CPKC-73

BEFORE THE
SURFACE TRANSPORTATION BOARD

Finance Docket No. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
- CONTROL -
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

CPKC'S COMMENTS ON APPLICATION AND REQUESTS FOR CONDITIONS

VOLUME IV OF IX

EXPERT VERIFIED STATEMENTS

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Dated November 18, 2026

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF RAYMOND ELPHICK AND BRIAN NELSON

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NOVEMBER 18, 2026

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I. INTRODUCTION

A. Raymond Elphick Expertise

1. My name is Raymond A. Elphick. I was employed by CPKC from April 1992 until my retirement as Vice President Service Design & Capacity Management July 1st, 2025.

2. My railway experience began in 1989, when I was hired by Canadian National Railway ("CN") as a brakeman/trainman in Toronto, Ontario. In 1992, I was hired by CP in Engineering Services. I held several different planning roles in Engineering. I was promoted to Service Design in 2005, where I spent 20 years in various roles with increasing accountability.

3. I was responsible for, among other things, the service design, network capacity capital and interline agreements at CPKC. One of my key responsibilities at CPKC was reviewing new business opportunities with CPKC's commercial team and designing transportation services that met the needs of customers consistent with CPKC's network and operating capabilities. In doing so, I was deeply engaged in the products CPKC offered and the strategic requirements to build a network with both the capacity to deliver those products efficiently and the service and capability our customers required. In 2022, I submitted a verified statement in the CPKC merger proceeding co-sponsored by John Orr (then Executive Vice President of Operations at KCS) which provided the Operating Plan for the combined CPKC. I subsequently oversaw the implementation of that operating plan and integration of operations between the former CP and KCS into one railroad.

4. From my experience, I am well qualified to evaluate the UPNS Operating Plan.[1]

[1] A copy of my detailed work history is provided in Appendix A.

B. Brian Nelson Expertise

5. My name is Brian N. Nelson. I was employed by CPKC from July 1997 to January 2019 and from May 2021 until my retirement as Managing Director Service Design April 3rd, 2026.

6. My railway experience began in 1997 when I was hired by CP as a track laborer in Calgary, Alberta. I held subsequent roles including brakeman and conductor prior to transferring to Service Design in 2001 where I spent 17 years in various roles with increasing accountability. In January 2019, I joined NS as a Service Design consultant working on the development and implementation of the TOP 21 Operating Plan. In May of 2021, I returned to CP to join the KCS merger project and lead CPKC Service Design.

7. From my experience, I am well qualified to evaluate the UPNS Operating Plan.[2]

C. Assignment

8. We have been asked by counsel for Canadian Pacific Kansas City Limited ("CPKC") to review and evaluate the Operating Plan[3] and Service Assurance Plan[4] submitted by Union Pacific Corporation and Union Pacific Railroad Company (collectively, "UP") and Norfolk Southern Corporation and Norfolk Southern Railway Company (collectively, "NS," and

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[2] A copy of my detailed work history is provided in Appendix A.

[3] *See* Joint Verified Statement of Eric Gehringer and John F. Orr, April 29, 2026, as revised by Second Errata submitted on September 4, 2026 ("Gehringer and Orr VS"). We note that Applicants' expert John Orr retired from his position on June 1, 2026; the Operating Plan was subsequently sponsored by Brian Barr (*see* Notice of Adoption of Previously Filed Verified Statement and Substitution of Sponsoring Witness, *Union Pacific Corporation and Union Pacific Railroad Company–Control–Norfolk Southern Corporation and Norfolk Southern Railway Company*, July 27, 2026). We understand that Mr. Barr fully endorses all opinions expressed in Mr. Orr's verified statement; we therefore will refer to the "Gehringer and Orr VS," with the understanding that these opinions are now sponsored by Mr. Barr.

[4] *See* Verified Statement of John W. Turner, April 29, 2026, as revised by Second Errata submitted on September 4, 2026 ("Turner VS")

together with UP, "Applicants") in support of their proposed transaction. Our assignment is to assess, from an operations and service-design perspective, whether Applicants have presented an executable operating plan that provides the Board with a reliable basis to evaluate the operational effects of the proposed transaction. Specifically, we have been asked to assess whether Applicants have presented a feasible plan to achieve their claimed service benefits and prevent service degradations following the merger.

9. Our review addresses each of the principal components of Applicants' Operating Plan. We first assess whether the Base Plan reasonably represents existing UP and NS operations and therefore provides an appropriate benchmark for assessing post-transaction changes. We then evaluate whether the service changes reflected in the Optimized Plan can be executed under real-world operating conditions using Applicants' existing network and facilities. Finally, we determine whether the Growth Plan can reliably accommodate Applicants' projected merger-related traffic growth while delivering the service improvements upon which those traffic projections depend. In doing so, we examine Applicants' traffic inputs, blocking and train plans, schedules, work events, train lengths and densities, and the physical and operating constraints at major yards and terminals throughout the proposed combined network.

10. We also evaluate whether Applicants' Service Assurance Plan is sufficient to prevent and respond to potential service degradation if the proposed operating changes do not perform as anticipated. To do so, we review Applicants' assessments of terminal capacity and operating buffer, their proposed change-management process, and their contingency planning for disruptions at key facilities.

11. Finally, where Applicants identify operating changes that appear feasible and beneficial—such as deeper blocking, coordinated schedules, run-through trains, and the

elimination of intermediate handlings—we consider whether those improvements require common ownership or whether they could be achieved through ordinary interline operating and commercial arrangements without the proposed merger.

D. Summary of Opinions

12. Based on our experience designing train service for Class I railroads, and our review of Applicants' Operating Plan, Service Assurance Plan, supporting workpapers, and related materials, we have reached the following principal conclusions:

- **Applicants have not presented an executable Operating Plan that provides a reliable basis for assessing the operational effects of the Transaction**. An Operating Plan must do more than demonstrate that traffic can be moved through a computer model. It must capture how the railroad actually operates under current conditions and provide a reasonable, realistic model of operations following the transaction. It must therefore contain achievable train schedules, allot sufficient time to perform assigned work, respect physical yard and network constraints, and allocate buffer to accommodate normal operating variability. Applicants' Plan does not satisfy those basic requirements. As a result, it does not provide us or the Board with a reliable basis to determine whether Applicants can achieve their claimed service benefits or maintain reliable service following the Transaction.

- **The Base Plan is not a reasonable representation of existing UP and NS operations.** The Base Plan contains pervasive errors and simplifying assumptions that disconnect it from the real-world operation it purports to represent. Among other issues, Applicants fail to provide realistic, achievable train schedules that balance work throughout the day; a substantial share of intermediate work events report no dwell at all; Applicants over-simplify the blocking plan to remove specific interline blocks, the consequence of which is an inaccurate representation of where blocks are built and which trains they are assigned to; Applicants "mutualize" distinct physical facilities at gateway yards, further obscuring where traffic is routed and work is performed; and the Base Plan is built upon a consolidated traffic record that distorts where density exists in the network. Applicants also have not adequately calibrated individual train routes, lengths, and transit times to historical performance. Matching aggregate systemwide measures such as gross ton-miles or car-miles does not cure those defects. If the Base Plan does not accurately reproduce existing operations, it cannot serve as a reliable benchmark for measuring post-Transaction improvements.

- **The Optimized Plan compounds those defects and assumes an operation that Applicants have not shown can be executed consistently with existing capital**. Among other changes, Applicants introduce new trains and blocks, remove handlings or shift them to new yards, and consolidate operations among neighboring facilities. Based on these changes, Applicants claim substantial transit-time improvements. But the Optimized Plan relies on unsupported train speeds, omits dwell for significant work events and crew changes, and operates trains at lengths that are either too short to provide sustainable traffic density or too long to run as-designed under normal operating conditions. In numerous instances, Applicants' own MultiRail model does not support their claimed transit time savings and work event savings. These are not minor modeling discrepancies. Applicants' claimed service improvements are not attainable based on the service design in the Optimized Plan.

- **The Growth Plan does not resolve these problems; it places additional traffic on a service design that at the outset is disconnected from real-world operations**. Applicants project substantial merger-related traffic growth based in significant part on improved service. Yet the Operating Plan does not reliably demonstrate that those service improvements can be achieved. Applicants then use the resulting projected traffic to support additional train density, blocks, and operating changes in the Growth Plan. That reasoning is circular: traffic density is used to make proposed services appear viable, while the traffic itself depends on service improvements that Applicants have not demonstrated they can deliver. Moreover, additional traffic magnifies the consequences of the unrealistic schedules, omitted work, excessive train lengths, and violation of yard constraints already present in the Optimized Plan. If Applicants fail to achieve their claimed service improvements, then diversions will likely fail to materialize as estimated. If Applicants cannot achieve their estimated diversions, they will not have sufficient density to introduce their new services in the Growth Plan.

- **Our yard-level review confirms that Applicants' proposed changes would add substantial complexity at many of the locations that will be most important to the combined network**. Applicants characterize elimination of UP-NS interchanges and consolidation of operations as simplifications. But removing the label "interchange" does not eliminate the physical work required to receive trains, classify or swap cars, build new trains, conduct inspections, and depart trains on time. At important gateways and terminals—including Atlanta, Louisville, Kansas City, Chicago, New Orleans, Memphis, North Little Rock, Chattanooga, and St. Louis—the Optimized and Growth Plans shift or add work to already congested yards, introduce long trains and new block movements, or concentrate activity at facilities whose physical and operating constraints Applicants have not adequately addressed. In several of these locations, Applicants' mutualization of separate facilities further prevents a meaningful assessment of where the proposed work would actually occur. In our view, these changes create significant risk of congestion,

increased dwell, delayed trains, and service degradation rather than the consistently improved service Applicants predict.

- **Applicants' Service Assurance Plan does not cure the deficiencies in the Operating Plan or provide adequate assurance against service disruption.** Applicants state that they will monitor performance at key corridors and yards and subject operating changes to a change-management process before implementation.[5] Those are sensible ordinary-course railroad practices. But they are also the kinds of reviews that should be completed before an operating plan is relied upon to establish merger benefits and assess service risk. Applicants' own proposal to validate and, where necessary, revise schedules and operating changes following approval of the Transaction underscores that the Plan filed with the Board has not yet undergone the operational review necessary to establish executability. Nor have Applicants presented a sufficiently detailed contingency plan explaining how the combined railroad would respond when particular yards become congested, trains exceed planned lengths, traffic develops differently than forecasted, or ordinary disruptions propagate through the network. Compounding this problem, Applicants design their model based on annual averages and make no allowance for peak-day or peak-season volumes. The Board therefore is being asked to rely on service benefits calculated from one plan while Applicants reserve the ability to develop a materially different plan after approval.

- **Finally, to the extent particular operating changes identified by Applicants are feasible and beneficial, Applicants have not demonstrated that those benefits require a merger**. Class I railroads routinely cooperate to provide effective interline service. They establish run-through trains, build deeper blocks for connecting carriers and exchange pre-blocked traffic, coordinate schedules, and bypass intermediate classification yards where sufficient density and operating conditions support doing so. UP and NS can employ those same practices through commercial and operating agreements without common ownership. Indeed, the Optimized Plan assumes existing traffic volumes, before adding merger-related diversions. Thus, where Applicants identify a practical opportunity to improve service through better blocking or coordination, the Optimized Plan itself provides no operational reason why that improvement could not be pursued today.

13. In summary, the Operating Plan submitted to the Board cannot be executed reliably and poses substantial risk of significant service disruptions. The Base Plan does not

[5] *See* Turner VS, ¶¶ 18–28; 349–350. *See also, for example*, Deposition of John Turner, September 2, 2026, 131:2–133:1.

accurately reproduce existing operations; the Optimized Plan relies on unrealistic operational assumptions; and the Growth Plan adds traffic to that unsupported foundation while depending on service improvements that Applicants have not shown they can achieve. The same shortcomings prevent the Board from reliably assessing the benefits that Applicants attribute to the transaction. Moreover, our review of yard-specific constraints reveals that the Plan as written contains substantial risk of severe service disruptions throughout the UP and NS networks, as well as the North American rail network through interline connections. These shortcomings are especially concerning, as Applicants also fail to provide a sufficiently detailed Service Assurance Plan that can account for normal operating variability, let alone more extreme disruptions. And where Applicants have identified operational improvements that may be feasible, they have not shown that common ownership is necessary to achieve them.

14. More broadly, the Operating Plan submitted to the Board does not demonstrate that Applicants can truly combine the UP and NS networks. An Operating Plan reflects an equilibrium system: a change to one component, however small, necessitates changes system-wide. Design changes in one lane spill over into multiple, seemingly unrelated lanes. For example, whether Chattanooga remains under capacity as its role adjusts to accommodate new traffic through the Memphis gateway depends on traffic blocked and designed from Conway and Elkhart, among other key yards. Those yards in turn must also support traffic moving through other gateways. Hence, even a minor change to an operation requires careful review to assess whether the network can run as intended.

15. Applicants now propose to combine two distinct rail networks to create the single largest rail network under common ownership in North America. Whether they can effectively do so requires the careful design of a unified Operating Plan that reflects the unique physical and

commercial constraints of the UP and NS systems. They have not presented that design to the Board. In fact, as we illustrate below, the Operating Plan submitted with this Application reflects an infeasible design that poses significant risk of widespread service disruptions. In our experience, a design of this quality would not be accepted in the ordinary course of business at a Class I railroad.[6] Hence, we cannot say based on the materials provided to us and the Board that Applicants can successfully combine their operations. We *can* say that, if Applicants try to implement the Plan submitted, they risk significantly disrupting rail operations throughout North America.

16. The rest of this Verified Statement is organized as follows:

- In Section II, we detail the key elements of an Operating Plan and the proper way to build a Plan tied to the real world.
- In Section III, we demonstrate that Applicants' Base Plan is not a reasonable snapshot of current UP and NS operations and therefore cannot be used to assess the feasibility of proposed service changes or claimed service improvements following the transaction.
- In Section IV, we demonstrate that the Optimized Plan builds upon this unreliable foundation, introducing service changes that are unlikely to materialize in the real world due to numerous errors and unsupported assumptions in Applicants' model.
- In Section V, we establish that these same issues affect the Growth Plan, making it unlikely that Applicants will realize their claimed service improvements and consequently, their claimed diversions as well. We further demonstrate that the Operating Plan does not reflect the service improvements assumed by Mr. Hunt, and consequently, Applicants will have insufficient density to run their new Growth Plan trains as-written in their Application.
- In Section VI, we detail specific operational constraints at key facilities where Applicants propose significant changes in operations. Based on this review, we conclude that Applicants' Operating Plan poses severe risk of significant service disruptions throughout their networks if diversion traffic materializes.

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[6] This is a fact that is underscored by Applicants' ongoing development of the actual transportation plan independent of this proceeding. *See, for example*, Deposition of David Welch, July 29, 2026, 119:12–120:20 and Deposition of Brian Barr, September 3, 2026, 334:15–335:6; 363:4–18.

- In Section VII, we establish that Applicants' Service Assurance Plan is insufficiently detailed and contains numerous errors and omissions that render their analysis of available capacity unreliable. As a consequence, Applicants are unprepared to maintain network fluidity if and when their yards get into trouble.

- Finally, in Section VIII, we demonstrate that, of those service improvements that are operationally feasible, Applicants have not identified a specific operational constraint that prevents them from implementing these changes today through cooperative agreements. Accordingly, Applicants have not demonstrated that a merger is necessary to achieve their (feasible) service improvements.

II. APPLICANTS' OPERATING PLAN AND ASSOCIATED OPERATIONAL ANALYSIS FAIL AT THE OUTSET WITH A BASE PLAN UNTETHERED TO THE REAL WORLD

A. Purpose and Goals of an Operating Plan

17. An Operating Plan provides a detailed blueprint of how traffic moves over a railroad's network. Dependable daily train service relies on consistent execution of the Operating Plan; the Operating Plan, in turn, must be feasible and provide a realistic representation of how traffic moves through a network. In a merger proceeding, the Operating Plan should describe both how traffic moves today and how that movement will change under the proposed service design following the transaction. Importantly, it must provide an accurate picture of the Applicants' separate pre-transaction operations, and it must demonstrate that the proposed post-transaction operation can be implemented and would achieve benefits that would otherwise not be possible without the merger.

18. Applicants recognize the importance of this exercise. They state that their Base Plan represents UP's and NS's pre-merger operations, their Optimized Plan represents operation of the two railroads as an integrated system without merger-related growth, and their Growth Plan represents operation of that system after adding projected merger-related traffic gains.[7]

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[7] *See* Gehringer and Orr VS, ¶¶ 15, 19–21.

They further claim that all three represent "feasible transportation plans" and comparison of these plans generates "metrics that can be used to assess the operating impacts of the transaction."[8] However, for these comparisons to have meaning, the starting point must be accurate, and the subsequent plans must be achievable. Applicants cannot reliably measure the consequences of the proposed merger unless the Base Plan reasonably reproduces the operations that exist today. Moreover, the Optimized and Growth Plans must present a realistic picture of operations following the merger. The requirement that the Operating Plan be executable is particularly pressing given the exceptional scale of the integrated network, where Applicants propose to combine two of the largest rail systems in North America to create the first transcontinental railroad in the United States.

19. At a minimum, an executable Operating Plan requires five interrelated elements.

20. First, it requires an accurate representation of the rail network. The network determines how traffic physically moves from origin to destination; specifically, it dictates the distance between locations, what physical constraints (*e.g.*, siding length or yard layout) an operating plan must accommodate to remain feasible, and where traffic may be exchanged with other railroads. In a merger proceeding, the networks from each railroad must be carefully joined to reflect a unified operation that properly represents how traffic will flow through the combined railroad. If the network is not accurately represented, block and train routes can be misleading, and in extreme cases, may reflect physically impossible movements.[9]

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[8] *See* Gehringer and Orr VS, ¶ 21.

[9] As discussed in Section II.A, Applicants' first submission contained an impossible movement through Kansas City that greatly complicated operations at this critical gateway. This movement was purely a figment of their initial network file, not any actual merger-related efficiency gains. *See* Appendix E for further detail.

21. Second, it requires reliable traffic inputs. Those inputs identify the rail cars, intermodal containers, auto racks, and other traffic that must move through the network, including their origins, destinations, commodity characteristics, interchange requirements, and anticipated volumes. The traffic file is the demand that the Operating Plan must serve. If traffic is assigned to the wrong location, routed through the wrong gateway, or concentrated at facilities that do not actually handle it, every downstream element of the plan will be distorted.

22. Third, it requires a blocking plan. A block is a group of cars assembled to move together for a portion of their trip. The blocking plan determines which cars will move together in one block (or, be "classified" into a single block), and where those blocks will be set out, picked up, exchanged, or reclassified to move traffic between trains. A well-designed blocking plan seeks to minimize the number of intermediate handlings by moving blocks over longer distances, while respecting the physical capabilities of the yards assigned to build and process those blocks.

23. Fourth, it requires a train plan. The train plan assigns the blocks to trains and identifies each train's origin, destination, route, frequency, scheduled work, and expected length and weight. The train plan must provide sufficient service frequency to meet customer requirements, while also ensuring that each train has sufficient traffic density to operate efficiently. It must also respect physical restrictions on the route, including siding lengths, grades, tunnel and bridge clearances, train-length limits, and weight restrictions, among others.

24. Fifth, it requires realistic train schedules. The plan must identify when trains will arrive and depart from each location and how much time will be allowed for the work assigned there. That work may include setting out or picking up blocks, changing crews, conducting inspections, and refueling or changing locomotives, among other necessary work events. Those

events consume time and occupy track, which must be explicitly accounted for in the Operating Plan.

25. These elements are interdependent. The network determines how traffic may move on the railroad; the traffic inputs inform the blocking plan; the blocking plan informs the train plan; and the train plan must be translated into schedules and ultimately the trip plan to be executed by the railroad. A defect in one element carries through to the others. For instance, inaccurate traffic inputs distort where the network has the greatest traffic density and may lead to the creation of blocks that are either too small to run regularly or too large to be accommodated by the yards where they are scheduled to work. In turn, an impractical or inaccurate blocking plan has the potential to overload yards, creating congestion and negatively impacting train service. Similarly, an unrealistic train plan may create trains that cannot consistently move over the proposed route or, alternatively, lack sufficient traffic density to reliably see the train mission fulfilled. And finally, a schedule that is not calibrated to real world conditions and does not provide sufficient time to perform the assigned work may lead to congestion, delayed trains and degraded service. It is of crucial importance that each of these components is accurate and reflects a realistic operation.

26. In summary, the purpose of an Operating Plan is not merely to demonstrate that traffic can flow through a computer model, but to demonstrate that the proposed railroad can operate safely, reliably, and consistently in the real world.

B. Why an Operating Plan Linked to the Real World is Vital

27. Rail operations can be dynamic and are interconnected. Traffic that departs late from one yard may miss a connection at the next yard; similarly, trains may arrive after the receiving track has been occupied by another train, waste a crew's time on duty, and delay other

trains over the same route. In short, the consequences of delay are not confined to the original train; they propagate across yards, mainlines, crews, locomotives, and customer shipments.

28. The scale of the proposed UP-NS system magnifies those challenges. UP reports approximately 32,880 route miles and NS approximately 19,200 route miles, producing a combined system of roughly 52,000 route miles.[10] The proposed network would be the first railroad under common control extending across the United States from the Pacific Coast to the Atlantic Coast. A network of that size must be planned at a granular level, or risk spreading service disruptions throughout the country.

29. In particular, the Operating Plan must reflect the real-world constraints present along individual routes and at specific yards.[11] Failure to account for these constraints will lead to degraded train service and an inexecutable plan. An inexecutable plan, and any statistics calculated therefrom, does not provide a valid basis to assess merger-related changes, as it cannot serve either as an appropriate baseline or an achievable target for network performance.

30. For example, consider an Optimized Plan that assumes a yard can generate more blocks than its physical configuration allows due to, *e.g.*, a limited number of classification tracks. In this case, the plan will overstate the number of blocks built at the yard in question. If this plan is put into practice, then it will quickly become apparent that the yard is over-subscribed, prompting a redesign that will consolidate volume at this yard into fewer blocks and/or shift work to neighboring facilities (assuming such changes are themselves feasible). This redesign will necessarily require additional handlings to re-route the traffic around the over-

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[10] *See* Gehringer and Orr VS, ¶¶ 38, 99.

[11] Applicants acknowledge this. *See, for example,* [redacted].

subscribed facility. Accordingly, this Optimized Plan will give a false impression of handling reductions and saved work events.

31. Thus, to offer a realistic picture of operations following the transaction and to provide a valid basis to measure changes in transit times, handlings, and yard capacity, it is critical that the Operating Plan be executable. Below, we enumerate some of the common constraints that an Operating Plan must incorporate.

1. Constraints That Must Be Accounted for in an Operating Plan

32. First, train schedules must be consistently achievable. Scheduled transit times must reflect the speed at which trains can and do travel over a given stretch of track. Transit times are affected by a variety of factors, including grades, curvature, train counts including passenger operations, and the type and length of the train, among others. The schedule must also include sufficient time for crew changes, inspections, fueling, pick-ups, set-outs, block swaps, and other work. Failure to generate consistently achievable train schedules will lead to unplanned delay.

33. Yard operations impose a separate set of constraints. A yard has a finite number of receiving, departure, and classification tracks, each of defined length. When a train arrives, the yard must have the required track space available. The yard must then have sufficient yard assignments and classification capacity to perform the assigned work and make the designed outbound connection. If only one train can work at that location at a time, scheduling two trains to work at a yard at the same time creates congestion and delay in the network.

~~34.~~ The timing and sequence of arrivals are therefore as important as the total number of trains or cars processed over a full day. As Applicants' expert acknowledges, [redacted]

[redacted].[12] Especially in yards running near capacity, the receiving, classification, departure, and (if any) through tracks require a scheduled, steady flow to support the larger network's fluidity. For example, if receiving tracks are full due to a constraint in classification, subsequent inbound trains must be held outside the yard. Those trains then occupy mainline capacity, delay following trains, consume crew time, and degrade operations.

35. Work events must also be feasible within each facility. A plan may show a train setting out one block and picking up another, but whether that event can be performed to schedule depends on where the blocks are located, the available track lengths, the train's length, the layout of the yard leads, the direction of movement, and whether the work would interfere with other facility operations for another route. Two locations with work events that appear equivalent in a model may require very different time and resources in practice.

36. Train and block size presents another constraint. A train or block following an otherwise sensible plan cannot be operated efficiently if too little traffic exists to support it. Running short trains over long distances consumes crews, locomotives, fuel, track capacity, and terminal resources that could otherwise support other, more efficient operations and services. Conversely, delaying cars for several days while sufficient volume accumulates may improve train utilization but degrade customer service. The Operating Plan must strike a balance between productivity and service.

37. Train length and weight must likewise be assessed over the entire proposed route and at every scheduled work location. A train may fit on the mainline but not on a receiving track at an intermediate yard. It may fit in one siding but not another. Moreover, a train that is

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[12] *See, for example,* Deposition of Brian Barr, September 3, 2026, 348:20–349:9.

planned at the physical maximum length offers no room for normal daily variation in traffic. When actual volume exceeds the physical capacity of the yard, siding, or mainline, cars risk being left behind to move via another train with available capacity, all the while taking up scarce track space and limiting the throughput of the yard.

38. Finally, a realistic Operating Plan must contain capacity and scheduling buffers. Railroads do not operate under perfect conditions every day. Weather, mechanical failures, incidents at crossings, passenger-train priorities, maintenance windows, and variations in customer releases—among numerous other factors—all introduce variability. A schedule that can be achieved only when every train departs on time, every connection is made, and every work event is completed in the minimum theoretical time will fail in ordinary operation. Accordingly, schedules include buffers to withstand some delays and support recovery to minimize the probability of delay and ensure that train schedules remain achievable.

2. Consequences of Failing to Account for These Constraints

39. When these matters are not properly addressed, the consequences are predictable. Traffic is left behind because the planned train cannot accept it. Yards become congested and dwell increases. Trains are held outside terminals or slowed along the route. Track maintenance time degrades. Crews, locomotives, and cars become misaligned with traffic demand and more resources are generally required. Connections are missed and service becomes unreliable. Moreover, these conditions can compound upon one another. A congested yard delays departures; as the yard struggles to alleviate the congestion, it may depart numerous trains in short order, creating a cluster of departing trains; this bunching consumes line capacity and stretches the capabilities of downstream yards, causing more congestion; the resulting delays cause additional cars and trains to accumulate. What begins as a local planning error can become a bigger network service problem.

40. Capacity and schedule buffers support recovery but alone may not be sufficient to overcome pervasive constraints and network service degradation. Applicants cannot rely on ad-hoc adjustments to support recovery, nor can they rely on vague assertions regarding excess capacity, as these fail to address specific constraints and their impact on operations and train service. Accordingly, Applicants must provide a detailed Contingency Plan, which spells out explicitly how operations will be adjusted—which trains will be re-routed, which blocks will be processed elsewhere, and how work will shift among neighboring facilities—when service declines or when yards become congested. Applicants did not do so, as detailed in Section VII.

41. Applicants assert that their Base, Optimized, and Growth Plans are feasible.[13] However, as we elaborate in Section III, Applicants fail to provide an executable plan that accounts for the numerous operating intricacies and constraints outlined above. Accordingly, Applicants have not demonstrated that their Operating Plan is achievable, nor have they provided a detailed Contingency Plan to maintain feasibility. Fundamentally, they have not provided a reliable basis to assess service impacts following the merger.

C. The Proper Way to Build an Operating Plan Linked to Real World Operations

42. Developing an Operating Plan is an iterative process. The objective is not simply to minimize or improve one metric, such as the number of car handlings or train miles. A workable plan must balance several goals: safety, reducing transit time, improving reliability, limiting work events, avoiding congestion, using crews and equipment efficiently, and maintaining enough traffic density to support the proposed services. Concurrently, as outlined in Section II.B above, the design must also reflect real-world constraints, including the number and

[13] *See* Gehringer and Orr VS, ¶ 21.

length of tracks at each yard, line capacity, contractual or "paper" barriers,[14] required inspections, and the dwell needed to complete assigned work. A service design that disregards any of these criteria may appear efficient in a model but will quickly prove to be inexecutable in practice, leading to degraded service.

43. Balancing these goals and criteria frequently involves tradeoffs. Increasing train frequency may reduce the total time a customer waits for their shipment, but the traffic may not be sufficient to support an efficient daily train. Adding a work event may allow a train to carry more traffic, but the additional work may extend transit time or exceed the physical limits of an intermediate yard. Conversely, removing a work event at one location may not eliminate the need for that work, but instead shift it to an upstream or downstream location – for example, removing a block swap at one location may necessitate another block swap elsewhere. Further, building a deeper block may save a work event downstream, but only if the originating yard has sufficient capacity and traffic volume to build that block reliably. Hence, the service design and operating teams must iteratively assess how the Operating Plan achieves these goals while maintaining feasibility.

1. Network File

44. In our experience, building an Operating Plan begins with an accurate representation of the network. In a merger proceeding, Applicants must combine two distinct network files—reflecting two independent operations—into one, integrated network representation that facilitates a combined operation. Where the existing networks overlap, special care must be taken to ensure the representation remains sensible and the proposed physical movements are feasible. For example, where Applicants currently operate distinct but physically

[14] For example, CPKC imposes a strict limit of 8,500 feet on the Meridian Speedway.

proximate facilities, they must carefully review how they intend to merge operations between the two yards—whether that means continuing to operate both, shuttering one and concentrating all traffic in the other, or bypassing both. The network representation must reflect the combined infrastructure accurately to support correct routing, which in turn allows you to build an appropriate blocking and train plan.

45. Failure to appropriately integrate the network may lead to inaccurate block and train routings and in the extreme, an Operating Plan that assumes physically impossible movements. For instance, in their original Application, Applicants over-simplified the Kansas City area by assuming that trains could route directly between 18th Street, North Yard, and Neff Yard over a connection that does not physically exist.[15] This network misrepresentation allowed Applicants to claim numerous efficiencies as a result, but it was purely a figment of their inaccurate network file. Seemingly recognizing their mistake, Applicants removed this routing in subsequent Applications. This example highlights how, if care is not taken to integrate the networks accurately, Applicants could propose a physically impossible operation, as they did in their original Application.

46. Further, Applicants may try to "patch" network representation problems by manually adjusting other inputs into their operating plan. For instance, they may aggregate distinct blocking into one, combined facility and block, thereby misrepresenting the traffic processing and blocking demands. Alternatively, they could alter their traffic inputs to limit the number of facilities that originate or receive traffic, thereby limiting the number of facilities that appear in their network file. While doing so greatly simplifies the modelling exercise, it

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[15] *See* map of Kansas City operations in Appendix E. Seemingly recognizing that this movement was physically impossible, Applicants removed this inaccurate route representation of Kansas City in subsequent filings.

necessarily means that the model no longer reflects the physical reality that the combined railroad must accommodate.[16]

2. Traffic Inputs

47. Once the network is finalized, the next step is to incorporate a reliable estimate of traffic flows. The service design team uses these traffic flows to characterize the total volume moving between all origins and destinations on their network(s), as well as normal variation in these volumes day-to-day and week-to-week. Based on these flows, the team then develops the blocking plan, identifying high-volume lanes within the network in which multiple cars from different flows can be classified into one block. From there, the service design team constructs the train plan, which specifies how blocks will move from origin to destination. Once the train plan is in place, the team develops schedules for trains based on realistic train speeds, making appropriate allowances for work events, inspections, crew changes, etc. Each step must be tested against operating constraints and revised as needed.

3. Blocking Plan

48. Developing the blocking plan begins by identifying opportunities to reduce unnecessary switching while maintaining or improving service. The general objective is to build cars into blocks that can travel as far as practicable toward their destination without being reclassified. Deeper blocks reduce intermediate handlings, avoid variability at intermediate yards, and generally improve asset utilization.

49. That does not mean that every possible origin-destination pair should receive a separate block. Each block consumes a classification track or a portion of one, requires a reliable connection, and must contain enough traffic to justify the space and work devoted to it. A

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[16] *See, for example*, Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," Section 3.1.

common initial screening threshold is approximately 10 cars per day, although the appropriate threshold depends on specific circumstances. For example, a smaller block may be appropriate where the traffic is especially service-sensitive,[17] or where the block eliminates a particularly unreliable connection. In contrast, a larger threshold may be necessary where traffic volumes are particularly large or there is a need to conserve use of scarce classification tracks.

50. Yard constraints are central to this analysis. The number and length of classification tracks limit how many blocks can be built. The terminal train plan determines the frequency at which the classification tracks will turn over as a function of when those blocks will depart. The service-design team must determine whether the yard can receive the inbound trains, classify the cars into the proposed blocks, and place those blocks on the designated outbound trains, all within the time required and recognizing the particular constraints of the yard.

51. For example, consider NS's yard at Birmingham. As detailed in Section VI.J, Birmingham currently maintains 56 classification tracks, along with forwarding tracks and pullback leads to support its operation.[18] According to an internal evaluation of Birmingham's capacity, this configuration means that, under normal conditions, Birmingham has a daily throughput of roughly [redacted] cars per day.[19] However, Birmingham has historically been over-subscribed. Consequently, Birmingham has struggled with dwell that is frequently 7 to 8

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[17] For example, traffic from shipping and logistics companies like UPS and DHL requires especially fast transit times.

[18] *See* Norfolk Southern, "Yardmax Capacity Study: Birmingham," March 2025, NS_00102449, at -456.

[19] *See* Norfolk Southern, "Yardmax Capacity Study: Birmingham," March 2025, NS_00102449, at -460.

hours longer than scheduled, with average turns reaching over 29 hours.[20] This example highlights the importance of considering yard configuration and yard constraints when planning work events and determining what blocks can be built where. Yards that become over-subscribed will lead to elevated dwell and degraded train performance.

52. Block swaps can sometimes reduce classification activity. A block swap is where an inbound crew places a block directly onto a track for an outbound train without sending the cars through the normal classification process. This is typically performed between two trains at a crew change location. But that movement must still be physically executable. The tracks must be long enough, and the inbound and outbound schedules must be coordinated to minimize impact on the connection and the facility's capacity. Importantly, not all yards are equally equipped to perform block swaps—in particular, hump yards generally have limited capacity for block swaps due to their physical layout.[21]

53. After developing an initial blocking plan, the service-design team evaluates additional yard bypass opportunities. The overall objective is to minimize the number of times a car has to be switched between its ultimate origin and ultimate destination. The best outcome is to handle the block direct on daily train service eliminating intermediate yard processing and

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[20] As of the week ending October 16, 2026, the average terminal dwell time is 29 hours. Norfolk Southern Corporation, "Weekly Performance Reports," last accessed October 20, 2026, https://norfolksouthern.investorroom.com/weekly-performance-reports.

[21] Hump yards are well-suited for classification due to their physical layout: they are designed like a conveyor belt, with traffic meant to come in one end, proceed to the hump to be classified into new blocks, which are subsequently placed on outbound trains. Most of their physical space is therefore devoted to classification track. They have limited ability to perform block swaps, as they have limited tracks available to access and swap pre-built blocks.

For an example of the difficulties created by adding block swaps to a hump yard, see the discussion of Chicago's Elkhart yard in Section VI.F.

Applicants' expert acknowledges this as well. *See, for example,* [redacted].

associated variability in train connections. Where traffic density does not permit direct train service, if supported by infrastructure, the second-best option is to block swap the traffic between scheduled train services at an intermediate location without having to classify the cars but at the cost of adding work events, dwell between train connections, and the risk of missed connections. When schedules do not align, block swapping quickly becomes operationally infeasible and traditional processing (*i.e.*, reclassifying traffic into new blocks) is favorable.

54. As highlighted by Applicants, MultiRail can help identify potential bypass opportunities, but this is only a starting point.[22] Each opportunity must be assessed for feasibility based on block size, available train capacity, the proposed train connection, impacts on connecting services, as well as the physical ability of the yards to perform the work. Importantly, not all potential bypasses are practical or beneficial. Some may create an unreliable connection, overload another yard, or require a train to operate at an unsustainable length; conversely, a longer train picking up a short block does not reflect an efficient operation. The process of evaluating potential bypass opportunities repeats until further changes no longer produce a practical improvement.

55. It is important to emphasize that not every bypass opportunity necessarily saves work. Bypass blocking is effective at removing a classification or block swap from a critical yard. However, the need to perform that work may not disappear—it may simply shift to another location in the network. Whether these additional work events are feasible depends on the specifics of each yard receiving new work. Hence, each bypass opportunity must be carefully evaluated against existing network constraints.

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[22] Gehringer and Orr VS Workpaper, "C-Optimized Plan.pdf," Section 3.3.

4. Train Plan

56. The blocking plan then informs the train plan. Typically, each train begins with an anchor block that provides the principal mission for the train. That is, the train's origin and destination are based on the anchor block. If that traffic does not provide sufficient density to warrant running the train, additional compatible blocks may be added for all or portions of the train's journey. Those additions determine the intermediate work events the train performs along its route, and will accordingly determine its schedule, length, weight, and required power.

57. The train plan must optimize efficiency within the physical limitations of the network. Running a train with insufficient volume over a long distance is generally inefficient and unrealistic. As stated previously, the train occupies crew, locomotives, fuel, track, yard capacity, and other resources regardless of size; at the same time, holding cars too long to build a larger train harms service. Moreover, trains are constrained by network limitations like the length of available sidings or receiving and departing track along their routes, as well as haulage capacity and a number of other factors. A longer train can be efficient, but only if it represents a physical movement that can consistently be achieved. The service design team must balance competing objectives when designing the train plan to optimize both service and productivity in parallel with both yard and mainline capacities.

5. Train Schedules

58. After the block to train assignment is complete, each train must be scheduled. The schedule identifies the train's planned departure, running time between locations, arrival time, dwell, and subsequent departure. Running times must reflect demonstrated operating conditions, and dwell must reflect the work assigned. Arrivals and departures must be distributed so that the plan does not concentrate more trains at a yard than the facility can reasonably receive and process throughout the day. The train plan must also account for day-of-week variation. As

Applicants' experts acknowledge, [redacted].[23] The plan must remain executable during those predictable peaks, not merely on the average day.[24]

59. Buffer must also be designed into the schedule. The appropriate amount varies by route and service, but some allowance is necessary to prevent a routine delay from causing a succession of missed connections. Buffer should not be confused with excessive schedule padding. The objective is a schedule that is both demanding and consistently achievable. Wherever practicable, the train plan should operate on a consistent daily schedule and be balanced in both directions. Daily operation reduces the time cars wait for service and makes crew, locomotive, and yard requirements more predictable. A repeatable plan—under which the same blocks move on the same trains at approximately the same times each day—is easier to execute, measure, and improve. Consistency also allows yards and line-of-road operations to plan train meets, receiving-track use, crew calls, inspections, and work assignments.

6. Terminal Clock Review

60. A terminal clock provides a more granular view of whether the work assigned to a yard can be performed at the times it is scheduled.[25] It shows when trains arrive and depart, when work events are expected to occur, and whether receiving, working, classification, and departure tracks are available during the relevant operating windows.

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[23] *See, for example,* Deposition of John Turner, September 2, 2026, 232:16–233:23 and Deposition of Brian Barr, September 3, 2026, 370:14–371:23.

[24] For more detailed discussions of how Applicants' Operating Plan violates this principle, see Section VI for yard-level issues and Section VII.B for a more comprehensive discussion.

[25] Applicants' expert confirms this. *See, for example,* [redacted].

61. Comparing average daily throughput to average daily yard standing capacity does not establish that a yard can execute a plan.[26] The plan must also demonstrate that scheduled trains and work events can move through the facility throughout the day and week without creating conflicts or congestion. Analysis by time of day is critical to account for the potentially uneven nature of traffic over the course of a day. Academic literature confirms this. *Ireland et al.* explain that Canadian Pacific "turned to . . . MultiRail software" and, as one step in its operating-plan process, would "[u]se simulation to analyze yard and train workloads by the day of week and time of day."[27] This simulation was performed iteratively, where each iteration would "adjust[] the blocks and trains to improve the overall use of yard and train capacity and to improve the routing of the cars."[28]

7. Iterative Review and Feedback

62. Once an initial plan has been developed, Service Design must also incorporate feedback from the Marketing and Operations teams. Local and regional operating personnel understand the physical constraints, recurring conditions, or other idiosyncrasies that impact the Plan's feasibility,[29] as well as ensure that the Plan meets inspection, fueling, locomotive, track,

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[26] Turner VS Workpapers, "NS Manifest IM Auto Terminal Capacity Calculations.xlsx" and "UP Manifest-Intermodal-Automotive Terminal Capacity Inputs & Calculations.xlsx."

See also, Deposition of Brian Barr, September 3, 2026, 370:14–371:2.

[27] Phil Ireland, Rod Case, John Fallis, Carl Van Dyke, Jason Kuehn, and Marc Meketon, "The Canadian Pacific Railway Transforms Operations by Using Models to Develop Its Operating Plans," *Interfaces* 34(1) (2004): 5–14, pp. 7–8.

[28] Phil Ireland, Rod Case, John Fallis, Carl Van Dyke, Jason Kuehn, and Marc Meketon, "The Canadian Pacific Railway Transforms Operations by Using Models to Develop Its Operating Plans," *Interfaces* 34(1) (2004): 5–14, p. 8.

[29] For example, NS's facility in Ft Wayne, IN, is not well-positioned to receive traffic running north-south between Chattanooga and the Chicago area. As elaborated in Section VI.M, the yard is laid out east to west with no easy access for north-south traffic. Therefore, traffic to/from Chicago must enter the west end of the yard, at which point it may be split across multiple tracks while the locomotive doubles back from the east end of the facility. To continue north to Elkhart or south toward Chattanooga,

and maintenance requirements. In other words, the Plan must be deemed feasible by the Operations staff who will execute it. Similarly, Marketing and Sales personnel assess whether the proposed frequency and transit time satisfy customer requirements and whether sufficient traffic exists to support the service. That is, the Marketing and Sales team ensures that the Plan is sustainable and competitive in the long term.

63. This review with Operations and Marketing commonly requires revisions to the blocking plan, train plan, and schedules. The process is iterative because a change intended to improve one part of the network can create an unacceptable consequence elsewhere. For a proposed 52,000-mile combined system, that validation would be a substantial, multi-layered exercise involving the interaction of hundreds of trains and dozens of major terminals. Below, we outline some of the most common issues that arise when evaluating an Operating Plan.

64. Yard and line-capacity problems are among the most common issues. A yard may lack sufficient receiving or departure tracks for the scheduled train pattern. Classification tracks may be too short or too few to support the proposed blocks. A block swap may require movements that cannot be performed without fouling an arrival or departure route. Closely spaced arrivals may force one train to wait outside the terminal even though the yard appears to have adequate daily capacity in aggregate.

65. Line-of-road constraints can create similar problems. A route may lack sidings long enough for the proposed trains to meet.[30] Tunnels, bridges, grades, curvature, or operating

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the train must be rebuilt to depart again through the west end of the facility. *See* Figure 122 for further detail. The complexity of this movement highlights how a yard's physical layout limits the practicality of certain work events.

[30] A train can run over siding length, but doing so will force trains running in the opposite direction over the same track to either wait on available sidings or delay departure. Accordingly, for any train that risks regularly running over siding capacity, schedules must be carefully designed and meets with other trains must be carefully orchestrated to minimize potential disruptions to other services.

agreements may impose length, weight, clearance, or routing restrictions. Passenger schedules or maintenance windows may reduce the time available for freight operations.

66. Finally, the Plan must ensure that train service is commercially viable. As discussed previously, a train will occupy resources—including track, crews, locomotives, and fuel, among others—whether it is short or long. It is therefore more efficient to run longer trains.[31] On the other hand, customers may not have enough demand to fill a train every day. Similarly, train service that either is infrequent or requires long transits may not meet customer needs.

67. These issues impact not only the short-term feasibility of an Operating Plan, but its long-term commercial sustainability. They must be resolved before an Operating Plan is put into action, rather than left for dispatchers and local operators to resolve after implementation.

8. Conclusion

68. The essential point is that developing an Operating Plan is not a paper exercise alone. The design must balance a number of competing objectives while respecting a wide array of constraints, including (among others): (1) yard and line capacity, (2) consistent, balanced, and attainable schedules with reasonable buffer, and (3) sufficient density to support continued service. This design must also be supported by a detailed contingency plan, which explains how operations will continue to respect these constraints in the presence of normal and predictable service disruptions. Finally, a feasible plan emerges only after the service design has been thoroughly vetted by experts from the railroads—including Service Design, Operations, and Sales and Marketing—to ensure the plan is physically attainable and commercially sustainable.

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[31] Applicants' expert acknowledges this. *See, for example,* [redacted].

D. The Proper Way to Incorporate Anticipated Traffic Changes into a Revised Operating Plan

69. The highly involved and disciplined process described in Section II.C applies not only when developing a new plan, but when anticipated traffic changes are added to an existing plan. The new volume cannot simply be placed on the trains or routes that appear to have room on an average basis. The service design team must determine how the traffic will be blocked, which trains will carry it, what work will be added at each location, and whether the resulting operation remains balanced and executable. An additional constraint in this context is the need to ensure that the Operating Plan reflects the service improvements that drive this new traffic. If the Plan fails to incorporate these improvements, it becomes questionable whether Applicants will achieve the stated diversions.

70. According to Mr. Hunt, the combined railroad will attract approximately 252 thousand new carloads per year as well as 1.280 million new intermodal units, driven by a combination of service and price improvements.[32] Incorporating these traffic changes requires more than increasing the size or number of selected trains. Moreover, Applicants must demonstrate that the service improvements that drive these diversions rely on the transaction—that is, they must identify a specific operational constraint that a merger will alleviate. As discussed further in Section V.D, Applicants cannot rely on merger-related traffic gains to rationalize service design changes following the Transaction—the service improvements must be directly attributable to the merger, and the traffic must then follow from the service improvements.

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[32] *See* Verified Statement of David T. Hunt, April 29, 2026, as revised by Second Errata submitted on September 4, 2026 ("Hunt VS"), Exhibit 2-4.

71. The added work must be distributed appropriately across the network. A plan that directs traffic away from one yard to "simplify" operations may overburden other portions of the network.[33] The analysis must address not only daily throughput, but the timing, direction, and type of work assigned. As discussed previously, idiosyncrasies at each intermediate work location impact the maximum feasible length of a train, as well as the volume and type of work events it can undertake. In incorporating new traffic, the service design team must include a detailed review of each new work event to determine whether it respects real-world conditions throughout the network.[34]

72. The plan must also assess whether crews, locomotives, and cars remain balanced. Adding eastbound traffic without corresponding westbound traffic may require cars, locomotives and crews to be repositioned. A plan that depends on significant deadheading or routine repositioning of crews and equipment may be operationally possible but is not necessarily efficient or reliable. Networks operate best when balance exists. In designing the new plan, the service design team must re-review existing traffic imbalances and accommodate new traffic imbalances with an eye to what efficiencies can or cannot be achieved.

73. Each new or redesigned train must be tested against the physical and paper barriers over its entire route. Consider a route with an 8,000-foot siding length limit. A train that

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[33] For example, as elaborated in Section VI.B, Applicants claim to simplify operations in St. Louis by abolishing blocks built at TRRA Madison Yard for CN and CPKC bound for Chicago, as well as blocks for NS headed to Elkhart and Bellevue. But in so doing, Applicants do not remove the need to classify this traffic. Rather, [redacted], which Applicants state is already at-capacity (*see* Section VII). Similarly, [redacted] Again, by Applicants' own calculations, Gateway reports effectively no excess capacity and will regularly be over-burdened by Applicants' design (*see* Section VII). Hence, "simplifications" of a network may not necessarily remove handlings but simply shift the burden between yards.

[34] In Section VI, we discuss specific yards, and explain that Applicants have added complexity, as opposed to simplifying operations as they claim.

historically operates at approximately 6,000 feet and is assigned an additional 2,000 feet of diverted traffic is not comfortably within the limit to meet opposing trains; it is planned at the limit. Normal traffic variation from day to day will cause volume for the train to routinely fluctuate beyond an average 8,000 feet. The railroad must then leave cars behind, operate an additional train on peak days, or move the excess traffic by a different and potentially slower, longer route.

74. Similar issues arise at yards and terminals. An additional block may fit on the train but require a new classification track at the originating yard. A larger train may fit over the road but exceed the receiving-track length at an intermediate terminal. Additional cars may be absorbed in average daily capacity but cause congestion during peak hours when the relevant trains are scheduled to arrive.

75. New blocks and train services must also have sufficient and sustainable density. Applicants acknowledge that transportation markets are dynamic and that merger-related growth will not precisely follow their forecast.[35] That uncertainty reinforces the need to test the Growth Plan across a reasonable range of traffic outcomes. A train that is economical only if Applicants obtain the full projected diversion may not remain viable if the traffic develops more slowly or in different lanes. This issue is of particular concern if Applicants do not incorporate service improvements that drive estimated diversions.

76. A proper growth-planning process therefore repeats the same sequence used for the existing operation: update the traffic forecast; revise the blocking plan; revise the train plan; develop executable schedules; test yard and line capacity; assess crew, locomotive, and car

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[35] *See* Turner VS, ¶¶ 11–13.

balance; and validate the result with operations and commercial personnel. The Plan is refined until it produces a repeatable operation under realistic conditions, including normal variability.

77. As we discuss in later sections, Applicants have not performed these tasks to develop a Growth Plan. Their Growth Plan rests on a Base Plan that does not accurately reproduce pre-merger operations[36] and an Optimized Plan that assumes operational efficiencies that have not been demonstrated to be executable.[37] Adding projected traffic to that foundation does not cure the underlying defects. Moreover, Applicants fail to incorporate the service improvements that Mr. Hunt asserts will drive diversions[38] – thus, the Operating Plan provides no reliable basis for determining whether or how Applicants might achieve their stated diversions.

E. Applicants Have Not Provided an Executable Operating Plan

78. As we detail in subsequent sections, the Operating Plan submitted by Applicants is replete with fundamental errors and omissions that render it completely uninformative for assessing service improvements or the likelihood of significant service disruptions following the transaction. Chief amongst these issues, Applicants state that [redacted][39] As we detail in Section III.A, [redacted] means that Applicants will need to substantially revise their Operating Plan before they can combine their operations. Necessary edits would include generation of feasible

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36 *See* Section III.

37 *See* Section IV.

38 *See* Section V.C.

39 *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, p. 3.

schedules, potentially major revisions to the train and blocking plan to make these schedules tenable, and subsequent re-analysis of work events and available capacity to ensure the plan is operationally executable and commercially sustainable. In short, the Operating Plan submitted with the Application is purely a paper exercise that Applicants cannot realistically implement, a fact which Applicants seem to acknowledge.[40]

79. The preliminary nature of the Operating Plan submitted with the Application is further underscored by [redacted] Applicants' witness Mr. Welch, [redacted] ".[42] As confirmed by the Operating Plan's co-sponsor Mr. Barr, this review includes [redacted].[44] As we outline above, these are ordinary-course procedures that ensure their integrated operation remains feasible. These validations should also have been completed before submitting the Operating Plan as part of their Application to argue that their benefits are

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40 *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, p. 3. *See also*, [redacted]

41 *See* Deposition of David Welch, July 29, 2026, 10:4–18.

42 *See* Deposition of David Welch, July 29, 2026, 119:12–120:20.

43 *See* Deposition of Brian Barr, September 3, 2026, 340:17–341:9; 350:5–19.

44 *See* Deposition of Brian Barr, September 3, 2026, 334:15–335:6; 363:4-18; 395:20–396:15.

attainable. As Mr. Barr admits, [redacted][45]

80. Applicants have ignored long-standing Board precedent by failing to provide an executable Operating Plan. Applications for past major transactions—including BN-SF (1995), CSX/NS-Conrail (1998), and CP-KCS (2023)—included detailed train schedules and concrete train-level operating designs that allowed the Board and other parties to evaluate whether the proposed operation could work in reality. This level of detail is essential to determine whether Applicants have a realistic path to achieve their claimed service benefits, and what the risks of service disruptions stemming from the transaction are.[46]

81. The Optimized Operating Plan accompanying the CP-KCS merger application provides a clear example. One of the authors of the present Verified Statement, Raymond Elphick, co-sponsored the CP-KCS Operating Plan along with Applicants' former expert John Orr. In generating this Plan, Mr. Elphick and his team followed closely the process described in Section II.C. Every new train, block, and work event was scrutinized to ensure that it was feasible with existing and projected yard configurations and network constraints. Schedules were painstakingly developed to preserve balance of work at each yard throughout the day, protecting commuter train operating windows, preserving interline blocking and operations through gateways, and also providing customers with improved transit opportunities. Variations in volumes were closely analyzed to ensure the combined operation could withstand surges in volume during peak periods. In this process, Mr. Elphick personally reviewed terminal clocks and blocking plans for every major yard. The result of this process was an executable Operating

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[45] *See* Deposition of Brian Barr, September 3, 2026, 293:11–294:22; 395:12–396:22.

[46] While select details of the Operating Plan may change before being put into effect, it should nevertheless provide a realistic projection of operations following the transaction.

Plan that gave a realistic snapshot of CPKC operations following the transaction. In fact, the overwhelming majority of the Optimized Plan accompanying the CPKC application was put into effect when CP and KCS formally combined their operations.

82. UP and NS have not held themselves to the same standard. Applicants have submitted an Operating Plan which they acknowledge [redacted].[47] Applicants' experts, Messrs. Gehringer and Barr, admit that [redacted][48] As we demonstrate below, this review is insufficient and leads to a Plan that is infeasible. Accordingly, the Operating Plan cannot be used as a reliable basis to assess train service following the transaction.

III. THE BASE PLAN DOES NOT ACCURATELY REFLECT PRE-MERGER UPNS OPERATIONS

83. Applicants describe the Base Plan as the baseline for comparing pre- and post-merger operations. They state that it combines a MultiRail representation of the UP and NS networks based on a blocking and train plan from July 2025, as well as consolidated traffic records from 2023.[50] Applicants assert that the model is an accurate representation of pre-merger

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47 *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, pp. 2–3.

48 *See* Deposition of Brian Barr, September 3, 2026, 356:7–359:12. *See also*, Deposition of Eric Gehringer, October 13, 2026, 41:6–18; 160:13–161:19.

49 *See* Deposition of Brian Barr, September 3, 2026, 359:5-12; 363:4-13. *See also*, Deposition of Eric Gehringer, October 13, 2026, 41:6–18; 160:13–161:19.

50 *See* Gehringer and Orr VS, ¶ 22.

operations based principally on system-wide comparisons of gross ton-miles and car-miles.[51] However, those aggregate comparisons do not demonstrate that the train schedules, work events, yard assignments, and traffic flows all adhere to the numerous real-world constraints that impact a design (described in Section II.B above).

84. An Operating Plan may reproduce aggregate ton-miles and car-miles while still failing to be executable. Our review shows that the Base Plan does exactly that. Accordingly, Applicants have not provided a reasonable basis to assess service impacts following the merger, as they have not provided an accurate representation of their current operations. Below, we enumerate the major problems we have identified in Applicants' Base Plan and explain why they make it inexecutable, meaning the Base Plan is not a reliable representation of pre-merger operations.

A. Applicants Did Not Provide Calibrated Train Schedules for Their Operating Plan

85. Applicants have confirmed that [redacted]. In an August 21, 2026 response to questions from BNSF concerning workpapers, Applicants state that [redacted][52] They further explain that [redacted]

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[51] *See* Gehringer and Orr VS, ¶¶ 21–25.

[52] *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, p. 3.

[redacted]

86. This is a major omission. As discussed in Section II.C, train schedules determine what time trains will run, what connections are made, and when yards have available capacity throughout the day. Absent accurately calibrated schedules, Applicants cannot determine whether the work events included in their train plan are balanced, or if they would overload a yard by putting too many trains into one operating window. Nor can they assess whether dwell incurred at a connection is reasonable or unreasonable (*e.g.*, dwell could require cars to sit in a yard for multiple hours waiting on an outbound train, thereby occupying track and reducing throughput). All of this undermines the development of a baseline trip plan. In other words, schedules determine whether the Operating Plan is executable, and offer a baseline to evaluate service improvements in subsequent plans.

87. Similarly, Applicants cannot reliably assess their claimed service benefits without scheduling information. Transit time is not determined solely by a train's route. It depends on actual operating conditions along that route, including congestion at yards and facilities, attainable speeds between yards, and dwell required for work events, crew changes, inspections, and fueling, among other potential factors. Applicants confirm that [redacted].[54] The MultiRail model therefore establishes, at most, a proposed routing and train origin and destination pairs. It does not

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[53] *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, pp. 2–3.

[54] *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, p. 3.

establish that this train plan and the associated, important intermediate work events and connections have been reviewed and are executable.

88. Applicants characterize their Base, Optimized, and Growth Plans as feasible transportation plans.[55] But feasibility cannot be established without determining whether the trains in those plans can be operated at achievable times, perform their assigned work, make necessary connections, and move through yards and lines without creating conflicts. Applicants have not performed that scheduling exercise. Accordingly, the Operating Plan does not provide the Board with the information necessary to assess Applicants' claimed benefits, as it does not provide plans that can actually be executed as represented.

89. In the subsequent sections, we identify numerous defects in Applicants' Base Plan that render it infeasible and unrepresentative of current operations. In some cases, these defects relate to unrealistic schedules that would over-burden yards and have the potential to create congestion and widespread service disruptions. In performing this review, we relied on the scheduling information accompanying Applicants' MultiRail model, [redacted][56] Accordingly, the sections below demonstrate that an Operating Plan that omits realistic train schedules is inherently infeasible.

90. Importantly, as we outline below, many of the issues with Applicants' unrealistic train schedules impact the feasibility of their proposed train plan and blocking plan. Given this,

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55 *See*, *e.g.*, Gehringer and Orr VS, ¶ 21 ("The process resulted in three feasible transportation plans for a UP/NS network, along with metrics that can be used to assess the operating impacts of the transaction.").

56 *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, pp. 2–3.

the Base Plan is not executable as written and requires substantial corrections before being an accurate representation of current operations. Accordingly, there is no reliable basis to assess Applicants' claimed service benefits, including reductions in transit times or handlings.

B. The Base Plan Does Not Contain Achievable Train Schedules

91. Approximately [redacted] percent of trains originating on the legacy UP system are shown in the Base Plan as departing at 12:00 noon from their origin.[57] Taken literally, this means that nearly all UP yards report departing an unrealistic number of trains at noon every day. This problem is pervasive and affects not just the Base Plan, but the Optimized and Growth Plans as well, demonstrating the consequences of Applicants' failure to provide foundational train schedules for the Base Plan. Figure 1 below shows the share of UP trains whose initial departure occurs at 12:00 noon in each plan.

FIGURE 1: SHARE OF UP DEPARTURES AT 12:00 NOON



Sources and Notes:

[57] All new train services introduced in the Optimized and Growth Plans likewise report a noon departure from their initial origin. *See* Gehringer and Orr VS Workpaper, "[mr_opal].[trainExpandedRoute]" filtered to new trains in the Optimized and Growth Plans. S*ee also,* Script "Look up Train Route (speeds).sql" in folder "MR Review" for newly-added trains in the Optimized and Growth Plans (resultScenarioKey 172 and 200). Use Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 'Trains' to identify trainKey values associated with new train services in the Optimized and Growth Plans.

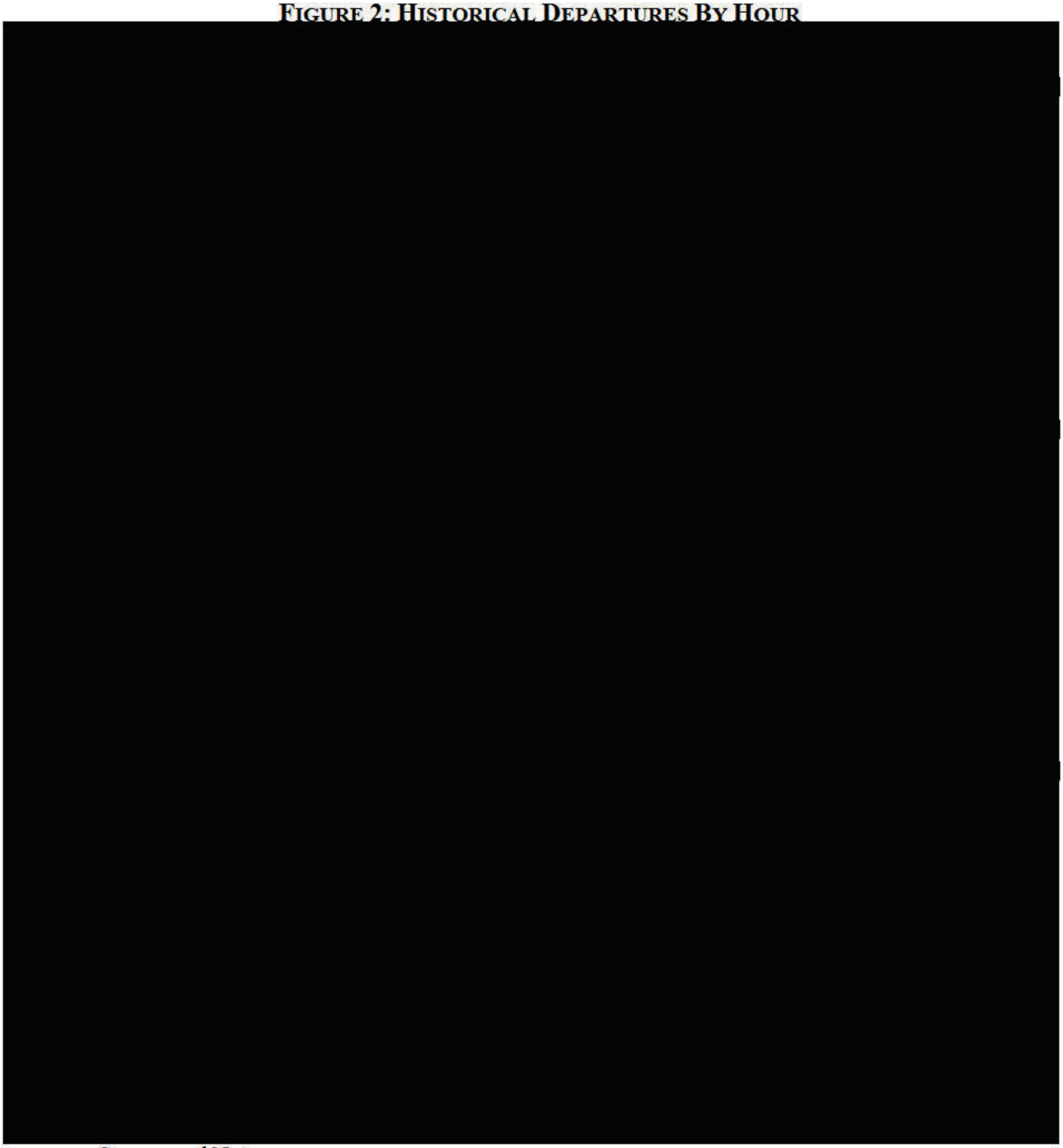
MultiRail tables 'mr_opal.trainExpandedRoute', 'mr_opal.train', and 'mr_opal.location.' *See* Script "01_ UP Trains Departing at Noon.R" and Workpaper "Share of UP Departures at 1200PM.xlsx," tab 'UP Noon Departures,' in folder "Share of UP Departures at 1200PM."
[A]: A train is identified as a "UP" train using MultiRail tables 'mr_opal.location' and 'mr_opal.train.' From 'mr_opal.train,' the originLocationKey for a given trainKey in a given plan is matched with a locationKey in 'mr_opal.location.' The corresponding locationKey in 'mr_opal.location' has a "railroadKey," which is used to establish if a train is a UP train.
[B]: Origin departure time is taken from 'mr_opal.trainExpandedRoute' using the record for a given trainKey and plan where routeOrder = 1.
[C]: [B] / [A].

92. This issue is not only pervasive, but also renders Applicants' train schedules inexecutable and therefore uninformative with regard to generating terminal clocks, which are pivotal to evaluate train and yard plans. As discussed in Section II.B, for a plan to be feasible, yards must be able to physically perform the work they are assigned within the time they are allotted. However, because of this noon departure issue, we cannot tell based on Applicants' schedules when each train will truly depart a yard. Rather, at most UP yards, the Base Plan shows a cluster of departures at noon with few, if any, departures the rest of the day. This schedule is obviously impossible to achieve and points to a fundamental disconnect between the Base Plan and actual operations.

93. To emphasize this point, in Figure 2 below we use Historical Event Data (hereafter referred to as "Car Event Data" or "Train Event Data") provided by Applicants to plot the distribution of actual departures throughout the day for select yards. Specifically, for every hour, we show the average number of trains picking up volume that depart within the given hour. We also plot the average number of cars picked up within the hour, to provide a sense of the size of these work events. We present these distributions for Englewood, TX; Avondale, LA; and Gateway Yard, IL. We chose these yards because they are examples of facilities critical to

operations throughout the watershed area (as further discussed in Section VI) and also demonstrate the importance of providing schedules as they relate to terminal clocks.

FIGURE 2: HISTORICAL DEPARTURES BY HOUR



Sources and Notes:

Car Event Data and MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.trainWork,' and 'mr_opal.location.' *See* Script "01_historical_yard_data_pull.sql" and "02_yard_departures_charts.R" and Workpaper

"yard_departures_charts_Englewood, TX_historical_base.png,"
"yard_departures_charts_Avondale, LA_historical_base.png," and
"yard_departures_charts_Gateway Yard, IL_historical_base.png" in folder "Yard Departures by Hour."

94. [redacted]

95. In contrast, according to Applicants' Base Plan, these yards report [redacted]. In particular, excluding local services, Englewood departs [redacted] trains at noon; Avondale departs [redacted]; and Gateway Yard is scheduled to depart as many as [redacted] trains at noon.[58] This plan reflects [redacted], as Figure 2 makes clear. As discussed in Section II.B, yards are constrained by track capacity, the number of competing movements, inspections, etc. The Car Event Data reflects these constraints, while the Base Plan ignores them. Accordingly, the schedules included in the Base Plan are not an accurate representation of UP's operating schedule but evidently [redacted][59] Applicants' use of such a default value renders their plan infeasible as presented and ultimately represents a simplifying assumption which masks the complexity of rail operations and untethers their Base Plan from Applicants' actual operations.

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[58] *See* Workpaper "Terminal Clocks.xlsx," tabs 'Englewood, TX,' 'Avondale, LA,' and 'Gateway Yard, IL,' in folder "Additional Review\Terminal Clocks."

[59] *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al. – BNSF Workpaper Questions," August 21, 2026, pp. 2–3.

96. The resulting distortion does not end at the originating yard. Because MultiRail calculates subsequent events from the initial departure, the noon defaults create artificial clusters of arrivals and departures at yards across the UP and NS networks which cannot be implemented in the real world. For example, in Figure 3 below, we plot the distribution of historical train departures against daily scheduled departures for NS's yard in Chattanooga, TN as shown in the Base Plan. This figure makes clear that, [redacted], [redacted]. Importantly, Chattanooga is an NS facility; legacy NS trains are less impacted by this noon departure issue. However, Figure 3 makes clear that, [redacted].

FIGURE 3: CHATTANOOGA HISTORICAL VS. BASE PLAN PERFORMANCE BY HOUR OF DAY

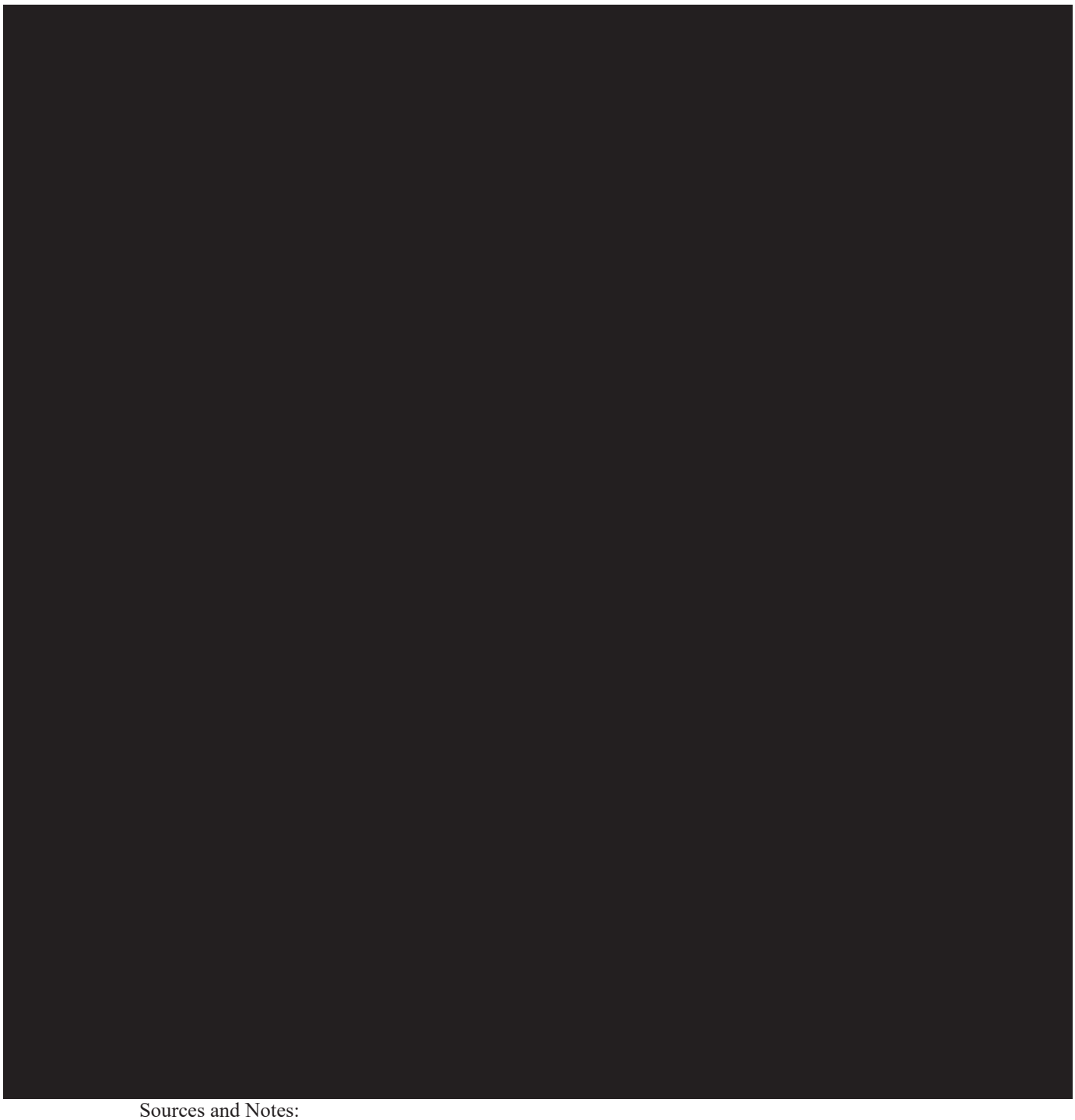


Sources and Notes:
Car Event data and MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.trainWork,' and 'mr_opal.location'. *See* Script "01_historical_yard_data_pull.sql," "01_yard_departures_trains.R," and "02_yard_departures_charts.R" and Workpaper "yard_departures_charts_Chattanooga, TN_historical_base.png" in folder "Yard Departures by Hour."

97. In addition to this noon departure issue, the Base Plan train schedules include erroneous or unrealistic transit times, demonstrating Applicants' failure to analyze the train schedules accompanying their MultiRail model. To illustrate this point, we plot in Figure 4 the transit times between yards included in the Base Plan against historical average transit times based on the Car Event Data. In the figure, each point corresponds to a unique train symbol. The size of the point reflects the total annual carloads carried by that symbol. For comparison, we

also plot a 45-degree line. If the Base Plan perfectly reflected average train performance, then all points would lie on this 45-degree line.

FIGURE 4: BASE PLAN TRANSIT TIME VS. AVERAGE HISTORICAL TRANSIT TIME



Sources and Notes:

MultiRail Tables 'mr_opal.trainRouteVolume,' 'mr_opal.train,' and 'mr_opal.location.' Train Event Data. Each point represents a train symbol, and its size indicates the train's annual carloads. Train symbols with fewer than 10 train-dates per year are omitted. *See* Script "01_operating_plan_transit_times.sql," "02a_plot_transit_time_NS.R," "02b_plot_transit_time_UP.R," and Workpaper "transit_time_manifest_UP.png," "train_transit_time_manifest_NS.png," "transit_time_intermodal_UP.png," and "train_transit_time_intermodal_NS.png" in folder 'Base Plan Transit Time vs. Historical.'

98. Instead, Figure 4 demonstrates that [redacted] Importantly, the Base Plan [redacted] Both types of differences can be problematic – trains arriving late risk disrupting service and connections, as well as potentially impeding yard throughput, while trains arriving early may not be able to be accommodated, and risk further impeding throughput for longer than planned. While some deviation between planned and actual performance is expected, the large degree of variation captured in Figure 4 reveals that [redacted]

99. Because of these errors, it is not reasonable to expect trains in the Base Plan to depart their initial origin on time, reach intermediate locations on time, complete work assignments on time, or arrive at their destination on time based on Applicants' train schedules. Consequently, Applicants have failed to provide an achievable Operating Plan because, among other reasons:

- Modeled schedules do not remotely approximate historical on-time performance.
- Yards lack sufficient capacity to handle clustered arrivals and departures built into their operating plan.
- Work events are concentrated in a manner that would congest line of road and terminals.
- There is no way to evaluate the feasibility and dwell for planned connections.
- Applicants have precluded generation of useful terminal clocks and thereby prevented analysis of workload by hour of day or day of week.[60]

100. Applicants' Service Assurance Plan underscores the significance of the missing information. Applicants state that they will benchmark corridor performance, yard dwell, and on-time origination and that their change-management process will evaluate schedules and operational conditions before implementation.[61] But the Operating Plan submitted to the Board [redacted].[62] In short, the Service Assurance Plan relies on benchmarks that cannot be evaluated in the Base, Optimized, or Growth Plan.[63]

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[60] MultiRail has the capability to generate terminal clocks and provide volumes by hour of day and day of week. In failing to generate schedules, Applicants have severely curtailed MultiRail's capabilities.

[61] *See* Turner VS, ¶¶ 19, 76–80.

[62] *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al. – BNSF Workpaper Questions," August 21, 2026, pp. 2–3.

[63] As part of their integration planning process, Applicants are currently developing [redacted] *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, p. 3. Hence, the information provided by Messrs. Gehringer and Orr is insufficient to gauge these benchmarks.

101. These scheduling errors are not merely minor formatting issues. A schedule that does not provide designed departure times or achievable transits is not executable. Without achievable schedules, Applicants cannot say when trains will arrive or depart each yard based on their Operating Plan. This omission impacts the feasibility of work events—as discussed in Section VII.A, whether a yard can handle its designed volume depends not only on the total number of cars in and out each day, but when those cars arrive/depart and whether there is sufficient track available at the time of arrival/departure. Consequently, Applicants cannot say whether their train and blocking designs are executable. If these designs are not executable, then Applicants have not provided a usable basis to determine where capital is needed, or how they will achieve their service benefits. Revisions to the Plan may require substantial changes to their train service and may shift work events significantly from what is listed in their Operating Plan.

C. The Base Plan Assigns No Dwell to a Large Share of Intermediate Work Events

102. A second pervasive problem is that approximately [redacted] percent of the Base Plan's intermediate work events report zero dwell. This problem affects approximately [redacted] percent of NS work events and [redacted] percent of UP work events. Importantly, these zero-dwell events are not just pass-through movements, but work events where trains report picking up and setting out substantial volume. In total, the Base Plan shows approximately [redacted] zero-dwell work events per day, *i.e.* [redacted] instances per day of cars being swapped or re-processed at intermediate locations with no time allocated to perform the work. For more details on this analysis, see Appendix C.

103. Figure 5 below provides an illustrative example of this problem. The figure shows the Base Plan schedule for train ITAG4. Importantly, the schedule allots no time for one of the

train's work events. In [redacted] on Day 2 it picks up [redacted] feet of cars, yet the schedule allocates [redacted] of dwell time.[64]

FIGURE 5: TRAIN ITAG4 BASE PLAN SCHEDULE

[redacted]

Sources and Notes:

[64] Also of note, Kenton is only [redacted] miles from the origin according to Applicants' MultiRail model, yet the train reports requiring 24'56" transit to go that stretch. This implies an average speed of [redacted] miles / [redacted] hours = [redacted] miles per hour. This example again highlights that the schedules provided are unusable. *See* Script "Look up Train Route (speeds).sql" in folder "MR Review," filtering to trainKey 11900629 in the Base Plan (resultScenarioKey 171).

MultiRail tables 'mr_opal.trainRouteVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "01_ Zero Dwell Base Schedule.R" and Workpaper "Train ITAG4 Base Plan Schedule," tab 'Sample Schedule Dwell,' in folder "Train ITAG4 Base Plan Schedule."

104. Setting out or picking up cars takes time. The train must enter the appropriate track, where the crew must secure the train, make the necessary cuts and couplings, and conduct required inspections to prepare the train for departure. These requirements affect processing events and block swaps alike. The final amount of time required varies by facility and event, but it is not zero, as confirmed by Figure 6 below. Applicants' own experts acknowledge [redacted][65]

105. A block swap likewise is not instantaneous. Even when the movement is designed to avoid classification, tracks must be available, crews must perform the movements, and required tests and inspections must be completed. Block swaps are further complicated by the need to coordinate schedules across the delivering and receiving trains. As described in Section II.C, block swaps are most effective when there is minimal time between the inbound and outbound trains. When these schedules are misaligned, the block must sit in the yard for substantial periods of time waiting on its outbound connection, taking up track space and limiting the yard's throughput. Applicants' zero-dwell entries conceal those requirements.

106. The fact that work events take time is confirmed by Applicants' own data. In Figure 6 below, we list the distribution of dwell incurred at intermediate work events (processing or block swaps) across the UP and NS systems. Figure 6 shows that even the quickest work events require a notable amount of dwell.

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[65] *See* Deposition of Brian Barr, September 3, 2026, 337:2–21. *See also*, Deposition of Eric Gehringer, October 13, 2026, 295:2–296:15.

FIGURE 6: SUMMARY OF DWELL TIME FOR INTERMEDIATE WORK EVENTS

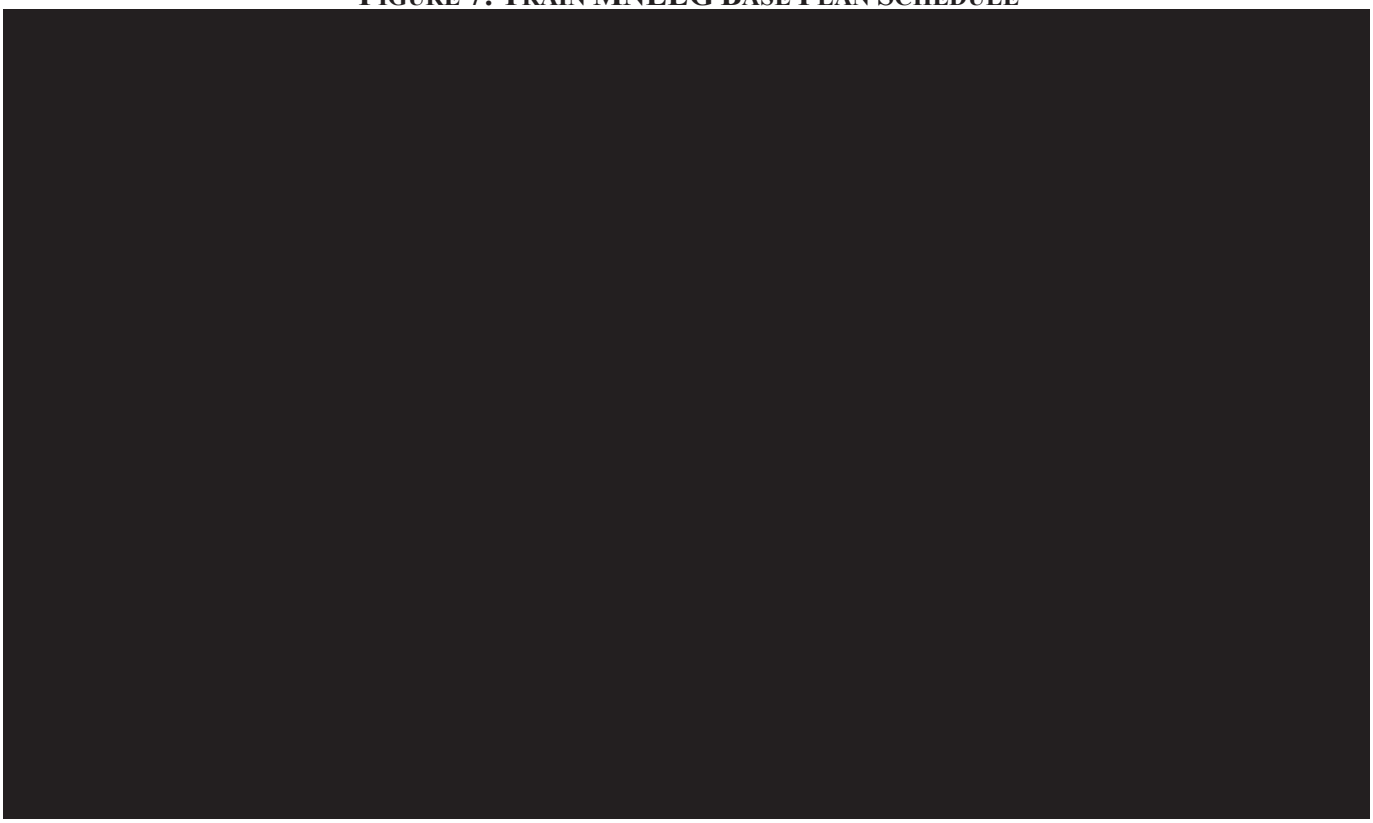


Sources and Notes:
Car Event Data. *See* Script "01_intermediate_work_dwell.sql" and Workpaper "work_events_dist.xlsx," tab 'Report Figure 6' in folder "Dwell for Intermediate Work Events."
[A]: Dwell time based on the Car Event Data. Only dwell episodes within the same train symbol are included. Local trains and episodes over 24 hours are excluded.

107. On top of this, Applicants make a related omission in several instances where they record zero dwell time for stops involving a crew change. Like setting out or picking up cars, crew changes are not instantaneous.[66] Figure 7 below shows the schedule for train MNLEG, in which an intermediate crew change at [redacted] has no recorded dwell time. This omission is striking, given that other crew changes along the MNLEG's journey are recorded as requiring at least [redacted] minutes of dwell.

[66] Applicants' expert acknowledges this. *See, for example,* [redacted]

FIGURE 7: TRAIN MNLEG BASE PLAN SCHEDULE



Sources and Notes:
MultiRail table "mr_opal.trainExpandedRoute." *See* Script "01_CrewChange Schedule.R" and Workpaper "Train MNLEG Base Plan Schedule," tab 'Sample Schedule Crew Change,' in folder "Train MNLEG Base Plan Schedule." Highlighted row emphasizes a zero-dwell crew change.
[A]: Corresponds to routeOrder in mr_opal.trainExpandedRoute. The selected stops are either (1) MNLEG's origin, (2) MNLEG's destination, (3) where dwell occurs, or (4) where a crew change occurs.
[B]: Name in mr_opal.location, matched using locationKey field.
[C]-[D]: calcArrivalTime and calcDepartTime in mr_opal.trainExpandedRoute, formatted as days, hours, minutes, and seconds beginning with Day 0.
[E]: Represents crewChangeStop in mr_opal.trainExpandedRoute; 1 indicates a designated crew change.
[F]: Represents calcDwellTime in mr_opal.trainExpandedRoute, converted from seconds to minutes.

108. The effect of these errors is to understate transit times and overstate available capacity. A train shown as arriving, performing substantial work, and departing instantaneously will appear to provide faster service than the railroad can physically operate. It will also appear

to release track capacity immediately, overstating the number of trains the terminal can accommodate in a given period. As outlined in Section II.B, yards are constrained at any one time by the number of available receiving and working tracks. Hence, understating or omitting dwell associated with work events overstates a yard's capacity.[67]

109. This error compounds the noon-departure problem. Even if the intended originating departure times could be reconstructed, the schedules would remain unusable because numerous intermediate work events contain no allowance for the work assigned. Moreover, this problem prevents us and the Board from assessing Applicants' claimed transit time savings in the Optimized and Growth Plans, as they have not provided attainable schedules that can be used as a reliable comparison.

110. In summary, these zero-dwell work events confirm that the Base Plan is not a realistic representation of current UP and NS train operations, and therefore Applicants cannot reliably use it as a basis to establish service improvements following the transaction.

D. Applicants' Modelling Simplifications Distort Block, Train, and Yard Plans

111. [redacted]

[67] As part of Applicants' Service Assurance Plan, Turner provides [redacted] *See, for example,* Turner VS Workpaper, "Consolidated Terminal Data.xlsx." In Section VII.A, we explain that Turner's analysis of capacity omits several critical factors, including the number of available tracks, peaks in volume throughout the day, and predictable variation throughout the week. Accordingly, terminal clocks provide a more informative view of yard capacity than Applicants' capacity calculations, as these show the distribution of work and allow us to evaluate whether the yard can consistently complete its assigned work in a 24-hour window. In fact, Applicants' expert acknowledges that [redacted] *See* Deposition of Brian Barr, September 3, 2026, 328:3–329:3.

Notably, Messrs. Gehringer, Orr, and Turner [redacted] *See, generally*, Gehringer and Orr VS Workpaper, "C-Base Plan.pdf" as well as Gehringer and Orr VS and Turner VS.

[redacted].[68] Concurrently, Applicants also [redacted],[69] the net effect of which is to greatly reduce blocking demands at key facilities. These modelling simplifications greatly distort operations at key gateways and make it impossible to assess where work is truly scheduled, and what capacity is needed. To illustrate the importance of these simplifications, we will focus first on the New Orleans area, where they are most acute. Later we will explain how they impact operations at other major gateways.

1. New Orleans

112. In the New Orleans area, UP and NS currently exchange traffic at NS's Back Belt Line and Oliver Yard; Oliver Yard also supports interchange operations with BNSF, CN, CPKC, and the NOPB.[70] Additionally, Applicants build blocks for CSX bound for CSX's Gentilly Yard and beyond.[71] Details of these distinct facilities are provided in Figure 8 below. [redacted].[72] This modelling simplification makes it impossible to assess interchange blocking demands in the New Orleans area and beyond. Importantly, it obscures

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68 *See* Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," Section 3.1.2.

69 *See* Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," Section 2.3.2.

70 *See* Gehringer and Orr VS, ¶¶ 224, 226.

71 *See* details of this blocking in Figure 9.

72 *See* Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," p. 38.

where work is performed by each train and creates a distorted view of available capacity by yard, block, and train.

FIGURE 8: DETAIL OF DISTINCT FACILITIES IN NEW ORLEANS



Sources and Notes:

Workpaper folder "Maps" and associated database files.

113. According to the documentation accompanying the Base Plan, [redacted].[73] While this

[73] *See* Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," p. 38.

simplification may facilitate a high-level network simulation,[74] it distorts which physical facility in New Orleans receives a train, performs required classifications and block swaps, and originates the next movement, or is just a pure interchange location. [redacted].[75] To illustrate the consequences of this over-simplification, Figure 9 below plots the likely true path of certain traffic flows through the New Orleans area against their modeled operation. We estimate this "likely" operation based on block and train names as well as our experience.[76]

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[74] For instance, this type of simplification is useful for a network-level assessment of total ton miles, as Gehringer and Orr have undertaken. *See* Gehringer and Orr VS, p. 15, Table 2. However, it is not useful for accurately representing a Base Plan and subsequently developing executable Optimized and Growth Plans, as it obscures where blocks are built and what trains handle them.

[75] Applicants consolidate blocks with the same origin and destination within the UP and NS systems, which we denote "same-route blocks." Same-route blocks may have different destinations on other carriers' networks but share an origin and destination within UP's and NS's networks.

[76] We will emphasize that the "likely" operation depicted in Figure 9 is our best guess of current traffic flows through New Orleans for select traffic records. We have made this assessment based on the names of each block, the train symbols carrying them, as well as our experience. For instance, MLIGN stands for "Manifest Livonia Gentilly," "MLIWX" stands for "Manifest Livonia Waycross," and MLIAV stands for "Manifest Livonia Avondale." From these symbols, we can make an informed guess as to the likely traffic on each train. However, we emphasize that this review is not possible at-scale within Applicants' model and requires us to make independent judgements about where traffic likely flows. Hence, the Base Plan fails to provide a complete picture of present-day operations.

FIGURE 9: MAP OF RAIL FACILITIES IN THE NEW ORLEANS AREA



Sources and Notes:
See Workpaper folder "Maps" and associated database files. Numbers in the figure above may differ slightly from those in text as they are based on previous submissions of Applicants' MultiRail data. Our conclusions remain the same.

114. As shown by Figure 9, our assessment is that UP currently builds [redacted] blocks at Livonia destined to the New Orleans area: [redacted]. Each of these blocks travels on a different train: [redacted]

[redacted].

115. In contrast, Applicants' Base Plan shows this traffic as travelling on [redacted] blocks: [redacted]. Consequently, in Applicants' model, the MLIGN shows handling [redacted] cars on average per day relative to its historical average of [redacted] cars; the MLIAV reports [redacted] cars relative to a historical average of [redacted].[77] Importantly, the MLIWX and YAV97 are retained in Applicants' model, but are designed with no volume despite being scheduled to run daily. In contrast, these train symbols report historical averages of [redacted] cars and [redacted] cars, respectively.[78]

116. This analysis makes clear that Applicants' over-simplification of their New Orleans operation leads to a significant distortion of traffic, work events, blocks built, and train terminations. In particular, as illustrated by Figure 9, volumes normally split between [redacted] different services are concentrated on [redacted] in the Base Plan. Consequently, we cannot tell: (i) how much volume is actually being processed in Oliver Yard; (ii) how many blocks are being built at Livonia for CSX, NS Oliver Yard, or the NOPB; and (iii) whether Livonia has sufficient track and capacity to complete the work assigned. In other words, the simplifications that Applicants impose on their network and blocking plan mean that [redacted]

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[77] *See* Script "historical_cars_per_day_for_in_text.sql" and Workpaper "historical_cars_per_day_for_in_text.xlsx" in tabs 'MLIGN' and 'MLIAV' in folder "Historical Cars Per Day."

[78] *See* Script "historical_cars_per_day_for_in_text.sql" and Workpaper "historical_cars_per_day_for_in_text.xlsx" in tabs 'MLIWX' and 'YAV97' in folder "Historical Cars Per Day." Note to remove the local_train_dummy filter and Event_Type filter for train symbol 'YAV97.'

[redacted].

117. Academic literature confirms that this loss of facility-level detail is operationally important. *Lin and Cheng* (both of NS) explain that "[e]ach rail yard has different infrastructure and unique operating characteristics" and that "[y]ard operations require variable resources, such as switch locomotives, switch crews, car inspectors…"[79] Thus, it is not surprising they conclude that "the best operational strategy of one rail yard may not be suitable to other yards" and that "yard simulation software requires the capability of easily incorporating different yard infrastructure, operating policies, and operational strategies."[80] This confirms that Applicants' yard mutualization for modeling purposes further divorces their model from reality.[81]

118. Importantly, mutualization and block consolidation are not limited to New Orleans. [redacted][82] This aggregation is particularly consequential in, *e.g.*, [redacted]. Accordingly, Applicants' MultiRail model greatly obscures the distribution of work events at select gateways where operations are

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79 Edward Lin and Clark Cheng, "YardSim: A Rail Yard Simulation Framework and Its Implementation in a Major Railroad in the U.S.," Proceedings of the 2009 Winter Simulation Conference (2009), p. 2532.

80 Edward Lin and Clark Cheng, "YardSim: A Rail Yard Simulation Framework and Its Implementation in a Major Railroad in the U.S.," Proceedings of the 2009 Winter Simulation Conference (2009), p. 2533.

81 We recognize that MultiRail does not include yard-level detail including specific track lengths and requirements. However, this emphasizes the importance of developing realistic schedules which support useful terminal clocks as a check against standing capacity and to infer what aspects of throughput are most constrained. Absent these checks, MultiRail report output alone does not establish that an Operating Plan is feasible.

82 *See* Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," Exhibit 3.1. Note that not all yards within every location were mutualized; however, every location includes at least one mutualized facility.

expected to change notably following the merger. Below, we offer additional detail on the consequences of mutualization and/or block consolidation at each of these gateways.

2. Memphis/North Little Rock

119. At the Memphis/North Little Rock gateway, Applicants' Base Plan similarly obscures the blocking and train operations required to facilitate interchange with other railroads. In particular, Applicants [redacted].[83] This simplification fails to reflect the distinct blocking, train assignments, and interchange events required to serve these three railroads. Consequently, [redacted]. Without accurately representing existing operations, Applicants cannot reliably assess capacity at Memphis and the surrounding terminals.

3. Livonia/Baton Rouge

120. Applicants make similar simplifications at the Livonia/Baton Rouge gateway. Currently, Livonia builds separate blocks for interchange with CN and CPKC at Baton Rouge. However, Applicants [redacted].[84] This simplification is particularly significant because [redacted]

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[83] *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks built at North Little Rock (Column F) showing only one block destined to Memphis.

[84] *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks built at Livonia (Column F) showing only one block destined to Baton Rouge.

[redacted].[85] Hence, Applicants do not accurately represent Livonia's existing blocking requirements, nor can they reliably assess whether the facility has sufficient blocking capacity to accommodate the additional work assigned to it following the merger. As discussed in Section VI.I, this is especially concerning given that [redacted] Applicants' modelling simplifications therefore greatly obscure blocking demand at Livonia.

4. Conclusion

121. Due to [redacted], the Board cannot assess whether the changes that Applicants propose are feasible, making the Base Plan uninformative as a baseline to assess the impacts of the merger. Continuing the New Orleans example, Applicants state that they will consolidate certain NS operations from Oliver Yard into UP's Avondale Yard, alter interchange activity, and continue using Oliver for other interline traffic.[86] Whether those changes reduce or add complexity depends on the actual route and timing of the trains, the locations where blocks are built and the interchange carriers they are directed to, the capacity of each facility, and the movements required between them. A mutualized New Orleans cannot answer those questions. More generally, if the Base Plan does not identify where work is performed today, the Optimized and Growth Plans cannot reliably measure the effect of moving that work after the transaction. [redacted]

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85 *See* discussion of Livonia in Section VI.I.

86 *See* Gehringer and Orr VS, ¶¶ 225–226.

[redacted].

122. This ambiguity matters not only to feasibility, but also to whether any claimed benefit is merger-specific. By mutualizing the facilities, Applicants' model cannot distinguish how much volume is assigned to a particular facility, what blocks are realistically expected to be built where, and therefore, the volume assigned to each train. As a result, the model does not demonstrate that the proposed changes require a merger.[87]

123. In summary, efforts to simplify the representation of the operation through [redacted] may be useful for selected high-level calculations, but Applicants rely on the Base Plan for far more. As we describe, the Base Plan has been significantly distorted, making the foundation for the Optimized and Growth Plans unreliable. Importantly, the Optimized and Growth Plans need to demonstrate that facilities have sufficient capacity, and that claimed reductions in handlings, yard activity, train miles, and transit times are achievable. This is not possible when the starting point of the Base Plan has been so significantly distorted.

E. The Base Plan Traffic File Creates Artificial Interchange Flows and Yard Imbalances

124. The Base Plan also relies on a traffic file that forces interline traffic through a limited set of modeled interchange locations. [redacted]

[87] As we explain in Section VIII, many of Applicants' proposed changes could be accomplished via normal interline cooperation. By mutualizing facilities, Applicants have not provided sufficient detail to demonstrate what specific operational changes are required to implement their proposed simplifications.

[redacted][89] Our review indicates that, contrary to Applicants' claims, this processing materially distorts where traffic moves and in particular, where interchange work occurs.

125. In Chicago, for example, the Base Plan [redacted] In total, by Applicants' own calculations, Calumet receives a total of [redacted] cars per day in the Base Plan for delivery to other railroads (including each other).[90] The distribution of these interline partners is given in Figure 10 below.

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88 *See* Gehringer and Orr VS Workpaper, "C-Traffic data processing.pdf," pp. 3–6.

89 *See* Gehringer and Orr VS Workpaper, "C-Traffic data processing.pdf," p. 6.

90 By Applicants' calculations, they exchange only [redacted] cars per day with each other in Calumet; the remaining [redacted] are delivered to other Class I's. *See* Gehringer and Orr VS Workpaper, "HC-Yard Details T1 vFinal.xlsx," tab 'Yard_Output_T1,' Cells J1318-K1318. Note that [redacted] interchanges between UP and NS per year / 364 days per year = [redacted] cars per day. Concurrently, Applicants report delivering or receiving [redacted] non-bulk cars to / from other railroads per year, resulting in [redacted] interchanges with other railroads per year / 364 days per year = [redacted] cars per day. *See also*, Gehringer and Orr VS Workpaper, "HC-Yard Details T1 vFinal.xlsx," tab 'Raw_T1,' Cells BZ1315 and CB1315.

FIGURE 10: DISTRIBUTION OF BASE-PLAN INTERLINE PARTNERS REPRESENTED AT CALUMET



Sources and Notes:
See Script "Pull Calumet Records.sql" and Workpaper "Calumet Block Detail - HC.xlsx," tab 'Distribution of Interline,' in folder "Calumet Interline Partners." Note that, based on Applicants' MultiRail model, we calculate a total of [redacted] cars bound for interline partners at Calumet, not their reported [redacted]. Applicants do not explain why their workpapers do not reflect their most recent MultiRail model.

126. In reality, this traffic is distributed among multiple Chicago-area facilities. For instance, NS currently builds blocks for CPKC destined to Bensenville and St. Paul; these blocks originate in Elkhart. Similarly, traffic bound for BNSF should show going to Cicero, and traffic for CN is largely interchanged at Elkhart itself. Manifest traffic for the IHB and IAIS should go to Blue Island. In short, Applicants grossly over-simplify Chicago area operations by consolidating most of this traffic into Calumet.

Elphick and Nelson V.S. at 75

127. In Figure 11 below, we demonstrate that, in 2023, Applicants delivered an average of [redacted] cars per day to other railroads at Calumet, far fewer than included in the Base Plan. In turn, Applicants model Calumet as receiving [redacted] cars per day in interchange traffic from other railroads, compared to an actual average volume of less than [redacted] car per day. In summary, by directing nearly all interline traffic in the Chicago area into Calumet, Applicants have severely distorted Base Plan interline operations.

FIGURE 11: INTERCHANGE VOLUMES AT CALUMET



Sources and Notes:
Historical volumes are calculated from UP and NS Car Event Data. Base plan volumes are obtained from Workpaper "HC-Yard Details T1 vFinal.xlsx." *See* Scripts "01_calumet_operating_plan.sql", "02_calumet_plot.R," and Workpaper "calumet_interchange_volumes.png" in folder "Calumet Interchange Volumes."

128. This distortion also produces substantial imbalance. As discussed previously, Calumet reports delivering [redacted] cars per day to other railroads while receiving only [redacted] in the Base Plan. This volume discrepancy persists when analyzing total volumes. In total, the Base

Plan reports approximately [redacted] cars inbound to Calumet compared with approximately [redacted] cars outbound.[91] That result is not a plausible representation of a stable daily train operation without a corresponding explanation of how the accumulated cars, crews, and equipment are handled. Moreover, concentrating this much traffic at Calumet creates density in the model that does not exist in the real world. This will cause the model to identify interchange opportunities where none exist, potentially overstating efficiencies from the merger.

129. In fact, as elaborated in Sections VI.E and VI.F, Applicants introduce new bypass blocks in the Growth Plan from [redacted]. This bypass is critical to Applicants' operation, as [redacted].[92] The new blocks from Bellevue and Conway rely on the [redacted] to be sustainable. However, this perceived density is a result of interline traffic distortions in the model, as opposed to actual volumes headed to Calumet. Accordingly, Applicants will not have sufficient density to build these new Elkhart bypass blocks. This example highlights how an error in the Base Plan threatens the validity of proposed changes in the Growth Plan.

130. Moreover, this manipulation of interline traffic in the traffic file is not restricted to the Chicago area. We see the same pattern affecting ALS Gateway Yard in St. Louis, albeit at a smaller scale. In particular, Applicants' model shows [redacted]

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91 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Summary' in folder "Yard Detail." Note that Cell E7 must be set to "CALUMET IL_UP" and Cell E8 must be set to "Cars (#)".

92 *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' Cells I42 and AH42. The Growth Plan outlines 2,410 cars per day at a total daily capacity of 2,620 cars per day at Elkhart, representing a 92% utilization rate. *See also*, Figure 133.

[redacted][93] Consequently, Applicants' model not only understates volume and blocking requirements at Gateway for TRRA Madison, but over-simplifies the operations in the St. Louis gateway.

131. The Base Plan therefore does not allow for an apples-to-apples comparison of pre- and post-merger operations. Service improvements following the transaction that Applicants claim based on a comparison with the Base Plan rely on a simplified traffic file that severely distorts certain interline flows and available density for blocking.

132. Finally, [redacted]. Specifically, [redacted]. This means that Applicants will not accurately capture certain track segment details, aspects of which are relevant to the Environmental Review.

F. The Base Plan Has Not Been Calibrated to Actual Train Productivity

133. Finally, the Base Plan does not provide an accurate snapshot of UP and NS train lengths circa 2023. To be informative of the operational impacts of the merger, the Base Plan should provide reasonable estimates of current productivity. However, as we demonstrate below, a large number of trains in the Base Plan report substantially different lengths relative to their 2023 historical averages. This deviation is problematic, as it further demonstrates that the Base Plan fails to reflect UP and NS's current operation.

134. Part of the reason for this disconnect may be Applicants' choice to use a 2023 traffic file with a train and blocking plan from 2025, without reconciling major changes in traffic

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[93] *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks terminating at Gateway Yard.

during that time. To establish an effective baseline for the present transaction, Applicants must account for major changes in business priorities and traffic demand between 2023 and 2025.[94] These adjustments ensure that blocks and trains included in the plan are assigned a realistic amount of volume and thereby offer a reasonable snapshot of present-day operations. The following example highlights the importance of accounting for these changes in traffic volumes. The Base Plan includes a train pair between Detroit (Oakwood), MI and Kansas City (North Yard), MO. The eastbound train 120 is modeled at an average length of [redacted] feet in the Base Plan, and the westbound train 181 is modeled at an average length of [redacted] feet in the Base Plan.[95] These train lengths include traffic from the RoadRailer service, which was discontinued in August 2024 – the volumes were converted to conventional double-stack equipment between Toledo, OH and Kansas City, MO.[96] In response to this major shift in service offerings, Applicants should have modified the traffic file that informs the Base Plan to ensure that traffic assignments aligned to a 2025 blocking and train plan.[97]

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94 [redacted] *See* Gehringer and Orr VS Workpaper, "HC-Major Traffic Wins Losses Since 2023.pdf," p. 2.

95 *See* Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 'Trains.'

96 *See* Bill Stephens, "Norfolk Southern's Triple Crown RoadRailers ride off into history," Trains, last accessed November 8, 2026, https://www.trains.com/pro/freight/intermodal/norfolk-southerns-triple-crown-roadrailers-ride-off-into-history/.

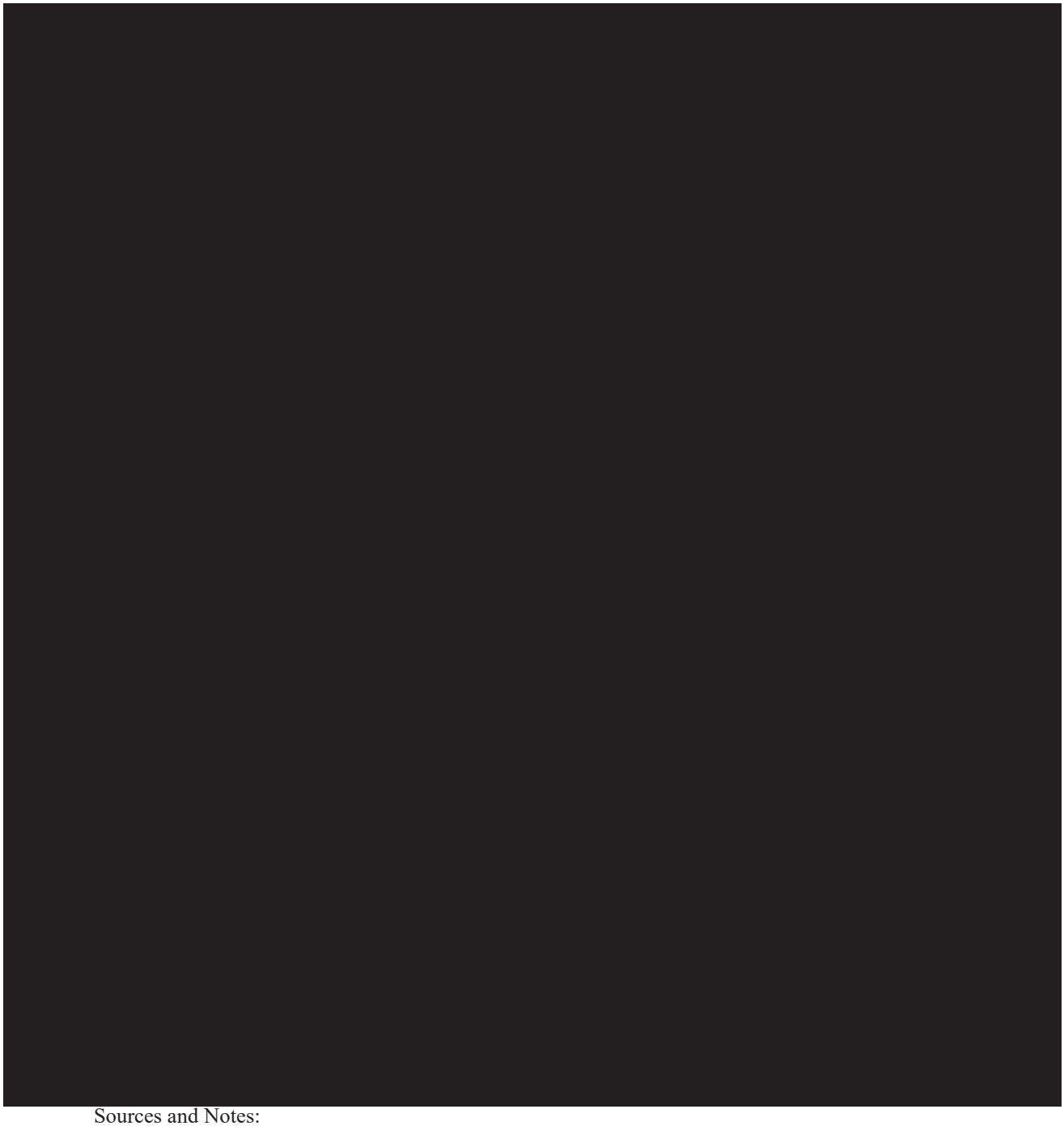
Notably, the Base Plan also incorporates a train pair between Toledo, OH and Kansas City, MO (251/252) that was created to accommodate the new double-stack service. However, because Applicants did not adjust their traffic file, the 251 reports an average length of [redacted] feet six days per week, while the 252 reports an average length of [redacted] feet six days per week. *See* Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 't1_trains,' filtered to train IDs 16000114 and 16000115 (rows 2572 and 2573).

97 [redacted] *See* Gehringer and Orr VS Workpaper, "HC-Major Traffic Wins Losses Since 2023.pdf," p. 2.

Elphick and Nelson V.S. at 79

135. Applicants did not calibrate their Base Plan to actual train lengths, as the above example demonstrates. To illustrate the systemic disconnect between the Base Plan and actual train lengths, below we plot average train lengths presented in Applicants' Car Event Data against the train lengths included in the Base Plan at particular stops. If Applicants had reasonably assigned the correct volume to the correct blocks and trains to replicate their 2023 operation, then we would expect these points to approximately align around the 45-degree line. However, as Figure 12 below demonstrates, [redacted]

FIGURE 12: BASE PLAN TRAIN LENGTHS VS. AVERAGE HISTORICAL TRAIN LENGTHS



Sources and Notes:

Car Event Data and MultiRail tables 'mr_opal.trainRouteVolume,' 'mr_opal.location,' and 'mr_opal.train.' Each point represents a train symbol's departure from a stop. Point size indicates the annual carloads passing through that stop on that train symbol. Stops with fewer than 10,000 annual carloads are omitted. *See* Scripts "01_operating_plan_lengths.sql," "02_historical_lengths_train.sql," "03_plot_lengths_train.R," and Workpapers "train_length_manifest_UP.png," "train_length_manifest_NS.png,"

"train_length_intermodal_UP.png," and "train_length_intermodal_NS.png" in folder "Base Plan Lengths vs. Historical."

136. While some variation between planned and actual train length is expected, the design should reasonably reflect a train's productivity in order to be considered a reliable model of operations. Material changes in routes or lengths must be identified and supported if they are to form part of the baseline. [redacted] Applicants' systemwide R-1 comparison does not resolve this problem. Matching aggregate gross ton-miles or car-miles does not establish that individual trains operate at the represented lengths, or over the represented routes. A reliable operating plan must be calibrated at the level at which the claimed operating changes and service benefits occur.

137. In addition to the clear disconnect between Applicants' planned and actual train lengths, the Base Plan omits trains that account for a substantial portion of historical carload and intermodal traffic. As Figure 13 below shows, [redacted] percent of carloads and [redacted] percent of containers represented in the Car Event Data are associated with train symbols that are absent from the Base Plan. An additional [redacted] percent of carloads and [redacted] percent of containers travel on trains that report a substantially altered route, meaning the train's mission in the Base Plan does not reflect its mission in the real world. Overall, [redacted] percent of carloads and [redacted] percent of containers are associated with trains that are either omitted or substantially misrepresented in the Base Plan. Taken together, these discrepancies reveal that the train plan is not an accurate reflection of UP and NS operations in 2023.

FIGURE 13: SHARE OF CARS AND CONTAINERS ON TRAINS THAT ARE OMITTED OR SUBSTANTIALLY ALTERED IN THE BASE PLAN



Sources and Notes:
Car Event Data and MultiRail tables 'mr_opal.train,' 'mr_opal.trainExpandedRoute', 'mr_opal.location.' *See* Script "01_volume_missing.sql" and Workpaper "volume_missing.xlsx," tab 'Report Figure 13' in folder "Volume Missing from Base Plan." An observation is a unique combination of a railcar or container journey and a train symbol.
[1]: Share of historical railcar and container traffic associated with trains absent from the Base Plan.
[2]: Share of historical railcar and container traffic associated with train symbols included in the Base Plan but observed in at least one state absent from that symbol's planned route.
[3]: [1] + [2].

138. The disconnect between historical and modeled train lengths is especially consequential because Applicants use differences between the Base and Optimized Plans to quantify merger benefits.[98] Because Applicants failed to update their traffic file for differences between 2023 and 2025, as well as calibrate their model to realistic train lengths, the Base Plan does not provide a realistic representation of baseline UP and NS operations. As a result, Applicants do not have a solid foundation to build the Optimized and Growth Plans, let alone draw comparisons that quantify merger benefits.

[98] *See* Gehringer and Orr VS, ¶¶ 26, 28–29.

G. Conclusion

139. Taken together, these defects are pervasive and fatal. [redacted] These errors are not trivial simplifications – rather, they reflect deep disconnects between Applicants' Base Plan and the real-world operations that it purports to represent.

140. Accordingly, the Base Plan cannot support later comparisons with the Optimized and Growth Plans concerning train schedules, yard feasibility, connections, transit-time improvements, or service reliability. Consequently, the Base Plan is not only unreflective of current UP and NS operations, but is uninformative as a basis to assess railroad operations following the merger. Applicants' Operating Plan therefore fails at the outset.

IV. THE OPERATIONAL CHANGES REFLECTED IN THE OPTIMIZED PLAN ARE EITHER UNREALISTIC OR REFLECT MEASURES THAT COULD READILY BE ACHIEVED WITHOUT A MERGER

141. Applicants describe the Optimized Plan as the operation that UP and NS would implement as one integrated railroad before adding any merger-related traffic growth.[99] The Optimized Plan forms the basis for the Growth Plan: it should lay out exactly how the combined UPNS will implement service improvements that lay the foundation to later attract their diversions. If the Optimized Plan is not executable, then Applicants do not have a realistic means

[99] *See* Gehringer and Orr VS, ¶ 15.

to improve service or assess other impacts of the merger. Applicants assert that the Optimized Plan is a feasible transportation plan that will improve service by effecting more efficient routes, creating new blocks and trains that bypass intermediate yards, and eliminating interchanges between UP and NS.[100] As a result of these changes, Applicants state that the Optimized Plan will save approximately 2,557 daily handlings, 65,143 daily car-miles, and 4,716 daily train-miles.[101]

142. Our review shows that Applicants' assertions are incorrect. As explained in Section III, Applicants begin with a Base Plan that does not reproduce actual UP and NS schedules, traffic flows, and work events. The Optimized Plan then layers onto that unreliable foundation a series of new trains, deeper blocks, assumed bypasses, and terminal consolidations that Applicants have not shown can be executed under real-world conditions.

143. As we demonstrate below, in generating the Optimized Plan, Applicants improved select performance metrics like total car-miles or number of handlings without demonstrating that the resulting railroad can operate as a coherent whole. Specifically, the Optimized Plan

[redacted]

144. While the merger would avoid interchanges between UP and NS, by itself this neither reduces work events nor increases train speeds (two primary drivers of transit times). Applicants' ability to avoid an interchange does not remove the need to build and sort blocks, swap blocks among connecting services, and process traffic at a block's destination—all of

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100 *See* Gehringer and Orr VS, ¶¶ 15, 26–27.

101 *See* Gehringer and Orr VS, ¶¶ 26–29. *See also*, Gehringer and Orr VS Workpaper, "C-Optimized Plan.pdf," Section 1.1.

which takes time. Thus, the merger alone does not explain [redacted] Concurrently, Applicants consolidate activity and add new work at critical gateway locations without identifying the specific facilities, resources, and operating windows needed to perform that work. Removing handlings or shortening modeled transits has no practical value if a train cannot be operated as planned.

145. In Section IV.C, we demonstrate that Applicants have not adequately reviewed the designs for their new services. Consequently, their new trains cannot run as written in the Optimized Plan. In Section V, we further demonstrate that Applicants add additional traffic onto this unstable foundation, generating a Growth Plan that likewise cannot be executed. Finally, in Section VI, we demonstrate how simplifications imposed in their model distort and complicate operations at key gateways. Cumulatively, this evidence demonstrates that Applicants have not fully evaluated the feasibility of their designs and are unlikely to achieve the benefits that they claim.

A. The Optimized Plan Inherits the Fundamental Defects of the Base Plan

146. Before evaluating the service changes that Applicants propose in the Optimized Plan, it is important to reiterate that the Optimized Plan does not start from a clean slate. Applicants developed the Optimized Plan by modifying the Base Plan to reflect how UP and NS would operate as a combined railroad (this is before adding merger-related diversions, which occurs in the Growth Plan). Accordingly, the same errors and invalid assumptions that make the Base Plan inexecutable also render the Optimized Plan infeasible. As explained in Section III, those problems include:

- **The Base Plan does not contain achievable train schedules.** Approximately [redacted] percent of trains originating on the legacy UP system depart at 12:00 noon in the Base Plan, evidently reflecting [redacted] That defect is not confined to the Base Plan. The Optimized Plan likewise uses default noon originating departures in [redacted] percent of instances.[102] Further, because subsequent arrivals and departures are calculated from these artificial starting times, it is impossible to determine from Applicants' Operating Plan when trains will reach intermediate yards, whether connections can be made, or whether required work can be accommodated within available terminal capacity.

- **The model assigns no dwell to a large share of work events.** Approximately [redacted] percent of work events in the Base Plan report zero dwell, and these instances affect substantial volume. The same problem appears in the Optimized Plan, with [redacted] percent of work events reporting zero dwell.[103] As discussed below, a number of Applicants' new Optimized Plan trains perform substantial work or change crews with no time allocated to do so. Those trains therefore appear faster and consume less terminal capacity in the model than they could in actual operation.

- **Applicants' modelling simplifications obscure where work is actually performed**. At certain major gateways, [redacted]. That may facilitate high-level comparisons, but when combined with [redacted], it prevents an operational assessment of whether the particular yard assigned the work has the time, tracks, crews, and locomotives necessary to perform it. The problem becomes more consequential in the Optimized Plan because Applicants propose to shift and consolidate work among those same gateway facilities. If the model does not accurately identify where the work occurs in the Base Plan, it cannot demonstrate that the proposed post-merger redistribution of that work is feasible.

- **The Base Plan traffic file creates artificial traffic concentrations and interchange flows.** [redacted] As discussed in Section III.E, Chicago provides a clear example: the Base Plan concentrates substantial interline traffic at Calumet that in actual operations is distributed among multiple facilities throughout the Chicago area. Those distortions persist in the Optimized Plan. Consequently, they create artificial density that supports deeper blocks, new trains, or yard bypasses that would not be supported by actual traffic flows. An optimization built on traffic density that does not exist in the real world is not executable.

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102 *See* Figure 1.

103 *See* Appendix C.

- **The Operating Plan has not been calibrated to actual train performance.** Numerous Base Plan trains differ materially from historical operations in route, length, and transit time, while other modeled trains have no historical counterpart at all. Applicants nevertheless claim Optimized Plan benefits by comparing those modeled Base Plan trains with redesigned trains in the Optimized Plan. Where a Base Plan train does not correspond to the service actually operated today, any measured "improvement" simply reflects a difference between two modeled constructs rather than an actual improvement that customers would experience following the merger.[104]

147. These are not independent shortcomings that can be set aside once the analysis moves from the Base Plan to the Optimized Plan. Several carry directly into the Optimized Plan itself: the Optimized Plan continues to rely on [redacted]. Others undermine the comparison on which Applicants' claimed Optimized Plan benefits depend: [redacted].

148. Applicants cannot cure these defects simply by showing that aggregate systemwide measures such as gross ton-miles, car-miles, or total handlings appear reasonable. As explained in Section II.B, executability depends on whether individual trains can depart and arrive when planned, whether assigned work can be completed within scheduled dwell, whether relevant physical yards can accommodate trains and associated work, and whether sufficient real-world traffic exists to support the proposed service. The Base Plan does not reliably answer those questions, and the Optimized Plan does not correct these underlying deficiencies.

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[104] This difference may be explained in part by Applicants using a 2023 traffic file along with a 2025 blocking and train plan. [redacted] *See* Section III.F for further detail.

Elphick and Nelson V.S. at 88

149. For that reason, before even considering the new train service that Applicants introduce in the Optimized Plan, the inherited defects from the Base Plan are enough to render the Optimized Plan inexecutable. Applicants have not demonstrated that the Optimized Plan represents an operation that UP and NS could actually implement. Nor can a comparison between an inaccurate Base Plan and an equally invalid Optimized Plan establish the magnitude, or even the existence, of the service improvements Applicants attribute to the merger.

B. The Optimized Plan is Unrealistically Over-Optimized

150. Applicants state that the Optimized Plan is a realistic picture of operations on the combined UP and NS network immediately following authorization of common control. Importantly, Applicants assert that no new capital investments are required to execute the Optimized Plan.[105] The Optimized Plan must therefore be executable using the facilities and operating constraints that exist today.

151. Our review indicates that the Optimized Plan is not executable under current conditions and with existing infrastructure. On top of the issues identified in Section IV.A, three recurring problems demonstrate that the service introduced in the Optimized Plan has been optimized beyond what Applicants' combined network, using existing infrastructure, can consistently perform. First, the schedules for this new service rely on unsupported train speeds and omit time for substantial work. Second, many new trains lack the traffic density needed to support the service that Applicants advertise. Third, other trains are planned at lengths that cannot be accommodated reliably by the yards and routes over which they would operate. These

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105 *See* Turner VS, ¶ 81.

problems render the service improvements outlined in the Optimized Plan unable to be executed and unlikely to materialize in the real world.

1. The Optimized Plan Relies on Unsupported Train Speeds

152. Our review of train speeds in this section focuses on the schedules provided in Applicants' MultiRail model. As discussed in Section III.A, [redacted].[106] We have already discussed how feasible train schedules are an integral part of any Operating Plan and, by failing to provide any realistic scheduling information, Applicants have presented an incomplete and inexecutable plan.[107] In this section, we emphasize that point by highlighting how the default schedules in Applicants' MultiRail model contain numerous errors that render the schedules infeasible. These are not isolated problems that Applicants can resolve later by providing schedules; they demonstrate that Applicants have not provided an executable design and, consequently, their claimed service benefits have limited, if any, factual basis.

153. The new train services in the Optimized Plan assume transit times that are substantially faster than Applicants' historical performance data support. Our review indicates that, among the 12 new trains introduced in the Optimized Plan, all have schedules that assume running speeds of approximately [redacted] miles per hour over most of the legacy UP network and [redacted] miles per hour over most of the legacy NS network.[108] [redacted]

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106 *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, p. 3.

107 *See also*, Section IV.A.

108 *See* Script "Look up Train Route (speeds).sql" in folder "MR Review," filtering to the following trainKeys reflecting new trains added in the Optimized Plan: 16011458, 16000432, 16011444, 11371136, 16011465, 16011461, 16011563, 16011562, 16011550, 16011549, 16011557, and 16011556.

[redacted]. Those speeds are inconsistent with the historical performance of the trains and routes being modeled, and, especially in the case of NS, [redacted][109]

154. Figure 14 below demonstrates how these faulty assumptions on speed can severely distort train performance in certain lanes. In this figure, we focus on key lanes in the NS network that are utilized by Applicants' new train services. In the Optimized Plan, Applicants assume that average train speeds on these lanes will range from roughly [redacted] mph to roughly [redacted] mph. Based on Applicants' own modelling in the Base Plan, speeds on these trains should range from roughly [redacted] mph to [redacted] mph. In other words, Applicants assume that trains can reach speeds on these corridors that are frequently more than [redacted] what they represent in the Base Plan. Applicants do not explain how they will achieve these improvements without capital investments. As we explain next, these speeds will not materialize in reality.

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[109] *See* Gehringer and Orr VS Workpaper, "[mr_opal].[trainExpandedRoute]," filtered to new trains added in the Optimized Plan (scenarioKey 172). *See also*, Script "Look up Train Route (speeds).sql" in folder "MR Review," filtering to the following trainKeys reflecting new trains added in the Optimized Plan: 16011458, 16000432, 16011444, 11371136, 16011465, 16011461, 16011563, 16011562, 16011550, 16011549, 16011557, and 16011556. These tables demonstrate that Applicants overwhelmingly assume an outbound speed of 22 mph on the legacy UP network and 60 mph on the legacy NS network.

Figure 15 provides additional evidence of unrealistic, assumed speeds in the Optimized Plan.

FIGURE 14: COMPARISON OF SPEEDS AND TRANSIT TIMES OVER CORRIDORS TRAVELLED BY NEWLY ADDED TRAINS IN THE OPTIMIZED PLAN



Sources and Notes:

See Script "Compare Transit Times - Corridor Level.R" and Workpaper "New Optimized Trains vs. Base Plan.xlsx," tab 'Figure 14,' in folder "New Optimized Trains vs. Base Plan."

[A]: The table above is limited to NS corridors travelled by newly added trains in the Optimized Plan over which a comparable train in the Base Plan is also observed to travel. A Base Plan train is defined as comparable if it travelled between the two end points of a given corridor in either direction and it carried the same type of traffic (intermodal vs. manifest). Corridors reflect movement in both directions. Corridors for which a comparable train in the Base Plan was not observed to travel are not presented. These include Kansas City, MO to/from Croxton, NJ, Chattanooga, TN to/from Memphis, TN and Charlotte, NC to/from Shreveport, LA. For certain corridors, travel to nearby yards was also considered to identify a comparable train in the Base Plan, such as travel between Morrisville, PA and Chicago Englewood, IL in lieu of Morrisville, PA and Chicago Ashland Avenue, IL.

[B]: The newly added trains that travel the corridor in [A].

[C]-[D]: The average transit times and speeds among the newly added trains in the Optimized Plan that travel the corridor in [A]. Speeds and transit times based on MultiRail table 'trainExpandedRoute' excluding dwell. The average transit times and speeds of a given corridor can reflect more than 1 train.

[D]-[E]: The average transit times and speeds among comparable trains in the Base Plan that travelled the corridor in [A]. Speeds and transit times based on MultiRail table 'trainExpandedRoute' excluding dwell. The average transit times and speeds of a given corridor can reflect more than 1 train.

[F]: ([D] – [F]) / [F].

155. A [redacted] average running speed is not a realistic terminal-to-terminal schedule for a freight train. Even where the maximum authorized speed permits a train to reach that speed for portions of its journey, the train must accelerate and decelerate, meet or pass other trains, comply with temporary restrictions, move through terminals and junctions, and contend with ordinary congestion. On top of this, trains must frequently stop to pick up or set out volume, change crews, refuel, and perform required inspections—all of which necessitates slowing a train to a stop and accumulating dwell. A relevant schedule must reflect speeds that are routinely achievable over the full segment, not the maximum speed attainable on selected portions of track.[110]

156. Applicants do not explain why common control would increase the speed at which trains travel between yards. Combining the networks may allow Applicants to remove a handling or work event, but it does not change the grades, curvature, signaling, passenger operations, junction conflicts, or other physical conditions over a route that determine the speed at which a train actually runs. Nor do Applicants identify infrastructure changes in the Optimized Plan that would materially increase speeds over the road.[111] Accordingly, there is no reason to expect that the new train service that Applicants introduce in the Optimized Plan should travel faster between yards than existing service.[112]

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[110] What exactly constitutes an achievable speed depends on context. While the exact approach to set realistic but high-standard schedules depends on the circumstances of the particular route under consideration, the critical point is that the speeds must be based on historical performance along the route, not a blanket assumption of maximum speed over large portions of the network.

[111] As stated earlier, Applicants assert that no capital investments are required to implement the Optimized Plan. *See* Turner VS, ¶ 81.

[112] In some cases, changes to interchange operations may change density at select watershed locations, which may impact congestion around these yards and alter speeds on surrounding mainlines. However, any speed gains from alleviation of congestion would not explain the degree of speed improvements that Applicants claim in their model.

157. Nevertheless, Applicants assume train speeds that have little or no historical basis. Below, we list the scheduled transit time over the road (that is, excluding dwell) for the new trains introduced in the Optimized Plan against the average historical transit times for trains over comparable route segments. This comparison reveals that [redacted]

FIGURE 15: PLANNED TRANSIT TIMES FOR NEWLY ADDED TRAINS IN THE OPTIMIZED PLAN AGAINST HISTORICAL TRANSIT TIMES FOR COMPARABLE TRAFFIC

[redacted]

Sources and Notes:

See Script "01_comparison_historical_optimized.sql" and Workpaper "new_train_speeds.xlsx," tab 'Report Figure 15' in folder "New Optimized Trains vs. Historical."

[A]: Optimized Plan train symbol. Symbols 'ZG2NE,' 'MALDC,' and 'MCHPR' were excluded due to lack of comparable historical traffic.

[B]: Origin and destination for new optimized plan train service.

[C]: Transit time based on MultiRail table 'trainExpandedRoute' excluding dwell.

[D]: Planned speed for the new train service in miles per hour based on transit times and distances from MultiRail table 'trainExpandedRoute.'

[E]: Transit time excluding dwell for comparable historical traffic based on Car Event Data. Top and bottom 1% of cars in terms of transit time were excluded.

[F]: Speed for train service in miles per hour based on transit times from the Car Event Data and distances from MultiRail table 'trainExpandedRoute.'
[G]: (([D]/[F]) – 1) x 100.

158. In an extreme case, Applicants assume a train speed that is [redacted] the speed that their trains have historically been able to achieve over the same segment. As shown in Figure 15, the Optimized Plan assumes the ZG2MV runs at an average of [redacted] miles per hour between Global 2 (Chicago, IL) and Morrisville, PA, resulting in a transit time of roughly [redacted] hours excluding dwell. Using the Car Event Data provided by Applicants, we find that trains running from Global 2 to Morrisville took an average of [redacted] hours excluding dwell, resulting in an average speed of [redacted] miles per hour. Applicants thus assume that the ZG2MV train can travel at an average speed that is [redacted] percent faster than the historical average of trains running over the same segment. The same pattern holds for the MCTNL: Applicants assume a speed of [redacted] miles per hour, while we find a historical average of [redacted] miles per hour. While these are the most extreme examples, Figure 15 demonstrates that this same pattern holds for [redacted] of Applicants' new train services.

159. Accordingly, the benefits that Applicants claim in the Optimized Plan—and transit time savings in particular—must be broken down into time saved from fewer work events (if any), and time saved due to unrealistic assumptions on train speeds.[113] Below, we provide updated transit time calculations assuming more reasonable speeds, based on comparable routes included in Applicants' Base Plan. Specifically, for each new train in the Optimized Plan, we recalculate its expected transit time (excluding dwell) using the average transit of Base Plan trains that route over the same stretch. As shown in Figure 16 below, [redacted]

[113] In Section IV.C, we evaluate each new train introduced in the Optimized Plan and show the exact stretches where Applicants have assumed unrealistic speeds. This analysis demonstrates that Applicants' travel time savings are consistently overstated.

[redacted]

FIGURE 16: COMPARISON OF SPEEDS AND TRANSIT TIMES FOR NEWLY ADDED TRAINS IN THE OPTIMIZED PLAN

[redacted]

Sources and Notes:

See Script "Compare Transit Times - Train Level.R" and Workpaper "New Optimized Trains vs. Base Plan.xlsx," tab 'Figure 14,' in folder "New Optimized Trains vs. Base Plan."

[A]: The table above is limited to the newly added trains in the Optimized Plan for which historical traffic from the Car Event Data and a comparable train in the Base Plan existed. For a list of newly added trains in the Optimized Plan with historical traffic. *See* Figure 15.

[B]: Origin and destination for the train in [A].

[C] – [D]: The transit times and speeds among the newly added trains in the Optimized Plan. Speeds and transit times based on MultiRail table 'trainExpandedRoute' excluding dwell.

[E] – [F]: The average transit times and speeds corrected to be more in line with comparable trains in the Base Plan. Comparable trains in the Base Plan were either those that shared the same journey or those that travelled common within-system corridors of the trains in [A]. Transit times and speeds would then be added or averaged based on comparable trains within each system's corridor.

*For trains ZCTLB and ZLCCX, Applicants do not currently model services for trains that travel either the entire corridor or either UP or NS's half of the corridor. Accordingly, we use speeds defined on comparable corridors that may not span the trains' full journey. For example, train ZCTLB runs from Charlotte, NC to Shreveport, LA, but there is no train in the Base Plan for a

dedicated service between Charlotte and Shreveport. Accordingly, we use trains travelling between Atlanta, GA and Shreveport, LA to approximate a reasonable speed over-the-road. Speeds and transit times based on MultiRail table 'trainExpandedRoute' excluding dwell. [G]: ([F] - [D]) / [D].

160. In Section IV.C, we separately address additional time required for omitted dwell on these new services. However, as Figure 16 makes clear, [redacted]

161. In summary, Applicants' claimed transit time savings stemming from new train service are greatly overstated. Applicants assume overly-optimistic train speeds over the road that have limited or no historical basis. When correcting train speeds to reflect speeds for comparable routes assumed in the Base Plan, we see that the new service can be up to [redacted] percent slower than Applicants assume.[114] This undermines Applicants' stated service benefits.

162. Applicants' own Service Assurance Plan reinforces this concern. Mr. Turner characterizes the reported schedules as preliminary and states that Applicants will not institute a new schedule until they later complete their change-management process and determine that the schedule can be executed under existing conditions.[115] That is an acknowledgement that [redacted].[116] A promise to develop an executable schedule later underscores that the schedules used to quantify merger benefits are incomplete.

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114 *See* Figure 16. *See also*, Script "Compare Transit Times - Train Level.R" and Workpaper "New Optimized Trains vs. Base Plan.xlsx," tab 'Figure 14,' in folder "New Optimized Trains vs. Base Plan."

115 *See* Turner VS, ¶¶ 18–28, 35, 40. For a discussion of why Applicants' change-management process does not cure the defects in their plan, see Section IV.C.4.

116 *See* Deposition of David Welch, July 29, 2026, 119:12–20; 283:10–284:7. *See also*, Union Pacific, "Optimized T-Plan Working Session #1," March 25, 2026, UP_0094437, at -438–439.

2. Numerous Optimized Plan Trains Lack Sufficient Traffic Density

163. The Optimized Plan also creates trains that are too short to reflect an efficient, sustainable service. As first discussed in Section II.C, a train consumes crews, locomotives, fuel, track, and other resources regardless of train length. A railroad therefore generally seeks sufficient traffic density to justify operating a train at the proposed frequency and over the proposed distance.

164. This does not mean that every train must operate at its physical maximum length. Service requirements sometimes justify a shorter train, particularly for high-priority traffic.[117] But a transportation plan that introduces numerous long-distance trains with only a small volume over substantial portions of their route does not reflect an efficient, sustainable operation. It either requires the railroad to devote disproportionate resources to those short trains or depend on traffic that is not present in the Optimized Plan.

165. Applicants' new trains exhibit this problem repeatedly. For example:

- ZLCCX operates at [redacted] feet from Kansas City to Sandusky ([redacted] miles), [redacted] between Sandusky and Harrisburg ([redacted] miles), and [redacted] from Harrisburg to Croxton ([redacted] miles).
- ZHBLC operates at [redacted] feet between Harrisburg and Sandusky ([redacted] miles), [redacted] between Sandusky and Kansas City ([redacted] miles), and [redacted] between Santa Teresa and Los Angeles ([redacted] miles).
- ZLBAT operates at [redacted] between Greggton and Austell ([redacted] miles).
- ZCTLB operates at [redacted] between Tucson and Los Angeles ([redacted] miles).
- MNPCW operates at [redacted] between Elkhart and Toledo Airline ([redacted] miles) and [redacted] between Toledo Airline and Conway ([redacted] miles).
- MCWAL operates at [redacted] feet between Conway and Bellevue ([redacted] miles) and [redacted] between Elkhart and Proviso ([redacted] miles).

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117 *See* discussion of the tradeoffs surrounding density in Section II.B.

- MNLCW is [redacted] between North Little Rock and Bellevue ([redacted] miles) and only [redacted] between Bellevue and Conway ([redacted] miles).[118]

166. These are not isolated short terminal movements. As described above, several trains move hundreds of miles at lengths less than [redacted] feet (and in one case less than [redacted] feet),[119] consuming track, locomotives, crew, and other resources that could be used on a much more efficient service. Applicants do not explain how these services remain commercially sustainable with these short designs, or how they would modify their plan to accommodate normal operating variability.[120]

167. As described in Section II.B, if a train does not have sufficient volume to run efficiently, service design may modify the plan to run the train less frequently to accumulate volume. However, doing so forces a customer to wait longer for their shipment, and may not be appropriate for certain types of traffic. Moreover, yard capacity is reduced while tracks are occupied with the accumulating cars. Alternatively, the railroad may rely on ad-hoc cancellations—running the train when volumes are sufficient due to normal operating variability and cancelling it when volumes are insufficient. However, doing so complicates wider network operations, as connecting services must now adjust to run at shorter lengths. Further, resources like locomotives and cars may become misaligned and require repositioning. Finally, the railroad may be unable to retain the customer if it repeatedly cancels service. In short, ad-hoc cancellations create much wider disruptions and should not be relied upon as a means of remedying inefficient designs.

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118 For more details on this analysis, *see* Appendix D.

119 [redacted]

120 As explained in Section II.B, volumes vary regularly day-to-day. Hence, under normal operating conditions, these trains will regularly run at lengths substantially shorter than their modeled volume.

168. The Optimized Plan contains substantial stretches over which trains have inadequate density. As elaborated above, this problem particularly affects Applicants' new train service. The model can assign a train symbol and schedule to those movements, but that does not establish that UPNS would devote the crews, locomotives, and capacity needed to operate the trains consistently. If Applicants instead combine those trains with other services, reduce their frequency, or hold traffic to build a larger train, the Operating Plan submitted to the Board would no longer apply. [redacted][121] Alternatively, Applicants may rely on ad-hoc cancellations, which have the potential to cause much wider service disruptions and are therefore not an effective means of addressing inefficient train designs.

3. Other Trains Exceed the Lengths That Existing Facilities Can Reliably Accommodate

169. At the other end of the spectrum, the Optimized Plan contains trains that are designed to exceptionally long lengths. Most strikingly, of the trains that are added or revised in the Optimized Plan, the 25G reports a length of [redacted] feet over its whole [redacted]-mile journey from Harrisburg, PA to Chicago 47th Street. The 12Z is designed to an average of [redacted] feet departing Chattanooga, TN and is destined to Enola, PA, a distance of [redacted] miles. And the 26A from Meridian, MS to Rutherford, PA reports a maximum length of [redacted] feet over its [redacted]-mile journey.[122] Designing trains of this size is not inherently a problem, so long as

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121 *See, for example*, Deposition of David Welch, July 29, 2026, 119:12–20; 283:10–284:7.

122 This discussion focuses exclusively on trains newly-added, or whose missions were edited in the Optimized Plan. However, it is important to note that the Base Plan similarly reports overlong trains due to the errors enumerated in Section III. For example, in the Base Plan, the 31Q from Elkhart to Calumet is designed to an average length of [redacted] feet over its entire journey. As discussed, this excessive volume is a consequence of Applicants' [redacted] However, it is also notable that Applicants did not flag this train as over-long, [redacted]

Applicants carefully coordinate train schedules to ensure that yards have sufficient track and resources available when these trains arrive and depart. Applicants have not done so. Below, we provide details on each of these trains, the burden they would place on scheduled yards, and how these designs would strain the wider network.

170. As noted above, Applicants design the 25G at [redacted] feet for the [redacted] miles from Harrisburg, PA to Chicago 47th Street. However, by Applicants' own calculations, Harrisburg has only [redacted] feet of working pad track.[123] Accordingly, building the 25G would occupy approximately [redacted] percent of Harrisburg's working track, leaving little available capacity to receive and process other traffic while this one train is being loaded and assembled. The same problem arises at Chicago 47th Street, where Applicants report only [redacted] feet of working pad track.[124] Receiving the 25G would occupy approximately [redacted] of this capacity.

171. Compounding these capacity problems, two days per week, Applicants' MultiRail model shows the 23G arriving at 47th Street [redacted] after the 25G to set out [redacted] feet of terminating traffic.[125] Together, these two trains would occupy approximately [redacted] percent of 47th Street's available working pad track, effectively preventing the terminal from processing any other traffic while it works these two trains two days per week. These

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[redacted]. *See* Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 'Trains,' filtered to Train ID 16000193 (row 2654). This problem persists into the Optimized Plan, with the 31Q reporting an average length of [redacted] feet in this scenario.

123 *See* Turner VS Workpaper, "NS Manifest IM Auto Terminal Capacity Calculations.xlsx," tab 'Intermodal Terminal Inputs.'

124 *See* Turner VS Workpaper, "NS Manifest IM Auto Terminal Capacity Calculations.xlsx," tab 'Intermodal Terminal Inputs.'

125 *See* Workpaper "Terminal Clocks.xlsx," tab '47th Street, IL' in folder "Terminal Clocks." *See also*, Workpaper "47th Street Block-Train Assignments (Arrivals) – Confidential.xlsx," tab 'Blocking Details,' in folder "Blocking Details," filtering cell AJ8 for "4-23G-C02_NS to CD517_NS/CHICAGO 47TH ST TV IL_NS."

movements would therefore [redacted] Further complicating this design, normal operating variability will cause these trains to arrive late or with volumes above their modeled averages, as discussed in Section II.B. [redacted], even minor disruptions would quickly create congestion, delay other arrivals and departures, and degrade service throughout the surrounding network.

172. The 12Z presents a similar problem at Chattanooga, a critical system yard that supports train service throughout the Southeast, Northeast, and Midwest. Applicants design the 12Z to [redacted] feet departing Chattanooga, TN. However, according to the schedules reflected in Applicants' MultiRail model, Chattanooga is expected to depart the 12Z and the 367—designed to [redacted] feet departing Chattanooga en route to Savannah, GA—within [redacted] These trains would depart from the same end of the departure yard. In other words, Chattanooga would need to assemble, inspect, and depart more than [redacted] feet on two trains within [redacted], all while continuing to receive and process other traffic through the yard.

173. Following merger-related investments, Chattanooga reports a maximum departure track length of [redacted] feet,[127] meaning that trains like the 12Z and 367 would each occupy at least [redacted] of 10 total departure tracks. When designing trains of this length—especially given that 12Z has 7 blocks and 367 has 3 blocks—careful coordination of switching assignments, crews, locomotives, and inspections is required to avoid interference with other

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126 *See* Workpaper "Terminal Clocks.xlsx," tab 'Chattanooga, TN,' in folder "Terminal Clocks."

127 *See* Gehringer and Orr VS Workpaper, "NS IM Auto Manifest Expansion Projects.pdf," slide 11, track 'F-01.'

operations.[128] As later discussed in Section VI.M, Applicants have not demonstrated that Chattanooga has sufficient capacity, nor have they provided realistic schedules that would allow them to evaluate whether any concentration of work is feasible. This review is not possible with the information provided in the Optimized Plan.[129]

174. Finally, the 26A would impose substantial demands on Atlanta and over the road. Applicants design this train to a maximum length of [redacted] feet over its [redacted]-mile journey from Meridian, MS to Rutherford, PA.[130] Of particular concern is the substantial work that Applicants assign to this train at Atlanta. According to the Optimized Plan, the 26A sets out approximately [redacted] feet of traffic to be processed, sets out an additional [redacted] feet to be block swapped onto other trains, and picks up approximately [redacted] feet for its subsequent journey.[131] In other words, Applicants effectively rebuild this train at Atlanta, requiring more than [redacted] feet of traffic to be placed onto working tracks and more than [redacted] feet of additional traffic to be assembled for departure. This would require substantial switching activity, sufficient tracks to stage the inbound and outbound blocks, coordination with connecting trains receiving the swapped traffic, and time to complete the necessary inspections and air-brake procedures. As detailed in Section VI.O, Atlanta's operation is severely constrained by a substantial increase in block swapping as well as additional

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[128] Seemingly recognizing this complication, Applicants add a new train start to Knoxville, TN in the Growth Plan, which reduces the size of the 12Z to roughly [redacted] feet. *See* Workpaper "Terminal Clocks.xlsx," tab 'Knoxville, TN,' in folder "Terminal Clocks."

[129] *See* Section III.A. *See also*, Section VI.M for a discussion of operational constraints at Chattanooga, as well as its wider role in the network.

[130] *See* Script "Look up Train Route (volume).sql" in the folder "MR Review" set to trainKey 16000134 in the Optimized Plan (resultScenarioKey 172).

[131] *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tabs 'Inbound' and 'Outbound' in folder "Yard Detail." Note that Cell E7 must be set to "ATLANTA GA_NS" and Cell E8 must be set to "Length (ft)".

processing demands in the Optimized and Growth Plans. The sheer volume of traffic being set out and picked up by the 26A would significantly strain Atlanta's already over-burdened operation.[132]

175. The above examples demonstrate that Applicants have not adequately reviewed their designs against the physical constraints of their network. These examples are illustrative but not exhaustive—Applicants' plan is replete with train lengths that are not realistic. Elsewhere in this report, we discuss additional issues with Applicants' Operating Plan related to unrealistic train lengths. These problems include:

- As explained in Section II.C, running a train over the siding capacity has the potential to create widespread service disruptions if schedules are not adequately developed. Doing so consistently compounds that risk.
- As explained in Section II.B, planning a train at or near a facility's maximum track length also leaves no allowance for ordinary day-to-day variation.
- As discussed in Section VI, in the real world, yards may not be able to accommodate the frequency and length of trains modelled by Applicants.

All together, these designs demonstrate that the Optimized Plan is not feasible.

4. Removal of Interchanges Does Not Guarantee Simplification of Operations

176. Applicants characterize the Optimized Plan as simplifying operations at current UP-NS gateways.[133] In practice, eliminating the interchange between UP and NS only simplifies operations insofar as it removes work events. However, where swaps or intermediate handlings

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[132] We also note that, in the Optimized Plan, Applicants design the 288 (Marion, AR to Rutherford, PA) at [redacted] volume from Marion, AR to Rossville, TN; it then lifts [redacted] feet at the purportedly closed Rossville, TN facility, then lifts another [redacted] feet at Sheffield, AL. The 288 then travels at [redacted] feet to Knoxville, TN where it sets out nearly all of its volume, before travelling to Rutherford, PA at an average of [redacted] feet. This non-sensical design is a symptom of Applicants consolidating all volume from Rossville and Marion to Rutherford onto the 26A via a connection in Atlanta. The result is an inexecutable design. *See* Gehringer and Orr VS Workpaper, "[mr_opal].[trainExpandedRoute]," as well as script "Look up Train Route (volume).sql" in the folder "MR Review" set to trainKey 16000156 in the Optimized Plan (resultScenarioKey 172).

[133] *See, e.g.,* Gehringer and Orr VS, ¶ 182.

persist, removing an interchange does not eliminate the physical work needed to move blocks between trains. Cars must still arrive at a particular facility, be placed on an available track, inspected, switched or swapped where required, and placed on the proper outbound train. The work may be relabeled from "interchange" to an internal UPNS movement, but the tracks, crews, locomotives, and time remain necessary. Hence, to simplify operations, Applicants must demonstrate that their plan removes work events.

177. However, many of Applicants' changes shift work rather than eliminate it. The Optimized Plan creates new blocks at select yards, consolidates operations that are presently distributed among distinct yards, adds new intermediate pick-ups and set-outs, and transfers work from major interchange facilities to adjacent yards. Whether those changes improve operations depends on the physical configuration and workload of the receiving facility, not simply on a modeled reduction in systemwide handlings.

178. Our yard-level review, detailed in Section VI, identifies several recurring problems. Namely, Applicants schedule work that cannot be completed within the allocated dwell; route existing trains through longer, less efficient routes in order to pick up new work events; strain yard capacity by assigning trains that tie up multiple receiving, departure, or working tracks for extended periods; and concentrate additional activity at facilities already planned near Applicants' own stated capacity. In several locations, [redacted].

179. These problems contradict Applicants' assertion that the Optimized Plan represents a feasible simplification of the existing operation. A model can reduce the number of labeled handlings by assigning a block to move farther or by treating multiple facilities as one

location. But if the originating yard cannot reliably build the block, the train cannot efficiently carry it, or the intermediate yard cannot perform the scheduled work, the modeled optimization will not translate into a real-world service improvement.

180. Further, this demonstrates why eliminating the UP–NS interchange does not, by itself, create a merger-specific benefit. Where Applicants genuinely reduce work, the reduction results from a different blocking, train-assignment, or schedule-coordination decision—measures that separate railroads can implement through an operating agreement, as we explain in further detail in Section VIII.

5. Conclusion

181. Taken together, the unsupported speeds, inadequate traffic density, excessive train lengths, and unresolved yard constraints demonstrate that the Optimized Plan is not an executable transportation plan. Applicants have identified changes that produce favorable outputs in MultiRail, but they have not shown that those changes can be operated consistently on the existing UP and NS networks.

C. The Optimized Plan Will Not Achieve the Anticipated Service Improvements and Does Not Rely on the Merger to be Implemented

182. The defects described above directly undermine Applicants' claimed service improvements. [redacted]

[redacted][134] Additionally, Applicants claim that the Optimized Plan will significantly reduce the number of intermediate handlings at key watershed yards.[135] As we detail below, this claim is unsupported by the blocking and train plans embedded in their MultiRail model. Finally, both their claimed transit time savings and work savings depend on Applicants actually operating the proposed trains at their modeled frequencies and lengths, notwithstanding the density and facility constraints discussed above.

183. In fact, Applicants' new services consistently fail to meet density requirements. Applicants state that the merger will allow UPNS to increase the productivity of trains on their network. Specifically, they claim that they will adopt UP operating practices to increase the length of trains throughout their network and improve resource allocation to reduce deadheading expenses.[136] However, these claims are not supported by Applicants' Operating Plan. As we explain below, the new transcontinental services that Applicants propose generally lack sufficient density over much of their route, and do not reflect a more efficient operation.

184. Applicants introduce nine new trains in the Optimized Plan: two intermodal train pairs and five manifest services, including one manifest train pair.[137] Messrs. Gehringer and Orr state that these new services will provide transit time savings ranging from 17 to 95 hours

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134 Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al. – BNSF Workpaper Questions," August 21, 2026, pp. 2–3. Applicants do not provide transit times for their new manifest services; *see* Gehringer and Orr VS, Appendix A.

135 *See* Gehringer and Orr VS, ¶¶ 6, 8.

136 *See* Gehringer and Orr VS, ¶¶ 420–422.

137 *See* Gehringer and Orr VS, ¶¶ 179–196 and Turner VS, ¶¶ 36–37. *See also*, Gehringer and Orr VS, Appendix A. Note that Appendix A lists 12 new Optimized Plan trains, but we focus on the new services discussed in the main body of their Verified Statement.

depending on the lane, while removing a total of 2,550 daily handlings.[138] As we detail below, these transit savings are significantly overstated, divorced from the MultiRail model that informs the rest of Applicants' benefit calculations, and have limited historical basis. Further, Applicants' estimate of total saved handlings is misleading, because it combines terminal lifts for intermodal units and handlings of manifest railcars.

185. First, we will address Applicants' misleading calculation of saved handlings. An "intermediate handling" refers to a classification or block swap, in which an individual railcar moves between trains. Separately, intermodal containers must be loaded onto railcars at their origin and unloaded onto trucks at their destination. These are referred to as "lifts," and are distinct from the usual work required to classify railcars into blocks and transfer cars between trains. However, Applicants mix these concepts when they report saved handlings. Specifically, they count the number of containers that are processed as an intermediate work event and add this to the number of manifest railcars processed.[139] A domestic intermodal railcar may carry anywhere from two to 10 containers,[140] meaning that intermodal volumes are given excess weight in Applicants' handling calculations. Correcting this issue lowers the number of handlings saved in the Optimized Plan to [redacted] railcars, or less than [redacted] of total daily

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138 *See* Gehringer and Orr VS, ¶¶ 179–196. *See also*, Turner VS, ¶¶ 36–37.

139 [redacted] *See* Gehringer and Orr VS Workpaper, "C-Traffic data processing.pdf," Appendix A, explaining that the MultiRail model routed containers directly from origin to destination, and therefore did not include dray.

140 In their analysis, Applicants have assumed approximately [redacted] intermodal containers per car. *See* Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," p. 44. Applicants calculate [redacted] cars per container for NS and [redacted] for UP; taking the reciprocal gives [redacted] containers per car for NS and [redacted] for UP.

handlings, assuming the Optimized Plan is put into operation as-written.[141] As we detail below, Applicants present an infeasible Optimized Plan that cannot be executed in reality.

186. In the remainder of this section, we dive into all of the new trains that Applicants propose in the Optimized Plan and demonstrate the numerous ways in which these services have not been adequately developed. In particular, we find that Applicants have not evaluated the feasibility of their blocking designs nor their block to train assignments; they also have not reviewed the productivity of these new services; [redacted][142] As a consequence of these omissions, they cannot properly assess capacity. All of this points to an incomplete and inexecutable design as well as service benefits that are not supported by their operating plan.

1. The New Intermodal Train Pair Between Southern California and the Northeast (ZLCCX/ZHBLC)

187. Applicants propose an eastbound train, ZLCCX, between Los Angeles and Croxton, New Jersey, and a westbound train, ZHBLC, between Harrisburg and Los Angeles. Below, we present maps from Gehringer and Orr's Verified Statement which show the route of this new service, along with its claimed service benefits. We also provide annotations that explain how this service is impacted by the various problems described in Sections IV.A and IV.B above. As shown by Figure 17, these problems are not limited to isolated sections of the proposed routes, but rather extend across substantial stretches of those routes.

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141 *See* Workpaper "C-Operating Plan Metrics vFinal (EN Corrected).xlsx," tab 'Growth Plan (EN Corrected),' Cells D25 and E25, in folder "Revised Handlings."

142 *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, p. 3.

FIGURE 17: ANNOTATED ROUTE OF SOUTHERN CALIFORNIA-NORTHEAST INTERMODAL VIA KANSAS CITY, SPRINGFIELD, AND SIDNEY (ZLCCX)



Sources and Notes:
Gehringer and Orr VS, Figure 19. The train also travels at an average of 4,793 feet from LATC to City of Industry. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 1 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

188. The schedule for the ZLCCX omits a substantial amount of dwell required to perform work. The train reports zero dwell while picking up [redacted] feet at City of Industry, picking up [redacted] feet and setting out [redacted] feet at Santa Teresa, and setting out [redacted] feet at Sandusky. It also reports crew changes with no dwell at [redacted]. At the [redacted] locations where the

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schedule assigns positive dwell for major work, the allowance is only [redacted] minutes: at NS Kansas City, the train sets out [redacted] feet; at Harrisburg, it sets out [redacted] feet.

189. [redacted] minutes is not a credible allowance for entering the appropriate track, securing the train, cutting and coupling the block, performing the necessary inspection, and departing—particularly for a train moving through major terminals with competing traffic. Trains picking up or setting off at least [redacted] feet at a yard required on average [redacted] minutes of dwell, far above the [redacted] minutes allotted in the Optimized Plan.[143]

190. The ZLCCX also lacks consistent density. As displayed by Figure 18 below, the train departs Kansas City at [redacted] feet, declines to [redacted] feet between Sandusky and Harrisburg, and then carries only [redacted] feet between Harrisburg and Croxton. Applicants do not explain how this journey is operationally viable beyond Sandusky. Its impracticality becomes evident when compared to the historical Car Event Data: on average between Harrisburg and Croxton, only [redacted] percent of trains reported a length less than [redacted] feet.[144] Applicants do not explain how they intend to daily run trains so far below historical precedent. As discussed in Section IV.B.2, it is not efficient for railroads to run trains without sufficient density.

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143 *See* Script "01_dwell_work.sql" in folder "Dwell Work Events."

144 *See* Script "historical_lengths_for_in_text_w_threshold.sql" and Workpaper "historical_car_lengths_in_text.xlsx," tab 'Harrisburg -> Croxton threshold,' in folder "Historical Lengths."

FIGURE 18: CUMULATIVE LENGTH AND WORK EVENT DETAIL FOR ZLCCX



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train', and 'mr_opal.location.' *See* Script "02_charts_new_trains_optimized_lengths.R" and Workpaper "new_train_lengths_ZLCCX.png" in folder "Cumulative Lengths and Work Event Detail."

191. The ZHBLC has similar problems. It is shown originating at noon and therefore inherits the initial-departure defect described in Section III.B—consequently, its schedules are unreliable and cannot be interpreted as a realistic measure of train performance. It reports zero dwell while picking up [redacted] feet at NS Kansas City, setting out [redacted] feet at Santa Teresa, and setting out [redacted] feet at City of Industry. It also reports crew changes with no dwell at [redacted]

FIGURE 19: ANNOTATED ROUTE OF NORTHEAST-SOUTHERN CALIFORNIA INTERMODAL VIA SIDNEY, SPRINGFIELD AND KANSAS CITY (ZHBLC)



Sources and Notes:
Gehringer and Orr VS, Figure 20. The train also runs an average of 2,497 feet from City of Industry to LA. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 2 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

192. As detailed in Figure 20 below, the westbound service also lacks sufficient density over much of its route. In particular, the train runs at [redacted] feet between Harrisburg and Sandusky, [redacted] feet between Sandusky and Kansas City, and [redacted] feet between Santa Teresa and Los Angeles. These lengths stand in sharp contrast to a historical average of [redacted] feet between Harrisburg and Sandusky, [redacted] feet between Sandusky and Kansas

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City, and [redacted] feet between Santa Teresa and Los Angeles.[145] Accordingly, the ZHBLC would not run as-designed, seven days per week.

FIGURE 20: CUMULATIVE LENGTH AND WORK EVENT DETAIL FOR ZHBLC



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute', 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_optimized_lengths.R" and Workpaper "new_train_lengths_ZHBLC.png" in folder "Cumulative Lengths and Work Event Detail."

193. The above analysis reveals that not only are these new trains unlikely to run daily as-planned, but the benefits from these new services are significantly overstated. Specifically, Applicants claim that this new intermodal service "will save approximately 17 hours of transit time eastbound and 19 hours westbound for approximately 367 containers per day."[146] This statement gives the impression that Applicants will save transit time for all containers moving on

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145 *See* Script "historical_lengths_for_in_text.sql" and Workpaper "historical_car_lengths_in_text.xlsx," tabs 'Harrisburg -> Sandusky,' 'Sandusky -> Kansas,' and 'Santa Teresa -> LA,' in folder "Historical Lengths."

146 *See* Gehringer and Orr VS, ¶ 185.

the train in both directions. Figure 18 and Figure 20 demonstrate that only a portion of each train completes the whole journey, and therefore only those portions should receive credit for Applicants' claimed transit savings.

194. For the remaining traffic that utilizes this new train pair for only part of the journey, Applicants have not provided sufficient information to gauge transit savings. As discussed at length, [redacted][147] In other words, as discussed in Section III.A, Applicants did not provide useable train schedules to accompany their model. Accordingly, we cannot assess connection times, as we do not know from Applicants' model when trains are realistically expected to arrive at or depart from any yard.[148] Consequently, there is no basis from Applicants' materials to judge the total transit time for any shipment requiring more than one train.

195. Further, Applicants' calculation of transit time savings is based not on the service they propose to run, but on segments pieced together from existing schedules. Specifically, Applicants calculate transit times for their new intermodal trains by extracting segments from existing intermodal schedules and making ad-hoc adjustments for their designed work events.[149] For example, in Figure 21 below, we provide a snapshot of Applicants' calculation of transit time for the ZLCCX. As shown by the Figure, Applicants estimate that the ZLCCX will take 95

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147 *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, p. 3.

148 MultiRail generated schedules for their new trains, but Applicants advised that [redacted] *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, pp. 2–3.

149 *See* Gehringer and Orr VS Workpaper, "Transcon Lane Level Transit Time & Comps.xlsx."

hours in total. They arrive at this transit time by estimating that the train will take 46 hours from Los Angeles to Kansas City, based on the current schedule of the ZCIG4 from City of Industry to Kansas City and an assumed 50 minutes in the greater Kansas City area. On the NS network, they estimate the train will require 49 hours from Kansas City to Croxton, based on the existing schedule of the 258 from Voltz to Harrisburg, 1 hour of dwell added for an unspecified "work event," and 6 hours added for the leg between Harrisburg and Croxton.

FIGURE 21: APPLICANTS' CALCULATION OF TRANSIT TIME FOR ZLCCX

Train Departure to Train Arrival Schedule (Hrs)			
Scenario	**ID**	**TRAIN SYMBOL**	**TYPE**
T2	**1**	ZLCCX	Z
Current		**Detail**	**Hrs**
NS (East) Current		Current schedule: Ashland Ave shuttle to 47th steet, 28X to Croxton	38
UP (West) Current		Current schedule: ZLCG2 to Global 3, Global 3 switch, IG3AH to Ashland Ave (NS Interchange)	74
Total Current			**112**
Plan		**Detail**	**Hrs**
NS (East) Plan		258 schedule Voltz to Harrisburg added 1 hour work event and 6 hours for Croxton leg	49
UP (West) Plan		ZCIG4 current schedule City of Industry to Kansas City (45'24"), +50" for KC, Kansas City Gateway	46
Total Plan			**95**

Sources and Notes:
Gehringer and Orr VS Workpaper, "Transcon Lane Level Transit Time & Comps.xlsx," tab 'ZLCCX.'

196. Applicants' estimates have little factual basis. First, Applicants do not explain how they determined that 6 hours was a reasonable estimate for travel between Harrisburg and Croxton, why they add 1 hour of dwell for a single work event when the ZLCCX has 5 intermediate work events scheduled (see Figure 18), or why they add 50 minutes in the Kansas City area. All of these are arbitrary and undefended assumptions. In addition, their workpapers do not provide the actual schedules that inform this calculation, or materials sufficient to recreate their calculation from produced or publicly-available data. In other words, the information provided in Figure 21 is the sum-total of detail that Applicants provide to justify their claimed

transit savings. This is problematic because the Board cannot confirm—and Applicants have not demonstrated—that the schedules they have used to estimate transits reflect the work events and crew changes that they have designed.

197. In fact, as we illustrate below, the transit times they assert are quicker than is consistently achievable based on historical data. Specifically, in Figure 22, we estimate approximate transit times for these new services using the average transit time (excluding dwell) of trains travelling the same route.[150] Additionally, we add average dwell for each stop where a train is scheduled to work, as well as 20 minutes for each crew change. As shown below, this calculation demonstrates that Applicants' claimed transit times are [redacted].[151] For the ZLCCX, we estimate that historically, trains running over the same route run approximately [redacted] than the 95 hours they claim. For the ZHBLC, historical train performance is [redacted] than the 93-hour transit that Applicants claim. In other words, Applicants cannot achieve their service benefits based on the design they propose and historical train performance.

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[150] In particular, we focus on the same trains that Applicants use to generate their schedules. For example, for the ZLCCX, we calculate the average transit time excluding dwell for the 258 and ZCIG4 to populate column [B] of Figure 22. We then add dwell for work events and crew changes based on Applicants' design.

[151] Our transit time estimates are illustrative, not definitive. Figure 22 and similar subsequent calculations demonstrate that Applicants' transit estimates have limited, if any, historical basis. However, as emphasized in Section II.C, building an executable, feasible train schedule is a highly involved and iterative process. We are not claiming to provide transit times based on schedules that we think these trains will follow; rather our estimates provide a benchmark to gauge how realistic Applicants' claimed transit time savings are.

FIGURE 22: PLANNED TRANSIT TIMES FOR NEW TRAINS IN OPTIMIZED PLAN COMPARED WITH TRANSIT TIMES ESTIMATED FROM HISTORICAL PERFORMANCE



Sources and Notes:

Car Event Data, MultiRail table 'mr_opal.trainExpandedRoute,' and Gehringer and Orr VS Workpaper, "Transcon Lane Level Transit Time & Comps.xlsx," tabs 'ZLCCX' and 'ZHBLC.' *See* Scripts "01_track_time_new_trains.sql" and "02_dwell_new_trains.sql", and Workpaper "new_trains_transit_time.xlsx," tab 'Report Figure 22' in folder "New Trains Transit Time vs. Historical."

[A]: Optimized Plan train symbol and corridor.

[B]: Track time is the elapsed time in the Car Event Data between departure from the origin and arrival at the destination, excluding dwell, and is calculated separately for each leg. Where possible, we used the historical train symbols whose schedules the Applicants cited in the Gehringer and Orr VS Workpaper, "Transcon Lane Level Transit Time & Comps.xlsx." The endpoints used for these historical comparisons sometimes differ slightly from those of the corresponding new train services.

[C]: The number of work events for each train is obtained from the MultiRail table 'mr_opal.trainExpandedRoute' and multiplied by the corresponding railroad's average work-event dwell for historical intermodal traffic.

[D]: The number of crew changes for each train is obtained from the MultiRail table 'mr_opal.trainExpandedRoute'. We assume each crew change takes 20 minutes. When a crew change coincides with a work event lasting more than 20 minutes, we add no dwell time beyond the work event's duration.

[E]: [B] + [C] + [D].

[F]: Transit time for new service based on Gehringer and Orr VS Workpaper, "Transcon Lane Level Transit Time & Comps.xlsx."

[G]: [E] / [F] × 100.

198. Finally, it is important to note that Applicants have previously provided interline service along this route. Specifically, UP and NS offered interline service between Los Angeles,

CA and Harrisburg, PA via Kansas City in 2018.[152] However, in January 2019, they closed Kansas City as an intermodal gateway and shifted this traffic into the Chicago area.[153] As we have stated, the new ZLCCX/ZHBLC train pair has significant problems with density and would be unlikely to run as-written. These issues aside, if Applicants are determined to run this train pair, they cannot claim that the merger is necessary to do so. Applicants provided interline service along this lane in 2018 and have not identified a specific operational constraint that prevents this service today.

199. In summary, the Los Angeles-Northeast train pair is unlikely to run as-written and will not achieve the service benefits that Applicants claim. This train pair suffers from multiple issues that reflect an inefficient and infeasible design, including work events that entail substantial shifts in volume but no dwell, crew changes with no dwell, and insufficient densities over substantial shares of its route. Further, the service benefits that Applicants assert from this train pair are significantly overstated. Applicants' calculation of transit time has no basis in either their MultiRail model or in historical train performance, and their statement of impacted containers ignores the fact that most of the volume on these trains does not travel for the whole journey. Finally, Applicants have not identified a specific operational constraint that prevents

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[152] *See* Union Pacific, "UP-NS Interline Service Schedules," July 26, 2018, available at: https://www.up.com/cs/groups/public/@uprr/@customers/documents/up_pdf_nativedocs/pdf_up_inter_nor-sched.pdf.

[153] *See* Union Pacific, "Interline Service Changes to Eastbound Intermodal Traffic Handled by UP and NS," Customer Announcement Number IM2019-70, May 31, 2019, last accessed October 19, 2026, https://www.up.com/customers/announcements/intermodal/allintermodal/IM2019-70.html. *See also*, Union Pacific, "UP-NS EASTBOUND DOMESTIC INTERLINE CHANGES (INTERMODAL).xlsx," last accessed November 9, 2026, https://www.up.com/cs/groups/public/@uprr/@customers/@announcements/@intermodal/documents/ms-nativedocuments/wcccon1037505.xlsx.

implementing this service via a standard interline partnership, as they did back in 2018. Accordingly, the merger is not necessary to achieve this service.

2. The New Intermodal Train Pair Between Southern California and the Southeast (ZLBAT/ZCTLB)

200. Applicants also propose the ZLBAT eastbound from Long Beach to Atlanta and the ZCTLB westbound from Charlotte to Long Beach. They claim that ZLBAT will operate in 74 hours and save approximately 70 hours relative to existing service, while ZCTLB will operate in 83 hours and save approximately 95 hours.[154] As before, we present annotated maps of this new service, which detail both its proposed route and the numerous operational issues we have identified along this service.

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[154] *See* Gehringer and Orr VS Workpaper, "Transcon Lane Level Transit Time & Comps.xlsx," tab 'Transit Times.'

FIGURE 23: ANNOTATED ROUTE OF SOUTHERN CALIFORNIA-SOUTHEAST INTERMODAL VIA MERIDIAN (ZLBAT)



Sources and Notes:
Gehringer and Orr VS, Figure 22. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 3 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

201. [redacted]. Specifically, as shown in Figure 24 below, the train picks up [redacted] feet at Los Angeles, picks up [redacted] feet at Santa Teresa, sets out [redacted] feet at Greggton, and sets out [redacted] feet at Austell [redacted]. The schedule also reports crew changes with no dwell at [redacted].

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202. The Greggton event is especially consequential. Setting out [redacted] feet is not a minor en-route adjustment. It requires substantial track space and physical work. According to Applicants' Train Event Data, work events that entail picking up or setting off over 8,000 feet require on average [redacted] hours; hence, Applicants' schedules omit a substantial amount of dwell.[155] Moreover, as displayed in Figure 24 below, the ZLBAT runs at no more than [redacted] feet between Greggton and Atlanta, a distance of roughly [redacted] miles. Trains designed to this length are at risk of ad-hoc cancellation, as normal operating variability will routinely lead to commercially unsustainable volumes on the Greggton-Atlanta leg. Applicants do not explain how this new service will remain commercially viable over this stretch.

FIGURE 24: CUMULATIVE LENGTH AND WORK EVENT DETAIL FOR ZLBAT



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train', and 'mr_opal.location.' *See* Script "02_charts_new_trains_optimized_lengths.R" and Workpaper "new_train_lengths_ZLBAT.png" in folder "Cumulative Lengths and Work Event Detail."

[155] *See* Script "01_dwell_work.sql" in folder "Dwell Work Events."

203. The westbound ZCTLB has similar problems. The train is shown originating at noon, meaning it also suffers from uninterpretable schedules as described in Section III.B. The train reports zero dwell while setting out [redacted] feet at Tucson and [redacted] feet at Los Angeles. It also reports crew changes with no dwell at [redacted].

FIGURE 25: ANNOTATED ROUTE OF SOUTHEAST-SOUTHERN CALIFORNIA INTERMODAL VIA MERIDIAN (ZCTLB)



Sources and Notes:

Gehringer and Orr VS, Figure 23. *See* Script "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 4 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

204. Although ZCTLB has more substantial density over most of its route relative to the previous trains, it is still insufficient to support a transcontinental mission. As shown in Figure 26 below, it runs at [redacted] feet from Charlotte to Atlanta, [redacted] feet from Atlanta to Tucson, [redacted] feet from Tucson to Los Angeles, and ends with only [redacted] feet between Los Angeles and ICTF. Applicants have not explained whether this final movement would actually operate as a train or would require a different terminal movement not represented in the plan. Additionally, it is doubtful that Applicants would really stop at Tucson to set out [redacted] feet, which by their own calculation would constitute roughly [redacted] cars per day.[156] As discussed at length, work events are not instantaneous: they require stopping the train, moving into the yard, finding appropriate track space, setting out the correct cars, and then departing the yard, all of which takes time. Applicants are proposing to stop the entire train for less than [redacted] car daily—in reality, this traffic would likely travel on a different service already working at Tucson.

[156] *See* Scripts "Look up Train Route (volume).sql" and "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16011563 in the Optimized Plan (resultScenarioKey 172).

FIGURE 26: CUMULATIVE LENGTH AND WORK EVENT DETAIL FOR ZCTLB



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_optimized_lengths.R" and Workpaper "new_train_lengths_ZCTLB.png" in folder "Cumulative Lengths and Work Event Detail."

205. Moreover, the fact that this Tucson-bound traffic is assigned to the ZCTLB at all demonstrates that Applicants have not fully evaluated their designs for practicality or feasibility. Not only is the length too short to justify a dedicated stop, but the stop adds an intermediate handling to a train that would otherwise operate non-stop (other than crew changes) between Atlanta and Los Angeles. The additional volume from the Tucson traffic is also too small to meaningfully impact the efficiency of the train, but the stop at Tucson adds notable dwell time nonetheless. Hence, Applicants have not provided finalized designs for their new train services that reflect how these trains would actually run following the transaction.

206. As before, the issues catalogued above demonstrate that these new trains are unlikely to run as-written, and that the benefits Applicants assign to these new services are

overstated. In particular, Applicants claim that this new train pair "will save 70 to 95 hours of transit time[] for approximately 400 containers per day."[157] As shown in Figure 24, the ZLBAT requires multiple stops to build up sufficient density and sets off most of its volume at Greggton, TX—any transit savings accruing to this train are limited, because most of the volume does not travel the entire journey. In contrast, Figure 26 demonstrates that the ZCTLB offers more consistent volume, [redacted]—however, this volume is still below what would be required for a dedicated transcontinental service.

207. Further, we again emphasize that Applicants have not provided sufficient information to identify transit times on volumes that connect to other trains. [redacted]. Consequently, Applicants have not provided a feasible basis to measure connection times, meaning it is impossible to calculate total transits for any traffic relying on multiple trains along their journey. Accordingly, the Board cannot judge any potential impact on transit times (either improvements or degradations) using this new service to connect to another destination.

208. Applicants' calculation of transit times has limited historical basis. In Figure 27 below, we present the transit times that Applicants assert for this new service in contrast to estimated transits based on the historical performance of trains using the same route. Our estimates provide a benchmark to gauge whether Applicants' asserted transit times are

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[157] *See* Gehringer and Orr VS, ¶ 189.

reasonable based on historical performance over the same segments.[158] As we show below, Applicants provide transit times for their new trains that are consistently quicker than has been achieved historically. In particular, we estimate that the expected transit time for the ZCTLB based on Car Event Data is [redacted] percent greater than the schedule that Applicants allow. Similarly, the expected transit for the ZLBAT is [redacted] percent greater than what Applicants estimate. Applicants do not explain how they plan to realize these transit time improvements without capital investments in the Optimized Plan.

FIGURE 27: PLANNED TRANSIT TIMES FOR NEW TRAINS IN OPTIMIZED PLAN COMPARED WITH TRANSIT TIMES ESTIMATED FROM HISTORICAL PERFORMANCE



Sources and Notes:

Car Event Data, MultiRail table 'mr_opal.trainExpandedRoute,' and Gehringer and Orr VS Workpaper, "Transcon Lane Level Transit Time & Comps.xlsx," tabs 'ZCTLB' and 'ZLBAT.' *See* Scripts "01_track_time_new_trains.sql" and "02_dwell_new_trains.sql," and Workpaper "new_trains_transit_time.xlsx," tab 'Report Figure 27' in folder "New Trains Transit Time vs. Historical."

[A]: Optimized Plan train symbol and corridor.

[B]: Track time is the elapsed time in the Car Event Data between departure from the origin and arrival at the destination, excluding dwell, and is calculated separately for each leg. Where possible, we used the historical train symbols whose schedules the Applicants cited in the Gehringer and Orr VS Workpaper, "Transcon Lane Level Transit Time & Comps.xlsx." The

[158] As mentioned previously, our estimated transit times are meant only to provide a benchmark to assess Applicants' claimed transit savings and are not meant to reflect a fully-developed schedule. As discussed at length in Section II.C, development of a feasible schedule depends on a multitude of factors and iterative input of multiple stakeholders. Our estimates do not replace this process. Rather, they provide an approximate gauge of whether Applicants' estimates are achievable based on historical performance.

endpoints used for these historical comparisons sometimes differ slightly from those of the corresponding new train services.
[C]: The number of work events for each train is obtained from the MultiRail table 'mr_opal.trainExpandedRoute' and multiplied by the corresponding railroad's average work-event dwell for historical intermodal traffic.
[D]: The number of crew changes for each train is obtained from the MultiRail table 'mr_opal.trainExpandedRoute.' We assume each crew change takes 20 minutes. When a crew change coincides with a work event lasting more than 20 minutes, we add no dwell time beyond the work event's duration.
[E]: [B] + [C] + [D].
[F]: Transit time for new service based on Gehringer and Orr VS Workpaper, "Transcon Lane Level Transit Time & Comps.xlsx."
[G]: [E] / [F] × 100.

209. Finally, it is important to emphasize that, setting aside the above issues with transit times and densities that render this service unlikely to run as-written, this new train pair could be implemented today under existing cooperative agreements. This new service makes use of the Meridian Speedway, which Applicants currently utilize for fast and reliable interline service between the West Coast and the Southeast.[159] We provide detail on some of these existing services in Section VIII.B. Applicants do not explain why a merger is necessary to implement this new train when they currently provide run-through blocking and train service over much of the same route. Accordingly, this new service does not require the merger to implement.

210. In summary, the new train pair between Los Angeles and the Southeast is unlikely to run as-written, has overstated service benefits, and could be implemented today without a merger. In particular, the ZLBAT requires numerous pickups along its route to reach sufficient density, and still sets off most of its volume in Greggton, TX, running below [redacted] feet for the

[159] Gehringer and Orr VS, ¶ 175. *See also*, discussion of the Meridian Speedway in Section VIII.B.

rest of its journey. The ZCTLB similarly reports insufficient density over the entirety of its route, never rising above [redacted] feet. Further, the transit savings that Applicants claim are overstated and have limited basis in historical data. Finally, this new train pair makes use of the Meridian Speedway, a corridor that Applicants already use for run-through blocking and train services. They do not explain why, if Applicants were determined to introduce this new train, they could not implement this service today under existing cooperative agreements.

3. The New Manifest Services Do Not Reliably Produce Applicants' Claimed Handling Savings and Would Not Run as Designed

211. Applicants also propose a series of new manifest services in the Optimized Plan that they claim will eliminate hundreds of daily car handlings.[160] In particular, Applicants highlight the MNPCW, MALEK, MCWAL, MNLCW, and the MNLCT/MCTNL train pair as important sources of operating efficiencies. Below, we present maps from Gehringer and Orr's Verified Statement showing the routes of these new services, along with annotations identifying the operating problems described in Sections IV.A and IV.B above. As with the new intermodal trains, these problems are not confined to isolated locations but occur throughout the new proposed routes.

212. The benefits that Applicants claim on these new manifest services are limited to saved handlings. Applicants do not provide transit time estimates for any of their new manifest services, in either the Optimized or Growth Plan. This omission underscores the fact that Applicants have not provided a complete operating plan that includes executable schedules for any of their train services. Accordingly, Applicants have not demonstrated that they can achieve the service benefits upon which they base their diversion estimates.[161] Further, their calculation

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160 *See* Gehringer and Orr VS, ¶¶ 190–195.

161 *See* Section V.C.

of saved handlings suffers from numerous errors, which we document below. Applicants have therefore not presented a concrete plan to improve their operation in the Optimized Plan.

a. MNPCW

213. Applicants propose the MNPCW as a new eastbound service moving traffic from North Platte toward Conway. Applicants claim that the train will eliminate approximately 248 daily car handlings for traffic moving from west of North Platte to the Ohio Valley and Northeast.[162]

214. The MNPCW is shown originating at noon and therefore suffers from the initial-departure problem described in Section III.B, thereby rendering its schedule uninformative. As shown in Figure 28 and Figure 29, the train reports zero dwell while picking up [redacted] feet at Global 3 and picking up [redacted] feet and setting out [redacted] feet at Proviso. At Elkhart, Applicants allow only [redacted] minutes to set out [redacted] feet.[163] The schedule also reports crew changes with no dwell at [redacted].

215. The Elkhart work event alone demonstrates that the schedule is not achievable. Setting out [redacted] feet requires the train to travel to the east end of the yard to set the block out in the receiving track before departing. A through train performing this volume of work at Elkhart would take far longer than the [redacted] minutes allotted in the Optimized Plan. Further, while this train is working, it could interfere with other activities in the receiving yard, including hump assignments. Applicants have not adequately modeled capacity impacts related to new

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[162] *See* Gehringer and Orr VS, ¶ 190. *See also*, Gehringer and Orr VS Workpaper, "Manifest T1 vs T2.xlsx," tab 'MNPCW.'

[163] *See also*, Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16011461 in the Optimized Plan (resultScenarioKey 172).

lifting, setting off, or block-swapping on through trains at Elkhart as introduced in the Optimized Plan, activities that were not present in the Base Plan.

FIGURE 28: ANNOTATED ROUTE OF NORTH PLATTE-CONWAY MANIFEST (MNPCW)



Sources and Notes:
Gehringer and Orr VS, Figure 24. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 5 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

216. The MNPCW also moves between extremes in train length that undermine the viability of the service, as further detailed in Figure 29 below. The train is [redacted] feet between North Platte and Beverly, [redacted] feet between Beverly and Global 3, and [redacted] feet between Global 3 and Proviso. Trains of this length add complexity to a design. They exceed the

length of working tracks at each of the yards listed above, and will certainly interfere with other movements in and around the yards. Applicants must therefore carefully design trains of this length, including development of carefully orchestrated schedules. Applicants do not address these specific complexities and instead assert that the train can run as-planned without analyzing potential disruption to other services.

217. However, after Elkhart, the train falls to only [redacted] feet between Elkhart and Toledo Airline and [redacted] feet between Toledo Airline and Conway. Historical trains operating over those segments average approximately [redacted] feet and [redacted] feet, respectively.[164] Applicants do not explain how a train that attracts substantial volume through Chicago and then falls significantly below historical norms farther east represents a viable daily service. This train would be subject to ad-hoc cancellations beyond Elkhart.

[164] *See* Script "historical_lengths_for_in_text.sql" and Workpaper "historical_car_lengths_in_text.xlsx," tabs 'Elkhart -> Toledo' and 'Toledo -> Conway,' in folder "Historical Lengths."

FIGURE 29: CUMULATIVE LENGTH AND WORK EVENT DETAIL FOR MNPCW



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_optimized_lengths.R" and Workpaper "new_train_lengths_MNPCW.png" in folder "Cumulative Lengths and Work Event Detail."

218. Finally, Applicants' claimed handling savings do not reconcile with their underlying MultiRail model. In particular, Applicants claim that the MNPCW eliminates 248 daily handlings.[165] However, we have identified that this count is impacted by a data processing error in Applicants' workpapers—the result of this error is that certain traffic records are double counted in their estimates of saved handlings.[166] After correcting this error, the number of daily saved handlings falls to approximately [redacted].[167] Hence, even if this train runs as planned—

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165 Gehringer and Orr VS, ¶ 190.

166 *See* Appendix B for a detailed explanation of this error.

167 *See* Script "Pull Work Events.sql" and Workpaper "Manifest T1 vs T2 (EN Corrected) - HC.xlsx," tab 'MNPCW,' in folder "Work Events for Trains of Interest."

which as we describe above, is doubtful—Applicants significantly overstate their saved handlings.

219. Moreover, the train continues to perform work at Global 3, Proviso, and Elkhart. Thus, while Applicants describe the service as eliminating substantial intermediate work, the underlying train plan continues to require significant work through Chicago. Hence the benefits of this new service are substantially overstated and do not alleviate congestion in Chicago.

b. MALEK

220. Applicants propose the MALEK to move traffic between Minnesota and Wisconsin, on the one hand, and Ohio, Pennsylvania, and New York, on the other. Applicants claim that this new service will eliminate approximately 148 daily car handlings.[168]

221. The MALEK originates at noon and therefore also suffers from the schedule defect discussed in Section III. More importantly, every intermediate work event identified in Applicants' train schedule reports zero dwell, as shown by Figure 30 and Figure 31. At Adams, the train picks up [redacted] feet and sets out [redacted] feet. At Butler, it picks up [redacted] feet and sets out [redacted] feet. At Proviso, it picks up [redacted] feet and sets out [redacted] feet. At Ashland Avenue, the train picks up [redacted] feet. Applicants nevertheless allocate no dwell for any of these events. Crew changes at [redacted] likewise receive no dwell.[169]

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168 *See* Gehringer and Orr VS, ¶ 191. *See also*, Gehringer and Orr VS Workpaper, "Manifest T1 vs T2.xlsx," tab 'MALEK.'

169 *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16011458 in the Optimized Plan (resultScenarioKey 172).



Sources and Notes:
Gehringer and Orr VS, Figure 25. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 6 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

222. Applicants would require a substantial amount of time to complete these work events. Applicants' Event Data indicates that work entailing picking up or setting out at least [redacted] feet requires on average approximately [redacted] minutes of dwell; picking up or setting out [redacted] feet or more requires on average [redacted] minutes.[170] However, the Optimized

170 *See* Script "01_dwell_work.sql" in folder "Dwell Work Events."

Plan instead assumes that thousands of feet of cars can be added or removed instantaneously at multiple locations along a single train's route.

FIGURE 31: CUMULATIVE LENGTH AND WORK EVENT DETAIL FOR MALEK



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_optimized_lengths.R" and Workpaper "new_train_lengths_MALEK.png" in folder "Cumulative Lengths and Work Event Detail."

223. The MALEK also continues to work at Proviso and Ashland Avenue before terminating at Elkhart. As displayed in Figure 31, the train does not have sufficient density to bypass Ashland Avenue, but it must continue to rely on substantial Chicago-area work that Applicants assign zero or insufficient dwell to perform. Finally, Applicants' estimated savings of 148 handlings suffers from the same data processing error that impacted the MNPCW, discussed earlier. Fixing this error, we estimate that the new service, if run as-designed, would save only

[redacted] daily handlings.[171] Hence, Applicants greatly overstate the benefits of their new manifest service between Altoona and Elkhart; the train does not remove work events from the Chicago area; and finally, the design as written includes numerous errors that Applicants would need to address—entailing substantial edits to their Operating Plan—before being put into operation.

c. MCWAL

224. Applicants propose the MCWAL as a new westbound service moving traffic from Conway through the Chicago gateway and into Wisconsin. Applicants state that the train will eliminate classification for approximately 110 cars per day currently processed through the BRC.[172]

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[171] *See* Script "Pull Work Events.sql" and Workpaper "Manifest T1 vs T2 (EN Corrected) - HC.xlsx," tab 'MALEK,' in folder "Work Events for Trains of Interest." *See also*, Gehringer and Orr VS Workpaper, "Manifest T1 vs T2.xlsx," tab 'MNPCW.'

[172] *See* Gehringer and Orr VS, ¶ 192. *See also*, Gehringer and Orr VS Workpaper, "Manifest T1 vs T2.xlsx," tab 'MCWAL.'

FIGURE 32: ANNOTATED ROUTE OF CONWAY-ALTOONA MANIFEST (MCWAL)



Sources and Notes:
Gehringer and Orr VS, Figure 26. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 7 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

225. Unlike several of the new services, the MCWAL does not originate at noon; its schedule reports a departure at [redacted].[173] Nevertheless, it contains the same zero-dwell problem seen throughout the Optimized Plan, meaning its schedules remain uninformative to determine when the train will realistically run. The train reports zero dwell while picking up [redacted] feet at

[173] *See* Script "Look up Train Route (speeds).sql" filtering to trainKey 16011444 in the Optimized Plan (resultScenarioKey 172).

Proviso; picking up [redacted] feet and setting out [redacted] feet at Butler; and picking up [redacted] feet at North Lowell. Crew changes at [redacted] likewise receive no dwell.[174]

226. The Proviso event is especially significant. Picking up almost [redacted] feet is a major work event, yet Applicants model this event as requiring no time whatsoever. Based on the 2023 Event Data provided by Applicants, trains performing work of approximately this magnitude dwell on average [redacted] hours.[175] The Optimized Plan therefore omits a substantial amount of time from the MCWAL's schedule.

227. The MCWAL also lacks sufficient density over material portions of its route. It operates at [redacted] feet between Conway and Bellevue, [redacted] feet between Bellevue and Elkhart, and [redacted] feet between Elkhart and Proviso. Based on 2023 Car Event Data, trains over these same segments average approximately [redacted] feet, respectively.[176] Applicants do not explain how they intend to support a dedicated daily train that is designed to less than [redacted] feet over roughly half of its route.

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174 *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16011444 in the Optimized Plan (resultScenarioKey 172).

175 *See* Script "01_dwell_work.sql" in folder "Dwell Work Events."

176 *See* Script "historical_lengths_for_in_text.sql" and Workpaper "historical_car_lengths_in_text.xlsx," tabs 'Conway -> Bellevue,' 'Bellevue -> Elkhart,' and 'Elkhart -> Proviso,' in folder "Historical Lengths."

FIGURE 33: CUMULATIVE LENGTH AND WORK EVENT DETAIL FOR MCWAL



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_optimized_lengths.R" and Workpaper "new_train_lengths_MCWAL.png" in folder "Cumulative Lengths and Work Event Detail."

228. Applicants' claimed handling benefits do not correspond to the work reflected in their model. Applicants state that the MCWAL will eliminate classification for approximately 110 cars per day moving through the BRC.[177] Importantly, on this one train, Applicants change their focus from discussing all intermediate handlings to reporting exclusively saved classifications. Their analysis, for this one train, omits a corresponding *increase* in block swap activity of roughly [redacted] cars per day.[178] Hence, Applicants have selectively chosen to report results that are favorable to their case.

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177 *See* Gehringer and Orr VS, ¶ 192. Gehringer and Orr VS Workpaper, "Manifest T1 vs T2.xlsx," tab 'MCWAL.'

178 *See* Gehringer and Orr VS Workpaper, "Manifest T1 vs T2.xlsx," tab 'MCWAL.'

229. Additionally, the design of the MCWAL includes swapping [redacted] cars per day at Elkhart, setting off [redacted] cars per day to train [redacted] and lifting [redacted] cars per day from train [redacted].[179] As discussed in Section VI.F, this is a particularly complex design at a hump yard like Elkhart, requiring substantial time and introducing significant risk of interfering with other operations. Applicants acknowledge [redacted].[180]

230. The MCWAL also works at Proviso, not only failing to bypass the Chicago gateway, but also maintaining a work event at Proviso previously performed by the MCHAL.[181] Hence, Applicants have overstated the benefits of their new Conway-Altoona manifest service, failed to bypass the Chicago gateway, and presented a design that will not realistically run from Conway to Elkhart.

d. MNLCW

231. Applicants propose the MNLCW as a new train from North Little Rock to Conway. Applicants state that it will eliminate two intermediate classifications in the East St. Louis area for approximately 80 cars per day, or approximately 161 daily handlings in total.[182]

232. The MNLCW originates at noon, rendering its schedule unreliable for the reasons explained in Section III.B. The schedule also reports zero dwell while setting out [redacted] feet at

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179 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Optimized)' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "ELKHART IN_NS" and Cell E8 must be set to "Cars (#)."

180 *See* Deposition of Brian Barr, September 3, 2026, 333:1–13.

181 *See* discussion of Chicago-area yards, specifically Global 2 and Proviso, in Section VI. *See also*, Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Outbound' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "PROVISO IL_UP" and Cell E8 must be set to "Cars (#)."

182 *See* Gehringer and Orr VS, ¶ 194. *See also*, Gehringer and Orr VS Workpaper, "Manifest T1 vs T2.xlsx," tab 'MNLCW.'

Bellevue. Crew changes at [redacted] likewise receive no dwell.[183]

233. Again, this is not minor work. Setting out nearly [redacted] feet requires substantial time. Applicants' Car Event Data indicates that a work event of this magnitude requires on average approximately [redacted] minutes of dwell.[184] Applicants instead assume that the event can occur instantaneously.

FIGURE 34: ANNOTATED ROUTE OF NORTH LITTLE ROCK-CONWAY MANIFEST (MNLCW)



Sources and Notes:

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183 *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16011465 in the Optimized Plan (resultScenarioKey 172).

184 *See* Script "01_dwell_work.sql" in folder "Dwell Work Events."

Gehringer and Orr VS, Figure 27. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 8 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

234. The more fundamental problem with the MNLCW is its lack of density, as detailed in Figure 35 below. The train operates at an average of [redacted] feet between North Little Rock and Bellevue. It is noted that the tradeoff between this train's productivity and handling savings at East St. Louis may be worthwhile.

235. However, the train then falls to only [redacted] feet between Bellevue and Conway. Historical trains operating over this segment average approximately [redacted] feet.[185] Applicants do not explain why UPNS would operate a dedicated daily train over this distance at a length so far below historical precedent. This train will likely be routinely cancelled at Bellevue, as illustrated in Figure 35 below, introducing new intermediate handlings for this Conway traffic. Applicants do not address the potential for these new handlings in their application.

[185] *See* Script "historical_lengths_for_in_text.sql" and Workpaper "historical_car_lengths_in_text.xlsx" in tab 'Bellevue -> Conway' in folder "Historical Lengths."

FIGURE 35: CUMULATIVE LENGTH AND WORK EVENT DETAIL FOR MNLCW



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_optimized_lengths.R" and Workpaper "new_train_lengths_MNLCW.png" in folder "Cumulative Lengths and Work Event Detail."

236. Finally, Applicants claim that the service will eliminate 161 daily handlings.[186] However, this train suffers from the aforementioned data processing error that causes Applicants to double-count certain traffic records. Correcting this issue, our review of their underlying model identifies approximately [redacted] handling savings.[187] Thus, even before considering the omitted dwell and insufficient density, Applicants' own train and block data support substantially fewer handling savings than the figure they advertise. Hence, the benefits of

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[186] *See* Gehringer and Orr VS, ¶ 194; and Gehringer and Orr VS Workpaper, "Manifest T1 vs T2.xlsx," tab 'MNLCW.'

[187] *See* Script "Pull Work Events.sql" and Workpaper "Manifest T1 vs T2 (EN Corrected) - HC.xlsx," tab 'MNLCW,' in folder "Work Events for Trains of Interest."

Applicants' new train service are overstated, and the design includes a number of serious errors that make this service unlikely to run as-planned.

e. MNLCT / MCTNL

237. Applicants also propose the MNLCT and MCTNL as a new train pair moving traffic between Texas, Louisiana, Arkansas, and western UP points, on the one hand, and Kentucky, Alabama, Tennessee, and northeastern and southeastern NS points, on the other. Applicants attribute approximately 170 daily handling savings to this new service.[188] As with the other new manifest services, the provided schedules reveal substantial operational problems. The eastbound MNLCT originates at noon and therefore suffers from the schedule defect discussed in Section III. The train reports zero dwell while setting out [redacted] feet at Memphis and while picking up [redacted] feet and setting out [redacted] feet at Sheffield. Crew changes at both [redacted] likewise receive no dwell.[189]

238. The Sheffield event is a major work event. The train exchanges more than [redacted] feet in total, yet Applicants model no time to complete the work. Applicants' Car Event Data indicates that work of this magnitude requires on average approximately [redacted] hours of dwell.[190] Applicants therefore omit a substantial amount of time from the train schedule.

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188 *See* Gehringer and Orr VS, ¶ 195. *See also*, Gehringer and Orr VS Workpaper, "Manifest T1 vs T2.xlsx," tab 'MNLCT.MCTNL.'

189 *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 11371136 in the Optimized Plan (resultScenarioKey 172).

190 *See* Script "01_dwell_work.sql" in folder "Dwell Work Events."

FIGURE 36: ANNOTATED ROUTE OF NORTH LITTLE ROCK-CHATTANOOGA MANIFEST (MNLCT)



Sources and Notes:

Gehringer and Orr VS, Figure 28. Note that Messrs. Gehringer and Orr initially create one map for the train pair (MNLCT / MCTNL), necessitating arrows in both directions. However, this figure concerns only the eastbound MNLCT. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 9 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

239. The MNLCT also operates at approximately [redacted] feet throughout much of its route. As discussed earlier, trains of this length require careful planning to ensure that they do not overburden network capacity by unintentionally blocking sidings or crossings, or by otherwise interfering with yard operations and other railroads. In order to ensure this design is

feasible, Applicants must evaluate schedules and terminal clocks to ensure that the train does not interfere with other operations. Applicants have not done so.

240. Consequently, the design for the MNLCT contains a particularly unusual work event that would not happen in reality. As detailed in Figure 37, the MNLCT stops for [redacted] to pick up [redacted] feet and then sets out [redacted].[191] Applicants do not explain why a train carrying this much volume would undertake an intermediate stop, incurring dwell along the way, to pick up such a negligible amount of traffic. Further, for a train of this length, setting out [redacted] feet at Memphis would necessarily entail interfering with CN and BNSF operations west of Sargent Yard (Memphis, TN). In reality, this kind of movement would likely move on a local out of Marion through the Memphis area. Consequently, Applicants have not evaluated their block to train assignments for feasibility or practicality.

241. As described in Section II.C, a fulsome design process contains multiple opportunities to flag an infeasible or impractical design and look for alternatives. First, in reviewing their blocking plan, they should have flagged this block as having insufficient density and developed an alternative means to carry this traffic from ICTF to Marion.[192] For example, [redacted]

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[191] *See also*, Scripts "Look up Train Route (volume).sql" and "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 11371136 in the Optimized Plan (resultScenarioKey 172).

[192] In generating run-through blocks in MultiRail, Applicants aggregated traffic for UP-NS interline service, for example [redacted] to [redacted]. However, the volumes that remain in the legacy ICTF to Memphis block were retained as a catch-all for any remaining intermodal traffic headed to Memphis, including traffic for [redacted] *See* Script "Look up Traffic in Block.sql," in folder "MR Review," filtering to blockKey 891 in the Optimized Plan (resultScenarioKey 172). Note that the column 'toRRKey' lists the relevant interline partners.

[redacted][193] Second, a review of block to train assignments should have made clear that a setout of this low volume is not practical on a through freight, and—assuming the block continues to exist—it should have been assigned to a local. The fact that this impractical work event continues into the final design makes clear that Applicants have not fully evaluated their model for feasibility.

242. The primary problem with this design is not that Applicants show [redacted] feet travelling between Marion and Memphis. The problem is that Applicants have assigned this volume to a [redacted]-foot through train. Consequently, Applicants have overstated the feasibility of their train designs, forcing the Board to speculate as to how this volume would actually move following the transaction.[194]

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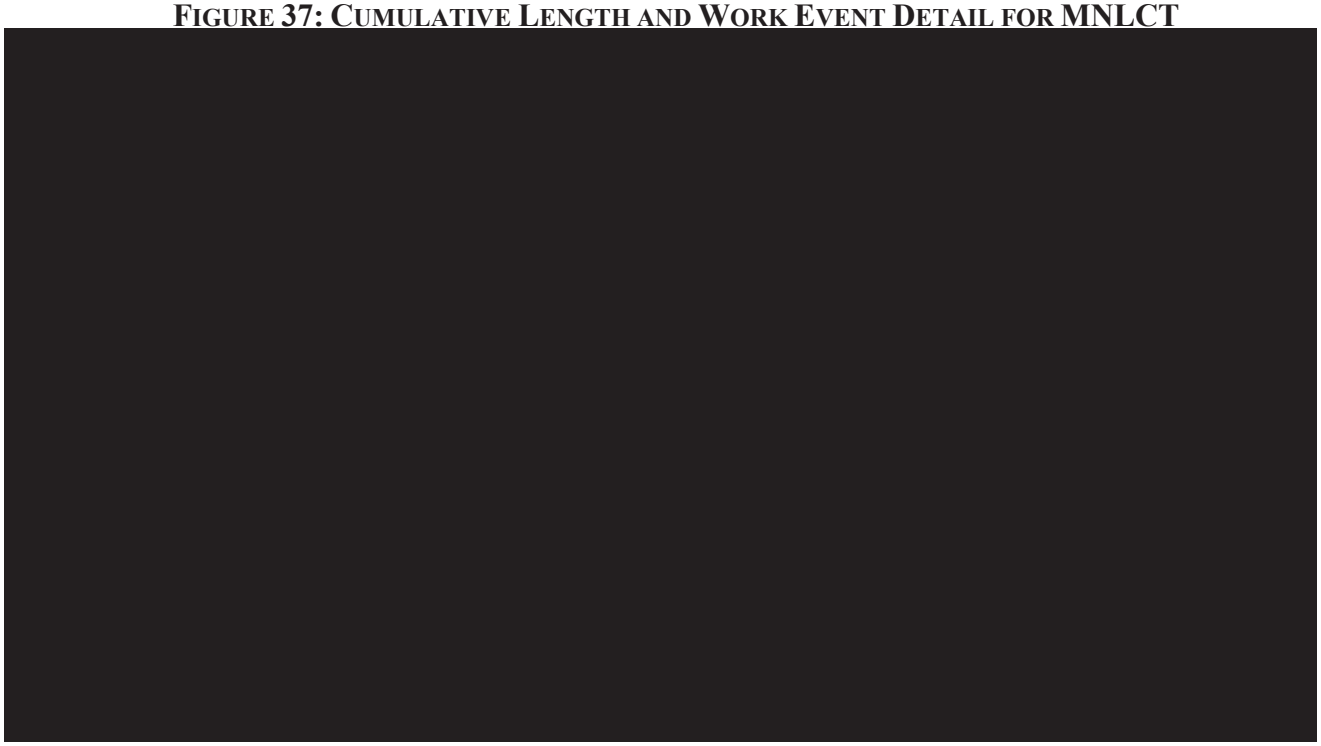
193 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtering to Block ID 1554.

194 In Section VI, we detail how Applicants' consolidation of nearby facilities has complicated operations at specific gateways.

FIGURE 37: CUMULATIVE LENGTH AND WORK EVENT DETAIL FOR MNLCT



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_optimized_lengths.R" and Workpaper "new_train_lengths_MNLCT.png" in folder "Cumulative Lengths and Work Event Detail."

243. As noted in Figure 37, the train sets out [redacted] feet and lifts [redacted] feet at Sheffield. In adding a [redacted] block to be swapped at [redacted] and a [redacted] block to be processed at [redacted],[195] Applicants claim handling benefits tied to the merger. There are no known physical constraints at North Little Rock today that would prevent Applicants from splitting what is effectively one multi-track block at North Little Rock to Sheffield into three distinct block classifications, all traffic at North Little Rock being equal.[196]

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[195] *See* Workpaper "Sheffield Block-Train Assignments (Arrivals) – Confidential.xlsx," tab 'Blocking Details,' in folder "Blocking Details," filtering cell AJ8 for "MNLCT to 240A_NS/CHATTANOOGA TN_NS."

[196] For a more detailed discussion of why many of Applicants' claimed operational improvements, including this one, do not require a merger, see Section VIII.C.

244. The westbound MCTNL contains similar issues. It does not originate at noon, but its schedule reports zero dwell while picking up [redacted] feet and setting out [redacted] feet at Sheffield; picking up [redacted] feet at Memphis; and picking up [redacted] feet at Marion. Crew changes at [redacted] likewise receive no dwell.[197]

FIGURE 38: ANNOTATED ROUTE OF NORTH LITTLE ROCK-CHATTANOOGA MANIFEST (MCTNL)



Sources and Notes:

Gehringer and Orr VS, Figure 28. Note that Messrs. Gehringer and Orr initially create one map for the train pair (MNLCT / MCTNL), necessitating arrows in both directions. However, this figure concerns only the westbound MCTNL. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of

[197] *See* Scripts "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16000432 in the Optimized Plan (resultScenarioKey 172).

Optimized and Growth Trains.pptx" slide 10 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

245. Again, the [redacted] event involves almost [redacted] feet of pickups and setouts, but Applicants assign no dwell to perform the work. The actual dwell for the MCTNL would therefore be at least 90 minutes, much longer than the schedule reflected in the Optimized Plan.

FIGURE 39: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF MCTNL



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_optimized_lengths.R" and Workpaper "new_train_lengths_MCTNL.png" in folder "Cumulative Lengths and Work Event Detail."

246. Finally, Applicants claim approximately 170 handling savings from the MCTNL/MNLCT train pair, compared with approximately [redacted] identified in our review of

their underlying model.[198] Their estimates again suffer from the data processing error that double-counts some traffic records. Moreover, most of these handling savings stem from the creation of a [redacted] block. There is no known physical restriction that prevents Applicants from building this block now and realizing these savings today. Hence, the majority of their claimed handling savings are not a function of the merger.

247. In summary, Applicants again overstate the benefits of their new service, and have submitted designs that contain numerous, significant errors that mean these new trains cannot run as-designed. These issues make clear that Applicants will not realize the service benefits they claim.

f. Conclusion

248. Taken together, Applicants' new manifest services exhibit the same basic defects as their proposed intermodal services. Applicants' schedules omit time for substantial intermediate work and crew changes, and several trains operate at lengths far below historical experience over material portions of their routes. Applicants do not address how they will consistently run trains so far outside of historical norms while conforming to existing constraints, including siding capacity, receiving and departure track length, and yard capacity. Further, Applicants' claimed handling savings frequently do not reconcile with their underlying MultiRail model. In particular, due to an error in Applicants' workpapers, they overstate the saved handlings accruing to many of their new services; additionally, they selectively omit corresponding increases in block swap activity. Furthermore, Applicants fail to present current capabilities of the network and claim many merger benefits that could be achieved today.

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[198] *See* Script "Pull Work Events.sql" and Workpaper "Manifest T1 vs T2 (EN Corrected) - HC.xlsx," tab 'MNLT.MCTNL,' in folder "Work Events for Trains of Interest." *See also*, Gehringer and Orr VS, ¶ 195; and Gehringer and Orr VS Workpaper, "Manifest T1 vs T2.xlsx," tab 'MNLCT.MCTNL.'

Accordingly, Applicants have significantly overstated the benefits accruing to their new manifest services, and have not provided executable designs that would allow them to put these new trains into operation.

249. The operationally feasible aspects of these manifest services are not merger-specific.[199] Each proposed service depends on activities that UP and NS can undertake as separate carriers: building deeper blocks for the connecting railroad, assigning those blocks to coordinated trains, and extending or modifying run-through service across an existing gateway. For example, UP and NS already operate run-through service between Elkhart and North Platte. More generally, because the Optimized Plan uses existing traffic volumes, either those volumes are sufficient to support the proposed blocks and trains (in which case UP and NS can negotiate the necessary operating arrangements today) or they are not (in which case common ownership does not make the services sustainable). Putting aside all of the issues that mean these services will not run as-designed, Applicants have not shown that a merger is necessary to implement them.

4. Applicants' Change-Management Process Does Not Cure the Defects in the Filed Plan

250. Applicants repeatedly state that the actual post-merger schedules and operating changes will be reviewed later through their ordinary change-management process. Mr. Turner explains that, following approval of the transaction and before implementing any specific operational changes, Applicants will seek the approval of personnel from operations, marketing, and others to ensure the changes are feasible and commercially sustainable.[200] Mr. Turner further

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[199] For a more detailed discussion of why many of Applicants' claimed operational improvements do not require a merger, see Section VIII.C.

[200] *See* Turner VS, ¶¶ 18–22.

explains that especially complex changes may require additional review and adjustment before being implemented, to ensure minimal disruption to existing train service.[201]

251. These are sensible ordinary-course procedures. They are also the procedures that should have been used to validate the Operating Plan before Applicants relied on it to quantify merger benefits. As Applicants acknowledge, the purpose of that review is to determine whether a proposed plan can be executed under actual operating conditions.[202] The fact that Applicants intend to perform this due diligence later confirms that the filed plan has not yet received the operational validation necessary to establish that its schedules and service claims are attainable. This is particularly relevant for the Optimized Plan, which must be implemented on Day 1 following the transaction if Applicants are to realize their claimed benefits. [redacted].[203]

252. Applicants cannot answer the defects identified in this section by stating that they may revise the blocks, trains, schedules, or yard assignments before implementation. Any material revision may change the number of handlings, train miles, connections, transit times, crew requirements, and facility workloads on which Applicants' claimed benefits depend. As Applicants acknowledge, [redacted].[204] If a long train is split to create an additional train start, Applicants will need

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201 *See* Turner VS, ¶¶ 23–24, 28.

202 *See* Turner VS, ¶¶ 18, 21, 25–28.

203 *See* Deposition of David Welch, July 29, 2026, 119:12–24; 120:4–20. *See also*, Deposition of Brian Barr, September 3, 2026, 363:4–365:22.

204 *See, for example,* Deposition of Michael R. McClellan, October 9, 2026, 178:21–179:17.

additional crews and potentially locomotive resources. If work is shifted to another yard, that yard's capacity must be re-examined. Such situations could require additional capital expenditures or diversion of resources from other parts of the network, which would in turn generate other tradeoffs and schedule modifications.

253. The Board is being asked to evaluate the Transaction based on the Operating Plan Applicants filed, not on an unidentified plan that may emerge after the transaction has been approved. As we demonstrate above, Applicants' claimed service improvements are not supported by the Optimized Plan as-written.

5. Many of the Feasible Changes Do Not Require a Merger

254. Finally, the operationally sensible elements of the Optimized Plan do not establish a merger-specific benefit. As discussed in further detail in Section VIII, railroads routinely build deeper blocks for connecting carriers, exchange pre-blocked traffic, coordinate train schedules, create run-through trains, and bypass intermediate classification yards. The physical actions involved do not require common ownership.

255. Several of Applicants' principal Optimized Plan changes consist of precisely those practices: [redacted][205] Importantly, Applicants assert that no new capital is needed to implement these changes in the Optimized Plan.[206] Further, Applicants do not identify an operational or

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205 *See* Turner VS, ¶ 31. *See also*, Gehringer and Orr VS, Section 4.3.7.

206 *See* Gehringer and Orr VS, ¶ 26; Turner VS, ¶¶ 82–83.

technical impediment that prevents UP and NS from implementing those arrangements today by agreement.[207]

256. To be clear, not every modeled change would necessarily be desirable or even feasible as proposed. For instance, Applicants propose new blocking to bypass Elkhart; however, as described in Section VI.F, these bypass blocks depend on misrepresentations of density that stem from Applicants' modelling simplifications; hence Applicants cannot implement these blocks in reality. But where a deeper block or coordinated run-through service is supported by sufficient traffic and can be accommodated by the relevant yards, UP and NS can negotiate the commercial and operating arrangements needed to provide it as independent railroads.[208]

257. Applicants contend that separate railroads lack sufficient incentives to make these improvements because each carrier focuses on its own costs and revenues.[209] That assertion does not explain why a service that generates meaningful customer demand and operating efficiencies for both carriers could not be implemented through an ordinary cooperative agreement. Indeed, as elaborated in Section VIII, Class I railroads—including UP and NS—already use such arrangements extensively throughout their networks. Hence, Applicants fail to affirmatively demonstrate that the changes they propose in the Optimized Plan require a merger to be achieved.

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[207] Importantly, recall that the Optimized Plan is implemented before including diverted traffic. Accordingly, Applicants assert that these operational adjustments are feasible with existing traffic volumes.

[208] Applicants' expert acknowledges [redacted]

[209] *See* Gehringer and Orr VS, ¶ 10.

6. Conclusion

258. In summary, the Optimized Plan relies on service improvements that are either infeasible or are fully achievable today without a merger. Where Applicants' proposed changes depend on unsupported speeds, omitted work, inadequate density, excessive train lengths, or overloaded yards, these changes are not realistic. As further elaborated in Section VI, if Applicants attempt to execute the Optimized Plan as-written, severe service disruptions will likely follow.

259. Applicants cannot rely on an ad-hoc change management process, or on additional, undisclosed revisions to their Operating Plan to address these issues. Any substantial revisions to the Optimized Plan will impact the distribution of work events, transit times, and crew and locomotive requirements. In short, Applicants' claimed service benefits rely on executing the Optimized Plan as-written.

260. Where the proposed service changes are feasible, Applicants have not demonstrated that they require a merger. Where density exists, deeper blocking, coordinated schedules, or run-through service can achieve service that is as fast as single-line service.[210] Importantly, Applicants claim that the Optimized Plan can be executed today with existing traffic volumes. Hence, if taken at face value, the Plan suggests that volumes are sufficient to introduce these services today.

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[210] *See* Section VIII.B.2.

V. THE OPERATIONAL CHANGES REFLECTED IN THE GROWTH PLAN ARE EITHER NOT VIABLE OR COULD BE IMPLEMENTED WITHOUT A MERGER BASED ON ASSUMED TRAFFIC CHANGES ARISING FROM IMPROVED SERVICE OFFERINGS

A. The Growth Plan Suffers from the Same Defects as the Base Plan and Optimized Plan

261. Before evaluating the additional train service that Applicants propose in the Growth Plan, it is important to recognize that the Growth Plan (like the Optimized Plan) does not start with a reliable foundation. Applicants developed the Growth Plan by adding projected merger-related diversions to the Optimized Plan and modifying the train and blocking plans where they assert that additional traffic supports new service. Accordingly, the same errors and invalid assumptions that impact the Base and Optimized Plans also render the Growth Plan inexecutable.

262. As detailed in Section III and summarized in Section IV.A, the Base Plan does not provide usable train schedules, does not allocate sufficient dwell for necessary work events, does not reliably identify where work occurs or where current traffic moves, and has not been calibrated to actual train performance. Those defects persist in the Growth Plan. They prevent Applicants from determining when trains will actually arrive and depart, whether connections and assigned work can be completed within available terminal capacity, whether real-world traffic supports the proposed blocks and trains, and whether modeled changes represent improvements over current service.

263. The Growth Plan also inherits additional defects introduced in the Optimized Plan. As explained in Section IV, those problems include:

- **The Optimized Plan relies on unsupported train speeds and transit times.** Applicants model new service at speeds materially above historical performance without identifying changes in infrastructure or operating conditions that would permit those speeds. Those unsupported assumptions do not disappear in the Growth Plan. [redacted]

[redacted] Adding projected traffic does not change the physical conditions, such as grades, curvature, signaling, and junction conflicts, that determine attainable speeds. [redacted].

- **The Optimized Plan does not support Applicants' claimed improvements in train productivity and instead plans trains of unrealistic length.** Applicants claim that the merger will allow UPNS to increase train lengths and better allocate resources to reduce deadheading. However, the Optimized Plan contains trains that are either too short to operate efficiently or too long to be accommodated reliably. The Growth Plan repeats both problems. As discussed below, even after Applicants add their entire projected traffic diversions, several new trains lack sufficient density over material portions of their routes. Concurrently, other trains reach a designed length between [redacted] and [redacted] feet;[211] in conjunction with Applicants' failure to provide executable schedules, these trains would strain siding capacity as well as receiving, departure, and working tracks. Remedying these issues would require significantly altering the service Applicants present, rendering their Operating Plan inexecutable as written.

- **The Optimized Plan eliminates UP-NS interchanges and reduces labeled handlings but does not simplify operations.** Common ownership does not, in and of itself, reduce the physical work required to move blocks between trains. To simplify operations, physical work events must be reduced. However, the Optimized Plan often shifts work rather than eliminating it. Applicants create new blocks, consolidate activity at select yards, add intermediate pickups and set-outs, and transfer work among yards without demonstrating that those facilities can accommodate it. The Growth Plan then adds traffic and new services to those same train, block, and yard arrangements. Thus, Applicants have not demonstrated that the Growth Plan is feasible or that it simplifies operations.

- **Applicants' claimed service improvements frequently do not reconcile with their Operating Plan.** Applicants calculate intermodal transit time savings using schedules that they have not shown correspond to the service modeled in the Optimized Plan. Further, their claim of significant reductions in intermediate handlings at key watershed yards does not correspond to the blocking and train plans they model. The Growth Plan nevertheless assumes that these service improvements will attract additional traffic and create the density needed to support further trains and blocks. Where claimed Optimized Plan improvements are not supported by modeled train and blocking plans, the

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211 *See* Appendix D.

additional traffic and service built upon those improvements are likewise unsupported.

- **Applicants' change-management process does not solve the issues in the Optimized Plan.** Applicants state that they will later review and modify specific schedules and operating changes before implementation. But such modifications could change Applicants' claimed benefits, such as transit time savings or reduced handlings, which are their basis for projecting diversions in the Growth Plan. Such modifications could also require capital or other resources not included in Applicants' analysis. Applicants cannot rely on an unidentified plan that may emerge after approval to establish the benefits of the Optimized and Growth Plans.

- **Many of Applicants' feasible changes can be implemented without a merger.** Deeper blocking, coordinated schedules, pre-blocked interchange, run-through service, and yard bypasses do not require a merger. They are operating practices that separate railroads can implement through commercial agreements. The Growth Plan's reliance on projected traffic does not alter that conclusion. If the potential additional traffic provides sufficient density to support a deeper block or new service, both UP and NS would have an incentive to cooperate to attract that traffic without a merger. If density is insufficient, common ownership does not make the proposed service operationally or commercially sustainable. Applicants therefore have not identified the particular operational impediment that requires common ownership to implement the feasible portions of the Optimized or Growth Plans.

264. Taken together, these defects materially affect the Growth Plan in two related ways. First, they remain embedded directly in the train and blocking plans themselves. For example, Applicants continue to rely on schedules that omit required time for work, assign traffic to trains that cannot be operated efficiently or accommodated reliably, and add work at yards without demonstrating that the relevant facilities can perform it. This directly undermines the executability of the Growth Plan. Second, the defects in the Optimized Plan render unreliable the premise upon which the Growth Plan is constructed. Applicants use the service improvements attributed to the Optimized Plan to project additional traffic and then use that projected traffic to support the new trains and deeper blocks reflected in the Growth Plan. To the extent service

improvements in the Optimized Plan are not achievable, then traffic diversions and corresponding new trains and deeper blocks in the Growth Plan are also not achievable.

265. Relatedly, the revisions necessary to make the Growth Plan executable would alter the service that Applicants require to support their projected diversions. Adding dwell, reducing frequency, combining short trains, splitting overlength trains, or reassigning work would change transit times, handling patterns, resource requirements, and service improvements reflected in the Growth Plan. Changing those service improvements would alter projected diversions, rendering the plan internally inconsistent. Accordingly, the Growth Plan does not establish an executable post-merger operation, nor even the definite possibility of creating one through the change-management process.

266. Applicants cannot resolve these problems merely by adding projected traffic to the model. Whether additional volume supports a particular service depends on where that traffic moves, in what direction, and whether it provides sufficient density for the particular train or block while remaining compatible with yard and route constraints. Even after Applicants add all of their projected diversions, several trains remain too short over material portions of their routes, while others reach infeasible lengths. Thus, the increase in modeled traffic does not cure the Optimized Plan's defects or demonstrate that the resulting operation can be executed as designed.

B. The Growth Plan Changes Will Not Yield the Degree of Service Improvements Applicants Claim

267. Applicants state that the Growth Plan reflects how the combined UPNS network would operate after adding the traffic they expect to attract through merger-related service

improvements.[212] They explain that much of this additional traffic can be added to trains already present in the Optimized Plan, but that in other instances, the projected growth supports additional train starts and entirely new services.[213] Applicants specifically identify seven new intermodal train pairs as well as a series of new manifest trains, all of which they claim will operate seven days per week.[214] In this section, we review each of these trains in detail and explain why the benefits from these new trains are overstated and unlikely to materialize.

268. The introduction of projected traffic does not make these proposed service changes merger-specific. If Applicants' projected diversions create sufficient density to support a new train, deeper block, or yard bypass, the resulting revenue opportunity would give both UP and NS an incentive to offer that service through an interline operating and commercial arrangement.[215] If the projected traffic is insufficient to support a new train or bypass, common ownership does not cure the density problem. Thus, while examining the individual Growth Plan trains, it is important to keep in mind that Applicants do not identify specific operational impediments preventing UP and NS from implementing any feasible service cooperatively.

269. As discussed above, many of the operational problems that impacted their new Optimized Plan services[216] continue to impact trains introduced in the Growth Plan. In particular, Applicants consistently allocate no dwell to numerous crew changes and work events; several trains operate with insufficient density over material portions of their routes even after

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212 *See* Gehringer and Orr VS, ¶ 31.

213 *See* Gehringer and Orr VS, ¶ 32.

214 *See* Gehringer and Orr VS, ¶¶ 31–33, 235–240.

215 For more detail on such interline operating and commercial arrangements, *see* Sections VIII.A and VIII.B. For additional analysis of how Applicants already reduce intermediate work events on their networks when density supports it, *see* Section VIII.B.3.

216 *See* Section IV.C.

Applicants have added their projected growth traffic; and other trains reach lengths well above [redacted] feet for extended portions of their journeys, exceeding the capacity of most sidings and stretching the capabilities of most yards.[217] These problems demonstrate that Applicants will not operate their new services as modeled in the Operating Plan.

270. Further, Applicants have not shown that any executable version of these services would require common ownership. To the extent a revised service is supported by sufficient traffic, its essential features, such as deeper blocks, coordinated train assignments, run-through movements, etc., could be implemented through an interline agreement. To the extent a revised service is *not* supported by sufficient traffic, the merger would *not* make the service viable.

1. New Intermodal Services

271. Applicants introduce seven new intermodal train pairs in the Growth Plan. These new services are designed to accommodate new demand for long-haul intermodal services across the combined network and will operate seven days a week.[218] However, our review demonstrates that these trains will not run as-modeled. In particular, Applicants do not add any time for work events or crew changes, meaning that the transit times on these trains will necessarily be much higher than Applicants model. Further, Applicants have failed to analyze whether these services have sufficient density to be run daily; as we show below, many of these new trains report low volumes over substantial portions—if not the entirety—of their route. We also note that some of these new trains will operate through facilities that have insufficient capacity to handle the new volume as-designed.[219] Consequently, these trains will not run as-modeled and will not support the service improvements that Applicants claim.

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217 *See* Appendix D.

218 *See* Gehringer and Orr VS, ¶ 240.

219 *See* Section VI.

272. Additionally, Applicants do not provide backup for their claimed transit times on any of their new intermodal trains in the Growth Plan. The Board therefore cannot determine how Applicants arrive at these transit times, and whether they offer a realistic estimate of train service following the transaction. Importantly, this means that the Board cannot assess whether any of these new services actually reflect the service improvements that generate Applicants' claimed diversions—rather, the Board has been asked to rely on Applicants' estimates with no proof. As we detail below and in Section VI, Applicants have introduced a number of vulnerabilities in their designs that make any service benefits unlikely to materialize and pose significant risk of wider service disruptions.

a. Northern California–Northeast Intermodal (ZLTCX/ZCXLT)

273. To accommodate projected diversions travelling between Northern California and the Northeast, Applicants propose a new train pair between Lathrop, CA and Croxton, NJ via Chicago. As in our analysis of the new Optimized Plan trains, we present maps from Messrs. Gehringer and Orr's Verified Statement which present the route of this new service, along with its claimed service benefits. We also provide annotations that explain how this service is impacted by the various issues described in Section V.A above.

FIGURE 40: ANNOTATED ROUTE OF NORTHERN CALIFORNIA-NORTHEAST INTERMODAL (ZLTCX)



Sources and Notes:
Gehringer and Orr VS, Figure 29. Note that Messrs. Gehringer and Orr initially create one map for the train pair (ZLTCX / ZCXLT), necessitating arrows in both directions. However, this figure concerns only the eastbound ZLTCX. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 11 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

274. Eastbound, the ZLTCX picks up traffic at Cheyenne and sets out traffic at Toledo and Harrisburg. The ZLTCX schedule omits time for both substantial work and numerous crew changes. The train reports zero dwell while picking up [redacted] feet at Cheyenne, setting out [redacted] feet at Toledo Airline, and setting out [redacted] feet at Harrisburg. It also reports crew changes with no dwell at [redacted]

Elphick and Nelson V.S. at 165

[redacted] The [redacted] stop in particular illustrates the problem: according to the Growth Plan, the ZLTCX sets out nearly [redacted] feet and changes crews with no time allocated for dwell. As discussed in Section III.C, neither a substantial set-out nor a crew change can occur instantaneously.

275. Also, as detailed in Figure 41 below, the eastbound train lacks density at the eastern end of its trip. For the [redacted] miles between Harrisburg, PA and Croxton, NJ the ZLTCX operates at an average length of [redacted] feet. As discussed later, two other new eastbound services into Croxton —the ZCICX and [redacted]. In reality, Applicants would likely consolidate these services at Harrisburg and run fewer, more efficient trains between Harrisburg, E-Rail, and Croxton. Doing so would be consistent with their claim of increased productivity;[220] however, it would also add additional handlings and transit time that are not reflected in Applicants' model. Hence, Applicants' design does not reflect their likely operation following the transaction.

[220] *See* Gehringer and Orr VS, ¶ 269 ("[T]he merger will allow UP/NS to handle the same traffic levels as the two railroads handled before using fewer, more efficient trains than UP and NS use today").

FIGURE 41: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZLTCX



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZLTCX.png" in folder "Cumulative Lengths and Work Event Detail."

276. Westbound, the ZCXLT performs corresponding work as it moves back toward Northern California and suffers from similar problems. It reports zero dwell while picking up [redacted] feet at Harrisburg and [redacted] feet at Toledo Airline, and also while setting out [redacted] feet at Colehour, [redacted] feet at Cheyenne, and [redacted] feet at Sparks. Crew changes at [redacted] likewise receive no dwell. Hence, the schedule accompanying the design is infeasible.

FIGURE 42: ANNOTATED ROUTE OF NORTHERN CALIFORNIA-NORTHEAST INTERMODAL (ZCXLT)



Sources and Notes:
Gehringer and Orr VS, Figure 29. Note that Messrs. Gehringer and Orr initially create one map for the train pair (ZLTCX / ZCXLT), necessitating arrows in both directions. However, this figure concerns only the westbound ZCXLT. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 12 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

277. Like its eastward counterpart, the ZCXLT runs at an average of [redacted] feet for the [redacted] miles between Croxton, NJ and Harrisburg, PA. With two other trains—the ZCXCI and ZCXMX—scheduled to depart Croxton and head towards Harrisburg, it is likely that this traffic would be consolidated onto fewer trains, creating additional work and transit time. Hence, the

Elphick and Nelson V.S. at 168

ZCXLT is unlikely to be run as-designed and will not achieve the service benefits that Applicants claim.

278. As detailed in Figure 43 below, this westward train also has problems with density. The ZCXLT remains below [redacted] feet between Cheyenne, WY and Lathrop, CA, a distance of [redacted] miles. This segment again reflects an inefficient design that Applicants would not run in reality.

FIGURE 43: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZCXLT



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZCXLT.png" in folder "Cumulative Lengths and Work Event Detail."

279. Additionally, as illustrated in Figure 43, the ZCXLT is also designed to set out [redacted] feet at Sparks, NV. As discussed in Section III.C, a work event takes time: the train must slow down, move onto the appropriate siding or track, stop and set out the volume to be processed or swapped, complete any necessary inspections, all before resuming its journey.

Elphick and Nelson V.S. at 169

Accordingly, work events on a through train must be large enough to justify the extra time. However, [redacted] feet at Sparks is insufficient. This inefficient event is striking in Applicants' new train services, which ostensibly reflect an efficient operation that saves handlings and transit times.[221] If Applicants properly reviewed work events and dwell, it is doubtful that they would design a stop into their new transcontinental service to set out less than [redacted] per day. Hence, this inefficient work event provides further evidence that Applicants have not fully reviewed their designs for feasibility or practicality.

280. In both directions, Applicants' proposed Northern California–Northeast service will not run as-designed. The provided schedules omit time for substantial physical work as well as multiple crew changes, demonstrating that Applicants have not developed feasible schedules. Further these trains have insufficient density to run daily as designed over their whole journey, which Applicants' benefit calculations assume. Moreover, in the westward direction, their design includes an inefficient work event which is unlikely to occur. Hence, Applicants have not presented a realistic picture of their new train services.

b. Northern California–Southeast Intermodal (ZLTCT/ZCTLT)

281. Applicants also propose a new intermodal train pair between Lathrop, CA and Charlotte, NC to accommodate new demand for intermodal service between Northern California and the Southeast. Below, we provide a map of this new service, along with accompanying annotations of service issues.

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[221] *See* Gehringer and Orr VS, ¶ 6 ("By operating as one network, UP/NS will move traffic in seamless, single-line service that eliminates interchanges, reduces handlings, and optimizes traffic more efficiently and safely than is possible today"). *See also*, Turner VS, ¶ 29 ("[T]he growth traffic will be created by and benefit from the same types of service improvements and efficiencies achieved in the Optimized Plan").

FIGURE 44: ANNOTATED ROUTE OF NORTHERN CALIFORNIA-SOUTHEAST (ZLTCT)



Sources and Notes:
Gehringer and Orr VS, Figure 30. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 13 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

282. The ZLTCT reports zero dwell while picking up [redacted] feet at North Platte East, setting out [redacted] feet at Appliance Park, and setting out [redacted] feet at Atlanta. It likewise records crew changes with no dwell at [redacted]

[redacted].[222] Again, these are not pass-through movements: Applicants assign significant physical work to the train at multiple locations but provide no time to perform that work.

283. The train also loses substantial density after Atlanta. As illustrated in Figure 44, between Atlanta and Charlotte, the ZLTCT operates at an average length of only [redacted] feet, reflecting an inefficient service that Applicants would not run daily. This conclusion becomes clear when analyzing Applicants' own Car Event Data for 2023: between Atlanta and Charlotte, the average train length is [redacted] feet.[223] Applicants do not explain how they would continue to run this daily service when it falls so far below historical norms. Further, as we elaborate on growth-related train and blocking activity in Section VI, the new volumes added to Atlanta push the capability of the yard to the extent that its role in the network, as well as the role of surrounding facilities, needs to be reevaluated, which may require significant capital investment not included in the Application, if at all possible.[224] Alternatively, Applicants may forgo the diversions they estimate in the Atlanta area to protect their operation. Finally, Applicants plan to run at [redacted] feet between Lathrop, CA and North Platte, NE, which could indicate a risk of cancellation when the actual volumes fall below average due to normal operating variability.[225] Taken together, this analysis reveals that the ZLTCT is unlikely to run as-designed and therefore will not realize the benefits that Applicants claim.

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222 *See* Scripts "Look up Train Route (speeds).sql" and "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 161134899 in the Growth Plan (resultScenarioKey 200).

223 *See* Script "historical_lengths_for_in_text.sql" and Workpaper "historical_car_lengths_in_text.xlsx," tab 'Atlanta -> Charlotte,' in folder "Historical Lengths."

224 Some yards are space-constrained and cannot realistically expand outside their existing physical footprint.

225 Recall that these volumes will vary in reality due to normal operating conditions. Consequently, on days that are below-average, it becomes less likely that this train will run.

FIGURE 45: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZLTCT



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZLTCT.png" in folder "Cumulative Lengths and Work Event Detail."

284. The westbound ZCTLT presents the same issues in the opposite direction. It departs Charlotte at an average length of [redacted] feet between Charlotte and Atlanta. As in the case of the eastward train, the volume of work added to Atlanta in the Growth Plan makes it unlikely that this service would continue to operate as a standalone train between Charlotte and Atlanta.[226] If Applicants cancel the train before Atlanta or consolidate this service, they will necessarily add work events and connection time at Atlanta, thereby placing their claimed service improvements in jeopardy.

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[226] *See* Section VI.

FIGURE 46: ANNOTATED ROUTE OF NORTHERN CALIFORNIA-SOUTHEAST (ZCTLT)



Sources and Notes:
Gehringer and Orr VS, Figure 31. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 14 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

285. After departing Charlotte, the ZCTLT shows picking up [redacted] feet at Atlanta with zero dwell. Crew changes at [redacted] also receive no dwell. Hence, the ZCTLT also cannot run as designed. Its schedule is not properly calibrated and omits substantial dwell, and the first leg of its journey is not commercially sustainable.

Elphick and Nelson V.S. at 174

FIGURE 47: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZCTLT



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZCTLT.png" in folder "Cumulative Lengths and Work Event Detail."

286. Finally, it is important to emphasize that, in designing this new train pair, Applicants have chosen an inefficient route that is unlikely to achieve their claimed service benefits. Currently, UP and NS cooperate on interline service between Northern California and the Southeast via the Meridian Speedway.[227] As discussed in further detail in Section VIII.B, NS has previously praised the Meridian Speedway as providing the "fastest, shortest route" between the West Coast and the Southeast, as well as providing "exceptional value" to its customers.[228]

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227 *See* Gehringer and Orr VS, ¶ 175.

228 VectorShift, "Norfolk Southern Corp. Q3 Earnings Call Transcript," October 23, 2025, last accessed October 21, 2026, https://vectorshift.ai/research/companies/norfolk-southern/earnings/2025-q3. As we discuss in further detail below, the assertion that the Meridian Speedway offers the fastest route between the West Coast and Southeast is supported by benchmarking data provided by Mr. Turner, which

Benchmarking data provided by Mr. Turner confirms that routes over the Meridian Speedway comprise some of the fastest intermodal service UP and NS currently provide, either interline or single-line.[229] In contrast, the ZLTCT/ZCTLT routes north through Louisville, a route that avoids the Meridian Speedway and is approximately [redacted] miles *longer* than existing service.[230] Applicants do not explain how they plan to save transit times while re-routing traffic over a route that is longer and slower than their current interline service offering.

287. Applicants do not explain why they elect the longer route for their new transcontinental service between Northern California and the Southeast. One possible explanation is that they have routed the service north to carry [redacted] feet between North Platte, NE and Appliance Park, KY. This design is problematic for a number of reasons.[231] First, [redacted].[232] Applicants do not explain why this extra volume was added to this transcontinental service in the Growth Plan (forcing the remaining Lathrop-Atlanta/Charlotte traffic onto a longer, slower route) when an existing service travels directly to Appliance Park.[233] Second, this movement between Appliance

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shows that routes involving the Meridian Speedway offer speeds that are as fast or faster than comparable single-line lanes.

229 *See* Turner VS Workpaper, "Corridor Benchmarking Matrix.xlsx."

230 *See* Workpaper "ZLTCT - Mileage Comparison Confidential.xlsx" in folder "ZLTCT Mileage Comparison."

231 *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 161134899 in the Growth Plan (resultScenarioKey 200).

232 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Outbound' in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "NORTH PLATTE EAST NE_UP" and Cell E8 must be set to "Cars (#)."

233 *See* Section VI.C.

Park and North Platte is not reciprocated in the westbound direction, meaning that the ZCTLT takes the longer route without any intermediate work.

288. Applicants therefore propose a seven-day transcontinental train pair that, in both directions, operates at an infeasible length between Charlotte and Atlanta while simultaneously assuming that substantial intermediate work can be performed instantaneously. Applicants further claim that this train pair will save transit time, and yet the train is routed over a longer, slower route, presumably to accommodate traffic between North Platte and Appliance Park. It is therefore highly unlikely that this service can operate as proposed and realize its claimed service benefits.

c. Southern California–Northeast Intermodal (ZCICX/ZCXCI)

289. Applicants propose a new intermodal train pair between Southern California and Croxton via Kansas City, MO. Importantly, Applicants explain that this service replaces the ZLCCX/ZHBLC pair introduced in the Optimized Plan because projected Growth Plan traffic allows Applicants to segregate Northeast traffic from Ohio Valley traffic and thereby provide improved service to each.[234] Below, we provide maps of this new service and flag the operational complexities that Applicants have not considered in their design.

[234] *See* Gehringer and Orr VS, ¶¶ 245–246.

FIGURE 48: ANNOTATED ROUTE OF SOUTHERN CALIFORNIA-NORTHEAST INTERMODAL (ZCICX)



Sources and Notes:
Gehringer and Orr VS, Figure 32. Note that Messrs. Gehringer and Orr initially create one map for the train pair (ZCICX / ZCXCI), necessitating arrows in both directions. However, this figure concerns only the eastbound ZCICX. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 15 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

290. As demonstrated by Figure 48 above, the eastbound ZCICX runs at an average of [redacted] feet from City of Industry to Harrisburg. As discussed in Section III.B, trains of this magnitude leave limited room for ordinary variation in daily traffic volumes. When such variation inevitably causes volumes to exceed maximum length—perhaps due to prior port

production or late car supply—the network will be forced to either run extra sections, move traffic on other trains, or leave traffic behind.

291. Analysis of Applicants' Car Event Data confirms that they generally avoid running trains of this size. On this particular lane, intermodal trains running from Conway, PA to Harrisburg, PA report an average length of [redacted] feet, and on occasion, hit a maximum length of [redacted] feet.[235] This reflects a conscious design that accommodates the physical constraints along this segment; track geometry between Conway and Harrisburg does not admit long trains without distributed power.[236] Following the East Palestine incident on February 3, 2023, NS tightened train makeup standards. Intermodal trains over 12,000 feet require distributed power. For a train just shy of [redacted] feet, Applicants have not provided any indication of how or where they will marshal the train with distributed power. They also do not provide sufficient detail to assess dwell for power marshaling and fueling events and related capacities.

292. Applicants' design does not reflect the requisite discipline to develop a feasible operating plan. The existing schedule provided for the ZCICX—which Applicants acknowledge has not been calibrated to real train performance—understates the time required to complete work along its route. At Harrisburg, Applicants allocate only approximately [redacted] minutes for the train to set out [redacted] feet and pick up [redacted] feet. At E-Rail, the train sets out [redacted] feet

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235 *See* Script "historical_lengths_for_in_text_w_max_length.sql" and Workpaper "historical_car_lengths_in_text.xlsx" in tab 'Conway -> Harrisburg max' in folder "Historical Lengths."

236 "Distributed power" refers to the practice of building a train with locomotives in the middle and end of the train as well as the front.

See Bill Stephens, "Norfolk Southern Tightens Train Makeup Standards for Long Trains," Trains, April 11, 2023, last accessed November 9, 2026, https://www.trains.com/trn/news-reviews/news-wire/norfolk-southern-tightens-train-makeup-standards-for-long-trains/. If an intermodal train exceeds 12,000 feet or 14,000 tons, then it must operate with distributed power. Manifest trains may not exceed 10,000 feet without distributed power.

with no dwell whatsoever. The schedule also assigns no dwell to crew changes at [redacted]

[redacted].[237] A train cannot exchange thousands of feet worth of cars, perform the necessary cuts, couplings, inspections, and resume its journey instantaneously. Nor is [redacted] minutes a credible allowance for exchanging more than [redacted] feet of cars at Harrisburg.

FIGURE 49: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZCICX

[redacted]

Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,', 'mr_opal.trainExpandedRoute,', 'mr_opal.train,', and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZCICX.png" in folder "Cumulative Lengths and Work Event Detail."

293. Accordingly, Applicants do not provide sufficient scheduling information to determine whether this new train service is truly feasible. In particular, the train is scheduled to pick up [redacted] feet and set out [redacted] feet at Harrisburg. Subsequently, it sets out its

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[237] *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16011549 in the Growth Plan (resultScenarioKey 200).

remaining volume (an average of [redacted] feet) at E-Rail, occupying all four working tracks as detailed in Figure 50 below, before continuing as a light engine move across town to Croxton. This leaves little room for normal operating variation by day of week. It further necessitates that the yard is completely clear when this train arrives, and the crew has sufficient time to spot the entire train into four tracks requiring eight cuts of cars to clear internal crossings. This volume of work would require multiple hours at least, which is omitted from Applicants' schedules, if the intent is to continue on to Croxton as designed. This underscores the fact that Applicants have not submitted complete and executable designs.

FIGURE 50: PATH OF ZCXCI FROM NS CROXTON THROUGH NS E-RAIL



Sources and Notes:

Elphick and Nelson V.S. at 181

See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."

294. The westbound ZCXCI shows coming into E-Rail at [redacted] feet. Beyond E-Rail, it utilizes a path through Port Reading on Conrail shared assets that is typically reserved for local service and detours, not daily mainline trains (see the green line on Figure 50 between Port Reading and Bound Brook). For the Growth Plan, Applicants project [redacted] more trains per day over the Port Reading Secondary, a route with no passing sidings, and which typically only sees two trains per day.[238]

295. Moreover, with a north-facing switch at E-Rail, it is unclear how the work would be performed on the ZCXCI. E-Rail is a stub-ended intermodal facility that has only one entrance and exit to the north (see Figure 50 above). This means that a progressive connection on a westbound train like the ZCXCI is not possible. Applicants do not address the extra work required to make this move feasible. To underscore this point, note that the remaining traffic out of E-Rail is pulled north by a local for connection to the 269 at Elizabeth Marine, subsequently routing via the mainline through Oak Island to Bound Brook and beyond.

296. This complex and time-intensive work event aside, the ZCXCI also reports a number of issues regarding omitted dwell, as well as [redacted]. Details of these issues are presented in Figure 51 below.

[238] *See* Gehringer and Orr VS Workpaper, "C-Line Segment Tables vFinal.xlsx," tabs 'Line Segment Table_Base' and 'Line Segment Table_Growth,' filtered to segment "12439-OTHER 062454-CP-BOUND BROOK N."

FIGURE 51: ANNOTATED ROUTE OF SOUTHERN CALIFORNIA-NORTHEAST INTERMODAL (ZCXCI)



Sources and Notes:
Gehringer and Orr VS, Figure 32. Note that Messrs. Gehringer and Orr initially create one map for the train pair (ZCICX / ZCXCI), necessitating arrows in both directions. However, this figure concerns only the westbound ZCXCI. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 16 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

297. The schedule for the ZCXCI omits necessary dwell for large amounts of work. It reports zero dwell while picking up [redacted] feet at E-Rail and [redacted] feet at Harrisburg. It further reports no dwell while picking up [redacted] feet and setting out [redacted] feet at Voltz; picking up [redacted] feet and setting out [redacted] feet at Santa Teresa; and while setting out [redacted]

feet at IEIT. Crew changes at [redacted] also receive no dwell.[239]

FIGURE 52: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZCXCI



MultiRail tables 'mr_opal.trainBlockVolume,', 'mr_opal.trainExpandedRoute,', 'mr_opal.train,', and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZCXCI.png" in folder "Cumulative Lengths and Work Event Detail."

298. The work event at Toledo Airline in Ohio is worth discussing. Specifically, the ZCXCI is scheduled to pick up [redacted] at Toledo Airline, despite being over [redacted] feet in total length. As discussed previously, such insubstantial work events reflect an inefficient design that Applicants would not realistically operate. Doing so would require slowing a train down, pulling into the appropriate track or siding, picking up the car, and performing inspections before resuming its journey. Applicants would not slow down a [redacted]-foot train to pick up [redacted]

[239] *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16011562 in the Growth Plan (resultScenarioKey 200).

[redacted] As with the E-Rail event, this Toledo Airline event underscores that Applicants have not fully evaluated their model for feasibility or practicality, even on their showcase transcontinental services.

299. The Southern California–Northeast service therefore does not support Applicants' claim that projected traffic will provide improved services. The train pair instead combines extensive zero-dwell work with train lengths that vary from only a [redacted] feet to more than [redacted] feet. Along their respective routes, these two trains contain a number of inefficient, unexplained, or unlikely work events and routings, meaning the design will not run as written.

d. Southern California–Ohio Valley/Detroit Intermodal (ZLCDT/ZDTLC)

300. Applicants propose a separate train pair between Southern California and Livernois in Detroit, again using the Kansas City-Springfield-Sidney routing. Applicants describe this train as an efficient, direct service for Southern California traffic moving to the Ohio Valley and Detroit.[240] A map of this service, as well as a summary of operational issues we have identified, is provided below.

[240] *See* Gehringer and Orr VS, ¶ 247.

FIGURE 53: ANNOTATED ROUTE OF SOUTHERN CALIFORNIA-OHIO VALLEY/DETROIT INTERMODAL (ZLCDT)



Sources and Notes:
Gehringer and Orr VS, Figure 33. Note that Messrs. Gehringer and Orr initially create one map for the train pair (ZLCDT / ZDTLC), necessitating arrows in both directions. However, this figure concerns only the eastbound ZLCDT. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 17 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

301. As shown in Figure 53, the eastbound ZLCDT runs between [redacted] and [redacted] feet between City of Industry and Livernois. As described previously, trains designed to this size create risk of running extra sections, having other trains carry the traffic, or leaving traffic behind.

302. A designed average length of [redacted] feet from Santa Teresa to Kansas City is problematic. That particular corridor has 15,000-foot sidings, meaning that this train will be over siding standard by design every day once accounting for locomotives, which typically add around 73 to 75 feet per locomotive.[241] As discussed in Section II.C, normal operating variability will cause the train length to regularly exceed this threshold. Further, Applicants' failure to provide executable schedules means that we cannot assess potential conflicts along this corridor; this is striking, given Applicants' reduced capital plan.[242] Finally, review of Applicants' Car Event Data demonstrates that a design average of [redacted] feet is not proven between Santa Teresa and Kansas City: along this stretch, [redacted] trains report an average length above [redacted] feet.[243]

303. Applicants have not provided an executable plan for these new services. Applicants openly admit that [redacted] [244] consequently, the schedules provided for this new service are incomplete. In particular, the train picks up [redacted] feet at City of Industry with zero dwell; at Santa Teresa, it picks up [redacted] feet and sets out [redacted] feet with zero dwell; at Voltz, it picks up [redacted] feet and sets out [redacted] feet with zero dwell. Crew changes at [redacted] likewise receive no dwell.[245]

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241 *See* Turner VS Workpaper, "UP Golden State Corridor Capacity Projects.pdf," p. 1.

242 *See* discussion of Applicants' shifting capital plan in Section VII.E.

243 *See* Script "historical_lengths_for_in_text_w_max_length.sql" and Workpaper "historical_car_lengths_in_text.xlsx" in tab 'Santa Teresa -> Kansas max' in folder "Historical Lengths."

244 Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al. – BNSF Workpaper Questions," August 21, 2026, pp. 2–3.

245 *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16013967 in the Growth Plan (resultScenarioKey 200).

FIGURE 54: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZLCDT



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,', 'mr_opal.trainExpandedRoute,', 'mr_opal.train,', and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZLCDT.png" in folder "Cumulative Lengths and Work Event Detail."

304. The Voltz work event is especially significant. Applicants assume that a train already exceeding [redacted] feet over much of its route can arrive at Voltz, set out [redacted] feet, pick up [redacted] feet, change crews, and depart without incurring any dwell. Moreover, as detailed further in Section VI.A, the three storage tracks at Voltz adjacent to the mainline total roughly [redacted] feet. This train alone would occupy all of Voltz's available capacity, meaning the yard would be unable to process any additional traffic for as long as the ZLCDT is working there. Further, Voltz is an especially taxed yard; in the Growth Plan, Applicants add block swapping at Voltz, and significantly more train work event activity. Trains held out on the

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mainline will interfere with the larger Kansas City terminal area.[246] Hence the design for the ZLCDT is not executable and would require substantial revisions before being implemented.

305. There are two key points to make regarding the work event at Voltz. First, Applicants do not have sufficient density to run a through-train from [redacted]. Rather than removing intermediate work events, Applicants rely on a substantial work event at Voltz to give the train sufficient density to complete the journey to Detroit. The volume of traffic exchanged at Voltz effectively means the train is rebuilt in Kansas City, and does not reflect the efficient transcontinental service that Applicants advertise. Second, the new volume to Detroit reflects, not growth driven by new service, but [redacted][247] This is most evident when examining train 252, which goes from an average of [redacted] feet in the Optimized Plan with traffic destined to Toledo Airline, down to [redacted] feet in the Growth Plan.[248] The ZLCDT carries the majority of this traffic, now destined to Livernois, recreating a historic NS move into Detroit.[249] [redacted]

[redacted]

246 *See* discussion of Voltz in Section VI.A.

247 *See* Sections III.E and VI.A.

248 See Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 'Trains,' filtering to Train ID 16000115.

249 *See* Workpaper, "Terminal Clocks.xlsx," tab 'Voltz, MO' in folder "Terminal Clocks." *See also*, Workpaper "Voltz Block-Train Assignments (Departures) – Confidential.xlsx," tab 'Blocking Details,' in folder "Blocking Details," filtering cell AJ8 for "ZLCDT to MH5_NS/LIVERNOIS MI_NS."

FIGURE 55: ANNOTATED ROUTE OF SOUTHERN CALIFORNIA-OHIO VALLEY/DETROIT INTERMODAL (ZDTLC)



Sources and Notes:
Gehringer and Orr VS, Figure 33. Note that Messrs. Gehringer and Orr initially create one map for the train pair (ZLCDT / ZDTLC), necessitating arrows in both directions. However, this figure concerns only the westbound ZDTLC. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 18 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

306. The westbound ZDTLC presents similar problems. Between Voltz and LATC, the train operates between [redacted] and [redacted] feet. At Voltz, the ZDTLC picks up [redacted] feet and sets out [redacted] feet, again with zero dwell, and again overwhelming the physical plant at

Voltz.[250] Hence, this new train service does not actually remove intermediate handlings, but relies on work at a major gateway in order to have sufficient density. Additionally, the schedule assigns no dwell to crew changes at [redacted][251] Just like with its eastbound counterpart, Applicants have not provided an executable design for the ZDTLC.

307. As further evidence of lack of sufficient review of train schedules and the consequences for capacity, the schedules for the train pair are stacked on top of each other at Voltz. The ZDTLC arrives at Voltz at [redacted], while the eastbound ZLCDT arrives just [redacted] hours earlier, at [redacted].[252] Both trains pick up and set out over [redacted] feet of total volume and will occupy all of the yard's available capacity. Hence, assuming these trains can run on-time (which as we discuss, is doubtful), they will overlap at Voltz. Voltz cannot accommodate this much volume at once, and the activity and train lengths involved will interfere with the Kansas City terminal.[253] This example highlights that Applicants have not provided a feasible operating plan.

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250 *See* Section VI.

251 *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16013965 in the Growth Plan (resultScenarioKey 200).

252 *See* Workpaper "Terminal Clocks.xlsx," tab 'Voltz,' in folder "Terminal Clocks."

253 *See* discussion of Voltz's capacity in Section VI.A.

FIGURE 56: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZDTLC



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZDTLC.png" in folder "Cumulative Lengths and Work Event Detail."

308. Thus, the train pair that Applicants characterize as a new direct Ohio Valley/Detroit service depends in both directions on long trains that cannot be run as designed. Infeasible schedules and overlapping work events in Kansas City reflect a design that has not been sufficiently evaluated for executability and practicality. The trains cannot operate as-planned. Further, both of these trains rely on picking up and setting out substantial volume in Kansas City, demonstrating that Applicants have not truly removed congestion at gateways as a result of this new service. Hence, Applicants have overstated the service benefits of this new train pair, and it would not run as-planned. This service is not really new, but reinstates a service between Kansas City and Detroit previously run by NS. Finally, this train pair gets most of its

volume between Kansas City and Detroit from trains 251 and 252, which remain in the Growth Plan at [redacted] days a week with almost no volume between Kansas City and Toledo.[254]

e. Southern California-Southeast Intermodal (ZIEJX/ZCTLB)

309. Applicants also introduce a new intermodal train pair between Southern California and the Southeast via the Meridian Speedway.[255] Below, we provide a map of this service as well as detail the operational issues that render it infeasible.

FIGURE 57: ANNOTATED ROUTE OF SOUTHERN CALIFORNIA-SOUTHEAST (ZIEJX)



Sources and Notes**:**

254 *See* Workpaper "Terminal Clocks.xlsx," tab 'Toledo Airline, OH,' in folder "Terminal Clocks." *See also,* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16000115 in the Growth Plan (resultScenarioKey 200).

255 *See* Gehringer and Orr VS, ¶ 249.

Gehringer and Orr VS, Figure 34. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 19 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

310. The eastbound ZIEJX reports no dwell for a crew change at Santa Teresa and no dwell while setting out [redacted] feet at Shreveport. After Atlanta, the train also lacks substantial density, operating at an average length of [redacted] feet between Atlanta and Jacksonville, as shown by Figure 58 below. This length puts it at risk for ad-hoc cancellation when volumes are lower due to normal operating variability, threatening service quality for the customer. However, as detailed in Section VI, Applicants may be forced to run this train regardless of size due to capacity issues in Atlanta. Doing so would force Applicants to run an inefficient train, whose resources could be better spent elsewhere.

FIGURE 58: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZIEJX



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZIEJX.png" in folder "Cumulative Lengths and Work Event Detail."

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311. As illustrated in Figure 58, of the [redacted] feet that arrive in Jacksonville, only [redacted] feet originate in Los Angeles, and the remainder are picked up in Atlanta. Further, roughly [redacted] feet are set out at Shreveport to take the ZSHAT to Atlanta, to swap again to the 281 to Bowden Yard, FL (roughly [redacted] miles from Jacksonville).[256] Applicants do not explain why they would set out this Bowden Yard traffic at Shreveport, thereby adding additional handlings.

312. The westbound ZCTLB contains more pronounced problems. The train reports zero dwell while picking up [redacted] feet at Shreveport, setting out [redacted] feet at IEIT, and setting out [redacted] feet at Los Angeles. Crew changes at [redacted] also receive no dwell.[257]

[256] *See* Script "Look up Block Movement on Train.sql," in folder "MR Review," filtering to blockKey 1001112 and resultScenarioKey 200.

[257] *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16011563 in the Growth Plan (resultScenarioKey 200).

FIGURE 59: ANNOTATED ROUTE OF SOUTHEAST-SOUTHERN CALIFORNIA (ZCTLB)



Sources and Notes:
Gehringer and Orr VS, Figure 35. This train also runs an average under 6,000 feet throughout the journey. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 20 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

313. As detailed in Figure 60, a work event to set out [redacted] feet reflects an inefficient design that would be unlikely to occur via a through freight. More likely, this penultimate work event would be performed by a separate terminal move, while the ZCTLB continued on to Long Beach. Moreover, the last crew change on this service is scheduled in [redacted] and implies that one crew will travel [redacted] miles to the Los Angeles area and perform [redacted] setouts over

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the [redacted] miles between IEIT and Long Beach.[258] Using Applicants' own assumptions on speed, this movement would take at least [redacted] hours absent work events,[259] which would likely exceed crew maximums in operation. Consequently, Applicants have not provided a realistic, finalized design for their new Southeast-Southern California service.

FIGURE 60: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZCTLB



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute ,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZCTLB.png" in folder "Cumulative Lengths and Work Event Detail."

314. In summary, Applicants' new service between Southern California and the Southeast relies on incomplete and inefficient designs that would not be run in reality.

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258 *See* Scripts "Look up Train Route (speeds).sql" and "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16011563 in the Growth Plan (resultScenarioKey 200).

259 *See* Scripts "Look up Train Route (speeds).sql" and "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16011563 in the Growth Plan (resultScenarioKey 200). Note the time difference between the stop at Yuma, AZ and ICTF, CA.

Accordingly, Applicants have not provided a feasible plan to achieve their stated benefits with this service.

f. Texas/Mexico-Northeast Intermodal (ZMXCX/ZCXMX)

315. Applicants project additional traffic between Texas, Mexico and the East Coast of the United States; to accommodate these anticipated diversions, they introduce a new intermodal train pair.[260] Details of this service are presented in Figure 61 below, along with annotations that detail specific operational issues that make them unlikely to operate as designed.

FIGURE 61: ANNOTATED ROUTE OF TEXAS/MEXICO-NORTHEAST (ZMXCX)



Sources and Notes:

[260] *See* Gehringer and Orr VS, ¶ 250.

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Gehringer and Orr VS, Figure 36. Note that Messrs. Gehringer and Orr initially create one map for the train pair (ZMXCX / ZCXMX), necessitating arrows in both directions. However, this figure concerns only the eastbound ZMXCX. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 21 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

316. The eastbound ZMXCX performs substantial intermediate work with little or no scheduled dwell. At SAIT (San Antonio, TX), the train sets out [redacted] feet and picks up [redacted] feet with zero dwell. At Houston, it picks up [redacted] feet with zero dwell. It also sets out [redacted] feet at McCalla, AL with zero dwell; at Atlanta, Applicants provide only [redacted] minutes for a set-out of [redacted] feet and a pickup of [redacted] feet; at Greencastle, it sets out [redacted] feet and picks up [redacted] feet with zero dwell; and at Harrisburg it sets out [redacted] feet with zero dwell. Crew changes at [redacted] also receive no dwell.[261] These numerous omissions underscore the fact that Applicants have not provided useable train schedules with their MultiRail model.

317. These omissions occur precisely where the train is changing materially in size and composition. The same train also operates between [redacted] and [redacted] feet from Atlanta to Croxton, reflecting limited density over portions of the eastern segment. As discussed in Sections II.B and IV.B.2, trains of insufficient density are prone to ad-hoc cancellations, forcing the traffic onto another outlet or requiring it to wait until the next day for sufficient density. Hence, this lack of density makes it significantly unlikely that the train will run as modeled in the Operating Plan.

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[261] *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16013966 in the Growth Plan (resultScenarioKey 200).

FIGURE 62: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZMXCX



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZMXCX.png" in folder "Cumulative Lengths and Work Event Detail."

318. The westbound ZCXMX likewise reports zero dwell for substantial work. It picks up [redacted] feet at Greencastle, sets out [redacted] feet at Charlotte, sets out [redacted] feet and picks up [redacted] feet at Atlanta, and performs additional pickups at Rutherford, McCalla, and SAIT, all with no dwell. Crew changes at [redacted] also receive no dwell.[262] Due to the lack of achievable schedules, this service will not run as-designed.

[262] *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16013964 in the Growth Plan (resultScenarioKey 200).

FIGURE 63: ANNOTATED ROUTE OF TEXAS/MEXICO-NORTHEAST (ZCXMX)



Sources and Notes:

Gehringer and Orr VS, Figure 36. Note that Messrs. Gehringer and Orr initially create one map for the train pair (ZMXCX / ZCXMX), necessitating arrows in both directions. However, this figure concerns only the westbound ZCXMX. The train also travels at an average of 5,548 feet from SAIT to Laredo. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," and "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 22 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

319. Most remarkably, Applicants' anchor block on the ZCXMX from Croxton to Port Laredo is comprised of [redacted] feet of empty intermodal equipment.[263] Absent this empty equipment, the density would not be available to run this train regularly, as it would report being

263 *See* Script "Look up all Blocks on Train.sql" filtering to trainKey 16013964 in the Growth Plan (resultScenarioKey 200). *See also*, Script "Look up Traffic in Block.sql" filtering to blockKey 1001326 in the Growth Plan (resultScenarioKey 200), column "lengthPerDay" for trafficCompressedKey 9500049.

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under [redacted] feet throughout most of its [redacted]-mile journey.[264] A network of this size and density should not require [redacted] feet of empty intermodal equipment to travel over [redacted] miles. A shorter-haul solution for empty equipment distribution should be available. Therefore, the design on the ZCXMX appears forced and unlikely to run regularly.

FIGURE 64: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZCXMX

[redacted]

Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZCXMX.png" in folder "Cumulative Lengths and Work Event Detail."

320. Accordingly, both directions of the service depend on schedules that treat substantial block movements and crew changes as instantaneous while assigning comparatively limited traffic to portions of a long-distance train mission.

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[264] As shown by Figure 64, removing [redacted] feet from the entire journey of the ZCXMX would reduce its cumulative length to under [redacted] feet or less for most of its journey.

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g. Houston-Atlanta Intermodal (ZHOAT/ZATHO)

321. Finally, Applicants add a new intermodal train pair between Houston and Atlanta via New Orleans. This train is intended to handle excess volume that would otherwise travel on the new ZMXCX/ZCXMX service between Texas and Atlanta.[265] Below, we provide details of this service and highlight the numerous issues that will preclude it from operating as-designed.[266]

FIGURE 65: ANNOTATED ROUTE OF HOUSTON-ATLANTA (ZHOAT)



Sources and Notes:

Gehringer and Orr VS, Figure 37. Note that Messrs. Gehringer and Orr initially create one map for the train pair (ZHOAT / ZATHO), necessitating arrows in both directions. However, this figure concerns only the eastbound ZHOAT. *See* Scripts "Look up Train.sql," "Look up all Blocks on

265 *See* Gehringer and Orr VS, ¶ 253.

266 While not discussed in this section, for a detailed analysis of this train's negative effects on Atlanta's Inman Yard, *see* Section VI.O.

Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 23 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

FIGURE 66: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZHOAT



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZHOAT.png" in folder "Cumulative Lengths and Work Event Detail."

322. The ZHOAT reports zero dwell for crew changes at [redacted]. It also allocates no dwell while picking up [redacted] feet at McCalla, AL and setting out [redacted] feet at Birmingham.[267] The train then operates at an average of [redacted] feet between Birmingham and Atlanta, as shown by Figure 65. Once again, the modeled schedule assumes that a substantial set-out can occur instantaneously.

[267] *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16019136 in the Growth Plan (resultScenarioKey 200).

FIGURE 67: ANNOTATED ROUTE OF HOUSTON-ATLANTA (ZATHO)



Sources and Notes:

Gehringer and Orr VS, Figure 37. Note that Messrs. Gehringer and Orr initially create one map for the train pair (ZHOAT / ZATHO), necessitating arrows in both directions. However, this figure concerns only the westbound ZATHO. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 24 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

FIGURE 68: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF ZATHO



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_ZATHO.png" in folder "Cumulative Lengths and Work Event Detail."

323. The ZATHO schedule similarly provides no dwell for crew changes at [redacted].[268] Applicants have not included time for the routine crew changes necessary to operate the train over its proposed route. As Applicants readily admit, [redacted]; the issues described above demonstrate the importance of this omission. The new service could not run absent significant revisions to their Operating Plan. Hence, the Growth Plan, and the design of these new services in particular, does not provide a realistic picture of what train service will look like following the transaction.

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[268] *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16019137 in the Growth Plan (resultScenarioKey 200).

h. Conclusion

324. Taken together, the seven Growth Plan intermodal train pairs do not reflect the repeatable, executable operation Applicants describe. Even after Applicants add the full traffic volumes on which the Growth Plan is based, several of these trains operate at insufficient density over material portions of their routes. This is in direct contrast to Applicants' claims that they will improve operating efficiency on the combined railroad by running longer trains and better allocating resources.[269]

325. In the other extreme, many of their new services are modeled at an average of [redacted] to [redacted] feet over substantial portions of their route. While technically feasible, without schedules to assess when these trains arrive and depart from each yard, Applicants have not provided any means to assess the line and yard capacity needed to accommodate these trains. For example, the ZLCDT/ZDTLC train pair are both long trains scheduled to exchange over [redacted] feet of traffic each at Voltz at roughly the same time. If implemented as-designed, this train pair would completely tie up the yard and disrupt operations throughout the Kansas City gateway for an extended period of time.

326. And throughout the new services, Applicants provide unrealistic and unattainable schedules. Most notably, this includes allocating zero or plainly insufficient dwell to work events involving thousands of feet of cars, as well as to required crew changes. [redacted] Hence, they have not provided a complete and final design for any of their new services.

327. Further, density factors to some extent in each of the transcontinental services. These new trains pick up and set out volume throughout their routes to maintain viability.

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[269] *See* Gehringer and Orr VS, ¶¶ 420–425.

Excessive work events degrade transits on long-haul traffic, and also force supporting connections onto and off these trains. Because Applicants [redacted] the total amount of time added for this connecting traffic is unknown, but could be substantial and may erode Applicants' claimed single-line benefits.[270] Notably, Applicants do not quantify service improvements on these new trains as they pertain to existing traffic, including watershed traffic, because connection times are impossible to evaluate based on the information provided in their model.[271] Hence, Applicants have not demonstrated that their new services achieve the benefits that drive their estimated diversions.[272]

328. Applicants would need to dramatically modify their designs to begin to review if their new train services are feasible. If Applicants add the time necessary to complete their scheduled work assignments, transits on these new trains would necessarily increase. Further, if Applicants reduce the frequency of trains with insufficient density to build up the necessary volume, the result would be necessarily longer transits. Similarly, if they split volumes on exceptionally long trains across multiple services, they would necessarily introduce new work events and add dwell, again negatively impacting train performance. If Applicants cannot provide the service improvements that they assert, it is unlikely they will realize their diversions, as we discuss in further detail in Section V.C below.

329. To conclude, Applicants have not demonstrated that the merger is necessary to achieve their transcontinental services. Notably, Applicants have also previously provided interline services for three of the new train pairs traversing Kansas City and are now claiming the

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270 *See* Section V.C.

271 *See, generally,* Turner VS Workpaper, "Transcon Lane Level Transit Time & Comps.xlsx" as well as discussion regarding lack of scheduling detail in Section V.B.1.a.

272 *See* Section V.C for a complete discussion of differences between train service assumed by Mr. Hunt and that included in the Operating Plan.

return of intermodal service to Kansas City as a merger benefit.[273] Nor have they identified any specific operational constraint that the merger would alleviate, that prevents them from implementing any of these as new interline services today.

2. New Manifest Services

330. The same defects affecting new intermodal services also impact Applicants' new manifest trains. In total, Applicants add nine new manifest trains, including four train pairs, that operate between the existing UP and NS networks.[274] As with the intermodal services, our review focuses on whether the train detail provides adequate time for assigned work and crew changes and whether the trains have sufficient traffic density to support their proposed missions. In summary we conclude that, like the new intermodal services, the new manifest trains have a number of operational problems that make them unlikely to run as-designed.

331. We will also re-emphasize that Applicants do not provide estimated transit times for any of their new manifest trains in either the Optimized or Growth Plan. This omission highlights Applicants' failure to provide calibrated schedules for any of their trains, reflecting an incomplete and infeasible design that could not possibly be put into operation.[275] Moreover, Applicants have not provided a concrete path to realize the service benefits that drive their diversion estimates, nor have they given the Board any means to evaluate whether their benefits are even feasible.[276]

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273 *See* Section VII.D.3.

274 *See* Gehringer and Orr VS, ¶ 255.

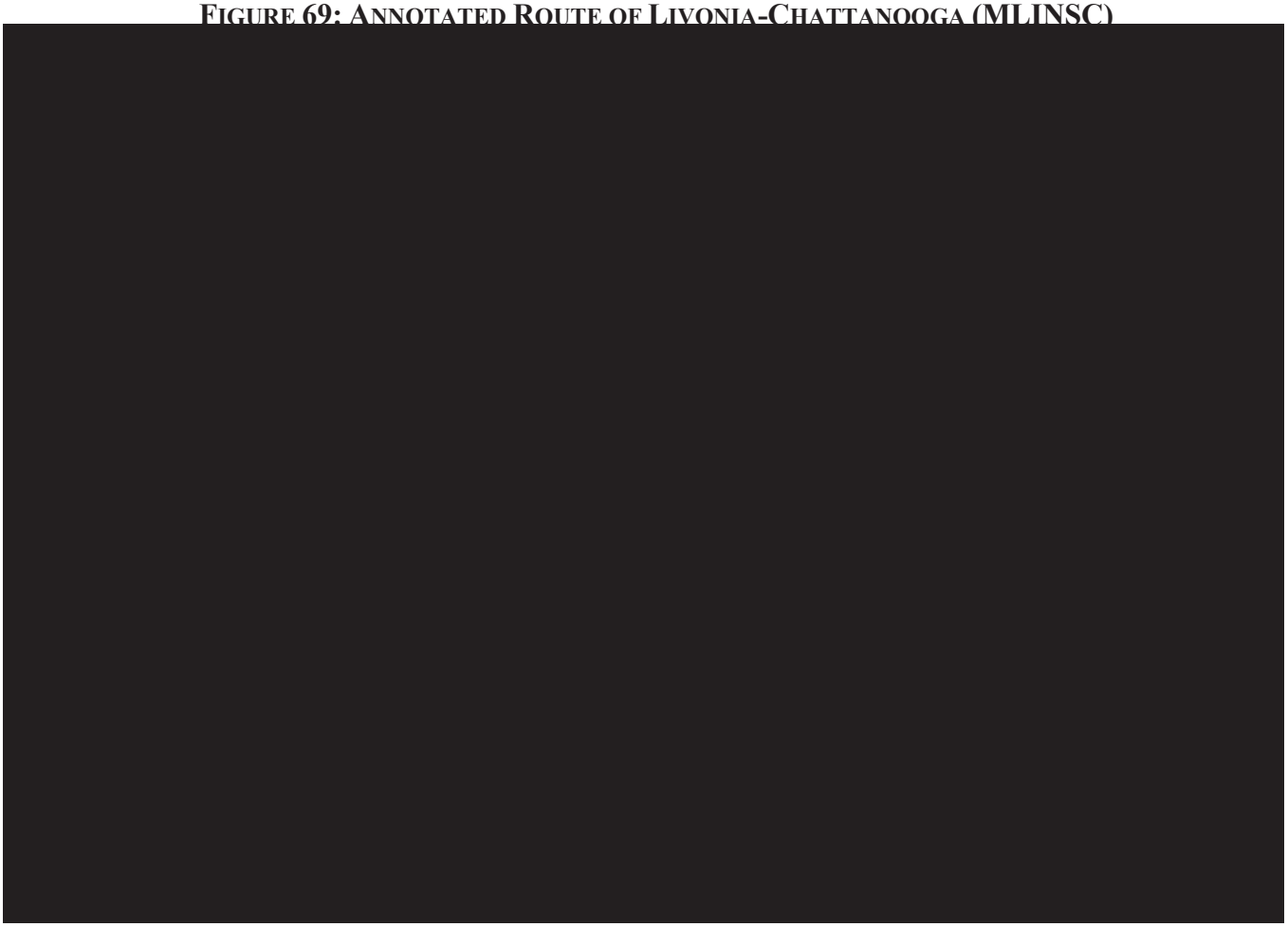
275 *See* Section III.A.

276 *See* Section V.C.

a. Livonia-Chattanooga Manifest (MLINSC)

332. Applicants introduce a new manifest train from Livonia to Chattanooga. Details of the new route are given in Figure 69 below, as well as annotations that explain the particular operational issues that make this design unlikely to be put into operation.

FIGURE 69: ANNOTATED ROUTE OF LIVONIA-CHATTANOOGA (MLINSC)



Sources and Notes:
Gehringer and Orr VS, Figure 38. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 25 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

333. The MLINSC schedule allocates no dwell to crew changes at [redacted]. More importantly, [redacted]

[redacted]. At Avondale, the train picks up [redacted] feet; at New Orleans, it sets out [redacted] feet and picks up [redacted] feet; and at Meridian, it sets out [redacted] feet and picks up [redacted] feet. The New Orleans event is plainly substantial, yet Applicants assume that the train can exchange thousands of feet of cars and change crews without any dwell.

FIGURE 70: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF MLINSC

[redacted]

Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_MLINSC.png" in folder "Cumulative Lengths and Work Event Detail."

334. The work event at New Orleans is impacted by Applicants' choice to mutualize nearby facilities, consolidate blocks, and assign interline traffic to only a few outlets.[277]

[redacted]

[277] For a more detailed discussion of the issues created by Applicants' modelling simplifications, including those affecting New Orleans, *see* Sections III.D and VI.H.

[redacted][278] [redacted]

[redacted][279]

regardless of any planned interchange or lack thereof. These assignments—traffic to block and block to train—inaccurately represent current operations and are nonsensical as a proposed operation. Hence, the plan for the MLINSC, as well as all manifest operations in New Orleans, is impossible as submitted. By extension, Applicants have not presented sufficient information to evaluate work events, capacity, or capital needs in the New Orleans area.

335. The train also has issues with density, as detailed in Figure 69. The train operates between [redacted] and [redacted] feet from New Orleans to Chattanooga. Based on historical Car Event Data from 2023, the average train length departing from New Orleans to Chattanooga was approximately [redacted] feet.[280] Note also that the train is scheduled to pick up [redacted] feet at Meridian, an impractically low-volume work event that is the result of this block being split across multiple services. Applicants do not explain how this train is commercially sustainable when it falls well below historical norms, or when work events are haphazardly assigned to this train.

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278 *See* Script "Look up all Blocks on Train.sql," in folder "MR Review," filtered to trainKey 16019094 in the Growth Plan (resultScenarioKey 200). *See also*, Script "Look up Traffic in Block.sql," in folder "MR Review," filtered to blockKey 2329 in the Growth Plan (resultScenarioKey 200).

279 *See* Script "Look up Block Movement on Train.sql," in folder "MR Review," filtered to blockKey 2329 in the Growth Plan (resultScenarioKey 200).

280 *See* Script "historical_lengths_for_in_text.sql" and Workpaper "historical_car_lengths_in_text.xlsx," tab 'New Orleans -> Chattanooga,' in folder "Historical Lengths."

b. Elkhart-North Platte/Boone Manifest (MEKBO/MNPEK)

336. To accommodate new manifest traffic between Elkhart and North Platte, Applicants introduce the MEKBO and MNPEK. In Figure 71, we provide a map that details this service and highlights specific operational issues.

FIGURE 71: ANNOTATED ROUTE OF ELKHART-BOONE (MEKBO)



Sources and Notes:
Gehringer and Orr VS, Figure 39. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx," slide 26 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

FIGURE 72: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF MEKBO



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_MEKBO.png" in folder "Cumulative Lengths and Work Event Detail."

337. The MEKBO reports crew changes at [redacted] with no dwell. It also reports zero dwell while setting out [redacted] feet at Clinton, [redacted] feet at Beverly, IA, and [redacted] feet at Marshalltown, IA.[281] Between Clinton and Boone, the train operates between [redacted] and [redacted] feet, relative to a historical average of [redacted] feet along this same leg.[282] Thus, the train performs work at three intermediate locations without any scheduled time

[281] *See* Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16019131 in the Growth Plan (resultScenarioKey 200).

[282] *See* Script "historical_lengths_for_in_text.sql" and Workpaper "historical_car_lengths_in_text.xlsx," tab 'Clinton -> Boone,' in folder "Historical Lengths."

to do so while also operating at limited density over the western portion of its mission. Applicants do not address how this train will continue to operate so far below historical norms.

338. Further, to support this new service, Elkhart must build [redacted] new blocks in the Growth Plan in conjunction with [redacted] additional blocks supporting other services.[283] As discussed in Section VI, it is questionable whether Elkhart can accommodate this new blocking in conjunction with new volumes and elevated block swapping activity planned in the Growth Plan. That is, the Growth Plan stretches Elkhart's capacity in order to build [redacted] new blocks for a train service that does not have sufficient density past Clinton. Even accepting that Elkhart will build these new blocks, per Figure 72, it is likely that Applicants will routinely cancel this train at some point after Clinton. Doing so would effectively remove any potential transit savings and fail to eliminate any handlings for traffic west of Clinton.

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283 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks' filtered to blocks built at Elkhart and are newly added in the Optimized and Growth Plans. Note that we omit from this count blocks designed with no volume.

FIGURE 73: ANNOTATED ROUTE OF NORTH PLATTE-ELKHART (MNPEK)



Sources and Notes:

Gehringer and Orr VS, Figure 40. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 27 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

FIGURE 74: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF MNPEK



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_MNPEK.png" in folder "Cumulative Lengths and Work Event Detail."

339. The eastbound MNPEK presents additional issues. It reports crew changes with zero dwell at [redacted], and at Clinton, IA it picks up [redacted] feet with zero dwell. From North Platte East to Clinton, the train operates at an average length of [redacted] feet, relative to a historical average of [redacted] feet over this same track segment.[284] When normal operating conditions cause this volume to be even lighter, it is likely that Applicants will cancel this service. Hence, Applicants have not fully evaluated the efficiency of their North Platte to Elkhart design.

[284] *See* Script "historical_lengths_for_in_text.sql" and Workpaper "historical_car_lengths_in_text.xlsx," tab 'North Platte East -> Clinton,' in folder "Historical Lengths."

340. Further, Applicants could implement the MNPEK today. [redacted].[285] This block shows swapping through Proviso on the MPRAH, which is a run-through service to Elkhart. In other words, Applicants are claiming benefits from the merger based on run-through blocking that already exists. There is nothing preventing them from implementing this service today.

c. Chattanooga-North Little Rock Manifest (MNLCTB/MCTNLB)

341. In Figure 75, we provide details on Applicants' new manifest service from Chattanooga to North Little Rock. Again, we demonstrate that this new service reflects an infeasible and incomplete design that would require substantial revision.

[285] *See* Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," pp. 51–52. Exhibit 3.12 shows ELKH_UP as originating in North Platte East, NE and destined for Elkhart, IN. *See also,* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 't1_blocks,' row 6,693.

FIGURE 75: ANNOTATED ROUTE OF CHATTANOOGA-NORTH LITTLE ROCK (MNLCTB)



Sources and Notes:
Gehringer and Orr VS, Figure 41. Note that Messrs. Gehringer and Orr initially create one map for the train pair (MNLCTB / MCTNLB), necessitating arrows in both directions. However, this figure concerns only the eastbound MNLCTB. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 28 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

342. The MNLCTB reports crew changes at [redacted] and [redacted] with zero dwell. At Sheffield, the train sets out [redacted] feet and picks up [redacted] feet, again with no

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dwell.[286] Applicants therefore assume that a work event involving more than [redacted] feet can occur instantaneously at the same location where the train also changes crews.

FIGURE 76: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF MNLCTB



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_MNLCTB.png" in folder "Cumulative Lengths and Work Event Detail."

343. The MCTNLB exhibits the same problem in the reverse direction. Crew changes at [redacted] and [redacted] receive no dwell. At Sheffield, the train picks up [redacted] feet and sets out [redacted] feet with zero dwell; it then picks up [redacted] feet at Memphis and [redacted] feet at

[286] *See* Script "Look up all Blocks on Train.sql", in folder "MR Review," filtered to trainKey 16019091 in the Growth Plan (resultScenarioKey 200). *See also*, Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16019091 in the Growth Plan (resultScenarioKey 200).

Marion, again with no dwell.[287] From Chattanooga to Marion, the train operates at average lengths ranging from [redacted] to [redacted] feet, relative to an average train length of [redacted] feet based on 2023 Car Event Data.[288]

FIGURE 77: ANNOTATED ROUTE OF CHATTANOOGA-NORTH LITTLE ROCK (MCTNLB)



Sources and Notes:

Gehringer and Orr VS, Figure 41. Note that Messrs. Gehringer and Orr initially create one map for the train pair (MNLCTB / MCTNLB), necessitating arrows in both directions. However, this figure concerns only the westbound MCTNLB. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of

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287 *See* Script "Look up all Blocks on Train.sql", in folder "MR Review," filtered to trainKey 16019090 in the Growth Plan (resultScenarioKey 200). *See also*, Script "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKey 16019090 in the Growth Plan (resultScenarioKey 200).

288 *See* Script "historical_lengths_for_in_text.sql" and Workpaper "historical_car_lengths_in_text.xlsx," tab 'Chattanooga -> Marion,' in folder "Historical Lengths."

Optimized and Growth Trains.pptx" slide 29 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

FIGURE 78: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF MCTNLB



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_MCTNLB.png" in folder "Cumulative Lengths and Work Event Detail."

344. Omitted from Applicants' discussion of this new train is the fact that the MCTNL—which Applicants introduce in the Optimized Plan and maintain in the Growth Plan—now reports departing Chattanooga with only [redacted] feet of Sheffield proper traffic. This is a consequence of the MCTNLB carrying all traffic from Chattanooga destined for North Little Rock, as well as the same [redacted] feet of Sheffield proper traffic. With this division of traffic, the MCTNL will be subject to ad-hoc cancellations out of Chattanooga. When this cancellation occurs, it is not clear from Applicants' Operating Plan if they will start an additional train at

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Sheffield or put the remaining volume onto the MCTNLB, thereby creating risk that the small-volume lifts at Memphis and Marion will not occur consistently.[289]

345. As with the MNLCT/MCTNL pair in the Optimized Plan, Applicants' Growth Plan continues to rely on substantial Sheffield work without allocating the time necessary to perform it. These trains are likely to be frequently cancelled due to inefficient density, and their designs would require substantial revisions before being put into operation. Further, doing so creates doubt about the daily operation around Memphis. As discussed in Section VI, it is not clear from the Growth Plan what trains will consistently run through the Memphis gateway.

d. Conway-North Little Rock Manifest (MCWNL)

346. Applicants introduce a new manifest train between Conway, PA and North Little Rock, AR, details of which are presented in Figure 79 below, along with specific operational issues that will prevent the design from being put into operation.

[289] As discussed previously, trains of substantial volume are not well-suited to pick up or set out small volumes. These are better served by local trains.

FIGURE 79: ANNOTATED ROUTE OF CONWAY-NORTH LITTLE ROCK (MCWNL)



Sources and Notes:
Gehringer and Orr VS, Figure 42. Note that Messrs. Gehringer and Orr initially create one map for the train pair (MNLCW / MCWNL), necessitating arrows in both directions. However, this figure concerns only the westbound MCWNL. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 30 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

347. The MCWNL reports crew changes with no dwell at [redacted] At Bellevue, it picks up [redacted] feet with zero dwell. More fundamentally, the train lacks density throughout its entire journey, operating between [redacted] and [redacted] feet. Based on Applicants' own Car Event Data, [redacted] percent of trains operating along this stretch

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ran at less than [redacted] feet, and only [redacted] percent ran at less than [redacted] feet.[290] Accordingly, this does not reflect a commercially viable service that Applicants would consistently run daily.

FIGURE 80: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF MCWNL



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_MCWNL.png" in folder "Cumulative Lengths and Work Event Detail."

348. Unlike a train that becomes short only on a final terminal segment, the MCWNL operates with insufficient volume over its entire mission. To make matters worse, normal operating variation will regularly put this train at even shorter lengths; in these cases, the service will likely be cancelled.

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290 *See* Script "historical_lengths_for_in_text_w_threshold.sql" and Workpaper "historical_car_lengths_in_text.xlsx," tab 'Conway -> Bellevue threshold' in folder "Historical Lengths."

349. A consequence of this new train service is that it removes volumes from Chattanooga. In so doing, the MCTNL and MCTNLB lose traffic that otherwise might flow to those trains, threatening their viability as daily services (see previous discussion in paragraph 344). All together, with potential cancellations at Conway, Bellevue, and Chattanooga towards North Little Rock, Applicants present a design that is neither feasible nor practical. Accordingly, Applicants do not present a concrete plan to achieve their claimed service benefits.

e. Chattanooga-Englewood Manifest (MCTEW)

350. Applicants also introduce new manifest service between Chattanooga and Englewood via New Orleans to accommodate additional demand for traffic between the Northeast, Ohio River Valley, and the Gulf Coast.

FIGURE 81: ANNOTATED ROUTE OF CHATTANOOGA-ENGLEWOOD (MCTEW)



Sources and Notes:

Gehringer and Orr VS, Figure 43. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 31 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

FIGURE 82: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF MCTEW



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_MCTEW.png" in folder "Cumulative Lengths and Work Event Detail."

351. The MCTEW reports crew changes with zero dwell at [redacted]. It also picks up [redacted] feet at Birmingham with no dwell. Applicants thus model a substantial pickup at the train's first identified work location as instantaneous and likewise omit time for each identified crew change along the route. Applicants acknowledge that [redacted][291] The above analysis confirms that, as a consequence of this omission, the designs for their new services are incomplete and would require substantial revision before being put into operation.

[291] *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al. – BNSF Workpaper Questions," August 21, 2026, pp. 2–3.

352. Further, the work event at Birmingham is necessary to provide an additional outlet for traffic out of Birmingham proper, due to the fact that the primary outlet—the MBHEW—is fully subscribed. Texas traffic at Birmingham is therefore dependent on a through train having daily capacity to make the lift. In the presence of normal operating variation, this will not consistently be the case. To make matters worse, Birmingham has a persistent history of struggling with excess dwell and limited capacity, as discussed in Section VI. All of this points to a design that does not properly account for normal operating conditions.

f. Livonia-Macon Manifest (MLIMC)

353. To accommodate new traffic between the Gulf Coast and the Southeast, Applicants introduce new manifest service from Livonia to Macon. Details of this new service are presented in Figure 83 below, along with a number of scheduling issues that make this train unlikely to run as-designed.

FIGURE 83: ANNOTATED ROUTE OF LIVONIA-MACON (MLIMC)



Sources and Notes:

Gehringer and Orr VS, Figure 44. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 32 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

FIGURE 84: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF MLIMC



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_MLIMC.png" in folder "Cumulative Lengths and Work Event Detail."

354. The MLIMC reports crew changes with no dwell at [redacted]. At Atlanta, it sets out [redacted] feet with zero dwell, and at East Point it sets out another [redacted] feet with zero dwell. Again, Applicants' schedule treats physical work involving [redacted] of feet of cars as requiring no time. These issues further underscore that Applicants have not provided complete, final designs for their new service. By failing to generate realistic schedules, Applicants would need to substantially revise their Operating Plan, including revisions to their blocking plan and train plan, meaning the service and work events they propose will not materialize in reality.

355. The work event at "New Orleans" is also questionable. Assuming Applicants mean Oliver Yard, this would require the train to depart Livonia to the Back Belt, tie the train

down, run light engines, and back into Oliver Yard to pick up [redacted] feet. Not only is this a complex movement, it would also tie up the Back Belt and the diamond with CSX near Gentilly, complicating operations throughout the New Orleans gateway. See the discussion on mutualization in Section III.D for further detail.

356. More importantly, Figure 84 makes clear that this train needs to undertake multiple intermediate work events to have sufficient density to support its mission. [redacted] there is no basis to assess their claimed service benefits, and whether this train can realistically attract new traffic.[292]

g. Birmingham-Englewood Manifest (MBHEW)

357. Applicants introduce a new manifest train from Birmingham, AL to Englewood, TX, details of which are provided in Figure 85 below.

[292] *See* Section V.C.

FIGURE 85: ANNOTATED ROUTE OF BIRMINGHAM-ENGLEWOOD (MBHEW)



Sources and Notes:

Gehringer and Orr VS, Figure 45. *See* Scripts "Look up Train.sql," "Look up all Blocks on Train.sql," "Look up Route Stops of Interest.sql," and Workpaper "Annotated Routes of Optimized and Growth Trains.pptx" slide 33 in folder "Annotated Routes for Optimized and Growth Plan New Trains."

FIGURE 86: CUMULATIVE LENGTH AND WORK EVENT DETAIL OF MBHEW



Sources and Notes:
MultiRail tables 'mr_opal.trainBlockVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "02_charts_new_trains_growth_lengths.R" and Workpaper "new_train_lengths_growth_MBHEW.png" in folder "Cumulative Lengths and Work Event Detail."

358. The MBHEW reports crew changes with no dwell at [redacted]. Although our review does not identify a separate train-length or intermediate-work issue for this service, the schedule still omits time for each of these required crew changes. Further, as elaborated in Section IV.B, these new services assume a constant train speed of roughly [redacted] miles per hour on the NS network and [redacted] miles per hour on the UP network, which, as discussed, are not consistently attainable. The resulting modeled transit therefore cannot represent the time needed to execute the train as written. Accordingly, Applicants will need to substantially revise the design for this new service before putting it into effect.

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h. Conclusion

359. Taken together, the new manifest services confirm that the defects identified in the Optimized Plan persist after Applicants add their projected traffic growth. The Growth Plan repeatedly assumes that trains can perform substantial pickups and set-outs, or change crews, without incurring any dwell. It also introduces manifest services that operate with insufficient density over substantial portions—and in the case of MCWNL, essentially all—of their proposed routes. This runs in stark contrast to Applicants' claims of improving efficiency by running longer trains.[293] These assumptions make the proposed services appear faster and more efficient in MultiRail than they can be in actual operation.

360. More broadly, the recurring nature of these problems matters. [redacted]. Across both the intermodal and manifest services, the train detail repeatedly omits time for physical work and crew changes, while alternately creating trains with insufficient traffic density or trains that exceed [redacted], [redacted], or even [redacted] feet. Correcting those problems would require Applicants to change the schedules, train frequencies, train lengths, block assignments, or some combination thereof. Any such changes would necessarily alter the service and work events represented in the Growth Plan.

361. Applicants therefore have not demonstrated that the new Growth Plan services will operate as modeled or deliver the degree of service improvement on which they rely. The additional projected traffic does not transform an unrealistic train plan into an executable one. Instead, Applicants add traffic and new train services to the same operating design problems already present in the Optimized Plan.

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[293] *See* Gehringer and Orr VS, ¶¶ 420–425.

C. Mr. Hunt Models Much Greater Service Improvements than Reflected in the Growth Plan

362. Thus far, our discussion of the Growth Plan has taken as given Applicants' estimated diversions. Mr. Hunt estimates that, systemwide, the combined UPNS will attract 252,000 manifest carloads and 1.28 million intermodal containers per year via a combination of improved train service and lower prices.[294] We understand from Dr. Powers that there are a number of issues with Mr. Hunt's methodology that render these estimates unreliable and unlikely to materialize.[295] These issues aside, we separately conclude that Applicants will be unlikely to attract this volume of diversions, based solely on the fact that Applicants have not provided a concrete plan to realize Mr. Hunt's assumed service improvements.

363. As we detail above in Sections V.A and V.B, there are several serious problems in the Growth Plan that render it infeasible. These include lack of executable schedules, work events planned with zero or insufficient dwell, modelling simplifications that obscure where work events are scheduled and distort traffic density, overly optimistic train speeds that cannot be achieved consistently, and train lengths that are either too short or too long to be put into practice. Moreover, as detailed in Section V.C, many of the improvements that Messrs. Gehringer and Orr claim stem from their new train services are unsupported by their workpapers and are directly contradicted by both provided Car Event Data and the Operating Plan.

364. Beyond Applicants' inability to achieve their claimed service improvements, there is a more fundamental issue that renders their diversions unlikely to materialize. We understand from Dr. Powers that Applicants' diversion study includes a bespoke model of train service

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294 *See* Hunt VS, Exhibit 2-4.

295 *See* Verified Statement of Nicholas E. Powers, November 18, 2026 ("Powers VS"), Section V.D.

before and after the transaction.[296] Importantly, it does *not* rely on the train service incorporated in the Base, Optimized, and Growth Plans. In fact, by Mr. Hunt's own admission, [redacted].[297] Even more critically, we understand that Mr. Hunt's model of train service assumes that every shipment will follow the shortest-path route through the UP and NS networks respectively, which either omits or significantly distorts dwell incurred at intermediate locations.[298]

365. Fundamentally, this is not how railroads operate. As discussed at length in Sections II.B and II.C, a railroad builds traffic into blocks of sufficient density. A block may be swapped between trains before reaching its destination. Once at its destination, the block is broken down, and its component cars may be re-processed into new blocks. Accordingly, most railroad shipments move between multiple trains, requiring intermediate handlings before reaching their final destination.[299] This organization ensures that railroads maintain sufficient traffic density to keep their operations efficient.

366. As shown empirically in Section VIII.B.3, Applicants largely recognize this reality when designing their own plan. For example, auto traffic between Northern California and eastern Texas is routed from the auto facility in [redacted] to UP's hump yard in [redacted] where it is built into a block with other manifest and auto traffic coming from [redacted] and [redacted] among other locations, before heading to

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296 *See* Powers VS, Section V.A and Section V.B.

297 *See* Deposition of David T. Hunt, Vol. II, October 8, 2026, 691:20–22.

298 *See* Powers VS, Section V.C.

299 The exceptions to this rule would be traffic that is particularly service sensitive like personal mail or packages, or traffic that is in sufficient volume to merit standalone service, like bulk grain or coal shipments.

[redacted] where it is subsequently reclassified before reaching Mesquite, TX.[300]

[redacted][301]

367. Low-volume traffic opportunities requiring dedicated blocking or train service are generally unsuitable for railroads. As discussed in Section II.C, when designing an Operating Plan, the service design team must work closely with commercial and marketing personnel to ensure that the plan strikes the correct balance between customer demands (*i.e.*, fast, dedicated train service) and operational efficiency (*i.e.*, building long trains to achieve greater density). In some cases, achieving this balance may require rationalizing inefficient services or not pursuing low-volume traffic opportunities. In fact, Applicants have themselves demonstrated a willingness to discontinue train service that lacks sufficient density.[302]

368. Mr. Hunt's diversion study is therefore predicated on rail service that is disconnected from the Operating Plan and unlikely to materialize. Because Mr. Hunt's model of intermodal service ignores intermediate work events, he omits a substantial portion of transit time that directly impacts rail's competitiveness with trucking. For example, Mr. Hunt estimates that the merger will cause a total of [redacted] intermodal containers travelling from [redacted]

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300 *See* Gehringer and Orr VS Workpaper, "[mr_opal].[blockSequence]" filtered to trafficCompressedKey 2029473 in the Base Plan (resultScenarioKey 171). *See also*, Script "Look up Traffic in Block.sql," in folder "MR Review," filtered to blockKey 3241 in the Base Plan (resultScenarioKey 171), column "originCity."

301 *See* Union Pacific, "February 2024 Board of Directors," February 8, 2024, UP_3162092, at -133 (p. 41); NS_00163218, at -220.

302 For example, in 2019 UP and NS jointly eliminated multiple low-volume intermodal lanes to improve the efficiency of their interline operation. *See* Union Pacific, "Interline Service Changes to Eastbound Intermodal Traffic Handled by UP and NS," Customer Announcement Number IM2019-70, May 31, 2019, last accessed October 19, 2026, https://www.up.com/customers/announcements/intermodal/allintermodal/IM2019-70.html.

[redacted] to [redacted] to shift from trucks to rail.[303] Below, Figure 87 traces in orange the path that Mr. Hunt assumes this traffic will take from its origin to its destination. In contrast to this direct routing, we plot in red the path this traffic will actually take based on the Growth Plan.

FIGURE 87: INTERMODAL CONTAINER ROUTES FROM MINNEAPOLIS TO CINCINNATI



Sources and Notes:

See Scripts "01_block_route.sql," "02_in_between_stops.sql," "03_location_sequence_build.R," "04_route_approximation.R," shapefiles "Block Swap.shp," "Diversion Study Route.shp," "Growth Plan Route.shp," "Stop End Point.shp," "Train Stops for Intermediate Work.shp," "UP NS Raile Lines.shp," and Workpaper "Intermodal Container Routes.pdf" in folder "Intermodal

303 *See* Gehringer and Orr VS Workpaper, "[mr_opal].[trafficCompressed]," filtered to trafficCompressedKey 4500030 in the Growth Plan (compressionKey 104), column intermodalUnitsPerDay. *See also*, Script "Look up Traffic in Block.sql," in folder "MR Review," filtered to blockKey 1001094 in the Growth Plan (resultScenarioKey 200), column intermodalUnitsPerDay.

Container Routes from Minneapolis to Cincinnati." UP and NS rails are represented by grey lines. Blue dots are stops where trains pick up and set out blocks. Green dots show swaps in Growth Plan. Blue dots show key stops in Mr. Hunt's proposed route. UP and NS rail lines are from the Bureau of Transportation Statistics, "North American Rail Network Lines – UP View," last accessed November 12, 2026, https://geodata.bts.gov/datasets/bf4cdb6210694fff9643e55d6f898435_0/explore?location=39.799201%2C-108.308501%2C2 and "North American Rail Network Lines – NS View datasets," last accessed November 12, 2026, https://geodata.bts.gov/search?q=North%20American%20Rail%20Network%20Lines%20-%20NS%20View. Mr. Hunt's route information is from the Quantanet model in his workpaper "IM Lanes Post-Current vFinal.xlsx" and Growth Plan stops are from the MultiRail dataset. Routes were approximated on the mapped rail network using nearest-neighbor spatial matching and nearest-endpoint matching.

369. Notably, the route that this diversion traffic is slated to travel in the Operating Plan [redacted]. Further, as shown by the figure, the Operating Plan includes [redacted] block swaps, each of which adds substantial time to the shipment's total transit, though how much cannot be verified from the Operating Plan. As discussed at length in previous sections, [redacted] so we cannot say concretely how long Applicants intend each of these swaps to take.[304] However, we can estimate this omitted dwell using Applicants' Car Event Data from 2023. Specifically, at each swap location above, we calculate the median dwell incurred each time a car changes trains; we then use this median value to provide a rough estimate of the time required for each intermediate work event. Details of this calculation are presented in Figure 88 below}}.

304 *See* Section III.A.

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FIGURE 88: SAMPLE MEDIAN DWELL AT EACH BLOCK SWAP LOCATION FROM EAST MINNEAPOLIS TO CINCINNATI



Sources and Notes:

See Script "01_Omitted Intermodal Dwell Time Event Distribution.R," "02_Hunt_Stop_List.R," "03 Work_Dwell_Time.sql," "05_Sample Omitted Intermodal Dwell Time.R" and Workpaper "Intermediate Work Events Omitted Dwell.xlsx," tab 'sample_dwell_table,' in folder "Calculating Intermediate Work Events Omitted Dwell."

[A]: From MultiRail data, route for blockKey = 1001094

[B]: Median dwell from Event Data.

370. As Figure 88 above demonstrates, intermediate work events can add substantial time and may significantly degrade train service. In this particular example, Mr. Hunt omits as much as [redacted] hours of dwell due to block swaps that Gehringer and Orr include in their proposed train service. This number does not include additional dwell that would be incurred at intermediate work locations for each train (*i.e.*, instances in which this East Minneapolis to Cincinnati traffic must wait while a train picks up or sets out additional traffic along its journey, denoted by blue points in Figure 87). Mr. Hunt's calculation therefore omits a substantial amount of dwell, to say nothing of the additional transit time over the road required by the longer route

included in the Operating Plan. This is particularly important in the context of intermodal shipments, which, as Mr. Hunt recognizes, must remain truck-competitive to stay on rail.[305]

371. In our experience, traffic requiring this many block swaps would not remain on rail due to the dwell accrued. In this particular example, non-stop truck service from East Minneapolis to Cincinnati would require roughly 13 hours, assuming a distance of roughly 700 miles and conservatively assuming an average truck speed of 55 miles per hour.[306] Even allowing substantial additional time for refueling and rest for the driver, the [redacted] hours of dwell accruing from block swaps alone[307] means this traffic is unlikely to convert to rail based on the design incorporated in the Growth Plan.

372. Moreover, this problem of omitted dwell is not restricted to this one particular example, but is pervasive throughout the Growth Plan. Figure 89 below plots the distribution of the number of intermediate handlings (including block swaps and classifications) for all intermodal diversions in the Growth Plan. The figure further displays the average number of intermediate work events via the orange line. As demonstrated by the Figure, the Growth Plan relies on a significant number of intermediate work events to accommodate these new volumes. On average, these diversions require approximately [redacted] intermediate work events.

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305 *See* Hunt VS, p. 58.

306 700 miles / 55 mph ≈ 12.7 hours.

307 *See* Figure 88.

FIGURE 89: DISTRIBUTION OF INTERMEDIATE WORK EVENTS FOR ALL INTERMODAL DIVERSIONS IN THE GROWTH PLAN



Sources and Notes:
See Script "01_Omitted Intermodal Dwell Time Event Distribution.R" and Workpaper "intermediate_work_events_histogram.png" in folder "Calculating Intermediate Work Events Omitted Dwell." Intermodal diversion sourced from traffic records from 'mr_opal.trafficCompressed' that were processed to calculate minimum transit time. See Script "Calculation of Transit Time for Intermodal Diversion Records.R" in folder "Calculation of Transit Time for Intermodal Diversion Records". Record data was then merged with Hunt Data based on location. *See* Script "Mapping Hunt and MultiRail Locations.R" in folder "Mapping Hunt and MultiRail Locatons".

373. These omitted work events directly impact the competitiveness of the new service. We understand from Dr. Powers that Mr. Hunt's analysis of intermodal diversions

implicitly assumes that all origin-destination pairs receive direct train service requiring no intermediate work events.[308] However, based on the train service designed in the Growth Plan, a diverted intermodal container is planned for [redacted] intermediate handlings on average. Based on Applicants' 2023 Car Event Data, most of these events would last between [redacted] and [redacted] hours, with a median dwell of [redacted] hours. Consequently, this intermodal diversion traffic could reasonably take between [redacted] and [redacted] more hours than Mr. Hunt allows based on dwell omitted from his analysis. Details of this calculation are presented in Figure 90 below.

FIGURE 90: OMITTED DWELL TIME FOR INTERMODAL TRAFFIC INTERMEDIATE WORK EVENTS



Sources and Notes:

See Script "01_Omitted Intermodal Dwell Time Event Distribution.R," "02_Hunt_Stop_List.R," "03 Work_Dwell_Time.sql," "04_System Wide Omitted Intermodal Dwell Time.R," and Workpaper "Intermediate Work Events Omitted Dwell.xlsx," tab 'system_wide_avg,' in folder "Calculating Intermediate Work Events Omitted Dwell."

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308 *See* Powers VS, Section V.B.1.

We understand from Dr. Powers that the speeds Mr. Hunt uses are based on data from the EP 724, which we understand generally excludes intermediate dwell. *See, for example*, Union Pacific, "UP Metrics – Explanation of Methodology – EP 724 (Sub 4)," last updated March 1, 2022, available at: https://www.stb.gov/wp-content/uploads/UP-Methodology-EP-724-03.01.22.pdf, p. 1.

[1]: From Car Event Data.

[B][1]: 25th percentile of yard-level median dwell time.

[C][1]: Median of yard-level median dwell time.

[D][1]: 75th percentile of yard-level median dwell time.

[2]: Average number of intermediate work events from the MultiRail data.

[3]: [1] x [2].

374. Beyond the omission of work events, Mr. Hunt's choice of the shortest possible route causes him to overstate service benefits accruing from the transaction. For example, Mr. Hunt assumes that diverted traffic travelling from [redacted] as illustrated by the orange path in Figure 91 below. However, in the Growth Plan, these diverted volumes are placed on [redacted] This path is not only longer, it also avoids the Meridian Speedway, which Applicants have specifically cited as some of the best, most reliable intermodal service they can offer.[309]

[309] *See* discussion of the Meridian Speedway in Section VIII.B.

FIGURE 91: MAP OF DIVERTED TRAFFIC FROM NORTHERN CALIFORNIA TO THE SOUTHEAST



Sources and Notes:

See Scripts "01_build_zltct_route.sql," "02_route_approximation.R," "03_look_up_work_stops.sql," "04_work_stop_processing.R," shapefiles "Block Swap.shp," "Diversion Study Route.shp," "Growth Plan Route.shp," "Train Stops with Intermediate Work.shp," "UP NS Raile Lines.shp," and Workpaper "Diverted Traffic from NCA to Southeast.pdf" in folder "Diverted Traffic from Northern CA to Southeast." UP and NS rails are represented by grey lines. Blue dots are stops where trains pick up and set out blocks. Green dots show key stops in Mr. Hunt's proposed route. UP and NS rail lines are from the Bureau of Transportation Statistics, "North American Rail Network Lines – UP View," last accessed November 12, 2026, https://geodata.bts.gov/datasets/bf4cdb6210694fff9643e55d6f898435_0/explore?location=39.799201%2C-108.308501%2C2 and "North American Rail Network Lines – NS View datasets" last accessed November 12, 2026, https://geodata.bts.gov/search?q=North%20American%20Rail%20Network%20Lines%20-%20NS%20View. Mr. Hunt's route information is from the Quantanet model in his workpaper "IM Lanes Post-Current vFinal.xlsx", and Growth Plan stops are from the MultiRail dataset. Routes

were approximated on the mapped rail network using nearest-neighbor spatial matching and nearest-endpoint matching.

375. This difference in routings is consequential, because it means that the Operating Plan fails to reflect (or to inform) the service improvements that drive diversions in Mr. Hunt's model. Specifically, the path taken by the [redacted] is roughly [redacted] miles *longer* than existing service between [redacted].[310] In contrast, we understand from Dr. Powers that Mr. Hunt assumes that the merger will effectively *remove* [redacted] miles for this lane.[311] Further, as detailed in Section V.B, Messrs. Gehringer and Orr claim transit savings on this service that are unsupported and unlikely to materialize. Consequently, the [redacted] does not provide the service improvements that are needed to generate Mr. Hunt's diversions.

376. This issue is again not limited to a few, isolated examples, but is endemic throughout the Growth Plan. In Figure 92 below, we display the magnitude of difference between the rail distances modeled by Mr. Hunt and those included in the Operating Plan. As shown by the figure, roughly [redacted] percent of intermodal diversions report a rail distance in the Operating Plan that is at least [redacted] miles *longer* than what Mr. Hunt assumes; over [redacted] percent of diversions report a rail distance that is at least [redacted] miles longer than Mr. Hunt's modeled service. This is significant, because it demonstrates that the rail service that underlies Mr. Hunt's model, and is subsequently used to generate diversions, is not represented in the Growth Plan.

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310 *See* Workpaper "ZLTCT - Mileage Comparison Confidential.xlsx," in folder "ZLTCT Mileage Comparison."

311 *See* Powers VS, Section V.B.3.a.

FIGURE 92: DISTRIBUTION OF TRAVELED DISTANCE DIFFERENCES BETWEEN HUNT AND OPERATING PLAN INTERMODAL SHIPMENTS



Sources and Notes:
See Script "01_Omitted Intermodal Dwell Time Event Distribution.R," and Workpaper "travel_distance_plot.png" in folder "Calculating Intermediate Work Events Omitted Dwell." MultiRail data and tab '20260813_1042_im_routes_future' from Hunt VS workpaper "HC-Intermodal Diversions Model vFinal.xlsx."

377. In summary, there is a significant disconnect between the train service included in the diversion study and the train service modeled in the Operating Plan. On the intermodal side, Applicants estimate diversions assuming that each diverted carload or container receives direct, non-stop train service with no intermediate dwell.[312] But in the Growth Plan, these volumes are

[312] *See* Powers VS, Section V.B.3.a.

built into blocks that are swapped and reprocessed throughout their journey, incurring dwell that was omitted from Mr. Hunt's estimates. Moreover, these blocks run on trains that follow less direct routings than Mr. Hunt assumes.[313] Consequently, the diversion study ignores the service design reflected in the Operating Plan, as well as the operational reality of running a railroad.

D. The Interdependence Between Traffic Diversions and New Train Service Further Threatens the Viability of the Growth Plan

378. The Growth Plan contains a fundamental circularity. Applicants explain that the Growth Plan reflects the traffic they expect to attract through merger-related service improvements.[314] They then use that additional traffic to create the density needed to support new trains and additional service improvements. Indeed, Messrs. Gehringer and Orr expressly state that projected increases in traffic on certain lanes create sufficient density to introduce new train pairs and other services.[315] This interdependence between train service and diversion traffic makes it critical that Applicants put forth a realistic plan to achieve their stated diversions that is also aligned with the model that estimated those diversions.

379. To demonstrate this interdependence, we show in Figure 93 below how reliant each new train is on estimated diversions by showing how much diverted traffic each new train is designed to carry. Specifically, for each new train, we calculate its average volume over the road, as captured by its departing car counts from each work location. Within that average volume, we calculate the share that is diversion traffic.

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313 *See* Powers VS, Section V.B.3.a.

314 *See* Gehringer and Orr VS, ¶ 31.

315 *See* Gehringer and Orr VS, ¶ 32.

FIGURE 93: NUMBER OF CARS WITH AND WITHOUT DIVERSIONS FOR NEWLY ADDED GROWTH TRAINS



Sources and Notes:

MultiRail tables 'mr_opal.location,' 'mr_opal.blockVolumeDetail,' 'mr_opal.trainBlockVolume,' 'mr_opal.train,' 'mr_opal.trafficCompressed,' and 'mr_opal.blockSequence.' *See* Script "Remove Diversion Volumes from T3 Trains.R" and Workpaper "Number of Cars With and Without Diversions.xlsx," tab 'Figure 93,' in folder "Number of Cars With and Without Diversions for Growth Trains."

[A]: The Intermodal and Manifest trains discussed in Section V.B.

[B]: The average number of cumulative cars observed for the train from its origin to destination in the Growth Plan. Namely, for each stop, the number of cars the train currently carries is calculated. For each train, the average is then taken over the given train's entire journey.
[C]: The average number of cars observed for the train in the Growth Plan from its origin to destination associated with diversions. Namely, cumulative cars are adjusted to remove cars that were added/subtracted by diversion traffic records to obtain cumulative cars absent diversions. The difference between average number of cumulative cars and average number of cars absent diversions is used to identify the average number of cars associated with diversions.
[D]: [C] / [B].

380. As Figure 93 makes clear, Applicants designed their new train services to be prominently dependent on estimated diversions. For intermodal—which comprises the majority of Applicants' total diversions[316]—these new trains are almost completely dependent on diversion traffic, representing anywhere from [redacted] to [redacted] percent of their total volume. Manifest trains are also highly reliant on diversions. As shown by the figure, diversions account for [redacted] to [redacted] percent of volumes on these new services. This interdependence is problematic for two reasons:

- First, as detailed in Section V.B, several of the new Growth Plan trains are designed to questionable density over substantial portions of their routes even with projected diversion traffic. Hence, many of these trains already require substantial redesign to balance both productivity and service.[317] Short of this redesign, most of these services will not materialize as-written.

- Second, as outlined in Section V.C, there is a significant disconnect between the train service included in the Operating Plan and the service assumed in the diversion study. As a consequence, it is highly doubtful that diversions will materialize as Applicants predict. This further threatens the viability of their new services.

These problems demonstrate that the Operating Plan does not provide a clear, executable path to realize claimed service improvements and subsequently achieve their estimated diversions.

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316 *See* Hunt VS, Exhibit 2-4.

317 *See* Section II.B for a discussion of the balance between service and productivity.

381. Applicants cannot rationalize the above deficiencies by claiming the Growth Plan is subject to change by external factors. We recognize that transportation markets are dynamic and that merger-related growth will not precisely follow their forecast.[318] However, Applicants must still put forth an executable Growth Plan that provides a realistic avenue to achieve diversions to the maximum extent possible despite external factors. As we illustrate in Sections V.A and V.B, they have not done so—the Growth Plan submitted requires substantial redesign before it reflects a feasible operation. However, doing so would change the transit times and handling patterns on which Applicants rely to claim merger benefits. If the service benefits fail to materialize, it becomes unlikely that Applicants will achieve any claimed diversions.

382. Applicants' past experience demonstrates that merely creating a new service is not sufficient to attract new traffic. Beginning in 2007, NS developed its Crescent Corridor initiative, a major program of intermodal terminal construction and infrastructure improvements intended to attract truck traffic moving between the Southeast and Northeast. NS projected that the initiative could generate as many as 1.3 million additional domestic intermodal loads annually. To support this anticipated growth, NS invested hundreds of millions of dollars in new terminals and corridor improvements, supported by approximately $295 million in public capital funding commitments.[319]

383. However, the anticipated traffic did not materialize at the scale NS projected. As documented in a recent article by Steve Blinn and Dan Bostek, NS's total systemwide intermodal volumes increased from approximately 3.4 million units in 2012 (the opening of the Crescent

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318 *See* Gehringer and Orr VS, ¶ 33.

319 *See* Steve Blinn and Dan Bostek, "The Capacity That Growth Forgot," August 10, 2026, accessed via LinkedIn, last accessed November 8, 2026, https://www.linkedin.com/pulse/capacity-growth-forgot-steve-blinn-sebvc.

Corridor) to 4.4 million units in 2018, before declining to 4.1 million units in 2025.[320] Thus, even at its peak, NS's systemwide intermodal growth was less than the 1.3 million additional annual loads it had projected for the Crescent Corridor alone.[321]

384. Although these systemwide figures do not directly measure the Crescent Corridor's performance, the subsequent experience of facilities constructed for the initiative further illustrates the risks associated with such growth forecasts. For instance, NS idled its Greencastle, PA intermodal terminal in 2019, reopened it in 2021, and has since idled it again. Similarly, NS discontinued intermodal operations at its McCalla, AL terminal. Notably, Applicants now propose to reactivate both facilities to accommodate the very growth they predict will result from the merger.[322]

385. NS's experience with the Crescent Corridor demonstrates that even substantial investments in infrastructure and service improvements do not guarantee that railroads will attract the traffic necessary to support those investments. There is no reason to assume that Applicants' present diversion forecasts are immune to the same risks. Indeed, Dr. Powers demonstrates that there are a number of significant issues with Mr. Hunt's forecasts; as we discuss in Section V.C above, there is a significant disconnect between the expected routes and transits that Mr. Hunt models and the service included in the Growth Plan. Hence, there is

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320 Steve Blinn and Dan Bostek, "The Capacity That Growth Forgot," August 10, 2026, accessed via LinkedIn, last accessed November 8, 2026, https://www.linkedin.com/pulse/capacity-growth-forgot-steve-blinn-sebvc.

321 Steve Blinn and Dan Bostek, "The Capacity That Growth Forgot," August 10, 2026, accessed via LinkedIn, last accessed November 8, 2026, https://www.linkedin.com/pulse/capacity-growth-forgot-steve-blinn-sebvc.

322 Steve Blinn and Dan Bostek, "The Capacity That Growth Forgot," August 10, 2026, accessed via LinkedIn, last accessed November 8, 2026, https://www.linkedin.com/pulse/capacity-growth-forgot-steve-blinn-sebvc.

substantial reason to suspect that traffic diversions will materialize differently than Applicants' predictions.

386. The consequences of overestimating growth may be particularly significant here because Applicants have designed their new train services around the volumes they expect to divert. As Figure 93 demonstrates, [redacted] In that event, Applicants would need to modify their train and blocking plans, potentially eliminating the very service improvements that they claim are embedded in their designs in order to retain the diversion traffic. NS's prior experience therefore underscores the importance of testing whether Applicants' Growth Plan can operate under more conservative diversion estimates. Without such an analysis, Applicants have not demonstrated that their proposed service improvements are sustainable or that the merger benefits dependent on those improvements are achievable. To the extent Applicants have overstated the traffic they will attract, they have also overstated any service improvements and associated benefits that the merger will produce.

387. There is an additional problem with Applicants' circular logic. If the service opportunities are as large as Applicants claim, and if the corresponding new traffic can be attracted simply by improving schedules, creating deeper blocks, or operating run-through trains, then Applicants already have an economic incentive to pursue those opportunities. As detailed in Section VIII.A, railroads routinely establish run-through services, reciprocal blocking arrangements, and other coordinated interline practices without common ownership. Therefore, if adding services could attract the volume of traffic Applicants claim, and if they could profitably fund those services from their accompanying revenues, then they ought to add those services without a merger. The fact that Applicants have not done so thus far signals that their

claimed diversions may not be realistic.[323] Applicants cannot use the projected traffic first to justify new service and then treat the ability to provide that service as a benefit achievable only through merger.

388. In summary, the Growth Plan does not demonstrate a stable post-merger operation. It demonstrates an operation entirely dependent on Applicants obtaining the traffic that their alleged service improvements are expected to generate. If those improvements are not achieved, Applicants must adjust their blocking and train plans as described in Section II.C; if the train and blocking plans change, the claimed transit times and efficiencies change as well. This is especially important given: (i) NS's past experience with the Crescent Corridor showing that simply designing and investing in new service is not enough to attract all forecasted traffic, and (ii) a number of serious issues with Mr. Hunt's forecasts that make it unlikely diversions will materialize as-written.

VI. THE CHANGES THAT APPLICANTS PROPOSE IN THE OPTIMIZED AND GROWTH PLANS ADD ADDITIONAL COMPLEXITY THAT WOULD OVERRUN KEY YARDS

389. Applicants repeatedly characterize the Optimized and Growth Plans as simplifying operations at major gateways and terminals. They point to the elimination of UP-NS interchanges, the consolidation or downgrading of existing facilities, the creation of deeper blocks, and the redirection of traffic around selected yards. Our yard-level review does not support that characterization. At many of the locations discussed below, Applicants have not eliminated the physical work required to move the traffic. Instead, they shift that work to other

[323] As discussed in Section VIII.B.1, Applicants' past behavior demonstrates that they are willing to discontinue unproductive services. For example, in 2019 UP and NS discontinued unproductive interline intermodal lanes. *See* Union Pacific, "Interline Service Changes to Eastbound Intermodal Traffic Handled by UP and NS," Customer Announcement Number IM2019-70, May 31, 2019, last accessed October 19, 2026, https://www.up.com/customers/announcements/intermodal/allintermodal/IM2019-70.html.

facilities, replace classifications with substantial block-swap activity, and concentrate additional trains and blocks at yards that already have limited capacity for extra work. Applicants then rely on generalized capacity measures and average daily volumes based on a full year's worth of traffic. This approach does not account for variation in traffic by day of week and peak season. Their modeling choices obscure where work would occur and create unsupported bypass opportunities, while their proposed capital projects do not provide a workable means to absorb the resulting workloads. This results in infeasible plans that Applicants cannot execute; put simply, the Optimized and Growth Plans would overrun key yards as-written.

390. To determine whether a plan is in fact feasible, Applicants must evaluate it against the constraints of individual yards as well as their interdependencies. A planned new work event is meaningless if it cannot be consistently executed by the yard in question. Simultaneously, any statement of benefits must evaluate whether it removes work or simply transfers it between yards. For example, at certain facilities Applicants have removed processing only to substitute additional block swaps in its place. As we illustrate below, key yards cannot handle these added swaps. More broadly, eliminating an interchange, downgrading a yard, or removing a block from one facility does not necessarily simplify the physical work required to move it: unless the cars can continue through the relevant portion of the network without added processing, another yard must classify them, swap blocks between trains, or otherwise make the necessary connection. Because Applicants have not provided executable schedules, they have not adequately evaluated the network wide impact of their supposed simplifications and therefore have not demonstrated that the resulting distribution of work is executable.

391. This also bears on whether Applicants' claimed service improvements are merger-specific. Where Applicants eliminate work through deeper blocking, coordinated schedules, or a

yard bypass, the improvement results from the service design, not common ownership, and (as discussed in Section VIII) can be implemented through an interline arrangement where traffic density and yard constraints permit. Where Applicants merely shift the work or change its label, no operational simplification has occurred. The yard analyses below therefore bear both on whether the changes are feasible and on whether any feasible reductions in work require a merger.

392. Applicants' yard-capacity calculations do not demonstrate that the affected facilities can perform the work assigned to them in the Optimized and Growth Plans. In assessing whether their plans are feasible, Applicants compare projected volumes with a yard's standing capacity.[324] But the relevant constraint may be receiving, classification, or departure capacity, or the volume and nature of the work scheduled to be performed at the yard. Extending receiving tracks, for example, does not necessarily increase a yard's throughput to the same extent that it increases standing capacity, [redacted].[325] All together, projected volume below estimated standing capacity does not by itself establish that a yard can execute a given plan. Applicants' failure to perform a rigorous analysis comparing each yard's capabilities and resources with the demands placed upon it renders the Optimized and Growth Plans unsupported.

393. Timing is equally important. Applicants often compare average daily volume with daily standing capacity. As discussed in Sections II.B and V.D, that comparison alone does not

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[324] *See* Turner VS Workpapers, "UP Manifest-Intermodal-Automotive Terminal Capacity Inputs & Calculations.xlsx" and "NS Manifest IM Auto Terminal Capacity Calculations.xlsx."

[325] *See, for example,* Norfolk Southern, "Yardmax Capacity Study: Birmingham," March 2025, NS_00102449, at -460, demonstrating that extending tracks at Birmingham and adding additional pullbacks raised capacity to only [redacted] cars per day, far less than Applicants' claimed [redacted] capacity stemming from track expansions alone. *See* Gehringer and Orr VS Workpaper, "NS IM Auto Manifest Expansion Projects.pdf," p. 6.

establish that a plan is executable. Traffic volumes and train arrivals vary by time of day, day of week, and season. One reason is that customer release patterns are highly variable. Typical Monday through Friday operation and select day of week local train service operation at outlying yards and other railroads amplify inbound patterns of traffic. A yard with little excess capacity on an average day will lack sufficient capacity when volume peaks, trains arrive in clusters, or ordinary delays cause work to accumulate. Accordingly, before concluding that a transportation plan is feasible, the service design team must carefully review each yard's terminal clock to determine that sufficient time and track space are available for the planned trains and work events, with sufficient buffer built into the schedules to mitigate the impact of delays caused by normal operating variability. [redacted][326] As we elaborate below, the Optimized and Growth Plans pose substantial risk of severe service disruptions at key facilities.

394. Further, Applicants treat increased block swapping as an operational simplification but do not account for the track space, time, and schedule coordination those swaps require. As described in Section II.C, a block swap requires available working or storage tracks and precisely coordinated inbound and outbound trains. To ensure a block swap is feasible, the design must demonstrate, among other factors: (i) that each train has sufficient capacity daily, (ii) where the block is marshalled off and on the trains, (iii) whether the train has distributed power, and (iv) what other trains are expected to perform work nearby. Failing to account for these factors threatens the feasibility of the planned swap. Due to the large number of factors that must align to execute a block swap, the best designs minimize block swaps. Even

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326 *See, for example*, Deposition of Brian Barr, September 3, 2026, 363:4–18.

Applicants' own experts admit that, [redacted][327]

395. Applicants' modeling choices further obscure these factors at the locations where the greatest changes occur. As explained in Section III.D, [redacted] Those simplifications can obscure or understate where work must be performed, create traffic density at a facility that does not exist in actual operations, and justify bypass blocks that lack sufficient real-world traffic. If a proposed bypass cannot be executed because the necessary block density does not exist for direct train service, that block must be set out at an intermediate yard and connect to another train, creating dwell and more work at an intermediate yard enroute to the destination. These modeling simplifications therefore prevent the Optimized and Growth Plans from reliably showing where work would occur or whether the proposed bypasses can be executed. Thus, Applicants have not demonstrated the feasibility of the Plans.

396. Applicants' proposed capital projects and contingency plans do not cure these deficiencies. Several proposed projects expand selected tracks or portions of a facility, but Applicants do not demonstrate that those changes increase sustainable throughput for the particular classification, block-swap, and train movements assigned there. Applicants likewise identify nearby or interconnected yards as alternatives or recovery facilities for constrained yards. Yet, they do not demonstrate that those yards have the capacity to accommodate the extra volume, nor do they provide a corresponding train and blocking plan laying out specifically how

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[327] Deposition of Brian Barr, September 3, 2026, 332:6–334:4.

a contingency plan will be put into action.[328] Reliance on another yard does not resolve a constraint unless the work is transferred through an executable plan and that yard can perform it.

397. As discussed in Section III.A, Applicants did not provide calibrated schedules to accompany their Operating Plan. Absent this information, Applicants cannot develop trip plans, which detail how an individual car moves over the network from its origin to its destination on the combined UPNS network.[329] Collectively, the trip plans reveal how much dwell is scheduled at each facility. Lacking this information, we cannot assess whether designed dwell at any facility has increased or decreased in the Optimized and Growth Plans relative to the Base Plan or a historical average. [redacted].[330] In other words, Applicants' standing capacity calculations do not reflect subsequent design changes in their MultiRail model; they have instead assumed that dwell will remain constant without generating schedules and corresponding trip plans to prove it.

398. Absent this information, Applicants have not presented a complete and final Operating Plan that would allow the Board to assess feasibility. In spite of this shortfall, the subsections below examine proposed operations at major yards and gateways, and demonstrate that the Operating Plan as written cannot be executed. This review highlights the importance of the missing scheduling information, as well as the complexities that Applicants introduce in the Optimized and Growth Plans. While each yard has unique characteristics and must be analyzed

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328 *See* Section VII.

329 *See* Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.* – BNSF Workpaper Questions," August 21, 2026, p. 3.

330 *See* Turner VS Workpapers, "UP Manifest-Intermodal-Automotive Terminal Capacity Inputs & Calculations.xlsx" and "NS Manifest IM Auto Terminal Capacity Calculations.xlsx."

individually (as we do below), Applicants' Operating Plan presents recurring problems across yards. For ease of reference, in Figure 94 below, we highlight some of these common types of problems and show which yards they affect.

FIGURE 94: SUMMARY OF APPLICANTS' PROPOSED YARD / GATEWAY CHANGES



Sources and Notes:
Based on our review of the Gehringer and Orr VS and accompanying workpapers. Details of individual yards are given below.

A. Kansas City

399. Applicants' proposed consolidation of Kansas City operations does not eliminate work or simplify the gateway. It removes efficient deep blocking while leaving much of the associated train activity in place, while simultaneously shifting processing and block swap demands to other facilities in and beyond Kansas City. The Growth Plan further concentrates train and block-swap activity at facilities that lack the necessary track space and operating windows. Applicants provide no capital or service-assurance plan that resolves those constraints.

Elphick and Nelson V.S. at 261

Moreover, the reciprocal blocking already performed by UP and NS shows that any feasible extension of deep blocking would not require common ownership.

400. As the second busiest rail hub in the United States behind only Chicago, Kansas City is a vital crossroads for BNSF, CPKC, NS and UP. Reflecting the importance of this key gateway, each Class I railroad owns and operates automotive, intermodal and manifest processing facilities in the greater Kansas City area. BNSF manifest operations are concentrated at Argentine Yard as illustrated in Figure 95 below. Intermodal and automotive operations are concentrated at Logistics Park Kansas City just to the west. CPKC manifest operations are at Knoche Yard. Automotive and intermodal operations are at the International Freight Gateway (IFG) facility to the south. As illustrated below, Applicants' manifest facilities are located at NS's North Kansas City Yard ("North Yard") and UP's 18th Street Yard ("18th Street"). NS intermodal and automotive traffic is concentrated at Voltz on the northeast side of Kansas City, only a short distance from the NS/CPKC diamond at Birmingham. UP's intermodal facility was relocated from Neff Yard in early August 2025 to a new facility called Kansas City Intermodal Terminal adjacent to 18th Street. Applicants' Operating Plan reflects Neff's July 2025 operation. UP's Muncie automotive facility is located to the west of 18th Street.

FIGURE 95: MAP OF KANSAS CITY AREA FACILITIES



Sources and Notes:

See Workpaper folder "Maps" and associated database files.

401. In an effort to simplify operations in Kansas City, Applicants plan to move work done at [redacted] to [redacted] with [redacted] remaining open only to local traffic.[331] As we discuss below, the changes that Applicants propose introduce more complexity into the Operating Plan, not less, and render the Plan infeasible as written.

[331] *See* Gehringer and Orr VS, ¶ 218.

402. In the Base Plan, NS and UP employ a directional blocking strategy with each other. NS blocks to UP's [redacted] out of multiple locations as far east as [redacted] In turn, [redacted] has sufficient traffic density to perform system blocking deep into the western network. Then, UP yards at [redacted] and [redacted] block to [redacted] NS has the traffic density at [redacted] to block deep into the eastern network as far as [redacted], [redacted] and [redacted] with a supporting train plan minimizing intermediate yard handlings and associated dwell.[332]

403. This existing directional blocking strategy is direct evidence that UP and NS can and do coordinate deep blocking across Kansas City without common ownership. To the extent Applicants identify a feasible opportunity to change where those blocks are built or to extend them farther into the connecting network, they do not identify why that change could not be implemented by modifying the existing reciprocal-blocking and train-service arrangements. The merger itself does not create the traffic density or the physical ability to build those blocks.

404. On top of this, Applicants have not demonstrated that [redacted] has sufficient capacity to absorb work done at [redacted] Blocking performed at [redacted] deep into the NS network to [redacted], and [redacted] is not replicated at [redacted] in the Optimized or Growth Plans.[333] The only new blocking added at [redacted] does not go deep into the NS network, and instead extends only to [redacted] and [redacted][334] In turn, [redacted], [redacted]

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332 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks originating at North Yard ("Kansas City MO_NS").

333 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks originating at North Yard ("KANSAS CITY MO_NS") and 18th Street ("EIGHTENST KS_UP").

334 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to new blocks added in the Optimized Plan originating at 18th Street ("EIGHTENST KS_UP").

and [redacted] pick up additional processing as a result of [redacted] yard changes and the cessation of deep blocking to the east.[335] The result is additional intermediate handlings and dwell at yards previously bypassed in the Base blocking and train plans. In other words, the changes that Applicants propose add additional car handlings to other watershed yards.

405. Contrary to claims that no trains other than locals will stop at North Yard, trains [redacted] continue to originate at [redacted] in the Optimized Plan. Only [redacted] shifts from [redacted] in the Optimized and Growth Plans, but it continues to work at [redacted][336] Accordingly, Applicants have removed efficient blocking from [redacted] but have not modified their train plan accordingly.

406. Relatedly, Applicants reduce the volume of traffic processed at [redacted] by introducing additional block swaps. While the Base Plan contains no block swap activity, the Optimized Plan introduces [redacted] cars of block swap activity exchanged between [redacted] arriving and departing trains. The Growth Plan sees a modest reduction in train activity with [redacted] inbound trains connecting to [redacted] outbound trains, but an increase in block swap volume to [redacted] cars per day. Thus, contrary to their claims, Applicants have not reduced the

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335 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Summary' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be respectively set to "VOLTZ MO_NS," "EAST DECATUR IL_NS," "GATEWAY YARD IL_UP" and Cell E8 must be set to "Cars (#)."

336 *See* Workpaper "Terminal Clocks.xlsx," tabs 'Kansas City, MO (NS)' and '18th Street, KS,' in folder "Terminal Clocks."

total amount of work done at [redacted] – they have merely exchanged car processing for block swaps.[337]

407. As [redacted] illustrates, there is no evidence of yard consolidations in the Kansas City Terminal. Similarly, neighboring [redacted] demonstrates increasing complexity with dire operational consequences to both [redacted] and the fluidity of operations across the entire Kansas City area, including other railroads such as CPKC. Messrs. Gehringer and Orr claim that Applicants will reorganize intermodal operations in Kansas City such that domestic and international intermodal shipments will be separated across Kansas City Intermodal and Voltz.[338] This claim is not supported by the Operating Plan. [redacted][341] These changes indicate a blurring of roles rather than a streamlining of the focus at each facility.

408. Similar to [redacted] Applicants propose a dramatic increase in block swaps at [redacted], for which it is poorly equipped in both design and location. In the Base

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337 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tabs 'Summary,' 'Swaps (Optimized),' and 'Swaps (Growth)' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "KANSAS CITY MO_NS," and Cell E8 must be set to "Cars (#)."

338 Gehringer and Orr VS, ¶ 217.

339 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to new blocks added in the Growth Plan originating at Voltz.

340 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks terminating at UP Kansas City, MO in the Growth Plan.

341 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks terminating at Voltz in the Growth Plan.

Plan, [redacted] performs no block swapping, reflecting its historical role of originating and terminating traffic for the greater Kansas City area. The Optimized Plan introduces a modest amount of block swap traffic limited to [redacted] feet inbound on [redacted] trains connecting to [redacted] outbound trains, but the Growth Plan moves to [redacted] feet of traffic exchanged between [redacted] inbound trains connecting to [redacted] outbound trains every day.[342]

409. To illustrate the complexity of block swapping at Voltz, consider train ZDTLC. This train shows picking up [redacted] feet at Voltz,[343] which has three total storage tracks adjacent to the mainline, ranging from [redacted] to [redacted] feet.[344] Hence, this one outbound connection will require all three tracks. This would leave little room for the other block swaps Applicants plan for Voltz. Potential use of the separate automotive yard at Voltz requires access off the main on a lead further to the west just [redacted] feet from the CPKC diamond (see the top panel of Figure 96 below). To avoid being foul of any internal truck crossings at the facility, a lift of [redacted] feet would still require the use of two tracks to build the outbound pickup for ZDTLC and an extended occupancy of the CPKC diamond as ZDTLC pulled west followed by a reverse move to return to the balance of the train still sitting on the mainline (Track 1).

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342 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tabs 'Swaps (Base),' 'Swaps (Optimized),' and 'Swaps (Growth)' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "VOLTZ MO_NS," and Cell E8 must be set to "Length (ft)."

343 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' in folder "Yard Detail." Total feet found by summing column CI when column CE = ZDTLC. Note that Cell E7 on tab 'Summary' must be set to "VOLTZ MO_NS," and Cell E8 must be set to "Length (ft)."

344 *See* Norfolk Southern, "Yardmax Capacity Study, Voltz Intermodal Terminal (09720)," February 2025, NS_00103169, at -175.

FIGURE 96: MAP OF VOLTZ BLOCK SWAPPING IN THE BASE PLAN



Sources and Notes:

See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."

410. As with other newly added train services, ZDTLC contains no scheduled dwell at [redacted].[345] In the Base Plan, the minimum scheduled dwell time for a setout and pickup at [redacted] is approximately 2 hours.[346] Applying this standard, ZDTLC will consume the

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345 *See* Workpaper "Terminal Clocks.xlsx," tabs 'Voltz, MO,' in folder "Terminal Clocks," Cells X50 and AK50.

346 *See, for example*, Workpaper "Terminal Clocks.xlsx," tabs 'Voltz, MO,' in folder "Terminal Clocks," train symbol 258, which arrives at 08:48 and departs at 10:58.

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[redacted] to [redacted] westbound slot, which overlaps with two new trains that are attempting to work at [redacted]: [redacted] These trains would have to wait for ZDTLC to depart before they can enter the yard, which would render them unable to meet Applicants' claimed schedules. Moreover, MDMHN (Des Moines to Herington, KS Daily) scheduled through Birmingham at [redacted] will be staged to the north waiting for a route through the Birmingham diamond with CPKC 252 (Bensenville to Kansas City Daily), which is expected to arrive in Birmingham at [redacted].

411. As the example of ZDTLC illustrates, the additional train and block swapping activity Applicants have designed into Voltz creates an impossible operation with no capital solution offered or alternative work event location(s) considered. [redacted].[347]

412. As illustrated in the terminal clock below, the Growth Plan indicates [redacted] westbound trains at Voltz, which includes [redacted] trains originating, [redacted] trains terminating, and [redacted] working on the way through.[348] Even with trains perfectly spread apart and an assumption of no more than two hours of working time per train, there will be a train occupying the west end of the facility for [redacted] hours per day.

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347 *See* NS_00102691, Notes to Time Series Graphs and Full Year Results.

348 *See* Workpaper "Terminal Clocks.xlsx," tabs 'Voltz, MO,' in folder "Terminal Clocks."

FIGURE 97: TERMINAL CLOCK FOR VOLTZ, MO



Sources and Notes:
Routing Data based on MultiRail tables. *See* "Script 01 Create Routing Data," in folder "Routing Data". Local trains have been excluded from the terminal clock. Trains in red text indicate trains that terminate at or depart from Voltz. *See* Scripts "01 Create Yard Data.R" and "02 Terminal Clock Builder.R" and Workpaper "Terminal Clocks.xlsx," tab 'Figure 97,' in folder "Terminal Clocks."

413. Voltz's physical layout means that Applicants' planned additional work there would render the yard unsuitable for normal train operations. As illustrated in Figure 96, the short [redacted] feet clearance from West Voltz and the even more restrictive [redacted] feet from West MC to the Birmingham diamond would leave a mere four-hour window for any North/South through trains to cross the Birmingham diamond unimpeded. This estimate assumes no eastbound trains working Voltz would block the diamond or interfere with blocking any westbound trains working Voltz on either lead. The clear distance from West Voltz to East Voltz

is [redacted] feet. Any portion of through traffic left on Main Track 1 cannot exceed that length to avoid blocking either end of the terminal. These constraints are incompatible with typical train operations and therefore render Applicants' Plan infeasible.

414. To the south of Voltz, Applicants alter the historical pattern of East/West NS train operation by introducing seven new daily train starts between Voltz on the North and KCS Junction to the South. The details of these movements are presented in the bottom panels of Figure 98 below, specifically, the dashed lines with arrows denoting directional flow. The blue line represents southbound-only moves for UP in the Base Plan, and the grey lines denote the [redacted] new Growth Plan trains operating in both directions.

FIGURE 98: NEW ROUTING OF EAST/WEST NS TRAIN OPERATION



Sources and Notes:

See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."

415. Currently, UP operates only southbound between Birmingham and KCS Junction. CPKC operates trains in both directions. The Growth Plan introduces operations between Birmingham and KCS Junction with [redacted] new daily trains, including [redacted] intermodal

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trains, [redacted] merchandise and [redacted] automotive train.[349] [redacted] of these trains are scheduled to work at Voltz.[350] As a result, none of these [redacted] daily working trains can take advantage of the proposed 30 MPH upgrade to the connection between CPKC/UP Joint trackage and the new crossover between Main Track 1 and 2 on the NS Kansas City District mainline between Birmingham and Voltz. Only the proposed ZCICX could operate at [redacted] MPH through the Birmingham/Voltz complex if on time from KCT, arriving in Birmingham/Voltz at [redacted] each day.[351] This also requires ZCXCI to complete a scheduled setout and pickup at Voltz by no later than [redacted] before proceeding south.[352] Train lengths and three at-grade crossings in the first [redacted] feet south of Birmingham will prohibit train meets between Birmingham and Kansas City Terminal trackage.

416. Additionally, the [redacted] trains per day increase forecasted in the Growth Plan may, in fact, be underestimated. To the east of Kansas City, UP intermodal symbols [redacted] and [redacted] continue to show operation over BNSF trackage rights into Chicago, as shown in Figure 99.[353] With the combined NS network providing a parallel route via Springfield into UP's Chicago Global 4 facility, it is not clear why UPNS would continue to operate over BNSF trackage rights. If the intent is to move these trains under direct control on NS trackage, it is not reflected in either the Optimized or Growth plans.

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349 *See* Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html," corridor "13032-OTHER VOLTZ MO_NS-BIRMINGHAM MO_UP."

350 *See* Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html," corridor "13032-OTHER VOLTZ MO_NS-BIRMINGHAM MO_UP." *See also*, Workpaper "Terminal Clocks.xlsx," tabs 'Voltz, MO' in folder "Yard Detail."

351 *See* Script "Look up Train Route (speeds).sql", filtered to trainKey 16011549 in the Growth Plan (resultScenarioKey 200).

352 *See* Workpaper "Terminal Clocks.xlsx," tabs 'Voltz, MO,' in folder "Terminal Clocks."

353 *See also*, Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html," corridor "11005-OTHER BOSWORTH-GALESBURG."

417. Further, train density changes resulting from the merger east of Kansas City would understate train demand through KCS Junction, Birmingham/Voltz and east to Springfield as a result. UPNS's stated desire to reduce third party charges (including trackage rights fees) would drive this rerouting of [redacted] and [redacted] right into the heart of Birmingham/Voltz, which would already be over capacity.

418. In addition, under the terms of the Binding Settlement Memorandum of Understanding, [redacted].[354] The ultimate routing of Applicants' [redacted] trains per day in the Base Plan to [redacted] trains per day in the Growth Plan[355] over [redacted] is uncertain and must be addressed for the purpose of determining routes and capacity through [redacted]. If CN were to assume control, [redacted] In effect, if Applicants divest from this line, then [redacted] UP trains would end up [redacted][356] There is no capital plan to address these far-reaching changes.

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354 *See* Union Pacific, "Binding Confidential Memorandum of Understanding for Exchange of Overhead Commercial and Operating Access," July 22, 2026, UP_3344397, at -399–400.

355 *See also*, Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html," corridor "10284-JEFFERSON CITY SUB."

356 As discussed previously, UP has a stated goal of reducing third-party charges (*see* Gehringer and Orr VS ¶ 439). It is therefore highly unlikely that Applicants would divest from this line only to pay

419. For CN to exercise either trackage rights or ownership west of St. Louis, Applicants note that new connections are required to the east at Tuscola or Sullivan and Mattoon.[357] As depicted in the bottom panels of Figure 99, these new connections have challenges with alignment, grade separation (at Tuscola), and property acquisition to effect a progressive connection with UP trackage rights into St. Louis. None of these challenges are addressed in the Application or publicly to date.

trackage rights for 23 trains continuing to use it. The result is that 23 UP trains would shift to the current NS route through Moberly.

357 *See* Union Pacific, "Binding Confidential Memorandum of Understanding for Exchange of Overhead Commercial and Operating Access," July 22, 2026, UP_3344397, at -399–400.

FIGURE 99: UP AND NS ROUTES BETWEEN KANSAS CITY, ST. LOUIS, AND CHICAGO



Sources and Notes:
See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."

420. To conclude, the introduction and escalation of block swapping and train activity at Voltz create an impossible-to-achieve Operating Plan with route access constraints. Applicants make no attempt to recognize or address these issues that block their Growth Plan through Kansas City. Hence, the UPNS merger only adds complexity through Kansas City, contrary to Gehringer and Orr's claims of simplification. There is no service assurance plan to address the fundamentally flawed Operating Plan that Applicants present. Finally, the likely movement of

two trains running on BNSF trackage rights as well as 23 trains with routing potentially impacted by the divestiture of UP's lines between Kansas City and St. Louis forces a total of 25 trains onto NS's current line with no plan to expand capacity to support these additional trains.

B. St. Louis

421. Applicants claim that implementation of merger-related operational changes will reduce complexity in St. Louis. This is not supported by the details embedded in their Optimized and Growth Plans. Applicants' proposed consolidation of St. Louis operations does not eliminate work or produce the claimed capacity benefits. The Optimized and Growth Plans retain substantially the same blocking and train-departure requirements at the shared TRRA terminal while shifting additional processing, setout-and-pickup activity, and backhaul to other facilities in the region. The Growth Plan concentrates this work at Gateway Yard, [redacted]. Further, peak-day and seasonal fluctuations are not taken into account and the proposed capital project does not take into account through trains picking up and setting out in the yard, which are present in both the Optimized and Growth Plans.[358]

422. Applicants' consolidation of operations at Gateway Yard does not remove handlings for the traffic previously handled at TRRA Madison Yard. First, in the Growth Plan, Applicants abolish blocks for CN and CPKC which were previously built at Gateway—this traffic is rolled into a Proviso block, adding [redacted] cars to process at Proviso.[359] Second, TRRA Madison Yard produces Elkhart and Bellevue blocks today which are not replicated at

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358 *See* further discussion of capacity in Section VII.A.

359 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to Block IDs 3556, 1855, and 3322.

Gateway in the Optimized and Growth Plans.[360] This traffic is rolled into blocks for East Decatur and Ft Wayne, again failing to remove handlings.[361]

423. Applicants further claim that merger-related changes to how and where traffic is handled through St. Louis will free up capacity at the TRRA for other railroads.[362] This is not demonstrated by either the Optimized or Growth Plan. [redacted]. All other TRRA blocks to [redacted] remain in place regardless of lower volumes and viability.[363] Further, the number of trains departing the TRRA does not change.[364] [redacted] to East Decatur and [redacted] to Conway continue to be scheduled daily – not consolidated – in spite of low volume through to East Decatur.[365] Thus, similar to the Belt Railway of Chicago, removing cars from the TRRA is not sufficient to free up capacity if the number of blocks and departure slots remain unchanged.[366] Indeed, the Optimized and Growth

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360 [redacted] Of these blocks, only [redacted] are transferred to Gateway. The Elkhart and Bellevue blocks are rolled into blocks for East Decatur and Ft Wayne. *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks originating in UP Madison, IL in the Base Plan and Gateway Yard, IL in the Optimized Plan.

361 Notably, the Elkhart and Bellevue blocks reflected deep blocking to major facilities. By removing these blocks, Applicants have shifted this traffic to minor facilities with less density.

362 *See* Gehringer and Orr VS ¶ 215.

363 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks originating in Madison, IL in the Base Plan and Gateway Yard, IL in the Optimized Plan.

364 *See* Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 'Trains,' filtered to trains originating in Madison, IL in the Base and Optimized Plans.

365 *See* Scripts "Look up Route Stops of Interest.sql," in folder "MR Review," filtering to trainKeys 16000185 and 16000223 in the Growth Plan (resultScenarioKey 200). *See also*, Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 't3_trains' filtered to trainKeys 16000185 and 16000223.

366 *See* Section VI.D for a discussion of the Belt Railway of Chicago, including this issue.

Plans for TRRA reflect a less efficient operation, where the number of blocks remains largely unchanged, but their total volume has decreased substantially.[367]

424. These changes to the TRRA impact Gateway Yard as well. By not adjusting the blocking and train plan at the TRRA to reflect lower third-party processing demands brought on by the merger, Applicants are not representing the full effect of yard consolidation and traffic shifts in the greater St. Louis area. In reality, TRRA will not build the blocks as-designed due to insufficient volume, forcing more work onto Gateway Yard and outlying facilities like East Decatur. Applicants have therefore not demonstrated that their Optimized and Growth Plans are feasible.

425. With NS Luther Yard downgraded to local and intermodal traffic only, work event activity in St. Louis becomes more complex by introducing Gateway Yard as an additional work event location for pick up and set off activity on trains [redacted] in the Optimized and Growth Plans.[368] To both work Gateway Yard and proceed through to Luther Yard on the St. Louis, MO side entails entering Gateway from the Northeast at A&S Junction, setting out in the receiving yard and progressing through to the departure yard for a pick up before exiting Gateway again on the northeast side of the facility as illustrated by the red dashed line in Figure 100 below (inset top right). In contrast, the Base Plan routes of [redacted] and [redacted] simply bypassed Gateway through to Luther Yard, as represented by the dark grey dashed line in Figure 100 (inset top right). Similarly, train [redacted] from Moberly, MO previously worked at only Luther Yard

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367 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks originating in Madison, IL in the Optimized and Growth Plans.

368 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tabs 'Inbound' and 'Outbound' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "GATEWAY YARD IL_UP" and Cell E8 must be set to "Cars (#)."

before proceeding across Merchants Bridge and heading northeast direct to East Decatur (see location detail for Luther Yard and Merchants Bridge relative to Gateway Yard in main panel of Figure 100).

FIGURE 100: MAP OF BASE PLAN ROUTES OF 224 AND 33K BYPASSING GATEWAY THROUGH THE LUTHER YARD



Sources and Notes:
See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."

426. It is not clear how Applicants intend to schedule this setout/pickup activity on through trains without blocking pullback assignment operations from the class yard to the

departure yard. As detailed in Figure 101 below, capital plans at Gateway focus on reducing interference between the class yard and the receiving and forwarding yards, but not on through-train setouts and pickups in either the receiving or forwarding yards.

FIGURE 101: PLANNED EXPANSION AT GATEWAY YARD



Sources and Notes:

Gehringer and Orr VS Workpaper, "UP Manifest Yard Expansion Projects.pdf," p. 8.

427. In the Growth Plan, the pre-merger capacity expansion at Gateway Yard is all but consumed with only an average [redacted] car per day margin using processing counts provided by Messrs. Gehringer and Orr, representing operations at [redacted] percent capacity by Applicants' own model.[369] However, this number is understated. Based on Applicants' block to train plan,

[369] *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "GATEWAY YARD IL_UP" (row 11,086). Note that the column "T3_PER_DAY" lists [redacted] cars per day against a stated post-transaction capacity of [redacted] (column "POST_CAP_DAILY").

Gateway Yard is [redacted] Real world peak-day and peak-season volumes will take away an ability to recover. In Figure 102 below, we plot the total daily volume that Gateway Yard is expected to handle in the Growth Plan by day of week based on their blocking plan. Notably, when calculating total volumes based on the blocks scheduled to be built, received, or swapped at Gateway yard, we find that [redacted].

FIGURE 102: DAILY VOLUMES AGAINST CAPACITY BY DAY OF WEEK AT GATEWAY YARD, GROWTH PLAN



Sources and Notes:

See Script "Extract Volumes for DoW.sql" and Workpaper "Day of Week Impacts - HC.xlsx," tab 'Growth Plan,' in folder "Day of Week Volumes." Note that on tab 'Table,' Cell E7 must be set to "GATEWAY YARD IL_UP," Cell E8 must be set to "Manifest," and Cell E9 must be set to "Both."

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428. Modifications elsewhere in the network also impact St. Louis. Reduction of blocking activity at both Kansas City North Yard and Luther comes at the cost of additional handlings and backhaul in the greater St. Louis area. Downgrading both facilities results in the elimination of blocking to [redacted] with no equivalent blocking established at Gateway Yard.[370] [redacted][371] The primary impact of these changes is additional handlings and dwell for customers in the greater Princeton area.

429. Inexplicably, Applicants have also directed roughly [redacted] cars per day of Decatur area traffic processed at Gateway into a [redacted] Traffic from Gateway must enter A.O. Smith from the South (dark pink line), be processed, and then make a reverse move back out to the mainline (blue line) to be picked up on train service to East Decatur (light pink line). Destinations involved in this additional processing and reverse movement at A.O. Smith include traffic for [redacted][372]

430. As these examples show, the Optimized and Growth Plans create greater complexity in the St. Louis area, negating any savings Applicants claim from yard consolidation.

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370 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks originating at Gateway Yard, IL in the Optimized and Growth Plans.

371 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to Block IDs 52575 and 54193. *See also, for example,* Script "Look up Block Sequence.sql" filtering to trafficCompressedKey 1007724 in the Growth Plan (resultScenarioKey 200).

372 *See* Script "Look up Traffic in Block.sql" filtered to blockKey 52575 in the Growth Plan (resultScenarioKey 200).

Applicants have not demonstrated that these plans are feasible nor that Gateway Yard can perform the work assigned to it.

C. Louisville: Appliance Park

431. Applicants' Growth Plan assigns Appliance Park [redacted] and introduces train work the terminal has not historically performed. Applicants suggest that nearby capacity at Buechel could absorb the excess, but they do not incorporate that combined operation into their blocking and train plans. Even then, [redacted] The proposed schedules cluster multiple trains into narrow operating windows and allocate insufficient track space and dwell for the required setouts, pickups, and block swaps. Applicants provide no capital or service-assurance plan that makes this operation executable.

432. As an example of a watershed-area intermodal terminal, Appliance Park has been historically tied to import traffic through the Port of Norfolk and to interline traffic through the Chicago Gateway, specifically at Calumet Yard.[373] Applicants estimate Appliance Park has an annual capacity of approximately [redacted] lifts per year following recent expansion projects.[374] In contrast, the Growth Plan anticipates Appliance Park will see a demand for [redacted] lifts per year, [redacted][375]

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373 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 't1_blocks.'

374 *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data', filtered to name "APPLIANCE PARK KY_NS" (row 10993).

375 *See* Amended Railroad Merger Application, July 27, 2026, UP-NS Supplemental Workpaper, "PB-5 STB Supplemental.xlsx," tab 'NS Intermodal Tab' Cell J3.

FIGURE 103: APPLIANCE PARK AND OTHER LOUISVILLE AREA FACILITIES



Sources and Notes:

See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."

433. [redacted] [376] Applicants do not articulate how they intend to accommodate projected growth through a [redacted]. This is notable, because Applicants [redacted], but do not adjust their train or blocking plan accordingly. As discussed in Section II.A, the scale and complexity of this

376 *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "BUECHEL KY_NS" (row 3910).

merger demand that the Operating Plan be executable, and that the Contingency Plan be specific; vague assurances regarding excess capacity are insufficient. Here, Applicants risk severe service disruptions that are unlikely to be limited to one yard alone.

434. Further, Appliance Park sees [redacted] new scheduled trains stop in the Growth Plan, adding block swapping traffic between other terminals in the combined UPNS network – an operating practice not previously performed at Appliance Park or Buechel outside of local traffic.[377] Applicants have not demonstrated that this is feasible.

435. Per Figure 104 below, Applicants' proposed train schedules through Appliance Park are not executable, entailing unrealistic, capacity-constraining amounts of dwell for traffic that is swapping, as well as a clustering of trains with insufficient time allocated for work events. Proposed connections include upwards of [redacted] hours dwell in the limited storage tracks available.[378] Further, the Appliance Park terminal clock (see Figure 104, highlighted yellow below) sees an increase from [redacted] scheduled trains working in the Base and Optimized Plans to a total of [redacted] scheduled trains in the Growth Plan. An impossible operational condition is imposed with [redacted] (see the black box in the Growth Plan terminal clock below).

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377 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tabs 'Swaps (Base)' and 'Swaps (Growth)' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "APPLIANCE PARK KY_NS" and Cell E8 must be set to "Cars (#)."

378 For example, Applicants plan a block from Oakland to Cincinnati at [redacted] feet per day, which swaps from the [redacted] to [redacted] at Appliance Park daily with a connection time of [redacted]. *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "APPLIANCE PARK KY_NS" and Cell E8 must be set to "Length (ft)."

FIGURE 104: TERMINAL CLOCK FOR APPLIANCE PARK, KY



Sources and Notes:
Routing Data based on MultiRail tables. *See* "Script 01 Create Routing Data," in folder "Routing Data". Local trains have been excluded from the terminal clock. Trains in red text indicate trains that terminate at or depart from Appliance Park. *See* Scripts "01 Create Yard Data.R" and "02 Terminal Clock Builder.R" and Workpaper "Terminal Clocks.xlsx," tab 'Figure 104,' in folder "Terminal Clocks."

436. From a track capacity perspective, train 224 originating at Atlanta destined to Kansas City North Yard places the highest demands on the Appliance Park and Buechel footprint. As illustrated in Figure 105 below, train 224 is scheduled in the Growth Plan to set out [redacted] feet and pick up [redacted] feet of intermodal traffic daily. To demonstrate the extreme complexity, time, and capacity demands of this proposed operation, we provide an illustration of several key steps that would likely be involved.

- First, the local assignment based at Appliance Park would be required to pull the pad or working tracks at both Appliance Park and Buechel to assemble the pickup in one block in an Appliance Park siding adjacent to the mainline in advance of an on time arrival of the 224. The crew on 224 would tie down the [redacted] feet of through traffic on their train on the main line which we depicted in Figure 105 below, proceed over a mile to Buechel to set out

[redacted] feet of traffic into storage tracks and apply hand brakes on two cars per track.[379] See steps 1 and 2 in Figure 105 below.

- With at least [redacted] storage tracks occupied by this movement, at most [redacted] storage track remains available until that traffic is processed through the intermodal terminal.

- The crew would then proceed to the Appliance Park siding to couple onto the [redacted] foot block,[380] connect air hoses, release hand brakes and perform a brake test before proceeding west of Buechel, then doubling back east to their train on the mainline. See step 3 in Figure 105 below.

- Finally, the crew would perform a brake test on the now [redacted] foot train, before departing west. See step 4 in Figure 105 below.

FIGURE 105: MAP OF TRAIN 224 SETTING OUT AND PICKING UP AT APPLIANCE PARK

[redacted]

Sources and Notes:

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379 *See* Norfolk Southern, "Midwest Division Bloomington Subdivision Timetable Number 1," Revised March 14, 2024, Effective July 19, 2023, p. 14.

380 Operationally, the local assignment based at Appliance Park would be required to pull the pad or working tracks at both Appliance Park and Buechel to assemble the pickup in one block in Appliance Park siding adjacent to the mainline in advance of an on-time arrival of the 224.

See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html." Numbers in the figure above may differ slightly from those in text as they are based on previous submissions of Applicants' MultiRail data. Our conclusions remain the same.

437. As described in the bullets above, it is important to emphasize the amount of effort and time required to actually perform this work. It requires the crew to set out into multiple tracks and secure each track before proceeding onto the next one. It also requires the train to travel back and forth from the east end of Appliance Park to beyond the far west end of Buechel, a distance of over a mile. Even at peak efficiency, the time required to complete this work is measured in hours; Applicants only represent [redacted] for this work, based on a single Base Plan work event.[381] Applicants further do not address the risk of a recrew that this complex move creates.[382] Finally, during this time, the siding and the main line are blocked while the 224 completes this complex Growth Plan assignment, preventing any other train movement through Appliance Park.

438. As illustrated above, successful completion of this work requires a number of key elements to come together, including main line, siding, and storage track capacity, sufficient crew hours, lift made available and readied on the main line, and no interference from other trains trying to work in the terminal area. It is unlikely that Applicants will be able to execute this design. In fact, recent events highlight the fragility of Appliance Park. On September 15th, 2025, NS and UP announced a new interline intermodal service partnership between Appliance Park and UP-served terminals in Houston, Los Angeles, Salt Lake City, Lathrop, Portland and

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381 *See* Script "Look up Route Stops of Interest.sql" filtered to trainKey 16000101 in the Base Plan (resultScenarioKey 171).

382 The extra hours that this move creates could potentially push crews to their maximum hours, requiring a new crew to replace them.

Seattle. At the same time, in an attempt to improve performance, NS implemented a number of operational changes at Appliance Park regarding how truck drivers retrieve shipments. Subsequent operating issues at Appliance Park led to congestion and the reopening of Buechel on January 26th, 2026 to alleviate long truck turn times with waits up to 6 hours.[383]

439. With a combined Buechel and Appliance Park capacity of [redacted] lifts per year, the Growth Plan puts both facilities at [redacted] percent average daily lift capacity by Applicants' own calculation, with no capital investment or service assurance plan to address even minor fluctuations in volume.[384] A recent history of service issues required Buechel to reopen in advance of merger-related growth, casting doubt on Applicants' ability to handle the new volume. Applicants therefore fail to demonstrate that Appliance Park can execute the Growth Plan.

D. Chicago – BRC

440. Applicants' claimed reduction in BRC workload does not establish a simpler Chicago operation. Although car volume declines, the BRC must maintain the same blocks and train departures, while several remaining blocks may be too small for the BRC to build and could require additional handling elsewhere that the Growth Plan does not capture.

441. Applicants claim the merger will simplify operations in Chicago by either bypassing the Chicago Gateway or consolidating terminal operations in the Chicago Area. This combination allows the Applicants to close two small intermodal terminals (Yard Center and Englewood) and reduce dependency on the Belt Railway of Chicago ("BRC") for the purported

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383 Ari Ashe, "Norfolk Southern Reopening Second Terminal in Congested Louisville," January 21, 2026, *Journal of Commerce*.

384 *See* Turner VS Workpaper, "NS Manifest IM Auto Terminal Capacity Calculations," tab 'Intermodal Terminal Inputs' Cell R38.

benefit of other carriers by removing approximately [redacted] UPNS-related cars from the BRC by the Growth Plan.[385]

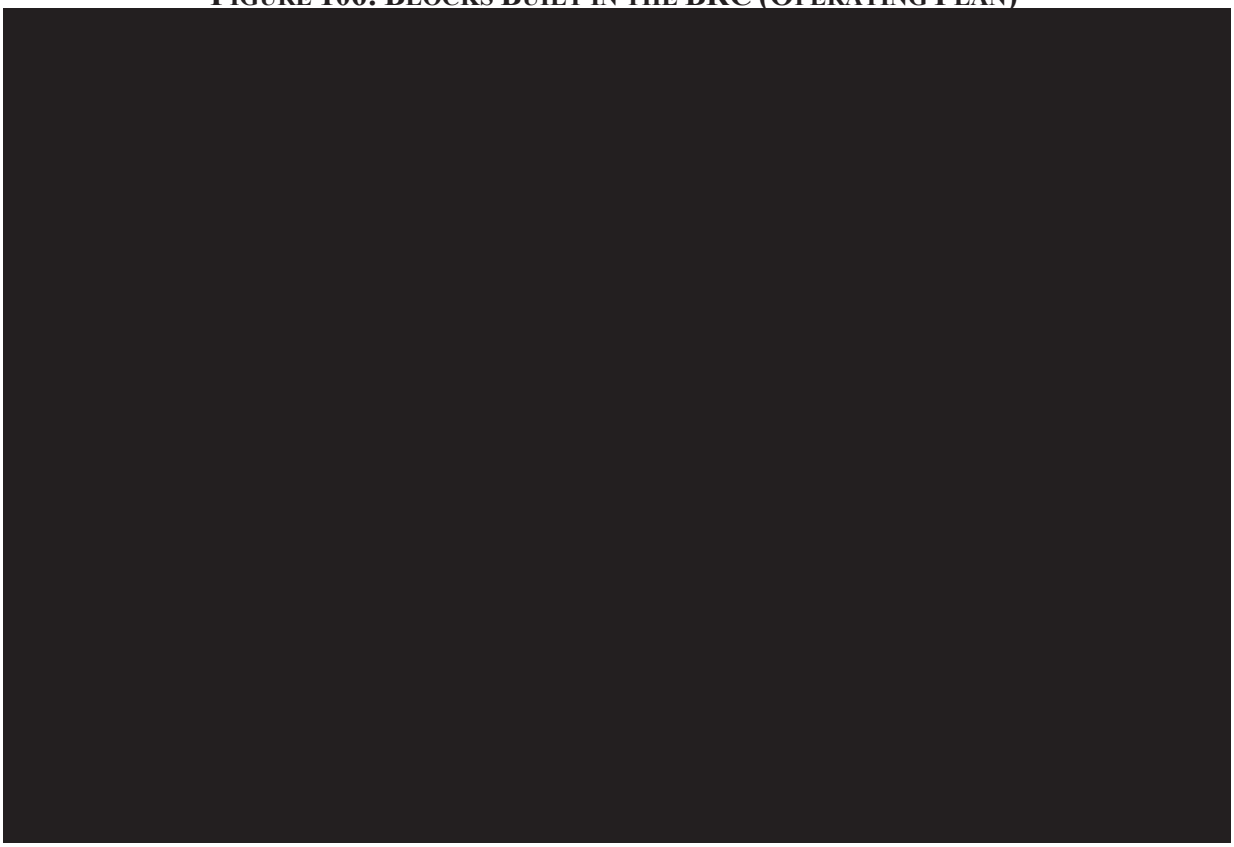
442. However, this is not an accurate representation of their Optimized and Growth Plans. Although Applicants propose to remove roughly [redacted] cars of processing from the BRC, the Growth Plan does not include any reductions in blocks made or scheduled train departures relative to the Optimized Plan. As illustrated in Figure 106 below, [redacted][387]

[385] *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Summary', row [4], showing volume of UP-NS interline traffic built in the BRC. Note that Cell E7 on tab 'Summary' must be set to "CLEARING IL_UP" and Cell E8 must be set to "Cars (#)."

[386] As shown in Figure 106, one block in the Growth Plan (Block ID 1420) reports zero volume. However, that block is not listed as "deleted" in Applicants' workpapers and continues to show being required in the BRC.

[387] *See* Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 'Trains,' filtered to trains originating in "CLEARING IL_UP" in the Base, Optimized, and Growth Plans.

FIGURE 106: BLOCKS BUILT IN THE BRC (OPERATING PLAN)



Sources and Notes:

See Workpaper "BRC_Blocks - Confidential.xlsx," in folder "Clearing Blocks." Limited to Blocks originating in Clearing, IL in the Base Plan with at least 10 cars per day. Note that a value of "0.0" reflects a rounded number of less than 0.05 cars per day; true zeros are represented by a dash.

443. Removing cars is not sufficient if the number of departure slots and blocks to be maintained by the BRC does not change. Because Applicants have not demonstrated that the merger will change the number of blocks or train departures from the BRC, they have not substantiated that operations will be simpler or result in savings.

444. Further, Figure 106 demonstrates that, of the blocks that the BRC built in the Base Plan, [redacted] fall below an average of [redacted] cars per day in the Growth Plan, making it unlikely that the BRC would produce those blocks. The BRC has strict volume requirements; if Applicants fall below this threshold, the blocks will not be built. Consequently, this traffic would

have to be processed elsewhere in the Chicago area, requiring additional handlings not incorporated in the Growth Plan.

E. Chicago – Manifest and Auto Facilities

445. As with the BRC, Applicants claim to reduce the complexity of their Chicago-area operation. However, Chicago-area operations, and in particular interline movements, are so heavily distorted in Applicants' MultiRail model that the Board cannot reliably assess what operations will look like following the transaction. Specifically, their interchange mapping assigns substantial traffic to the wrong locations, creating artificial density and implausible train volumes.[388] This error impacts the Base Plan and carries through to the Optimized and Growth Plans. Consequently, work at the actual interchange points is understated, and Applicants introduce new blocking based on unsupported bypass opportunities into Chicago. Taken together, these errors make it impossible to assess Applicants' Chicago-area operation.

446. As first discussed in Section III.E, Applicants consolidate interline traffic into select interchange facilities. In the Chicago area, this simplification means that nearly all interline traffic shows going into Calumet. Consequently, Calumet reports inflated inbound counts starting in the Base Plan. According to their blocking plan, Calumet reports [redacted] cars per day inbound versus [redacted] cars per day outbound in the Base Plan;[389] the single biggest contribution to this discrepancy is a [redacted] car Elkhart to Calumet block reported in the Base Plan.[390]

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388 By "mapping" traffic, we mean substituting waybill destinations for model representations.

389 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Summary' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "CALUMET IL_UP" and Cell E8 must be set to "Cars (#)."

390 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to Block ID 51209.

447. This interchange substitution issue is best illustrated below by the train plan out of Elkhart inbound to Calumet, IHB Blue Island, BNSF Cicero and CPKC Bensenville.

FIGURE 107: MAP OF TRAIN PLAN OUT OF ELKHART INBOUND TO CALUMET



Sources and Notes:
See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html." Numbers in the figure above may differ slightly from those in text as they are based on previous submissions of Applicants' MultiRail data. Our conclusions remain the same.

448. In the Base Plan, 31Q (Elkhart to Calumet) is reported handling a [redacted] block to Calumet for processing.[391] This block contains traffic travelling via

[391] *See* Script, "Look up Block Movement on Train.sql," filtering to blockKey 51209 in the Base Plan (resultScenarioKey 171).

Chicago to [redacted].[392] In validating their plan, Applicants should have flagged this as an impossible design. There is no precedent for running a train over [redacted] feet, nor could Elkhart afford to accumulate [redacted] cars for one destination with one train outlet per day. Doing so would occupy a disproportionate amount of resources at Elkhart. For comparison, the actual train size of 31Q arriving in Calumet averages [redacted] cars per day, based on 2023 Car Event Data.[393] Thus, Base Plan 31Q does not represent the actual NS operation.

449. While volumes on the 31Q are overstated, volumes for other interline services are understated. For instance, as shown in Figure 107, the Base Plan shows 33G handling a [redacted] car ([redacted] foot) block to the BNSF interchange at Cicero.[394] For comparison, the actual train size of 33G arriving in Cicero averages [redacted] cars per day, based on 2023 Car Event Data.[395] The Base Plan shows 35J handling a [redacted] car [redacted] foot block to the IHB interchange at Blue Island,[396] while the actual train size of 35J arriving in Blue Island averages [redacted] cars per day.[397] The Base Plan shows 17V handling two reciprocal blocks to CP for Bensenville and St.

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[392] *See* Figure 10.

[393] *See* Script "historical_cars_per_day_for_in_text.sql" and Workpaper "historical_cars_per_day_for_in_text.xlsx" in tab '31Q' in folder "Historical Cars Per Day."

[394] *See* Script "Look up Block Movement on Train.sql," filtering to blockKey 53940 in the Base Plan (resultScenarioKey 171). *See also*, Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to Block ID 53940.

[395] *See* Script "historical_cars_per_day_for_in_text.sql" and Workpaper "historical_cars_per_day_for_in_text.xlsx" in tab '33G' in folder "Historical Cars Per Day."

[396] *See* Script "Look up Block Movement on Train.sql," filtering to blockKey 51195 in the Base Plan (resultScenarioKey 171). *See also*, Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to Block ID 51195.

[397] *See* Script "historical_cars_per_day_for_in_text.sql" and Workpaper "historical_cars_per_day_for_in_text.xlsx" in tab '35J' in folder "Historical Cars Per Day."

Paul.[398] Due to the overgeneralization of traffic mapping in Chicago, only the Bensenville block shows volume for a total planned train size of [redacted] cars and [redacted] feet per day.[399] The actual train size of 17V arriving in Bensenville averages [redacted] cars per day – almost a match for the [redacted] cars on 17V in Base Plan plus the [redacted] cars mapped to Calumet.[400] These examples illustrate the significant difference between Applicants' modeled operation and their actual operation; accordingly, they have not provided a reliable basis for the Base, Optimized, or Growth plans.[401]

450. These problems manifest in the wider network beyond Chicago. In particular, the consolidation of interchange traffic into a few yards gives the false impression of density where none exists. Consequently, Applicants do not have the volume to build bypass blocking into the Chicago area. This is important, as it means that growth volumes will shift back to key yards like Elkhart. In the next section, we discuss how the errors described above lead Applicants to understate the workload at Elkhart.

F. Chicago – Elkhart

451. Applicants' Growth Plan is not executable as written in Elkhart. It places Elkhart near or above its practical capacity while substantially increasing the number and complexity of

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398 *See* Script "Look up Block Movement on Train.sql," filtering to blockKeys 50737 and 54798 in the Base Plan (resultScenarioKey 171).

399 *See* Script "Look up Block Movement on Train.sql," filtering to blockKeys 50737 and 54798 in the Base Plan (resultScenarioKey 171). *See also*, Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to Block IDs 50737 and 54798.

400 *See* Figure 10. *See also,* Script "historical_cars_per_day_for_in_text.sql" and Workpaper "historical_cars_per_day_for_in_text.xlsx" in tab '17V' in folder "Historical Cars Per Day."

401 As another example, of [redacted] cars originating at Chicago Heights in the Base Plan, only [redacted] make their way to Hegewisch, pointing to a substitution issue in the traffic file giving a false picture of volumes at Hegewisch in the Optimized and Growth Plans. *See* Script, "Look up Traffic in Block.sql" filtering to blockKey 226 in the Base Plan (resultScenarioKey 171). Among the records identified, the total carsPerDay is 24 and only 7 records report a destinationCity of Hegewisch.

block swaps performed there. Applicants' proposed bypasses to mitigate this are infeasible and based on errors in the Base Plan. The new work also conflicts with the yard's physical layout and core classification operations, and the proposed track extensions provide far less sustainable throughput than Applicants assume. Despite Elkhart's network-wide importance, Applicants provide no service-assurance or contingency plan for the yard.

a. Bypass Blocking is Unsupported

452. Currently, Elkhart receives traffic from Conway and Bellevue to build blocks for interline partners throughout the Chicago area.[402] In reality, this traffic goes direct to each interline partner in the Chicago area—for example, traffic headed to CPKC is blocked to Bensenville, IL and St. Paul, MN, and travels on a train direct to CPKC's facility at Bensenville. The same applies for BNSF, CN, and IHB (including CIC and IAIS). However, the Operating Plan over-simplifies the Chicago operation; as a result, Applicants largely do not map the traffic to separate blocks for each interline partner. [403] Instead, Applicants represent most of this traffic as destined to Calumet.[404]

453. As a result, Applicants' representation creates a false impression of traffic density for Calumet out of Elkhart, Bellevue, and Conway. This becomes important in the Growth Plan, when volumes at Elkhart increase and strain its capacity, thus creating the need to remove handlings. In response, Applicants introduce new blocks from Conway to Calumet and Bellevue

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402 *See, for example*, Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to Block IDs 52121, 52163.

403 *See* discussion in Section III.E.

404 *See* Figure 10.

to Calumet that bypass Elkhart.[405] This bypass is critical to keep Elkhart under-capacity in the Growth Plan. However, this bypass is premised on there being sufficient density going into Calumet – there is not.[406] In reality, this volume is for interline partners throughout Chicago, including BNSF, CN, CPKC, and IHB (including CIC and IAIS). Therefore, absent dramatic changes to their design, this traffic must either continue to route to Elkhart on the train services that run directly to those interchanges—[redacted]—or this bypass volume must go to the BRC, not Calumet.

b. Applicants Plan an Infeasible Increase in Block Swapping Activity

454. As in the case of other yards, Applicants increase the complexity of their operation by drastically increasing the number of block swaps at Elkhart in the Optimized and Growth Plans. As indicated in the Base Plan, block swap demands are limited to [redacted] cars per day exchanged between [redacted] arriving and [redacted] departing trains performing very basic movements within the yard.[407] An example of this simple movement is given by Figure 108

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405 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to Block IDs 1001883, 1001882.

406 As discussed in Section VI.E, Applicants' bypass opportunities are based on a generalized and incorrect traffic file in the Base Plan, which consolidates interline traffic in the Chicago area into Calumet. As a result of this seriously flawed traffic file, two blocks are created in the Growth Plan meant to bypass Elkhart: Conway to Calumet at [redacted] cars per day, and Bellevue to Calumet at [redacted] cars per day. The resulting train plan sees the creation of a new daily train service, the MCWCL, designed at an average of [redacted] cars per day. *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to Block IDs 1001883, 1001882. *See also*, Script "Look up Train Route (volume).sql," filtering to trainKey 161131438 in the Growth Plan (resultScenarioKey 200).

Closer analysis of both blocks reveals an actual bypass plan out of Conway and Bellevue would require the creation of a minimum of [redacted] blocks each at both Conway and Bellevue and at least [redacted] daily train starts to truly achieve an Elkhart bypass design involving train service to BNSF Cicero, CPKC (with Bensenville and St Paul blocking required). In other words, Applicants' consolidation of the traffic file gives the impression of density where there is none.

407 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Base)' in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "ELKHART IN_NS" and Cell E8 must be set to "Cars (#)".

below, which shows train 359 (Sterling Heights, MI to Elkhart) connecting a single westbound block to train 31M destined to IHB's Gibson Yard in Chicago.

FIGURE 108: MAP OF BASE PLAN TRAIN 359 BLOCK SWAPPING TO 31M



Sources and Notes:
See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html." Numbers in the figure above may differ slightly from those in text as they are based on previous submissions of Applicants' MultiRail data. Our conclusions remain the same.

455. The illustration above depicts train 359—which originates in Sterling Heights (Detroit), MI—arriving at Elkhart with two automotive blocks (Elkhart and IHB Gibson) totaling

[redacted] cars ([redacted] feet).[408] The train moves into the receiving yard to set out and secure the Elkhart block in 1 track for processing by one of the Elkhart hump assignments (see step 1 in Figure 108 above). The crew of train 359 then proceeds from the receiving yard to the west departure yard on the south side of Elkhart (step 2) to set out and secure the [redacted] car IHB Gibson block for connection to 31M (step 3).[409] The inbound crew concludes their run from Detroit by taking their locomotives to the shop track for servicing. This progressive movement through Elkhart is an example of a simple block swap move through a hump yard facility minimizing interference with hump and pullback assignments through the setout of a single block in both the receiving yard and the west departure yard. From a scheduling perspective, the only area for improvement in this Base Plan is a reduction of connection time of [redacted] hours from the arrival of 359 to the departure of 31M.[410]

456. In the Growth Plan, block swapping at Elkhart increases to [redacted] cars per day exchanged between [redacted] arriving and [redacted] departing trains each day.[411] In addition to

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408 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Inbound' in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "ELKHART IN_NS" and Cell E8 must be set to "Cars (#)" to show cars or "Length (ft)" to show length. Cumulative counts can be found by summing the block names "ELKHAML_NS" and "GIBSNML_NS".

409 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Inbound' in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "ELKHART IN_NS" and Cell E8 must be set to "Cars (#)" to show cars or "Length (ft)" to show length. Cumulative counts can be found by summing the block names "GIBSNML_NS".

410 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Base),' column "Scheduled Dwell" in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "ELKHART IN_NS" and Cell E8 must be set to "Cars (#)" to show cars or "Length (ft)" to show length.

By either departing 359 later out of Sterling Heights or departing 31M earlier from Elkhart, the Base design could minimize the occupancy of a departure yard track and reduce automotive transit from Detroit to Gibson. This scheduling change assumes there are no interline departure/arrival window restrictions in Detroit or Chicago and no limitations to the Elkhart terminal clock including the bunching of arrivals or departures.

411 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "ELKHART IN_NS" and Cell E8 must be set to "Cars (#)".

the sheer increase in block swap car counts and train activity, block swapping eastbound is introduced for which there is no simple, linear path between the east departure yard on the north side of Elkhart (between the mainline and the class bowl) and the receiving yard located at the extreme east end of Elkhart.[412] An illustration of the complexity of this type of movement is given in Figure 109 below. This type of movement could interfere with hump and pull back operations, which would reduce yard throughput and further constrain capacity, a risk that Applicants do not address.

[412] *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "ELKHART IN_NS" and Cell E8 must be set to "Cars (#)".

FIGURE 109: MAP OF GROWTH PLAN TRAIN MALEK BLOCK SWAPPING TO 12N AND 310 AT ELKHART



Sources and Notes:

See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."

457. Using the example of Growth Plan train MALEK originating from Altoona, WI with [redacted] blocks [redacted] arriving at Elkhart at [redacted] cars ([redacted] feet)[413] from the west (see step 1 in Figure 109 above), MALEK enters the east departure yard blocking access to the pullback assignments moving blocks of classified traffic from the west end of the class bowl to shove into the west end of the east departure yard.

413 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Inbound' in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "ELKHART IN_NS" and Cell E8 can be used to switch between "Cars (#)" and "Length (ft)."

MALEK must set out and secure [redacted]-car Corning and [redacted]-car Conway blocks to connect to trains 310 and 12N.[414] To do so requires occupancy of two out of a total of six east departure yard tracks to set out and secure both blocks. Once complete, the crew of train MALEK then proceeds from the east departure yard onto one of the main tracks past the receiving yard and over the Main Street grade crossing to stop and then reverse direction into the receiving yard (see step 2a in Figure 109). Then the remaining [redacted] of the train in the receiving yard requires the crew to double over and secure the cars into 2 receiving yard tracks blocking hump assignments from accessing other tracks in the receiving yard and shoving through to the hump for classification.

458. This complicated movement through Elkhart is an example of how Applicants have designed an infeasible operation. In particular, Applicants introduce a multi-block swap move through a hump yard facility not built to handle both eastbound block swaps and traffic to be processed at Elkhart. To avoid impacting the pullback assignments on the west end of the facility and also avoid a reverse movement into the receiving yard, the most likely scenario involves MALEK routing through the south side of Elkhart past the west departure yard and terminating the entire train in two receiving yard tracks (see step 2b in Figure 109 above). This scenario presents the least impact to yard operations but results in all traffic, including Corning and Conway, being humped into the class yard, increasing processing demands. Recall that, in the Growth Plan, Elkhart is scheduled to swap [redacted] cars per day between [redacted] inbound

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414 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "ELKHART IN_NS" and Cell E8 must be set to "Cars (#)."

and [redacted] outbound trains.[415] The incremental train activity and cars dwelling for connection on critical tracks in a busy hump yard will undoubtedly affect Elkhart's throughput.

c. Planned Capital Investments are Insufficient to Improve Throughput

459. In fact, Applicants recognize how interference with yard activities can reduce throughput. As a result, Applicants highlight a pre-merger expansion plan underway to extend four receiving yard tracks by approximately [redacted] to [redacted] feet each to better accommodate the arrival and subsequent yarding of long trains.[416] Taking Applicants' capacity calculations at face value, this new investment would increase Elkhart's capacity to [redacted] cars per day in the Growth Plan.[417] However, Applicants' blocking plan reports [redacted] cars per day departing Elkhart in the Growth Plan, putting Elkhart at [redacted] percent of capacity in the Growth Plan.[418]

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415 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "ELKHART IN_NS" and Cell E8 must be set to "Cars (#)."

416 *See* Gehringer and Orr VS Workpaper, "NS IM Auto Manifest Expansion Projects.pdf," p. 5. Note the extension lists adding [redacted] feet total, which roughly equates to [redacted] to [redacted] feet per track.

417 *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "ELKHART IN_NS."

418 *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to observations for Elkhart.

FIGURE 110: PRE-MERGER EXPANSIONS AT ELKHART



Sources and Notes:

See Gehringer and Orr VS Workpaper, "NS IM Auto Manifest Expansion Projects.pdf," p. 5.

460. While Applicants predict that [redacted] would increase standing capacity by [redacted] cars per day,[419] a prior 2023 Norfolk Southern study found this same investment yielded a throughput increase of only [redacted] cars per day from a base throughput capacity of [redacted] cars per day to [redacted] (see Figure 111 below).[420] In other words, [redacted]

[419] *See* Figure 110. Note that this stated increase differs from the increase implied by their capacity calculation, which lists [redacted] cars per day in the Base Plan and [redacted] in the Growth Plan implying an increase of [redacted] cars per day.

[420] *See* Norfolk Southern, "YardMAX Capacity Analysis, Elkhart (CD422)," April 10, 2023, NS_00102565, at -573.

Elphick and Nelson V.S. at 305

[redacted]

FIGURE 111: INCREASES IN STEADY STATE THROUGHPUT AT ELKHART FOLLOWING TRACK EXTENSIONS



Sources and Notes:
Norfolk Southern, "YardMAX Capacity Analysis, Elkhart (CD422)," April 10, 2023, NS_00102565, at -573.

461. Given Applicants' reliance on Elkhart to add [redacted] new blocks to support the combined UPNS network and growth projections in the Growth Plan,[421] Applicants should have investigated and embedded bypass blocking and train designs to reduce rather than increase block swap activity. This would have proactively taken volume around Elkhart rather than into the yard. Indeed, Elkhart is fundamental in supporting Chattanooga and Chicago-area yards in the Service Assurance and Contingency Plan. In stark contrast, there is no Service Assurance/Contingency Plan to assist Elkhart. The combination of insufficient capital, mistaken

421 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to newly-added (T3 status of "Added") blocks originating in Elkhart in the Growth Plan. Note we omit one block with zero volume assigned to it.

bypassing, and elevated block swapping—in concert with normal operating variation—will erode its available capacity and exceed the yard's capability.

G. Chicago – Intermodal

462. Applicants propose consolidation of Chicago intermodal facilities in the Optimized and Growth Plans.[422] The Plans reduce the number of terminals but do not simplify the underlying work. They shift activity to remaining facilities, preserve existing cross-town transfers, and increase block swapping without providing the track space, capital, or nearby capacity needed to absorb those activities. For many lower-volume lanes, the proposed service requires multiple yard connections, lengthy dwell, and circuitous routing inconsistent with the claimed single-line service improvements.

463. Applicants' claim to simplify Chicago intermodal operations is not supported by the Optimized Plan. Applicants propose to consolidate intermodal operations from Englewood into Global 2 and remove Yard Center as a stop for cross-town moves.[423] But Applicants do not comprehensively redesign their train or blocking plan to reflect this consolidation. Englewood activity merely moves over to Global 2, while existing operations at Global 2 remain unchanged. As a result, Global 2 capacity is strained as follows.

464. Applicants plan for an over [redacted]-fold increase in daily block swaps by footage:

- In the Base Plan, [redacted] arriving trains at Global 2 swapped [redacted] feet per day to [redacted] departing trains;[424]

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422 *See, for example*, Gehringer and Orr VS ¶¶ 203–204.

423 Practically, this means moving an intermodal train pair from Yard Center to 47th Street as part of their "simplification" of Chicago-area operations. *See* Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 'Trains,' filtered to Train IDs 14481455 and 14481456.

424 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Base)' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "GLOBAL 2 IL_UP" and Cell E8 must be set to "Length (ft)."

- In the Optimized Plan, following the consolidation of Englewood operations, swapping demand increases to [redacted] feet per day arriving on [redacted] inbound trains for connection and departure on [redacted] outbound trains;[425]
- By the Growth Plan, Global 2 block swapping increases to [redacted] feet per day arriving on [redacted] inbound trains for connection and departure on [redacted] outbound trains.[426]

To reiterate: the Base Plan shows [redacted] trains swapping [redacted] feet to [redacted] trains per day, which jumps to [redacted] trains swapping [redacted] feet to [redacted] trains per day. That is, Applicants plan on more than [redacted] the number of trains performing block swaps, as well as an over [redacted] increase in the volume of cars swapping. This does not reflect a simplified design in Chicago.

465. Importantly, [redacted][427] This means that Applicants do not consider the time, resources, and track space needed to execute these block swaps at Global 2. Further, Global 2 receives no planned capital investment. With the adjacent Proviso Yard already utilizing [redacted] percent of rated standing capacity (see Figure 112 below), there is no nearby facility to absorb

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425 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Optimized)' in folder "Yard Detail" Note that Cell E7 on tab 'Summary' must be set to "GLOBAL 2 IL_UP" and Cell E8 must be set to "Length (ft)."

In addition, the ZG2MV (priority intermodal to Morrisville, PA) originates at Global 2 as part of the Englewood intermodal facility consolidation. Hence, Global 2 is expected to build a new train in addition to the increase in block swapping activity. *See* Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," filtered to trainKey 16011557.

426 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' in folder "Yard Detail" Note that Cell E7 on tab 'Summary' must be set to "GLOBAL 2 IL_UP" and Cell E8 must be set to "Length (ft)."

427 Rather, Mr. Turner estimates that capacity at Global 2 is [redacted] lifts per day. *See* Turner VS Workpaper, "UP Manifest-Intermodal-Automotive Terminal Capacity Inputs & Calculations.xlsx," tab 'Intermodal Terminal Inputs.' Note that [redacted] lifts per year / 364 days per year = [redacted] lifts per day.

Elphick and Nelson V.S. at 308

Global 2 block swap and corresponding terminal clock workload. Applicants have not demonstrated how Global 2 can feasibly execute this increase in activity.

FIGURE 112: LAYOUT OF GLOBAL 2



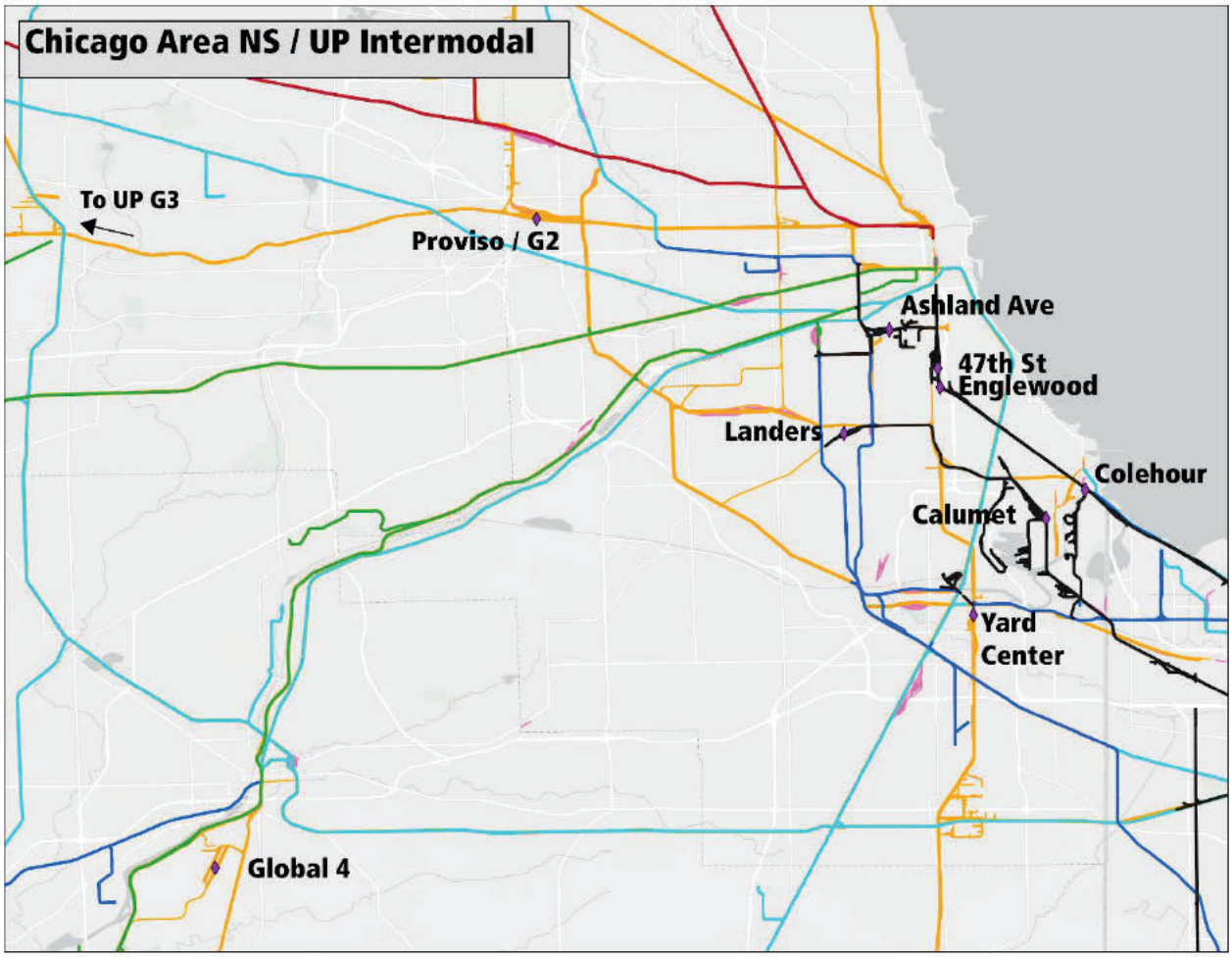
Sources and Notes:
See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."

466. A broader concern is that intermodal traffic that is *not* part of a through block on a transcontinental train is at risk to go through two or more yards in Chicago. For example, Livernois (Detroit, MI), Maple Heights (Cleveland, OH), Appliance Park (Louisville, KY), and Rickenbacker (Columbus, OH) to Global 4 traffic is processed at Colehour, transferred to Global

2 and set out to swap for a transfer train to Global 4.[428] This move, touching three facilities in Chicago, does not change in the Optimized Plan. Further, as Figure 114 demonstrates, these facilities are spread out across the Chicago area, necessitating a complicated cross-town move in order to execute the connection. Finally, these smaller volume origin/destination pairs risk stopping for other connecting services outside of Chicago, potentially incurring out-of-route miles in the process.

[428] *See* Script "Look up Block Movement on Train.sql", filtered to BlockKeys 50951, 50955, 50954 in the Base Plan (resultScenarioKey 171) and the Growth Plan (resultScenarioKey 200), showing three stops in the Chicago area. *See also*, Script "Look up Traffic in Block.sql," filtered to BlockKeys 50951, 50955, and 50954 in the Base Plan (resultScenarioKey 171) and the Growth Plan (resultScenarioKey 200).

FIGURE 113: CHICAGO-AREA INTERMODAL TERMINALS



Sources and Notes:

See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."

467. Broadly, the Growth Plan assigns low-volume intermodal traffic multiple handlings through Chicago. This is a problem because these new intermodal services must be truck-competitive, or they risk losing traffic to truck.[429] Below are three striking examples that illustrate this problem.

- First, [redacted] feet daily from East Minneapolis to Cincinnati Guest Street Intermodal is designed with five swaps at South St Paul MN, Boone IA,

429 [redacted] *See, for example,* Hunt VS, ¶¶ 1–3.

Elphick and Nelson V.S. at 311

Global 3 (Rochelle, IL), Ashland Avenue, and Rickenbacker (Columbus, OH).[430, 431]

- Second, [redacted] feet daily from Toledo, OH to Council Bluffs, IA involves intermediate connections at Colehour, Global 2, Global 4 and Global 3 (Rochelle, IL). Block swap dwell within the three Chicago facilities totals [redacted] hours, compared to roughly [redacted] hours total truck transit between Toledo and Council Bluffs.[432, 433]

- Third, [redacted] feet daily from Austell, GA to East Minneapolis, MN involves intermediate connections at Calumet, Colehour, and Global 4 to navigate Chicago, followed by additional block swaps at Boone, IA and South St Paul. Based on schedules provided with the MultiRail model, block swap dwell through these three Chicago facilities totals [redacted] hours. Boone and South St Paul add another [redacted] hours of yard dwell for a total of [redacted] hours of pure idle time, compared to roughly [redacted] hours of total transit time on the highway.[434]

468. These three examples, among others, pose a key question: aside from a few higher volume transcontinental origin/destinations with direct train service, how can the projected

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430 [redacted] *See* Norfolk Southern, "Intermodal Network Discussion," June 2025, NS_STB_00001343, at -385.

431 *See* Gehringer and Orr VS Workpapers, "[mr_opal].[trafficCompressed]" and "[mr_opal].[blockSequence]," filtered to trafficCompressedKey 4500030 in the Growth Plan (resultScenarioKey 200 or compressionKey 104). These workpapers demonstrate that this East Minneapolis-Cincinnati traffic is assigned to one block (blockKey 1001094). *See also*, Gehringer and Orr VS Workpaper, "[mr_opal].[trainBlockVolume]" filtered to blockKey 1001094 in the Growth Plan (resultScenarioKey 200), which demonstrates that the block is designed to have [redacted] swaps along its route.

432 The [redacted] hours assumes Global 4 can make the [redacted] hour connection from INSG4 to IG4SE. If not, block swap dwell within Chicago soars to [redacted] hours.

433 *See* Gehringer and Orr VS Workpapers, "[mr_opal].[trafficCompressed]" and "[mr_opal].[blockSequence]," filtered to trafficCompressedKey 4500126 in the Growth Plan (resultScenarioKey 200 or compressionKey 104). These workpapers demonstrate that this Toledo-Council Bluffs traffic is assigned to one block (blockKey 1001032). *See also*, Gehringer and Orr VS Workpaper, "[mr_opal].[trainBlockVolume]" filtered to blockKey 1001032 in the Growth Plan (resultScenarioKey 200), which demonstrates that the block has multiple connections through Chicago.

434 *See* Script "Look up Block Sequence.sql" filtered to trafficCompressedKey 4500096 in the Growth Plan (resultScenarioKey 200). These workpapers demonstrate that this Austell-East Minneapolis traffic is assigned to one block (blockKey 1001769). *See also*, Script "Look up Block Sequence.sql" filtered to blockKey 1001769 in the Growth Plan (resultScenarioKey 200), which demonstrates that the block has multiple connections through Chicago and beyond.

growth lanes be truck-competitive? As described above, multiple connections to and through Chicago do not demonstrate the efficient single-line service claimed by Applicants.[435]

469. Even if this traffic did remain on rail, Applicants' own commercial strategy suggests that they would be unlikely to pursue these low-volume opportunities.[436] As recently as 2025, NS proposed eliminating low-volume lanes in an effort to simplify intermodal operations.[437] UP similarly has a history of eliminating low-volume lanes to preserve profitability.[438] Applicants nowhere address the apparent contradiction between their stated commercial strategy and their estimated diversions.

470. Taken together, Applicants' Plans neither simplify Chicago operations nor establish a feasible basis for their claimed intermodal growth. Instead, they concentrate substantially more work at an unexpanded Global 2, subject low-volume traffic to multiple yard connections and lengthy dwell, and depend on markets and facilities that Applicants' own recent operating strategy suggests they may not be committed to serving. Further Applicants' own pre-merger planning shows that at least part of the proposed consolidation could be implemented without common ownership. As recently as June 2025, NS identified and advocated for the closure of Englewood and consolidation of container volume and train service into 47th Street.[439]

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435 *See* Powers VS, Section V.A.3.a.

436 We understand that Dr. Powers addresses this more thoroughly in his report. *See, for example,* Powers VS, Section III.A.

437 [redacted]

438 Union Pacific, "Interline Service Changes to Eastbound Intermodal Traffic Handled by UP and NS," Customer Announcement Number IM2019-70, May 31, 2019, last accessed October 19, 2026, https://www.up.com/customers/announcements/intermodal/allintermodal/IM2019-70.html.

439 Norfolk Southern, "Project Pegasus Productivity Synergies," June 9, 2025, NS_STB_00001255, at -265.

Hence, a substantial simplification in Chicago-area operations is possible today without a merger.

H. New Orleans

471. Applicants' Operating Plan does not demonstrate that their proposed New Orleans changes simplify the gateway. By combining locations, interchange movements, and blocks into generalized locations and traffic flows, the Base and subsequent plans obscure where work actually occurs, erroneously reduce blocking requirements due to modelling artifacts, and produce implausible train assignments. The resulting model cannot reliably show whether fewer trains or less work would be required.

472. As described in Section III.D, Applicants' modelling simplifications in the New Orleans area are so severe as to significantly distort their operation. To illustrate the magnitude of these simplifications, we reconstruct their likely present-day operation for certain movements and blocking connecting through New Orleans to interline partners. We make this assessment based on block names, train symbols, and our design experience.[440] This reconstructed operation further demonstrates that Applicants have not simplified their operation in the New Orleans area.

473. Based on train symbols and block naming conventions, it appears that UP blocks and builds [redacted] manifest trains a day out of [redacted] to NS. [redacted]

[redacted]

[redacted]

[440] As outlined in Section III.D, we make this assessment based on block and train names. For example, [redacted] From these symbols, we can make an informed guess as to the likely traffic on each train. However, we emphasize that this review is not possible at-scale within Applicants' model and requires us to make independent judgements about where traffic likely flows. Hence, the Base Plan fails to provide a complete picture of present-day operations.

[441] These reciprocal blocking and run through agreements highlight existing efforts by UP, NS, and CSX to cooperate to simplify operations in a busy gateway.

474. In contrast to the above, Applicants present a highly obscured model of operations in New Orleans in an effort to simplify their modelling exercise. As a consequence of this distortion, traffic to block assignments, block to train assignments, and relevant volumes for each are not accurately represented. For example, as represented in the top panel of Figure 114 below. In reality, as illustrated in the bottom panel of Figure 114 below.

[441] *See* Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 'Trains,' filtered to trains originating in Livonia in the Base Plan and terminating at an NS location. *See* Train IDs 11355636, 11362657, 11370328, and 11370329.

FIGURE 114: DETAIL OF NEW ORLEANS AREA FACILITIES AND MUTUALIZED LOCATIONS



Sources and Notes:
See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html." Numbers in the figure above may differ slightly from those in text as they are based on previous submissions of Applicants' MultiRail data. Our conclusions remain the same.

475. As a consequence of this oversimplification, blocking demands at Livonia are artificially reduced. Importantly, we cannot tell how much volume at Livonia is destined for Waycross, Gentilly, Oliver Yard, or the NOPB. Train volumes are thus greatly distorted: for example, the MLIWX reports [redacted] in the Base and Optimized Plans, while MLIGN

reports an average of [redacted] feet,[442] as shown in the top panel of Figure 114. In summary, Livonia reports building one, massive interline block for "New Orleans," while distinct blocking to Waycross, Oliver Yard, and the NOPB is removed.

476. This fundamental issue of oversimplification is not isolated to Livonia blocking eastward. Blocks built at Livonia for interline partners in Baton Rouge (CPKC and CN), as well as blocks built at North Little Rock for interline partners in Memphis (CN and BNSF), are similarly consolidated.[443] Applicants have thus significantly distorted blocking and train demand at key gateways.

477. This is important, because the number of blocks built and the number of cars per train are key inputs into a yard's capacity. From a capacity perspective, one 300-car block on one train is *not* the same as three 100-car blocks split across three trains. These are only equivalent if you exclusively evaluate standing capacity and yard throughput on a daily average basis, as Applicants have.[444] However, these two scenarios place very different burdens on an operation: line capacity/infrastructure, yard capacity/infrastructure, and scheduling/dispatching demands, to name a few.[445]

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442 *See* Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 'Trains,' filtered to train symbols MLIWX and MLIGN in the Base Plan.

443 As before, we make this assessment based on the train symbols included in the Base Plan, which show two distinct trains going to two distinct interline partners, and therefore require separate blocking. However, Applicants' plan shows the MLICN (CN) carrying all Livonia-Baton Rouge volume (in both directions), while the MLILI (CPKC) carries no traffic out of Livonia. *See* Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 'Trains,' filtered to Train IDs 11939285 and 6292. *See also*, Script "Look up Train Route (volume).sql" in folder "MR Review," filtered to trainKeys 11939285 and 6292 in the Base Plan (resultScenarioKey 171).

444 *See* Section VII.

445 *See* discussion of how long and short trains differentially impact an operation in Sections V.B and VI.

I. Livonia

478. In the previous section, we demonstrated that certain blocking and train demands at Livonia are likely greater than Applicants plan. Setting these issues aside, Livonia is increasingly overburdened in the Optimized and Growth Plans.

479. First, Livonia is required to pick up new blocking. In the Optimized Plan, it takes on the strategic role of building a new [redacted] block.[446] In the Growth Plan, Livonia adds [redacted] additional blocks to [redacted].[447] Also note that [redacted] to interchange at [redacted]—which was previously blocked as far east as [redacted] and interchanged out of [redacted] is now directed to Livonia.[448] At Livonia, this volume is incorporated in one block travelling on one train, now totaling [redacted] cars ([redacted] feet) per day.[449]

480. Second, Livonia reports [redacted]. As shown in Figure 115 below, capacity improvements currently under way in the receiving and departure yards will only support [redacted] cars. However, Livonia reports a projected demand in the Growth Plan averaging [redacted] cars per day, leaving only a margin of

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446 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks originating in Livonia newly added in the Optimized Plan (Column C shows "Added"). *See* specifically Block ID 91681.

447 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks originating in Livonia newly added in the Optimized Plan (Column D shows "Added" and Column C shows "Not present in T2").

448 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to Block IDs 594, 53835, 53832, and 53833. Note that the volumes from Birmingham to New Orleans shrink, while the volumes from Livonia to Baton Rouge increase. *See also, for example*, Script "Look up Block Sequence.sql" filtering to trafficCompressedKeys 1001801 and 1007587, comparing blocking sequences in the Base Plan (171) and the Optimized Plan (172).

449 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 't2_blocks,' filtered to Block ID 594.

[redacted] cars per day.[450] Breaking out Livonia's margin by day of week based on Applicants' blocking and train plans, we similarly find [redacted] as detailed in Figure 115 below.[451]

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450 *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data.'

451 Our count of daily processing volumes reflects the volume of cars to be processed and swapped at the yard given the work events embedded in the blocking and train plans. Based on these work events, we calculate that Livonia is expected to process an average of [redacted] cars per day, slightly below Applicants' claimed [redacted]. Applicants generate their processing counts independent of the volumes reported in their train and blocking plans; however, the difference is immaterial to our conclusions at Livonia. *See* Workpaper "Day of Week Impacts - HC.xlsx," tab 'Control Panel,' in folder "Day of Week Volumes." Note that on tab 'Control Panel,' Cell E7 must be set to "LIVONIA LA_UP," Cell E8 must be set to "Manifest," and Cell E9 must be set to "Both." *See also*, Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "LIVONIA LA_UP."

FIGURE 115: DAILY VOLUMES AGAINST CAPACITY BY DAY OF WEEK AT LIVONIA, GROWTH PLAN



Sources and Notes:
See Script "Extract Volumes for DoW.sql" and Workpaper "Day of Week Impacts - HC.xlsx," tab 'Growth Plan,' in folder "Day of Week Volumes." Note that on tab 'Control Panel,' Cell E7 must be set to "LIVONIA LA_UP," Cell E8 must be set to "Manifest," and Cell E9 must be set to "Both."

481. , it is not clear how the yard will handle peak-demand volumes to keep the New Orleans and Baton Rouge gateways fluid. In their initial filing, Applicants stated that Alexandria, LA to the north of Livonia would build additional blocks to North Little Rock, Conway, and Bellevue

to bypass Livonia.[452] The amount of traffic at Alexandria for Livonia ([redacted] cars) would have no impact on Livonia's fluidity, were it to bypass.[453] Applicants also propose the industry yard at Addis, LA southeast of Livonia as a location to build North Little Rock, Bellevue and Conway blocks to bypass Livonia; but, they offer no corresponding train plan from New Orleans, Avondale, or Addis to accomplish anything more than a block swap through Livonia with Livonia still exceeding capacity.[454] Notably, Applicants removed these contingencies in their later filings. Thus, Applicants have no capital or service assurance plan to assist Livonia during peak traffic, despite it operating at [redacted] percent capacity by their own calculation,[455] rendering the Growth Plan unable to be executed.

482. In summary, Applicants' Growth Plan assigns Livonia additional blocking and gateway responsibilities while leaving virtually no capacity for day-of-week or seasonal fluctuations. The proposed relief concepts are not supported by corresponding train and blocking plans and would largely shift or swap work rather than remove it. Applicants provide no capital or service-assurance plan capable of keeping Livonia and the connected gateways fluid during peak conditions.

483. The combined issues at New Orleans and Livonia demonstrate that Applicants have not reliably represented their New Orleans-area operation in the Base Plan, let alone the Optimized or Growth Plans. Consequently, the Board cannot assess whether Applicants have

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452 *See* Joint Verified Statement of Eric Gehringer and John F. Orr, December 17, 2025, ¶ 303.

453 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks' filtered to Block ID 112.

454 Turner VS, Appendix A, p. 276.

455 *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "LIVONIA LA_UP." Note that Applicants report a Growth Plan volume of [redacted] cars per day against a stated capacity of [redacted] cars per day.

truly proposed a simplification in New Orleans, nor whether they can feasibly curtail operations at Oliver Yard as they have proposed, nor whether Livonia can take on the additional blocking responsibilities that it is assigned.

J. Birmingham

484. Applicants claim Birmingham can handle additional traffic in the Growth Plan. However, their claim depends on achieving levels of scheduled dwell and a limited pre-merger expansion project, neither of which reflects the yard's actual operating performance or the infrastructure required to sustain Growth Plan volumes. Historical dwell materially exceeds the design assumption, while Applicants' own internal study identifies substantially more track work and operating resources than the merger plan provides. With nearby major yards also constrained, Applicants offer no credible recovery strategy if Birmingham cannot process the assigned traffic.

485. Working in tandem with Chattanooga, Birmingham acts as a system yard, blocking deep into the NS network—including Elkhart, IN, Bellevue, OH, Allentown, PA, Knoxville, TN and Linwood, NC—to support both the New Orleans and Memphis gateways. Birmingham also blocks into the UP network including North Little Rock via Memphis, Avondale, Livonia, LA and Englewood (Houston, TX) via New Orleans.

486. Applicants describe pre-merger work to [redacted] (as shown in Figure 116 below). According to Applicants, this pre-merger investment supports an increase in traffic from [redacted] cars in the Base Plan to [redacted] cars per day in the Growth Plan. However, as discussed above, waybill release patterns demonstrate that customer demand varies substantially across different days of the week. Typical lulls in

business at the beginning of the week are followed by surges toward the weekend. Applicants have therefore not demonstrated that Birmingham has capacity to handle peak traffic.

FIGURE 116: PLANNED EXPANSION AT BIRMINGHAM



Sources and Notes: Gehringer-Orr VS Workpaper, "NS IM Auto Manifest Expansion Projects.pdf," p. 6.

487. Further, Applicants' calculation of standing capacity relies on assumptions regarding dwell which are unsupported by historical performance. Birmingham has historically been challenged with high yard dwell.[456] From 2016 through 2018, average actual dwell ranged from 24.5 to 66.6 hours.[457] From 2021 onward, average dwell at Birmingham has consistently been over 29 hours with some exceptions—more recently, the yard reported an average of 29.4

[456] As explained in paragraph 397, without calibrated trip plans in their design model, we cannot assess changes in designed yard dwell in the Optimized or Growth Plan, and therefore rely on historical averages.

[457] Norfolk Southern Corporation, "Weekly Performance Reports," last accessed October 20, 2026, https://norfolksouthern.investorroom.com/weekly-performance-reports.

hours in 2025 and 29.0 hours through the week ending October 16, 2026.[458] In fact, over the last 10 years, only one 12-month period witnessed a sustained average dwell below 25 hours (24.5-to-25-hour actual from 2019 to 2020).[459] This elevated dwell is indicative of an operation that is already at-capacity, despite Mr. Turner's analysis.

488. This is important because Applicants assume that Birmingham can achieve [redacted] hours of dwell in their capacity calculations.[460] [redacted]. If Applicants had instead chosen to use the actual dwell observed from September 2024 through August 2025 (as provided in their workpapers), their estimated Base Plan capacity would be only [redacted] cars per day.[461] [redacted]

458 Norfolk Southern Corporation, "Weekly Performance Reports," last accessed October 20, 2026, https://norfolksouthern.investorroom.com/weekly-performance-reports.

459 Norfolk Southern Corporation, "Weekly Performance Reports," last accessed October 20, 2026, https://norfolksouthern.investorroom.com/weekly-performance-reports.

460 Gehringer and Orr VS Workpaper, "NS Manifest IM Auto Terminal Capacity Calculations.xlsx," tab 'Manifest Terminal Inputs.'

461 *See* Workpaper "NS Manifest IM Auto Terminal Capacity Calculations (EN Corrected).xlsx," tab 'Manifest Terminal Inputs (EN)', Cell N5.

FIGURE 117: BIRMINGHAM YARD CAPACITY (791)



Sources and Notes:

Norfolk Southern, "Yardmax Capacity Study: Birmingham," March 2025, NS_00102449, at -455.

489. As shown in Figure 117, a 2025 NS study of Birmingham capacity expansion indicates [redacted][462] Those infrastructure changes include pullback lead construction, the extension of [redacted] forwarding tracks and [redacted] class tracks, and the construction of [redacted] new class tracks, for a total of [redacted] classification tracks. In addition to these extensive infrastructure improvements, a [redacted] daily pullback assignment is required to achieve a steady state capacity of [redacted] cars per day.[463] Applicants

462 *See also*, Norfolk Southern, "Yardmax Capacity Study: Birmingham," March 2025, NS_00102449, at -458 and -459.

463 *See* Norfolk Southern, "Yardmax Capacity Study: Birmingham," March 2025, NS_00102449, at -455.

underestimate the changes required to address operational bottlenecks at Birmingham for the Growth Plan, as described in the detailed findings of the 2025 NS study to address regional growth.[464] With [redacted] and [redacted] at or over capacity in the Growth Plan, Applicants fail to describe recovery strategies for these interconnected system yards, thus failing to demonstrate the feasibility of the Growth Plan.

K. Memphis

490. Applicants' claimed consolidation of Memphis intermodal operations is not reflected in their own train and blocking plans. The facility that is supposed to close continues to receive traffic and support local work, while the remaining terminal is never tested for the full operation Applicants describe, leaving the plan internally inconsistent and inexecutable.

491. In order to rebalance intermodal terminals in the Memphis area in the Optimized and Growth Plans, Applicants claim they can move all intermodal lift volume from [redacted] to UP's nearby [redacted][465] This results in the [redacted] Base Plan container lifts per day at Rossville, TN dropping to zero.[466] Local service based at Rossville, in turn, would move either to Memphis or Sheffield, idling the Rossville facility. However, Applicants' own train and blocking plans do not represent this transition of local activities to other Memphis-area facilities.

492. Rossville is never truly idled in Applicants' Plan. In both the Optimized and Growth Plans, Rossville still receives inbound intermodal traffic from [redacted] and still supports the local operations serving

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464 *See* Norfolk Southern, "Yardmax Capacity Study: Birmingham," March 2025, NS_00102449, at -458 and -459.

465 *See* Gehringer and Orr VS, Table 5.

466 *See* Gehringer and Orr VS, Table 5.

[redacted][467] Further, Rossville reports originating and terminating [redacted] manifest cars per day.[468] Hence, Applicants' Plan reflects an idling of lift activity, but not a complete idling of the facility at Rossville.

493. As illustrated in Figure 118 below, without completely consolidating Rossville as claimed, Marion reports a shift in the type of activity, as demonstrated by an increase in the number of cars terminated/originated, but fewer intermediate handlings. Note, however, that the total number of cars handled remains relatively stable, because the remaining Rossville activity has not been transitioned into Marion. Therefore, Applicants' claims regarding consolidating operations in the Memphis gateway are not supported by their MultiRail model. Marion's capacity therefore cannot be fully evaluated.

FIGURE 118: INBOUND AND OUTBOUND VOLUMES AT MARION, AR

[redacted]

Sources and Notes:

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467 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tabs 'Inbound' and 'Outbound' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "ROSSVILLE TN_NS" and Cell E8 must be set to "Cars (#)."

468 *See* Gehringer and Orr VS Workpaper, "HC-Yard Details T3 vFinal.xlsx," tab 'Raw_T3' filtered to name "ROSSVILLE TN_NS," columns "non bulk originations per year" and "non bulk terminations per year." Note that [redacted] originations per year / 364 days per year = [redacted] originations per day. Similarly, [redacted] originations per year / 364 days per year = [redacted] originations per day.

Elphick and Nelson V.S. at 327

Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Summary' in folder "Yard Detail". Note that Cell E7 on tab 'Summary' must be set to "MARION AR_UP" and Cell E8 must be set to "Cars (#)."

L. North Little Rock

494. Applicants assign North Little Rock substantially more blocking responsibility while [redacted]. The expansion will not support the Optimized Plan and does not create enough room for the Growth Plan, while the proposed redirection of selected work merely shifts demands elsewhere in the network. Applicants do not provide the corresponding blocking and train changes necessary to make the increased workload executable.

495. On either side of Memphis, Chattanooga and North Little Rock take on expanded burdens in the Optimized and Growth Plans in bypassing both the Memphis Gateway and intermediate yard facilities, including Sheffield, AL. Of the two classification yards, North Little Rock sees the greatest increase in merger-related blocking demands. Over the Memphis gateway, one block to Sheffield, AL in the Base Plan expands to new blocks for Birmingham, AL, Bellevue, OH, and Chattanooga, TN in the Optimized Plan. One additional block to Decatur, AL is added in the Growth Plan. North Little Rock is also called upon to block traffic for Oakwood (Detroit), MI and Conway, PA. Applicants thus add six new blocks to North Little Rock by the Growth Plan.[469]

496. To support these new blocks, Applicants redirect traffic into North Little Rock. However, doing so [redacted], as demonstrated in the top-right table in Figure 119. In an attempt to keep volumes down,

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469 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks' filtered to blocks originating in North Little Rock, AR in the Growth plan and with a T3 status (Column D) of "Added."

Applicants redirect a [redacted]-car block from Salem, IL to nearby Pine Bluff Yard.[470] However, this change results in a margin of only [redacted] cars per day, as shown in Figure 119. Importantly, this [redacted] car margin takes into account Applicants' planned capital expansion, which raises standing capacity by [redacted] cars per day.

FIGURE 119: PLANNED EXPANSION AT NORTH LITTLE ROCK



Sources and Notes:
Gehringer and Orr VS Workpaper, "UP Manifest Yard Expansion Projects.pdf," p. 3.

497. Applicants do not demonstrate what other network blocking and train plan changes would be required to create additional buffer at North Little Rock. It is possible that additional blocking to Pine Bluff would be required at yards such as Chattanooga, Proviso, Elkhart, or Conway. Or, additional traffic could be sent to, and blocking designated at, Sheffield; however, doing so would increase transits, potentially jeopardize growth efforts, and erode

470 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," filtered to Block ID 2639, noting change in destination from North Little Rock to Pine Bluff in the Growth Plan.

claimed benefits. In conclusion, Applicants do not present a feasible Optimized or Growth Plan for North Little Rock, and consequently, do not demonstrate that the five additional blocks and their associated benefits are attainable.

M. Chattanooga

498. Applicants' Growth Plan assigns Chattanooga the largest increase in car volume of any yard, along with additional blocks and more complex block-swap activity.[471] As with other yards, the proposed expansion leaves little margin for normal traffic peaks. One of the new blocks that Applicants propose at Chattanooga also adds additional work events and substantial out-of-route mileage for certain traffic, creating avoidable yard and mainline conflicts. Applicants have not clearly demonstrated that Chattanooga can perform its expanded system-yard role under normal operating conditions.

499. Like Birmingham, Chattanooga's role as a system yard already includes blocking deep into the NS network with blocks and train service to Enola PA, Conway PA, Bellevue OH, Oakwood (Detroit) MI, Elkhart IN, St. Louis MO, and Decatur IL. Chattanooga also supports bypassing Birmingham with blocking and train service to Calvert, AL and Meridian, MS. Interaction with the UP network includes blocking to North Little Rock, AR via the Memphis gateway.

500. To support a combined UPNS network in the Optimized and Growth Plans, Applicants describe merger-related work to [redacted] just [redacted] percent above what is required to support a projected [redacted] car per day average increase in traffic from the Base to Growth

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471 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Summary' in folder "Yard Detail." Note that Cell E7 must be set to "CHATTANOOGA TN_NS" and Cell E8 must be set to "Cars (#)".

Plan, as illustrated in Figure 120 below.[472] However, as discussed above, normal waybill release patterns mean that customer demand varies substantially across different days of the week. Typical lulls in business at the beginning of the week are followed by surges toward the weekend. Applicants have not demonstrated that Chattanooga can handle daily or seasonal traffic peaks called for in the Optimized and Growth Plans.

FIGURE 120: PLANNED EXPANSION AT CHATTANOOGA



Sources and Notes:

Gehringer and Orr VS Workpaper, "NS IM Auto Manifest Expansion Projects.pdf," p. 11.

501. In the Growth Plan, Applicants increase the complexity of block swapping in Chattanooga.

[472] Per Figure 120, Chattanooga is modeled at percent capacity in the Growth Plan, leaving a percent margin.

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[redacted][475]

502. In addition to the increased block swapping activity just discussed, the yard also reports the largest increase in car counts from the Base Plan to the Growth Plan, and further, is constrained by the number of blocks it is tasked to build. Chattanooga has 60 classification tracks it can use to build blocks. Assuming that two of these tracks are reserved for blocks that are not represented in Applicants' plan—one for bad-orders, the other for CSX interchange traffic—at best, Chattanooga can produce 58 blocks. That count is further impacted by the requirement to support local operations, and the fact that certain blocks are designed beyond the length of available classification tracks. Conservatively assuming that Chattanooga must reserve three tracks for local traffic, that brings down the number of blocks Chattanooga can build to 55.

503. The Growth Plan will exceed this threshold. Based on our review of the yard's layout as well as our experience, we estimate that Chattanooga has nine tracks that can accommodate up to 63 cars, and the remainder can accommodate up to 45. Based on these track length thresholds, we then review how many tracks are required for each block that Chattanooga

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473 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Base)' in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "CHATTANOOGA TN_NS" and Cell E8 must be set to "Cars (#)."

474 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tabs 'Inbound' and 'Outbound' in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "CHATTANOOGA TN_NS" and Cell E8 must be set to "Cars (#)."

475 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tabs 'Inbound' and 'Outbound' in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "CHATTANOOGA TN_NS" and Cell E8 must be set to "Cars (#)."

is planning to build. Details of this calculation are given in Figure 121 below. As shown by the figure, we estimate that Chattanooga requires a total of [redacted] tracks in the Growth Plan based on a reasonable allocation of blocks to tracks, exceeding our conservative upper-limit.

FIGURE 121: ILLUSTRATIVE TRACK REQUIREMENTS IN CHATTANOOGA



Sources and Notes:

See Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 't3_blocks,' filtered to non-local blocks originating in Chattanooga, TN. Note that the above example is illustrative of likely track requirements based on average daily volumes presented for each block. Absent calibrated schedules and trip plans, we can only develop a high-level view of daily track requirements that does not account for dwell.

504. It is important to emphasize that, with the lack of calibrated scheduling information in Applicants' MultiRail model,[476] we cannot determine whether any individual classification track can be used to build more than one block in one day. However, it should be noted that Mr. Turner's capacity analysis [redacted][477] The above analysis conservatively assumes that locals can share tracks.

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476 *See* Section III.A.

477 Specifically, Applicants calculate that the standing capacity at Chattanooga turns over (24 / (1.1 x 21.6)) = 1.01 times per day. *See* Turner VS Workpaper, "NS Manifest IM Auto Terminal Capacity Calculations.xlsx," tab 'Manifest Terminal Inputs.'

505. Notably, by the Growth Plan, Applicants introduce [redacted] new blocks to be built at Chattanooga. [redacted][478] The fact that it is not built today further suggests that Chattanooga's classification bowl is at capacity with respect to the number of blocks built.

506. When designing a new block, care must be taken to ensure that not only does the originating yard have the capacity to build it, but also that it can be assigned to trains to move efficiently through the network. For example, one of the new blocks built at Chattanooga does not reflect an efficient, feasible design. Specifically, the assignment of the [redacted] is illogical for the following reasons:

- Routing the Chattanooga block via Ft Wayne is 91 miles longer than the shortest path option directly west of Muncie, IN through South Lafayette (see top panel of Figure 122);
- Adding work events to 142 and 11E at Fort Wayne adds further complexity to a network crossroads already busy with an additional six trains per day operating through the area (see bottom panel of Figure 122); and
- Train symbol 142, at an average train length of [redacted] feet departing Chattanooga,[479] must be redirected east in Fort Wayne to arrive in the yard and split into at least two tracks to clear the West end of the yard and set out

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478 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks originating in Chattanooga in the Growth Plan with a T3 status of "Added" (column D). Note that our count omits an Allentown block with no volume assigned to it.

479 *See* Workpaper "Terminal Clocks.xlsx," tab 'Chattanooga, TN,' in folder "Terminal Clocks," Cell BL64.

the Lafayette block swap. The crew must then move the head end locomotives from the East end to the West end of the yard and rebuild the train before proceeding West to the final destination of Elkhart (see bottom panel of Figure 122).

FIGURE 122: DETAIL OF MOVEMENT OF 142 THROUGH FT WAYNE TO LAFAYETTE



Sources and Notes:

See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."

507. Given its out-of-route miles, the certainty of a recrew, and the risk to both yard and mainline operations at Ft. Wayne, this plan is illogical. Creation of this operating bottleneck should have been flagged by the service design teams at UP and NS, as well as by Applicants'

experts before signing off on the plan. However, this issue was evidently missed, pointing to inadequate review of the plan to ensure feasibility.[480]

508. Chattanooga demonstrates the consequences of Applicants' simplified standing capacity calculations. Those calculations do not consider whether the yard can accommodate the number of blocks built, the size of these blocks, or the efficiency of their proposed new blocking as it routes through the network. Applicants further complicate operations at Chattanooga by adding additional block swaps. All of these factors combine to make the proposed operation at Chattanooga infeasible, demonstrating that Applicants have performed only a shallow review of capacity.

N. Houston: Englewood Yard

509. Applicants' Growth Plan concentrates additional traffic at Englewood while [redacted] Because Englewood is the principal distribution yard for southern Texas, congestion there would affect far more than the Houston area and could propagate across several already-constrained system yards. Applicants do not identify a capital project, alternative facility, or contingency plan capable of mitigating that risk.

510. Englewood's reach into southern Texas extends from Houston area local industry to Corpus Christi, Brownsville and the interchanges at Laredo and Eagle Pass. More specifically, across the Base, Optimized, and Growth Plans, Englewood remains the only major hump yard blocking to heavy industry and ports along the Gulf coast from PTRA's Pasadena Yard to

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[480] Applicants' experts acknowledge [redacted]. *See* Deposition of Brian Barr, September 3, 2026, 356:7–359:21. *See also*, Deposition of Eric Gehringer, October 13, 2026, 41:6–18; 160:13–161:19.

Galena Park, Angleton/Hoskins, Bloomington, Sinton, Corpus Christi and Olmito (Brownsville). Key growth markets included in Mr. Hunt's estimated diversions—including Pasadena, Angleton/Hoskins and Corpus Christi—depend entirely on Englewood to succeed.

511. With traffic feeding into Englewood through new direct blocking from Chattanooga and existing blocking from Birmingham, Pine Bluff, North Little Rock, Fort Worth, 18th Street (Kansas City) and North Platte, volumes at Englewood increase by 409 cars per day.[481] Volumes increase from 2,044 cars per day in the Base Plan to 2,453 cars per day in the Growth Plan.[482] Englewood is thus left with a remaining margin of only { cars per day based on Applicants' claimed car sustainable standing capacity.[483]

512. As shown in Figure 123 below, in the Growth Plan,

. In fact, Figure 123 demonstrates that Applicants' modelling approach removes all variation in volume at Englewood yard. This lack of variation stems from Applicants' choice to model average day operations, meaning daily volumes are calculated as total annual volume divided by 364.[484] However, as discussed in Section II.C, variation by day of week results in traffic peaks substantially above weekly averages, making it likely Englewood would regularly exceed its stated daily capacity. Seasonal variation will exacerbate this effect.

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481 *See* Gehringer and Orr VS, Table 7.

482 *See* Gehringer and Orr VS, Table 7.

483 *See* Gehringer and Orr VS Workpaper, "UP Manifest-Intermodal-Automotive Terminal Capacity Inputs & Calculations.xlsx," tab 'Manifest Yard Inputs.'

484 Applicants build a model of a weekly operation that they extend to an annual model by replicating their weekly operation 52 weeks per year, yielding a total of 7 x 52 = 364 days in a year.

Hence, Applicants' Base Plan margin of [redacted] cars would be appropriate to handle the large degree of variation Englewood regularly encounters.[485]

FIGURE 123: DAILY VOLUMES AGAINST CAPACITY BY DAY OF WEEK AT ENGLEWOOD, GROWTH PLAN



Sources and Notes:

See Script "Extract Volumes for DoW.sql" and Workpaper "Day of Week Impacts - HC.xlsx," tab 'Growth Plan,' in folder "Day of Week Volumes." Note that on tab 'Control Panel,' Cell E7 must be set to "ENGLEWOOD TX_UP," Cell E8 must be set to "Manifest," and Cell E9 must be set to "Both."

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485 For example, Englewood on average handles [redacted] cars per day but reports a 90th percentile of daily processing volumes of [redacted] cars per day. In other words, Englewood will regularly exceed its average by [redacted] cars per day. *See* Scripts "01_processing_capacity.sql" and "02_processing_capacity_plot.R" and Workpaper "daily_processing_vol.csv" in folder "Processing Volumes Distributions."

513. Applicants have not put forth capital or contingency plans for Englewood to accommodate the increased volumes in the Growth Plan. No alternative yards are presented to assist in serving Englewood's Gulf Coast territory. Given that Englewood is intertwined with constrained yards at Chattanooga, North Little Rock, Gateway Yard, Livonia and Birmingham, Applicants' Growth Plan presents a wide geographic area without a recovery strategy. This culminates in limited additional network capability to build blocks to bypass Englewood. Applicants do not provide a dedicated contingency plan for Englewood, leaving the Board to speculate how it will maintain fluidity should it get into trouble.

O. Atlanta: Inman Yard

514. Applicants' Growth Plan substantially increases both manifest and intermodal work at Inman, but their capacity analysis captures only part of the yard's blended operation and omits most intermodal block-swap activity. The Plan nearly doubles block swapping, increases the number of trains and destinations, and creates an unexplained imbalance between originating and terminating service. Existing studies and Applicants' own operating notes indicate that the facility was already constrained and may require traffic to be shifted elsewhere. Yet Applicants provide no capital or contingency plan for Inman while relying on it to support other constrained yards.

515. Inman is unique among intermodal facilities for retaining its 65 track classification bowl and using half of it for intermodal. Currently, Inman serves as a blended manifest and intermodal facility, a role it has held since 2021. However, this dual role of supporting both manifest and intermodal operations is not represented in Applicants' oversimplified capacity calculations. By Applicants' calculation, Inman has a standing capacity

of [redacted] cars.[486] However, [redacted],[487] such as the [redacted] tracks of the [redacted]-track classification bowl depicted in the bottom panel of Figure 124 below separate from the [redacted] track manifest portion of the yard. The distinction is important given that the Growth Plan increase in traffic and block swapping at Inman is predominantly block swap intermodal traffic not counted as consuming yard capacity.

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[486] *See* Turner VS Workpaper, "NS Manifest IM Auto Terminal Capacity Calculations.xlsx," tab 'Manifest Terminal Inputs.'

[487] *See* Turner VS Workpaper, "NS Manifest IM Auto Terminal Capacity Calculations.xlsx," tab 'Manifest Terminal Inputs,' column O.

FIGURE 124: MAP OF INMAN YARD (ATLANTA)



Sources and Notes:

See Workpaper folder "Maps" and associated database files

516. The increase in intermediate handlings, and block swapping in particular, that Applicants include in the Growth Plan will overwhelm the yard's capacity. In particular, the volume of cars swapping at Inman nearly doubles, from [redacted] cars ([redacted] feet) per day in the Base Plan to [redacted] cars [redacted] feet) per day in the Growth Plan.[488] Intermodal is

[488] *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Summary' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "ATLANTA GA_NS" and Cell E8 must be set to "Cars (#)" or "Length (ft)" to respectively show number of cars or total length.

the vast majority of that block swap activity at [redacted] cars per day.[489] Only the remaining [redacted] cars of manifest block swap traffic are evaluated against standing capacity at Inman. The increase in intermodal block swap volume and complexity at Inman cannot be overlooked. As with Global 2, Applicants have provided only a partial view of Optimized and Growth Plan activity by ignoring the expansion of intermodal block swap activity in the Operating Plan.[490]

517. The increase in the number of trains working at Inman Yard adds to this difficulty. On average, from the Base Plan to the Growth Plan, the number of inbound trains increases from [redacted] to [redacted] per day, block swap traffic increases from [redacted] feet to [redacted] per day, the number of unique destinations handled increases from [redacted] to [redacted] (including new intermodal opportunities), and the number of departing trains increases from [redacted] to [redacted] per day.[491]

518. Of the new inbound train services, ZHOAT (Intermodal Houston to Atlanta) best illustrates the increased complexity of the Growth Plan connecting [redacted] blocks to [redacted] outbound trains in addition to handling traffic for the local Atlanta area.[492] Below, we detail the complexity of new block swapping activity for this one inbound train.

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489 *See also*, Gehringer and Orr VS Workpaper, "HC-Yard Details T3 vFinal.xlsx," tab 'Raw_T1,' filtered to name "ATLANTA GA_NS" (row 604) column "im cars block swap." Note that the workpaper reports [redacted] swaps per year, which equates to an average of [redacted] / 364 = [redacted] per day.

490 *See* Section VI.G.

491 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swap (Base)' and 'Swaps (Growth)' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "ATLANTA GA_NS" and Cell E8 must be set to "Cars (#)" or "Length (ft)" to respectively show number of cars or total length.

492 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "ATLANTA GA_NS" and Cell E8 must be set to "Cars (#)" or "Length (ft)" to respectively show number of cars or total length.

FIGURE 125: MAP OF INMAN YARD (ZHOAT)



Sources and Notes:

See Workpaper folder "Maps" and associated database files. Numbers in the figure above may differ slightly from those in text as they are based on previous submissions of Applicants' MultiRail data. Our conclusions remain the same.

519. ZHOAT is scheduled by Applicants to arrive at Inman at 12:37 daily at an average length of [redacted] feet, as noted in step 1 of Figure 125.[493] The train is comprised of [redacted] blocks including a [redacted] foot block of local Atlanta intermodal traffic destined to the Inman intermodal ramp tracks and [redacted] feet of block swap traffic destined to Croxton NJ, Sharonville OH, Jacksonville FL and Charlotte NC.[494] Due to the configuration of Inman Yard – specifically the location of the intermodal ramp – ZHOAT will enter the yard to access the Local

493 *See* Workpaper "Terminal Clocks.xlsx," tab 'Atlanta, GA,' Cell L77 in folder "Terminal Clocks."

494 *See* Workpaper "Atlanta Block-Train assignments (Arrivals) – Confidential.xlsx," tab 'Blocking Details," setting Cell AI8 to "ZHOAT to 148H_NS/ATLANTA GA_NS." Note that our counts exclude zero-volume blocks.

Intermodal Receiving and Departure Yard adjacent to the intermodal ramp tracks.[495] Once the train is secured in the receiving yard with locomotives to the shop, Atlanta Proper intermodal traffic will be spotted at the intermodal ramp by a local yard crew, as noted in step 2 in Figure 125 above. Then, as shown in step 3, the remaining [redacted] through blocks will be classified by a second local assignment into [redacted] of the [redacted] intermodal classification tracks utilizing a dedicated lead track. With an estimated Growth Plan average daily size of [redacted] feet, the inbound Croxton block consumes [redacted] out of the [redacted] class tracks. Each of the [redacted] blocks contributes to the outbound build of the following [redacted] outbound trains.

[495] Norfolk Southern, "Yard Capacity Analysis Progress Update, Atlanta Inman (148H)," July 20, 2021, NS_00102233, at -256.

FIGURE 126: MAP OF 24X AND 26C DEPARTING FROM INMAN YARD FOR CROXTON AND CALUMET



Sources and Notes:

See Workpaper folder "Maps" and associated database files

520. As just [redacted] of the [redacted] outbound trains performing block swaps per day,[496] 24X is scheduled to take [redacted] hours to work at Inman. To facilitate the departure of 24X, yard assignments must:

- Position originating traffic from the Inman ramp for both Greensboro and Croxton.

496 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "ATLANTA GA_NS" and Cell E8 must be set to "Cars (#)." Note that our count of unique trains includes multiple versions of the same symbol.

- Position outbound connecting block swaps from Mercedes, AL and Los Angeles, CA.
- Double-up the Croxton block from ZHOAT out of the bowl into a designated departure track, as shown in the top panel of Figure 126.

521. After marshalling and inspections, 24X then departs with a total average train length of [redacted] feet. Further, planned dwell for the Croxton block ranges from a minimum of [redacted] to [redacted] based on the six day a week operation of 24X. With Croxton traffic from ZHOAT arriving daily at an average of [redacted] feet, accumulating traffic for 24X will spill over into at least a third classification track at Inman.[497]

522. Train 26C originates at Jacksonville, FL destined daily to Calumet, IL. At Inman, after cutting off an Atlanta proper block (steps 1 and 2 in the bottom panel of Figure 126), it must lift a [redacted] car ([redacted] foot) block destined to Sharonville, OH from the ZHOAT (step 3). This block is planned to dwell for [redacted]. Train 26C must also lift a block destined to Rickenbacker (Columbus, OH) from the ZMXCX, which dwells an average of [redacted], assuming the ZMXCX is on-time.[498] Train 26C departs Inman with an average of [redacted] cars ([redacted] feet), as shown in step 4 of the bottom panel of Figure 126 above.

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497 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "ATLANTA GA_NS" and Cell E8 must be set to "Length (ft)." *See also*, Workpaper "Terminal Clocks.xlsx," tab 'Atlanta, GA' in folder "Terminal Clocks."

498 Due to the tight timing of this connection, if the ZMXCX is delayed, then the dwell could be as long as 28'41".

FIGURE 127: MAP OF TRAINS DEPARTING AND ORIGINATING FROM ATLANTA



Sources and Notes:

See Workpaper folder "Maps" and associated database files

523. Train 29F originates at Calumet, IL destined daily to Bowden Yard (Jacksonville, FL). It arrives at Inman with [redacted] feet (step 1 of the top panel of Figure 127). It must first set off a [redacted] foot block to backhaul to Austell (see step 2 of top panel above, with activities not shown). It must then lift a block of indeterminate size from the ZHOAT destined to Jacksonville, FL (step 3). The block size is uncertain because the ZHOAT shows setting off this block at Inman of [redacted] cars ([redacted] feet), while Applicants' MultiRail model shows the 29F

picking up the same block at a length of [redacted] cars ([redacted] feet).[499] The reason for this discrepancy is that Applicants show multiple trains per day carrying this one block out of Meridian. Practically, this means that this Meridian traffic could be split across multiple trains or concentrated all on one train. This traffic is subsequently consolidated at Inman. However, out of Inman this block may be carried by the 29F seven days a week, or the 26J one day a week. With 29F departing at [redacted] feet (noted in step 4 above), normal variation in this and other traffic flows[500] would lead to an inability to complete the lift at Inman on occasion.[501] This block splitting further complicates expected dwell, and together with the departing train lengths, it is unclear whether this traffic would be marketable.

524. Train 282 originates at Inman and is destined daily to Charlotte, NC. Like the 29F, it picks up a block of unknown length from ZHOAT (see step 1 in the bottom panel of Figure 127 above).[502] This block, originating in Meridian, is shared among four different trains into Atlanta, making it unclear what the expected volume on each train inbound to Atlanta is; the 282 shows picking up a [redacted] car block destined to Charlotte. Additionally, the train is

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499 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "ATLANTA GA_NS" and Cell E8 must be set to "Cars (#)."

500 The 29F is scheduled to pick up [redacted] other blocks at Inman, respectively from Rutherford, Croxton, Memphis, Austell, and other Meridian traffic. *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Outbound' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "ATLANTA GA_NS" and Cell E8 must be set to "Cars (#)."

501 Compounding this risk, the 26J shows departing at [redacted] feet, and may also have insufficient capacity for these block swaps. *See* Workpaper "Terminal Clocks.xlsx," tab 'Atlanta, GA,' Cell BL103 in folder "Terminal Clocks."

502 The model shows the ZHOAT setting out a [redacted] car block at Inman, while the 282 reports picking up a [redacted] car block. *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tabs 'Inbound' and 'Outbound' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "ATLANTA GA_NS" and Cell E8 must be set to "Cars (#)."

expected to be built with blocks from [redacted] other origins, arriving on [redacted] inbound trains. The 282 then departs with an average of [redacted] feet, as shown in step 2 above.

525. The example of the ZHOAT highlights the extreme complexity of Applicants' proposed operation at Inman. As discussed above, the sheer number of connections, the amount of dwell scheduled for blocks and trains at Inman, the number of supporting movements required to facilitate this operation, and the capacity constraints not captured in Applicants' standing capacity model all together point to an infeasible operation. Further, Applicants' failure to provide calibrated schedules, in conjunction with modelling simplifications that obscure traffic-to-block and block-to-train assignments (i.e., the block sharing issue described above), results in Applicants not presenting a complete model.

526. Taking Applicants' capacity calculations at face value, they cannot sustain the Growth Plan workload at Inman. From a Base Plan of [redacted] lifts per day on average, the Growth Plan calls for lifts per day to increase to [redacted] on average, representing [redacted] percent of Applicants' rated capacity.[503] [redacted] Additionally, bypass blocking included in their manifest design suggests that Inman is already at-capacity.[505] Further, the Operating Plan does

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503 *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "ATLANTA GA_NS" (row 11,115). Note that the column "T3_PER_DAY" lists [redacted] lifts per day against a stated post-transaction capacity of [redacted] (column "POST_CAP_DAILY").

504 *See* "Austell and Inman Terminal – Operations Notes," UP_0097289, at -291.

505 Locally-generated multilevel traffic—travelling from Commerce, GA to crosstown satellite yards like Eastpoint for destinations in Kentucky and beyond—bypasses Inman in an attempt to keep the workload down. This pattern exists in the Base Plan, suggesting that Inman is already at- or near-capacity.

not address how Applicants intend to handle fluctuations by day of week and peak season at Inman.

527. [redacted][506] Newly-restored intermodal volumes from Rutherford, PA to the reopened ramp at McCalla, AL are directed to Austell, where they dray by truck to northern Alabama, thereby avoiding Inman. However, despite this reliance on trucking drayage, Inman still reports almost no excess lift-capacity.[507]

528. There is no capital plan or service assurance plan to explain how Inman will be supported, or what triggers will alert management to address congestion with bypass strategies to alternative facilities—if any exist—to support Inman's increasing role as the combined carload and intermodal railroad hub of the Southeastern US. Despite the risk that Inman will need relief, it is instead relied upon to support Chattanooga, magnifying the risk of broadening rather than resolving service problems. Other key intermodal ramps relying on Inman—including Croxton, Bethlehem, and Lathrop—are also pushed up to [redacted] per cent capacity and are similarly not addressed.[508]

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[506] Norfolk Southern, "Yard Capacity Analysis Progress Update, Atlanta Inman (148H)," July 20, 2021, NS_00102233, at -261. *See also*, Gehringer and Orr VS Workpaper, "HC-Yard Details T1 vFinal.xlsx," tab 'Raw_T1,' filtered to name "ATLANTA GA_NS" (row 609) column "im cars block swap." Note that the workpaper reports [redacted] swaps per year, which equates to an average of [redacted] / 364 = [redacted] per day.

[507] *See* "Austell and Inman Terminal – Operations Notes," UP_0097289, at -291.

[508] *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "CROXTON NJ_NS" (row 10,924). Note that the column "T3_PER_DAY" lists [redacted] cars

P. Meridian

529. Applicants propose to increase train activity at Meridian without demonstrating that it can accommodate the additional workload. In particular, their Operating Plan adds train work at a location where NS operations are constrained by CPKC yard activity, Amtrak, and through-train movements. Applicants have not provided feasible schedules or [redacted], nor have they evaluated how the increased activity would affect CPKC. Consequently, they have not demonstrated that their proposed Meridian operation is executable.

530. As illustrated in Figure 128 below, operations at the NS yard are closely tied to the surrounding CPKC facilities and train movements. Switch tending at the east end of the NS yard is constrained by activity at the CPKC yard, Amtrak, and through trains using the crossings and available time slots. Further, the CPKC diamond is dispatched by NS. Thus, the additional NS activity must be evaluated against the operating needs of both railroads, including the potential for NS work to interfere with CPKC movements.

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per day against a stated post-transaction capacity of [redacted] (column "POST_CAP_DAILY"); Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "BETHINTERMODAL PA_NS" (row 11,096). Note that the column "T3_PER_DAY" lists [redacted] cars per day against a stated post-transaction capacity of [redacted] (column "POST_CAP_DAILY"); Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "LATHROP CA_UP" (row 11,117). Note that the column "T3_PER_DAY" lists [redacted] cars per day against a stated post-transaction capacity of [redacted] (column "POST_CAP_DAILY").

Elphick and Nelson V.S. at 351

FIGURE 128: MAP OF MERIDIAN AREA FACILITIES



Sources and Notes:
See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."
Note that Applicants' OEA data lists an increase of [redacted] new trains per day between Meridian and New Orleans, while their MultiRail model shows [redacted]. To properly account for through trains, we note that Applicants report an increase of [redacted] trains per day between Meridian and Shreveport, and [redacted] trains per day between Meridian and Birmingham. Factoring in a new train start out of Meridian headed towards Birmingham, we therefore assume that the correct increase in trains per day between Meridian and New Orleans is [redacted]. *See* Workpaper "Terminal Clocks.xlsx," tab 'Meridian, MS,' in folder "Terminal Clocks."

531. Applicants nevertheless project increased activity between Shreveport and Birmingham and between New Orleans and Birmingham. At Meridian, they add a new train performing work and a new train being built, both of which increase the work assigned to the yard. Applicants did not produce an evaluation of how this increase would affect CPKC's

operation.[509] Further, Mr. Turner [redacted].[510] Applicants therefore have not established that the yard can accommodate the increased activity or that the surrounding operations can remain fluid.

532. The terminal clock in Figure 129 below illustrates why the proposed operation is not executable as scheduled. Trains are clustered between 16:30 and 17:15, MLINSC and MLIBM are scheduled to work at the same time, and ZCXMX is assigned insufficient dwell to perform its work. These schedules do not demonstrate how the required work can be completed within the constrained operating windows described above. Without feasible schedules accounting for the additional work and the interaction with CPKC, Amtrak (see Amtrak 19 at 16:19 in terminal clock below), and through trains, Applicants have not demonstrated that their additional train activity can be accommodated at Meridian.

[509] Applicants' experts acknowledge this. *See, for example*, [redacted].

[510] *See* Turner VS Workpaper, "NS Manifest IM Auto Terminal Capacity Calculations.xlsx."

FIGURE 129: TERMINAL CLOCK FOR MERIDIAN, MS



Sources and Notes:
Routing Data based on MultiRail tables. *See* "Script 01 Create Routing Data," in folder "Routing Data". Local trains have been excluded from the terminal clock. Trains in red text indicate trains that terminate at or depart from Meridian, MS. *See* Scripts "01 Create Yard Data.R" and "02 Terminal Clock Builder.R" and Workpaper "Terminal Clocks.xlsx," tab 'Figure 129,' in folder "Terminal Clocks."

Q. Conclusion

533. As-written, the Operating Plan threatens the fluidity of neighboring facilities and indeed, Applicants' entire network, and potentially, the North American rail system. Major classification yards operate as interconnected systems, with the blocks produced at one yard supporting train departures, connections, and processing at other yards throughout the network. When a yard becomes congested, trains may be held outside the terminal, departures delayed,

and connections missed. Traffic can then accumulate at these locations, consuming track space, crews, and locomotives and disrupting subsequent operations. These risks are particularly pronounced on NS's network, where traffic moves between numerous dispersed locations in densely populated areas. If a major classification yard on NS's network gets into trouble, it reverberates broadly throughout the East Coast, Midwest, and Southern US. Applicants' Growth Plan is particularly vulnerable to these risks because it adds substantial work to interconnected yards while leaving little spare capacity to absorb ordinary operating variability. Consequently, a problem at one facility can affect a much broader portion of the network.

534. Elkhart illustrates how a capacity constraint at one system yard can affect both a major gateway and yards throughout the Midwest and Southeast. Elkhart supports traffic moving into Chicago, including traffic interchanged with BNSF, CPKC, CN, and IHB. Applicants' proposed bypasses depend on incorrectly consolidating these separate interchanges into Calumet. Once these errors are corrected, traffic must continue to be processed at Elkhart or be shifted elsewhere in Chicago. Yet Elkhart already operates at [redacted] percent of Applicants' claimed capacity in the Growth Plan, even before accounting for the limitations of the receiving-track expansion and the interference caused by increased block swapping.[511] Congestion at Elkhart would disrupt traffic into Chicago, where Global 2 and Proviso have their own operating constraints and limited ability to absorb additional work. The effects would extend beyond Chicago. Elkhart builds blocks for Chattanooga and other eastern yards. Delayed departures or missed connections at Elkhart could disrupt inbound traffic and onward connections at Chattanooga, which in turn supports service throughout the Southeast and is interconnected with

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511 *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "ELKHART IN_NS" (row 42). Note that the column "T3_PER_DAY" lists {[redacted] cars per day against a stated post-transaction capacity of [redacted] (column "POST_CAP_DAILY").

Birmingham and Atlanta. Concurrently, Elkhart builds blocks for all Class I railroads west of Chicago. Thus, an operating problem at Elkhart could spread to UPNS facilities far removed from the original constraint, as well as other railroads.

535. Chattanooga and Birmingham form the backbone of Applicants' Southeastern operations, but both face constraints that limit their ability to support one another. Chattanooga serves the Northeast, Midwest, Southeast, and connections into the UP network. Applicants assign it the largest increase in daily car volume of any yard in the Growth Plan, while our analysis estimates that its proposed blocking requires 65 classification tracks against approximately 55 available tracks.[512] Applicants have not demonstrated that Chattanooga can perform its expanded role with average-day volumes, let alone under peak-season demand, or absorbing delayed trains or additional traffic from other constrained yards.

536. Birmingham operates in tandem with Chattanooga, supporting the Memphis and New Orleans gateways and destinations throughout the eastern network. However, [redacted][513] These problems are mutually reinforcing. If Chattanooga becomes congested, Birmingham is poorly positioned to absorb displaced traffic. Conversely, congestion at Birmingham would delay connections and traffic moving to Chattanooga and other Southeastern facilities. Applicants also rely on Atlanta's Inman Yard to support Chattanooga, despite Inman's substantial increases in intermodal block swapping and train activity and its limited remaining capacity. Congestion at any one of these facilities could therefore spread throughout the South, affecting traffic moving

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512 *See* Figure 121.

513 *See* Section VI.J.

toward Charlotte, Jacksonville, Livonia, Englewood, North Little Rock, Elkhart, among other destinations.

537. Kansas City and St. Louis demonstrate how Applicants' proposed consolidations do not eliminate work but rather transfer it to other yards and gateways, creating congestion at critical facilities. At Kansas City, Applicants downgrade North Yard and eliminate existing deep blocking to Elkhart, Bellevue, Louisville, and Chattanooga. That work then shifts to Voltz, East Decatur, Gateway, and other intermediate yards. At Voltz, the increase in block swapping would overwhelm the available tracks and interfere with movements through the Birmingham diamond, affecting other railroads as well as Applicants. Farther east, Gateway Yard is already operating at approximately [redacted] percent of its reported standing capacity under Applicants' calculations.[514] Applicants do not demonstrate that Gateway or the other affected facilities have the capacity to perform this work.

538. Congestion in Kansas City could therefore delay trains and increase processing requirements at St. Louis, which lacks the capacity to absorb additional demand. In turn, congestion at Gateway Yard or East Decatur could impede traffic moving between the western and eastern networks. Applicants also have not resolved the routing demands east of Kansas City. Their model continues to route Kansas City–Chicago intermodal services over BNSF trackage rights despite their stated objective of reducing third-party charges. Separately, the potential divestiture of UP's Kansas City–St. Louis line to CN introduces further uncertainty over where trains would operate and what routes would remain available for recovery.

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[514] *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "GATEWAY YARD IL_UP" (row 11,086). Note that the column "T3_PER_DAY" lists [redacted] cars per day against a stated post-transaction capacity of [redacted] (column "POST_CAP_DAILY").

Our more detailed review of the blocking and train plans shows that its workload exceeds stated capacity throughout the week. *See* Figure 102.

Elphick and Nelson V.S. at 357

Applicants have not presented a feasible plan addressing these combined demands. Given the importance of these gateways to connecting carriers, the resulting disruptions would not necessarily be limited to UPNS traffic.

539. North Little Rock and the Memphis gateway provide another critical connection between Applicants' western and eastern networks with little operational flexibility. Applicants assign North Little Rock five additional blocks by the Growth Plan, including new blocking to Birmingham and Chattanooga to support bypassing intermediate facilities and the Memphis gateway. Even after the proposed capital expansion and diversion of traffic to Pine Bluff, North Little Rock retains an average capacity margin of only [redacted] cars per day.[515] A disruption there would threaten traffic moving toward Birmingham, Chattanooga, and the broader eastern network. Conversely, congestion at those downstream yards could cause traffic to accumulate at North Little Rock. Applicants have not demonstrated how Pine Bluff or Sheffield could absorb displaced work without additional handlings or changes that would undermine the proposed service improvements.

540. Livonia and Englewood create a similarly vulnerable connection between the Gulf Coast, southern Texas, and the rest of the combined network. Livonia supports traffic moving through New Orleans and Baton Rouge, including connections with the eastern network through Birmingham and Chattanooga. Yet the Growth Plan leaves only [redacted] cars per day of average spare capacity at Livonia.[516] Applicants' modelling simplifications in New Orleans obscure

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[515] *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "North Little Rock, AR_UP" (row 11,076). Note that the column "T3_PER_DAY" lists [redacted] cars per day against a stated post-transaction capacity of [redacted] (column "POST_CAP_DAILY").

[516] *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "Livonia LA_UP" (row 11,062). Note that the column "T3_PER_DAY" lists [redacted] cars per day against a stated post-transaction capacity of [redacted] (column "POST_CAP_DAILY").

Elphick and Nelson V.S. at 358

actual blocking and train demands, making it unclear whether New Orleans-area facilities could provide relief.[517] Congestion at Livonia could disrupt the Gulf Coast gateways and traffic moving to Birmingham and Chattanooga, while delays at those yards could compound Livonia's own constraints.

541. West of Livonia, Englewood is the principal distribution yard for southern Texas, supporting Houston-area industry, Gulf Coast ports, Corpus Christi, Brownsville, and the international gateways at Laredo and Eagle Pass. It is connected to numerous constrained yards, including Chattanooga, Birmingham, North Little Rock, Livonia, and Kansas City, but retains only [redacted] cars per day of average spare capacity in the Growth Plan.[518] Delayed traffic from those yards could disrupt Englewood's operation, while congestion at Englewood would impede traffic serving southern Texas and the timely handling of arriving trains from elsewhere in the network. Given the high degree of variability observed at Englewood, Applicants fail to provide an alternative yard or feasible contingency operation capable of containing these problems.

542. Intermodal operations are particularly vulnerable because Applicants' claimed service improvements depend on coordinated connections across multiple constrained terminals. Applicants' proposed single-line services still require multiple handlings and block swaps for lower-volume lanes. In Chicago, for example, traffic may pass through Colehour, Global 2, Global 4, and other facilities before proceeding toward its destination. Global 2 alone is assigned more than [redacted] feet of daily block swapping in the Growth Plan,[519] despite receiving no

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517 *See* Section III.D.

518 *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data,' filtered to name "Englewood TX_UP" (row 11,099). Note that the column "T3_PER_DAY" lists [redacted] cars per day against a stated post-transaction capacity of [redacted] (column "POST_CAP_DAILY").

519 *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "GLOBAL 2 IL_UP" and Cell E8 must be set to "Length (ft)."

planned capital investment and having little nearby relief capacity. Appliance Park and Inman likewise receive substantial additional train and block-swap work despite their existing constraints.

543. A late-arriving block at any of these locations can miss its connecting train and incur many additional hours of dwell. Where a shipment requires several intermediate connections, those delays can compound over the journey. The resulting service would undermine Applicants' claimed end-to-end transit time and reliability improvements. As a result, a significant portion of Applicants' projected diversion traffic is unlikely to materialize on the service Applicants have modelled, particularly in lower-volume markets where multiple handlings and connections must compete with direct highway transportation. Tight connections at already overburdened terminals further undermine that proposed growth.

544. Applicants' Service Assurance Plan does not provide a credible means of preventing or recovering from these interconnected problems. As discussed throughout this section, Applicants frequently identify other facilities as potential alternatives for constrained yards, even though those facilities are themselves operating at or near capacity. Applicants do not demonstrate how traffic would be redirected, where new blocks would be built, what train services would move them, or whether the receiving facilities would have sufficient tracks and operating windows to perform the additional work. Further, Applicants did not develop and validate executable schedules and terminal clocks demonstrating that the planned connections and work events can be performed under normal operating variability. Without evaluating these dependencies across the network, Applicants cannot establish that congestion at one facility could be contained before spreading to other yards and mainline segments.

545. Taken together, these constraints place Applicants' system-wide service improvements and forecast growth at risk. The Operating Plan depends on key yards consistently performing complex operations near or above their estimated capacity limits, while also relying on those yards to support other constrained facilities when problems arise. The consequences extend beyond longer dwell at individual yards to widespread missed connections, delayed departures, reduced network fluidity, and deterioration of service reliability. Resolving these problems could require Applicants to eliminate proposed blocks, reroute traffic, add train service, or reduce volumes at constrained facilities. Each of these changes would undermine the service design underlying their claimed merger benefits.

546. Further, the Growth Plan relies on projected diversions to provide sufficient traffic density for new service.[520] If congestion or the number of required work events prevents Applicants from providing the claimed improvements, those diversions may fail to materialize, undermining the commercial feasibility of the train and blocking arrangements intended to produce the benefits. The Board therefore cannot assess feasibility by reviewing individual yards in isolation. Applicants must demonstrate that the complete network can operate as proposed under ordinary fluctuations in traffic and service, and that executable contingency plans exist when disruptions occur. They have not done so.

VII. APPLICANTS DO NOT PRESENT A CONCRETE CONTINGENCY PLAN TO PREVENT SERVICE DEGRADATIONS AND MAINTAIN A RELIABLE RAILROAD

547. Up to this point, our analysis has focused on demonstrating that Applicants fail to present an executable Operating Plan. In summary, Applicants' Base Plan has not been

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[520] For a more detailed discussion of the Growth Plan's circularity in relying on projected diversions to support the traffic density required for the service improvements needed to gain those diversions, see Section V.D.

sufficiently calibrated to real-world train performance and omits critical scheduling information; on top of this shaky foundation, the Optimized and Growth Plans introduce train service that is unrealistic, fails to reflect Mr. Hunt's assumed service improvements, and is therefore unlikely to generate estimated diversions; finally, the Operating Plan fails to respect physical constraints at key facilities, meaning Applicants have presented an inherently infeasible operation. As a consequence of these errors and omissions, service will suffer if Applicants attempt to implement the Optimized and/or Growth Plan as written following approval of the transaction. In this section, we demonstrate that Applicants have not provided sufficiently detailed contingency plans to keep their networks fluid.

548. Applicants recognize that changes to blocking plans, train plans, train schedules, and terminal operations create a risk of service degradation, which increases substantially if the changes are flawed in design or execution.[521] The Service Assurance Plan sponsored by Mr. Turner therefore purports to identify, preempt, and respond to merger-related disruptions. This plan encompasses both a change-management process—meant to mitigate the scope for adverse outcomes before Applicants implement merger-related service changes[522]—as well as contingency plans to address significant disruptions at specific locations.[523] However, the Service Assurance Plan does not address the specific operational weaknesses embedded in the Operating Plan and instead relies on general assertions regarding excess capacity to prevent service disruptions. Below, we document specific deficiencies in the Service Assurance Plan and

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521 *See* Turner VS, ¶ 16 ("Applicants recognize that any change to train and blocking plans and any yard or terminal rationalization creates a risk of service degradation to the extent plans are flawed in design or execution").

522 As discussed in Section IV.C, reliance on a change-management process is insufficient to remedy the issues we have identified in the Optimized and Growth Plans and threatens to substantially alter or eliminate Applicants' claimed service benefits.

523 *See* Turner VS, ¶¶ 25–27.

explain that Applicants have not demonstrated that they can accommodate normal operational disruptions, let alone potentially major disruptions following a re-design of their network and operations.

A. The Service Assurance Plan is Overly General and Omits Many Important Factors that Impact Train and Yard Performance

549. To fully demonstrate that the Optimized and Growth Plans pose limited risk of service disruptions, the Service Assurance Plan must address specific constraints that are likely to be confronted in each operating plan. This requires a granular review of operating constraints throughout the network, the complexity of the work each location is tasked to perform, as well as the variability in volume that occurs day-to-day and throughout the year.[524] The Service Assurance Plan must examine each of these constraints and explain exactly how operations will adjust at the traffic, block, yard, and train level to accommodate variability, and more importantly, where redundant capacity exists that can realistically support recoveries.[525]

550. However, Applicants do not provide this level of detail in their Service Assurance Plan.[526] Instead, they [redacted][527]

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[524] *See* Section II.B for a discussion of specific operating constraints that must be considered when designing an Operating Plan.

[525] It should be noted that our review of the Service Assurance Plan and Mr. Turner's contingency planning focuses solely on whether the network has sufficient capacity to execute Applicants' proposed operation. However, there is a broad range of issues that may cause operational disruptions, like, for instance, problems integrating IT systems. We understand that CPKC's witness James Clements addresses these risks. Our review, however, is focused exclusively on capacity and whether the combined UPNS will remain fluid under the Growth Plan.

[526] Applicants' expert acknowledges this. *See, for example,* [redacted]

[527] *See* Turner VS Workpapers, "NS Manifest IM Auto Terminal Capacity Calculations.xlsx" and "UP Manifest-Intermodal-Automotive Terminal Capacity Inputs & Calculations.xlsx."

Applicants then assert that, in part because most—though not all—yards report average daily volumes below this threshold, the Growth Plan is feasible.[528]

551. This metric alone is insufficient to gauge whether a yard can accommodate the work for which it is scheduled. As explained in Section II.B, whether a yard remains fluid depends on far more than the number of cars it can theoretically process over a day. Importantly, congestion varies throughout the day based on the volumes that a yard is expected to process within a given window. Even if a yard shows as under-capacity by daily volume, multiple trains arriving at once will strain its capacity and cause congestion. It is therefore critical to generate schedules that remain balanced throughout the day and do not overload a yard. [redacted] As detailed in Section III.B, the design [redacted] Hence, [redacted] Applicants have ignored a substantial source of congestion that their measure of standing capacity cannot capture.

552. Traffic volumes further vary by day of week and by season. Normal variations in customer releases, connection performance, mechanical issues, and weather events all affect the volume that actually materializes on any one day. Broader swings in economic conditions—including seasonality and macroeconomic or geopolitical events—also influence demand for transportation. Accordingly, actual volumes carried on any one day will vary significantly from the averages that Applicants model. Mr. Turner's sole focus on modeled average volumes

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[528] Turner VS, ¶¶ 68–69. Notably, Applicants do not address how they will accommodate the yards that are modeled above-capacity.

[529] Letter from Michael L. Rosenthal (Covington & Burling LLP on behalf of Applicants) to T. J. McCarrick, Esq. (Kirkland & Ellis), with subject "Re: Docket No. FD 36873, Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al. – BNSF Workpaper Questions," August 21, 2026, pp. 2–3.

ignores this normal operating variability. This is an important omission, because, as we detail in Section VI, peak-volume days will put certain yards over-capacity and threaten the feasibility of the design. Concurrently, low-volume days will cause certain services to become inefficient and subject to ad-hoc cancellation, as elaborated in Sections IV.C and V.B.

553. Finally, Mr. Turner's capacity calculation [redacted]. For example, as discussed in Section VI.J, Birmingham has consistently reported average yard dwell over 29 hours since 2021; in contrast, Mr. Turner assumes that average dwell at Birmingham will be between [redacted] and [redacted] hours in his calculation of capacity.[530] This is important, because [redacted] In fact, as we show in Figure 130 below, recent performance at key hump yards demonstrates that Mr. Turner's analysis is not reflective of current conditions at key hump yards.

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530 Gehringer and Orr VS Workpaper, "NS Manifest IM Auto Terminal Capacity Calculations.xlsx," tab 'Manifest Yards.'

531 Gehringer and Orr VS Workpaper, "NS Manifest IM Auto Terminal Capacity Calculations.xlsx," tab 'Manifest Yards.'

FIGURE 130: ACTUAL YARD DWELL VS. MR. TURNER'S ASSUMED DWELL



Sources and Notes:

Rick Patterson, "State of the Rails," November 1, 2026, p. 2; Gehringer and Orr VS Workpaper, "NS Manifest IM Auto Terminal Capacity Calculations.xlsx," tab 'Manifest Yards.' *See* Workpaper "Actual vs. Assumed Yard Dwell - HC.xlsx" in folder "Turner Dwell."

554. Applicants solely rely on general assurances of "excess capacity" throughout the network to claim that their Plan is feasible.[532] Even if Applicants' capacity calculations were complete and correct, the Service Assurance Plan lacks sufficient detail to explain exactly how Applicants will adjust their operation—which trains will be re-routed, which blocks will be built at different locations, what trains may pick up extra volume—in the face of regular operational variability. Further, as we explain in greater detail in Section VII.D, Applicants' contingency

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532 *See* Turner VS, ¶¶ 353–358; Appendix A.

plans rely on downgraded or shuttered yards as post-merger facilities with extra capacity.[533] They do not provide a timeline or concrete plan to re-integrate these facilities into the network should operations become strained. Nor have they demonstrated that these facilities have the appropriate capacity to support the network.[534] Accordingly, Applicants have not presented a complete Service Assurance Plan to ensure the integrity of their operation.

B. Applicants' Operating Plan Regularly Places Yards Over-Capacity

555. Beyond these omitted factors, the Operating Plan does not include sufficient buffer within their modeled operation. As discussed above, the actual amount of traffic at any facility will vary greatly day-to-day. Tangible sources of this variation include delays in customer releases, mechanical failures that delay inbound and outbound connections, or weather events that disrupt operations. For example, a customer may have a lot of inventory to ship on Monday, but that volume will slowly wane over the week, leading to a spike in volume at the start of the week and a gradual decline towards the weekend. Alternatively, a mechanical problem on an inbound train may result in a missed connection, meaning the yard must accommodate the extra volume until it finds a replacement train for the connecting traffic.

556. An effective design incorporates this variability by building buffer into the plan. For example, yards must have sufficient tracks and other resources available to accommodate extra volume. A yard that is designed up to its capacity has no extra resources to accommodate regular volume spikes, meaning it will become overwhelmed under normal conditions. Critically, these buffer resources also help a yard recover when it becomes congested following a severe,

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533 *See* Turner VS, ¶¶ 353–358; Appendix A.

534 For example, adding back intermodal capacity in Chicago does nothing to help Elkhart, a purely manifest facility. Similarly, re-opening the Muncie automotive facility on the west side of Kansas City does little to help Voltz.

widespread service disruption—like a hurricane, natural disaster, or major derailment—that generates a backlog of traffic. A plan with insufficient buffer is therefore not executable.

557. Numerous key yards are designed up to capacity by Applicants' own calculations. For example, North Little Rock is modeled at 2,334 cars per day against a stated capacity of 2,350; Gateway Yard at 2,147 against 2,160; and Livonia at 2,034 against 2,040.[535] Those figures leave available capacity of only 16, 13, and 6 cars per day, respectively, under Applicants' methodology. Such arithmetic does not demonstrate that these facilities can absorb normal variation, much less recover efficiently from a disruption.

558. In fact, close examination of Applicants' train plan suggests that the excess capacity at Gateway Yard is even lower. When calculating the total volume processed at Gateway Yard based on the volume of inbound and outbound trains, Gateway's excess capacity disappears, and Gateway Yard shows being *over* capacity by over [redacted] cars per day.[536] Hence, Applicants' capacity calculations do not consider all trains that are scheduled to work a yard.

559. Further, examining daily variation included in the Growth Plan reveals that this excess capacity is even narrower, or disappears entirely, on select days of the week. Based on Applicants' train plan, we plot in Figure 131 below the total volume that each yard is planned to

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[535] *See* Turner VS, Table 6. Note that these figures report volumes and capacity as stated in Turner's VS. As we detail later in this section, we have identified discrepancies between Turner's stated volumes and the volumes calculated based on Applicants' blocking and train plans.

[536] This discrepancy between Applicants' stated volumes and the volumes we calculate based on their train plan stems from train [redacted]. Work events related to this train are excluded from Applicants' processing counts, but would push Gateway Yard over-capacity. Specifically, train [redacted] is designed to [redacted] inbound to Gateway in the Growth Plan; adding this traffic back to Gateway's volume pushes demands over-capacity. Applicants provide no rationale as to why this train should be included in their train plan but excluded from their processing counts. *See* Workpaper "Processing and Swap Details (All Yards) – HC.xlsx," tabs 'Inbound' and 'Outbound' in folder "Yard Detail." Note that Cell E7 on tab 'Summary' must be set to "GATEWAY YARD IL_UP" and Cell E8 must be set to "Cars (#)."

process by day of week. As revealed by the figure, [redacted]

[redacted].

FIGURE 131: PROCESSING VOLUMES BY DAY OF WEEK AGAINST MODELED CAPACITY

[redacted]

Sources and Notes:

See Script "Extract Volumes for DoW.sql" and Workpaper "Day of Week Impacts - HC.xlsx," tab 'Growth Plan (tiny),' in folder "Day of Week Volumes." Note that on tab 'Control Panel,' Cell E7 must be set to "NORTH LITTLE ROCK AR_UP," "GATEWAY YARD IL_UP," "LIVONIA LA_UP," respectively, while Cell E8 must be set to "Manifest," and Cell E9 must be set to "Both."

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560. Importantly, the above analysis is limited to *modeled* volumes, which are roughly consistent each day. However, as Applicants recognize and as we have stated repeatedly, actual volumes will not precisely follow this schedule for a variety of reasons.[537] Figure 131 therefore understates the true amount of variability that these yards will face day-to-day and over the course of a year. This problem becomes particularly stark in light of the fact that Applicants' model relies on average-day volumes that understate daily and seasonal variation. That is, [redacted][538] Peak-season volumes will therefore greatly exceed Applicants' modeled values. This is important—a yard that regularly exceeds capacity throughout the week will likely spend the subsequent days catching up or will need to rely on neighboring facilities to pick up the excess volume.

561. Below, we quantify the degree of variation omitted from Applicants' model. Based on Car Event Data provided by Applicants, we calculate the 25th, 50th, and 75th percentiles of total volume at key watershed yards through Applicants' respective networks. As the figure below demonstrates, [redacted]

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537 *See, generally,* Sections III and VI.

538 [redacted] *See* Gehringer and Orr VS Workpaper, "C-Traffic data processing.pdf," p. 37.

Applicants' method stands in stark contrast to the methodology used in the CP-KCS proceeding, where we designed a train and blocking plan to accommodate peak-season volumes. In approving the CP-KCS merger, the Board specifically endorsed this peak-season methodology. *See* Decision No. 35, *Canadian Pacific Railway Limited, et al.–Control–Kansas City Southern, et al.,* Docket No. FD 36500, March 14, 2023, p. 39.

FIGURE 132: DAILY NUMBER OF CARS PROCESSED AT SELECTED YARDS



Car Event Data and Gehringer and Orr VS Workpaper, "UP Manifest-Intermodal-Automotive Terminal Volume-Capacity Summary.xlsx." Processed cars are defined as the sum of originations, terminations, and train symbol changes at a given yard. The black line inside the box is the median; the two ends of the box are the 25th and 75th percentiles; the vertical lines span 1.5 times the Interquartile Range (75th percentile – 25th percentile). The points are outliers. *See* Scripts "01_processing_capacity.sql", "02_processing_capacity_plot.R," and Workpaper "capacity_plot.png" in folder "Processing Volumes Distribution."

562. This figure demonstrates that yards routinely face a wide range of volumes. At North Little Rock, for instance, half of the days in 2023 reported volumes above [redacted] cars or below [redacted] cars, with a median value of roughly [redacted] cars per day. That is, North Little Rock will routinely process volumes that are more than [redacted] cars above a "typical" day.[539] This variation could be due to any number of factors, including seasonality, variation in

[539] *See* Scripts "01_processing_capacity.sql" and "02_processing_capacity_plot.R" in folder "Processing Volumes Distribution."

customer volumes, weather events, or numerous other factors. We do not attempt to parse those reasons here. Rather, this exhibit illustrates that variability is a normal part of railroad operations, and that yards will routinely exceed the average volumes that form the basis of Applicants' model.

563. Another striking feature of Figure 132 is that Mr. Turner's capacity calculation seems to consistently overestimate capacity. In the case of Livonia, Mr. Turner's capacity calculation roughly corresponds to the [redacted] percentile of historical daily volumes, meaning that, historically, the yard handles daily volumes less than Mr. Turner's assumed capacity roughly [redacted] months out of the year. The story is similar for North Little Rock. However, at Gateway Yard, Mr. Turner's standing capacity calculation [redacted] This is important, as Applicants now design all three of these yards [redacted] Accordingly, all three of these yards are being asked to substantially increase their daily processing volume [redacted] their historical average.

564. Academic literature discusses the negative effects likely to ensue. *Zhao and Dick* find that yard throughput variability "damages the performance of a railway classification yard by decreasing the ratio of outbound trains that depart on time and increasing the railcar dwell time in the yard."[540] Notably, they write, "these effects are most apparent under higher traffic volumes as the yard nears capacity."[541] In other words, a yard does not need to exceed its stated

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[540] Jiaxi Zhao and C. Tyler Dick, "Quantifying the Influence of Volume Variability on Railway Hump Classification Yard Performance with AnyLogic Simulation," *Transportation Research Record* 2677(10) (2023): 79–94, p. 91.

[541] Jiaxi Zhao and C. Tyler Dick, "Quantifying the Influence of Volume Variability on Railway Hump Classification Yard Performance with AnyLogic Simulation," *Transportation Research Record* 2677(10) (2023): 79–94, p. 91.

capacity on an average day for ordinary volume variation to cause increased dwell and delayed departures. These negative effects are even more likely given that Applicants model yards close to capacity with little or no remaining margin. Thus, Applicants' reliance on an annual traffic file that reflects an average day is unreliable, especially at yards close to capacity.

C. Data Errors That Distort Traffic Volumes Render Turner's Capacity Analysis Uninformative

565. As described in Sections III.D and III.E, simplifications made to Applicants' network representation, blocking plan, and traffic file—specifically, [redacted]—cause Applicants' model to significantly mis-represent traffic flows, particularly for interline traffic, creating the false impression of density where none exists.[542] This density does not correspond to actual traffic flows and therefore cannot support bypass blocks in real operation. If a modeled bypass fails to materialize in the real world due to lack of density, the traffic must be processed elsewhere. The resulting work is absent from Applicants' yard-capacity calculations, rendering those calculations uninformative.

566. An illustrative example (discussed in Section VI.F) makes clear the risks of developing a blocking plan based on incorrect densities. [redacted].[543] [redacted] Removing these work events at Elkhart is

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542 *See* Sections III.D and III.E for a complete summary of these problems.

543 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks.'

vital, because in the Growth Plan, Elkhart has 210 cars of remaining daily capacity according to Mr. Turner's calculations.[544]

567. However, the density to support these new bypass blocks is a figment of the model and does not represent actual volumes travelling to [redacted]. As discussed in detail in Section III.E, [redacted]. Accordingly, Applicants do not have the density to support the bypass blocks that they introduce in the Growth Plan.

568. As Mr. Turner stresses repeatedly, Applicants intend to introduce a change-management process that evaluates the potential for service disruptions before implementing any merger-related operational changes.[545] In this case, if Applicants have insufficient density to build these new bypass blocks, they will have to re-block the traffic. If this traffic returns to Elkhart to be processed, then it will cut into Elkhart's already thin margin. These two blocks alone account for roughly [redacted] cars per day; re-introducing this volume would reduce Elkhart's daily margin to only [redacted] cars per day.[546] This excess capacity would be routinely used up by normal operational variation.

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544 *See* Turner VS, Table 7. As discussed previously, these capacity calculations omit many important factors that impact train performance. Moreover, Mr. Turner's focus on daily averages omits normal operating variation that will cause many yards to regularly exceed capacity.

545 *See* Turner VS, ¶¶ 18–19.

546 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks' filtered to Block IDs 1001883 and 1001882.

D. Turner's Contingency Plans Ignore Yards That are Already at or Near Capacity

569. In the preceding sections, we identify numerous reasons that actual traffic volumes will regularly exceed Applicants' modeled capacity. In summary, these reasons are: (i) Applicants' capacity estimates are based primarily on standing capacity against an average day in the year and omit numerous operating constraints that affect yard performance; (ii) the Service Assurance Plan ignores normal operating variability and does not include sufficient buffer to accommodate regular deviations from forecasted traffic flows; and (iii) modelling simplifications and adjustments made to the traffic records underlying the Operating Plan obscure density, creating false opportunities for bypass blocking that will not materialize in reality. In this section, we address Mr. Turner's contingency plans, which explain how Applicants intend to mitigate severe service disruptions when select facilities are over-capacity.

570. Applicants rely primarily on other yards for overflow capacity.[547] That approach works only if the alternate yards have sufficient unused capacity at the same time the primary facility is disrupted and can physically perform the type of work being transferred. Applicants do not quantify the amount of necessary capacity to accommodate ordinary operating variability, much less a more serious event like a derailment or extreme weather event that removes a major facility or corridor from normal operation. Instead, Mr. Turner relies on general assertions about building sufficient buffer into each yard to ensure that extra capacity is available if needed.[548] However, as we demonstrate in this section, these assertions of excess capacity are overstated.

571. The lack of available capacity is evident even taking Mr. Turner's capacity calculations at face value. Several important UP yards are modeled with only modest headroom

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547 *See* Turner VS, ¶¶ 357–359.

548 *See* Turner VS, ¶ 357. *See also,* Deposition of John Turner, September 2, 2026, 240:20–241:11.

in the Growth Plan. As discussed above, North Little Rock, Gateway Yard, and Livonia all report no more than [redacted] cars per day of stated capacity available. Similarly, Applicants report only [redacted] cars per day of stated capacity available at 18th Street in Kansas City and [redacted] cars per day at Council Bluffs.[549] Those are not large reserves when measured against the scale of the network and the daily workloads Applicants propose to move through it.[550] To illustrate the scope of this problem, below we map key facilities throughout the UP and NS networks, showing their average daily remaining capacity as a percentage of their modeled capacity in the Growth Plan.

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549 *See* Gehringer and Orr VS Workpaper, "Consolidated Terminal Data.xlsx," tab 'Data' filtered to yards "COUNCIL BLUFFS IA_UP" (row 11064) and "EIGHTENST KS_UP" (row 11052).

550 As discussed previously, normal operating variation will regularly erode these stated capacity margins; it is not unusual for yards to see daily swings in volume ranging in hundreds of cars. *See* Figure 132.

FIGURE 133: MAP OF AVERAGE DAILY UTILIZATION AT KEY MANIFEST YARDS, GROWTH PLAN



Sources and Notes:

See Scripts "01_yard_location_build.sql," "02_carlod_intermodal_data_build.R" shapefiles "Carload Black Highlight.shp," "Carload Capacity Calculation.lyrx," "Carload Grey Highlight.shp," and "Mississippi River.shp" in folder "Aggregated Maps," and Workpaper "carload_agg.pdf" in folder "Turner Available Capacity Maps." "Mississippi River.shp" is constructed using data in USGS, "Access National Hydrography Products," "NHDPlus HR National Release 2" dataset, last accessed November 12, 2026, https://www.usgs.gov/national-hydrography/access-national-hydrography-products. Pie chart size is proportional to the total daily volume for the Growth Plan processed at each yard or aggregated area. The Chicago, Kansas City, New Orleans, Houston, and Gateway Yard areas each combine multiple yards into a single aggregated point. The labeling shows the percentage of capacity unused at each yard. Black outlines identify yards that have a dedicated Contingency Plan, as detailed in Appendix A of Mr.

Turner's Verified Statement. For aggregated areas, a black outline indicates that all yards in the area are included in the Contingency Plan, while a gray outline indicates that only some yards in the area are included. Details on the aggregated areas are provided in the workpapers.

572. This map reveals a number of important conclusions. First, critical yards supporting watershed operations—including Elkhart, Council Bluffs, Chattanooga, Decatur, North Little Rock, Birmingham, Englewood, and Livonia—all report an average daily utilization above [redacted] percent capacity. Numerous other yards report utilization above [redacted] percent of modeled capacity. These figures rely on Applicants' own calculation of modeled volumes and capacity; they do not incorporate normal operating variability, which will undoubtedly cause these yards to regularly exceed modeled capacity. Nor do they incorporate the numerous factors that affect throughput detailed in Section VI, which may further reduce or alter this modeled capacity.[551] Second, Mr. Turner only provides dedicated contingency plans for select yards, denoted on this map as a point with a black or grey border. Strikingly, Applicants have no dedicated Contingency Plan for the majority of yards in their manifest network.

573. The intermodal network reveals a similar pattern, as detailed in Figure 134 below. In this case, most terminals are between [redacted] percent and [redacted] percent of their modeled capacity, with Inman Yard in Atlanta at roughly [redacted] percent capacity and Appliance Park over-capacity by [redacted] percent of its modeled capacity.[552] Applicants nowhere explain how they plan to accommodate this extra volume at Appliance Park. Moreover, only two intermodal locations—Kansas City and Chicago—report a dedicated contingency plan.

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551 For example, certain yards like Elkhart are poorly suited to block swapping, yet Applicants design a substantial increase in block swapping activity at Elkhart in the Growth Plan. Doing so will occupy valuable track space at Elkhart and will reduce throughput substantially more than Applicants' standing capacity calculation suggests. *See* Section VI for detail on yard-specific constraints that impact throughput.

552 For detailed analyses of Atlanta's Inman Yard and Louisville's Appliance Park, see Sections VI.O and VI.C, respectively.

FIGURE 134: MAP OF AVERAGE DAILY UTILIZATION AT KEY INTERMODAL TERMINALS



Sources and Notes:

See Scripts "01_yard_location_build.sql," "02_carlod_intermodal_data_build.R," shapefiles "Carload Yards Reference in Intermodal.shp," "Intermodal Black Highlight.shp," "Intermodal Capacity Calculation.lyrx," "Intermodal Exceeding Capacity.lyrx," and "Mississippi River.shp" in folder "Aggregated Maps," and Workpaper "intermodal_agg.pdf" in folder "Turner Available Capacity Maps." "Mississippi River.shp" is constructed using data in USGS, "Access National Hydrography Products," "NHDPlus HR National Release 2" dataset, last accessed November 12, 2026, https://www.usgs.gov/national-hydrography/access-national-hydrography-products. Pie chart size is proportional to the total daily volume processed at each yard or aggregated area for the Growth Plan. The Chicago area combines multiple yards into a single aggregated point. Black outlines identify yards that have a dedicated Contingency Plan, as detailed in Appendix A of Mr. Turner's Verified Statement. For aggregated areas, a black outline indicates that all yards in the area are included in the Contingency Plan, while a gray outline indicates that only some yards in

> the area are included. Manifest yards are presented by a small grey dot. Dark red pie charts represent overcapacity. Yards with available capacity of more than [redacted] are excluded. Details on the aggregated areas are provided in the workpapers.

574. A contingency plan that redirects traffic from an oversubscribed yard to another yard already at or near its own limit risks transferring the congestion rather than resolving it. That problem is particularly serious on an integrated network because one facility may be expected to support more than one corridor or more than one contingency at the same time. For example, Elkhart is listed as a "buffer resource" for both Chicago-area manifest and mixed facilities (including Proviso, Yard Center, Global 3, Ashland Ave, and interchange traffic with the BRC and IHB) as well as for Chattanooga.[553] Elkhart itself has only [redacted] percent of its capacity free on an average day, as depicted in Figure 133 above. Hence, it is unlikely that Elkhart will be able to accommodate excess traffic from either Chattanooga or the Chicago area, let alone both. Moreover, Elkhart does not have a dedicated contingency plan, despite its key role in the network.

575. The risk of spreading, as opposed to mitigating, service disruptions becomes even more prominent when examining the details of Mr. Turner's contingency plans. Below, we present Applicants' modeled utilization for designated "buffer resources" supporting six distinct gateways: Chicago, Kansas City, St. Louis, Memphis, Chattanooga, and New Orleans.[554] These maps demonstrate that, contrary to Mr. Turner's testimony, [redacted]

[redacted]

553 *See* Turner VS, Appendix A.

554 *See* Turner VS, Appendix A.

1. Chicago

FIGURE 135 : AVAILABLE CAPACITY IN MR. TURNER'S CONTINGENCY PLAN FOR CHICAGO



See Scripts "03_all_yard_location_build.sql," "04_contingency_plan_data_build.R," shapefiles "Black Highlight with Capacity.lyrx," "Black Highlight without Capacity.shp," "Capacity Calculation.lyrx," and "Capacity Not Modeled.shp" in folder "Chicago Manifest," and Workpaper "chi_manifest.pdf" in folder "Turner Available Capacity Maps." Pie chart/dot size is proportional to the total daily volume processed at each yard or aggregated area for the Growth Plan. Black outlines identify yards listed as Buffer Resources in Mr. Turner's verified statement in Appendix A of the Contingency Plan. Dark red dots represent yards with no capacity calculation in Turner's workpapers. Manifest yards include both manifest and mixed yards.

576. Figure 135 demonstrates that there is not sufficient capacity in Chicago to support Mr. Turner's contingency plans. First, and most notable, Mr. Turner does not provide capacity calculations for 63rd Street or Colehour. Hence, Applicants claim that their design is "feasible" and present a contingency plan for Chicago without evaluating capacity at several key facilities in the Chicago area. Hence, Applicants' evaluation of capacity is incomplete.

577. Second, most of the yards that Mr. Turner lists as "buffer resources" do not have excess capacity.[555] In particular, Mr. Turner claims that, if any Chicago area yards become congested, they will re-route overflow traffic to 63rd Street and Yard Center.[556] [redacted]. Further, due to Yard Center's location on the south side of Chicago, it can only effectively assist with north-south traffic, not east-west traffic. That is, traffic travelling east-west through Chicago would have to travel significantly out of route to reach Yard Center located on the city's south side, adding additional miles and exacerbating congestion within the greater Chicago area. [redacted], meaning he has no basis to claim that it has capacity available to accommodate overflow traffic.

578. Mr. Turner also states that Butler (Milwaukee), WI and Elkhart, IN are available to take on additional switch activity. First, Butler is located far to the north of Chicago in Milwaukee, WI, and could not reliably support east-west traffic. Second, as we show in Figure 135, [redacted][557] Hence, Mr.

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555 *See* Turner VS, Appendix A and Figure 135.

556 Turner VS, Appendix A, pp. 267–268.

557 For a detailed analysis of the issues at Chicago's Elkhart, see Section VI.F.

Turner's contingency planning for Chicago is incomplete and does not consider whether his buffer yards are actually able to accommodate overflow.

2. St. Louis

579. The story is the same when considering Mr. Turner's contingency plans for St. Louis. As shown by Figure 136 below, [redacted] Hence, Mr. Turner's capacity analysis offers an incomplete picture of the St. Louis gateway.

FIGURE 136: AVAILABLE CAPACITY IN MR. TURNER'S CONTINGENCY PLAN FOR ST. LOUIS



Sources and Notes:
See Scripts "03_all_yard_location_build.sql," "04_contingency_plan_data_build.R," shapefiles "Black Highlight.lyrx," "Capacity Calculation.lyrx," "Capacity Not Modeled.shp," and "Mississippi River.shp" in folder "St Louis Manifest," and Workpaper "st_louis_manifest.pdf" in folder "Turner Available Capacity Maps." "Mississippi River.shp" is constructed using data in USGS, "Access National Hydrography Products," "NHDPlus HR National Release 2" dataset, last

accessed November 12, 2026, https://www.usgs.gov/national-hydrography/access-national-hydrography-products. Pie chart/dot size is proportional to the total daily volume processed at each yard or aggregated area for the Growth Plan. Black outlines identify yards listed as Buffer Resources in Mr. Turner's verified statement in Appendix A of the Contingency Plan. Dark red dots represent yards with no capacity calculation in Turner's workpapers. Manifest yards include both manifest and mixed yards.

580. Importantly, Gateway Yard is the largest facility in the area by total volume and is modeled with [redacted][558] Ignoring the numerous ways in which Mr. Turner's capacity analysis fails to capture yard throughput, volumes at Gateway will regularly exceed standing capacity under normal conditions. Applicants therefore will need to regularly rely on Mr. Turner's contingency plan to keep the St. Louis gateway fluid. Mr. Turner specifically cites Luther and Dupo as providing overflow capacity.[559] However, these are the smallest yards in the area: Dupo yard has a modeled standing capacity of [redacted] cars per day compared to Gateway's [redacted]; Mr. Turner did not provide a standing capacity calculation for Luther Yard.[560] Importantly, as part of his contingency planning, Mr. Turner does not say how much volume may be required to be re-routed daily from Gateway to Luther and/or Dupo, and whether their excess capacity is sufficient. Concurrently, these yards may also be expected to pick up excess volume from Granite City and/or Madison Yard if they get into trouble. In summary, Mr. Turner has not evaluated how much traffic would be required to re-route to Luther or Dupo yard and whether the yards have sufficient capacity to pick up the extra volume.

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[558] For a detailed discussion of the issues in St. Louis's Gateway Yard, including insufficient excess capacity, see Section VI.B.

[559] *See* Turner VS, Appendix A, p. 270.

[560] *See* Turner VS Workpapers, "UP Manifest-Intermodal-Automotive Terminal Capacity Inputs & Calculations.xlsx" and "NS Manifest IM Auto Terminal Capacity Calculations.xlsx."

Accordingly, Mr. Turner's contingency planning for St. Louis is incomplete and insufficient to keep the yard fluid.

3. Kansas City

581. In Kansas City, Mr. Turner again presents an incomplete and uninformative contingency plan. Details of this plan are presented in Figure 137. As discussed in Section VI.A, Voltz has much less capacity than Mr. Turner's standing capacity calculation suggests. The current design will strain Voltz's capacity by overloading it throughout the day, meaning it is likely that excess traffic from Voltz will create congestion throughout the Kansas City gateway. Additionally, 18th Street is modeled at roughly [redacted] percent of its standing capacity, meaning it will regularly go over-capacity due to normal operating variability. Hence, Applicants will need to regularly rely on Mr. Turner's contingency plan to keep Kansas City fluid.

582. To help manage this excess volume, Mr. Turner cites Neff Yard, North Yard, and North Platte as the key "buffer resources." Of these, [redacted] meaning he has not evaluated how much overflow volume this yard can handle.[561] Concurrently, Applicants have indicated that Neff Yard is a candidate for lease or sale, making its availability to support UPNS operations questionable at best.[562] Hence, [redacted] while another may be leased or sold and will consequently be unavailable to UPNS as a support yard. This leaves only [redacted] available to support Kansas City operations, which is substantially out-of-route for most traffic

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561 *See* Turner VS Workpapers, "UP Manifest-Intermodal-Automotive Terminal Capacity Inputs & Calculations.xlsx" and "NS Manifest IM Auto Terminal Capacity Calculations.xlsx."

562 Union Pacific, "Union Pacific and CN Reach Agreement to Expand Customer Opportunities in Connection with Merger," July 22, 2026, last accessed November 12, 2026, https://www.up.com/press-releases/growth/up-cn-customer-opportunities-260722.

travelling through Kansas City. Mr. Turner does not consider the impact of this re-routing on transit time for traffic currently planned through Kansas City.

FIGURE 137 : AVAILABLE CAPACITY IN MR. TURNER'S CONTINGENCY PLAN FOR KANSAS CITY



Sources and Notes: *See* Scripts "03_all_yard_location_build.sql," "04_contingency_plan_data_build.R," shapefiles "Black Highlight.lyrx," "Capacity Calculation.lyrx," and "Capacity Not Modeled.shp" in folder "Kansas City Manifest," and Workpaper "kansas_city_manifest.pdf" in folder "Turner Available Capacity Maps." North Platte, NE aggregates capacity information from both North Platte East and North Platte West. Pie chart/dot size is proportional to the total daily volume processed at each yard or aggregated area for the Growth Plan. Black outlines identify yards listed as Buffer Resources in Mr. Turner's verified statement in Appendix A of the Contingency Plan. Dark red dots represent yards with no capacity calculation in Turner's workpapers. Manifest yards include both manifest and mixed yards.

583. Finally, Mr. Turner's contingency plan lacks sufficient detail to explain how operations will adjust when Kansas City gets into trouble. He does not explain the traffic and blocking demands that are expected to respectively shift to North Yard, Neff Yard, and North

Elphick and Nelson V.S. at 386

Platte, what trains will carry it, and how the gateway will shift resources throughout.[563] In short, Mr. Turner has not provided a concrete plan that would let the Board evaluate whether his contingency is sufficient to keep Kansas City fluid.

4. Memphis

584. The contingency plan for Memphis is similarly problematic.[564] Details of the plan are presented in Figure 138 below. Most strikingly, [redacted], the UP manifest facility in Memphis. The Board therefore cannot determine the following from Mr. Turner's analysis: (i) whether Sargeant Yard has a feasible design; (ii) how frequently Applicants will rely on this contingency plan to keep Memphis fluid; and (iii) when they do so, how much manifest volume is likely to rely on these backup facilities. Mr. Turner's analysis is therefore incomplete: [redacted]

585. Moreover, it is odd that Mr. Turner would develop a standalone contingency plan for Memphis, while omitting so many other yards that are critical for Applicants' joint operation. From Applicants' blocking plan, Sargeant Yard primarily handles local traffic—it does not handle high-volume run-through or interline services between UP and NS, nor does it regularly build large blocks for major gateways or yards beyond Sheffield and North Little Rock.[565] Consequently, disruptions at Sargeant Yard pose limited threat to the wider network, compared to disruptions at Elkhart, Chattanooga, Englewood, or North Little Rock. Nevertheless, Mr.

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563 For instance, Applicants do not explain how they will navigate legacy labor agreements that restrict movement of craft employees from yard to yard in Kansas City (or elsewhere). In fact, Mr. Turner suggests that developing a dedicated plan for managing craft employee resources was not feasible at this stage of the Application. *See* Turner VS, ¶ 269.

564 For a detailed discussion of the issues facing Memphis, see Section VI.K.

565 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks' filtered to blocks originating in Memphis in the Base Plan.

Turner lists critical yards—including Chattanooga, Sheffield, Pine Bluff, and North Little Rock—as buffer resources to assist should Memphis become congested.

FIGURE 138: AVAILABLE CAPACITY IN MR. TURNER'S CONTINGENCY PLAN FOR MEMPHIS



Sources and Notes:
See Script "03_all_yard_location_build.sql," "04_contingency_plan_data_build.R," shapefiles "Black Highlight.lyrx," "Capacity Calculation.lyrx," "Capacity Not Modeled.shp," and "Mississippi River.shp" in folder "Memphis Manifest," and Workpaper "memphis_manifest.pdf" in folder "Turner Available Capacity Maps." "Mississippi River.shp" is constructed using data in USGS, "Access National Hydrography Products," "NHDPlus HR National Release 2" dataset, last accessed November 12, 2026, https://www.usgs.gov/national-hydrography/access-national-hydrography-products. Pie chart/dot size is proportional to the total daily volume processed at each yard or aggregated area for the Growth Plan. Black outlines identify yards listed as Buffer Resources in Mr. Turner's verified statement in Appendix A of the Contingency Plan. Dark red dots represent yards with no capacity calculation in Turner's workpapers. Manifest yards include both manifest and mixed yards.

586. Figure 138 demonstrates that [redacted]. As discussed in VI.L, [redacted]

Elphick and Nelson V.S. at 388

[redacted] and will itself go over capacity under normal operating conditions. As discussed in VI.M, Chattanooga is also capacity constrained. Seemingly recognizing this, Mr. Turner provides a dedicated contingency plan for Chattanooga, which we examine later in this section. Pine Bluff and Sheffield are therefore the only yards that could feasibly accommodate some overflow traffic, but again, he has not presented a concrete plan: what trains will reroute and what blocks will be built or swapped elsewhere. Mr. Turner's plan therefore provides insufficient detail to demonstrate what operational adjustments are necessary to keep the Memphis gateway fluid.

5. New Orleans

587. The contingency plan for New Orleans reflects a severely constrained design. As demonstrated by Figure 139, [redacted] and will regularly go over capacity due to normal operating variation. [redacted], but as discussed in Section III.D, [redacted]. When these yards become over-burdened, Applicants state that traffic will re-route to Livonia, Addis, Alexandria, and Birmingham, AL.[566] Of these, [redacted], as shown by Figure 139 below; Birmingham and Livonia, on the other hand, [redacted]. Mr. Turner does not address how these yards are expected to further support operations in New Orleans beyond their current run-through blocking and train plans.

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[566] *See* Turner VS, Appendix A, p. 276.

FIGURE 139 : AVAILABLE CAPACITY IN MR. TURNER'S CONTINGENCY PLAN FOR NEW ORLEANS



Sources and Notes:

See Scripts "03_all_yard_location_build.sql," "04_contingency_plan_data_build.R," shapefiles "Black Highlight.lyrx," "Capacity Calculation.lyrx," and "Mississippi River.shp" in folder "New Orleans Manifest," and Workpaper "new_orleans_manifest.pdf" in folder "Turner Available Capacity Maps." "Mississippi River.shp" is constructed using data in USGS, "Access National Hydrography Products," "NHDPlus HR National Release 2" dataset, last accessed November 12, 2026, https://www.usgs.gov/national-hydrography/access-national-hydrography-products. Pie chart/dot size is proportional to the total daily volume processed at each yard or aggregated area for the Growth Plan. Black outlines identify yards listed as Buffer Resources in Mr. Turner's verified statement in Appendix A of the Contingency Plan. Dark red dots represent yards with no capacity calculation in Turner's workpapers. Manifest yards include both manifest and mixed yards.

6. Chattanooga

588. Finally, Mr. Turner provides a standalone contingency plan for Chattanooga. Notably, Chattanooga is the only yard that receives a standalone contingency plan distinct from a major gateway. He does not explain why Chattanooga merits a standalone contingency plan

when other critical yards (*e.g.*, Elkhart or Bellevue) are just as capacity-constrained and do not receive a standalone plan. Further, the yards he lists as buffer resources do not have excess capacity. By Mr. Turner's calculations, Elkhart, IN reports only [redacted] percent excess capacity, while Bellevue, OH reports only [redacted] percent. Normal variation in volumes will regularly erode these thin margins, meaning Elkhart and Bellevue will not consistently have sufficient capacity to accommodate excess volume from Chattanooga. This is notable, because Chattanooga itself is modeled at [redacted] percent of its available capacity by Mr. Turner's calculation, meaning it will regularly need to rely on its contingency plan to remain fluid.

589. [redacted] However, re-routing traffic from Chattanooga, TN to Macon, GA requires significant out-of-route miles for traffic not originating or terminating in the Southeast. Chattanooga serves traffic to/from Pennsylvania and the Ohio Valley, as well as other locations throughout the mid-Atlantic. Mr. Turner does not address the extra miles required to route this traffic via Macon, nor the resultant impact on transit time. Hence, even if Mr. Turner's contingency plan successfully eases congestion at Chattanooga, it is likely that the re-routed traffic will see significant degradation in service.

Elphick and Nelson V.S. at 391

FIGURE 140 : AVAILABLE CAPACITY IN MR. TURNER'S CONTINGENCY PLAN FOR CHATTANOOGA



Sources and Notes:

See Scripts "03_all_yard_location_build.sql," "04_contingency_plan_data_build.R," shapefiles "Black Highlight.lyrx," "Capacity Calculation.lyrx," and "Mississippi River.shp" in folder "Chattanooga Manifest," and Workpaper "chattanooga_manifest.pdf" in folder "Turner Available Capacity Maps." "Mississippi River.shp" is constructed using data in USGS, "Access National Hydrography Products," "NHDPlus HR National Release 2" dataset, last accessed November 12, 2026, https://www.usgs.gov/national-hydrography/access-national-hydrography-products. Pie chart/dot size is proportional to the total daily volume processed at each yard or aggregated area for the Growth Plan. Black outlines identify yards listed as Buffer Resources in Mr. Turner's verified statement in Appendix A of the Contingency Plan. Dark red dots represent yards with no capacity calculation in Turner's workpapers. Manifest yards include both manifest and mixed yards.

7. Conclusion

590. In summary, Mr. Turner's contingency plans are incomplete and insufficient. Many of the yards he lists as "buffer resources" themselves have limited excess capacity by his own calculation, which in turn omits many factors that could further constrain capacity. Further,

Mr. Turner fails to adequately assess capacity at key facilities in Chicago, Kansas City, St. Louis, and Memphis—meaning his contingency plans for these gateways are based on an incomplete view of available capacity. Mr. Turner does not explain how these contingency plans are executable when he has not assessed expected demands at each buffer yard.

591. Beyond the specifics of each contingency plan, Mr. Turner's contingency planning broadly lacks specificity. He does not explain which trains will be re-routed, which blocks will be built elsewhere, or how connections will be reorganized if Applicants enact a contingency plan. As we explain above, they will likely need to do so regularly. Mr. Turner states that railroad operations are too dynamic to rely on an "off-the-shelf playbook"—his contingency planning therefore emphasizes flexibility over specificity.[567] What this statement ignores, however, is the need to develop a specific plan before a contingency is executable. While we agree that the minutiae of a contingency plan must be developed in the moment, the core plan to protect key gateways and terminals, thereby preserving network fluidity, must be developed ahead of time.[568]

592. The interconnected nature of railroad operations requires all yards to be on the same page before implementing a design change. Bellevue cannot accept a new block coming from Chattanooga unless it knows it has sufficient track and other resources to process the extra traffic. Elkhart cannot accommodate a block swap originally scheduled in Chicago unless it has the track to do so. Failure to align all yards to a single plan will lead to disorganization, delays, and wider service problems. Hence, a contingency plan must lay out specifically what traffic will

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567 Turner VS, ¶ 350.

568 For instance, major weather events regularly impact operations in the south and Midwest (*e.g.*, hurricane season and winter storms). To preserve network fluidity, Applicants must have standing playbooks that detail operating strategies to mitigate disruptions.

be diverted, what blocking is necessary to support that plan, and what trains will carry the revised blocking; it must further specify where blocks will be swapped and processed under the new plan; and it must explain how other resources will be re-allocated, including craft employees. Absent this specificity, a contingency plan is not executable.

593. Because Mr. Turner does not provide this level of specificity in his contingency plans, it will be incumbent upon Applicants to develop their concrete contingency playbooks later, after the gateways are already in trouble. Doing so takes time; as we have explained at length in Section II.C, developing an executable operating plan is a labor-intensive and iterative process that requires input from multiple stakeholders, even if adjusting operations at only one yard. Once the plan is in place, putting it into action will take even more time: yards and interchange partners cannot instantaneously shift their operations to a new plan, especially if they are recovering from a backlog of excess traffic with limited extra capacity. In our experience, enacting a contingency plan for a large-scale disruption could take days to fully transition. Further, Mr. Turner relies heavily on shuttered or downgraded facilities to provide relief—re-activating these facilities is likewise not instantaneous, especially if they have been shuttered for a long time. Finally, Applicants will need to specify a timeline or criteria to revert operations to their original plan, again requiring more time and further evaluation of yard performance. All of these are critical details that Mr. Turner does not address in his contingency planning.

594. As discussed in Section IV.C.4, Applicants' proposed change-management process does not solve this deficiency. Applicants state that they will evaluate conditions before implementing changes, monitor performance, and reverse changes if unforeseen problems arise.[569] Those are prudent management practices, but they are not a substitute for demonstrating

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[569] Turner VS, ¶¶ 24–27.

that the Growth Plan submitted to the Board is executable. Nor is reverting to pre-merger train or blocking patterns necessarily a simple response after traffic has grown, facilities have been consolidated, customers have been sold new service products, and operating resources have been repositioned around the integrated plan. Hence, the change management process does not cure the insufficiency of Mr. Turner's contingency plans.

E. Applicants' Capital Investments are Insufficient for Their Anticipated Increase in Work Events

595. Finally, it is important to note that Mr. Turner's capacity calculations take into account proposed capital investments meant to expand capacity at existing terminals.[570] However, as we make clear above, these capacity improvements are insufficient. Many yards still report being above or near-capacity by Applicants' own method, and regular operating variability will regularly cause these yards to go over-capacity with no concrete plan to keep them fluid.

596. Importantly, Applicants' planned increases in block swapping and train activity at Voltz, Global 2, and Atlanta[571] demonstrate why Mr. Turner's calculation of capacity is insufficient and renders the capital plan inadequate. All three of these locations see a tremendous increase in the complexity of their design that, at minimum, requires additional capital to address. No investments are slated to support this new activity. Hence, Mr. Turner's capacity calculations and capital plan do not support the Growth Plan. Further, in conjunction with Applicants' intent of avoiding third-party charges and a subsequent agreement with CN that may result in an ownership change between Kansas City and St. Louis, we simply do not know what

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570 *See* Turner VS, ¶¶ 69, 73. *See also, for example,* Deposition of John Turner, September 2, 2026, 239:14–19.

571 *See* Section VI.

additional demands will be placed on routes within and east of Kansas City.[572] This further distorts capital needs on the main lines.

597. Applicants' contingency planning does not make up for this capacity shortfall. As described in detail previously, Applicants' contingency plans primarily rely on excess capacity at neighboring yards. Setting aside whether Applicants have the excess capacity that they claim, staging traffic at another location does not cure a processing constraint at the destination yard. If Birmingham, for example, lacks sufficient capacity to classify or otherwise process the cars assigned to it, holding those cars at another yard merely delays when they reach Birmingham. Unless the contingency plan changes the blocking plan, changes the train plan, or provides additional processing capability, the same work still must ultimately be performed.

598. It is further notable that Applicants significantly revised their capital plan between their December and April Applications. In their initial Application dated December 19, 2025, Mr. Turner proposed a total of $1.023 billion in merger-related investments, meant to expand capacity at certain over-subscribed yards as well as select track segments.[573] Then, in their revised filing dated April 30, 2026, Mr. Turner revised these projected investments down to $923 million; most of this reduction stems from a significant downgrade of planned expansions at Settegast terminal in Houston, TX.[574] Concurrently, Messrs. Gehringer and Orr altered the Growth Plan to reduce volume at many yards that reported being over-capacity in their original

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572 *See* Section VI.A.

573 *See* Verified Statement of John W. Turner, December 17, 2025 ("Turner December 2025 VS"), Table 14.

574 *See* Verified Statement of John W. Turner, April 29, 2026 ("Turner April 2026 VS"), Table 14.

Application, as detailed in Figure 141 below.[575] Mr. Gehringer admits that [redacted]

[redacted].[576]

FIGURE 141: REVISIONS TO GROWTH PLAN VOLUMES BETWEEN FILINGS BROUGHT KEY YARDS UNDER-CAPACITY

Yard	Stated Capacity (all three filings)	December 19, 2025		April 30, 2026		September 4, 2026	
		Projected Cars	Capacity Shortfall	Projected Cars	Capacity Surplus	Projected Cars	Capacity Surplus
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
North Little Rock, AR	2,350	2,672	-322	2,335	+15	2,334	+16
Livonia, LA	2,040	2,311	-271	2,035	+5	2,034	+6
Elkhart, IN	2,620	2,747	-127	2,411	+209	2,410	+210
18th St (Kansas City), KS	870	929	-59	830	+40	829	+41
Gateway Yard (St. Louis), IL	2,160	2,180	-20	2,149	+11	2,147	+13

Sources and Notes:

Turner December 2025 VS, Tables 6 and 7; Turner April 2026 VS, Tables 6 and 7; Turner VS, Tables 6 and 7.

599. These changes highlight the interdependence between the capital plan and the operating plan. The volumes projected in the Growth Plan determine where Applicants require additional investments. These investments, in turn, inform capacity, and are used to evaluate whether the plan as-written is executable. But Applicants have not presented a finalized, feasible Growth Plan, meaning they cannot create a finalized capital plan, as these successive changes highlight. Applicants have therefore not presented a realistic model that allows the Board to assess long-term capital needs, and consequently, whether the Growth Plan is feasible.

575 *See* Turner December 2025 VS, Tables 6 and 7; Turner April 2026 VS, Tables 6 and 7; Turner VS, Tables 6 and 7.

576 Deposition of Eric Gehringer, October 13, 2026, 291:14–292:6.

F. Applicants Do Not Adequately Address the Risk of Degradation to Existing Interline Services

600. The above analysis makes clear that Applicants' Growth Plan includes significant risk of widespread service disruptions, and that Applicants do not have a concrete plan to keep their network fluid. As discussed, the Growth Plan regularly puts certain yards over-capacity by Applicants' own measure, and they do not explain how these yards will consistently accommodate the extra volume. Further, Applicants do not plan for variation in volume over the course of the day, by day of week, or during peak seasons, meaning they have not provided a sufficiently detailed analysis of yard capacity that accounts for the multitude of factors that influence a yard's throughput. On top of this, Applicants have not provided a sufficiently detailed contingency plan that lays out clearly what trains and blocks need to be re-routed if and when yards do become overwhelmed. Hence, Applicants' Growth Plan poses significant risk of creating service disruptions throughout the UP and NS networks.

601. If these disruptions become reality, interline services with other railroads will also be affected. For example, consider that Elkhart currently builds blocks for interline partners throughout the Chicago area, including CN, BNSF, CPKC, as well as UP.[577] Under the Growth Plan, Elkhart reports only 210 cars per day of excess capacity by Mr. Turner's calculation.[578] As we lay out in Section VI.F, Elkhart's operating margin will be even thinner, as the bypass blocking they propose is unsupported after resolving issues with Applicants' traffic file. Also, as discussed repeatedly, Mr. Turner's view of capacity is incomplete and misses numerous salient factors that affect Elkhart's throughput, like number of blocks built, number of block swaps

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577 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to blocks originating in Elkhart in the Base Plan.

578 *See* Turner VS, Table 7.

scheduled, as well as train scheduling and car dwell.[579] These problems aside, normal surges in volume brought about by, *e.g.*, variation in customer releases, will erode this margin, regularly pushing Elkhart over-capacity. How Applicants then respond to accommodate the extra volume is an open question: Mr. Turner does not provide a dedicated contingency plan for Elkhart.[580] Hence, Applicants must choose what traffic will be re-routed, what trains will be delayed, and what services will be cancelled to ease congestion at Elkhart. The question then becomes: when choosing what services will be delayed, do Applicants have incentive to prioritize their own traffic, or their interline/interchanging traffic?

602. Applicants' past behavior indicates that, when given the opportunity, they will prioritize their own gain at the expense of interline service. For example, UP shifted its focus to insular profitability strategies in 2018, with its implementation of Precision Scheduled Railroading ("PSR").[581] Under PSR, UP focused primarily on improving its operating ratio by scaling back service offerings and cutting staff, infrastructure, and other resources.[582] Interline services were hit hard by this shift; shortly after announcing its shift to PSR, UP discontinued hundreds of domestic intermodal interline connections with NS alone.[583] This example illustrates

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579 Lack of calibrated scheduling information makes it impossible to assess these factors based on Applicants' model.

580 Elkhart's only appearance in the contingency plans is as a buffer resource for both Chicago-area terminals and for Chattanooga. It does not have a dedicated contingency plan. *See* Turner VS, Appendix A, p. 267.

581 *See* Union Pacific, "Union Pacific Announces Unified Plan 2020," Announcement Number CN2018-33, September 17, 2018, last accessed October 19, 2026, https://www.up.com/customers/announcements/customernews/allcustomernews/CN2018-33.html.

582 *See* Anthony B. Hatch, "Intermodal at the Crossroads: Leader of the 'Growth Pivot'," prepared for the Intermodal Association of America, available at: https://www.intermodal.org/documents/Intermodal_at_the_Crossroads.pdf, pp. 6–7.

583 *See* Union Pacific, "Interline service changes to eastbound intermodal traffic handled by UP and NS," Announcement Number IM2018-389, December 6, 2018, last accessed November 12, 2026,

that, in trying to preserve their own profitability, Applicants have historically deprioritized or discontinued interline services.

603. It is also important to note that, in recent years, Applicants have abandoned their near-singular focus on operating ratio and have expanded interline service. For instance, in February of 2020, UP reinstated many of its discontinued lanes with NS and CSX in order to respond to customer demand.[584] NS has similarly acknowledged that, during their own focus on PSR, they stretched themselves too thin and were unable to respond to shifts in demand.[585] Subsequently, NS added new interline service offerings with both FEC and UP.[586] Concurrently, both UP and NS have continued to invest in infrastructure at major terminals to help facilitate efficient exchanges.[587] As we detail in Section VIII, cooperation among railroads is standard practice and necessary to achieve effective transcontinental service.

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https://www.up.com/customers/announcements/intermodal/internationalservicelanesandschedules/IM2018-389.html. *See also*, Union Pacific, "UP-NS EASTBOUND DOMESTIC INTERLINE CHANGES (INTERMODAL).xlsx," last accessed November 9, 2026, https://www.up.com/cs/groups/public/@uprr/@customers/@announcements/@intermodal/documents/ms-nativedocuments/wcccon1037505.xlsx.

584 *See* Union Pacific, "Additional Lanes Open to Interline Service," Announcement Number IM2020-15, January 27, 2020, last accessed October 19, 2026, https://www.up.com/customers/announcements/intermodal/allintermodal/IM2020-15.html.

585 *See* Norfolk Southern, "Remarks From President & CEO Alan Shaw," Investor Day December 2022, available at: https://www.norfolksouthern.com/content/dam/nscorp/newsroom/story-yard/pdf/FINAL-NSC-AHS-IR-Day-Remarks-Full-Text-Design.pdf, pp. 4–5.

586 *See* Norfolk Southern, "Norfolk Southern, Florida East Coast Railway further expand intermodal service for customers," March 4, 2024, last accessed October 19, 2026, https://www.norfolksouthern.com/en/newsroom/news-releases/norfolk-southern-florida-east-coast-railway-further-expand-intermodal-service-for-customers; Norfolk Southern, "New Union Pacific and Norfolk Southern Intermodal Gateway Expands Market Access," September 15, 2025, last accessed November 12, 2026, https://www.norfolksouthern.com/en/newsroom/news-releases/new-union-pacific-and-norfolk-southern-intermodal-gateway-expands-market-access.

587 *See* Norfolk Southern, "New Union Pacific and Norfolk Southern Intermodal Gateway Expands Market Access," September 15, 2025, last accessed November 12, 2026, https://www.norfolksouthern.com/en/newsroom/news-releases/new-union-pacific-and-norfolk-southern-intermodal-gateway-expands-market-access.

604. The present transaction threatens to derail this momentum and allow Applicants to once again disregard interline service, as they did while implementing PSR. Should the merger be approved, Applicants will be able to provide transcontinental services without relying on an interline partner. As Applicants' experience with PSR demonstrates, if Applicants choose to focus solely on their own profitability, they will have limited incentive to remain a reliable interline partner to other Class I railroads or shortlines. This risk compounds if their network becomes strained—and it likely will—as Applicants must selectively prioritize what services will be delayed, re-routed, or cancelled to alleviate congestion. Moreover, there is a risk that any degradation of interline service snowballs: if UPNS proves to be an unreliable interline partner, in our experience, other Class I's may be required to deprioritize their own interline connections to preserve capacity.[588] Hence, there is a significant risk of service degradation across all interline partners.

605. In conclusion, the Growth Plan puts many key yards in jeopardy. The subsequent service disruptions will affect both UPNS traffic and interline traffic with other railroads. Because Applicants have not provided executable contingency plans, it is unclear from their application what traffic will be delayed, re-routed, or cancelled when certain key facilities become congested. Applicants' past experience with PSR suggests that, if they focus solely on their own profitability, they will prioritize their own traffic. Moreover, with a transcontinental network and multiple abridged lanes, Applicants have limited incentive to expand interline services. Strategic behavior can lead this trend to snowball, leading to an overall degradation of

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[588] For example, if UPNS routinely cancels or collapses blocking for interline service agreements with CPKC, these volumes could reverberate throughout CPKC's network as it struggles to process large and unanticipated volumes from UPNS. This in turn could require CPKC to collapse blocking or train services with UPNS.

interline service quality across the country. Applicants do not address the significant risk of degrading interline service in their application.

G. Conclusion

606. As described previously, Applicants have not provided an executable Growth Plan, which poses a significant risk of severe service disruptions as written. These issues include unrealistic schedules for new proposed trains, over-subscribed yards that take on an unrealistic number of block swaps, block builds, and processes, unrealistic and unsustainable densities for new train service, and insufficient margin for normal daily operating variation at key yards. The Service Assurance Plan largely promises that Applicants will monitor these issues and adjust later.[589]

607. That is insufficient for a transaction of this size with this magnitude of likely impacts. A reliable contingency plan should identify the specific operational constraints likely to arise, the threshold at which corrective action will be taken, the alternate train and blocking plans that will be used, the facilities that will absorb displaced work, and the capacity available at those facilities under the same conditions. Applicants have not provided that level of operational detail.

608. Accordingly, Applicants have not demonstrated either that the Growth Plan can be implemented as written or that their contingency procedures can reliably prevent the resulting problems from becoming broader service disruptions. The Growth Plan therefore cannot provide a reliable basis for the Board to credit Applicants' claimed service benefits or conclude that the merged railroad can absorb the projected traffic without material service risk.

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[589] Turner VS, ¶¶ 24–27.

VIII. IF APPLICANTS WERE RIGHT ABOUT THE FEASIBILITY AND ADVANTAGES OF THE GROWTH PLAN OPERATIONAL CHANGES, THEY WOULD HAVE INCENTIVES TO IMPLEMENT THEM WITHOUT NEEDING A MERGER

609. Applicants repeatedly suggest that common ownership is necessary to achieve the operating changes and service improvements reflected in their Optimized and Growth Plans. In particular, Messrs. Gehringer and Orr assert that, as separate railroads, UP and NS each naturally seek to maximize their own revenues and minimize their own costs, have limited incentives to use their assets jointly, and may be reluctant to commit locomotives, crew, or other resources where the success of the operation depends on the actions of the other railroad.[590] According to Applicants, those problems largely disappear after a merger because the combined railroad will internalize the costs and benefits of operational changes.[591]

610. That argument is too broad and does not apply to the operational changes that Applicants propose in their Optimized and Growth Plans. There certainly can be circumstances in which separate ownership complicates the allocation of scarce resources, particularly where a proposal requires one railroad to make a substantial investment whose benefits accrue principally to another. But that does not describe the operational changes that Applicants propose in their Optimized and Growth Plans. Building a deeper block, coordinating two train schedules, agreeing to accept a run-through train, changing the gateway through which traffic moves, or arranging for a block to bypass an intermediate classification are ordinary service-design decisions, as explained in Section II.C.

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590 *See* Gehringer and Orr VS, ¶ 10. We note that Robert Majure addresses these topics in his Verified Statement. We address the practical incentives for railroads to cooperate from an operational perspective based on our experience in railroad operations, but do not form opinions on theoretical economic incentives.

591 *See* Gehringer and Orr VS, ¶ 11.

611. These types of cooperative arrangements can be highly effective at reducing dwell and improving train performance. As elaborated in Sections II.B and II.C, the time consumed in moving a car through the network is driven by the physical work that must be performed—breaking down blocks, swapping blocks between trains, and building new blocks for departure on outbound trains—and not simply by the number of distinct corporate identities handling the car. A car that must be classified into a new block will incur that work whether the two trains involved belong to the same railroad or to different railroads. Conversely, if two carriers agree to build the appropriate block at an upstream location and move that block intact across the interchange, the interchange itself does not require the car to be classified again. A well-designed interline plan can therefore eliminate many intermediate work events.

612. Accordingly, Class I railroads routinely make these kinds of arrangements when traffic density and service opportunities warrant doing so. Academic literature confirms this fact, as discussed later in this section. Indeed, UP and NS themselves provide several examples. Their history shows that the choice is not between common ownership and an inefficient interchange. Separate railroads can design an interline service so that cars or blocks travel substantial distances without classification, trains are coordinated across the interchange, and the physical work performed at the gateway is minimized. To demonstrate that a merger is necessary to improve train service, Applicants must identify specific operational or business constraints that prevent undertaking such cooperative agreements.

613. Applicants' own diversion estimates put the scale of these opportunities in perspective. Mr. Hunt estimates that the combined UPNS would attract approximately 1.28 million new intermodal units and 252,000 new carloads per year.[592] The intermodal traffic is

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[592] *See* Hunt VS, Exhibit 2-4.

particularly concentrated. Mr. Hunt estimates that approximately 87 percent of net diverted intermodal traffic would fall within eight key traffic flows where Applicants expect sufficient density to support new truck-competitive intermodal train service.[593] Similarly, Mr. Hunt modifies his estimate of carload diversions to ensure sufficient density exists to support rail service along any one corridor.[594] That concentration is important here. On corridors where Applicants themselves project traffic volumes sufficient to support new train service, the relevant question is not whether enough traffic exists to coordinate schedules, operate run-through trains, or build deeper blocks. It is what specific operational constraint requires those activities to occur under common ownership rather than through cooperative interline arrangements.

614. In this section, we establish: (i) cooperative operations among railroads—including run-through trains, deeper blocking, coordinated interchange operations, shared use of track, and joint infrastructure investments—are common and widely recognized to improve train service without requiring a merger; (ii) UP and NS regularly engage in these activities already, demonstrating that Applicants could implement many of their proposed service improvements today without a merger; (iii) Applicants' own operational data demonstrates that they can reduce handlings and improve transit times on lanes where sufficient density exists; and (iv) Applicants have not identified a specific operational constraint that prevents engaging in this cooperation today.

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593 *See* Hunt VS, Section 7.1.1.

594 Specifically, Mr. Hunt rationalizes low-volume lanes and equivalently scales up his remaining estimates. *See* Hunt VS, Appendix C.1.

A. It Is Widely Recognized That Railroads Can Cooperate to Improve Service

615. As first discussed in Section II.C, railroads may cooperate to improve reliability, reduce transit times, and streamline marketing and scheduling for high volume interline services. Operationally, this type of coordination comes in several forms, including run-through blocking and trains. That is, NS may build a block on the East Coast that it delivers to UP, who in turn transports this block deep into its network where the traffic is processed and delivered to customers on the West Coast. This type of arrangement saves both UP and NS from having to break down or re-build blocks at the interchange. Similarly, run-through trains arrive at an interchange "pre-built"—the interchange then only requires a crew change. It saves UP from having to break down a train to deliver individual cars to NS, who would then re-process the traffic into new trains (or vice-versa). This is one way two independent railroads may deliver reliable, high-performance interline service. As discussed in more detail below, there are many other ways independent railroads cooperate to deliver improved interline service, such as coordinated interchange operations, shared use of track, and joint infrastructure investments.

616. These types of cooperative agreements are widely recognized as important to railroads' success and have been well-documented in the academic literature. For example, *Natarajan et al.* note that "formation of strategic alliances is transforming the way North American railroads do business," and *Pittman* describes railroads' "increased reliance on alliances."[595] While there are many such examples, such as cooperation between railroads and

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[595] Balu Natarajan, Chandler Duncan, and David Simpson, "Strategic Innovations in North American Railroad Management," *Transportation Research Record: Journal of the Transportation Research Board* 1924 (2005), p. 146.

Russell Pittman, "Railway Mergers and Railway Alliances: Competition Issues and Lessons for Other Network Industries," EAG Discussion Paper No. 09-2 (2009), p. 5; subsequently published in *Competition and Regulation in Network Industries* 10(3) (2009): 259–279.

rail suppliers, the most relevant here are cooperative agreements between Class I railroads. These agreements allow Class I railroads to work together to deliver effective interline services, and in so doing, capture many of the types of benefits which Applicants claim are merger-specific. *Breen* notes that UP itself identified "long-term alliances to coordinate interline operations" as a means "to achieve benefits traditionally attributed to end-to-end mergers."[596] *Breen* goes on to note UP's attempts to improve interline service through "alliances with Canadian Pacific, Canadian National, CSX, and Norfolk Southern."[597] Importantly, these cooperative agreements need not be permanent; railroads may alter these arrangements when volumes and/or business priorities shift, as UP and NS have frequently done in the past.[598] Below, we discuss many illustrative examples of such cooperation – Figure 142 below provides a summary of those examples.

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596 Denis A. Breen, "The Union Pacific/Southern Pacific Rail Merger: A Retrospective on Merger Benefits," Federal Trade Commission Bureau of Economics, Working Paper No. 269 (2004), p. 33.

597 Denis A. Breen, "The Union Pacific/Southern Pacific Rail Merger: A Retrospective on Merger Benefits," Federal Trade Commission Bureau of Economics, Working Paper No. 269 (2004), p. 33.

598 For example, Applicants consolidated interline intermodal services into select high-volume lanes in late 2018 to early 2019. *See* detailed discussion in Section VIII.B.1.

FIGURE 142: SELECTED RAILROAD COLLABORATIONS

Railroads and Arrangement	Year	Approximate Geography	Selected Activity
UP–CSX Interline Service	2001	Chicago; St. Louis; New Orleans; Memphis; Salem/St. Elmo, Illinois	New blocks and planned trains focused on five gateways
CN–IC-KCS Alliance Agreement	1998	Canada–U.S.–Mexico routes via Illinois and Mississippi gateways	Through routes; service; rates and contracts; revenue divisions
CN–KCS Access Agreement	1998	Louisiana, Mississippi, and Alabama	Haulage and trackage rights; contemplated joint facilities
CN–NS Joint Interline Service	2017	Western Canada–Eastern U.S. via Elkhart	Carload service avoiding Chicago terminal interchange
BNSF–CN Marketing Agreement	2000	Western Canada–Western U.S.	Joint interline marketing; authority to price each other's traffic
CP–NS Commercial Agreements	2004	Northeastern U.S., incl. Buffalo–Binghamton and Detroit–Chicago	Haulage, trackage rights, and consolidation of yard work
CPKC–CSX Direct Connection	2024	Myrtlewood, Alabama; Mexico/Texas–Southeastern U.S.	Direct interchange connection
CP–UP Pacific Can-Am	1999	Western Canada–Western U.S. and Mexico via Eastport/Kingsgate	Jointly designed, marketed and operated corridor
UP–CN Operating-rights	2026	Chicago EJ&E corridor; Memphis–Eagle Pass	Proposed exchange of operating rights
CN–CP Directional Running	1999	British Columbia	Westbound trains use CN track; eastbound trains use CP track
CN–CP Co-production	2006	Boston Bar–Vancouver	Train exchanges at Boston Bar for access to Vancouver terminals
NS–KCS Meridian Speedway	2006	Meridian, Mississippi–Shreveport, Louisiana	Joint ownership and improvement of the line
NS–Pan Am Patriot Corridor	2009	Mechanicville, New York–Ayer, Massachusetts	Joint venture and commitment to invest in upgrades
UP–BNSF Capacity Partnerships	2002	Los Angeles (2002) and Chicago (2003) regions	Participation in broader partnerships to expand rail capacity
UP–BNSF Joint Line	2006	Southern Powder River Basin, Wyoming	Capacity expansion on jointly owned coal line
BNSF–UP Joint Dispatching	1998	Gulf Coast network centered on Spring/Houston, Texas	Joint regional dispatch center
NS–CSX Shared Assets	1999	Northern New Jersey; Southern New Jersey/Philadelphia; Detroit	Shared-assets operations, including traffic solicitation rights

617. *Natarajan et al.* discuss a cooperative arrangement between UP and CSX, in which the two "have made interchange improvements at five strategic gateways reported to enable freight to move without handling delays in fast and consistent run-through operations."[599] Tellingly, this alliance "was the result of combined operations research between the railroads using … MultiRail."[600] UP and CSX used MultiRail to analyze their traffic "as if the cars were moving on a single railroad" and then developed "interchange points and blocking schemes for run-through trains… as a means of reducing overall transit times and minimizing terminal handling."[601] *Pittman* discusses this concept more generally, describing operating alliances where "trains originating on one railway run 'preblocked,' – that is, without using switching yards or even changing locomotives – deep into the system of the terminating carrier, sometimes

599 Balu Natarajan, Chandler Duncan, and David Simpson, "Strategic Innovations in North American Railroad Management," *Transportation Research Record: Journal of the Transportation Research Board* 1924 (2005), p. 150.

600 MultiRail is the same software Applicants have used to develop the Operating Plan. *See* Gehringer and Orr VS ¶ 19.

601 Balu Natarajan, Chandler Duncan, and David Simpson, "Strategic Innovations in North American Railroad Management," *Transportation Research Record: Journal of the Transportation Research Board* 1924 (2005), p. 150.

all the way to the final destination."[602] Ultimately, *Natarajan et al.* note that UP and CSX's alliance "improved service and enabled the carriers to penetrate new commodity segments," such as "West Coast perishables traffic."[603] In other words, UP and CSX achieved through cooperation much of what Applicants claim they require a merger to do – optimize traffic jointly across their networks, create deeper blocking to enable run-through trains, reduce transit times and handlings, and use this increased efficiency to attract new traffic. Applicants have not demonstrated why this same approach could not be used to capture many of the benefits they claim are merger-specific.

618. The cooperative arrangement between UP and CSX is not an isolated occurrence. As another example, *Natarajan et al.* discuss two cooperative agreements between CN and KCS, which "provide access to new markets and speed up the process of goods flow through the network."[604] The Alliance Agreement involved cooperation regarding "through routes, including quality of service, joint rates and contracts, and revenue divisions for rail movements using these routes."[605] The STB noted, "[t]his type of agreement is entered into regularly by rail carriers

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602 Russell Pittman, "Railway Mergers and Railway Alliances: Competition Issues and Lessons for Other Network Industries," EAG Discussion Paper No. 09-2 (2009), pp. 6–7; subsequently published in *Competition and Regulation in Network Industries* 10(3) (2009): 259–279.

603 Balu Natarajan, Chandler Duncan, and David Simpson, "Strategic Innovations in North American Railroad Management," *Transportation Research Record: Journal of the Transportation Research Board* 1924 (2005), p. 150.

604 Balu Natarajan, Chandler Duncan, and David Simpson, "Strategic Innovations in North American Railroad Management," *Transportation Research Record: Journal of the Transportation Research Board* 1924 (2005), p. 150.

605 Decision No. 37, *Canadian National Railway Company, Grand Trunk Corporation, and Grand Trunk Western Railroad Incorporated—Control—Illinois Central Corporation, Illinois Central Railroad Company, Chicago, Central and Pacific Railroad Company, and Cedar River Railroad Company*, Surface Transportation Board, STB Finance Docket No. 33556, May 21, 1999, p. 145.

without the need for our approval."[606] The Access Agreement involved "granting of certain haulage and trackage rights… and contemplates new investments in certain joint facilities."[607] CN estimated that these alliances achieved an 18% increase in traffic.[608] This is another example of two Class I railroads gaining benefits through a cooperative agreement for which Applicants claim a merger is necessary, namely attracting additional traffic to their network.

619. CN and NS provide a more recent example involving Chicago, a gateway at issue in this matter (see Sections VI.D-VI.G for a more detailed discussion of the Chicago gateway's role in Applicants' Operating Plan). In 2017, CN and NS established interline service for "carload traffic between Western Canada and NS destinations in the Eastern United States."[609] According to the carriers, the service allowed freight to "bypass traditional interchange points in Chicago," with traffic interchanging instead at NS's Elkhart yard and "avoiding extra handlings in the Chicago terminal."[610] They reported that it "has reduced transit times by up to 48 hours" and that they were "interchanging two eastbound and two westbound manifest trains daily

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606 Decision No. 37, *Canadian National Railway Company, Grand Trunk Corporation, and Grand Trunk Western Railroad Incorporated—Control—Illinois Central Corporation, Illinois Central Railroad Company, Chicago, Central and Pacific Railroad Company, and Cedar River Railroad Company,* Surface Transportation Board, STB Finance Docket No. 33556, May 21, 1999, p. 145.

607 Decision No. 37, *Canadian National Railway Company, Grand Trunk Corporation, and Grand Trunk Western Railroad Incorporated—Control—Illinois Central Corporation, Illinois Central Railroad Company, Chicago, Central and Pacific Railroad Company, and Cedar River Railroad Company,* Surface Transportation Board, STB Finance Docket No. 33556, May 21, 1999, p. 136.

608 Balu Natarajan, Chandler Duncan, and David Simpson, "Strategic Innovations in North American Railroad Management," *Transportation Research Record: Journal of the Transportation Research Board* 1924 (2005), p. 150.

609 CN, "CN and Norfolk Southern Joint Interline Service Reducing Transcontinental Transit Times by Up to 48 Hours," PR Newswire, October 27, 2017, last accessed October 21, 2026, https://www.prnewswire.com/news-releases/cn-and-norfolk-southern-joint-interline-service-reducing-transcontinental-transit-times-by-up-to-48-hours-653631453.html.

610 CN, "CN and Norfolk Southern Joint Interline Service Reducing Transcontinental Transit Times by Up to 48 Hours," PR Newswire, October 27, 2017, last accessed October 21, 2026, https://www.prnewswire.com/news-releases/cn-and-norfolk-southern-joint-interline-service-reducing-transcontinental-transit-times-by-up-to-48-hours-653631453.html.

through greater Chicago."[611] This is an example of NS changing its interline service to avoid Chicago terminal handling without a merger, which is particularly noteworthy given that Applicants claim merger-specific benefits from simplifying Chicago operations, as discussed in Sections VI.D-VI.G.

620. As another example, BNSF and CN formed interline service agreements after their failed merger attempt in 2000 to attract new traffic and make existing routes more efficient. These agreements included "authority to market and price carload traffic originating with one railroad and terminating with the other, without first negotiating terms of the movement," thereby making interline moves more efficient.[612] This mechanism extends beyond BNSF and CN; *Pittman* writes, "one recent innovation has been the delegation by one partner to the other of price quotation for the entire haul."[613] Applicants have not demonstrated why they could not do the same if their merger attempt is blocked.

621. CP and NS also used commercial agreements to change routes and yard operations. *Cairns* explains that their 2004 arrangements included haulage and trackage rights, with CP traffic moving in NS trains between Binghamton and Buffalo and CP using an NS route between Detroit and Chicago.[614] He reports that CP "has ceased yard operations in Buffalo,

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611 CN, "CN and Norfolk Southern Joint Interline Service Reducing Transcontinental Transit Times by Up to 48 Hours," PR Newswire, October 27, 2017, last accessed October 21, 2026, https://www.prnewswire.com/news-releases/cn-and-norfolk-southern-joint-interline-service-reducing-transcontinental-transit-times-by-up-to-48-hours-653631453.html.

612 Balu Natarajan, Chandler Duncan, and David Simpson, "Strategic Innovations in North American Railroad Management," *Transportation Research Record: Journal of the Transportation Research Board* 1924 (2005), p. 151.

613 Russell Pittman, "Railway Mergers and Railway Alliances: Competition Issues and Lessons for Other Network Industries," EAG Discussion Paper No. 09-2 (2009), p. 6; subsequently published in *Competition and Regulation in Network Industries* 10(3) (2009): 259–279.

614 Malcolm Cairns, "Overcoming Rail Infrastructure Capacity Constraints: Implications for Competition," Canadian Transportation Research Forum, 41st Annual Conference (2006), available at: https://ctrf.ca/wp-content/uploads/2014/07/Overcoming-Rail-Infrastructure-Capa.pdf, pp. 5–6.

shifting all freight marshalling to the NS yard there," while NS "has shifted its yard operations in Binghamton to CP[]'s East Binghamton yard."[615] Thus, CP and NS changed where yard work was performed without combining their networks.

622. CPKC has had similar experience working with other Class I carriers to develop new interline products. For example, CPKC and CSX established a new direct Class I connection to support traffic moving among Mexico, Texas, and the Southeastern United States, and have developed the Southeast Mexico Express service around that connection.[616] The important point for purposes of our testimony is that independently-owned Class I railroads routinely have commercial incentives to coordinate routes, schedules, interchange practices, and investments when doing so creates a service that can attract additional traffic for both parties. Such cooperation is a regular and frequent part of designing effective train service.

623. UP and CP's Pacific Can-Am alliance provides another example of carriers jointly developing interline service. This alliance runs "between Western Canada and North Dakota and the Pacific Northwest, California, the U.S. Southwest and Mexico."[617] Subsequent expansions of the service extend to the U.S. Midwest, Southeast, and Northeast.[618] CP stated that the railroads "jointly design, market and operate the Can-Am corridors as a seamless service to

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615 Malcolm Cairns, "Overcoming Rail Infrastructure Capacity Constraints: Implications for Competition," Canadian Transportation Research Forum, 41st Annual Conference (2006), available at: https://ctrf.ca/wp-content/uploads/2014/07/Overcoming-Rail-Infrastructure-Capa.pdf, pp. 5–6.

616 *See* CPKC, "STB Approves Transaction That Creates New CPKC-CSX Class I Connection Linking Mexico, Texas and the U.S. Southeast," October 17, 2024, last accessed October 21, 2026, https://www.cpkcr.com/en/media/STB-Approves-Creation-of-New-Direct-Connection.

617 Canadian Pacific, "2008 Corporate Profile & Fact Book," available at: https://s21.q4cdn.com/736796105/files/doc_downloads/resources/cp-2008-fact-book.pdf, p. 45.

618 Canadian Pacific, "2008 Corporate Profile & Fact Book," available at: https://s21.q4cdn.com/736796105/files/doc_downloads/resources/cp-2008-fact-book.pdf, p. 45.

customers," which "dramatically reduce[s] transit times."[619] UP reported that traffic handed off at Eastport, Idaho and moving to Roseville, California sped up from 14 days to six following implementation of the alliance, while the number of trains through Eastport rose from two to five daily.[620] This is an example of carriers cooperating to improve transit time and interchange throughput.

624. UP itself has pursued another cooperative arrangement while seeking to acquire NS. In July 2026, UP and CN announced a binding memorandum of understanding under which UP would receive "expanded operating rights over CN's Elgin, Joliet & Eastern Railway corridor through Chicago," while CN would receive "new rights on UP's network between Memphis, Tennessee, and Eagle Pass, Texas to support freight movements between Canada and Mexico."[621] UP subsequently told customers that this separate agreement "moves forward on its own, independent of the proposed merger."[622] The announced rights provide an example of UP seeking access to another carrier's Chicago route by agreement.

625. CN and CP have also coordinated their use of parallel infrastructure. Under their directional-running agreement through British Columbia's Fraser Canyon, both railroads'

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619 Canadian Pacific, "2008 Corporate Profile & Fact Book," available at: https://s21.q4cdn.com/736796105/files/doc_downloads/resources/cp-2008-fact-book.pdf, p. 45.

620 Union Pacific Corporation, Letter from the Chairman, Form 10-K for the Fiscal Year Ended December 31, 2000, p. 11 (included in its Form 10-K for the fiscal year ended December 31, 2000).

621 Union Pacific, "Union Pacific and CN Announce Agreement to Improve North American Rail Connectivity," July 22, 2026, last accessed October 21, 2026, https://www.up.com/press-releases/growth/up-cn-connectivity-260722.

622 Kenny Rocker, "Record Results and Expanded Options for You," Union Pacific Customer News No. CN2026-19, July 23, 2026, last accessed October 21, 2026, https://www.up.com/announcements/customer-news/2026/CN2026-19.

westbound trains use CN's line, with eastbound trains using CP's line.[623] *Cairns* explains that the arrangement accommodated "an increased number of trains at faster speeds," without building new double-track infrastructure.[624] The Canadian Transportation Agency separately describes a co-production arrangement under which the carriers "trade trains at Boston Bar" to reach Vancouver customers by more direct routes, "bypassing the interchange at Sapperton, New Westminster and Vancouver."[625] These agreements illustrate cooperation in both mainline and terminal operations.

626. Cooperation between railroads extends to joint capital investments where traffic density is sufficient. In particular, *Pittman* discusses alliances involving "joint infrastructure investments in order to improve interchange efficiency," specifically noting the Meridian Speedway (NS and KCS, now CPKC) and Patriot Corridor (NS and Pan Am, now CSX) projects.[626] In both cases, two railroads made joint capital investments to improve rail performance without requiring a merger. *Pittman* notes other examples of railroad infrastructure cooperation, such as UP and BNSF's efforts to expand rail capacity "in the ports of Los Angeles and Long Beach and the Chicago metropolitan area," as well as "on a jointly owned line serving

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623 Malcolm Cairns, "Overcoming Rail Infrastructure Capacity Constraints: Implications for Competition," Canadian Transportation Research Forum, 41st Annual Conference (2006), available at: https://ctrf.ca/wp-content/uploads/2014/07/Overcoming-Rail-Infrastructure-Capa.pdf, pp. 4–5.

624 Malcolm Cairns, "Overcoming Rail Infrastructure Capacity Constraints: Implications for Competition," Canadian Transportation Research Forum, 41st Annual Conference (2006), available at: https://ctrf.ca/wp-content/uploads/2014/07/Overcoming-Rail-Infrastructure-Capa.pdf, pp. 4–5.

625 Canadian Transportation Agency, "Inquiry Report: 2019 Vancouver Freight Rail Investigation (Revised)," Case No. 19-00189, Revised February 6, 2019, last accessed October 21, 2026, https://otc-cta.gc.ca/eng/inquiry-report-2019-vancouver-freight-rail-investigation-revised, Section 4.2 and Annex B.

626 Russell Pittman, "Railway Mergers and Railway Alliances: Competition Issues and Lessons for Other Network Industries," EAG Discussion Paper No. 09-2 (2009), p. 7; subsequently published in *Competition and Regulation in Network Industries* 10(3) (2009): 259–279.

the coal fields of the Southern Powder River Basin in Wyoming."[627] Such cooperation takes many forms, including joint dispatching (BNSF and UP) and mutual traffic solicitation rights (NS and CSX) over shared assets.[628] While Applicants claim that a merger is required to reap the benefits of joint infrastructure investments,[629] they have not established why cooperation could not yield the same benefits.

B. UP and NS Regularly Cooperate to Provide High-Performance Interline Service

627. The discussion above demonstrates that cooperation among Class I railroads is a regular part of service design. Cooperative agreements like run-through trains, deeper blocking, and coordination of marketing, pricing, and schedules can greatly improve both train service and the overall customer experience. In some cases, this improved service has attracted greater volumes and earned the participating railroads additional revenues, creating incentive for both railroads to participate and maintain the joint service. In this section, we establish that UP and NS themselves regularly cooperate to improve train service via similar arrangements. Analysis of Applicants' Event Data confirms that these services lead to faster transits and lower dwell, meaning that Applicants could realize many of their service improvements today without a merger.

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627 Russell Pittman, "Railway Mergers and Railway Alliances: Competition Issues and Lessons for Other Network Industries," EAG Discussion Paper No. 09-2 (2009), p. 8; subsequently published in *Competition and Regulation in Network Industries* 10(3) (2009): 259–279.

628 Russell Pittman, "Railway Mergers and Railway Alliances: Competition Issues and Lessons for Other Network Industries," EAG Discussion Paper No. 09-2 (2009), p. 8; subsequently published in *Competition and Regulation in Network Industries* 10(3) (2009): 259–279.

629 *See* Gehringer and Orr VS, ¶ 10.

1. UP and NS Engage in Numerous Cooperative Agreements and Have Failed to Demonstrate Why They Could Not Continue to Do So

628. Applicants' history demonstrates that they can work together to provide high-performance, reliable interline service. In 2019, for example, UP publicly described an ongoing joint initiative with NS to improve existing interline intermodal service.[630] UP explained that the two railroads had "[discontinued] small volume lanes to reduce train complexity," while simultaneously introducing "high-density blocking that will increase the velocity on our interchange at our major interline gateways" like Chicago and Memphis.[631] UP expressly stated that the objective was, "a more fluid and less complex interchange… which will reduce transit times and improve customers' experience."[632] These are the same basic operating tools – high-density blocking, reduced handlings, and more efficient interchanges – that Applicants now characterize as important advantages of operating one combined network.[633]

629. This example is particularly instructive because it demonstrates both sides of the service-design tradeoff that we first described in Section II.C. In revising their interline service, UP and NS did not attempt to create a direct service for every possible lane. They removed small-volume lanes where the density did not support the desired operation, while creating

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630 Union Pacific, "Interline Service Changes to Eastbound Intermodal Traffic Handled by UP and NS," Customer Announcement Number IM2019-70, May 31, 2019, last accessed October 19, 2026, https://www.up.com/customers/announcements/intermodal/allintermodal/IM2019-70.html.

631 Union Pacific, "Interline Service Changes to Eastbound Intermodal Traffic Handled by UP and NS," Customer Announcement Number IM2019-70, May 31, 2019, last accessed October 19, 2026, https://www.up.com/customers/announcements/intermodal/allintermodal/IM2019-70.html.

632 Union Pacific, "Interline Service Changes to Eastbound Intermodal Traffic Handled by UP and NS," Customer Announcement Number IM2019-70, May 31, 2019, last accessed October 19, 2026, https://www.up.com/customers/announcements/intermodal/allintermodal/IM2019-70.html.

633 *See, for example,* Gehringer and Orr VS, ¶¶ 6, 27, and 230.

deeper, high-density blocks where the traffic did support it.[634] The underlying logic is the same whether operating within a single network or cooperating among multiple railroads. Common ownership does not make an uneconomic low-density block efficient, just as separate ownership does not prevent two railroads from establishing a deeper block when sufficient traffic exists. Notably, Applicants could achieve many of their service benefits via a similar cooperative agreement, and do not provide a specific operational hurdle that prevents their cooperation in the future.[635]

630. UP and NS also regularly cooperate to publish and market unified schedules for their interline customers, making them function much like a single-line service. For example, in January 2022, UP announced that customers could access comprehensive domestic intermodal schedules covering UP-NS and UP-CSX traffic; those schedules identified the origin ramp, interchange location, method of interchange (*i.e.*, whether the interchange occurred by rubber tire or steel wheel), destination ramp, as well as cut off and customer availability information.[636] This comprehensive scheduling information makes interline service function similarly to single-line services from the customer's perspective. The fact that a shipment crosses a corporate boundary does not prevent the carriers from planning and marketing a coordinated end-to-end service, as this example demonstrates.

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634 Union Pacific, "Interline Service Changes to Eastbound Intermodal Traffic Handled by UP and NS," Customer Announcement Number IM2019-70, May 31, 2019, last accessed October 19, 2026, https://www.up.com/customers/announcements/intermodal/allintermodal/IM2019-70.html.

635 *See* Sections II.C and II.D for discussion of how to build a blocking plan that reflects an efficient operation.

636 Union Pacific, "Domestic Intermodal Interline Schedules Now Available," Customer Announcement IM2021-203, January 4, 2022, last accessed October 21, 2026, https://www.up.com/customers/announcements/intermodal/allintermodal/IM2021-203.html.

631. More recently, UP and NS coordinated a return of domestic intermodal service between Louisville, KY and western and southern markets through an interchange at Kansas City. When Applicants announced this revived service in September 2025, they described the product as providing "truck-competitive transit times" and expressly characterized it as "another example of UP and NS developing innovative interline service products," as both railroads had done previously with other Class I and short-line partners.[637] Importantly, this new interline service between the West Coast and Louisville, KY serves many markets that are slated to receive new service in the Optimized and Growth Plans, including Lathrop CA, Los Angeles CA, Seattle WA, Salt Lake City UT, and Houston TX.[638] This example establishes that UP and NS can identify a new lane, coordinate an interchange, establish a new service, and offer a competitive transportation product without first operating under common control. It is particularly relevant to this transaction, as this new service mirrors many of Applicants' proposed new services.[639]

632. The Meridian Speedway provides another important example. UP and NS currently operate a daily pair of intermodal trains that are interchanged between them through CPKC haulage over the Meridian Speedway between Shreveport, LA and Meridian, MS. That

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637 Union Pacific, "New Union Pacific and Norfolk Southern Intermodal Gateway Expands Market Access," Customer Announcement PR2025-73, PR Newswire, September 15, 2025, last accessed October 21, 2026, https://www.up.com/announcements/intermodal/PR2025-73. *See also*, Norfolk Southern, "American Manufacturers Gain New Ground by Rail," October 27, 2025, last accessed October 21, 2026, https://www.norfolksouthern.com/en/newsroom/story-yard/american-manufacturers-gain-new-ground-by-rail.

638 Union Pacific, "New Union Pacific and Norfolk Southern Intermodal Gateway Expands Market Access," Customer Announcement PR2025-73, PR Newswire, September 15, 2025, last accessed October 21, 2026, https://www.up.com/announcements/intermodal/PR2025-73.

639 For example, the ZLCCX/ZHBLC provides intermodal service between Los Angeles and the East Coast via Kansas City (*see* Gehringer and Orr VS, Figures 19 and 20); the ZLTCT/ZCTLT offers service between Lathrop CA, Ogden UT (near Salt Lake City), and the Southeast (*see* Gehringer and Orr VS, Figures 30 and 31).

service exists pursuant to longstanding arrangements dating to 2006. In October 2025, NS Chief Marketing Officer Ed Elkins described UP-NS service over the Meridian Speedway as the "fastest, shortest route" between the West Coast and the Southeast and identified the corridor as one in which NS provides exceptional value to its customers.[640] Thus, Applicants themselves already rely on a coordinated service involving three separately owned railroads to provide what NS describes as the fastest and shortest routing in this important transcontinental market.

633. Finally, it is critical to emphasize that cooperation between Applicants is not limited to a few, isolated examples. Rather, UP and NS currently implement run-through blocking and train services extensively across their networks. Figure 143 and Figure 144 below show maps of the largest run-through blocks and train services, respectively, by volume.

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[640] VectorShift, "Norfolk Southern Corp. Q3 Earnings Call Transcript," October 23, 2025, last accessed October 21, 2026, https://vectorshift.ai/research/companies/norfolk-southern/earnings/2025-q3, p. 12. As we discuss in further detail below, the assertion that the Meridian Speedway offers the fastest route between the West Coast and Southeast is supported by benchmarking data provided by Mr. Turner, which [redacted]

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FIGURE 143: TOP-10 UP AND NS RUN-THROUGH BLOCKS BY CAR COUNT, BASE PLAN



Sources and Notes:

Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," Exhibit 3.12, pp. 51–52; MultiRail tables 'mr_opal.BlockVolume,' 'mr_opal.Block,' 'mr_opal.node,' and 'mr_opal.location.' *See* Script "02_run_through_blocks_maps.R" and Workpaper "run_through_blocks.png" in folder "Run Through Blocks and Trains". The thickness and colors of the arrows represent the volume of cars per day.

FIGURE 144: TOP-10 UP AND NS RUN-THROUGH TRAINS BY CAR COUNT, BASE PLAN



Sources and Notes:
Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," Exhibit 3.13, p. 52; MultiRail tables 'mr_opal.trainRouteVolume,' 'mr_opal.train,' 'mr_opal.node', and 'mr_opal.location.' *See* Script "02_run_through_train_maps.R" and Workpaper "run_through_trains.png" in folder "Run Through Blocks and Trains." The thickness and colors of the arrows represent the volume of cars per day.

634. These figures show that UP and NS already cooperate to provide deeper blocking and run-through trains on major lanes. That is, NS builds blocks for UP and UP builds blocks for NS where density is sufficient; this traffic travels across the country and requires no re-processing at an interchange, reducing the amount of time spent at the handoff between UP and NS. Similarly, Applicants currently coordinate run-through trains that require only a crew change

at the interchange, again saving dwell at the handoff between UP and NS. Applicants do not explain why they could not use similar arrangements to realize their claimed service benefits today without a merger, beyond vague assertions that incentives do not align.[641] These assertions are directly contradicted by the numerous examples of cooperation above.

2. Dwell on These Services is Limited and Does Not Entail Excessive Time at an Interchange

635. Applicants' own operational data demonstrates that these types of cooperative agreements can effectively limit dwell. In Figure 145 below, we plot the average transit times and dwell within lanes where Applicants currently provide run-through train services.[642] The horizontal axis reflects the route of the movement in approximate scale, from left to right. The dark blue line reports the mean cumulative transit time for the cars included in the figure as they traverse the route from left to right, while the light green and orange lines report the 25th and 75th percentiles, respectively. Dwell at a location is demonstrated by a vertical line segment (reflecting containers being stationary for some period of time). Finally, we show the work being performed at intermediate locations, denoted as the change in train length in number of cars.

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641 *See* Gehringer and Orr VS, ¶ 10.

642 *See* list of run-through trains provided in Exhibit 3.13 in Gehringer and Orr VS Workpaper, "C-Base Plan.pdf".

FIGURE 145: AVERAGE CUMULATIVE TRANSIT TIME BY STOP FOR RUN-THROUGH TRAINS

345 (BIRMINGHAM TO NEW ORLEANS) → MNOEW (AVONDALE TO ENGLEWOOD)









Sources and Notes:

Car Event Data. Means based on excluding top and bottom 1% of transit times for each stop. Stops with median dwell under 30 minutes were not plotted. Spacing between stops is approximately proportional to distance. Data limited to railcars following each train sequence. For interchange events in Kansas City, Global 2, and New Orleans, several yards were combined into one stop. Average inferred pick-ups and set-outs at intermediate work events are included as annotations. *See* Scripts "01_extract_cars.sql", "02_plot_cumulative_transit_time.R", "03_annotation_input.sql", "04_annotation_files.R", and Workpapers "annotated_average_cumulative_transit_bulls_gap_to_pine_bluff.png", "annotated_average_cumulative_transit_birmingham_to_englewood.png", "annotated_average_cumulative_transit_livonia_to_birmingham.png",

"annotated_average_cumulative_transit_harrisburg_to_latc.png",
"annotated_average_cumulative_transit_livonia_to_chattanooga.png",
"annotated_average_cumulative_transit_elkhart_to_north_platte_west.png",
"annotated_average_cumulative_transit_north_little_rock_to_sheffield.png",
"annotated_average_cumulative_transit_topeka_to_bellevue.png" in folder "Cumulative Tranist Time and Stop".

636. The above figure demonstrates [redacted] Where sufficient density exists to support run-through train service, UP and NS have effectively aligned their operations to minimize dwell at the interchange. For example, [redacted] On the other hand, where these trains do report significant dwell at an interchange, it is usually associated with a large work event. For instance, 257-IGLC2 reports picking up [redacted] cars and setting out [redacted] cars on average from all inbound connections—including connections other than 257—at Global 2, yielding an average dwell of roughly [redacted] hours. However, there is nothing inherent to the interchange at Global 2 that requires substantial dwell, as the example of [redacted] demonstrates. In other words, these examples demonstrate that, where sufficient density exists to support a run-through operation, Applicants are capable of minimizing interchange dwell by designing a train and blocking plan that avoids work events at the interchange. As explained later in this section, Applicants do not identify any specific operational or business constraint that prevents them from implementing similar agreements today.

637. One of the best examples of effective interline coordination is the Meridian Speedway. As discussed previously, UP and NS exchange a daily intermodal train pair over CPKC haulage between Shreveport LA and Meridian MS. That is, UP hands off eastbound traffic to CPKC at Shreveport, who then carries it east to Meridian, where NS picks it up to reach

destinations throughout the Southeast. Westbound traffic functions similarly: NS hands off to CPKC at Meridian, who then interchanges with UP at Shreveport. Despite the need to coordinate not one but *two* interchanges, Applicants consistently laud UP-NS interline service over the Meridian Speedway as providing the "fastest, shortest route" between the West Coast and the Southeast, as discussed previously.[643]

638. Applicants' ability to limit dwell at these interchanges is confirmed by their Event Data. Below, we present charts originally filed by Dr. Powers[644] that depict cumulative transit time on traffic between the West Coast and Southeast utilizing the Speedway. They are constructed similarly to the charts above: the horizontal axis approximates the route of the movement from left to right. The dark blue line reports the mean cumulative transit time along the way, while the green and orange lines respectively reflect the 25th and 75th percentiles of transit time at each point. Dwell is represented by vertical line segments, where containers remain stationary for an extended period.[645] We present two charts below plotting traffic between Lathrop CA and Charlotte NC; the rest are incorporated in Appendix G.

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643 *See* VectorShift, "Norfolk Southern Corp. Q3 Earnings Call Transcript," October 23, 2025, last accessed October 21, 2026, https://vectorshift.ai/research/companies/norfolk-southern/earnings/2025-q3, p. 12.

644 *See* Verified Statement of Nicholas E. Powers, Ph.D., *Union Pacific Corporation and Union Pacific Railroad Company–Control–Norfolk Southern Corporation and Norfolk Southern Railway Company*, August 6, 2026.

645 We also identify intermediate points en-route where median dwell exceeds 25 minutes, as well as dwell at the origin following receipt from the customer and at the destination prior to delivery to the customer where such information is available.

FIGURE 146: CUMULATIVE TRANSIT TIMES FOR INTERMODAL TRAFFIC USING THE MERIDIAN SPEEDWAY

LATHROP CA → CHARLOTTE NC



CHARLOTTE NC → LATHROP CA



Sources and Notes:

Verified Statement of Nicholas E. Powers, Ph.D., *Union Pacific Corporation and Union Pacific Railroad Company–Control–Norfolk Southern Corporation and Norfolk Southern Railway Company*, August 6, 2026, Figure 1 and Figure 2.

639. These figures demonstrate that, over the Speedway, Applicants [redacted]. However, at key work locations within each railroad's network like Atlanta and Los Angeles / ICTF, these containers will accrue an average of [redacted] to [redacted] hours of dwell while waiting for a connecting service. That is, in the most extreme case, a container will sit in a yard for over a day waiting on a connecting train operated *by the same railroad*. Yet at the interchanges with CPKC, cars will dwell for at most [redacted]. These charts reinforce the conclusion that Applicants are capable of limiting dwell at an interchange to provide fast and reliable interline service where density warrants doing so.

640. In their response regarding their Prima Facie case, Applicants interpreted Dr. Powers' figures as in fact confirming the benefits of their case. For example, they stated that the above charts demonstrated that traffic from Lathrop to Charlotte required an average of [redacted] hours, while their new ZLTCT will purportedly take only 109 hours. Moving in the opposite direction, traffic from Charlotte to Lathrop required an average of [redacted] hours, while the ZCTLT will purportedly take only 108 hours.[646] As we explain in Section V.B, in the limited instances where Applicants offer a transit time for their new services, they provide no backup or support for their estimates.

641. Without backup materials, the Board cannot assess whether these transit improvements are truly feasible. Our review, however, suggests that they are unlikely to materialize. In particular, Applicants do not explain how they will save over [redacted] hours on the ZLTCT and nearly [redacted] hours on the ZCTLT when:

- (i) their current service—which requires an average of [redacted] hours eastward and [redacted] hours westward—uses the Meridian Speedway, which Applicants themselves have cited as the fastest route between the West Coast and Southeast and, as illustrated above, significantly limits dwell;
- (ii) even if Applicants' claims regarding dwell at the interchange were correct, they would save at most [redacted] hours according to Mr. Hunt;[647]
- (iii) the proposed route of the ZLTCT/ZCTLT train pair not only avoids the Speedway, but adds [redacted] miles onto the journey relative to current service[648] and includes numerous stops for work events;[649] and

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646 *See* Applicants' Response Regarding their Prima Facie Case, *Union Pacific Corporation and Union Pacific Railroad Company–Control–Norfolk Southern Corporation and Norfolk Southern Railway Company*, STB Finance Docket No. 36873, UP-94/NS-93, August 26, 2026, p. 34.

647 *See* Hunt VS, Exhibit B-13.

648 *See* Workpaper "ZLTCT - Mileage Comparison Confidential.xlsx," in folder "ZLTCT Mileage Comparison."

649 *See* Section V.B.1.b.

- (iv) we have identified significant issues with density over material portions of the route of both trains, making them unlikely to run as-designed.[650]

642. Benchmarking data provided by Mr. Turner confirms that train speeds on the Speedway are some of the fastest that Applicants have to offer. As part of the Service Assurance Plan, Mr. Turner calculated the average monthly train performance—including average transit time and distance travelled—across key lanes in the UP and NS networks. Importantly, Mr. Turner asserts that these lanes are representative of the entire UP and NS systems.[651] Below, we plot the fastest intermodal lanes, grouped by whether that service is interline or single-line. Tellingly, the fastest lanes predominantly utilize the Meridian Speedway, while the slowest lanes are all single-line. This pattern demonstrates that interchanges need not be an impediment to fast rail service: high-density interline service can achieve speeds as fast as or faster than even the best single-line service.

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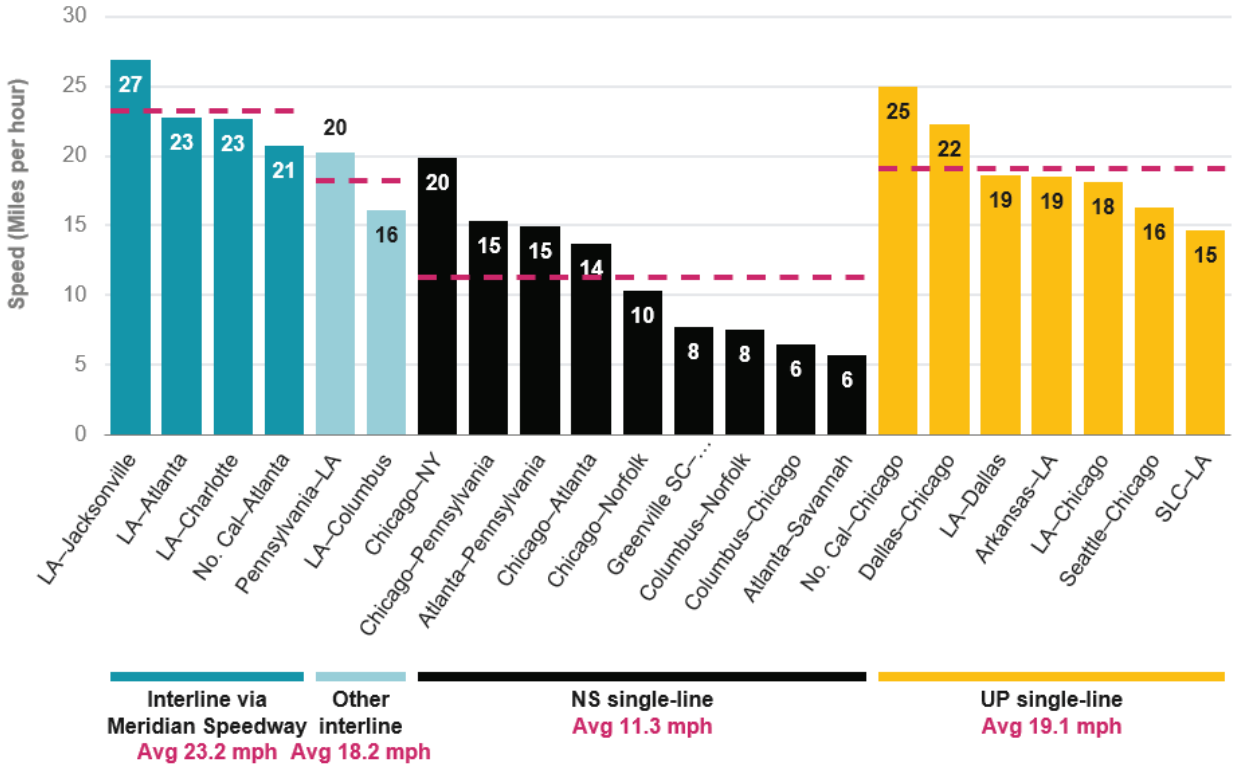
650 *See* discussion of this train pair in Section V.B.1.b.

651 *See* Turner VS, ¶ 532.

FIGURE 147: COMPARISON OF APPLICANTS' PRE-TRANSACTION INTERLINE PERFORMANCE WITH COMPARABLE SINGLE-LINE PERFORMANCE USING MR. TURNER'S BENCHMARKING DATA[652]



Meridian Speedway services are the fastest group on average (23.2 mph); **other interline routes (18.2) are close to UP single-line (19.1) and well ahead of NS (11.3)**

Sources and Notes:

See Script "Interline and Single Line Performance.R" and Workpaper "Interline and Single Line Performance.xlsx," tab "chart," and "Interline and Single Line Performance. pptx" in folder "Interline and Single Line Performance." Applicants' Corridor Benchmarking data for Service Assurance Plan from 2022 to 2025 for intermodal traffic lanes only. Average train speeds are weighted by volume. Bars labeled "Meridian Speedway" are routes by UP-CPKC-NS via MSLLC.

652 Note that the average speed for NS long-haul lanes (the first five bars) is roughly 15 miles per hour. Note that this average is still well below the average speed for routes using the Meridian Speedway.

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643. Finally, it is important to emphasize that train service over the Speedway would not change following the transaction.[653] A combined UPNS would still need to interchange with CPKC at Shreveport and Meridian, and Applicants do not propose any changes to this haulage arrangement as part of their Application.[654] As illustrated in Figure 147 above, average train speeds over the Speedway are as fast or faster than single-line services currently offered by UP and NS, making it doubtful that the merger could materially improve operations on the Speedway. Further, Applicants currently provide coordinated schedules and marketing materials for service on the Speedway, meaning that, from the customer's perspective, very little will change whether they are working with UP and NS separately or a combined UPNS.

644. In summary, Applicants cannot assume that a service improvement is merger-specific simply because it crosses the current UP-NS boundary. The relevant question is what physical work common control would eliminate, and whether UP and NS could eliminate that same work through a coordinated interline arrangement like those described in this section. Applicants have a long history of cooperating to provide interline service that mitigates dwell and is as fast or faster than the best single-line service. As we elaborate in Section VIII.C below, Applicants provide no operational constraint that would prevent this type of cooperation today.

3. Applicants Already Introduce Direct Service Where Density Exists

645. Traffic density is critical to an efficient operation.[655] As discussed in Section II.B, a railroad generally will not dedicate a separate train or block to a lane that lacks sufficient

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653 Applicants acknowledge this. *See, for example,* [redacted].

654 Applicants' experts also acknowledge this. *See, for example,* [redacted].

655 *See* John D. Bitzan and Theodore E. Keeler, "Economies of Density and Regulatory Change in the U.S. Railroad Freight Industry," *Journal of Law and Economics* 50(1) (2007): 157–180, p. 157 ("An

volume. Common ownership does not remove that constraint. Within a single network, low-volume traffic is routinely combined with other traffic and later reclassified at intermediate yards because there is insufficient volume to justify a direct block or train from the first location. Conversely, when sufficient density exists across two railroads, the carriers can agree to operate a direct block or through service. UP and NS themselves made that distinction in 2019 when they simultaneously rationalized small-volume intermodal lanes and established new, high-density blocking on their existing interline service.[656]

646. Because traffic density is central to whether deeper blocks and new train services are viable, Applicants' reliance on Growth Plan density is particularly important. Applicants state that, in many cases, projected growth will make existing trains and blocks larger, while in other cases the added traffic will create sufficient density for new train services.[657] But if the projected volume is in fact sufficient to make those trains and blocks operationally and commercially attractive, that same volume would create an incentive for UP and NS as separate railroads to cooperate. Each railroad would earn additional line-haul revenue from traffic that it otherwise would not carry, and each would have an interest in designing an interline product capable of competing for that traffic.[658]

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important welfare gain from these changes predicted by researchers was the efficiency gain from increased densities in rail freight traffic" and "Our results indicate net benefits of $7–$10 billion per year (as of 2001), stemming from cost savings from increased traffic densities…").

656 Union Pacific, "Interline Service Changes to Eastbound Intermodal Traffic Handled by UP and NS," May 31, 2019, last accessed October 19, 2026, Customer Announcement Number IM2019-70, https://www.up.com/customers/announcements/intermodal/allintermodal/IM2019-70.html.

657 Gehringer and Orr VS, ¶ 32.

658 Of course, the precise division of that revenue and the responsibility for particular costs would need to be negotiated. This is true of interline rail service generally, and railroads routinely enter into commercial and operating arrangements that allocate revenue, responsibilities, and, where appropriate, infrastructure costs. The Meridian Speedway arrangement is one example; the UP-NS interline products

647. This conclusion is supported by analysis of Applicants' own operational data. In Figure 148 below, we graph the average annual number of work events by origin-destination pairing across different volume densities.[659] We separately analyze the relationship between work events and density for UP, NS, and interline services, as well as manifest and intermodal traffic. In each of these segments, the same relationship is clear: [redacted] Thus, it is clear that when lanes have sufficient traffic, Applicants successfully reduce intermediate work events, regardless of whether the service is single line or interline. This demonstrates that Applicants are fully capable of designing their own networks or cooperating on interline services to remove intermediate handlings where density is sufficient.

discussed in Section VIII.B.1 above are others. Removing the need to coordinate on interline service does not justify common ownership.

See also, Alexei Alexandrov, Russell Pittman, and Olga Ukhaneva, "Pricing of Complements in the U.S. Freight Railroads: Cournot Versus Coase," EAG Discussion Paper No. 18-1 (2018, Revised 2024), available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3165072, pp. 29, 30 ("[C]oal shipment contracts that involve two interconnecting railroads often include discussions and negotiations between the railroads concerning both the joint rate and the divisions of the rate" and "Our results suggest that an end-to-end railroad merger would not be needed to fix a Cournot or double-marginalization-like pricing issue"); subsequently published as "Double Marginalization in the Pricing of Complements: The Case of U.S. Freight Railroads," *Journal of Economics & Management Strategy* 34(2) (2025): 403–427.

[659] *See* Appendix F for additional analysis of work events over different volume densities, broken down by route distance.

FIGURE 148: INTERMEDIATE WORK EVENTS VS. VOLUME[660]



Car Event Data. Train symbol sequences with under 300 annual carloads are excluded. The volume buckets are calculated within each system and traffic type; therefore, the buckets are not comparable across systems. Distances are approximate and based on coordinates rounded to integer values sourced from the Central Station Master. Intra-state lanes are excluded. Intra-state lanes are excluded. *See* Scripts "01_train_symbol_sequence.sql," "02_work_volume_plot_final.R," and Workpaper "work_volume_hist.png" in folder "Work Events vs. Volume."

[660] The average distances for UP, NS, and interline routes presented in this figure are , and miles, respectively. *See* Scripts "01_train_symbol_sequence.sql" and "02_work_volume_plot_final.R." In Appendix F, we show this same chary broken down by different lengths of haul.

648. This comparison does not mean that every Growth Plan lane above a particular threshold should support a stand-alone train. As described in Section II.C, whether a service is operationally and commercially sustainable depends on a wide array of factors, including frequency, commodity, customer requirements, equipment balance, yard capacity, and the availability of compatible traffic, among other considerations. Our point is narrower. If Applicants already operate cooperative services at comparable densities, then a corporate boundary cannot by itself explain why the Growth Plan service requires a merger. Applicants would need to identify the particular operational obstacle that prevents them from implementing the service through interline coordination today.

649. The inverse comparison is equally instructive. Common ownership does not cause a railroad to establish deep blocks between every pair of locations on its own network. Where density is inadequate, the same railroad continues to classify traffic at intermediate yards despite controlling both sides of the movement. This relationship can be seen in Figure 148 above – single line traffic in both Applicants' networks demonstrates that low density lanes experience a greater number of intermediate handlings. Such arrangements reflect an efficient operation where low-volume traffic is condensed into larger blocks, allowing the railroad to transport these volumes longer distances with fewer handlings than they might otherwise require as a standalone block.

650. For example, consider auto traffic between Northern California (specifically, Benicia CA) and eastern Texas (specifically Mesquite, TX). This traffic accounts for only [redacted] cars per year ([redacted] per day on average).[661] Accordingly, rather than build a

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661 *See* Scripts "Look up Block Sequence.sql" in folder "MR Review" filtered to trafficCompressedKey 2029473 in the Base Plan (resultScenarioKey 171). *See also,* Gehringer and Orr Elphick and Nelson V.S. at 438

standalone block, UP routes traffic from [redacted] to its hump yard in [redacted] where it is built into a block with other manifest and auto traffic coming from [redacted], and [redacted] among other locations, before heading to [redacted], where it is subsequently reclassified before reaching Mesquite.[662]

651. These examples reinforce the basic operating principle: density and network design determine whether deep blocking makes sense. Corporate ownership does not. If there is insufficient traffic, a merger does not make a direct block efficient. If there is sufficient traffic, separate ownership does not prevent the carriers from agreeing to build one.

652. This issue also bears directly on Applicants' claimed merger-related traffic growth. As we discuss in Section V.D, Applicants' Growth Plan assumes that improved services will attract additional traffic and then uses that additional traffic to support new trains and blocks that purportedly generate the improved service. To the extent that Applicants contend that those new services are commercially attractive because they will attract substantial additional traffic, that proposition cuts against the suggestion that UP and NS lack an incentive to pursue them independently. If a new interline product truly can attract enough traffic from truck or competing railroads to support the service, both participating railroads stand to benefit from that additional business.

C. Applicants Do Not Demonstrate That a Merger is Necessary to Achieve Specific Operational Improvements

653. Many of the specific changes Applicants make between the Base, Optimized, and Growth Plans do not depend on any physical, commercial, or operational conditions created by

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VS Workpaper "[mr_opal].[trafficResult]" filtered to trafficCompressedKey 2029473 in the Base Plan (resultScenarioKey 171).

662 *See* Scripts "Look up Block Sequence.sql" in folder "MR Review" filtered to trafficCompressedKey 2029473 in the Base Plan (resultScenarioKey 171).

the merger. In fact, many of these changes could be implemented today with standard cooperative agreements.

654. For example, Mr. Turner explains that Applicants plan to build blocks at North Platte for NS destinations in Ohio and Pennsylvania, rather than processing those cars again in Indiana, and to build blocks at Bellevue and Conway for North Little Rock.[663] Applicants also plan to build blocks at Birmingham for Texas Gulf traffic, and to build additional blocks in eastern Iowa and Elkhart to reduce intermediate handling in Chicago.[664] However, neither Mr. Turner nor Messrs. Gehringer and Orr provide specific examples of operational constraints that prevent this type of deeper blocking today. UP can build a block whose destination is on NS. NS can agree to accept that block and move it on a designated train without reclassifying it at the gateway. The two carriers can coordinate the schedules necessary to make the connection reliable. Indeed, their 2019 initiative did exactly that kind of density-based redesign when UP and NS jointly created high-density blocks to increase interchange velocity.[665]

655. In fact, the new run-through blocks that Applicants introduce in the Optimized Plan overlap substantially with existing run-through blocks. In Figure 149 below, we map the top-10 highest-volume blocks that Applicants add in the Optimized Plan which traverse the UP and NS networks. Notably, the largest of these is built by [redacted] and travels to [redacted]. [redacted] already builds a block for [redacted]

663 *See* Turner VS, ¶ 31.

664 *See* Turner VS, ¶ 31.

665 *See* Union Pacific, "Interline Service Changes to Eastbound Intermodal Traffic Handled by UP and NS," Customer Announcement Number IM2019-70, May 31, 2019, last accessed October 19, 2026, https://www.up.com/customers/announcements/intermodal/allintermodal/IM2019-70.html.

[redacted] traveling to [redacted].[666] Moreover, [redacted].[667] Applicants do not explain why a merger is necessary to build the [redacted] block, when UP already builds a block for NS destined to [redacted] As shown by the map, many of these new blocks overlap substantially with existing run-through blocks.

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666 *See* Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks,' filtered to Block ID 211.

667 *See* Workpaper, "Processing and Swap Details (All Yards) – HC.xlsx," tab 'Swaps (Growth)' and tab "Outbound" in folder "Yard Detail." Note that, in tab 'Summary,' Cell E7 must be set to "NORTH LITTLE ROCK AR_UP" and Cell E8 must be set to "Cars (#)."

FIGURE 149: TOP-10 UP AND NS RUN-THROUGH BLOCKS VS. NEW OPTIMIZED PLAN RUN-THROUGH BLOCKS



Sources and Notes:
MultiRail tables 'mr_opal.BlockVolume,' 'mr_opal.Block,' 'mr_opal.node,' and 'mr_opal.location.' Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," Exhibit 3.12, pp. 51–52; Gehringer and Orr VS Workpaper, "C-Blocks and Intensities vFinal.xlsx," tab 'Blocks.' Limited to blocks added in the Optimized Plan that either originate on UP and terminate on NS or vice-versa. *See* Script "02_run_through_new_blocks_optimized_maps.R" and Workpaper "run_through_new_blocks.png" in folder "Run Through Blocks and Trains." The thickness and colors of the arrows represent the volume of cars per day.

656. The same holds true for Applicants' new train services. The Optimized Plan introduces new intermodal train pairs between Southern California and the Northeast via Kansas City, and between Southern California and the Southeast via Shreveport and the Meridian Speedway.[668] Mr. Turner attributes substantial transit-time reductions to those routings.[669] But a new train does not become physically feasible because the locomotives on the two sides of Kansas City or Shreveport have the same corporate owner. If there is sufficient traffic to support the service, UP and NS can agree on a schedule, interchange the train or its blocks, and coordinate its movement across the gateway. Their recently launched Louisville service through Kansas City demonstrates that they are capable of doing precisely that.[670]

657. Applicants' proposed Southern California-Southeast service (ZLBAT/ZCTLB) provides a particularly clear example. Applicants rely on routing traffic via Shreveport and Meridian rather than Memphis as a major source of projected transit-time savings.[671] Yet UP and NS already use the [redacted] And NS itself has characterized that existing interline routing as the fastest and shortest route between the West Coast and

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668 For detailed discussions of these train pairs, see Sections IV.C.1 (Southern California and the Northeast) and IV.C.2 (Southern California and the Southeast).

669 As discussed in Sections IV.C and V.B, these transit time reductions are substantially overstated and unsupported by any detailed scheduling or analysis of historical train performance.

670 Norfolk Southern, "New Union Pacific and Norfolk Southern Intermodal Gateway Expands Market Access," September 15, 2025, last accessed November 12, 2026, https://www.norfolksouthern.com/en/newsroom/news-releases/new-union-pacific-and-norfolk-southern-intermodal-gateway-expands-market-access.

671 *See* Gehringer and Orr VS, ¶ 189.

672 Specifically, the ZLAAI/ZAILA (NS 28J/29S) runs daily between Los Angeles and Atlanta via the Meridian Speedway. *See* Gehringer and Orr VS Workpaper, "C-Trains vFinal.xlsx," tab 'Trains,' filtered to Train ID 13835964 and 16000176. *See also,* Script "Look up Route Stops of Interest.sql" in folder "MR Review" filtering to trainKeys 13835964 and 16000176 in the Base Plan (resultScenarioKey 171).

Southeast—a fact supported both by Mr. Turner's benchmarking data as well as [redacted].[673] Hence, the ability to improve transit times by diverting traffic out of Memphis and onto the Meridian Speedway is an opportunity that is available to Applicants today and does not arise from the merger.[674]

658. Similarly, Applicants' new manifest train service from North Platte to Conway (MNPCW) could be implemented today without a merger.[675] Applicants claim that this new service will reduce daily handlings and ease congestion around Chicago.[676] However, Applicants already provide run-through train service between [redacted] today.[677] Applicants do not identify a specific operational constraint that would prevent them from implementing a run-through train from North Platte to Conway, or from [redacted]

659. The same principle applies to most of Applicants' new train services. In Figure 150 below, we provide a map of Applicants' new Optimized Plan train services, as well as existing run-through trains. As shown by the map, other than services originating in Los Angeles, most of the Optimized Plan's new services overlap significantly with existing run-through trains. This high degree of overlap suggests that there may not be operational impediments to implementing these new services as run-through trains.

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673 *See* discussion of the Meridian Speedway in Section VIII.B.

674 Applicants acknowledge this. *See, for example,* [redacted].

675 For a more detailed discussion of Applicants' proposed new manifest train services, see Section IV.C.3.

676 *See* Gehringer and Orr VS, ¶ 190.

677 *See* Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," Exhibit 3.13, train symbol "5-39E-C01_NS/1."

FIGURE 150: TOP-10 UP AND NS RUN-THROUGH TRAINS VS. NEW OPTIMIZED PLAN TRAINS



Sources and Notes:
Gehringer and Orr VS Workpaper, "C-Base Plan.pdf," Exhibit 3.13, p. 52; MultiRail tables 'mr_opal.trainRouteVolume,' 'mr_opal.train,' 'mr_opal.node,' and 'mr_opal.location'; "C-Trains vFinal.xlsx," tab 'Trains.' Limited to trains added in the Optimized Plan that either originate on UP and terminate on NS or vice-versa. *See* Script "02_run_through_new_optimized_trains_map.R" and Workpaper "run_through_new_trains_wo_CA.png" in folder "Run Through Blocks and Trains." The thickness and color of the arrows represent the daily volume of cars. Four California routes associated with the new run-through trains in the Optimized Plan are excluded from the figure.

660. None of this means that separate ownership is irrelevant to every operational decision. Common ownership can remove the need to negotiate between carriers regarding cooperative service and can alter how revenues and costs are accounted for internally. But these effects are distinct from the physical operating changes Applicants actually use to generate their claimed service benefits. A deeper block is not created by common ownership. A train does not

travel faster because the corporate name on the two halves of its route is the same, and a work event that can be eliminated through coordinated blocking is not a merger-specific benefit merely because Applicants chose not to eliminate it previously.

D. Conclusion

661. In summary, Applicants have not shown that many of the operating changes embedded in their Optimized and Growth Plans are benefits that can be credited to the merger. Their own history demonstrates that UP and NS know how to develop run-through blocks on high-density lanes, coordinate interline schedules, establish new truck-competitive services, and operate coordinated trains over multiple railroad networks when they see a sufficient commercial opportunity. Indeed, many of the new blocks and trains that drive transit improvements and reductions in handlings overlap with Applicants' existing run-through services. Messrs. Gehringer and Orr do not identify a specific operational constraint that prevents them from implementing these new services within existing frameworks. If the volume of diversions is as large as Applicants contend, there is every reason to expect UP and NS to have incentives to pursue many of those same opportunities through ordinary interline cooperation.

IX. CONCLUSION

662. In summary, our review of Applicants' Operating Plan leads us to the following principal conclusions:

- The Operating Plan submitted to the Board is incomplete and not executable.
    - Applicants fail to provide realistic train schedules that reflect a feasible operation; in fact, they did not provide calibrated train schedules and instead provide "placeholder values" from MultiRail.
    - Modelling simplifications imposed at key gateways distort processing and blocking demands precisely where operations are likely to change the most following the transaction.

  - Applicants do not adequately assess yard capacity, relying on an overly-simplified calculation of standing and lift capacity that relies on unsupported and inaccurate measures of yard dwell that do not reflect the model. This analysis also fails to account for blocking demands and the physical space required to execute their design. In this way, their model is a paper exercise alone and does not reflect a realistic operation.

- As a result of these errors, the Base Plan is not a realistic representation of current UP and NS operations and therefore cannot be used as a basis to assess service integrity or improvements following the transaction.

- On top of these errors, new blocking and train services introduced in the Optimized and Growth Plans are unlikely to materialize. Applicants do not provide adequate support for their claimed service improvements—most notably, Applicants' transit time improvements and handling reductions are erroneous and/or lack support from any historical train performance. Further, their claimed benefits differ materially from the assumed train service that supports Mr. Hunt's estimated diversions.

- Our review of yard-level constraints demonstrates that the Operating Plan as-written poses substantial risk of service disruptions at critical yards. There is a high likelihood that these service disruptions would spread throughout the UPNS network and also impact interline services with other railroads.

- Mr. Turner's Service Assurance Plan does not provide executable contingency plans for key yards and instead relies on vague assurances of "excess capacity" throughout the network. If anything, the Service Assurance Plan highlights Applicants' intention to substantially alter their Plan ex-post via their change-management process, as the Plan cannot be executed as written.

- Applicants fail to demonstrate why a merger is necessary to achieve their claimed service improvements when they have a long history of cooperating to provide run-through trains and deeper blocking. Their own event and benchmarking data confirm that Applicants can limit intermediate handlings and interchange dwell where density warrants doing so. Applicants identify no operational, physical, or business-related constraint that prevents them from cooperating to implement their planned service improvements.

663. Taken together, these findings lead to the following fundamental conclusion: Applicants have not demonstrated that the proposed merger will deliver the operational benefits they claim while maintaining reliable service across their networks. Their Base Plan does not provide a credible representation of current operations; their Optimized and Growth Plans are not executable as written; and their Service Assurance Plan does not adequately address the resulting

risks of widespread service disruptions. Moreover, the operational improvements that may be feasible have not been shown to require a merger. Accordingly, in our opinion, Applicants have not provided the Board with a reliable operational basis to credit their claimed service benefits or conclude that the proposed transaction can be implemented without substantial risk of widespread service disruptions throughout the rail network.

VERIFICATION

I, Raymond Elphick, declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed on this 18th day of November, 2026.



VERIFICATION

I, Brian Nelson, declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed on this 18th day of November, 2026.



Appendix A: Work Histories of Raymond Elphick and Brian Nelson

Figure 151: Work History of Raymond A. Elphick

Education	
Simon Fraser University, Burnaby CA, BA in English and Psychology	1992
Work History	
Canadian National Railway Company	
Brakeman/trainman	1989 – 1992
Canadian Pacific Kansas City Limited (formerly Canadian Pacific Railway Limited)	
Engineering Planning	1992 – October 1998
Program Planner	October 1998 – August 2001
Engineering Service Design Planner	August 2001 – December 2001
Assistant Director, Service Design	December 2001 – July 2004
Director, Integrated Operating Plan	August 2004 – December 2007
Director, Product Design	December 2007 – January 2010
General Manager, Product Design	January 2010 – August 2010
General Manager, Service Design	Sepember 2010 – October 2012
General Manager, Service Design & Infrastructure	November 2012 – May 2016
General Manager, Service Design & Car Management	May 2016 – Februrary 2017
Assistant Vice President, Service & Product Design	February 2017 – April 2023
Vice President, Service Design & Capacity Management	April 2023 – June 2025
Testifying Experience	
Canadian Pacific Railway Limited – Control – Kansas City Southern Limited, FD 36500	
Exhibit 13, Operating Plan, Verified by Raymond A. Elphick and John F. Orr	

FIGURE 152: WORK HISTORY OF BRIAN NELSON

Education	
University of Saskatchewan, BA in Business History	1994
University of Victoria, BC, Masters-level coursework in History	1997
Work History	
Canadian Pacific Kansas City Limited (formerly Canadian Pacific Railway Limited)	
Track Labourer, Alberta	July 1997 – November 1997
Brakeman / Conductor	November 1997 – February 1999
Table Maintenance Specialist	February 1999 – June 2000
Analyst, Plan Integration / System Planning	June 2000 – August 2001
Analyst, Plan Integration	August 2001 – September 2004
Field Operations Manager	September 2004 – September 2005
Product Design Manager	September 2005 – December 2006
Product Design Architect, Production	December 2006 – January 2011
Specialist, Architecture	January 2011 – January 2013
Director, Service Design	January 2013 – January 2019
Director, Network Integration	May 2021 – April 2023
Managing Director, Service Design	April 2023 – April 2026
Norfolk Southern Railway	
Service Design Consultant	January 2019 – May 2021

Appendix B: DATA PROCESSING ERROR IN APPLICANTS' CALCULATION OF SAVED HANDLINGS

664. To calculate intermediate handlings saved by their new Manifest services in the Optimized Plan, Applicants purport to implement the following logic:

- Identify the blocks that are on a given train over the primary gateway for that train. For example, the MNPCW (Manifest North Platte to Conway) traverses Chicago, so the set of relevant blocks will be all blocks that originate west of Chicago, travel on the MNPCW across the Chicago gateway, and terminate east of Chicago.
- For each of these blocks, identify all traffic records that compose the block.[678]
- For each traffic record, calculate the change in total handlings (block swaps plus classifications) from the Base Plan to the Optimized Plan.
- Sum these differences across all traffic records in a block to determine how many handlings each block adds/subtracts.
- Sum across all blocks to get the net impact (in terms of reduction in handlings) of each train.[679]

665. However, the count of saved handlings reported in Messrs. Gehringer and Orr's Verified Statement does not reflect this logic. Applicants make the following omissions and errors when reporting saved handlings for their new services:

- Applicants selectively switch between reporting the change in all intermediate handlings and just classifications (a subset of handlings)—in one case (the MCWAL), the total number of handlings increases due to an elevated number of block swaps, but in that instance Applicants report a different (and more favorable) number – the reduction in classifications.[680]
- Due to a data processing error, they duplicate volumes for some records, leading them to overstate the reduction in the number of handlings. This error is obvious when comparing the stated volumes of the affected blocks with the volumes listed in other provided workpapers. For instance, if a traffic record

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[678] Applicants omit from this calculation certain traffic records that were added in the Optimized Plan, like [redacted] *See* Gehringer and Orr VS Workpaper, "C-Optimized Plan.pdf," Section 2.6.

[679] *See* Gehringer and Orr VS Workpaper, "Manifest T1 vs T2.xlsx," tab 'Read Me.'

[680] *See* Gehringer and Orr VS Workpaper, "Manifest T1 vs T2.xlsx," tab 'MCWAL.'

> input into MultiRail lists 10 cars per day going from, e.g., Houston, TX to Croxton, NJ, Applicants' workpapers will list the record as showing 20 or 30 cars per day when compiling saved handlings.

666. The combination of these factors means that, for most of their new manifest trains in the Optimized Plan, the modelled reduction in handlings is substantially lower than what Messrs. Gehringer and Orr claim. For instance, if we replicate Applicants' methodology to calculate the reduction in handlings attributable to the MNPCW, we find [redacted] fewer handlings, not 248. In some cases, we find an increase in handlings, not a decrease.

Appendix C: ZERO-DWELL WORK EVENTS

667. The figures below show the results of our analysis of zero-dwell work events in Applicants' Base, Optimized, and Growth plans.

668. Work events are identified based on changes in train length between stops. This is a conservative definition of a work event – all changes in train length require work (setting off or picking up cars), yet work events can occur without a corresponding change in train length. Thus, there may be additional work events, including zero-dwell work events, beyond those captured here.

669. Zero-dwell work events are identified as work events without recorded dwell time.

FIGURE 153: SHARE OF ZERO-DWELL WORK EVENTS ACROSS PLANS AND RAILROADS (TABLE)



Sources and Notes:

Elphick and Nelson V.S. at 455

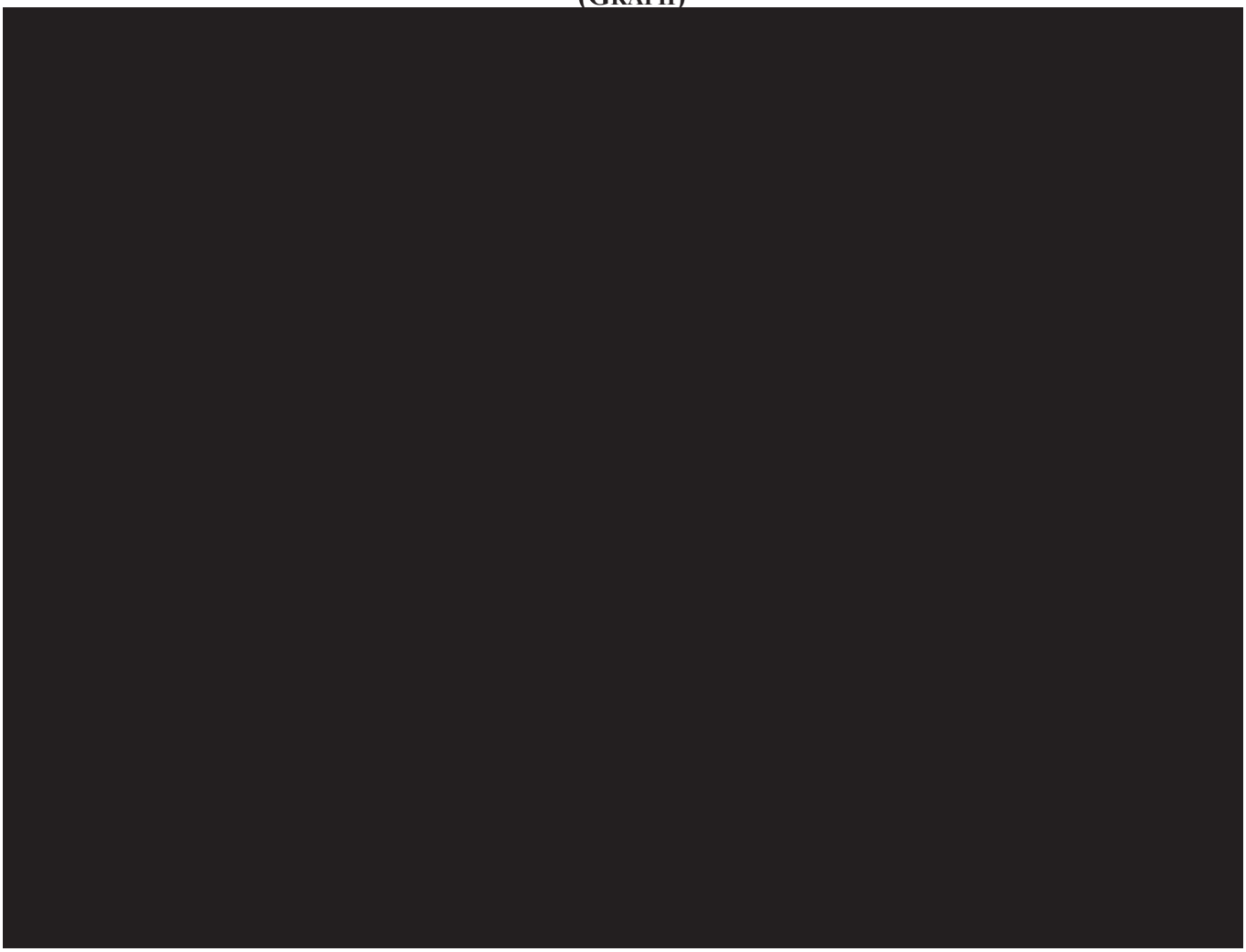
MultiRail tables 'mr_opal.trainRouteVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "01_ Daily Zero Dwell Work Events.R" and Workpaper "Zero Dwell Work by Plan.xlsx," tab 'ZeroDwell,' in folder "Share of Zero Dwell Work Events by Plan."

[A]: Any point along a train's journey where the cumulative length of the train changes between stops, excluding a train's originating and terminating stops where blocks are picked up or set off.

[B]: Work events (as described in [A]) where no dwell time was recorded.

[C]: [B] / [A].

FIGURE 154: SHARE OF ZERO-DWELL WORK EVENTS ACROSS PLANS AND RAILROADS (GRAPH)



Sources and Notes:

MultiRail tables 'mr_opal.trainRouteVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "01_ Daily Zero Dwell Work Events.R" and Workpaper "Zero Dwell Work by Plan.xlsx," tab 'ZeroDwell Fig,' in folder "Share of Zero Dwell Work Events by Plan."

Appendix D: TRAIN LENGTHS BETWEEN WORK STOPS

670. The figures below show the results of our analysis of train lengths between work stops in Applicants' Optimized and Growth plans.

671. Work stops are identified based on changes in train length between stops.

FIGURE 155: TRAIN LENGTHS BETWEEN WORK STOPS FOR NEW TRAINS PROPOSED IN OPTIMIZED PLAN



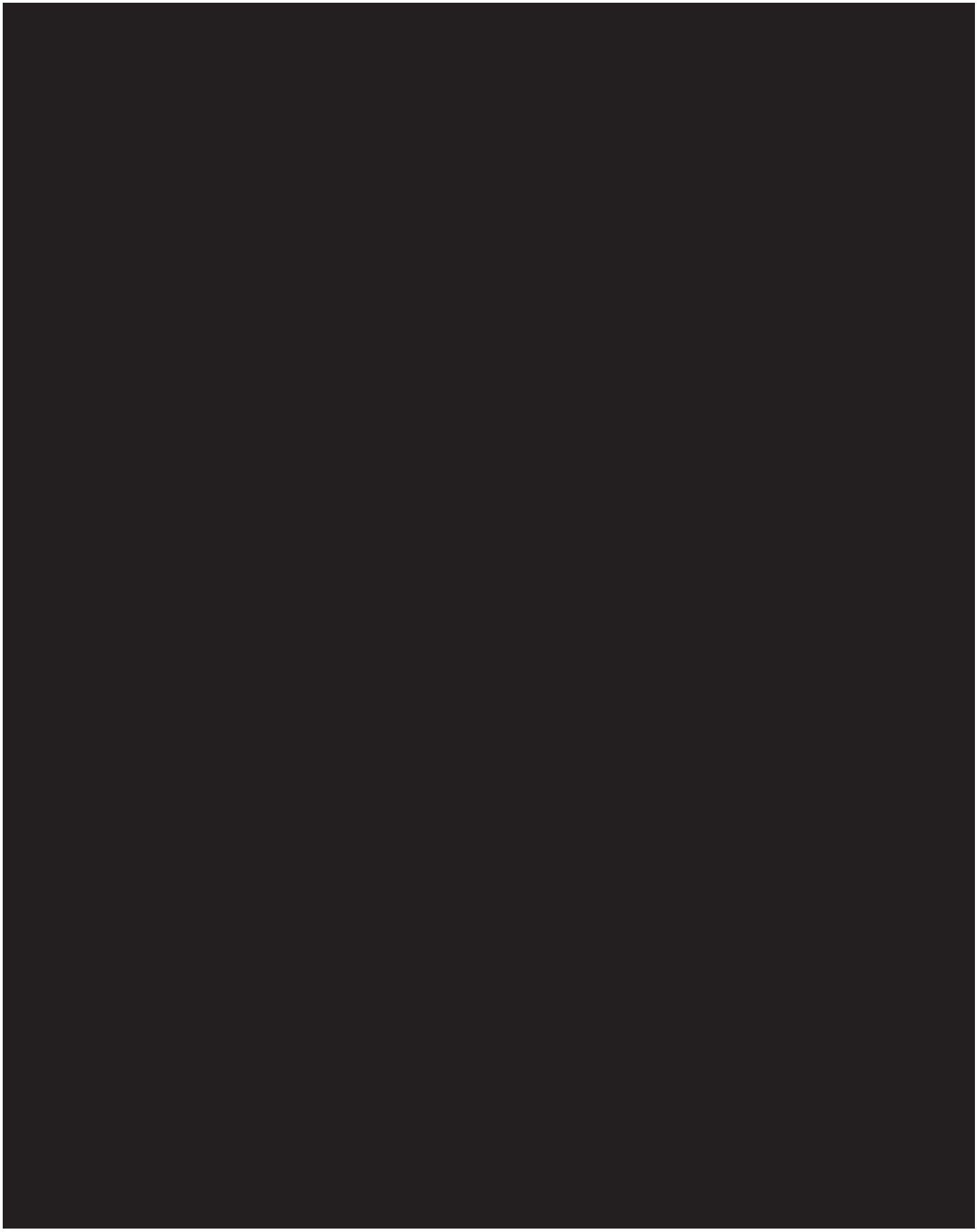
Sources and Notes:

Elphick and Nelson V.S. at 457

MultiRail tables 'mr_opal.trainRouteVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "01_Length Between Work Stops.R" and Workpaper "Optimized Train Lengths.xlsx," tab 'WorkStopLength_Opt,' in folder "Length of New Optimized Plan Trains Between Work Stops."

FIGURE 156: TRAIN LENGTHS BETWEEN WORK STOPS FOR NEW TRAINS PROPOSED IN GROWTH PLAN







Sources and Notes:

MultiRail tables 'mr_opal.trainRouteVolume,' 'mr_opal.trainExpandedRoute,' 'mr_opal.train,' and 'mr_opal.location.' *See* Script "01_Length Between Work Stops.R" and Workpaper "Growth Train Lengths.xlsx," tab 'WorkStopLength_Growth,' in folder "Length of New Growth Plan Trains Between Work Stops."

Appendix E: OVERSIMPLIFIED OPERATIONS IN KANSAS CITY AREA

FIGURE 157: TRAIN TRAFFIC THROUGH KANSAS CITY, MO



See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."

Appendix F: Intermediate Work Events vs. Volume, By Distance

672. In Section VIII.B, subsection "Applicants Already Introduce Direct Service Where Density Exists," we discuss the relationship between work events and density. Figure 148 in that subsection shows average work events by route density. Below, in Figure 158, we recreate that same analysis, broken down by route distance. The charts below show the relationship between work events and density within three categories of route distance: the shortest third of routes, the middle third of routes, and the longest third of routes. While this reduces the number of observations in some categories to a level which makes inference difficult—particularly within interline routes—the categories with sufficient observations show the same trend we discuss above: denser routes have fewer work events.

FIGURE 158: INTERMEDIATE WORK EVENTS VS. VOLUME, BY DISTANCE





Elphick and Nelson V.S. at 465



Sources and Notes:

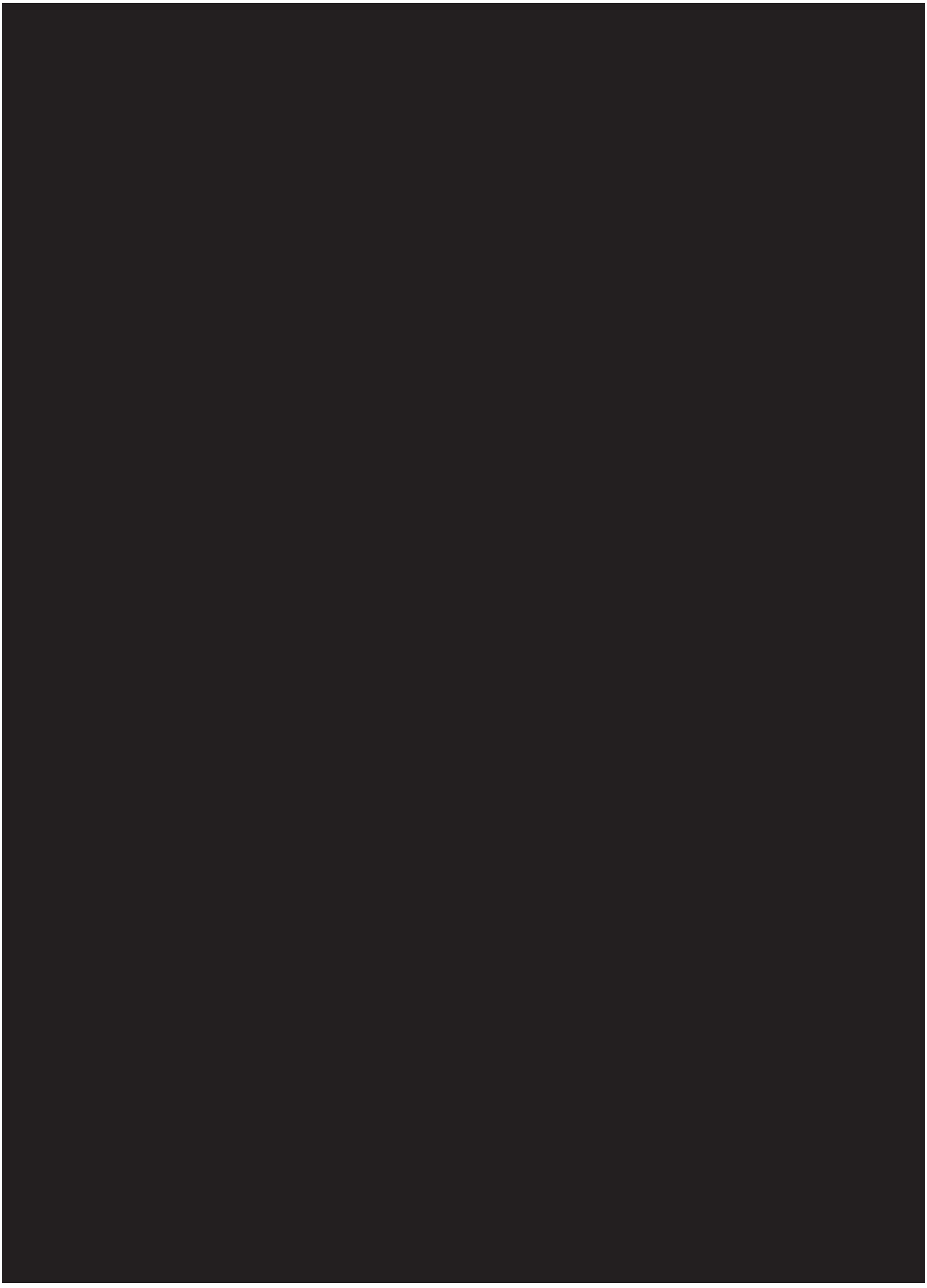
Car Event Data. Train symbol sequences with under 300 annual carloads are excluded. The volume buckets are calculated within each system, traffic type, and distance-third; therefore, the buckets are not comparable across systems. Distances are approximate and based on coordinates rounded to integer values sourced from the Central Station Master. Intra-state lanes are excluded. *See* Scripts "01_train_symbol_sequence.sql," "02_work_volume_plot_final.R," and Workpapers "work_volume_plot_shortest.png," "work_volume_plot_middle.png," and "work_volume_plot_longest.png" in folder "Work Events vs. Volume."

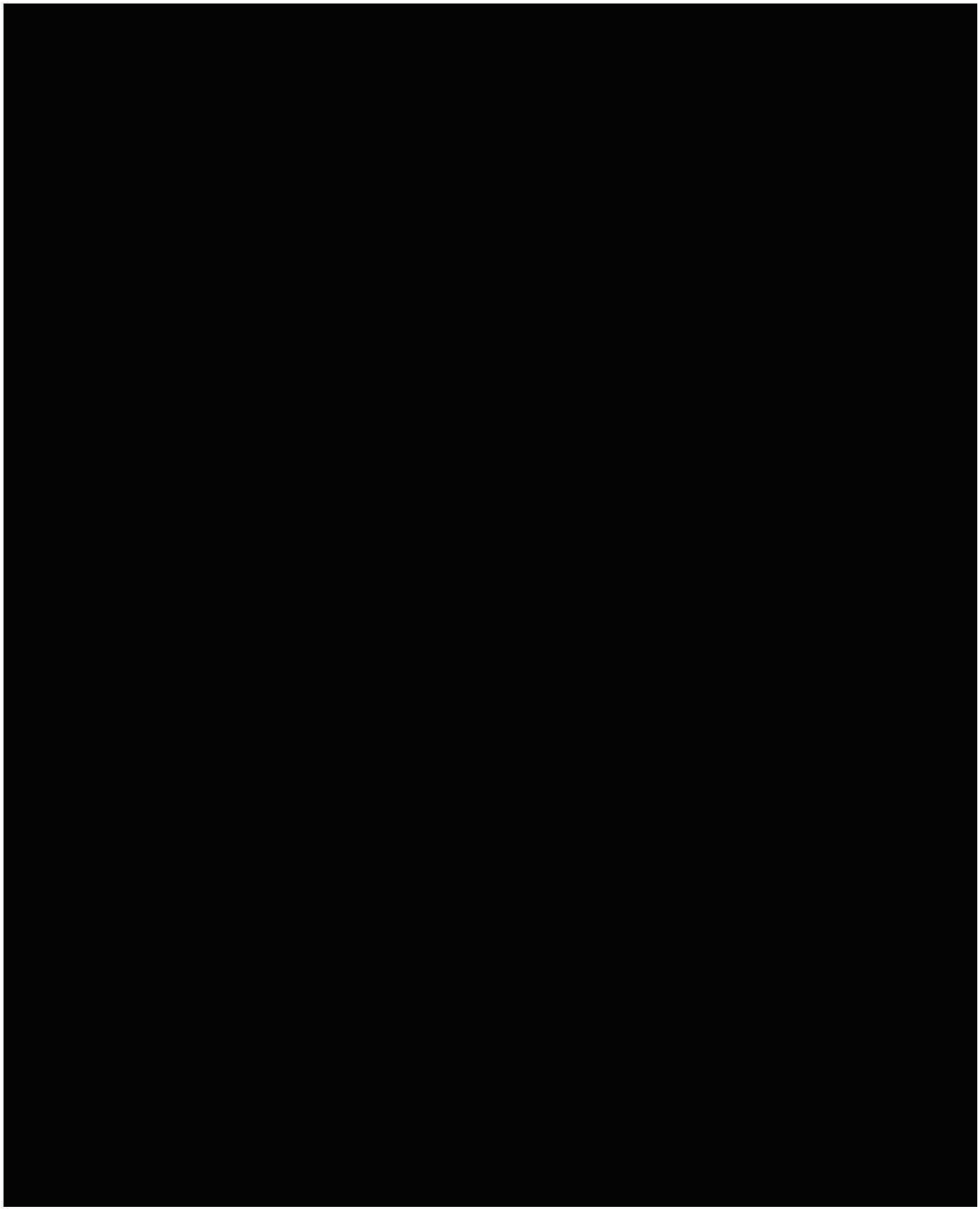
Appendix G: TRANSIT TIMES ON THE MERIDIAN SPEEDWAY

673. Below we show the transit time figures filed by Dr. Powers detailing total time spent from origin to destination on routes using the Meridian Speedway.

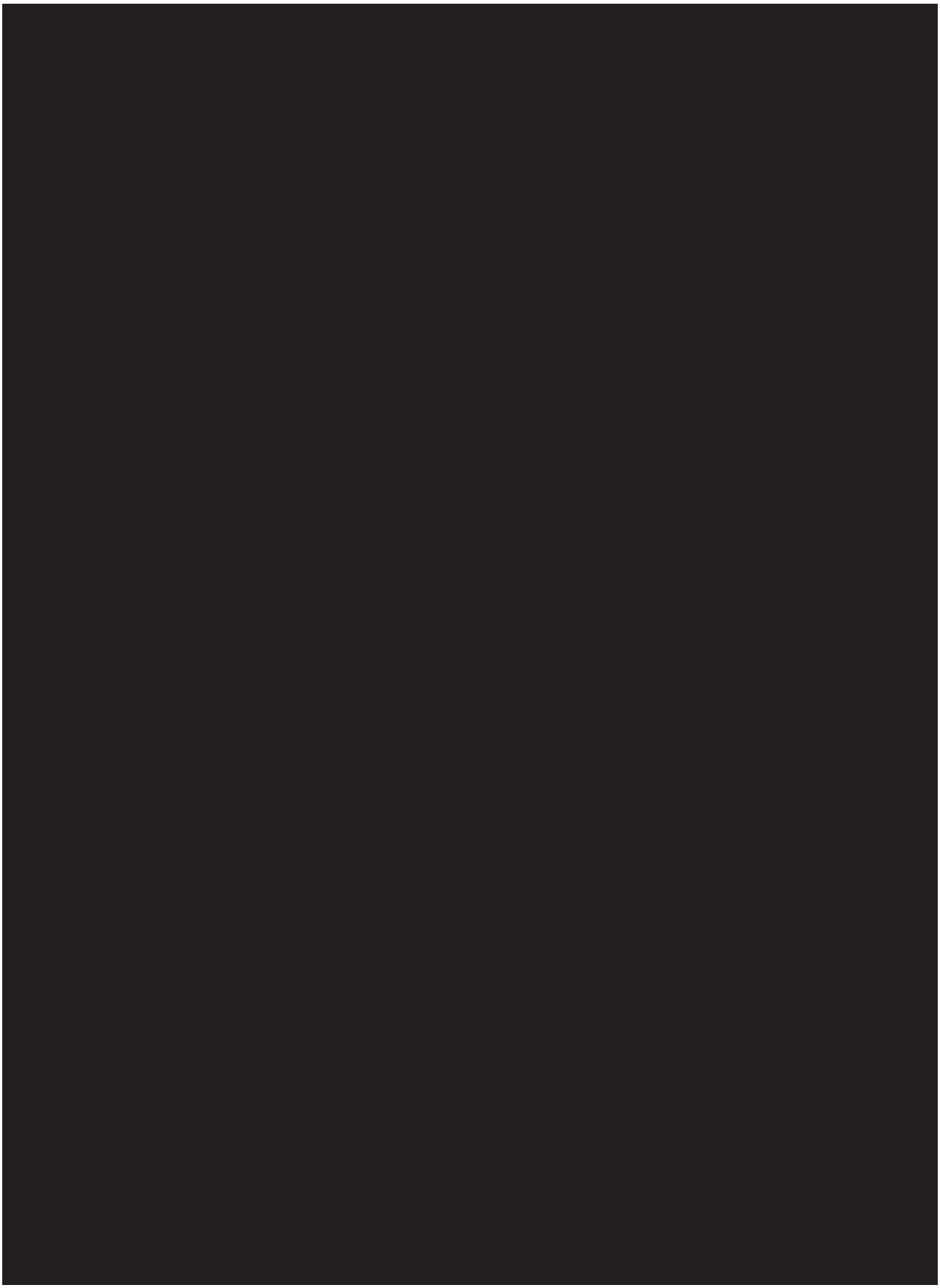
FIGURE 159: TRANSIT TIME CALCULATIONS FROM POWERS TRANSIT TIMES VS

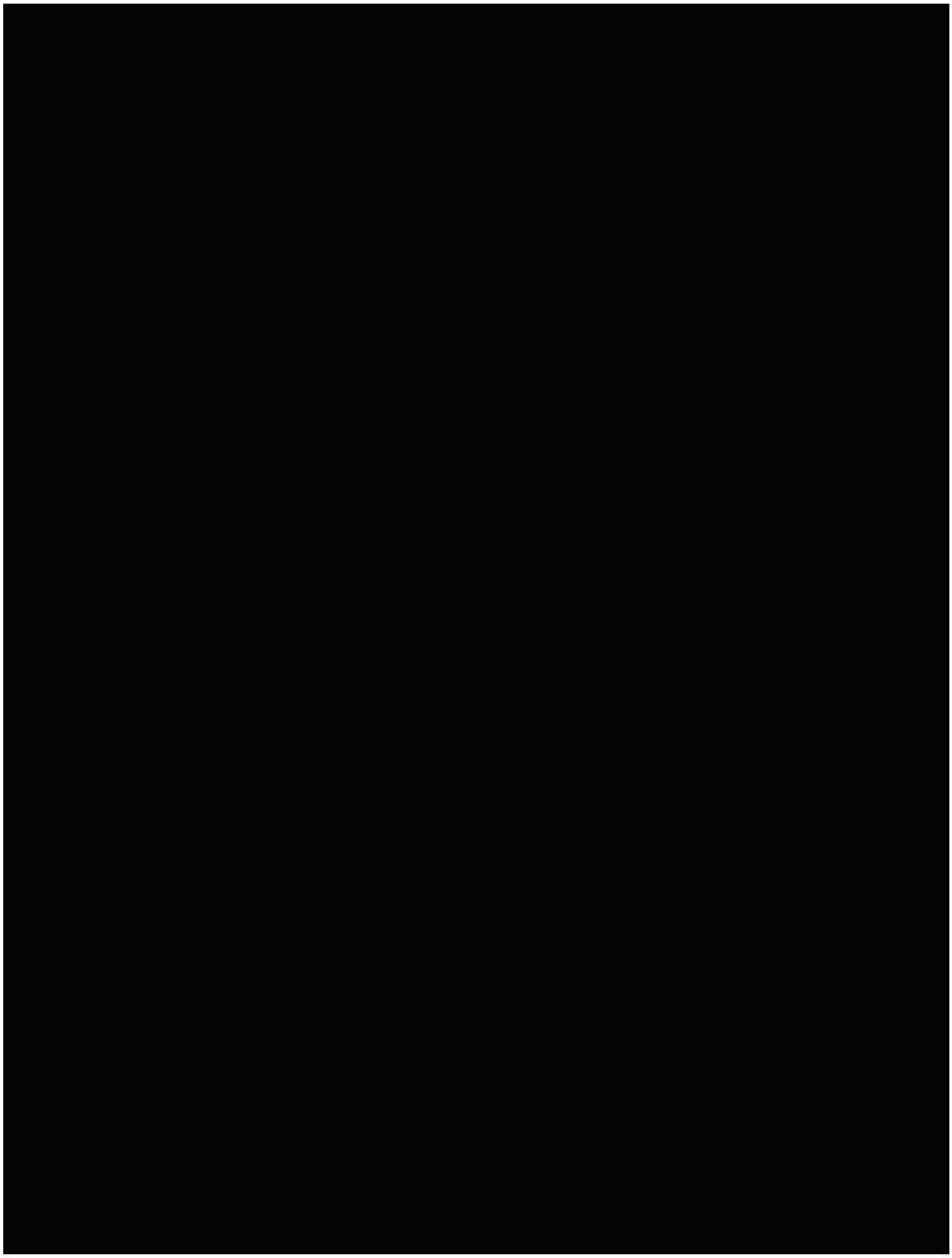




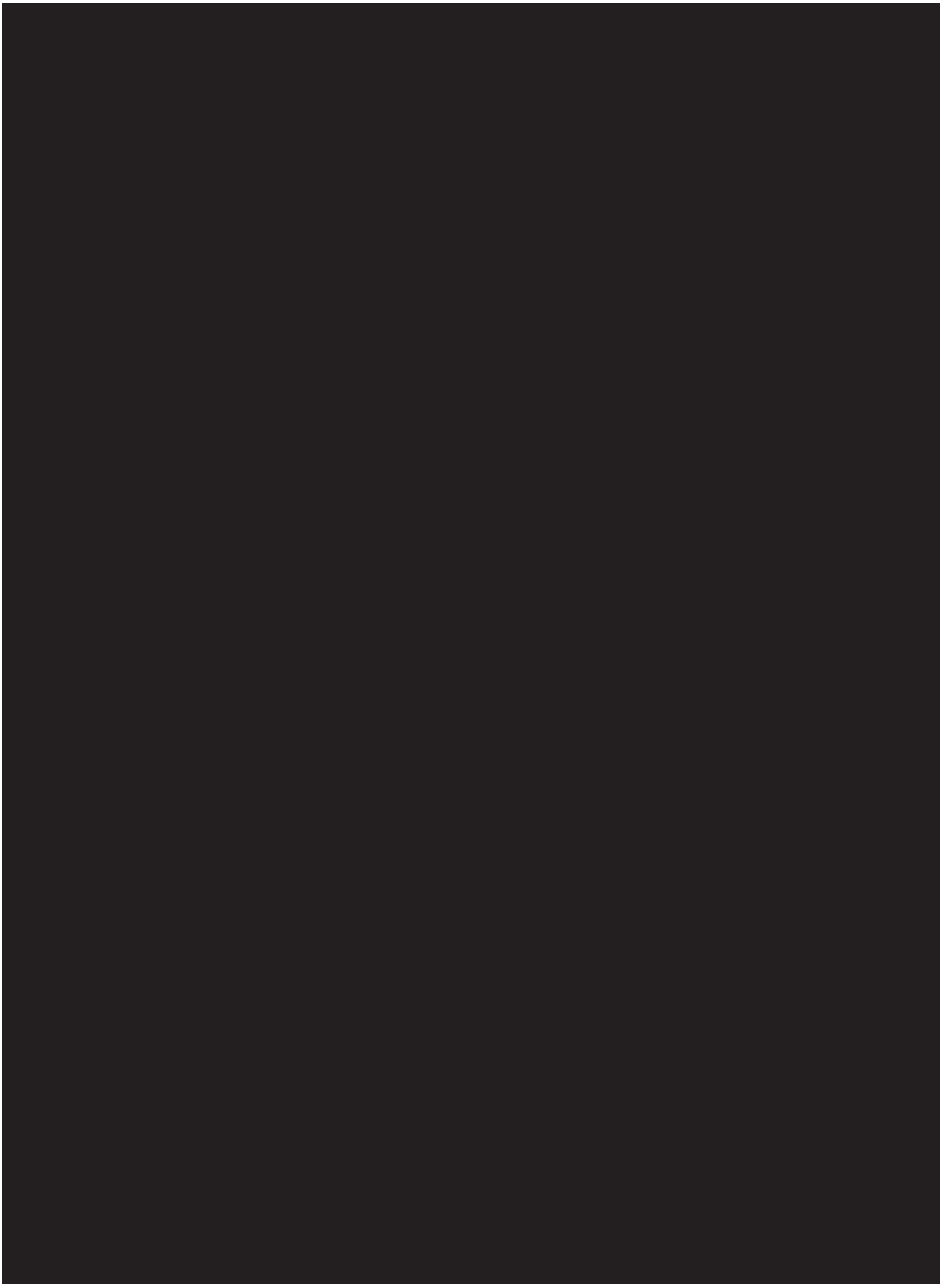


Elphick and Nelson V.S. at 470





Elphick and Nelson V.S. at 472



Appendix H: MODELED OPERATIONS ON THE EJ&E

674. Figure 160 below shows train activity in the Chicago area following UP's eastern access to NS via CN's EJ&E line.

FIGURE 160: TRAIN ACTIVITY ALONG THE EJ&E



Sources and Notes:

See Workpaper folder "Maps" and associated database files. Train counts from Gehringer and Orr VS Workpaper, "C-Corridor Map vFinal.html."

Appendix I: Transit Times for New Optimized Plan Trains

675. Figure 161 compares the Applicants' planned transit times with estimates based on historical track time, work-event durations, and crew-change allowances.

Figure 161: Planned and Historically Estimated Transit Times



Sources and Notes:

See Figures 22 and 27.

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF W. ROBERT MAJURE Ph.D.

Volume I

CORNERSTONE RESEARCH
ECONOMIC AND FINANCIAL CONSULTING AND EXPERT TESTIMONY

BEFORE THE SURFACE TRANSPORTATION BOARD

Finance Docket No. 36873
UNION PACIFIC CORPORATION AND UNION PACIFIC RAILWAY COMPANY—CONTROL—NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

EXPERT STATEMENT OF W. ROBERT MAJURE, PH.D. VOLUME I OF II

November 18, 2026

HIGHLY CONFIDENTIAL MATERIAL: CONTAINS WAYBILL DATA

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1. Qualifications and assignment

1.1. Qualifications

1. My name is W. Robert Majure. I am a Senior Vice President at Cornerstone Research. Prior to joining Cornerstone Research, I worked for approximately 25 years in the Antitrust Division of the U.S. Department of Justice ("DOJ") as an economist, Assistant Section Chief, Section Chief, and ultimately as the Director of Economics.

2. I earned my Ph.D. in Economics from Massachusetts Institute of Technology in 1994 and a B.A. from the University of Virginia in 1990. My main area of expertise is the economics of industrial organization – particularly issues of competition.

3. While at the DOJ, I performed and supervised economic analyses of competition issues in various industries, including transportation, telecommunications, banking, computer software and hardware, heavy industry, mining and drilling, healthcare, entertainment, and railroads. I submitted testimony on competitive effects in the merger of the Union Pacific and Southern Pacific Railroads and on the suitability of remedy in *U.S. v. SBC Communications Inc. and AT&T Corp.* and *U.S. v. Verizon Communications Inc. and MCI, Inc.* I also served on the committee that drafted the 2010 Horizontal Merger Guidelines. I received awards for my work at the DOJ, including presidential recognition for my contributions as a senior executive of the civil service.

4. In my role at Cornerstone Research, I have worked with government agencies and private clients to examine competitive effects of contractual arrangements and mergers across many industries including support of the U.S. Department of Justice's challenges to a proposed merger of JetBlue and Spirit airlines and to a joint venture with the effect of a merger between American Airlines and JetBlue. I have testified for Canadian Pacific regarding the competitive effects of combining Canadian Pacific and Kansas City Southern ("CP-KCS") and on the effects of Canadian National acquiring Iowa Northern. I have also provided testimony in other proceedings which are described in my curriculum vitae which is attached as Appendix A.

1.2. Assignment

5. I have been asked by counsel for Canadian Pacific Kansas City ("CPKC") to examine competition issues related to the proposed acquisition of Norfolk Southern ("NS") by Union Pacific ("UP"). I have also been asked to review and respond to the verified statements submitted by Applicants (UP and NS) that relate to competition.

6. Cornerstone Research is being compensated at my standard billing rate of $1,400 per hour. I have been assisted by staff at Cornerstone Research, who worked under my direction. Cornerstone Research's compensation in this matter is not in any way contingent or based on the content of my opinion or the outcome of this or any other matter, nor is my compensation.

7. Appendix B contains a list of materials I have relied upon in preparing this statement. My work is ongoing, and I reserve the right to supplement this analysis as proceedings continue.

2. Overview and summary of opinions

8. The proposed UP-NS merger is unprecedented in its scope, scale, and potential adverse effects on competition. The Surface Transportation Board's ("The Board") 2001 Major Rail Consolidation Procedures ("2001 Rules") anticipated that a combination of this magnitude would have far-reaching implications for the national rail network and require Applicants to bear the heavier burden of showing that a merger would serve the public interest. To make that showing, Applicants would need to identify and evaluate all potential competitive harms, including those that conventional overlap screens miss, and demonstrate that such harms would not result from their merger. Applicants have not made that showing. They fail to analyze critical forms of competition the merger would eliminate, and their own evidence, when properly examined, demonstrates that shippers would face higher rates and diminished competitive options rather than the benefits Applicants promise.

9. UP-NS would account for {{REDACTED}} of rail revenues for all U.S. movements and participate in movements representing {{REDACTED}} of U.S. rail revenue, before any projected diversions. Its reach, combined with UP's and NS's existing local dominance West and East, would make it substantially harder for shippers to avoid the merged railroad or credibly threaten to shift business elsewhere. That is why the additional competitive analysis contemplated by The Board's 2001 Rules is essential here (Section 3).

10. My analysis identifies three principal sources of harm that the UP-NS merger likely would cause.

11. *First*, the merger would give UP-NS the ability and incentive to foreclose competition, especially where they today support competing interline services.

a. Today, shippers benefit from competition on portions of their interline service. UP supports competition between NS and other Class Is in the East, and NS supports competition between UP and other Class Is in the West. Shippers can build the pairing of railroads on either side of a gateway that benefits them the most. And even where the shipper has a sole-serving railroad on one side, separate negotiations, including under Rule 11, allow a shipper to benefit from competition on one side of the gateway or the other, with the sole-serving railroad on the other side of the gateway being unable to capture all the profits.

b. A combined UP-NS offering single-line service would have a financial incentive to change this relationship across the gateway—to avoid competing with its own service. It would have both the incentive and the ability to foreclose interline partners and insulate its rates and its profits from that competition, making shippers worse off (Section 4.1).

c. The data show that UP and NS already {{{REDACTED }}} where they can favor their own single-line service. Comparisons across existing corridors also show higher rates where a carrier has that incentive, as UP-NS will

post-merger than when it does not, as today. Across estimation approaches, these findings support estimated harm to shippers from foreclosed competition of approximately {{REDACTED}} million annually. The evidence thus points toward harm from the merger's impact on competitive incentives, not an automatic benefit from creating single-line service (Section 4.2).

d. Further, Dr. Israel's "one-lump" theory assumes away the bargaining constraints that allow shippers to benefit from this competition today. His flawed single-line/interline rate comparison does not measure the merger's effect on those constraints. Moreover, the record evidence indicates that UP pursues higher margins {{REDACTED

}} Unless UP were to suddenly switch its pricing strategy, the merger is more likely to result in increased rates on NS traffic, rather than lower rates in furtherance of winning the truck-to-rail diversions that Applicants' forecast. Such diversions are unlikely and so is the implication that UP would suddenly switch to a strategy of pursuing rate decreases. If Applicants could plausibly generate the sort of traffic diversions their experts' analysis predicts from small price changes, then UP and NS would have the incentive to reduce its rates and pursue this traffic today. A more realistic explanation is that no such gains are likely (Section 4.3).

e. If Applicants' projections of large traffic gains were actually realistic, Applicants have not explained why they cannot be accomplished without a merger.

There are many examples of railroads having success and benefitting shippers with effective interline agreements. Indeed, Applicants' own experts acknowledge successful interline agreements and rely on new interline cooperation among other railroads to constrain UP-NS. They do not reconcile that position with their claim that UP and NS must merge to coordinate effectively (Section 4.4).

f. The remedies Applicants offer for the harm to shippers from foreclosed competition due to their proposed merger ignore its unprecedented scale and scope and do not begin to address the harm it will have for shippers. Their Open Gateway Commitments ("OGCs") are inadequate to address the harm of this merger as are the other assurances and procedural options they have offered (Section 4.5).

12. *Second,* the proposed merger would weaken geographic competition and deprive shippers of bargaining strategies that support more competitive rates and service offerings.

a. Shippers can discipline rates and service terms by changing sources or destinations, shifting production, and investing in facilities served by competing railroads. They can also negotiate across facilities and movements to obtain better terms. Combining UP and NS would place more of those alternatives under common control, reduce shippers' ability to shift business, and increase the merged railroad's geographic bargaining leverage (Section 5.1).

b. UP's own internal documents recognize that {{REDACTED }} (Section 5.2).

c. Applicants' experts ignore such competition completely. Dr. Israel claims to {{REDACTED }} despite shippers' direct claims to the STB that the merger will harm their bargaining leverage. Mr. Hunt's analysis of diversions does not incorporate any analysis of shipper bargaining leverage. Dr. Bailey purportedly screens for geographic competition in her "between-corridor" analysis, but the "50/10" screen she uses is incapable of assessing the options provided at each of the multiple locations to/from which a shipper may require transportation. Rather, the "50/10" screen focuses on competition for all the shippers in one single area across all the plausible origins or destinations for the products they ship. That is a different aspect of geographic competition than a single shipper bargaining over multiple distinct locations simultaneously (Section 5.3).

d. Likewise, Dr. Bailey's examination of competition that shippers have at any single facility is also incapable of assessing the benefits to those shippers of having multiple facilities sole-served by different railroads – {{REDACTED }}. None of Dr. Bailey's screens consider that a merger of this scale and scope would concentrate an individual shipper's geographically dispersed facilities on a single railroad's network. A shipper will lose significant competition across its own geography when those locations become more collectively dependent on a

combined UP-NS. Applicants' proposed regulations fail to preserve the competition that will be lost through UP-NS's increased geographic bargaining leverage (Section 5.4).

13. *Third*, the merger would eliminate competition between UP and NS for a greater portion of the interline movements in which they participate.

a. The networks of UP and NS are such that there are often multiple possible interchange points on current UP-NS interlines, which introduces opportunities for each of them to win a greater portion of the profit from any particular interline move. Some interchange points give UP the "longer haul" and some interchange points give NS the "longer haul." The railroad that carries the "longer haul" (or the middle part of the movement) tends to earn higher revenues and higher margins. This opportunity to earn higher profits (or the threat of earning less) generates competition between the railroads to win the middle of the movement and an incentive to offer the shipper more competitive rates to influence the choice of interchange point (Section 6.1).

b. The data show that the choice of interchange point is often at issue. UP and NS have published public routing guidelines, which identify regions of their respective networks and the corridors connecting those to indicate their pre-specified handoff points for each corridor. When I examine where traffic in these corridors was actually interchanged, I find that the point of interchange often varies from the

routing guidelines and that the difference in the portion of the route that each handle is often significant. That indicates that UP and NS often engage in this direct competition over who gets the benefit of the longer haul (who wins their competition for the middle segment) particularly for the movements traversing the Watershed. {{REDACTED }} (Section 6.2).

c. Applicants' screens do not analyze competition for the middle of interline movements (Section 6.3), and their commitments would not replace it (Section 6.4).

14. These competitive harms would be exacerbated by the further consolidation that UP-NS would likely trigger. UP-NS would create pressure for a BNSF-CSXT or other merger, culminating in a potential duopoly structure, which The Board's 2001 Rules require Applicants to address. My empirical analysis indicates that two transcontinental railroads would not restore today's competition: prices are higher in comparable structures with two single-line railroads than where four independent railroads compete to interline. Further consolidation would also increase shippers' dependence on individual carriers. Two independent carriers will have very little incentive to seek traffic where they have to compete with one another and instead seek to enjoy the benefits of their increased market power over their own bases of customers (Section 7).

15. Nor have Applicants demonstrated benefits sufficient to offset the lost competition. Shipper support letters may identify benefits for particular shippers, but they do not

establish the merger's overall competitive effects or answer the evidence of broader or longer-term harm. Indeed, shippers that are in favor of the merger sometimes have short-term or individualized benefits that do not weigh against the long-term harm to competition from this proposed consolidation (Section 8).

16. Applicants' Committed Gateway Pricing ("CGP") proposal is a price-cap regulatory program, not a competitive enhancement. Their own modeling projects small, temporary net benefits while predicting higher rates for some shippers. Dr. Israel's model also omits important competitive interactions and fails to reproduce observed prices or credible costs reliably. These flaws undermine reliance on its narrow projected net benefit to offset the competitive harms identified above (Section 9).

17. That leaves the question whether commitments or conditions could preserve the competition at risk. Applicants' OGCs would not restore incentives to support competing interline services, while facility-access and service-failure remedies do not protect bargaining leverage across a shipper's geography. And Applicants' proposed transparency commitments and dispute resolution programs will not constrain prices as effectively as being able to leverage an alternative competitor. CPKC's proposed conditions would preserve some competitive alternatives and mitigate some harms, but even they would not, and could not, fully replace the interline options, geographic bargaining leverage, and competition for the middle of movements that shippers would lose (Sections 4.5, 5.4, and 10; Volume 2).

18. Applicants have not met the heightened showing this unprecedented merger demands. In my opinion, preserving UP and NS as independent competitors is the only way to fully protect shippers from the competitive harms my analysis shows are likely.

3. The effect of a UP-NS merger will be unprecedented, necessitating more analysis than in prior mergers to identify and address likely harmful competitive effects

19. The proposed UP-NS merger is unprecedented in its scope, scale, and potential adverse effects on competition in the U.S. railroad industry. It would combine two of the largest Class I railroads into a single carrier with a reach and presence unlike any railroad operating today. Yet Applicants' competitive analysis does not grapple with the full range of consequences that a transaction of this magnitude could have for shippers.

20. The extraordinary scope and scale of the proposed combination create more—not fewer—ways in which competition could be affected. These effects are not limited to locations where UP and NS directly compete today. They can arise across geographies and commodities and through the direct and indirect alternatives that shippers use to obtain bargaining leverage and competitive rates.

21. The Board adopted its 2001 Rules in recognition of precisely these concerns. Following the last wave of rail consolidation, The Board recognized that further combinations among the remaining Class I railroads could affect competition throughout the North American transportation system and therefore required a more comprehensive assessment of both competitive harms and competitive enhancements.

A transaction of this magnitude thus calls for a particularly searching analysis of the ways in which competition could be lost.[1]

22. Applicants instead rely principally on conventional screens focused on direct competition and on analogies to prior rail mergers.[2] Those approaches do not adequately account for the broader competitive effects presented by this transaction. And the prior mergers on which Applicants rely arose in materially different competitive circumstances, preserved important competitive constraints, and did not create a carrier with the scope and scale that a combined UP-NS would possess.

23. The remainder of this section explains why Applicants' approach is inadequate. First, The Board's 2001 Rules anticipated that a combination of this magnitude would have far-reaching implications for the national rail network and require Applicants to bear the heavier burden of showing that a merger would serve the public interest. To make that showing, Applicants would need to identify and evaluate all potential competitive harms, including those that conventional overlap screens miss, and demonstrate that such harms would not result from their merger (Section 3.1). Second, the empirical evidence shows that UP-NS would account for {{REDACTED}} of rail revenue for all U.S. movements and participate in movements representing {{REDACTED}} of U.S. rail revenue, before any projected diversions.[3] Its reach,

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[1] Major Rail Consolidation Procedures Docket No. EP 582 (Sub-No.1), 5 S.T.B. 539, June 7, 2001. ("Major Rail Consolidation Procedures"), p. 599.

[2] See Sections 4.3, 4.4, 5.3, and 6.3.

[3] See workpaper 3-1.

combined with UP's and NS's existing local dominance West and East, respectively, would make it substantially harder for shippers to avoid the merged railroad or credibly threaten to shift business elsewhere. That is why the additional competitive analysis contemplated by The Board's 2001 Rules is essential here. Applicants have not made that showing. They fail to analyze critical forms of competition the merger would eliminate, and their own evidence, when properly examined, demonstrates that shippers would face higher rates and diminished competitive options rather than the benefits Applicants promise (Section 3.2). This unprecedented scope and scale, predicted by The Board in 2001, would harm shippers significantly and in many ways, which I discuss throughout the rest of this statement.

3.1. The Board's 2001 Rules envision that a combination like UP-NS can reduce competition in ways not flagged by standard screens

24. In 2001, The Board issued new "Major Rail Consolidation Procedures" stating that, with only a small number of Class I railroads remaining, applicants for future proposed mergers would have a heavier burden to meet to demonstrate that their merger is in the public interest.[4] It anticipated—correctly, based on the available data—that a future proposed merger would be almost necessarily "end-to-end" and would impact

[4] Major Rail Consolidation Procedures, p. 546 ("Our revised rules reflect a significant change in the way in which we will apply the statutory public interest test to any major rail merger application. Because of the small number of remaining Class I railroads, the fact that rail mergers are no longer needed to address significant excess capacity in the rail industry, and the transitional service problems that have accompanied recent rail mergers, we believe that future merger applicants should bear a heavier burden to show that a major rail combination is consistent with the public interest.").

transportation across North America.[5] Thus, its new rules require applicants to address not only standard screens of direct competition, but also additional analyses of both direct and indirect competition.[6]

25. The Board indicated it would "strive to remedy every competitive harm that would stem from any proposal that [it] decide[s] to approve."[7] To do so, The Board implicitly recognized that *all* potential competitive harms would need to be evaluated and identified, including those that may not have been relevant to smaller-scale transactions. For example, in the 2001 Rules, The Board outlined, non-exhaustively, certain forms of indirect competition (also referred to as "geographic competition") that would be relevant for applicants to address in their analysis of a potential coast-to-coast merger:

[5] Major Rail Consolidation Procedures, p. 551 ("Thus, while the prior policy statement focused on greater economic efficiency and improved service as the most likely and significant public interest benefits, our new policy statement adds enhanced competition as an important public interest benefit. The policy statement also recognizes that, with only a few Class I carriers remaining, a transaction involving two Class I rail carriers would affect the entire transportation system, including highways, waterways, ports, and airports.") and p. 555 ("The carriers argue that, because future merger proposals would likely be for end-to-end rather than parallel mergers, there would be little loss of direct competition ('2-to-1 points') and thus extensive trackage rights or other remedies … would not be needed").

[6] Major Rail Consolidation Procedures, p. 555 ("But we believe the carriers underestimate the difficulties we could face in attempting to remedy, in a direct and proportionate manner, losses of both direct and indirect competition.").

[7] Major Rail Consolidation Procedures, p. 557.

a. Shippers' leverage, even when sole-served on one end of a movement, to obtain the same product from a different source or ship the same product to a different destination.[8]

b. Shippers' leverage in bargaining from the ability to shift production to facilities outside of a railroad's network.[9]

c. Shippers' leverage from competition at different points of interchange.[10]

26. The Board requires applicants to evaluate the potential for effects through these forms of indirect competition in addition to more traditional forms of direct competition, such as head-to-head competition, and to ensure that all major gateways will remain open post-merger.[11]

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[8] Shippers who are sole-served on one end may be able to leverage alternative sources or destinations as leverage against railroads. See Major Rail Consolidation Procedures, p. 556 ("significant losses in geographic competition could occur even where carriers truly are 'end-to-end', because there are many commodities…that have a limited number of sources.") and Market Dominance Determinations Docket No. EP 627, 3 S.T.B. 937, December 10, 1998 p. 937 ("geographic [competition]…whether the complaining shipper can avoid using the defendant railroad by obtaining the same product from a different source, or by shipping the same product to a different destination.") (emphasis removed).

[9] Major Rail Consolidation Procedures, p. 556 ("They [shippers] also may benefit from the opportunity to negotiate a long-term contract before choosing to locate a new plant along either of two carriers' lines or to adjust production levels at plants already located along those lines.").

[10] Major Rail Consolidation Procedures, p. 556 ("A quick glance at a rail map confirms that the eastern and western railroads do not simply meet end-to-end at Chicago and the Mississippi River crossings; there is a fair degree of overlap. This situation seems to exist with regard to many of the connections of large U.S. and Canadian systems as well. Thus, a merger between any two U.S. Class I rail carriers or between major U.S. and Canadian rail carriers would surely threaten certain shippers with a loss of some indirect competition.").

[11] Major Rail Consolidation Procedures, p. 546 ("we believe that future merger applicants should bear a heavier burden to show that a major rail combination is consistent with the public interest. Our shift in policy places greater emphasis in the public interest assessment on enhancing competition while

27. The Board also recognized that further consolidation was likely after future major railroad mergers.[12] It stated that its goal in the review process is to ensure that the end result of further mergers is to preserve effective competition as it exists today and into the future.[13] Thus, as part of the review process in any given merger, The Board will consider the impacts of such follow-on mergers.[14]

28. The Board's concerns are not theoretical. The data show that a combined UP-NS would have precisely the systemwide reach and control over shipper alternatives that make the loss of these indirect forms of competition consequential.

3.2. Empirical evidence indicates that the proposed merger would create a railroad that is so large that many shippers would lack a meaningful alternative to its service

29. A combined UP-NS would be, by a substantial margin, the largest Class I railroad in the U.S. rail industry. It would account for over $36 billion in gross freight revenue

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ensuring a stable and balanced rail transportation system."), p. 563 ("We will require applicants to present an effective plan to keep open major existing gateways, and will impose conditions on any transaction that we approve to ensure that result.").

[12] Major Rail Consolidation Procedures, p. 549 ("That being said, the prospect of reducing the already small number of major Class I railroads even further, perhaps to the point where only two major railroads remain in the U.S. and Canada, gives us substantial concern.") and p. 545 ("future major merger proposals would trigger other proposals that, if approved, could result in the consolidation of the Class I railroad industry into only two North American transcontinental railroads.").

[13] Major Rail Consolidation Procedures, p. 551 ("Any companies resulting from an additional (perhaps final) round of consolidations must be able to compete effectively and deliver necessary services, now and into the future.").

[14] Major Rail Consolidation Procedures, pp. 549–550 ("More importantly, we need to look down the road and determine whether approving not just the immediate proposal that may be before us, but others like it, would ultimately result in a rail industry structure that continues to provide at least the existing level of competitive options for shippers, and continues to make railroads pass on most of the beneficial results of their merger efficiencies to the shipping public.").

in 2024,[15] and would participate in {{REDACTED}} of U.S. movements (by revenue).[16]A railroad of that scale will be difficult (or, in some cases, impossible) for shippers to avoid or credibly threaten to avoid. Shippers gain bargaining leverage from having credible alternatives, such as another carrier, another mode of transportation, or another facility to which they can shift traffic. As discussed above, The Board's 2001 Rules recognize this kind of leverage and indirect competition as important to shippers.[17]

30. As I will show below, a combined UP-NS would dominate U.S. rail revenues across the country, in different commodities, in many individual geographies, and would be a dominant presence both in the East and the West.

31. The data demonstrate the sheer scale of a combined UP-NS. To measure a firm's market power in industries that include a wide range of services of different value to the particular customer, economists typically look at the revenue the firm collects from its customers as a share of all revenues collected in the industry.[18] In Exhibit 1, I show

[15] Second Errata Verified Statement of Dr. Elizabeth M. Bailey, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, September 4, 2026 ("Bailey Second Errata VS"), ¶ 31 ("In 2024, UP transported 8.3 million carloads, earning $24.1 billion in freight revenues and NS transported 7.1 million carloads, earning $12.1 billion in freight revenues.").

[16] See Exhibit 2.

[17] Major Rail Consolidation Procedures, p. 552 ("the new merger guidelines were prompted largely by the fact that there are now only 6 large carriers remaining in the North American rail industry and there are significant risks associated with further consolidations between any of those carriers.").

[18] Merger Guidelines, U.S. Department of Justice and the Federal Trade Commission, December 18, 2023 ("2023 Merger Guidelines"), p. 50 ("Revenues in a relevant market often provide a readily available basis on which to compute shares and are often a good measure of attractiveness to customers. Unit sales may provide a useful measure of competitive significance in cases where one

that a combined UP-NS would earn {{REDACTED}} of rail revenues for all U.S. movements, even before accounting for any of the purported diversions Applicants claim would accrue to the merged railroad.[19] Among intra-U.S. moves (i.e., those originating and terminating in the U.S.), the combined UP-NS would earn {{REDACTED}} of revenue for such movements reported in the combined data set of the 100% tapes submitted by all six Class I railroads (the "Six-Railroad Tapes Data").[20]

unit of a low-priced product can serve as a close substitute for one unit of a higher-priced product. For example, a new, much less expensive product may have great competitive significance if it substantially erodes the revenues earned by older, higher-priced products, even if it earns relatively low revenues.").

[19] U.S. movements are defined as movements where the origin or termination point is in the U.S. (i.e., excluding intra-Mexico and intra-Canada movements and movements between Mexico and Canada, but including movements between the U.S. and Mexico or Canada).

[20] References to the Six-Railroad Tapes Data herein refer to a modified version of Dr. Bailey's July 27, 2026, Six-Railroad Merged Tapes Data (Loaded) (2019–2024). I follow Dr. Bailey's methodology to process this data, along with including additional variables used throughout my report. Dr. Bailey's Six-Railroad Tapes Data does not contain geographic coordinates. I include Dr. Israel's stationmaster {{REDACTED }} in the Six-Railroad Tapes Data. See Data Dictionary for further discussion.

Exhibit 1
UP and NS combined share of U.S. rail revenues (based on average annual revenues reported in the Six-Railroad Tapes Data)

{{{*REDACTED*

}}}

32. Participation shares are more informative in measuring the difficulty shippers would face in avoiding UP and NS. They reveal that the combined UP-NS would be more dominant than even their large, combined share of revenues suggests.[21] UP and

[21] I define participation shares as the share of movements handled by UP or NS for any portion of the movement weighted by the total movement revenue.

NS each participate in a substantial volume of traffic (as either the originating railroad, terminating railroad, or as a bridge railroad). As seen in Exhibit 2, according to the Six-Railroad Tapes Data, UP and NS participate in {{REDACTED}} of U.S. movements weighted by rail revenue. This participation share rises to {{REDACTED}} if I focus on movements within the U.S.[22] Exhibit 2 further shows that among the movements Applicants identified as the "major points on the parties' combined system, major corridor-commodity pairs, and major origin-commodity pairs / major destination-commodity pairs," UP and NS *earn* a combined {{REDACTED}} of revenue.[23] As Mr. Hunt reports in his Appendices, the Applicants expect to increase their presence on these "major" movements, which would make them even more difficult for a U.S. shipper to threaten to avoid.[24]

[22] See workpaper 3-3.

[23] Bailey Second Errata VS, ¶ 25. I understand that Applicants produced workpapers on August 28, 2026, that include all traffic in addition to their claimed "major" points and commodities.

[24] Second Errata Verified Statement of David T. Hunt, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, September 4, 2026 ("Hunt Second Errata VS"), Appendix E, p. 204 ("The following market share tables were produced, as shown in Exhibit E-2, which include all major commodity traffic flows that correspond to 80% of all current state UP and NS traffic. The projected increases in UP-NS market shares reflect diversions from truck and other rail competitors driven by improved service offerings.").

Exhibit 2
UP-NS would participate in a dominant share of U.S. rail movements (weighted by revenue) and {{REDACTED }} in "major movements" (based on rail revenues reported in the Six-Railroad Tapes Data and movements identified as "major")

{{REDACTED

}}

33. At the bargaining table, not all threats are equally credible. In particular, for traffic that is already moving by rail, the most credible threat (the closest competitor) is

naturally the prospect of that shipper taking the movement to another rail carrier. In negotiating against a railroad that will span the country, many shippers will find that their only credible rail options all need UP or NS somewhere. For those shippers, the threat of taking their traffic to their next best alternative after the merger will no longer provide the sort of bargaining leverage they enjoy today. Economists take a situation like that as a clear prediction of higher rates for the shipper. For some of these shippers, the merger will even mean that they no longer have any credible way to threaten UP-NS to take their business elsewhere and will have to pay whatever UP-NS demands.

34. This scope and scale of the merged UP-NS will significantly reduce the leverage of a variety of shippers as they try to negotiate with the combined firm. Consider a large shipper, with multiple facilities spread across the U.S. Today, that shipper has credible options it can use in negotiations for better rates.[25] It can threaten to shift its production between its many facilities to gain some bargaining leverage with the railroads it contracts with. It can also offer to bundle its business across various facilities or corridors as an inducement to lower rates where it might not have an alternative for the specific movements. If UP and NS were to merge, that same shipper will find that most

[25] In Section 5, I analyze data on individual shippers to examine this situation and the merger's effect on them. I find {{REDACTED }} with multiple locations and rates consistent with this sort of bargaining. For example, {{{REDACTED }}} originated shipments from {{{REDACTED}}} stations via {{{REDACTED}}} different Class I railroads, which is more than most similar shippers (among {{REDACTED }} moving similar commodities over similar distances in the same year, the median number of facilities is {{REDACTED}} and the median number of Class I railroads they use is {{REDACTED}}). Consistent with {{{REDACTED}}}'s geographic bundle of locations giving them leverage to negotiate with individual railroads, {{{REDACTED}}} paid approximately {{{REDACTED}}}% less than other {{REDACTED }} moving similar commodities over similar distances in the same year. See workpaper 3-4.

of its traffic *has* to be carried by the combined UP-NS (a likely outcome since UP-NS would participate in {{REDACTED }} ({{REDACTED}}) of U.S. rail traffic (weighted by revenue). A lot of that shipper's options that today give it competitive rates would suddenly be off the table. A combined UP-NS would see the loss to that shipper as a gain in its own bargaining leverage against the shipper.

35. While I have described this effect as the shipper losing the ability to threaten to go to their next-best alternative, the affected routing could just as easily be the one that the shipper prefers. For example, the route that is fastest for a particular movement of a given shipper might be a UP-CSXT routing. Before the merger, NS might compete against this route by offering the shipper a $200 lower rate if they take a UP-NS route and perhaps the shipper gives them some of their less time-sensitive traffic on the route. After the merger, UP would be bargaining against itself if it continued to be indifferent between the offer it makes on its side for that UP-CSXT routing and the UP-NS routing. Every dollar's worth of delay it can introduce for that shipper on the UP-CSXT movements will be a dollar less it has to offer to still win the UP-NS moves. And, if UP-NS can make the UP-CSXT route uncompetitive, it wins the whole move with no need to discount. CSXT might look to pair with BNSF, but if that was a routing that wasn't even in the shipper's consideration pre-merger, the shipper is still worse off.

36. Smaller shippers that already depend on UP and NS will be even more vulnerable, especially if they operate in commodities where the combined UP-NS particularly dominate rail service. As The Board's 2001 Rules anticipated, competition for specific

commodities across geographies can be affected even with "end-to-end" mergers.[26] The Board recognized that shippers of a given commodity often compete with one another in their own downstream markets which indirectly puts competitive pressure on the movements of that commodity in different areas. A large shipper might internalize that competition and use the leverage of different origins or destinations for its products to bargain down its own rates. Smaller shippers will be unable to pay more than their large competitors or than small competitors in other areas. That is the indirect competition limiting what railroads can charge, but it is a constraint that a railroad with a large share of all the moves for competitors across the map can relieve with the power to raise rates to the whole industry across the board.

37. In Exhibit 3, I demonstrate that the Six-Railroad Tapes Data show the combined UP-NS would immediately earn more than {{REDACTED}} of {{REDACTED }} revenues (a ${{REDACTED }} industry, annually), {{REDACTED}} of {{REDACTED }} revenues (a {{REDACTED }} industry, annually), and {{REDACTED}} of {{REDACTED }} revenues (a ${{REDACTED }} industry, annually). Among smaller industries, the Six-Railroad Tapes Data identifies that a combined UP-NS would earn {{{REDACTED}}} of {{{REDACTED }}},

[26] Major Rail Consolidation Procedures, p. 556 ("significant losses in geographic competition could occur even where carriers truly are 'end-to-end,' because there are many commodities (such as phosphate and soda ash) that have a limited number of sources."). I expand on this below in Section 6.

{{{REDACTED}}} of {{{REDACTED }}}, and {{{REDACTED}}} of {{{REDACTED }}} revenue.[27]

[27] {{REDACTED }} See {{REDACTED }} UP_1559554–7 at UP_1559556.

Exhibit 3
UP-NS share for select commodities (STCC2) by average annual revenue

{{{REDACTED

}}}

38. The exhibit shows the proposed transaction would significantly consolidate the service of rail movements provided to the shippers of many major commodities. To see how significant that effect is, I employ the standard outlined in the Merger Guidelines published by the Department of Justice and the Federal Trade Commission. The Merger Guidelines call for using the Herfindahl-Hirschman Index ("HHI") to measure how a merger will change concentration among competitors. The screen speaks to a presumption established by the Supreme Court that a merger that creates or further consolidates a highly concentrated market will tend to substantially harm competition and the economy.[28] The agencies evaluate a merger's effect on this HHI measure against a threshold derived from case law to identify mergers that can be presumed

[28] Opinion of the Court, *United States v. Philadelphia National Bank*, 374 U.S. 321, June 17, 1963 ("Philadelphia National Bank"), p. 363 ("we think that a merger which produces a firm controlling an undue percentage share of the relevant market, and results in a significant increase in the concentration of firms in that market is so inherently likely to lessen competition substantially that it must be enjoined in the absence of evidence clearly showing that the merger is not likely to have such anticompetitive effects.").

unlawful and likely to harm customers.[29] That is, a merger is presumptively illegal in a particular market if it triggers either of the following conditions:[30]

a. If the post-merger HHI exceeds 1,800 and the change in the HHI due to the merger exceeds 100;[31] or

b. If the merged firm's post-merger market share exceeds 30% and the change in the HHI due to the merger exceeds 100.

39. In Exhibit 4, I compute the HHI values for the proposed UP-NS merger associated with all the commodities I analyze in Exhibit 3. The changes in concentration

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[29] 2023 Merger Guidelines, p. 2 ("Guideline 1: Mergers Raise a Presumption of Illegality When They Significantly Increase Concentration in a Highly Concentrated Market. Market concentration is often a useful indicator of a merger's likely effects on competition. The Agencies therefore presume, unless sufficiently disproved or rebutted, that a merger between competitors that significantly increases concentration and creates or further consolidates a highly concentrated market may substantially lessen competition.") (emphasis removed) and p. 6 ("The first merger guidelines to reference an HHI threshold were the merger guidelines issued in 1982. These guidelines referred to mergers with HHI … above 1,800 as 'highly concentrated,' while they referred to an increase in HHI of 100 as a 'significant increase.' … During this time, courts routinely cited to the guidelines and these HHI thresholds in decisions."). See also Philadelphia National Bank, p. 364 ("Without attempting to specify the smallest market share which would still be considered to threaten undue concentration, we are clear that 30% presents that threat.").

[30] 2023 Merger Guidelines, pp. 5–6 ("Markets with an HHI greater than 1,800 are highly concentrated, and a change of more than 100 points is a significant increase. A merger that creates or further consolidates a highly concentrated market that involves an increase in the HHI of more than 100 points is presumed to substantially lessen competition or tend to create a monopoly. The Agencies also may examine the market share of the merged firm: a merger that creates a firm with a share over thirty percent is also presumed to substantially lessen competition or tend to create a monopoly if it also involves an increase in HHI of more than 100 points.").

[31] HHI is a widely used measure of concentration with a maximum value of 10,000. See 2023 Merger Guidelines, p. 5 ("The Agencies generally measure concentration levels using the Herfindahl-Hirschman Index ('HHI').… The HHI is defined as the sum of the squares of the market shares; it is small when there are many small firms and grows larger as the market becomes more concentrated, reaching 10,000 in a market with a single firm.").

demonstrate that the proposed UP-NS merger would {{REDACTED }}[32] For example, for rail shipments of {{REDACTED }}, (i) UP-NS's post-merger share ({{REDACTED}}) {{REDACTED }}, (ii) the commodity's post-merger HHI ({{REDACTED}}) also {{REDACTED }}, and (iii) the merger would {{REDACTED }} by {{REDACTED}} points. {{REDACTED }}. Many of the commodities {{REDACTED }} Beyond the set of select commodities in Exhibit 4, I find that {{REDACTED}} out of all {{REDACTED}} STCC2 commodities {{REDACTED }}[33] Thus, even the generalized presumption thresholds associated with the conventional concentration metrics—not just the merger-specific analyses that follow—already reveal {{REDACTED }}. Those conventional metrics, however, capture only part of the competitive concern: as The Board's 2001 Rules recognize, a merger of this scale can also reduce indirect competition and the alternatives that give shippers bargaining leverage.

[32] In Exhibit 4 I analyze market shares treating non-Class-I railroads as a single combined competitor. When I restrict the analysis to Class I railroads, {{REDACTED }}. See workpaper 3-5.

[33] See workpaper 3-6.

Exhibit 4
A UP-NS merger would so consolidate movements of many major commodities *{{REDACTED }}* ***(STCC2)***

{{{REDACTED

}}}

40. The difficulty shippers will have avoiding a combined UP-NS is also a product of how many places currently have no real competition with UP or NS. This is not a merger where one party competes for all traffic in the West and the other competes for all traffic in the East, as Applicants imply. Instead, for many shippers, this merger would result in a combination of monopoly power in the East with monopoly power in the West. The combined UP-NS would have substantially more opportunities to hold

up a shipper, to foreclose options the shipper might prefer and utilize today, and all but ensure that the combined UP-NS can extract every last dollar the shipper is willing to pay for its movements.

41. When I look at the East, West, and the Watershed region surrounding the Mississippi River, a combined UP-NS would participate in at least {{REDACTED}} of Class I revenue originating or terminating any of these three parts of the country.[34] No matter where shippers are shipping within the U.S., a combined UP-NS {{REDACTED }}. Exhibit 5 shows that a combined UP-NS would participate in {{{REDACTED}}} of movements (weighted by revenue) originating in the West, {{REDACTED}} of movements (weighted by revenue) originating from the Watershed, and {{{REDACTED}}} of movements (weighted by revenue) originating in the East.

[34] I adopt Mr. Hunt's definition of the "East," "West," and "Watershed" regions of the U.S., which are mutually exclusive and collectively exhaustive of the continental U.S. See Hunt Second Errata VS, Exhibit 4-8.

Exhibit 5
Share of total revenues that a combined UP-NS would participate in for movements within the U.S. originating in the East, West, and Watershed regions

{{{REDACTED

}}}

42. Similarly, Exhibit 6 shows that a combined UP-NS would participate in {{{REDACTED}}} of movements (weighted by revenue) terminating in the West, {{REDACTED}} of movements (weighted by revenue) terminating in the Watershed, and {{{REDACTED}}} of movements (weighted by revenue) terminating in the East.

Exhibit 6
Share of total revenues that a combined UP-NS would participate in for movements within the U.S. terminating in the East, West, and Watershed regions

{{{REDACTED

}}}

43. The broad shares across the East, West, and Watershed do not tell the whole story, however. When I look at individual counties—which speak to the options particular shippers have to originate or terminate movements—Exhibit 7 and Exhibit 8 below show that there is even less direct competition in the East or in the West than the broad shares across those regions suggest. Much of the U.S. is already only served by one Class I Railroad. The West is full of counties where BNSF does not effectively compete with UP and the East is similarly full of counties where CSXT does not effectively compete with NS.

44. Exhibit 7 shows that many counties in the West throughout all six years in the Six-Railroad Tapes Data only had service from one Class I railroad. These are the dark colored counties in the map and they are, as a practical matter, either sole-served by UP or sole-served by BNSF.[35] The lighter colored counties add areas where the local monopoly is not literal, but these counties still have one Class I railroad providing the preponderance of service to/from them in the entire Six-Railroad Tapes Data (that is, there was one Class I associated with over 75% of moves weighted by revenue).

[35] The shares in this exhibit account for Class II and Class III railroads serving counties. I attribute Class II or Class III revenue in a county to UP (BNSF) if a Class II or Class III railroad interchanges with UP (BNSF).

Exhibit 7
Counties where BNSF or UP has at least a 75% share of Class I Revenue, 2019–2024

{{{REDACTED

}}}

45. Similarly, Exhibit 8 shows that many counties in the East are either sole-served by NS or sole-served by CSXT.[36] Again, this is true in the literal sense of dark colored counties that are 100% served by the associated railroad in the Six-Railroad Tapes Data and more broadly true if one uses a more typical threshold for effective monopolization of the local traffic (colored counties have one Class I railroad associated with at least 75% of movements weighted by revenue).

[36] The shares in this exhibit account for Class II and Class III railroads serving counties. I attribute Class II or Class III revenue in a county to NS (CSXT) if a Class II or Class III railroad interchanges with NS (CSXT).

Exhibit 8
Counties where NS or CSXT has at least a 75% share of Class I Revenue, 2019–2024

{{{REDACTED

}}}

46. The control that UP and NS have over counties in the West and East, respectively, gives them power over competition for rail service connecting to those counties. The

2023 Merger Guidelines recognize this concern: a firm that controls an important input or route to customers may be able to use that control to weaken competition in a related market.[37] As the Merger Guidelines describe, combinations of firms that have an ability to foreclose a competitor in the related market can substantially harm competition.[38] Where UP and NS today work as partners with other railroads, and where shippers can benefit from competition somewhere on their move—either between potential destinations or to reach the remaining areas where both of the current partner railroads are good options—the merger turns one of those partners into a competitor and creates the opportunity and incentive to eliminate (or severely degrade) the competition that shipper currently enjoys in favor of steering traffic onto its own network.

47. This ability to harm competition is widespread. Counties where a combined UP-NS will account for at least 75% of movements (weighted by revenue) by Class I rail revenue represent {{REDACTED}} of revenue on all U.S. movements and {{REDACTED}} of within-U.S. rail revenue. Counties where the combined UP-NS would be the only Class I option account for {{REDACTED}} of rail revenue on all U.S. movements and {{REDACTED}} of within-U.S. rail revenue. In other words,

[37] 2023 Merger Guidelines, p. 13 ("The Agencies evaluate whether a merger may substantially lessen competition when the merged firm can limit access to a product, service, or route to market that its rivals may use to compete. … These problems can arise from mergers involving access to any products, services, or routes to market that rivals use to compete, and that are competitively significant to those rivals, whether or not they involve a traditional vertical relationship…").

[38] 2023 Merger Guidelines, pp. 13–14 ("A merger involving products, services, or routes to market that rivals use to compete may substantially lessen competition when the merged firm has both the ability and incentive to limit access to the related product so as to weaken or exclude some of its rivals … in the relevant market. … Dependent rivals can be weakened if limiting their access to the related product would make it harder or more costly for them to compete; for example, if it would lead them to charge higher prices or offer worse terms in the relevant market… .").

{{REDACTED }} movements shipped in the U.S. (weighted by revenue) comes from a shipper who will have only one rail option—UP-NS—in their county post-merger.

48. The ability to harm competition is even more widespread when considering counties across the country where the dominant position of a combined UP-NS could be used to effectively foreclose competition from current interline partners. I described above the example of a shipper that might today enjoy some competition between CSXT (to win its portion of a UP-CSXT routing) and NS (to win its portion of a UP-NS routing for the same move) and that post-merger CSXT might find it difficult to compete as a partner with BNSF. The data reveal in these exhibits that this scenario will be particularly true for many movements. Indeed, it is a significant portion of all movements where, if a combined UP-NS chooses not to work with a railroad that it currently partners with in some options for a shipper, that rail partner could be completely foreclosed or effectively foreclosed from offering the shipper a competitive alternative. This extraordinary power over shippers is described more in Exhibit 9 below, which shows how often this scenario meets various thresholds that would all constitute the sort of ability over an input market that the Merger Guidelines identify.

Exhibit 9
A combined UP-NS would participate in {{REDACTED }} for significant portions of the country

{{REDACTED

}}

49. Further, as I demonstrate in Section 5, there are {{REDACTED }} shippers that utilize both a sole-served UP facility and a sole-served NS facility. These shippers account for {{REDACTED }} in total revenue.[39]

50. A combined UP-NS would also {{REDACTED }} the interline movements that cross the Watershed which are so central to this case.[40] Instead, the effect of the merger is to limit to an even more extreme degree those shippers' ability to avoid the combined railroad by contracting with other Class Is. A combined UP-NS would participate in {{REDACTED}} of cross-Watershed interline movements (that involve multiple Class I railroads), weighted by Class I rail revenue. This means that shippers would only be able to *avoid* a combined UP-NS on {{REDACTED }} ({{REDACTED}}) of those movements weighted by revenue.

[39] See Exhibit 35. Note that due to the methodology used to aggregate shipper names, the number of shippers is overstated and the amount of revenue moved by shippers that are sole-served by UP and NS is understated.

[40] Applicants' experts claim that the merger is "designed" to improve movements between the East and West of the country but seem to acknowledge the {{REDACTED }} UP-NS would have among these movements. See Second Errata Joint Verified Statement of Kenny Rocker and Claude E. Elkins, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, September 4, 2026 ("Rocker and Elkins Second Errata VS"), ¶ 10 ("This merger is designed to fix that problem by giving customers coast-to-coast, seamless, single-line service."). See also Hunt Second Errata VS, pp. 42–43, Exhibit 4-8 ("Much of US Class I interline traffic involves traffic within or crossing the watershed region, the traditional dividing line between the eastern and western US railroads.").

Exhibit 10
For shippers on U.S. cross-Watershed movements involving two or more Class I railroads
{{REDACTED }}

{{REDACTED

}}

51. Exhibit 11 shows that shippers' dependence on a combined UP-NS to interline between the East and the West is consistent across various major commodity groupings as well. Shippers who move these commodities across the country would be particularly dependent on a combined UP-NS. These shippers will be the ones who no

longer have credible alternatives they can use to get competitive rates in their negotiations.

Exhibit 11
A combined UP-NS would dominate cross-Watershed interline movements involving multiple Class I railroads for many commodities (STCC2s)

{{{REDACTED

}}}

52. Taken together, the data on scope and size of a combined UP-NS show that the proposed merger would create a railroad that would dominate U.S. rail movements. Regardless of whether I look at the entire U.S., specific geographies, or specific commodities, combining UP and NS would create a single railroad controlling an enormous share of revenues—shippers would need to negotiate with UP-NS on {{REDACTED }} of U.S. rail traffic, making it difficult for them to avoid (or even to threaten to avoid) UP-NS.

53. Applicants and their experts do not adequately analyze how the combined railroad's unprecedented reach would affect the competitive alternatives and bargaining strategies available to shippers. My analysis identifies three principal sources of harm that the UP-NS merger likely would cause:

a. The proposed merger would give a combined UP-NS the ability and incentive to foreclose or weaken competing interline services that UP and NS support today. This would reduce shippers' options, increase rates, and harm shippers (Section 4).

b. The proposed merger would weaken geographic competition and deprive shippers of bargaining strategies that support more competitive rates and service offerings. Today shippers can negotiate across facilities and movements to obtain better terms. Combining UP and NS would place more of a shipper's alternatives under common control, reducing the shipper's ability to shift business and increasing the merged railroad's bargaining leverage, harming shippers (Section 5).

c. The proposed merger would eliminate competition between UP and NS to carry the longer portion of an interline movement, depriving shippers of the lower rates that competition over the choice of interchange point can produce (Section 6).

4. A combined UP-NS will undermine competition that UP today supports between NS and other Class Is and that NS today supports between UP and other Class Is

54. The proposed merger will have a vertical competitive effect. Vertical effects, like horizontal effects, ultimately involve a reduction in head-to-head competition. However, unlike horizontal effects which arise from the loss of direct competition between merging parties, the vertical effects here would reduce competition between the combined UP-NS and other railroads that depend on UP or NS as an interline partner. Today, UP facilitates competitive service offered by both NS and its competitors in the East. Likewise, NS facilitates competitive service offered by both UP and its competitors in the West. If NS's competitors can no longer use UP effectively as an interline partner, and UP's competitors can no longer use NS effectively as an interline partner, those railroads will be less able to compete with the combined UP-NS. As a result, shippers will lose options and UP-NS will not have to offer shippers rates and service as favorable as competition requires today. In this section, I show that the proposed UP-NS merger will lead to foreclosure of these competitors, substantially reducing shippers' competitive options and raising the rates where competitors are foreclosed.

55. First, I explain how, today, shippers benefit from competition on portions of their interline service. UP supports competition between NS and other Class Is in the East, and NS supports competition between UP and other Class Is in the West. Shippers can build the pairing of railroads on either side of a gateway that benefits them the most. And even where the shipper has a sole-serving railroad on one side, separate

negotiations, including under Rule 11, allow a shipper to benefit from competition on one side of the gateway or the other, with the sole-serving railroad on the other side of the gateway being unable to capture all the profits.

56. A combined UP-NS offering single-line service would have a financial incentive to change this relationship across the gateway to avoid competing with its own service. It would have both the incentive and the ability to foreclose interline partners and insulate its rates and its profits from that competition, making shippers worse off (Section 4.1).

57. Second, the data show that {{{REDACTED }}}. {{{REDACTED }}} Across estimation approaches, these findings support estimated harm to shippers from the foreclosure of competition of approximately {{REDACTED}} million annually. The evidence thus points toward harm from the merger's impact on competitive incentives, not an automatic benefit from creating single-line service (Section 4.2).

58. Third, I discuss how Applicants and their economists have failed to admit even the possibility of this harm. Dr. Israel's "one-lump" theory assumes away the bargaining constraints that allow shippers to benefit from this competition today. His flawed single-line/interline rate comparison does not measure the merger's effect on those constraints. Moreover, the record evidence indicates that UP commands higher rates than other railroads, with a stated strategy of favoring price increases at the expense of

volume growth. Unless UP were to suddenly switch its pricing strategy, the merger is more likely to mean increased rates on NS traffic, rather than lower rates in furtherance of winning the truck-to-rail diversions that Applicants forecast. Such diversions are unlikely and so is the implication that UP would suddenly switch to a strategy of pursuing rate decreases. If Applicants could plausibly generate the sort of traffic diversions their experts' analysis predicts from small price changes, then UP and NS would have the incentive to reduce its rates and pursue this traffic today. A more realistic explanation is that no such gains are likely (Section 4.3).

59. Fourth, if Applicants' projections of large traffic gains were actually realistic, Applicants have not explained why they cannot be accomplished without a merger. There are many examples of railroads having success and benefitting shippers with effective interline agreements. Indeed, Applicants' own experts acknowledge successful interline agreements and rely on new interline cooperation among other railroads to constrain UP-NS. They do not reconcile that position with their claim that UP and NS must merge to coordinate effectively (Section 4.4).

60. Fifth, the remedies Applicants offer for the harm to shippers from foreclosed competition due to their proposed merger ignore its unprecedented scale and scope and do not begin to address the harm it will have for shippers. Their OGCs are inadequate to address the harm of this merger as are the other assurances and procedural options they have offered (Section 4.5).

4.1. The merger would give UP-NS the incentive and the ability to weaken its current partners and degrade facilities and services that today compete as interline options. UP will stop competitors to NS where it can and NS will stop competitors to UP where it can

61. The proposed merger would create a railroad with the incentive and ability to foreclose competition that UP and NS today support among their respective interline partners. Today, all else being equal, UP should be indifferent to whether it interchanges with NS or CSXT, and NS should be indifferent as to whether it interchanges with UP or BNSF. After the merger, a combined UP-NS would have the incentive to favor UP-NS's routings because the combined firm would retain all of the revenue from traffic moving over its new single-line route, but only part of the revenue from traffic interchanged with BNSF or CSXT.[41] This dynamic would give UP-NS an incentive to weaken competing interline options and steer traffic onto its own single-line routes, where it would capture the revenue that would otherwise go to its interline partners. And where UP-NS can, it will act on that incentive by making those competing interline options less attractive through its pricing, service, equipment, and interchange decisions.[42] In many cases that will be enough to completely foreclose

[41] Applicants' expert Dr. Bailey explained how single-line carrier incentives operate. Bailey Second Errata VS, ¶ 58 ("When creating blocks at its yards, UP's economic incentive is to consider the commercial implications only for its own business. Its incentives will differ from those of the combined railroad for at least two reasons. First, UP receives only a part of the profit for interline services with NS as independent entities, but the combined railroad would receive all of the profit from single-line services. Second, UP has little incentive to incur costs itself in order to reduce NS's costs of delivering interline services. As a result, as an independent entity pre-transaction, UP has weak economic incentives to support the capacity and expend the resources needed to sort and reclassify cars to better serve NS's interests.").

[42] Applicants' expert Dr. Bailey explained this when describing the incentives for the single-line carrier to ensure reliable services. Bailey Second Errata VS, ¶ 67 ("Compared to a combined entity, standard economic reasoning shows that a standalone UP will generally put less weight on ensuring that interline services arrive on time for two reasons. First, UP shares the benefits (i.e., gets partial

competition, particularly where UP-NS controls a necessary input for the shipper such as a sole-served origin or destination. And even where UP-NS may not be able to preclude competition altogether, it can significantly weaken the shipper's options if it no longer partners effectively with those interline partners UP or NS support today. Whether complete or partial, the merged UP-NS will gain power to insulate itself from competition and raise rates for shippers.

62. {REDACTED

[43]}

63. This loss in competition is illustrated in a hypothetical example in Exhibit 12. Even though the merger will not change the routes that are theoretically possible, if shippers recognize that they can no longer use the pairs UP-CSXT and BNSF-NS—whether that requires the combined UP-NS to exercise its ability to discontinue interline service with CSXT and BNSF or shippers merely recognize that those options no longer have any

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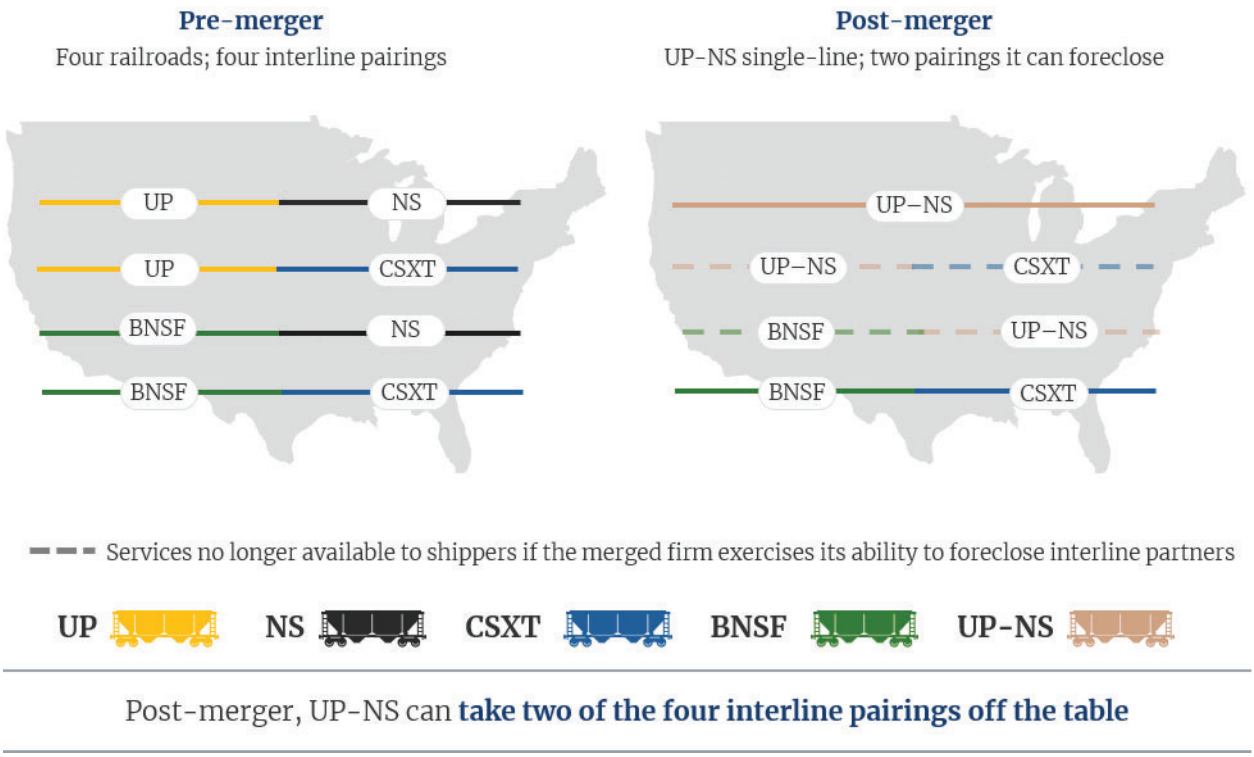
benefits) of meeting the expectations of interline customers with NS, whereas the proposed combined railroad would gain the full benefit. Second, customers have limited visibility into interline operations, making it difficult to determine which railroad is responsible when delays occur. … As a result, neither railroad fully internalizes the (positive) benefits from high service quality nor do they fully internalize the (negative) costs of low service quality.").

[43] Deposition of Grant Janke (Assistant VP, Capital Planning & Finance, UP), September 1, 2026, Exhibit 84, UP_0039326.

credibility at the negotiating table—the effect is less competition for shippers. Some shippers may insist and use whatever bargaining power they can to obtain a rate for one of these pairs, but in terms of options that can discipline pricing, shippers will not see these routes as relevant options anymore. It is effectively the same as if two of the route pairings were destroyed by the merger.

Exhibit 12
Illustration of competition today and post-merger when UP-NS forecloses interline partners



Source: Illustrative Graphic
Note: This exhibit is a visual representation of both (i) a reduction in railroads involved and (ii) likely reduction in service options available on a corridor following the proposed merger of UP and NS, moving from West to East. The dashed lines represent services that would no longer be available to shippers, if the merged firm exercises its ability to foreclose interline partners.

64. A good example of this effect is Schneider, an intermodal service provider, that has used different combinations of railroads to generate competition for its business, first

switching its western business from BNSF to UP, and more recently announcing that it would switch its eastern business from CSXT to NS. Along the way, it has relied on various pairings for its East-West moves, including BNSF-CSXT, UP-CSXT, and soon UP-NS.[44] Because Schneider could choose any of those pairings, NS competed with CSXT to serve Schneider in the East, and UP supported that competition by collaborating with whichever carrier Schneider picked in the East for interline services.

65. {{REDACTED

}}[45]

66. However, this type of competition would be lost after the proposed UP-NS merger. While Schneider cites its record of switching between two major providers in each of the East and West as evidence of competition that it expects will continue post-merger, that is not consistent with Applicants' internal expectations which are, instead,

[44] "Union Pacific Railroad and Schneider to Team Up for Intermodal Service in 2023," *Union Pacific Newsroom*, January 19, 2022, available at https://www.up.com/press-releases/service/schneider-intermodal-service-nr220119; "Norfolk Southern and Schneider partner to expand domestic intermodal capacity across the eastern U.S.," *Norfolk Southern Newsroom*, October 29, 2026, available at https://norfolksouthern.com/en/newsroom/news-releases/norfolk-southern-and-schneider-partner-to-expand-domestic-intermodal-capacity-across-the-eastern-us.

[45] {{REDACTED }} NS_00239039–97 at NS_00239044 ({{REDACTED }}); {{REDACTED }} NS_00126707–37 at NS_00126729 ({{REDACTED }}).

consistent with my own findings below that such switching will be foreclosed.[46]

According to a UP {{REDACTED

}}[47] {{REDACTED

}}

67. Indeed, Schneider's expectations of benefits from the merger appear to be at odds with the evidence in this case, as well. In his letter of support for this merger, Schneider's President and CEO points to the increased coordination Schneider observed after the CP-KCS combination, noting that CPKC is an example of "[t]he enhanced speed, reliability and service consistency of a new single-line network improved rail's ability to compete for freight, encouraged investment, and increased competition across the broader transportation market" that they expect to see with the proposed UP-NS merger.[48] But, as I discuss in Section 4.5.1, the CP-KCS combination

[46] Letter from James Filter (President and CEO, Schneider National Carriers, Inc.) to Chairman Fuchs and Members of the Board, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 11, 2026 ("Schneider Letter"), pp. 2–3 ("Concerns that the proposed combination would diminish competition or lead to higher rates do not reflect the competitive dynamics of the freight transportation market. Schneider today negotiates with at least two major rail providers in each relevant geography, and that competitive choice will remain following the transaction.").

[47] {{REDACTED }} UP-STB-D13-0000430–51 at UP-STB-D13-0000440 {{REDACTED }}; {{REDACTED }} UP_0080839–53 at UP_0080850 {{REDACTED }}.

[48] Schneider Letter, p. 2.

differed from the proposed UP-NS merger on essentially all of the facts that are relevant to this sort of comparison. Of particular import, CP and KCS had been unable to align their incentives in arm's-length negotiations for reasons that were peculiar to that combination, but which meant that there was unusual potential to improve their coordination; and their new single-line service competed with already existing single-line service from three Class Is, which is a level of competition (and incentive to share with shippers the benefits of improved service) that UP-NS will not face.

68. {{REDACTED

}} Today, they regularly partner with other Class I railroads that compete with one another on the other side of a gateway. As shown in Exhibit 13, {{REDACTED

}}[49] {{REDACTED

}}[50] After the merger, {{REDACTED

}}.

[49] {{REDACTED

}} NS_00103605–56 at NS_00103654.

[50] {{REDACTED

}} NS_00103605–56 at NS_00103654 ({{REDACTED

}}); {{REDACTED

}} NS_00155457–59 at NS_00155457 57({{REDACTED

}}).

Exhibit 13
Today, NS regularly *{{REDACTED*

}}

Source: {{REDACTED
}} NS_00103605–56 at NS_00103654
Note: {{REDACTED

}}

69. Both UP and NS anticipate that {{REDACTED

}}.[51] The reasoning provided by NS's Chief Strategy Officer, Mr. McClellan,

[51] {{REDACTED }} UP-STB-D13-0000430–51 at UP-STB-D13-0000440 {{REDACTED
}}; {{REDACTED
}} UP_0080839–53 at UP_0080850 {{REDACTED
}}; Deposition of Michael R. McClellan (Chief Strategy Officer, Norfolk Southern Corporation), October 9, 2026, Exhibit 409, NS_00482221–26 at NS_00482223 ({{REDACTED
}}).

{{REDACTED

}}[52] {{REDACTED

}}[53] {{REDACTED

}}

70. {{REDACTED

[54]}}

[52] Deposition of Michael R. McClellan (Chief Strategy Officer, Norfolk Southern Corporation), October 9, 2026, pp. 415:4–416:1 ({{REDACTED

}}).

[53] {{REDACTED

}} NS_00130381–85 at NS_00130384.

[54] Deposition of Michael R. McClellan (Chief Strategy Officer, Norfolk Southern Corporation), October 9, 2026, Exhibit 409, NS_00482221–26 at NS_00482223 ({{REDACTED

}}).

71. By allowing UP-NS to benefit financially from favoring its own single-line service in many more corridors, the merger would extend its incentive to weaken competing interline options. To evaluate the merger's effect therefore requires accounting for the change in railroad incentives and the role of competitive options available to shippers. The proposed merger is more than a change in the mode of production (i.e., new single-line service) for specific options. Rather, the merger would also reduce the number of railroads shippers can bargain with and change the mix of competitive incentives for railroads. This change in competitive structure would impact the rates of single-line and interline services in the same corridor simultaneously. Therefore, to evaluate the merger's effect, it is important to consider the change in competitive structure to examine whether shippers are harmed when they lose options on either side of a gateway.

72. The central question is whether shippers are better off or worse off when a carrier faces the incentive to favor its own single-line option. Specifically, the question is whether that incentive corresponds with lower rates of the single-line service (which presumably the interline services would have to respond to with their own lower rates) or does it correspond with fewer or less effective interline options for shippers and higher overall rates (which presumably raises the rate observed for both the remaining interline and the new single-line service). To address this central question, I compare rates in markets where carriers have an incentive to favor their own single-line service with rates in markets with otherwise similar competitive conditions where carriers lack that incentive. As I show in Section 4.2.2, the evidence confirms that shippers pay more

where carriers have that incentive, supporting my conclusion that the merger would harm shippers due to foreclosed competition.

4.1.1. The popularity of Rule 11 demonstrates that shippers value separate negotiations that preserve discounts from competition on one side of the gateway without offsetting price increases on the other

73. A particularly popular tool for shippers negotiating interline rates is Rule 11, an arrangement under which each railroad separately quotes and bills for its portion of an interline move. Its popularity demonstrates that shippers do benefit from competition on one end of their moves. Rule 11 helps shippers generate competitive pressure on their rates by allowing them to negotiate directly with each railroad without having to disclose the rate negotiation with the railroad on the other side of the gateway. For example, a shipper might negotiate a discounted rate to use a different interchange point. Although that shipper still must obtain a rate from the railroad serving the other side of that interchange, the shipper does not have to reveal the amount of the discount. Likewise, if a shipper has a volume discount or other arrangement related to its overall portfolio with one railroad, it can keep the exact discount confidential when bargaining with the other railroad.

74. As a result of separate negotiations, Rule 11 helps ensure that discounts shippers get from competition on one side will not simply raise the rate they will pay on the other side of the gateway and will instead turn into net savings for shippers. This is because when a railroad does not have full information of a shipper's rate or discounts

on the other side of a gateway, it is unable to raise its rate to a level to extract the full monopoly rent and fully offset the savings from competition on the other side of the gateway. Thus, a shipper that is captive to a sole-serving railroad on one side of the gateway can benefit from competition on the other. As I explain further in Section 4.3.1, this is contrary to Dr. Israel's one monopoly-rent theory and consistent with UP's own acknowledgement before The Board.

75. The proposed merger would eliminate the benefit of Rule 11, and therefore would eliminate the benefit of separate negotiations, on UP-NS movements. A combined UP-NS would have the ability to charge a total price higher than the combined Rule 11 quotes UP and NS separately offer today. This is because UP and NS would no longer be separate railroads to contract with; instead, the combined UP-NS as a single entity would know exactly what it was doing with that shipper for the entire movement. Indeed, once it has a single-line option for the entire length of the move, Rule 11 does not require UP-NS to make a rate available for the portion a shipper may have been using with another railroad.[55] And, while Applicants have offered to commit that they

[55] Railroads are required to provide rates upon request, but they are allowed to determine the type of rate they quote shippers (e.g., interline or single-line). This means that a railroad that has a single-line offering can choose to only quote the single-line rate (as opposed to the interline or Rule 11 rate). See Decision, "Central Power & Light Company v. Southern Pacific Transportation Company," Docket No. NOR 41242, December 27, 1996, pp. 1067–1068 ("In summary, a shipper may not insist upon local rates for what is really a through service. If a shipper seeks a rate from an origin that is not currently served by the bottleneck carrier, either directly or in interline service, the carrier must accept the traffic at a reasonable interchange and establish a rate over the bottleneck segment to complete the transaction. A shipper seeking an alternative routing from an origin from which it is already served by the bottleneck carrier, either directly or in interline service, must proceed under the competitive access provisions of the statute."). This embraces previous STB decisions. See Decision, "Central Power & Light Company v. Southern Pacific Transportation Company," Docket No. NOR 41242,

will continue to offer interconnecting service in certain ways, it is not clear that shippers would get the same benefits out of the structure of pricing that UP-NS would offer – particularly if UP-NS does not have to give them a tool that helps the shipper get competitive pressure on rates.

76. This loss of separate bargaining will be especially detrimental on routes where shippers are sole-served by UP at one end or NS on the other but can still benefit from separate Rule 11 quotes. The merger will eliminate that separation and force shippers to contract with a combined UP-NS. Even though these shippers are sole-served at one end today, and would remain so after the merger, negotiating with two independent railroads rather than one matters for the total rate they pay. As I explain below, Dr. Israel dismisses this concern by relying on the "one-monopoly-rent" or "one-lump" theory—but Rule 11 is one of the commonly used levers that allow shippers to negotiate lower rates even where a railroad has monopoly power.

77. The value shippers receive from the ability to negotiate separately on each side of a gateway is also demonstrated by the popularity of Rule 11. The data show that {{{REDACTED }}}, {{{REDACTED }}}.

December 27, 1996, fn. 1 ("This case embraces No. 41295, *Pennsylvania Power & Light Company v. Consolidated Rail Corporation*; and No. 41626, *MidAmerican Energy Company v. Union Pacific Railroad Company and Chicago And North Western Rail Company*."). As such, the number of rates available to shippers would decrease. Applicants' own experts acknowledge that additional rate optionality benefits shippers. See Deposition of Katherine N. Novak (General Director of Interline Operations, Union Pacific Railroad Company), September 24, 2026, p. 199:7–16 ("Q. Well, let me ask you, what, if any, additional access does CGP provide to shippers? A. Well, by offering additional rates, it offers them the ability to have additional competitors fighting for their business. So through the rate optionality it does offer additional access or could offer additional access.").

In 2024, UP {{{REDACTED }}} among the Class I railroads and NS {{{REDACTED }}}, as can be seen in Exhibit 14 below.

Exhibit 14
Rule 11 carloads touched by Class I railroad, 2024

{{{REDACTED

}}}

78. Moreover, the share of UP's interline movements (movements that involve more than one Class I railroad) that are contracted under Rule 11 {{{REDACTED

}}}.[56] This trend means that {{{REDACTED

}}}

4.2. Empirical evidence confirms that a combined UP-NS would degrade competition

79. As discussed in Section 4.1, shippers benefit when multiple railroads compete as effective options to serve a portion of their movement. The question is whether an interline option remains an effective competitive alternative when one of the railroads needed to provide that service gains an ownership incentive to steer the traffic to its own single-line service. If a combined UP-NS can weaken enough of a shipper's alternatives, it will face less competitive pressure and can charge higher rates for both interline and single-line service.

80. In this section I show evidence that UP and NS already {{{REDACTED }}} where they can favor their own single-line service (Section 4.2.1). I then compare rates across existing corridors with competitive structures resembling those before and after the merger and show that shippers pay higher rates where a carrier has the incentive to favor its own single-line service, as UP-NS would post-merger. Across estimation approaches, these findings support an estimated harm of approximately {{REDACTED}} million annually (Section 4.2.2). The evidence thus indicates that the

[56] See workpaper 4-1. UP's share of carloads from Rule 11 movements {{{REDACTED }}} based on the Six-Railroad Tapes Data.

merger's changes to competitive incentives would harm shippers, undermining Applicants' claim that creating single-line service would necessarily benefit them.

4.2.1. Today UP and NS act on their more limited incentives to foreclose competition

81. Corridor-level analyses show that most corridors with competitive structures resembling the "post-merger" setting in Exhibit 12 do not use all potential interline services. By contrast, corridors with competitive structures resembling the "pre-merger" setting are much more likely to show traffic moving over all potential interline services.

a. In the left panel of Exhibit 15, I analyze corridors that are served by two railroads on each end and require interlines. These corridors have competitive structures like the "pre-merger" setting in Exhibit 12. In these corridors, shippers have four potential interline routing options. Shippers frequently use all four options, doing so in corridors account for {{REDACTED}} of total revenue across all corridors with this competitive structure.

b. In the right panel of Exhibit 15, I analyze corridors served by two railroads on each end where one single-line option is available. These corridors are like the "post-merger" setting in Exhibit 12. In these corridors, shippers have three potential interline options. However, shippers rarely use all three, doing so in corridors that account for only {{REDACTED}} of total revenue. This is because shippers tend

not to use interline options that involve the railroad that can offer single-line service.[57]

[57] For example, in corridors accounting for {{REDACTED}} of total revenue shippers do not use any interline option that involves a single-line provider. See workpaper 4-2.

Exhibit 15
The presence of a single-line service is associated with diminished use of interline options

{{REDACTED

}}

82. Carrier-level analyses also show that both UP and NS are {{{REDACTED }}} to engage with interline partners when they can offer single-line service. For corridors where a carrier can offer both interline and single-line service, Exhibit 16 shows the

share of revenue that comes from interline movements. For example, for corridors where UP can offer interline and single-line service, Row 1 shows that {{{REDACTED}}} of revenue generated by movements involving UP (including both single-line and interline movements) come from interline service. In other words, in corridors where UP could offer either single-line or interline service, {{{REDACTED}}} of the revenue generated by UP's movements comes from its single-line services. Similarly, in corridors where NS could offer either single-line or interline service, interline movements account for only {{{REDACTED}}} of the revenue from movements involving NS. While it is true that all railroads show an incentive to favor their own single-line, other Class I railroads are {{{REDACTED }}} to interline with partners even when they can offer single-line service. In corridors where other Class Is could offer either single-line or interline service, interline movements account for {{{REDACTED}}} of revenue in their movements, which is nearly {{{REDACTED }}} than the comparable share for UP or NS.

83. This analysis, as shown in Exhibit 16, demonstrates more than the prevalence of single-line service. To test whether the rare use of interlines reflects foreclosure beyond any shipper preferences for single-lines, I compare the interline shares in two cases:

a. In the first case (Row 1.a), I consider corridors where a railroad providing single-line service faces a competitor at each end of a shipper's movement. These resemble corridors that, for example, post-merger, will be served by a UP-NS single-line and a BNSF-CSXT interline. On such corridors, shippers will continue

to have a routing option independent of the merged UP-NS, thus the merged UP-NS will have less ability to steer traffic to its single-line service, even if they decline to work with interline parters BNSF or CSXT.

b. In the second case (Row 1.b), I consider corridors where a railroad providing single-line service is the only carrier serving one end of a shipper's movement and faces a competitor at the other end. These resemble corridors that, post-merger, will be served by a UP-NS single-line and a potential UP-CSXT interline. On such corridors, shippers will no longer have a routing option independent of the merged UP-NS, giving the merged UP-NS greater ability to steer the shippers to its single-line service if they decline to work with interline partner CSXT.

84. A comparison of these two cases therefore measures how a railroad's use of interline service varies when it has a greater ability to determine whether shippers can choose an interline option.

85. This comparison is shown in Row 2 of Exhibit 16 (the "Foreclosure Index"), where a Foreclosure Index greater than one indicates that a railroad engages in an effort to steer traffic from their interline service to their single-line service where it has a greater ability to do so. To see this, first note that if a railroad did not act on that ability, and shipper preferences were otherwise comparable across the two cases, its interline shares would be the same and the foreclosure index would equal one. By contrast, if a railroad more effectively discourages competing interline service where it has greater ability to

do so, its interline share would be lower in those corridors (Row 1.b) than in corridors where it has less ability to steer traffic (Row 1.a), producing an index greater than one. That is not to say that either case necessarily reflects pure shipper preferences or the total effect of foreclosure, just that the difference we can observe between these two cases reveals that railroad's responsiveness to an increase in its ability to foreclose. Under the assumption of comparable shipper preferences, a higher index indicates that the railroad's conduct contributes more to the observed predominance of single-line service. UP's and NS's foreclosure indices, {{{REDACTED

}}}

Exhibit 16
{{{REDACTED

}}}

86. UP and NS stand out both for how much {{{REDACTED

}}}. When sole-served by the railroad, interline service accounts for {{{REDACTED}}} of the revenue on relevant movements UP participates in, and {{{REDACTED}}} of NS's revenue in their relevant movements –

{{{REDACTED }}} average for other Class I railroads. And, while the average Class I {{{REDACTED }}}, UP and NS have ratios indicating it roughly {{REDACTED }} the likelihood of working cooperatively with another railroad to offer an attractive interline offering.

87. UP's and NS's own {{REDACTED }} and past conduct {{REDACTED }}. As I discussed in Section 4.1, {{REDACTED }} This is not surprising as UP has taken similar actions in the past, using its control over equipment sharing programs or shared junctions to make it harder for other railroads to offer competing services and to retain or {{REDACTED }}. For example, in 2022, UP removed CP from the EMP program – a domestic intermodal, interline container service managed by UP and NS that allows shippers to use the containers on authorized railroads – {{REDACTED }}.[58] Commentary in an NS internal document and communication suggests that {{REDACTED

[58] "EMP Domestic Container Program," *Union Pacific*, available at https://www.up.com/shipping/intermodal/emp ("EMP is a domestic interline container service offered by Union Pacific and Norfolk Southern. EMP provides a fleet of more than 40,000, 53' domestic containers and and [sic.] demonstrates both carriers' commitment to maximize customers' shipping options, while featuring truck-competitive services."). Shippers may only use EMP on authorized railroads. See "Intermodal Equipment Glossary," *Union Pacific*, available at https://www.up.com/customers/premium/emp/empgloss/index.htm ("Off-Route ... A unit is considered Off-Route when it travels ... on a non-participatory railroad (such as BNSF Railway). An [Intermodal Marketing Company] will be charged off-route charges by Blume Global until that unit is brought back to a valid terminal."). {{REDACTED }}, NS_00152716–34 at NS_00152721 {{REDACTED }}

}}.[59] The removal from the EMP degraded CP's service and a {{REDACTED

}}[60]

[59] See {{REDACTED }} NS_00136603–9 at NS_00136606 {{REDACTED

}} See also {{REDACTED }} NS_00162764–67 at NS_00162764 {{REDACTED

}}

[60] {{REDACTED

}} UP_0215372–75 at UP_0215373 {{REDACTED

}}. See "Rail Map," *Canadian National*, available at https://www.cn.ca/-/media/images/our-services/images/rail-map-download-en.jpg. See also "Coverage," *Ferromex*, available at https://ferromex.mx/en/cobertura/. An industry publication also reported that UP decided to remove CP from the EMP in 2022 "because the proposed CP-KCS merger would create a new single-line competitor to UP in intermodal lanes linking Mexico and Texas with Chicago." See also Daniel O'Donohue, "Interactive US Railroad Map – Complete Rail Network Explorer," *Mapscaping,* September 4, 2025, available at https://mapscaping.com/interactive-us-railroad-map/. See Bill Stephens, "Union Pacific drops Canadian Pacific from EMP intermodal program," *TrainsPro*, September 16, 2022, available at https://www.trains.com/pro/freight/intermodal/union-pacific-drops-canadian-pacific-from-emp-intermodal-program/.

88. As another example, UP has also used interchange fees to foreclose competition at a shared junction. In 2018, Colorado Pacific Railroad ("CXR") rehabilitated the Towner Line, creating an alternative route to UP for Kansas and Colorado grain shippers.[61] UP and its lessee, Kansas & Oklahoma Railroad ("K&O"), then amended their 1997 lease without STB approval to impose an uncapped interchange fee — alleged to exceed $500 per car — on any traffic interchanged with a carrier other than UP.[62] Farmers, Weskan Grain, and CXR sued UP and K&O, alleging the fee was designed to block the route and no carloads have interchanged between K&O and CXR

[61] The Soloviev Group, "Local Farmers, Weskan Grain, and Colorado Pacific Railroad File Antitrust Lawsuit Against Union Pacific Railroad and Kansas & Oklahoma Railroad," *PR Newswire*, January 28, 2026, available at https://www.prnewswire.com/news-releases/local-farmers-weskan-grain-and-colorado-pacific-railroad-file-antitrust-lawsuit-against-union-pacific-railroad-and-kansas--oklahoma-railroad-302672873.html ("CXR attempted to give shippers and farmers in the Relevant Market an alternative and more direct route west by purchasing the Towner Line in early 2018 and rehabilitating it. The line reopened for freight service in 2019.").

[62] Bill Stephens, "STB Rejects Kansas & Oklahoma-Union Pacific Lease Renewal Over Interchange Concerns," *Trains.com*, March 20, 2026, available at https://www.trains.com/pro/freight/stb-rejects-kansas-oklahoma-union-pacific-lease-renewal-over-interchange-concerns/ ("K&O and UP twice renewed and amended the lease agreement in 2018 and 2019 without board approval."). See also The Soloviev Group, "Local Farmers, Weskan Grain, and Colorado Pacific Railroad File Antitrust Lawsuit Against Union Pacific Railroad and Kansas & Oklahoma Railroad," *PR Newswire*, January 28, 2026, available at https://www.prnewswire.com/news-releases/local-farmers-weskan-grain-and-colorado-pacific-railroad-file-antitrust-lawsuit-against-union-pacific-railroad-and-kansas--oklahoma-railroad-302672873.html ("As part of the 2019 amendment, Defendants agreed to impose a significant interchange fee on any railcar that originated or terminated on the UP Lease Track and interchanged with the Towner Line ("the interchange fee"). Based on information and belief, the Interchange Fee exceeds $500 per railcar[.]").

since.[63] In 2026, the STB found that the arrangement had effectively foreclosed interchange with CXR.[64]

89. This pattern is significant because UP's and NS's {{REDACTED }} is informative of their behavior if the proposed merger were to be consummated. As a result, contrary to Dr. Israel's characterization, the combined UP-NS is unlikely to offer interline service in situations where it can serve a route with a single-line and no longer needs to depend on interline partners.[65] As shown above, {{REDACTED }}. As demonstrated above in Exhibit 7 and Exhibit 8, shippers often have only one choice of Class I railroad in a given county (and

[63] Bill Stephens, "STB Rejects Kansas & Oklahoma-Union Pacific Lease Renewal Over Interchange Concerns," *Trains.com*, March 20, 2026, available at https://www.trains.com/pro/freight/stb-rejects-kansas-oklahoma-union-pacific-lease-renewal-over-interchange-concerns/ ("CXR and Weskan have presented evidence that no carloads originating or terminating on the Lines have interchanged with CXR. … [T]his lack of interchanged traffic creates a strong inference that the interchange commitment has effectively foreclosed interchange with CXR"); The Soloviev Group, "Local Farmers, Weskan Grain, and Colorado Pacific Railroad File Antitrust Lawsuit Against Union Pacific Railroad and Kansas & Oklahoma Railroad," *PR Newswire*, January 28, 2026, available at https://www.prnewswire.com/news-releases/local-farmers-weskan-grain-and-colorado-pacific-railroad-file-antitrust-lawsuit-against-union-pacific-railroad-and-kansas--oklahoma-railroad-302672873.html ("Thirteen Kansas- and Colorado-based farmers, Weskan Grain and Colorado Pacific Railroad (CXR), two subsidiaries of Soloviev Group, yesterday filed an antitrust lawsuit in the U.S. District Court for the District of Kansas against Kansas & Oklahoma Railroad (K&O), LLC and Union Pacific Railroad Company (UP) … alleg[ing] that the Defendants engaged in conduct designed 'to stifle competition from a newly rehabilitated rail line and preserve control over westward shipments of grain.'").

[64] Bill Stephens, "STB Rejects Kansas & Oklahoma-Union Pacific Lease Renewal Over Interchange Concerns," *Trains.com*, March 20, 2026, available at https://www.trains.com/pro/freight/stb-rejects-kansas-oklahoma-union-pacific-lease-renewal-over-interchange-concerns/ ("'Given that the interchange commitment was already in effect, this lack of interchanged traffic creates a strong inference that the interchange commitment has effectively foreclosed interchange with CXR,' the STB said. 'K&O has offered no rebuttal on this point.'")

[65] Second Errata Verified Statement of Dr. Mark A. Israel, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, September 4, 2026 ("Israel Second Errata VS"), ¶ 92.

that sole railroad is often UP or NS). Moreover, UP and NS already participate in {{REDACTED }} of intra-U.S. rail revenue.[66] These statistics showing UP's and NS's dominant presence do not account for diversions to the combined UP-NS network (from other railroads or from other modes of transportation), which means the combined railroad would dominate shippers' choices even more than they do today.

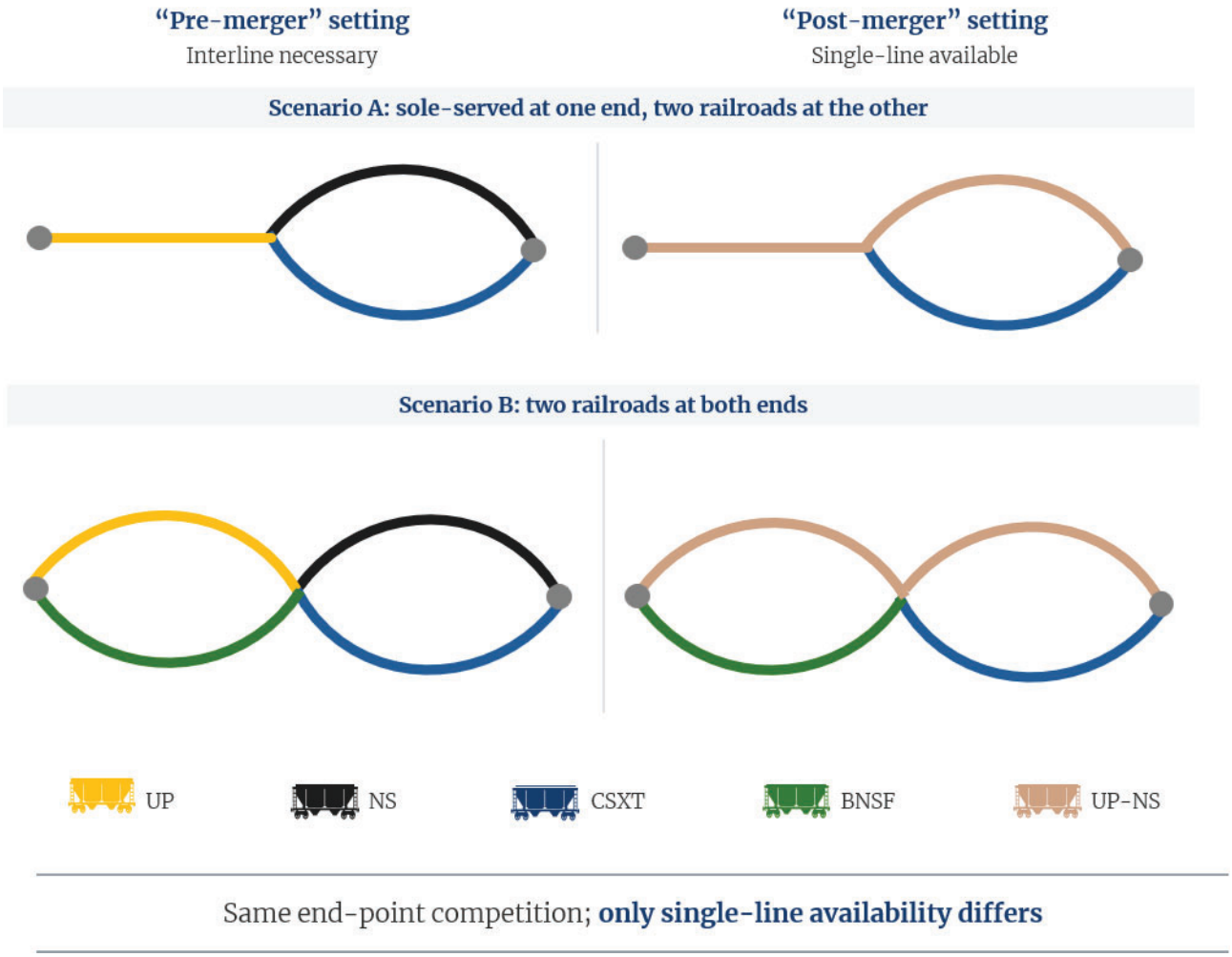
4.2.2. Shippers pay significantly more on routes where one railroad has this incentive and ability to foreclose competitors in favor of its own single-line

90. The data show that when a railroad operates on both sides of a gateway, it has both the incentive and a greater ability to favor its own single-line service over a competing interline option, thereby harming shippers who, absent the single-line carrier spanning the gateway, would have benefited more from rate competition between independent carriers.

91. Specifically, comparing corridors with otherwise similar competitive structures, I find that shippers pay higher average rates where there is a single-line option in addition to the potential interline pairings. In other words, rates are higher in the situation illustrated on the right of Exhibit 17 than in the situations illustrated on the left, all other things equal.

[66] See workpaper 3-3.

Exhibit 17
Rates are higher in corridors with competitive structures resembling the post-merger setting compared to the pre-merger setting



Source: Illustrative Graphic
Note: The "pre-merger" setting on the left illustrates competitive structures where interlines are necessary. The "post-merger" setting on the right illustrates competitive structures where a single-line option is available. Scenario A describes the scenario where a corridor is sole served at one end and served by two railroads at the other end. Scenario B describes the scenario where a corridor is served by two railroads at both ends.

92. Note that this empirical exercise looks at how a particular mix of competitive incentives affects the rate shippers pay, not merely how specific options (such as

interline and single-line) are priced relative to one another.[67] It reflects the fact that a merger that allows new single-line service inextricably changes the incentives of the merging railroads and can affect whether they continue to work as partners to support competitive options. Within that empirical framework, one possibility is that the new single-line service is so efficient that rates go down for all shippers, but the analysis needs to also allow other possible interactions including the possibility that the loss of support for competitive options means shippers end up paying higher rates because competition across the gateway (i.e., between eastern carriers or between western carriers) is diminished.

93. In order to predict the effect of a merger that is not yet consummated, the analysis compares rates in corridors that reflect pre-merger competitive conditions with rates in other corridors that reflect the proposed merger's transformation of UP-NS interconnects into UP-NS single-lines.[68] Doing this econometrically and isolating the comparison of the change in competitive structure that will happen if UP and NS merge allows the comparison across corridors to reliably estimate the effect of this change in competitive conditions.

94. Although every corridor is different, the raw data show that shippers tend to pay {{REDACTED}} in corridors that resemble the post-merger competitive environment

[67] This empirical exercise contrasts with Dr. Israel's analysis which, as I explain in Section 4.3.2 and Appendix 12.1, is fundamentally flawed.

[68] Specifically, the corridors are normalized using a set of control variables identified by Dr. Israel to make them comparable, with the exception that the structure of competition changes.

than in corridors that resemble the pre-merger competitive environment. Exhibit 18 compares average revenue per carload-mile in corridors with competitive structures that will be transformed by the merger. I focus on two situations in which competition on one end of a movement may be affected by a railroad's incentives arising from its presence at the other end: first, corridors that are sole-served at one end and served by two railroads at the other ("Scenario A"); and second, corridors served by two railroads at both ends ("Scenario B").[69] For each situation, the exhibit compares corridors that resemble the relevant "pre-merger" and "post-merger" competitive structures. On the left, it compares corridors in Scenario A (sole-served at one end and served by two railroads at the other), examining the difference associated with whether the sole-serving railroad can also provide single-line service from the two-railroad end. On the right, it compares corridors in Scenario B (served by two railroads at both ends), examining the difference associated with whether one of those railroads can provide single-line service across the corridor.[70]

[69] For a given origin-destination pair, I consider an origin (destination) sole-served if only one Class I railroad originates (terminates) movements and consider it dual-served if two Class I railroads originate (terminate) movements.

[70] No corridor can be observed both before and after the proposed merger. This analysis approximates that comparison using corridors that today either require interline service or already support single-line service, holding constant the number of railroads capable of serving each end.

Exhibit 18
Shippers pay** {{REDACTED}} **in similar scenarios when a railroad on one side of a gateway has a stake in the other side

{{REDACTED

}}

95. The presence of a single-line service corresponds with shippers paying higher rates in both scenarios. In Scenario A, when a sole-serving railroad faces two independent railroads on the other side of a gateway for a movement, shippers have an average rate of {{REDACTED}} per carload-mile compared to {{REDACTED}} if that sole-serving railroad has a single-line option for the other side. In Scenario B, movements where four railroads all compete to get a portion of the shipper's revenue on an interconnecting move have an average rate of {{REDACTED}} per carload-mile compared to {{REDACTED}} if one of the potential pairings in that scenario were replaced with a single-line.

96. Exhibit 18 shows that rates are higher in corridors with competitive structures resembling those after the proposed merger, without controlling for differences in route or commodity characteristics. To test whether this finding is robust to accounting for those differences, I perform the same comparison using a regression analysis that controls for observable characteristics that may also affect rates. This allows me to assess whether the relationship persists when comparing otherwise similar movements, rather than reflecting differences in the routes or commodities being compared.[71]

97. In Appendix 12.2, I detail this analysis using two approaches: (1) one that utilizes Dr. Israel's regression (comparing single-line and interline rates leaving his data

[71] Jeffrey M. Wooldridge, *Introductory Econometrics: A Modern Approach* (6th ed.), (Boston, MA: Cengage Learning, 2016), p. 67 ("The power of multiple regression analysis is that it provides this ceteris paribus interpretation even though the data have not been collected in a ceteris paribus fashion.").

handling and regression controls unchanged) but compares rates for different competitive structures;[72] (2) and one that further corrects for flaws in his empirical approach and uses the Six-Railroad data to address deficiencies in his data.[73] In the second approach, I also replace Dr. Israel's assumption that a railroad's mere presence makes it an equally effective competitor with a measure more consistent with The Board's past practice: counting railroads based on whether shippers actually use them for the relevant movement. This measure better reflects the reality that not every theoretically available route is practical and that a railroad's rights at a location may not permit every move. It also produces a conservative estimate of foreclosure effects because it necessarily treats any instance where a railroad is not chosen by any of the shippers as the shippers' choice, even though that can also happen because of complete foreclosure by another railroad. Even under this more conservative approach, I find that shippers pay higher rates where a railroad can offer single-line service and has an incentive to weaken competing interline options.

98. As shown in Exhibit 19 below, the two regression analyses confirm the same pattern after controlling for observable shipment and corridor characteristics. Using the second approach correcting for multiple flaws in Dr. Israel's regression, I estimate that: (i) in Scenario A where shippers are sole-served at one end and served by two railroads at the other, rates are 7% higher when one of the potential interline pairings is a single-line, and (ii) in Scenario B where shippers are served by two railroads at both ends,

[72] Israel Second Errata VS, Figure 10, and Section 12.2.1.

[73] See Section 12.2.2.

rates are 15% higher when one of the potential interline pairings is a single-line.[74] These estimates are directionally consistent with the raw data comparisons of Exhibit 18.[75] When leaving Dr. Israel's data handling and regression controls unchanged in a generalized form of Dr. Israel's regression, the estimated effects are directionally similar for both scenarios, 9% and 8%, respectively.[76] The estimates from both regression approaches are all statistically significant, but not necessarily significantly different from one another.[77] Taking the mid-point across these estimated price effects, 11% higher rates, implies that shippers will pay around {{REDACTED }} more each year as a result of UP-NS's incentive to foreclose competition with their current interline partners.[78]

[74] See Exhibit 59.

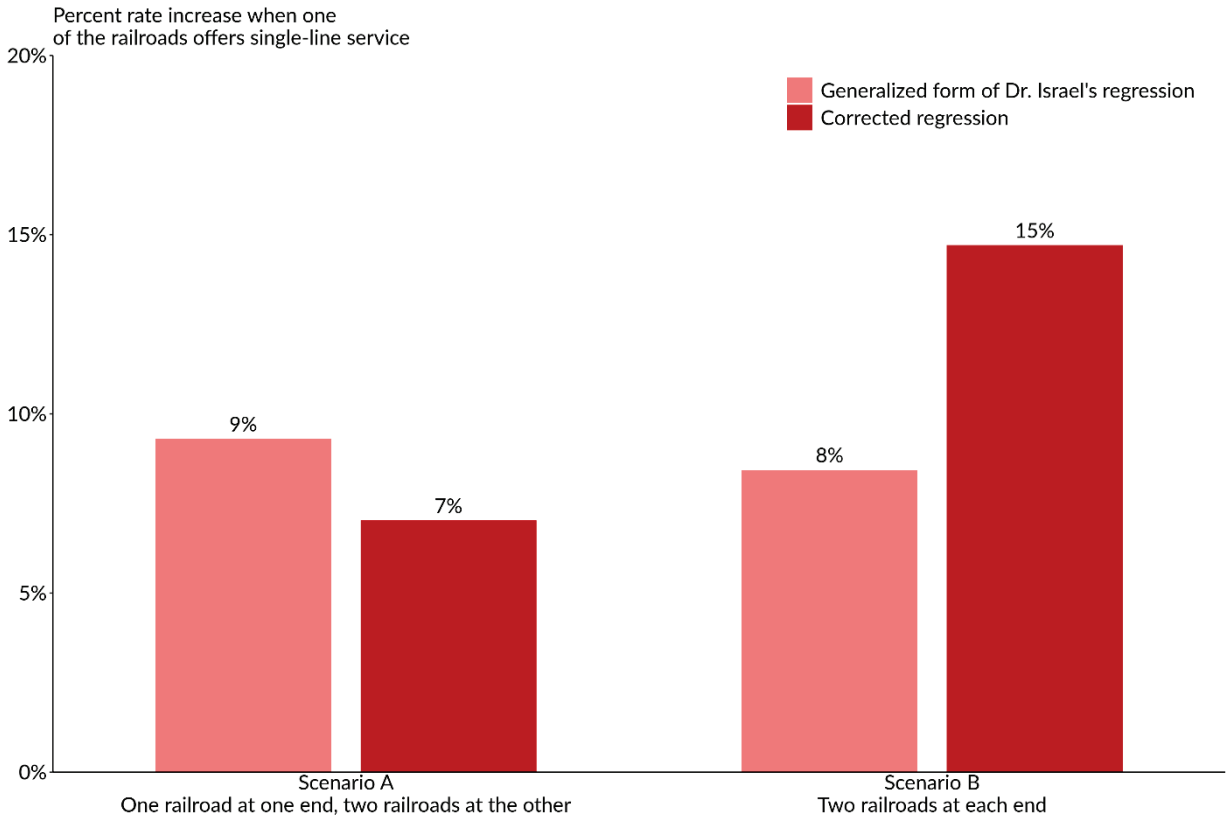
[75] See Exhibit 59.

[76] See Exhibit 57. I focus on movements from UP and NS (i.e., the "UP↔NS Traffic" sample in Dr. Israel's Figure 10), which focuses on traffic most likely to be affected by the proposed merger.

[77] See Exhibit 57 and Exhibit 59.

[78] I apply the price effects on corridors that contain UP-NS interline traffic and have competitive structures of either (1) sole-served at one end and served by two railroads at the other or (2) served by two railroads at both ends. The 2024 revenue on these corridors is around {{REDACTED }}. See workpaper 4-3.

Exhibit 19
Regression analysis confirms that shippers pay higher rates where a carrier has the incentive and ability to favor their own single-line service



Source: Six-Railroad Tapes Data; Israel's Second Errata Backup (Tapes)
Note: This figure shows the percentage increase in rates measured as revenue per carload-mile in corridors that have the competitive structures that resemble the proposed merger. The light red bars show the percent increase based on a modified version of the regression used in Dr. Israel's Figure 10. See Appendix 12.2.1 and Exhibit 57 for details. The dark red bars show the percent increase based on a corrected version of Dr. Israel's regression. See Appendix 12.1.2 and Exhibit 59. All the percent effects are statistically significant at the 95% confidence level.

99. Because my analyses only account for changes to the combined UP-NS's incentives to cooperate with interline partners within each individual corridor, the estimated potential harm to shippers from foreclosed competition of {{REDACTED }} is conservative. The merger, however, would likely weaken the combined UP-NS's incentive to continue supporting the investments, institutions, and operational efforts

that facilitate East-West moves in general, as evidenced, for example, in NS's anticipation of {{REDACTED }}.[79] These additional incentives would yield additional harm to shippers by further limiting shipper options and lowering service quality.

100. Rates are higher when there is an incentive to impair competition due to the presence of a single-line. That is seen in the raw data and both empirical specifications. Moreover, it is seen whether UP-NS would have a monopoly on one end or would face one other railroad. All show the same relationship: shippers pay higher rates when a railroad operates on both sides of a gateway and has an incentive to steer traffic away from competing interline services onto its own single-line service. By contrast, shippers pay lower rates where the railroads serving one side have no ownership interest in those serving the other and therefore no incentive to favor one interline partner over another to protect their own single-line service.

4.3. Applicants ignore these harms from the proposed merger and present flawed analyses to suggest rates will go down

101. In this section, I explore Applicants' failure to engage with the vertical competitive harms from the proposed merger and identify at least four flaws in their

[79] Deposition of Michael R. McClellan (Chief Strategy Officer, Norfolk Southern Corporation), October 9, 2026, Exhibit 409, NS_00482221–26 at NS_00482223 ({{REDACTED }}).

analysis that contribute to this failure. First, I explain how Dr. Israel's "one-lump" theory assumes away the bargaining constraints that allow shippers to benefit from this competition today (Section 4.3.1). Second, I demonstrate that Dr. Israel's flawed single-line/interline rate comparison does not measure the merger's effect on those constraints (Section 4.3.2). {{REDACTED }} with a {{REDACTED }}, and the merger is more likely to mean increased rates on NS traffic (Section 4.3.3). Finally, I explain that Applicants' claimed truck diversions are unlikely to materialize and why UP is unlikely to suddenly adopt the rate-cutting strategy those projections imply (Section 4.3.4).

4.3.1. Dr. Israel's one monopoly-rent theory conflicts with the evidence and the realities of the railroad industry

102. Dr. Israel cautions that "basing policy and enforcement decisions on what might be possible *in theory* is a recipe for welfare-harming decisions."[80] Yet, his foreclosure analysis rests almost entirely on theory. He dismisses any prospect of competitive harm for all interline traffic other than the rare movements subject to tariff rates—and even in that context, his empirical analysis is ill conceived, as I discuss below. The premise built into the one monopoly-rent or "one-lump" theory is one that The Board has rejected as a poor fit for the railroad industry, that UP itself has argued does not fit the

[80] Israel Second Errata VS, ¶ 14.

industry,[81] and Dr. Israel's own analysis repeatedly shows to be inconsistent with railroad realities.

103. Fundamentally, Dr. Israel oversimplifies railroad pricing in ways that assume away competition. For example, he assumes that railroads serving the endpoints of a movement do not compete over which railroad will receive the longer haul[82]—which I explain further in Section 6.1. He also assumes that every movement is negotiated independently, disregarding shippers' ability under standard principles of bargaining theory to use a bundle of movements to obtain lower rates on particular movements—which I go into more detail in Section 5.1. That assumption also precludes the possibility that the merger would reverse that dynamic by making shippers more dependent on UP-NS across their bundle of locations and undermining the bargaining power those shippers have used to generate competition between UP and NS across

[81] Decision No. 35, "Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern, et al.," Docket No. FD 36500, March 14, 2023, p. 43–44 ("UP disputes Applicants' contention that the proposed Transaction would not enhance Applicants' incentive or ability to foreclose. … UP notes that modern economic analysis indicates that when an upstream monopolist and downstream rivals lack full information about each other's costs and prices, the monopolist may be unable to extract the full 'lump,' allowing the customer to retain a surplus; contrary to the one-lump presumption, a merger in such a market would increase the combined firm's ability and incentive to foreclose efficient interline options.").

[82] Deposition of Dr. Mark A. Israel, October 15, 2026, ("Israel Deposition"), pp. 241:16–242:10 ("Q. And after the merger, UP and NS would carry the whole movement in these scenarios and would no longer compete with each other over the interchange point with the revenue split; is that right? … A. Again, I'm not sure I would describe it as a negotiation that's happening now. It's separate from what I, as an economist, would call 'competition.' And I'm not sure I say they will carry the haul. It depends on what the nature of the route you're describing, if they face competition from others who might carry it. But to the extent it's carried by UP and NS after the merger, they would carry it as a single line. There wouldn't be any discussion of interchange. Well, it would be a single line.").

those locations. As I discuss in Sections 5 and 6, shippers do benefit from precisely these forms of competition, which Applicants' analysis leaves out.

104. In Dr. Israel's simplified model of railroad pricing, a railroad sole-serving one side of a gateway can always capture any benefit that a shipper might otherwise obtain from competition on the other side (or elsewhere).[83] His model thus incorporates the one-monopoly-rent, or "one-lump," premise that The Board has considered before and determined "does not justify a presumption that a vertical combination will not result in competitive harm."[84] That premise equates a railroad's ability to foreclose competition on one side of a gateway with a perfect ability to extract all of the shipper's potential gains from competition on the other side of the gateway. If the premise was true, the sole-serving railroad would have no incentive to foreclose competition, it would already earn all the available profit. And, because the theory rules out any form of foreclosure by assumption, it only considers vertical integration as possibly neutral or a benefit to shippers.

[83] Israel Second Errata VS, ¶ 41 ("A long-standing response to these concerns has been that the sole-serving carrier can charge the monopoly rate for the movement and earn the monopoly profit *prior to a merger*. If so, then the sole-serving carrier is already earning all the profits possible and cannot increase them by foreclosing an unintegrated carrier, meaning there should be no concern about foreclosure due to the merger").

[84] Decision No. 35, "Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern, et al.," Docket No. FD 36500, March 14, 2023, p. 47 ("However, while merger applicants are free to argue that the facts in an individual proceeding warrant application of the one-lump theory, the Board concludes that the one-lump theory does not justify a presumption that a vertical combination will not result in competitive harm.").

105. The "one-lump" premise also explains why Dr. Israel concludes that separate, interlining railroads may produce a rate above the monopoly level through successive markups, his "double moral hazard."[85] The idea is a little convoluted. The sole-serving railroad is presumed to get the full "one-lump," but at the same time, this "double moral hazard" version of the theory assumes that the sole-serving railroad *cannot* extract all the profit of railroads on the other side. That is, the theory presumes it can take every dollar of rate decrease offered by the interline partner from the shipper's hands, but somehow does not have that same assumed power over its rail partner who offered the rate decrease to secure the business at a lower profit for itself in the first place. The result of this chain of assumptions is that the total profit on the move is the sum of both the one lump to the sole-serving side and this positive profit of the competitive-side partner. To the economic theory, that is too much profit. It would mean prices are too high, even for a monopolist on the route, and perhaps investment is too low. That is the chain of logic behind Dr. Israel's counterfactual claim that "only"

[85] Israel Second Errata VS, ¶¶ 100–101 ("The theory of incentives described above (i.e., double moral hazard) is powerful because it is quite general. Specific examples of the way double moral hazard can play out in practice—here, when complementary rail networks are operated by separate railroads—include pricing inefficiencies (referred to by economists as 'double marginalization'), suboptimal operational and scheduling decisions (i.e., failing to consider the benefits to the complementary network), and insufficient investment. One specific example of an inefficiency created by separate networks is double marginalization. Double marginalization occurs because each railroad raises its price to maximize its own profits without regard for the negative impact of its price on the sales of its partner on joint movements.").

integration can eliminate that excess—getting rid of the competitive-side profit gets the theoretical solution of "only" the monopoly profit.[86]

106. In reality, there is no excess. Instead of single-line service driving prices down by eliminating this hypothesized excess, it drives prices up by allowing foreclosure of the competition directly (as I showed in Section 4.2). And, unintegrated railroads can achieve similar competitive effectiveness to a single-line rather than being inherently stymied by the difficulty of contracting (as I will discuss below in Section 4.4).[87] Dr. Israel's theoretical predictions of merger benefits are based on a convoluted chain of assumptions that are inconsistent with reality.

107. The Board has previously determined that these assumptions (and the overly-simplistic notion of railroad rate bargaining they are based on) do not provide a sound basis for evaluating railroad mergers, and Dr. Israel offers no reason for The Board to change that conclusion. To the contrary, his theoretical models repeatedly produce predictions that conflict with actual railroad pricing, validating The Board's concern.

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[86] Israel Second Errata VS, ¶ 99 ("Bringing the two railroads under common ownership and control is the only solution that corrects the railroads' suboptimal incentives. Thus, there is no question that the merger's benefits are, in fact, the result of the merger itself. They cannot be obtained by other means").

[87] Israel Second Errata VS, ¶ 97 ("Nor can the problem be solved with sufficiently rich contracts. In practice, it is impossible to write a complete contingent contract that specifies how the two railroads must manage their interline business on a day-to-day basis. Such a contract would require dictating decisions or rules in every state of the world: every service choice, every investment decision, every price, and so on, accounting for every possible outcome of everything that is uncertain. They would have to say how each railroad should operate under any scheduling circumstance, what investment decisions should be made under all operational and economic conditions, how prices should be set under all demand scenarios, and so on.").

108. Although Dr. Israel meticulously avoids the term "one-lump" in his statement, and Applicants deny invoking it as a legal presumption,[88] Dr. Israel acknowledged his reliance on its logic in deposition,[89] and it is explicit in his statement:

> "For these theories to hold, [i.e., for there to be any foreclosure issue to analyze] it would have to be the case that the carrier that solely serves one segment of the route can earn greater profits by merging with a carrier on the competitive segment of the route and foreclosing the remaining unintegrated carrier(s). A long-standing response to these concerns has been that the sole-serving carrier can charge the monopoly rate for the movement and earn the monopoly profit *prior to a merger*. If so, then the sole-serving carrier is already earning all the profits possible and cannot increase them by foreclosing an unintegrated carrier, meaning there should be no concern about foreclosure due to the merger."[90]

109. Dr. Israel thus assumes a model that has no room for foreclosure and does not account for the more complicated ways in which shippers negotiate in practice.[91] Those

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[88] Applicants' Response Regarding Their Prima Facie Case, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, August 26, 2026 (Public) ("Applicants' Prima Facie Response"), p. 16 ("Neither Applicants nor Dr. Israel rely on or argue for the application of a rebuttable presumption that the proposed transaction will result in no vertical foreclosure because it is end-to-end.").

[89] Israel Deposition, pp. 210:20–211:14 ("Q. Well, there's various things that can be going on in the marketplace that constrain the sole-serving carrier from charging the monopoly price. A. If it's a monopolist, it's – if it's a sole-served carrier, then it's a sole-served carrier. It doesn't face competition … So the answer to your question is, nothing in economics that I know of says that the way in which – the one-lump theory, as broken down, has been on the side of the sole-served carrier. I have not seen that. I don't know any economist who says that they're rejecting the one-lump theory because they're saying the sole-served carrier might not set the monopoly price.").

[90] Israel Second Errata VS, ¶ 41.

[91] Israel Deposition, pp. 210:20–212:15 ("Q. Well, there's various things that can be going on in the marketplace that constrain the sole-serving carrier from charging the monopoly price. … A. So I know of nothing in economics that would say the sole-served carrier is not going to set the monopoly price, and I certainly don't know anything about the breakdowns that have happened in the one-lump theory that are about some reason to believe the sole-served carrier doesn't set the monopolist price.

complications create mechanisms through which shippers can develop bargaining leverage and obtain the benefits of competition even when a monopolist serves part of the movement. His argument also ignores modern frameworks that consider critical non-price dimensions of competition.[92] Indeed, UP itself has previously acknowledged before The Board that modern economic analysis shows that a monopolist may not be able to extract the full monopoly rent when the upstream monopolist and downstream rivals lack complete information about one another's costs and prices. UP also acknowledged that its witness' models showed that vertical mergers can harm some shippers.[93]

110. Despite Applicants' prior positions before The Board, Dr. Israel claims that "standard theories of foreclosure. . . rely on pre-merger rates being below the level that the vertically merged carrier would charge" and on "there being something preventing the vertically dis-integrated railroad from raising prices pre-merger, even though it

… Q. In that long answer there, you are equating a sole-served carrier with monopolists in a way that makes it seem kind of like a truism. … A. A sole-served carrier faces no competition, direct competition, on the route when it sets the price.").

[92] U.S. Department of Justice and the Federal Trade Commission, "Merger Guidelines," December 18, 2023, p. 1 ("Mergers can lessen competition when they diminish competitive constraints, reduce the number or attractiveness of alternatives available to trading partners, or reduce the intensity with which market participants compete.").

[93] Decision No. 35, "Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern, et al.," Docket No. FD 36500, March 14, 2023, p. 44 ("UP notes that modern economic analysis indicates that when an upstream monopolist and downstream rivals lack full information about each other's costs and prices, the monopolist may be unable to extract the full 'lump,' allowing the customer to retain a surplus; contrary to the one-lump presumption, a merger in such a market would increase the combined firm's ability and incentive to foreclose efficient interline options. UP states that its witness's models find that vertical mergers can benefit some shippers and harm others, although the models do not attempt to predict the likelihood of any particular outcome.").

provides sole service on one end."[94] He could have tested those criteria directly—and thus tested the premise he uses to dismiss vertical foreclosure concerns: that nothing prevents the sole-serving railroad from extracting the full monopoly rent before the merger. As I showed in Section 4.2.2, applying Dr. Israel's own data handling and regression framework demonstrates that this premise is wrong: premerger rates are below the level that the vertically merged UP-NS would charge.

111. Instead, Dr. Israel constructs a regression that analyzes rates in corridors that are sole-served on one end and competitively served on the other end. He compares rates that are quoted from the monopolist against rates that are quoted from the competitive end. That regression does not test whether there is "one-lump" (i.e., one monopoly profit)—or, more to the point, whether prices are higher or lower after a merger introduces the possibility of foreclosing competition.[95] Instead, it tests a straw-man assumption that is neither necessary nor sufficient for Dr. Israel's conclusion that prices are already fully monopolized (or worse). Dr. Israel's test of whether rates are higher when the monopolist, rather than one of the competing railroads, sets the through rate addresses neither the criterion Dr. Israel identifies nor his underlying theory. In particular, it does not identify whether or how rates will change when the monopolist

[94] Israel Second Errata VS, ¶ 17.

[95] Israel Deposition, pp. 208:20–209:15 ("Q. You're assuming that the longstanding response to such concerns in this situation folks have referred to as the 'one-lump theory' holds in those situations? … A. This result has nothing to do with the one-lump theory. The one-lump theory says that there is no possibility of a price below the integrated price if there's a sole-served carrier anywhere. I'm not assuming that. I'm testing that. The one-lump theory applies everywhere. It says it can't happen. I just talked about how I tested that. This result that a sole-served carrier sets the monopoly price is the result of, in all of economics, that says monopolists set monopoly prices.").

merges with one of the railroads on the competitive end. If, as I found, the monopolist would raise rates after such a merger, Dr. Israel's regression could suggest that his assumption is correct, even though it is not. That is because the competitiveness of the shipper's rate does not necessarily depend on which railroad quotes the through rate. It depends on how shippers are currently keeping their rates lower than the integrated monopolist would set (which may have nothing to do with through rates but certainly need not depend on which railroad set that rate). It is therefore unsurprising that Dr. Israel's "test" of his straw-man assumption finds nothing.[96]

112. Ultimately, Dr. Israel's analysis sidesteps the possibility of foreclosure and harm to shippers. He assumes away the features of real-world negotiations that allow shippers to benefit from competition on one side of a gateway before the merger. He then fails to address how a combined UP-NS could harm shippers by foreclosing that existing competition.[97] The proposed combination would not only curtail competition where UP-NS can foreclose competing railroads; it would also give UP-NS greater

[96] Israel Second Errata VS, Figure 7; Israel Deposition p. 201:10–16 ("[Q.] Given that shippers can choose to solicit rates from either the sole-serving railroad or dual-serving railroads, then the rates they receive from either end, all else equal, should, likewise, not be materially different, correct? A. Again, all else equal is an awful lot of stuff. But if literally everything else in the world was equal, then I think I agree with that.").

[97] Applicants also incorrectly claim that Dr. Israel's "independent routes analysis" addressed concerns related to vertical foreclosure. As discussed in Appendix 12.4.1, this analysis is not designed to, and is incapable of, analyzing vertical foreclosure. See Applicants' Prima Facie Response, p. 16 ("Dr. Israel directly addressed potential harms flowing from vertical foreclosure highlighted in comments filed by CPKC on Applicants' original application. He used a counting algorithm deployed in the *CP/KCS* proceeding to identify all independent routings that create competition that could be diminished by the UP/NS merger.").

power to defeat the strategies that shippers currently use to bring competitive pressure to bear on UP and NS.

4.3.2. Dr. Israel's claim that single-line rates are lower than interline rates is a product of his flawed data work

113. Dr. Israel claims that single-line service is 15%–29 % cheaper than interline service, yet his own regression data show that single-line service is, on average, more expensive. His regression reverses that observed relationship through a flawed design that does not adequately account for differences among the movements he compares. More fundamentally, his comparison does not address how the proposed merger would change competitive incentives and the options available to shippers.

114. Comparing single-line and interline rates does not, by itself, measure the proposed merger's likely effect. The merger would do more than convert an interline service into a single-line service. It would change the railroads' incentives to work with interline partners and the competitive options available to shippers, potentially affecting rates for both single-line and interline services. Dr. Israel's regression does not account for that change in competitive structure.

115. Setting aside this conceptual flaw, a simple rate comparison using Dr. Israel's own regression sample contradicts his finding. Without using Dr. Israel's regression framework, the Tapes data Dr. Israel analyzes show that single-line services are on average higher priced than interline services. Exhibit 20 shows the average single-line

and interline rates in the samples underlying Dr. Israel's Figure 10. The first set of bars shows the rates he compares in the "All Simple Interline Traffic" sample (Column 1) of his Figure 10. In this sample, UP or NS single-lines are on average {{REDACTED}} per carload-mile, through rates involving UP or NS are on average {{REDACTED}} per carload-mile, and Rule 11 rates quoted by UP or NS are on average {{REDACTED}} per carload-mile. The other two samples show the same pattern: single-line rates are higher than interline rates. These averages do not control for differences in shipment characteristics, but they establish that Dr. Israel's claimed single-line discount is a product of his regression specification, rather than a relationship apparent in his underlying data.

Exhibit 20
Dr. Israel's regression sample shows that interlines are cheaper than single-lines

{{REDACTED

}}

116. Dr. Israel's regression that flips the raw data relationship is, however, based on a flawed design. Dr. Israel's regression fails to compare movements with sufficiently similar characteristics. While he claims that his regression controls "ensure that the

measured price differences are the result of interlining and not due to differences in shipment characteristics or costs,"[98] they fail to account for the inherent differences in characteristics or costs across movements in different parts of the country.

117. Specifically, in Dr. Israel's sample, single-line and interline movements of the same commodity and similar length run in different parts of the country. His distance control (which does not account for where that distance is covered) forces these apples-to-oranges comparisons and is the control that reverses the relationship in the data, as I show in Appendix 12.1.1.

118. Exhibit 21 illustrates this problem using plastics shipments carried between 1,950 and 2,050 miles in Dr. Israel's sample. The yellow lines indicate single-line movements between origins and destinations, and the blue lines indicate interline movements between origins and destinations.

[98] Israel Second Errata VS, ¶ 112.

Exhibit 21
Plastics shipments of 2,000 miles in Dr. Israel's comparisons of interline and single-line rates span very different geographic areas

{{{REDACTED

}}}

119. The exhibit shows clear differences in shipment characteristics across the map. There are no single-line movements to, from, or within the East. All single-line movements are within the West where, for example, there is less congestion. By

contrast, interline movements are predominantly between the Gulf Coast and the Mid-Atlantic and Northeast. Even if these movements were single-line movements, factors such as more congestion can tend to increase costs associated with movements in the East. Dr. Israel's controls do not account for these differences. As a result, he assumes that the only difference in rates between these movements is the fact that one is a single-line and the other is an interline, incorrectly attributing geographic cost differences to markups for interline services.

120. Correcting the flaws in Dr. Israel's regression also produces findings contrary to his claimed single-line benefit. As discussed in Section 4.2.2, my corrected analyses show that shippers pay higher rates in corridors where a carrier can offer single-line service and has an incentive to weaken competing interline options. That finding persists in the generalized form of Dr. Israel's regression where I leave Dr. Israel's flawed data handling and regression controls unchanged, but I replace his comparison of single-line and interline rates in the abstract with a comparison of rates across corridors representing the competitive situation before and after the proposed merger introduces single-line service and all the incentives that go with that transformation.[99]

121. Dr. Israel's regression also suffers from other conceptual and implementation errors in his data processing, which I further explain in Appendix 12.1.2. Taken together, his claimed single-line discount therefore provides no reliable basis for predicting lower post-merger rates. His own raw data show higher average single-line

[99] See Exhibit 57 and Appendix 12.2.1 for details.

rates, and my analyses that account for the merger's changes to competitive structure likewise point toward higher rates for shippers.

4.3.3. UP's approach to pricing indicates that the merged firm is more likely to raise rates on NS traffic rather than lower rates on any traffic

122. Contrary to Applicants' experts' claim that Applicants will lower rates to attract traffic,[100] UP is unlikely to pursue a lower price strategy. Evidence in the record indicates that UP sets higher rates and has higher margins than other Class I railroads. Such a strategy reflects UP's extensive network and is consistent with the ability of a railroad to better resist or avoid altogether competitive pressure when more shippers are dependent on that railroad. Dr. Israel's own pricing analysis shows that UP charges higher rates than other railroads, including NS, even after controlling for the other factors he identifies as affecting rates. Consequently, not only are Applicants' claims that they will lower rates to attract traffic post-merger specious, there is also good reason to expect that the merged firm will raise rates, particularly on newly-acquired NS routes.

[100] Israel Second Errata VS, ¶ 130 ("[A.] direct demonstration of the benefits generated by the merger comes from the fact that the merged carrier's single-line service is expected to attract business from its competitors. This follows from the law of demand—a railroad offering lower prices and/or better service, which together mean lower quality-adjusted prices, will make sales at the expense of its competitors.").

123. UP has been the largest Class I railroad, with the highest annual revenue, since at least 2023.[101] UP generates this high revenue despite carrying fewer ton-miles than BNSF.[102] That is to say, across its large volume of business, UP is particularly effective at preserving its profit margins and, according to its own documents, its {{REDACTED }}[103] UP has an {{REDACTED }}[104] In addition, UP also has indicated a {{REDACTED }}[105] Despite

[101] Oliver Wyman, "North American Freight Rail Performance: Q1 2025 Financial and Operations Review," May 2025, available at https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2025/may/q1-2025-class-I-railroad-performance.pdf ("North American Freight Rail Performance Q1 2025, Oliver Wyman"), p. 6.

[102] Industry reports indicate that BNSF has had the largest revenue ton-miles since 2018. See North American Freight Rail Performance Q1 2025, Oliver Wyman, p. 18.

[103] See {{REDACTED }} UP_0209007–12 at UP_0209009.

[104] {{REDACTED }} See {{REDACTED }} UP_1626615–23 at UP_1626615 ({{REDACTED }}) (emphasis removed). See also {{REDACTED }} UP_0208474–505 at UP_0208480–84 ({{REDACTED }}) (emphasis added); {{REDACTED }} UP_0282009–12 at UP_0282011 ({{REDACTED }}); {{REDACTED }} UP_1535760–63 at UP_1535763 ({{REDACTED }}).

[105] See {{REDACTED }} UP_0694815–985 at UP_0694858 ({{REDACTED }}); {{REDACTED }} UP_1641198–200 at UP_1641198–9 {{REDACTED }}).

{{REDACTED }}[106] UP has been able to {{REDACTED }}[107] which suggests it generally lacks competition and enjoys substantial market power. As the largest railroad by revenue,[108] UP has multiple ways of leveraging its geographic network and size. The market power over shippers that it has achieved in this way is evident in its history.

a. A recent analysis by Oliver Wyman indicates that UP has the highest operating income of the Class I railroads ($2.371 billion) and the highest operating margin (39%). NS is the railroad with the next highest margin, at 38% and an operating income of $1.146 billion.[109]

b. Since 2010, UP has been brought before the STB from shippers seeking rate relief more than other Class I railroads including if one compares them on a case-per-carload basis to allow for UP's greater volume of traffic.[110]

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[106] See {{REDACTED }} UP_0890262–84 at UP_0890276 ({{REDACTED }}).

[107] See {{REDACTED }} UP_0282009–12 at UP_0282011 {{REDACTED }}

[108] North American Freight Rail Performance Q1 2025, Oliver Wyman, p. 6.

[109] North American Freight Rail Performance Q1 2025, Oliver Wyman, p. 20, where NS's 2025 Q1 operating income was $1.146 billion compared to BNSF's $1.817 billion. See also workpaper 4-4.

[110] Surface Transportation Board, "Quarterly Report of Rate Complaint Cases," Q2 2025, available at https://www.stb.gov/wp-content/uploads/2Q-Report-on-Rate-Case-Review-Metrics-2025.pdf. UP was involved in 8 cases, CSXT 5 cases, BNSF 4 cases, and NS 3 cases. Based on a Q1 2025 quarterly carload volume of 2,097 thousand for UP, 2,357 thousand for BNSF, 1,518 thousand for CSXT and

c. UP is also much more likely to reduce service quality—in 2022 UP issued {{REDACTED }}[111] {{REDACTED }}[112]

124. Evidence from both UP's strategy and economic facts from the record are clear: as {{REDACTED }}[113] confirmation that {{REDACTED }}, which is to say that {{REDACTED }}

125. {{REDACTED }} For example, in 2019,{{REDACTED

1,740 thousand for NS, that corresponds to an approximate case-per-thousand-carloads of 0.38% for UP, 0.17% for BNSF, 0.33% for CSXT, and 0.17% for NS. For Q1 2025 carloads see North American Freight Rail Performance Q1 2025, Oliver Wyman, p. 7. In the recently concluded Omaha Public Power v. Union Pacific Railroad Company, Omaha Public Power complained that "UP's charge is excessive and unreasonable." See Complaint, "Omaha Public Power District v. Union Pacific Railroad Company," Docket No. NOR 42173, July 22, 2022. This case settled in November 2023.

[111] See {{REDACTED }} NS_00569895–923 at NS_00569918.

[112] See {{REDACTED }} NS_00205551–71 at NS_00205553 ({{REDACTED }}).

[113] See Deposition of David Welch (General Director of Corporate Strategy, Union Pacific Railroad Company), July 29, 2026, Exhibit 10, p. 29.

}}[114] Additionally, {{REDACTED

}}[115]

126. UP has also been aggressive in implementing precision scheduled railroading ("PSR") to an extent that imposes more cost (in the form of decreased service) to shippers. PSR is an operational strategy focused on reducing railroads' costs and improving margins through greater asset utilization. According to the U.S. Government Accountability Office, while PSR is not defined by a prescribed set of operational changes, stakeholders—including railroads, shippers, and employee unions—associate it with staff reductions, longer trains, and reductions in assets.[116] UP executives frame PSR as being "unequivocally … a benefit to the railroad."[117] PSR is focused on schedule predictability and less idling time,[118] and it achieves these reduced congestion effects with reduced customer services and commitments.[119] {{REDACTED

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[114] {{REDACTED
}} NS_00205551–71 at NS_00205551 ({{REDACTED
}}).

[115] In {{REDACTED}} documents, NS notes the need to {{REDACTED
}}. See {{REDACTED
}} NS_00205551–71 at NS_00205553.

[116] U.S. Government Accountability Office, "Freight Rail: Information on Precision-Scheduled Railroading," GAO-23-105420, December 2022 available at https://www.gao.gov/assets/gao-23-105420.pdf.

[117] "UP Defends Precision Scheduled Railroading Amid Service Struggles," *FreightWaves,* April 21, 2022, available at https://www.freightwaves.com/news/up-defends-precision-scheduled-railroading-amid-service-struggles.

[118] Carl Van Dyke, "The Operational Nuts and Bolts of Precision Scheduled Railroading," *Federal Highway Administration, Webinar*, March 2020, available at https://www.fhwa.dot.gov/Planning/freight_planning/talking_freight/march_2020/talkingfreight3_18_20cvd.pdf ("FHWA Webinar, March 2020"), p. 14.

[119] FHWA Webinar, March 2020, p. 15 ("Fewer customer specific services ... do not run one-off unit trains … No single customer commitments.").

}}[120] {{REDACTED

}}[121] UP's longstanding commitment to aggressively implement PSR for its own gain is at odds with the suggestion that it would seek out lower-margin traffic.

127. {{REDACTED

}}[122] To the extent that UP's {{REDACTED }} will be applied to NS movements, that is another form in which the merger would harm shippers as lowering the quality of their experience is effectively raising the price of what they get from the railroad. It also represents a greater willingness to forgo lower-margin traffic to raise the profit that can be extracted from the remaining NS volumes.

128. As discussed in earlier sections, a combined UP-NS will have unprecedented scale and scope to apply UP's pricing approach and existing market power to the NS system and its shippers. The likely effect is not just higher rates of existing interlines,

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[120] {{REDACTED }} UP_1858492–6 at UP_1858494 {{REDACTED

}}.

[121] {{REDACTED

}} NS_00130381–85 at NS_00130382 and NS_00130385.

[122] {{REDACTED }} NS_00205551–71 at NS_00205559.

where a combined UP-NS can reduce options or foreclose competition from rivals, but higher rates for shippers using NS single-lines and NS interlines that don't involve UP.

129. Applicants' experts do not account for or discuss UP's pricing approach borne out of its large scale and scope, and the implications of applying that approach to existing NS routes in their analysis of the potential effects of the merger. As the merger will give UP additional market power that it can exploit against its own existing shippers as well as the acquired NS shippers, the likely effect of the merger is even higher UP pricing than is estimated in the current data. Nevertheless, the effect of simply applying the current UP rate premium to existing NS traffic would be harm to shippers.

130. Although not expressly discussed in his testimony for Applicants, Dr. Israel quantified this effect. He found that UP prices significantly higher than other railroads for moves he deems otherwise comparable. Exhibit 22 shows Dr. Israel's estimate of UP's rate premium—the additional cost to a shipper of their movement if UP is involved in the movement compared to if NS were involved in the movement—after he accounts for other factors which could determine the price. As discussed further in Section 12.1.4, Dr. Israel specifically tests the impact of UP's involvement on prices, but fails to interpret his model holistically, and does not acknowledge the impact of UP's high-price regime on existing NS routes.

Exhibit 22
Israel Figure 10 – UP premium on rates paid over NS

{{REDACTED

}}

131. Dr. Israel's results indicate that, after controlling for other factors, if UP is involved in a movement, shippers' rates increase by {{REDACTED}} relative to similar movements that involve NS. When he restricts his analysis to only UP-NS traffic, Dr. Israel finds that UP charges a rate {{REDACTED}} higher than NS on

purportedly comparable movements, according to his regression.[123] The {{REDACTED}} premium is {{REDACTED }} the 15% "discount" he finds for single-line service instead of through rate service, and is {{REDACTED }} the 23% "discount" he finds for Rule 11s. [124] Put more simply—Dr. Israel finds that UP's ability to price higher {{REDACTED }} he identifies with single-lining.

132. When appropriately investigating the reduction in shippers' interline options above, I found evidence of harm. Even if I were to ignore that evidence and assume that interline shippers will benefit from the merger in the way Dr. Israel claims, the full implication of Dr. Israel's regression is still that {{REDACTED

[123] In all Dr. Israel's reported regressions, UP and NS are the only single-lines. When analyzing "All Simple Interline Traffic," Dr. Israel analyzes all interlines involving UP or NS including interline movements with other railroads (e.g., a UP-CSXT interline). When limiting to UP↔NS traffic, Dr. Israel further restricts to only UP-NS interlines. I utilize Dr. Israel's analysis for both UP↔NS traffic and All Simple Interline traffic because, based on how Dr. Israel created his railroad controls, the "UP premium" is not identified for interlines when restricting to UP and NS traffic only. For more details, see Appendix Section 12.1.4.

[124] Dr. Israel estimates three regressions restricting to different types of traffic. Each regression reports two coefficients for interlining, through rates and Rule 11s. Taking his regression at face value, when restricting to UP-NS traffic only in his third regression, he finds that through rates are 15% more expensive than single-lines and Rule 11s are 23% more expensive than single-lines. Israel Second Errata VS, Figure 10, Column (6).

}}

133. In addition, given {{REDACTED }} the fact that long-haul routes account for 78% of projected truck-to-intermodal diversions,[125] the evidence points to the merger creating transcontinental single-line routes and charging higher rates for those long-haul shipments—all consistent with UP's historical practice.

134. In Exhibit 23 {{{REDACTED

}}}[126] {{{REDACTED

}}}

[125] Hunt Second Errata VS, p. 63 ("Some 78% of truck-miles [that are diverted] are in long-haul lanes over 2,000 miles, as shown in Exhibit 5-5.").

[126] Israel Second Errata VS, Figure 10, Column 1, where Rule 11 rates are 29% higher than single-lines. For simplicity and to be conservative, I assume a 29% reduction in UP-NS Rule 11s and Through Rates. {{REDACTED

}} See workpaper 4-5. {{REDACTED

}}

Exhibit 23
Predicted yearly change in what shippers pay, unpacking Dr. Israel's Figure 10

{{{REDACTED

}}}

135. All told, based on Dr. Israel's model, even if Applicants' purported efficiencies of single-lines "as the result of cost savings and the elimination of double marginalization"[127] are passed on to shippers, the claimed benefit {{{REDACTED }}}. Even if Dr. Israel might contend that his Figure 10 should not be interpreted in this way, the fact is that my own analyses of the data reached similar conclusions. Specifically, {{{REDACTED }}}[128] Across multiple analyses, both Dr. Israel and I consistently find that {{{REDACTED }}}

136. The bottom line is that UP is already able to impose significantly higher rates on shippers, and the merger will extend that existing ability to even more shippers while also expanding the power that UP can exert over all shippers. Attempts to reframe UP's

[127] Israel Second Errata VS, ¶ 112.

[128] This is based on the regression analysis I present in Section 4.2.2 where I correct for multiple flaws in Dr. Israel's regression. See workpaper 4-6.

pricing as something innocuous, perhaps a suggestion that UP's higher rates reflect higher quality, {{REDACTED

}}[129]

137. Alternatively, Dr. Israel may suggest that UP's pricing approach is only reflective of the competition it faces, and that rates on newly acquired NS lines will be held in-check by existing competition with CSXT. This is incorrect: when I generalize this empirical analysis to test that possibility directly in Section 4.2, I find that shippers will be harmed by the foreclosure incentives of the merger as well as UP-NS gaining leverage to increase rates.

4.3.4. Applicants' claims of reducing rates and improving quality are baseless and claimed subsequent truck-to-rail diversions are unrealistic

138. Applicants emphasize truck-to-rail diversion as a leading benefit from their proposed merger.[130] Their traffic expert, Mr. Hunt, estimates that 72% of gross

[129] See, {{REDACTED
}} UP_0282009–12 at UP_0282011 {{REDACTED
}}; {{REDACTED }} UP_1535760–63 at UP_1535763 {{REDACTED
}}

[130] Amended Railroad Control Application, Volume 1, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, April 30, 2026, p. 20 ("The Board has also recognized that enhanced opportunities for truck-to-rail conversion are a public benefit. Applicants project that the combined UP/NS will convert approximately 2.1 million truckloads of traffic from long-haul trucking to rail, including approximately 1.2 million truckloads of intermodal containers, by offering new single-line service.").

diversions to a combined UP-NS would be from current truck traffic.[131] This large portion of total diversions coming from trucks is unrealistically high given that competing rail services are much more natural substitutes for each other than truck. Further, Applicants' economic consultants do not explain why UP or NS do not lower rates today to capture such large opportunities from trucks. What is more likely is that such gains from current truck traffic are unlikely today and post-merger.

139. Mr. Hunt's estimate of traffic that would divert from truck to rail would constitute a meaningful prize that would increase UP and NS profits significantly today if they lowered rates. Further, 86% of Mr. Hunt's predicted truck-to-rail diversions come from intermodal traffic.[132] Mr. Hunt predicts that UP and NS would gain 44% of addressable intermodal truckloads after the merger, which would represent a 16% increase in UP and NS's total intermodal traffic.[133] This is not based on Dr. Israel's economic model nor any formal economic model.[134] Rather, Mr. Hunt finds this large diversion rate from truck to rail using what he calls a "lookalike methodology."[135] Dr. Powers

[131] Hunt Second Errata VS, Exhibit 2-4. 72% = 1,397 ÷ 1,934.

[132] Hunt Second Errata VS, Exhibit 2-4 86% = 1,201 ÷ (1,397).

[133] Hunt Second Errata VS, pp. 62, 83. Mr. Hunt estimates that UP and NS shipped 7,385,000 intermodal units in 2023, and that 1,201,000 intermodal units would divert from truck to UP-NS post-merger. (1,201,000 ÷ 7,385,000 = 16%).

[134] Mr. Hunt is not familiar with econometric tools for estimating demand response and did not consult any UP-NS's paid economist when deciding what model to use. Deposition of David T. Hunt, October 7–8, 2026 ("Hunt Deposition"), Vol. I, pp. 295:14–19, 297:15–18 ("Q. Okay. Are you an economist, sir? A. I am not. Q. Okay. Are you familiar with different econometric tools to measure demand response? A. No. Not -- I'm not. […] Q. Did you ever ask UP-NS's paid economist what model he would use to measure truck-to-rail diversions? A. I did not.").

[135] Hunt Second Errata VS, p. 57 ("A lookalike methodology at the lane level was employed to size the potential intermodal traffic gains that could result from the merger.").

exposes numerous flaws that undermine Mr. Hunt's methodology and demonstrates that his estimate is not credible on its face.[136] For the sake of argument, I explore what Mr. Hunt's prediction would suggest, if it were credited but placed within an economic model of the increased volume hypothetically achievable if UP and NS lowered rates on their interconnected service.

140. Mr. Hunt's analysis suggests at least one effective strategy for UP and NS today would be to agree to reduce prices by {{REDACTED}} in lanes of {{REDACTED}} miles or more, gain {{REDACTED}} units from trucks per year, and increase profit.[137] Applicants' rivals have had such arrangements for more than twenty years.[138] Mr. Hunt

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[136] Verified Statement of Nicholas E. Powers, Ph.D., "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026.

[137] For intermodal shipments on lanes more than 2,000 miles long, Mr. Hunt predicts a {{REDACTED}} increase in quantity from {{REDACTED}} units to {{REDACTED }} units post-merger due to diversion from trucks. For these lanes, Mr. Hunt's data also shows that UP and NS would need only a {{REDACTED}} rate cut to offer shippers a 10% discount compared to trucks. If, as Mr. Hunt's analysis implies, this discount could win traffic from trucks to increase quantity by {{REDACTED}}, UP and NS could have coordinated to do this already if their margins exceed {{REDACTED}}. Specifically, a price decrease from p_0 to $p_1$with associated quantities q_0 to $q_1$increases profits if $\left(\frac{p_1-c}{p_1}\right)\left(\frac{q_1-q_0}{q_0}\right) > \left(\frac{p_0-p_1}{p_1}\right)$. The new margin on the additional quantity must outweigh the drop in price. In other words, high diversion increases the incentive to lower price. Rearranging and plugging in numbers: {{REDACTED }}. Assuming UP and NS earn {{REDACTED}} margins on intermodal traffic, they could earn more than {{REDACTED }} in net additional profits by coordinating to offer rates on these {{REDACTED}} mile shipments at a {{REDACTED}} discount to truck. See workpaper 4-7.

[138] See, e.g., Rip Watson, "Can interline agreements bring intermodal growth?" *trains.com*, June 1, 2026, available at https://www.trains.com/pro/freight/intermodal/can-rail-alliances-bring-intermodal-growth/ ("Jon Gabriel, BNSF group vice president-consumer products, told Trains in a recent interview that the long-standing haulage agreement with CSX 'is almost like being one railroad. Nothing magical comes out of being a merged entity. Partnerships help to expand our network.' The two railroads late last year announced extension and expansion of the agreement that is in its 20th year, Gabriel said, moving 3 million loads. Most recently, the service was enhanced between the Los Angeles area and Atlanta to add Charlotte, N.C., and points in Florida[.]").

himself acknowledges that when railways collaborate to establish run-through services, like when CPKC and NS collaborated to improve service on the Meridian Speedway, they can deliver the same supposed benefits of single-lining without merging.[139] Given that Mr. Hunt's assumptions, an {{REDACTED }}, and a {{REDACTED }} all indicate that UP and NS have {{REDACTED }},[140] they certainly have {{REDACTED }}.

141. Dr. Israel's own interpretation of Mr. Hunt's projected diversions supports that if Mr. Hunt's projections were accurate, Applicants would not need a merger to win intermodal business from truck. Based on Mr. Hunt's projections, Dr. Israel makes his own set of assumptions to calculate that "the *value* provided by the new UP/NS option is estimated to be equivalent to a[n] 11.1% percent reduction in price."[141] Applicants could implement a rate cut of this magnitude today. Given that Applicants ship

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[139] Hunt Second Errata VS, pp. 77, 109, 113.

[140] Mr. Hunt's analysis of intermodal truck-to-rail diversion assumes a ratio of revenue to variable cost of {{REDACTED}}, which implies a {{REDACTED}} operating margin. See {{REDACTED }}{{REDACTED }}. See {{REDACTED }} NS 00038359–66 at NS_00038359. {{REDACTED }} See {{REDACTED }} UP_0041285–90 at UP_0041289.

[141] Israel Second Errata VS, ¶ 138. Whereas I calculate a {{REDACTED }}, Dr. Israel calculates an 11.1% rate cut by assuming a cross-price elasticity of 4 to calculate the equivalent value of the merger. Both Dr. Israel's and my own calculations obtain estimates of the rate cut that would be necessary, based on Mr. Hunt's analysis, to obtain all the diversions he projects.

intermodal traffic with a {{REDACTED}} operating margin, they have {{REDACTED }}.[142]

142. Discounting rates is not necessarily the strategy Applicants would follow if Mr. Hunt's estimates were correct, but it does demonstrate that the Application is premised on an assumed elasticity of demand—the amount of truck-to-rail diversions estimated from a small decrease in their own prices—that is so high that UP and NS should be gaining this traffic today. It is telling that Applicants' economic consultants, Dr. Bailey and Dr. Israel, did nothing to address this premise within an economic framework of profit-maximizing firms. Instead, Dr. Israel simply presumes that UP and NS cannot achieve the purported benefits by working together.

143. What is more likely is that such a high elasticity of truck-to-rail diversion is unlikely today or even post-merger. UP's testimony in this matter confirms this. Mr. Michael Houston (Director of Corporate Strategy at Union Pacific) testified that {{REDACTED

143

[142] Given that Applicants earn a {{REDACTED}} operating margin today, an 11.1% rate cut would {{REDACTED }}. Even conservatively assuming a {{REDACTED}} operating margin, if this rate cut could yield the same intermodal traffic gains Mr. Hunt predicts from the merger, Applicants could {{REDACTED }} from implementing this rate cut today. See workpaper 4-8.

[143] Deposition of Michael Houston (Director of Corporate Strategy, Union Pacific Railroad Company), July 30, 2026, pp. 125:15–126:7 ({{REDACTED

}} Such a high projected elasticity also seems unlikely given the operational constraints Applicants are already facing. For example, {{REDACTED

}}[144]

144. Mr. Hunt predicts most of his diversions in relatively long-distance moves, particularly for intermodal traffic. Exhibit 24 reports the mean and median length of haul for Mr. Hunt's predicted diversions by service type. The median length of haul for intermodal diversions is {{REDACTED}} miles. Mr. Hunt predicts that finished vehicles and merchandise/bulk will divert along lanes that tend to be {{REDACTED}} than intermodal (medians of {{REDACTED}} and {{REDACTED}} miles, respectively).

}}).

[144] {{REDACTED

}} NS_00148838–47 at NS_00148838–39 {{REDACTED

}}; {{REDACTED

}} NS_00148874–80 at NS_00148874 {{REDACTED

}}

Exhibit 24
Length of haul by diversion and service type

{{REDACTED

}}

145. The data from Dr. Israel's empirical analyses, however, suggest that

{{REDACTED

}} Dr. Israel's data show that

{{REDACTED

}}. Not only does this result {{REDACTED

[145]

}}. This all suggests that {{REDACTED

}}.

[145] See Section 12.1.

146. Specifically, Exhibit 25 shows the average revenue per carload-mile that Dr. Israel analyzes in his regression from Figure 10 of the second errata to his VS.[146] Each blue dot is the average rate of interline movements involving UP or NS for moves of a given distance. Each orange dot is the average rate of UP or NS single-line movements for the same distances.

[146] Israel Second Errata VS, Figure 10.

Exhibit 25
Mr. Hunt predicts the majority of intermodal diversions at longer distances where Dr. Israel finds that single-line rates are generally *{{REDACTED}}* ***than interline rates***

{{REDACTED

}}

147. While {{REDACTED }}. There is no longer a noticeable gap between the rates when moves are longer than approximately {{REDACTED}} miles. Interline movements longer than approximately {{REDACTED}} miles {{REDACTED }}. For reference, the exhibit shows the medians of the move lengths of different types in Mr. Hunt's projected diversions. Both median {{REDACTED }} and {{REDACTED }} diversions are near or well into the range where Dr. Israel's analysis shows that {{REDACTED }}. Or, putting this another way, Mr. Hunt largely assumes that UP and NS will do something they appear to have already done effectively without a merger.

148. This key premise of the Application is backwards. As a general matter, UP and NS do not need a merger to overcome contracting barriers. They are hardly precluded from delivering lower rates today where those can realistically drive traffic to divert from other modes. The foundation of Applicants' analysis should reflect the reality that railroads do not necessarily need a merger to divert traffic from trucks where that makes economic sense. Mr. Hunt appears to have identified a lot of corridors where it does not make economic sense to UP and NS to offer lower rates today and no reason to think that will change with a merger.

4.4. Applicants have not shown that they, and they alone, can only coordinate interconnections with a merger

149. If Applicants' projections of large traffic gains were actually realistic, Applicants have not explained why they cannot be accomplished without a merger. As I previously addressed, Dr. Israel asserts that interline service is inherently inferior to single-line service as a competitive alternative, except when he is speculating that a competitive route to UP-NS would be viable. He posits that independent railroads operating complementary networks are structurally incapable of efficiently coordinating operations or incentivizing network investments. Under this logic, he avoids asking how much of the service improvement he assumes will happen between UP and NS could have been achieved without a merger. From there, he sidesteps examining which interconnections between the UP and NS have failed to achieve these benefits or why contractual solutions fell short.

150. Yet, there are examples of voluntary interconnections that provide efficient, highly competitive service today. The hypothesized failure of UP and NS to emulate those successes leaves only two possible answers to the questions Dr. Israel avoids: either the gains from the merger improving interconnections are not real or there is some specific barrier to achieving them which would be something Dr. Israel has not considered and cannot assume will be solved through a merger.

151. Applicants have not shown that common ownership is necessary to achieve their claimed coordination benefits. There are many examples of railroads having success

and benefiting shippers with effective interline agreements (Section 4.4.1). Dr. Israel does not reconcile these successful agreements with his claim that UP and NS must merge to coordinate effectively, and his analysis of independent routes demonstrates this inconsistency (Section 4.4.2).

152. The success of past interline agreements in delivering operational improvements, cost savings, or traffic gains demonstrate that these benefits are not specific to mergers. Even if common ownership could produce additional efficiencies, Applicants must distinguish those incremental gains from improvements available through less anticompetitive alternatives. Their failure to examine those alternatives leaves them without a basis to attribute the full claimed benefits of the merger.[147]

[147] Israel Deposition at pp. 268:14–269:15 ("Q. Did you do any sort of analysis of whether or not there's still additional interlining that could be done between UP and NS to achieve some of the merger benefits that they would set out? … A. No, not specifically interlining, no. Q. So what's your basis for saying that none of the benefits could be achieved by a means short of a merger? A. I mean, much of the benefit is -- that I talk about and contribute is single-lining and elimination of double marginalization, which I think are inherent to a single railroad. Beyond that, I guess I'm not saying there's absolutely nothing that someone could do better as alliances. It's just economics saying they have been a long time trying to maximize profits as separate railroads. And so, again, I wouldn't say my opinion is there's nothing they could probably do better, but there's a fundamental failure when you maximize separate profit pools that can only be overcome as a matter of a merger. That's an opinion based on economics."). Bailey Deposition at p. 162:7–19 ("Q. So fair to say that you never assessed whether UP and NS could improve their interline operations without a merger? ... A. That wasn't my assignment in this matter. Q. For example, you never quantified how much of the service benefits they could achieve without a merger, right? ... A. That wasn't my assignment in this matter.").

4.4.1. Independent railroads can, in appropriate circumstances, interconnect efficiently through voluntary agreements

153. To dismiss the viability of non-merger alternatives, Dr. Israel relies on abstract theories of "double moral hazard" and contracting frictions, asserting that independent railroads operating complementary networks are structurally incapable of efficiently coordinating operations or incentivizing network investments.[148] His comparison of theoretical frictions among independent railroads to assumed perfect operations of an integrated railroad is false in theory and empirically. The economics literature identifies how agents or employees operating within one firm can fail to achieve a standard of optimality.[149] Further, as I discuss in this section, independent railroads frequently coordinate to provide competitive service. So, it is not clear why Dr. Israel believes that a merger will assure perfection in the coordination between current UP and NS operations. Nor is it clear why his observation that perfection is impossible to achieve today is at all relevant to whether UP and NS interchanges can compete effectively.

154. In practice, where railroads have clear commercial incentives to compete for long-haul freight, the real-world evidence demonstrates that they can remain independent

[148] Israel Second Errata VS, ¶ 95 ("Collaborations and cooperation notwithstanding, independent railroads cannot operate complementary railroad networks together as efficiently as a merged railroad can…In such a situation, each railroad will maximize its own individual profits at the expense of optimal outcome that maximizes joint profits across the complementary networks. This is often referred to as double moral hazard.").

[149] N. Gregory Mankiw, *Principles of Economics* (8th ed.), (Boston, MA: Cengage Learning, 2018), p. 481 ("Moral hazard is a problem that arises when one person, called the agent, is performing some task on behalf of another person, called the principal. If the principal cannot perfectly monitor the agent's behavior, the agent tends to undertake less effort than the principal considers desirable … The employment relationship is the classic example. The employer is the principal, and the worker is the agent.").

and still overcome Dr. Israel's theoretical impossibility of perfect coordination. These railroads have resolved operational frictions by establishing interconnections through voluntary agreements, joint ventures, or run-through train operations—all without the mergers Dr. Israel insists are required.[150]

155. Applicants' own submission recognizes that, in a number of circumstances, independent railroads have worked together to make interline service an effective competitive option. Despite Dr. Israel's assertion that such agreements "would be impossible … to come close" to the competitive significance of a merged firm, these interconnections achieved competitive service without a merger.[151]

156. In his verified statement, Mr. Hunt identifies the Meridian Speedway as a prime example of a successful joint venture capable of capturing share in the market without

[150] Israel Second Errata VS, ¶ 97 ("In practice, it is impossible to write a complete contingent contract that specifies how the two railroads must manage their interline business on a day-to-day basis. Such a contract would require dictating decisions or rules in every state of the world: every service choice, every investment decision, every price, and so on, accounting for every possible outcome of everything that is uncertain. They would have to say how each railroad should operate under any scheduling circumstance, what investment decisions should be made under all operational and economic conditions, how prices should be set under all demand scenarios, and so on. While economists may be able to talk of such "complete contingent contracts," they have no relation to industry reality. Once again, only a merger—with its full alignment of incentives—can solve this problem.").

[151] Israel Second Errata VS, ¶ 11 ("[I]t would be impossible for other alternatives short of a full merger between the parties (e.g., contracts or trackage agreements) to come close to addressing every possible situation that arises in the daily operations of two independent railroads, and thus, those alternatives could not deliver the benefits that this merger will create. These benefits include: more effective competition and service from increased single-line options—an improvement that will allow rail to compete more effectively with trucks and to serve historically underserved areas; improved quality, faster transit times and increased reliability; and increased investment in the rail network, including planned investment of a billion dollars to accommodate merger-related growth on main lines and in yards and terminals.").

common ownership.[152] NS's Chief Strategy Officer, Mike McClellan, {{REDACTED }}[153] Established in 2006 by CPKC (then the Kansas City Southern Railway (KCSR)) and NS, the Meridian Speedway LLC oversees a 320-mile rail line between Shreveport, Louisiana and Meridian, Mississippi, which was created to provide a high-speed, high-capacity intermodal corridor connecting the Southeast and the Southwest.[154] The Meridian Speedway LLC, operated by KCSR (now CPKC), grants haulage rights to NS for certain categories of intermodal traffic, and supports efficient interline service between UP and MSLLC (via Shreveport) and between MSLLC and NS (via Meridian), with CPKC handling the traffic across MSLLC between Shreveport and Meridian. Upon establishing the joint venture, the railroads committed real assets and $300 million in capital improvements to expand line capacity and reduce transit times.[155] This investment funded extensive infrastructure upgrades including "the

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[152] Hunt Second Errata VS, p. 113 ("Where interline intermodal rail service has been able to capture share has been in run-through service, such as NS-CPKC on the Meridian Speedway.").

[153] Deposition of Michael R. McClellan (Chief Strategy Officer, Norfolk Southern Corporation), October 9, 2026, p. 349:6–19 {{REDACTED

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[154] "KCS, NS joint venture to start Meridian Speedway trackwork in August," *Progressive Railroading*, July 24, 2006, available at https://www.progressiverailroading.com/mow/news/KCS-NS-joint-venture-to-start-Meridian-Speedway-trackwork-in-August--8459 ("Under the joint venture formed earlier this year, KCS contributed the 320-mile Meridian, Miss.-to-Shreveport, Speedway and NS agreed to invest $300 million in capital improvements to expand the lines capacity and improve transit times."). See {{REDACTED }} NS_00134944–61 at NS_00134946 {{REDACTED }}

[155] "KCS, NS joint venture to start Meridian Speedway trackwork in August," *Progressive Railroading*, July 24, 2006, available at https://www.progressiverailroading.com/mow/news/KCS-NS-joint-venture-to-start-Meridian-Speedway-trackwork-in-August--8459 ("Under the joint venture formed earlier this year, KCS contributed the 320-mile Meridian, Miss.-to-Shreveport, Speedway and NS agreed to invest $300 million in capital improvements to expand the lines capacity and improve transit times.").

construction of new mainline and siding tracks, bridge replacements, large-scale rail and tie replacement programs, reconfiguration of major interchanges, and various other capital improvements."[156]

157. Mr. Hunt's own diversion model recognizes that joint-ventures and run-through agreements more broadly are essentially as efficient as single-line service. Under Mr. Hunt's baseline traffic modeling, a standard uncoordinated interchange between independent Class I railroads is assigned an impedance penalty to model operational friction (e.g., yard switching, dwell times, and crew changes). By contrast, Mr. Hunt assigns the Meridian Speedway a much lower impedance penalty—equating it to a simple crew change—to explicitly reflect the operational efficiencies realized through this joint venture without a merger.[157] Likewise, Mr. Hunt acknowledged the efficiency and current competitive significance of other exemplar corridor routes—the BNSF-CSXT interchange at Birmingham, all BNSF-CSXT traffic between BNSF's Los Angeles terminals and CSXT's NW Ohio terminal in North Baltimore, OH, and all

[156] "Projects," *Foster Jones Engineering*, available at https://www.fosterjonesengineering.com/projects.

[157] Hunt Second Errata VS, Exhibit 6–3 ("Interchange impedances were set to 350, 450, 550, or 650 miles. Historically high-volume interchanges received an impedance of 350, while historically low-volume interchanges received an impedance of 650. (An impedance of 350 can be thought of as a 350-mile additional 'cost' to a trip). Intermodal trains that operate run-through haulage services were given an impedance of 90 miles, reflecting an approx. three-hour delay for crew change… These include UP, CPKC, and NS for Meridian Speedway traffic, BNSF-CSXT for traffic to/from Northwest Ohio and Atlanta Fairburn terminals, and CN-INRD for traffic to/from Indianapolis (see Appendix A for full list).").

routes that include NS and Ayer, MA—by modeling them with an impedance equivalent to a basic crew change. [158]

158. Furthermore, Applicants' experts make much of the success of the I-5 Agreement—another example of independent railroads coordinating under a structured agreement—when it is needed to defend the viability of their CGP proposal.[159] Originally negotiated with BNSF as part of a deal for support in UP's acquisition of Southern Pacific (SP) in 1996, the I-5 Agreement established a framework for coordinating certain interconnections of traffic along the Pacific coast between BNSF and UP.[160] Under the agreement, UP sold a rail line to BNSF to establish single-line

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[158] Hunt Second Errata VS, Appendix Section A.6.5. ("The following adjustments were made to route impedances to better reflect the penalties of run-through haulage agreements being lower than true interchanges…The UP-CPKC-NS interchange lanes via Shreveport, LA onto the Meridian Speedway…The BNSF-CSXT interchange at Birmingham…All BNSF-CSXT traffic between BNSF's Los Angeles terminals and CSXT's NW Ohio terminal in North Baltimore, OH…The NS-KCS interchange at Meridian…All service types: All routes that include NS and Ayer, MA.").

[159] Israel Deposition, p. 267:11–21 ("Q. Despite being an agreement between independent railroads, the I-5 agreement has been a commercial success, has it not? … A. Yeah, I think that's fair. I think there can be agreements between railroads that can be successful. There's just degrees of success. So it's – you're limited by the lack of integration, but you can certainly still do things that succeed."). {{REDACTED }} UP-STB-D13-0000430–51 at UP-STB-D13-0000448 {{REDACTED }}; Israel Second Errata VS, ¶ 154 ("[T]he I-5 Agreement between BNSF and UP regarding movements and rates between the Pacific Northwest and the U.S. Southwest— demonstrates the competition-enhancing effects of market-based gateway rates…In this way it is very similar to CGP and served as an inspiration for parts of the CGP proposal.").

[160] Decision No. 44, "Union Pacific Corporation, et al. – Control – Southern Pacific Rail Corporation, et al.," Docket No. FD 32760, August 6, 1996, at p. 17 ("*Proportional Rate Agreement*. The BNSF agreement includes, among other things, a proportional rate agreement over the Portland gateway (hereinafter referred to as the BNSF PRA) that will allow UP/SP to participate in joint rates with BNSF for traffic moving between points in an area north of Portland, OR, and west of Billings and Havre, MT, on the one hand, and, on the other, points in an area extending from Oregon to West Texas."); "Union Pacific merger family tree," *Trains.com*, June 2, 2006, available at https://www.trains.com/trn/railroads/history/union-pacific-merger-family-tree/ ("Union Pacific acquired the SP on Sept. 11, 1996.").

BNSF service between the Pacific Northwest and southern California, creating a new single-line service along the I-5 corridor.[161] The agreement also granted UP the ability to market transportation services directly to BNSF-served shippers in Washington (across the Portland gateway) without requiring BNSF's direct involvement.[162] Despite this being an agreement between independent railroads (that have not merged with each other), Dr. Israel reports the growth in the volume of traffic utilizing this interconnection arrangement as demonstrating commercial success.[163]

159. Agreements over a specific interconnection are not the only investment-enabling arrangements that independent railroads have implemented to improve interline service. Equipment pools like the Equipment Management Program ("EMP") and UMAX demonstrate another way in which interline service can be improved when partners are willing to cooperate.[164] EMP and UMAX are domestic interline intermodal container

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[161] Decision No, 44, "Union Pacific Corporation, et al. – Control – Southern Pacific Rail Corporation, et al.," Docket No. 32760, August 6, 1996, p. 17 ("*Line Sales*. Under the BNSF agreement, BNSF will purchase: (1) UP's Keddie Line (in California) between Keddie, CA at MP 0 and Bieber, CA at MP 111.8, including both legs of the wye at Keddie[.]").

[162] "Improved Shipping in the I-5 Corridor," *Union Pacific*, available at https://www.up.com/shipping/metals-minerals-forest/i-5 ("The I-5 Proportional Rate Agreement was established in 1997 to allow Union Pacific to compete with BNSF for traffic moving between the Pacific Northwest/Canada and the Southwest/Mexico. The agreement allows Union Pacific to unilaterally establish rates between these points, skipping the concurrence process. As a result, shippers get rates quickly and have more options for shipping product farther and faster throughout the I-5 corridor.").

[163] Israel Second Errata VS, ¶ 158 ("[S]ince 2009, UP has moved over {{{REDACTED}}} carloads under the I-5 Agreement, accounting for nearly {{{REDACTED}}} billion in revenue to UP. The volume of traffic moving under the I-5 agreement has generally grown over this period, with carload volume in 2024 more than {{{REDACTED }}} of 2010 volume.").

[164] {{REDACTED

programs designed to provide truck-competitive, coast-to-coast container shipping across North America[165] Offered jointly by UP and NS (along with agent railroads), EMP provides access to a fleet of tens of thousands of 53-foot rail-owned containers.[166] NS's Chief Strategy Officer, Mike McClellan, {{REDACTED }}[167] UMAX is a similar partnership between UP and CSXT Intermodal, extending access to an expansive network of 53-foot domestic containers and hundreds of service lanes connecting the western and eastern United States.[168] Together, these programs allow shippers to move domestic freight more efficiently across these networks by aligning incentives to handle the pool equipment efficiently when it goes onto another railroad.

160. The success of these joint coordination agreements has motivated Class I railroads to plan for more such projects between them and to modernize current programs.[169]

}}. See {{REDACTED }} UP-STB-D13-0000430–51 at UP-STB-D13-0000440.

[165] "Intermodal Equipment," *Union Pacific*, available at https://www.up.com/shipping/resources/rail-equipment/intermodal.

[166] Railroad, "EMP Domestic Container Program," *Union Pacific*, available at https://www.up.com/shipping/intermodal/emp.

[167] {{REDACTED }} NS_00569895–923 at NS_00569917 {{REDACTED }}

[168] "CSX Intermodal and Union Pacific Railroad Announce UMAX Domestic Interline Container Program," *CSXT*, February4, 2010, available at https://www.csx.com/index.cfm/about-us/media/press-releases/csx-intermodal-and-union-pacific-railroad-announce-umax-domestic-interline-container-program/. See also Deposition of Michael R. McClellan (Chief Strategy Officer, Norfolk Southern Corporation), October 9, 2026, p. 378:14–15 {{REDACTED }}

[169] {{REDACTED }} {{REDACTED

These real-world examples demonstrate that whether railroads have an effective and coordinated interconnection depends on their incentives. Where commercial demand exists on both sides of the interchange, independent railroads face clear economic incentives to compete for long-haul freight traffic and overcome theoretical coordination barriers through joint ventures, voluntary agreements, and run-through operations. Investments do not get made when there is a lack of opportunity and the incentives that stem from it. They also do not get made (or are actively managed to disadvantage) when incentives do not align because one of the railroads sees the would-be partner as competition. The practical lesson economics suggests in this context is not about the impossibility of perfection, it is about the importance of incentives in determining whether independent railroads act on their ability to coordinate well enough to compete effectively.

4.4.2. Dr. Israel makes inconsistent assumptions about effectiveness of interline coordination

161. As I have noted throughout my analysis, Dr. Israel takes inconsistent positions on whether independent railroads can interconnect effectively. When discussing UP and NS, he treats a merger as necessary for effective coordination. When discussing their competitors, he treats contractual arrangements, including some that do not yet exist, as

}} NS_00155457–59 at NS_00155457. See also, {{REDACTED
}} NS_00103605–56 at NS_00103613 {{REDACTED

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particularly effective means of enabling interline services to compete. Neither position adequately accounts for the circumstances of a particular arrangement. Instead of examining those circumstances, Dr. Israel relies on whichever assumption supports his conclusion: that UP and NS must merge to compete effectively, while their rivals can constrain the merged railroad through contracts alone.

162. These two extreme assumptions are front and center in Dr. Israel's view that CGP will substantially benefit shippers—a stark contrast to his stance on railroads' ability to coordinate on interline movements without a merger. As I explain in Section 9.1, his estimates of CGP's benefits are contingent on an assumption that railroads will resolve any operational and incentive hurdles to meet CGP-induced demand increases *without merging*, thus conveniently abandoning his premise that a merger is necessary for effective interlines. Dr. Israel cannot have it both ways—either meeting the CGP-induced increased demand for interconnections is impossible without a merger, in which case CGP will not benefit shippers as much as he claims (due to railroads' inability to coordinate resulting in poor service), or his claims that a merger is the only way to align incentives and improve interconnections is false. CGP is just one striking example of how his reliance on extreme assumptions calls into question whether the merger's claimed benefits will materialize, let alone outweigh its harms.

163. Dr. Israel's inconsistency is apparent in his analysis of independent routes, where he relies on new (and never observed in the data) interline cooperation among other railroads to constrain UP-NS despite their claim that UP and NS need to merge to be

effective competitors. In Dr. Israel's analysis of independent routes, he claims to follow an algorithm that I utilized for the CP-KCS merger and identifies 74 corridors where the proposed merger will result in shippers having a reduction from three independent routes to two, or two independent routes to one.[170] As I discuss further in Appendix 12.4, for these routes, he assumes that other Class Is can readily interconnect to serve the relevant traffic, even though such an interconnection has not been observed for at least five years. That assumption conflicts with his claim that UP and NS must merge to interconnect efficiently. As discussed above, independent railroads can and do interconnect efficiently, but whether they can do so on a particular route requires analysis rather than assumption. Dr. Israel cannot have it both ways—either interconnection is impossible without a merger, and the shippers in those 74 routes are harmed, or efficient interconnection is achievable without a merger, and the merger is unnecessary.

164. Instead of undertaking a route-by-route analysis using evidence from the record, Dr. Israel makes this determination solely based on existing trackage and *possible* interchanges between railroads. He provides no evidence on whether a specific interchange or routing would be reasonable, feasible, or in any way economically useful for shippers. He also does not investigate whether the creation of these routes would require additional investment from competitors.

[170] Despite his claims to the contrary, his analysis is substantially different than the one I utilized in the CP-KCS merger. For more details, see Appendix 12.4.

165. On their face, several of Dr. Israel's proposed interchanges are particularly difficult to square with his core claim that a merger is necessary for interchange service to compete effectively. First, several rely on an option with multiple interchanges that he posits will compete effectively with an existing single-line. Between {{REDACTED }} and {{REDACTED }}, Dr. Israel identifies that {{REDACTED}} currently single-lines, and the "viable route" would be based on {{REDACTED}} interchanging with {{REDACTED}} first in {{REDACTED }} and interchanging again in {{REDACTED }} with {{REDACTED}}. Similarly, between {{REDACTED }} and {{REDACTED }} he assumes that an interchange between {{REDACTED}} and {{REDACTED}} in {{REDACTED }} followed by another interchange with {{REDACTED}} can readily compete effectively with existing single-line service by {{REDACTED}}, which currently carries {{REDACTED}} of the traffic on that corridor.[171]

166. In his analysis of independent routes, Dr. Israel thus treats coordination among independent railroads as effective when invoking alternatives to UP–NS, but ineffective when arguing that UP and NS must merge. Neither his assumption that the identified "viable alternative independent routes" would offer effective competition nor his assumption that UP and NS must merge to coordinate effectively are supported by evidence;[172] both rest on speculation.

[171] Israel Second Errata VS, Table D - 3.

[172] Israel Second Errata VS, Appendix D ¶ 3.

167. In Exhibit 26, I summarize Dr. Israel's findings of independent routes and show that for {{REDACTED}} of the corridors (representing {{REDACTED }} annual carloads) he dismisses, he does so on the basis that never-before-seen interline service not only will be readily established but will compete effectively with the very UP-NS single-line service he claims requires the merger.[173] As I discuss below, his claim that UP and NS, as independent railroads, "cannot coordinate their operations and investments as efficiently as a single combined railroad" is patently inconsistent with his conclusion that so many other railroads can and will interconnect well enough to be effective competitors to UP-NS.[174]

[173] Israel Second Errata VS, ¶ 11 ("As I discuss in detail below, it would be impossible for other alternatives short of a full merger between the parties … to come close to addressing every possible situation that arises in the daily operations of two independent railroads, and thus, those alternatives could not deliver the benefits that this merger will create. These benefits include: More effective competition and service from increased single-line options—an improvement that will allow rail to compete more effectively with trucks and to serve historically underserved areas; improved quality, faster transit times and increased reliability.").

[174] Supplemental Verified Statement of Dr. Mark A. Israel, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, July 17, 2026 ("Israel Supplemental VS"), Section IV.A.1.

Exhibit 26
Theoretical routes identified by Dr. Israel highlight his inconsistency over the assumed difficulties of interconnect service

{{REDACTED

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168. Exhibit 27 summarizes where Dr. Israel contradicts himself on critical issues including: (1) whether independent railroads can write contracts and coordinate outside of a merger; (2) whether single-lines are inherently more efficient than interlines, and (3) whether routes among railroads that have never been observed as a choice by any shipper for a particular corridor at any point in the Six-Railroad Tapes Data are nevertheless a viable competitor to an integrated carrier. Row 1 of Exhibit 27 highlights that Dr. Israel argues that independent railroads cannot coordinate or invest efficiently

through contracts, yet when addressing vertical foreclosure "edge cases," he relies on Applicants' voluntary OGCs—which are themselves long-term contractual commitments governing rates and service—to mitigate any harms.[175] Row 2 shows that Dr. Israel likens single-line service to a nonstop flight and interline service to a connecting one with unavoidable frictions and markups—yet to justify CGP, he points to the successful interline coordination seen under the I-5 Agreement.[176] Finally, Row 3 highlights that Dr. Israel argues not only that a UP-NS merger will benefit shippers—and that a follow-on vertical merger (which I discuss in detail in Section 7) would create similar benefits[177]—but also that existing "viable" routes with no previously observed traffic across 74 corridors will be enough for independent railroads to

[175] Israel Second Errata VS, ¶ 100 ("The theory of incentives described above (i.e., double moral hazard) is powerful because it is quite general. Specific examples of the way double moral hazard can play out in practice—here, when complementary rail networks are operated by separate railroads—include pricing inefficiencies (referred to by economists as "double marginalization"), suboptimal operational and scheduling decisions (i.e., failing to consider the benefits to the complementary network), and insufficient investment."). Israel Second Errata VS, ¶ 90 ("While I will address any theories of foreclosure raised in opposition to the proposed merger in subsequent reports, they will almost surely be edge cases, not well suited to this industry. Nevertheless, to the extent there remains any concern that some of these edge cases may "slip through" and apply to isolated, atypical transactions, those are precisely the situations open gateway commitments are designed to address.").

[176] Israel Second Errata VS, ¶ 105 ("For shippers, eliminating the need for an interchange is akin to the difference between connecting air travel service and a nonstop option. The introduction of direct, single-line service eliminates the cost, scheduling uncertainty, coordination, and added transit time associated with interchanging traffic, and is a clear benefit to shippers and railroads."). Israel Second Errata VS, ¶ 154 ("An existing analogous agreement—the I-5 Agreement between BNSF and UP regarding movements and rates between the Pacific Northwest and the U.S. Southwest—demonstrates the competition-enhancing effects of market-based gateway rates… In this way it is very similar to CGP and served as an inspiration for parts of the CGP proposal[.]").

[177] Israel Second Errata VS, ¶ 144 ("[T]he merger of UP and NS will generate significant vertical benefits for shippers. These vertical benefits—including the expansion of single-line service, more efficient service and operations, and increased investment—are unlikely to be undermined by any subsequent mergers. Instead, a future U.S. transcontinental merger would also tend to be predominantly vertical with similar effects.").

coordinate effectively so as to provide a competitive check against a combined UP-NS.[178]

169. That is, every substantive topic Dr. Israel opines on is touched by one or the other of his extreme and contradictory positions on whether a merger is necessary for efficient interline coordination.[179]

[178] Israel Second Errata VS, ¶¶ 82–83 ("[T]he algorithm identifies 74 corridors as losing an independent route due to the UP/NS merger. In fact, however, there should be no concern about loss of competition in any of these corridors … Because carriers serving different segments of a corridor at a common gateway can connect (even if such a connection is not observed in the Waybill data) to create a route in the corridor, I treat those connections as alternative viable routes in my analysis.").

[179] Dr. Israel has a related internal inconsistency in his more formal discussion of the economics of vertical mergers. He dismisses vertical foreclosure models as theoretical "edge cases." Yet, when responding to an academic study on incomplete information, he acknowledges that merged railroads gain private cost information that enables them to extract shipper surplus on sole-served legs. He then claims that elastic demand forces the carriers to lower total rates and expand volume—contradicting his core premise that sole-serving carriers gain no post-merger leverage. Israel Second Errata VS, ¶ 74 ("[T]hat is not to say that other economists could not present alternative theories of foreclosure and claim they apply to this industry and this transaction. Here, I can confidently say any such theories would describe, at best, "edge cases," based on unreasonably restrictive assumptions about firm behavior or other assumptions ill-suited to the railroad industry."), ¶ 72 ("In the Moresi model [] the merger reduces shipper surplus…[h]owever, this finding is an artifact of Moresi's assumptions that: (i) shippers have perfectly inelastic demand… I find that for the case of linear demand and uniformly distributed costs, a merger increases shipper surplus in addition to increasing output and total welfare. The increase in shipper welfare is the result of the railroad making more sales at lower prices and the fact that it cannot fully extract the shipper's surplus as it can in Moresi.").

Exhibit 27
Dr. Israel's contradictory extreme assumptions about interconnection coordination

{{REDACTED

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4.5. Applicants proposed conditions will not adequately address the merged firm's incentive and ability to weaken and degrade interline options

170. The remedies Applicants offer are insufficient to address the harm to shippers from foreclosed competition. Applicants' experts perversely point to analysis from the CP-KCS combination as if reliance on the condition imposed in that case, which largely implemented CP's commitment to "keep gateways open on commercially reasonable

terms,"[180] ensures no harm is possible in this case. The facts of that earlier combination are not at all comparable to the unprecedented scale, scope, and market context of the proposed UP-NS merger. Instead, they illuminate the much greater risk from the scale and scope of a UP-NS combination – consistent with The Board's waiver of major merger treatment in the CP-KCS combination. Applicants' references to CP-KCS are "apples and oranges" to the competitive issues of a UP-NS combination. Their OGCs are inadequate to address the harm of this merger, as are the other assurances and procedural options they have offered.

4.5.1. The CP-KCS merger, where open gateway commitments were accepted, did not pose similar competitive issues and is not a suitable reference for evaluating this merger

171. Prior mergers, which were evaluated under less-restrictive regulations than The Board's 2001 Rules (including CP-KCS, which was exempted from The Board's 2001 Rules), stand in stark contrast to the size of the proposed UP-NS transaction.[181] Those prior deals did not result in a railroad that went nearly everywhere and touched nearly everything transported by rail. In other words, those mergers left intact many of the

[180] Decision No. 35, "Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern, et al.," Docket No. FD 36500, March 14, 2023, p. 12 ("The Board is approving the acquisition by CP of control of KCS, subject to the following conditions, as set forth more fully in the decision below: (1) Applicants' commitments to keep gateways open on commercially reasonable terms and create no new bottlenecks, with the clarifications and enhancements described herein…").

[181] See Decision No. 35, "Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern, et al.," Docket No. FD 36500, March 14, 2023, p.10 ("By decision served April 23, 2021, following a public comment period, the Board found the Transaction to be subject to the regulations set forth at 49 C.F.R. part 1180, subpart A, in effect before July 11, 2001, pursuant to the regulatory waiver in 49 C.F.R. § 1180.0(b) for a merger transaction involving KCS and another Class I railroad as set forth in Major Rail Consolidation Procedures, 5 S.T.B. 539, 553 (2001).").

competitive constraints that the proposed UP-NS would not. For a host of reasons, the proposed merger has much more potential for competitive harm than CP-KCS, and as a result, Applicants are incorrect to assume that "voluntarily embracing" the same OGC that The Board imposed in CP-KCS will address all competitive concerns.[182]

172. For instance, consider the CP-KCS transaction—the most recent merger between two Class I railroads—evaluated under an exemption to The Board's 2001 Rules and one Applicants and their experts often cite to provide the veneer of support for their approach to evaluating their proposed merger.[183] The CP-KCS transaction combined the sixth and seventh-largest Class I railroads and following the merger, CPKC was still the *smallest* Class I railroad by U.S. operating revenue.[184] Indeed, according to the Six-Railroad Tapes Data CPKC only earned {{{REDACTED}}} of revenue on U.S. movements, while the proposed UP-NS would earn {{REDACTED}} of that revenue

[182] Rocker and Elkins Second Errata VS, ¶ 163, App. Vol. 1, p. 348 ("We therefore are voluntarily embracing the same robust and readily enforceable open gateway requirement and bottleneck pricing conditions that the Board imposed in the recent Canadian Pacific-Kansas City Southern ('CP-KCS') merger proceeding. These commitments will thoroughly address any customer fears (even if speculative and groundless) about foreclosure or competitive harm.").

[183] See, e.g., Bailey Second Errata VS, fn. 22 ("Prior railroad transactions also conducted economic analyses at the BEA level. See Verified Statement of W. Robert Majure, 'Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern, et al.,' Finance Docket No. 36500, October 29, 2021, ('Majure VS')"), fn. 75 ("For example, see the between-corridor analysis in Majure VS at pp. 52-72."). See also Israel Second Errata VS, ¶ 79 ("I have applied an algorithm for counting independent routes (the 'algorithm') based on and consistent with the method used in CPKC's merger proceeding.").

[184] Decision No. 4, "Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern, et al.," Docket No. FD 36500, April 23, 2021, p. 2. CPKC is also the smallest of the Class I railroads by carloads and tons carried in 2024. CPKC had slightly higher gross freight revenue than CN in 2024. See Bailey Second Errata VS, Exhibit 3.

before any of the predicted traffic diversion.[185] The Board's 2001 Rules recognized "as a general matter, that a potential transaction involving KCS and another Class I carrier would not necessarily raise the same concerns and risks as other potential mergers between Class I railroads."[186] That conclusion is consistent with the magnitude of difference between the scale and scope of a CP-KCS combination and the proposed UP-NS combination. That difference also makes the CP-KCS transaction (and the analyses performed in the review of that transaction) an inappropriate reference point for evaluating a merger the scale and scope of the proposed UP-NS deal.

173. Even under the pre-2001 standard, the CP-KCS transaction warranted a careful review of potential competitive effects. That analysis examined both horizontal overlaps within corridors and potential losses of geographic competition where substantial commodity flows might be combined. In the limited instances where the initial screens identified a potential concern, more detailed analysis showed that shippers retained credible competitive alternatives, including routes confirmed by railroad executives as commercially viable.[187] The result reflected the materially

[185] These shares represent shares of revenue earned on movements between 2019 and 2024, based on the Six-Railroad Tapes Data. Additionally, according to the Six-Railroad Tapes Data from 2019 to 2024, CPKC participated in about {{{REDACTED}}} of U.S. movements (weighted by revenue), while a combined UP-NS would have participated in {{REDACTED }} of U.S. movements (weighted by revenue). See workpaper 3-1.

[186] Major Rail Consolidation Procedures, p. 552.

[187] For example, in one corridor, the new single-line CPKC route was found to still compete against an existing route. In another corridor, the new single-line CPKC route was found to still compete against two other routes. Expert Statement of W. Robert Majure, Ph.D., "Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern, et al.," Docket No. FD 36500, October 29, 2021 ("Majure CP-KCS VS (Public)"), Exhibits 8, 9, pp. 42–45.

different competitive circumstances of CP-KCS—not a lesser need to examine potential harms.

174. CP-KCS did not present an ability to foreclose competition that is comparable to the proposed merger. Although UP argued that KCS's position at the Laredo gateway could give the combined railroad foreclosure power, the evidence showed otherwise.[188] Shippers retained meaningful alternatives both among gateways and among parallel U.S. routes, and traffic patterns demonstrated that those alternatives were in fact used. BNSF, for example, had developed service through Eagle Pass connecting Mexico to its main line between the U.S. Southwest and Chicago, providing an alternative to routes through Laredo, which have to navigate a more congested route through Houston.[189] Those facts distinguish CP-KCS from the proposed UP-NS transaction, where UP and NS already occupy positions across large portions of the western and eastern U.S. that would allow the combined railroad to restrict or degrade competing routes.

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[188] Majure CP-KCS VS (Public), p. 17–19.

[189] "BNSF, GMXT and J.B. Hunt Collaborate to Launch New Intermodal Service Through Eagle Pass Gateway to and From Mexico," J.B. Hunt Transport Services, Inc., November 13, 2023, available at https://www.jbhunt.com/our-company/newsroom/2023/11/eagle-pass-gateway ("BNSF Railway (BNSF), North America's largest intermodal rail, GMXT (BMV: GMXT), the largest rail provider in Mexico, and J.B. Hunt Transport Services Inc. (NASDAQ: JBHT), one of the largest supply chain solutions providers in North America, announced their new intermodal service between Monterrey, Silao-Bajio and Pantaco-Mexico City regions, key markets in Northern and Central Mexico, through the Eagle Pass, Texas border gateway."); Marybeth Luczak, "BNSF, GMXT to Run J.B. Hunt's Intermodal Service Via Eagle Pass Border Gateway (Updated, Blaze Commentary)," *Railway Age*, November 14, 2023, available at https://www.railwayage.com/intermodal/bnsf-gmxt-to-run-j-b-hunts-intermodal-service-via-eagle-pass-border-gateway/ ("The Laredo route is more congested and can be subjected to traffic conflicts between Corpus Christi and the Houston region. Eagle Pass less so.").

175. In short, CP-KCS demonstrates why foreclosure must be evaluated based on the competitive facts of the particular transaction, rather than through a general assumption, which Dr. Israel adopts,[190] that railroads lack incentives to foreclose competitors. In the case of Laredo, shippers had multiple meaningful alternatives, and the CP-KCS combination *enhanced* rather than reduced those options.[191] The proposed UP-NS transaction presents materially different competitive circumstances and therefore requires a different analysis.

176. Also, in contrast to the proposed UP-NS merger, CP's and KCS' networks were highly complementary and connected at only one location—Kansas City—as Exhibit 28 shows.

[190] I discuss Dr. Israel's assumptions regarding railroads' lack of incentives to foreclose competitors in Section 4.3.1.

[191] Majure CP-KCS VS (Public), Section 3.

Exhibit 28
Exhibit 1 from Majure 2021 VS: A Canadian Pacific and Kansas City Southern deal is a vertical combination of complementary networks

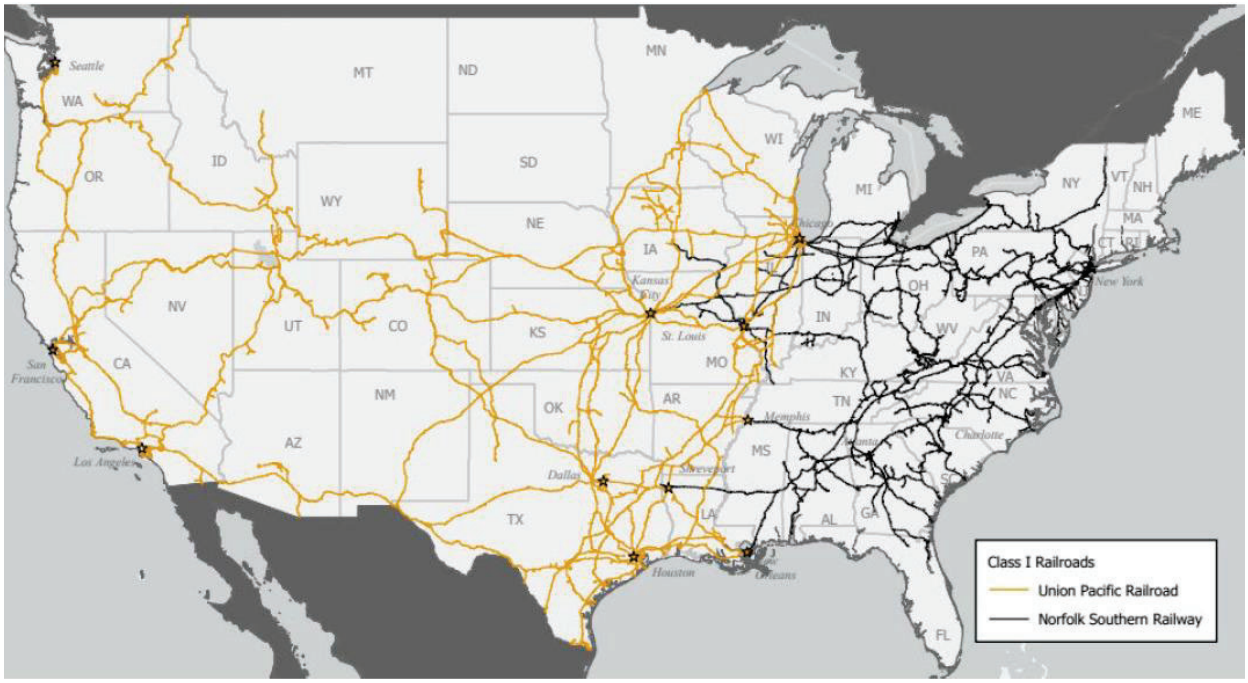


Source: Majure CP-KCS VS (Public), Exhibit 1
Note: This map plots the rail networks of CP and KCS including tracks that each railroad either owns or has trackage rights over.

177. Shippers did not rely on competitive bidding between CP and KCS over alternative interchange points in the way that may occur with UP and NS, which can be seen from UP's and NS's networks overlapping at multiple possible interchange points

in Exhibit 29.[192] The proposed UP-NS transaction therefore raises a distinct competitive issue that was not present in CP-KCS.

Exhibit 29
Bailey Second Errata VS Exhibit 4: Combined Railroad (UP + NS) Map



Source: Bailey Second Errata VS, Exhibit 4

178. And, unlike the claims of interconnection improvements between UP and NS, the CP-KCS merger addressed a very specific failure to improve their interconnection at that one point through negotiated arrangements. CP had tried to improve their service, and their ability to compete as a partner with KCS alongside existing single-line rail competition, but KCS had good reason to worry that doing so would upset its other rail partners.[193] {{REDACTED

[192] Majure CP-KCS VS (Public), Exhibit 1.
[193] Majure CP-KCS VS (Public), Section 3.1.

}}.[194] The benefit of aligning incentives between CP and KCS has no parallel in the proposed UP-NS combination.

179. CP-KCS enhanced rather than reduced the options for shippers.[195] The new single-line routes CPKC introduced following the merger competed with existing Class I service, meaning they enhanced options and competition for shippers rather than removed it. The Board's decision on CP-KCS stated: "Increased Competition. The Transaction will allow CPKC to compete more effectively against the larger Class I railroads that surround it. … Figure 1 below highlights that the new CPKC network will provide stronger competitive options, particularly for north-south traffic flows in which these larger railroads already offer single-line routes."[196] Exhibit 30 below shows Figure 1 from The Board's decision on CP-KCS. The figure shows that the merger's introduction of new single-line service from the North to the South through Kansas City would be along the existing networks of and would compete with the service of CN, BNSF, and UP.

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[194] {{REDACTED }} UP_0215372–75 at UP_0215373 ({{REDACTED }}).

[195] Majure CP-KCS VS (Public), Section 3.

[196] Decision No. 35, "Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern, et al.," Docket No. FD 36500, March 14, 2023, p. 26.

Exhibit 30
Board decision on CP-KCS: Figure 1, Larger Class I Systems Will Face New Competition from the Combined CPKC Network

FIGURE 1
LARGER CLASS I SYSTEMS WILL FACE NEW COMPETITION FROM THE COMBINED CPKC NETWORK



Canadian National

Would Face New Competition from CPKC Single-Line Routes Between Gulf/South Central States and Upper Midwest/Canada

BNSF

Would Face New Competition from CPKC Single-Line Routes Between Gulf/South Central States/Texas/Mexico and Upper Midwest/Canada

Union Pacific

Would Face New Competition from CPKC Single-Line Routes Between Gulf/South Central States/Texas/Mexico and Upper Midwest

Source: Decision No. 35, "Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern, et al.," Docket No. FD 36500, March 14, 2023, p. 26 (Figure 1)

180. In short, the proposed UP-NS merger is different from the facts in CP-KCS in every important regard. The proposed UP-NS combination is not about overcoming a peculiar misalignment of incentives in order to respond to competitors who can already offer the same service. As I demonstrated above, for many shippers in the East and the West, there is no (or no significant) rail option to explore (Exhibit 7 and Exhibit 8). Without that competitive pressure to be faced after the merger, merely being an "end-to-end" merger does not create any reason to share prospective cost savings with shippers. The merged UP-NS can, unlike CPKC, pick and choose whether it wants to

work with competitors or enjoy the fruits of monopoly where it does not have to act as a rail partner and can instead use its ability to foreclose competition. That is not an ability CPKC ever had, so drawing inferences from the CP-KCS transaction is simply avoiding consideration of the problems with the proposed UP-NS merger.

181. Applicants commit to the same OGC as in the CP-KCS merger in order to provide "assurances to [their] customers and to the Board that this transaction will offer more, not less, competition and customer options."[197] But they have not even attempted to explain why the same commitment applied to a merger between the two smallest Class I railroads who interchange at one point will sufficiently address competitive concerns for a merger between two of the largest Class I railroads who interchange at all major east-west gateways. Given the undeniable differences between this proposed merger and CP-KCS, there is no reason to expect that Applicants' OGC will prevent them from foreclosing at those gateways.

4.5.2. Applicants' open-gateway commitments do not preserve effective interline competition

182. Applicants propose a series of "voluntary gateway commitments" that they claim will "thoroughly address any customer fears (even if speculative and groundless) about foreclosure and competitive harm."[198]

[197] Rocker and Elkins Second Errata VS, ¶ 162.
[198] Rocker and Elkins Second Errata VS, ¶¶ 163, 166.

183. The first such commitment, the OGC, promises to keep open all gateways "on commercially reasonable terms," and that they will "not make it impossible to construct viable interline options for customers by refusing to quote commercially reasonable rates."[199] However, simply keeping gateways open will not ensure robust competition. As I show in Section 4.2.1, UP and NS already exhibit a strong preference not to work with other railroads, and this preference becomes more apparent as their ability to foreclose increases. That is the commercial norm that presumably establishes what is "commercially reasonable." If they extend this preference to gateways with new UP-NS single-lines, Applicants will end up gradually pushing out competitors even while these gateways technically remain "open."

184. Applicants could have gone further with their commitments, but they did not. For example, they do not offer any solution to the typical regulatory problem of identifying the benchmark that their post-merger behavior can be effectively judged against. Their proposal to set "commercially reasonable" rates invites a rate increase based on the very incentives that an effective commitment would need to protect against. After the merger, a combined UP-NS could justify higher rates with any number of costs and complications from continuing to offer the rates that an independent NS, for example, would have set for the eastern leg and which would have supported competition between BNSF and UP, say, on the western leg of a move. Even if Applicants did offer a benchmark that tried to protect against this incentive to raise rates rather than one that

[199] Rocker and Elkins Second Errata VS, ¶ 166.

includes it, shippers and connecting railroads (and ultimately The Board) need the benchmark to be clearly defined so they can readily monitor it and so the commitment can be enforceable enough to offer any effective protection. Applicants have offered nothing to address these common issues that often limit even well-intentioned commitments.

4.5.3. Applicants' additional commitments do not replicate the discipline of competition

185. Applicants propose additional commitments and programs that fall short of addressing the foreclosure harms that will follow from the merger.

186. First, Applicants propose a "Targeted Access Program" ("TAP") as a "safeguard against unforeseen merger-related service disruptions" during the implementation of the merger.[200] The program is particularly short-term as switching orders granted through TAP terminate after six months, and the program itself will be in place for only three years.[201] That limited duration stands in stark contrast to the loss of competition, which is effectively forever. The program also has limited applicability as only certain

[200] Applicants' Second Response to Decision No. 21, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, July 27, 2026, *SUPP PAGE 23*.

[201] Applicants' Second Response to Decision No. 21, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, July 27, 2026, *SUPP PAGE 9, 128, 195* ("Applicants are committing to a new Targeted Access Program … Under the program, a sole-served customer located in a terminal area becomes eligible for expedited reciprocal switching… Switching prescriptions would be in place for six months and would terminate automatically. … This Targeted Access program shall remain in effect for three years from the effective date of STB approval of the Union Pacific-Norfolk Southern merger transaction.").

sole-served shippers located in terminal areas can make a claim of having their service disrupted under this program (while it is in effect). Even those shippers would have to show their disruption in the form of a dramatic change in one of two metrics that Applicants nevertheless reserve the right to dispute or to "cure" (which presumably only means bringing service "up" to the threshold of 70% or 85% degradation of the respective measure) in 30 days.[202] Whatever limited benefit, if any, the TAP may offer to some shippers in the short run, it will not address the harm to shippers from foreclosed competition that the merger causes. As I showed above, this foreclosure takes the form of both higher rates and a lot more of the traffic being carried on the single-line service – not a service disruption.[203] For almost all of the affected shippers, there will not be any disruption because they will agree to pay the higher rate and use the UP-NS service. TAP offers those shippers no recourse at all.

187. Second, Applicants commit to providing shippers written justification for rate increases over inflation and reporting monthly gateway interchange volumes.[204] These

[202] Applicants' Second Response to Decision No. 21, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, July 27, 2026, *SUPP PAGE 23–24* ("During the merger implementation period, if any UP/NS customer that is sole-served and located in a terminal area can show that its Original ETA or its ISP had deteriorated from pre-merger levels and is below 70 percent for Original ETA or below 85 percent for ISP, then that customer would be eligible for reciprocal switching without having to demonstrate the deterioration in service was merger related, unless the railroad proves an affirmative defense or cures the service deterioration within 30 days.").

[203] To the extent that higher rates are accepted based on a fear that, if the shipper does not accept the UP-NS single-line service, their existing interline service will be disrupted, TAP also does not prevent this fear from affecting the shipper's choice. A shipper that has access to the program would first need to experience the service degradation they fear before making a claim and would likely get, at most, a "cure" that is still a degradation.

[204] Rocker and Elkins Second Errata VS, ¶¶ 167–168.

commitments may enhance transparency but fail to meaningfully condition the merged firm's pricing behavior in scenarios where they have market power or the capacity to foreclose.

188. Third, Applicants propose an optional Alternative Dispute Resolution Program ("Rate ADR Program") to streamline rate disputes between customers and UP-NS.[205] However, even streamlined, the program does not replicate competition. When NS competes with CSXT, for example, to win the portion of a movement from the gateway to a destination in the East, they have to react in real time to improved offers from CSXT and they do that within a dynamic where both railroads try to make their service more attractive to the shipper. Competition works for shippers because of the immediate and automatic feedback railroads face of losing business if a rate is higher than the competitor's rate or if a railroad has not kept up on service improvements or any other aspect that matters to the shipper. Competition drives a railroad to set all of those factors where they have to be to win the business and balances the return of winning that business against all the legitimate considerations a railroad will have – direct operating costs, opportunity costs, investment costs, labor relations, and so many more. A regulatory process, whether it is streamlined arbitration or not, is not automatic. To be completely effective, it has to replicate that balancing process across all the relevant decisions. As a practical matter, that means even the most streamlined

[205] Applicants' Second Response to Decision No. 21, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No.0392FD 36873, July 27, 2026, SUPP PAGE 196.

process will be slower and rely on rules that imperfectly replicate the balancing act competition performs between the offer to shippers and the considerations of the railroad. Mr. Brooks identifies specific issues the arbitrator would have to address which are likely to keep this offer from streamlining the process effectively.[206] The program is also limited in scope both because it is temporary and because it excludes the traffic that has historically had enough competition to be exempted from regulation—as if those shippers will necessarily continue to have that competition after a UP-NS combination.[207]

[206] Verified Statement of John Brooks, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026, Section V.

[207] Verified Statement of John Brooks, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026, Section V.

5. Shippers today employ bargaining strategies that put UP and NS effectively into competition with one another – competition that will be lost and cost shippers significantly

189. The proposed merger would weaken geographic competition and deprive shippers of bargaining strategies that support more competitive rates and service offerings. In Section 4.1 above, I discussed the example of Schneider and the competition it enjoys today in picking an eastern and western carrier independently. The proposed merger would preclude it from using the strategy of playing off UP and BNSF against one another for its business in the West (with either of them working with CSXT as Schneider's chosen rail provider in the East) and then generating competition between CSXT and NS for that eastern business. {{REDACTED

}}

190. Some of the strategies that will be lost to shippers place UP and NS into competition with one another today. One such bargaining strategy available to shippers today is the ability to leverage multiple facilities served by different railroads across the country to receive better rates ("geographic bargaining"). Many shippers operate facilities in, receive deliveries from, or have customers in both the East and the West. These shippers' ability to choose how much traffic is moved by a single railroad gives them leverage and allows them to receive better rates than a shipper who relies on solely a single railroad. This geographic bargaining strategy creates horizontal competition between UP and NS, by letting shippers with multiple options decide on

which railroad to use. Shippers with a larger geographic scope have the potential to leverage this scope into better rates. Applicants' experts did not investigate this bargaining strategy.

191. The proposed merger, however, will substantially reduce these shippers' ability to bargain or leverage UP and NS against each other. Rather than being able to bundle routes to receive lower rates or threaten to move production, many shippers will be wholly reliant on a merged UP-NS and will see higher rates as a result. By creating a railroad that would be particularly difficult for shippers to avoid, the proposed merger will give a combined UP-NS significant leverage when negotiating with shippers who bargain over multiple facilities simultaneously, or who can leverage multiple options to reduce rates.

192. In this section, I discuss the implications of the merger on this form of competition in four parts. First, I describe how combining UP and NS would place more of those alternatives under common control, reduce shippers' ability to shift business, and increase the merged railroad's bargaining leverage (Section 5.1). Second, UP's own internal documents recognize that {{REDACTED }} I provide evidence from the data that shippers will pay {{REDACTED }} due to such a reduction in bargaining leverage (Section 5.2). Third, I discuss how Applicants' experts ignore such competition completely, and how their analyses in no way incorporate or address such changes in bargaining leverage (Section 5.3). Fourth, I

discuss how Applicants' proposed regulations fail to preserve the competition that will be lost through UP-NS's increased geographic bargaining leverage (Section 5.4).

5.1. Shippers use their geographic dispersion to generate competition, including between UP and NS, for their overall bundle of movements

193. Shippers can discipline rates and service terms by changing sources or destinations, shifting production, and investing in facilities served by competing railroads. They can also negotiate across facilities and movements to obtain better terms. This "geographic bargaining" can occur even for facilities which are sole-served and are on both sides of a gateway. For example, a shipper with a UP sole-served facility and an NS sole-served facility can threaten to move production from one facility to another,[208] which applies to many shippers that operate facilities on both the eastern and western sides of the country. This method of competition holds even if these facilities only utilize single-line movements. The former Chief Executive Officer of Union Pacific, Lance Fritz, specifically noted that {{REDACTED

[208] "Should You Bundle Your Moves When Negotiating Rail Rates?" *RSI Logistics*, available at https://www.rsilogistics.com/blog/should-you-bundle-your-moves-when-negotiating-rail-rates/ ("A more effective scenario is for shippers to use competitive traffic as leverage to secure better rates on their captive lanes. Evaluating current treatment by captive railroads can be a factor in determining which competing carriers are provided the opportunity to bid on competitive lanes."); Congressional Research Service, "Railroad Access and Competition Issues," CRS Report RL34117, April 4, 2011, available at https://www.congress.gov/crs_external_products/RL/PDF/RL34117/RL34117.11.pdf, p. 4 ("And shippers with multiple facilities may have bargaining power even if an individual plant or distribution center appears to be a captive, as the shippers can agree to tender freight at competitive locations in return for favorable treatment at captive locations.").

}}[209]

194. Shippers have made clear their concerns that the proposed merger will result in declines in shippers' geographic bargaining leverage. Shippers' motions before the STB present concerns that the proposed UP-NS merger would harm shippers by giving UP-NS ability to leverage captive traffic to affect competitive traffic.[210] In particular, shippers warned that "the combined captive origins and destinations on UP and NS would give the merged entity a far greater concentration of closed industries than any of the other Class I carriers."[211]

[209] Deposition of Lance Fritz (former Chief Executive Officer, Board of Directors, UP), November 3, 2026, pp. 132:19–133:20 (discussing UP_3141193–227 at UP_3141227) {{REDACTED

}}

[210] Joint Shipper Associations' Motion for Summary Denial, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, August 6, 2026 ("Joint Shipper Associations' Motion"), fn. 76 ("In multiple Board proceedings, shippers have described a railroad's ability to exert market power by leveraging its captive lanes to also dictate terms for other traffic.")

[211] Joint Shipper Associations' Motion, p. 30.

195. Shippers can also benefit from geographic bargaining by bundling geographically disparate traffic across multiple routes to secure volume discounts. For example, a shipper with five facilities where three are served by Railroad A and two by Railroad B might be able to secure more favorable terms (e.g., through a volume discount) from Railroad A by shifting some production to the facilities served by Railroad A. NS's own documents {{REDACTED }}[212]

196. In addition, shippers can benefit from geographic bargaining by leveraging railroad competition for new facilities to lower the shippers' rates at existing facilities. That is, railroads may offer discounts for a shipper's existing business as a way to compete to be the provider for the shipper's new business. UP's own documents {{REDACTED }}[213]

197. A shipper's threat to move production to another facility or offer to create a new facility along a certain railroad's track, to secure a lower rate is less credible the fewer

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[212] As an example, {{REDACTED

}} See {{REDACTED

}} NS_00041822–34 at NS_00041823–4, {{REDACTED

}} See also {{REDACTED

}} NS_00041822–834 at NS_00041830–31.

[213] See {{REDACTED }} UP_0208474–505 at UP_0208492 {{REDACTED }}; UP_0082686.xls, {{REDACTED

}}

facilities it has independent of a particular railroad. In the same example, if Railroad A serves four of the five facilities, the shipper will have less credibility with threats to shift enough production to just the one facility not served by Railroad A to defeat a price increase at all of the others.

198. As the example illustrates, a shipper's ability to use its portfolio of movements and locations to generate bargaining leverage depends on how diversified those locations are relative to each railroad it faces on the other side of the bargaining table. The more of the shipper's network is dependent on one railroad, the more that railroad can leverage the *shipper's* dependence to demand higher prices or increased volume at competitive locations.[214] In effect, shippers that are less dependent on a single railroad will have more bargaining leverage (which they can use to get lower rates across all of their movements) and shippers that are more dependent on a single railroad will have less bargaining leverage and higher overall rates.

199. In the first instance, a merger can only either leave shippers unchanged or make them more dependent on the merged railroad.[215] This is because the merger can only increase the merged railroad's options to bargain over more routes simultaneously. At

[214] "Glossary of Terms," *Freight Rail Customer Alliance*, available at https://railvoices.org/the-issue/glossary-of-terms/ ("When railroad serves a customer at multiple locations, with at least one location 'captive,' the railroad sometimes quotes very high rates at the captive location. Then, the railroad may offer to reduce the rate at the captive location if the customer will also contract with the railroad at its competitive locations at higher than market rates.").

[215] Applicants may assert that shippers can eventually choose new locations to potentially counter this effect, but for a merger affecting as much commerce as the proposed UP-NS combination the amount of relocating of U.S. production capacity it might take to reverse this phenomenon is impractical to consider and would be tremendously disruptive.

the same time, the merger can only decrease shippers' alternative options to leave the bargaining table and turn to a different railroad. A merger like the proposed UP-NS combination would significantly disrupt this balance for many shippers, weakening their ability to negotiate discounts across routes while increasing the merged railroad's leverage to avoid price competition and prevent shippers from using previously available competitors. As stated by Lance Fritz, the former CEO and Chairman of UP's Board of Directors, {{REDACTED

}}.[216] The merger will result in UP getting substantially more {{REDACTED }} because for many shippers, they will become the sole option across a larger portion of their facilities, or even the sole option across all of the shipper's facilities.[217]

[216] Deposition of Lance Fritz (Chairman, Board of Directors, UP), November 3, 2026, pp. 132:19–133:20 (discussing UP_3141193–227 at UP_3141227) {{REDACTED

}}

[217] As discussed in Section 4.3.1, Dr. Israel relies on "one-lump" or "one monopoly rent" theory, which precludes these types of cross-route negotiations, and instead assumes that sole-served carriers cannot extend that leverage beyond the existing route. Dr. Israel refers to these as "bundling theories" and claims that he doesn't "know of a theory that holds up that says that combination creates more

200. I provide examples of this mechanism below. In the example shown in Exhibit 42, a shipper whose factory needs 150 units of input to operate can source between three geographically distinct UP, NS, and BNSF single-lines from facilities that each have a capacity of 100 units. Pre-merger, the shipper utilizes volume discounts to source a full 100 units from the cheapest carrier (BNSF) and sources the remainder from the second cheapest carrier (NS). Post-merger, the combined UP-NS can threaten to withhold the remaining 50 units as leverage to win additional traffic and will have capacity to serve all of the factory's needs. This shipper cannot credibly threaten to utilize only BNSF—that is not enough volume—meaning the shipper is now beholden to a higher-cost combined UP-NS to source its factory input, and UP-NS is able to win all of the traffic. This is a stylized example, but it illustrates how the merger shifts bargaining leverage to the merged UP-NS and leaves the shipper with higher rates post-merger.

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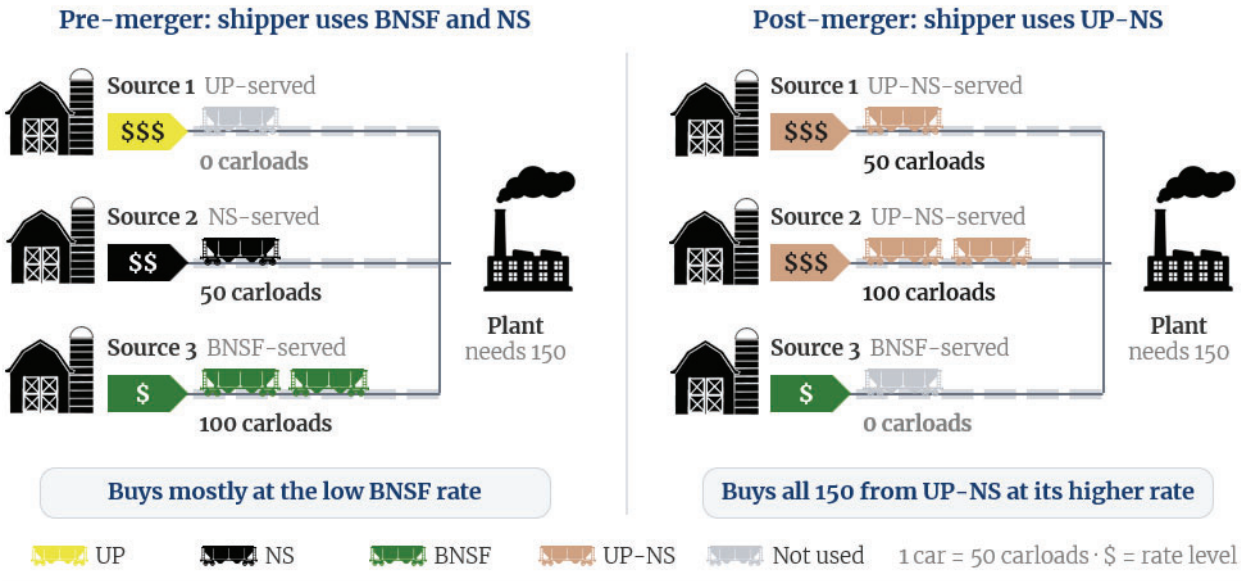
market power or something in a way that's anticompetitive." As I show in the remainder of this section, {{REDACTED }}. In addition, Dr. Israel's reference to "bundling theories" likely refers to a literature that models sellers as posting prices or making take-it-or-leave-it offers. That literature, however, generally does not consider the dynamics of price bargaining and thus is not applicable to this matter. Simply put, Dr. Israel's analyses—both theoretical and empirical—are completely at odds with the demonstrated realities of how prices and competition work in the railroad industry. See Israel Deposition, pp. 296:4–297:2 ("Q. So it's your testimony that there's no valid economic theory that you've ever seen that would find an anticompetitive effect to a shipper becoming more dependent upon a supplier as a result of a transaction? A. You know, certainly, the way you asked that, at a given shipper level, I have I don't know of an economic theory that concludes that that -- a valid economic theory that concludes that will have an anticompetitive effect. People have written down theories that say -- these are bundling theories, right. People have written down theories that say there may be reasons or that railroads or other businesses might try to raise prices on some of those routes they brought together in various ways. But those -- I don't know of a theory that holds up that says that combination creates more market power or something in a way that's anticompetitive.").

Exhibit 31
The proposed merger would shift the balance of shippers' bargaining leverage



Source: Hypothetical example
Note: The example above depicts a hypothetical shift in bargaining leverage following the proposed merger between UP and NS. Pre-merger, the shipper uses BNSF and NS, the cheapest carriers. Post-merger, UP-NS can refuse to serve the necessary 50 carloads and will leverage its bargaining power to win additional traffic and raise the shipper's rates.

201. As shown in its own documents, UP {{REDACTED

}}. For example, {{REDACTED

}}[218] As another example, UP's own strategic planning {{REDACTED

[218] {{REDACTED }} UP_2168208–13 at UP_2168213 {{REDACTED

}}

}}[219] Other record evidence likewise shows UP {{REDACTED }}.[220] As discussed above, this effect can go both ways—shippers can also utilize this type of cross-route leverage to obtain better terms. However, the proposed merger will enhance and expand the combined UP-NS's ability to raise rates, allowing the combined railroad to use its control over more captive traffic and facilities in negotiations over contestable business.

202. Notably, the type of competitive harm illustrated in Exhibit 31 {{REDACTED }} As I further explain below in Exhibit 33, a {{REDACTED

}}

---

[219] {{REDACTED }} UP_0884487–96 at UP_0884496 {{REDACTED

}}.

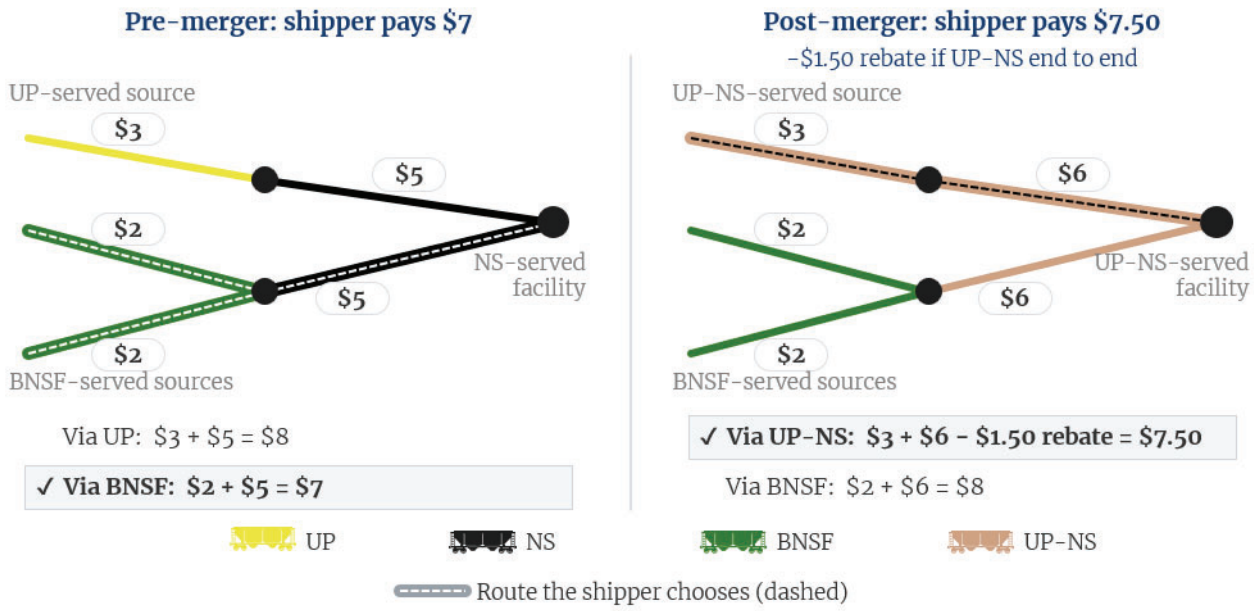
[220] {{REDACTED }} UP_1123948–60 at UP_1123958 {{REDACTED }}, UP_1123958 {{REDACTED }}; {{REDACTED }} UP_0209007–12 at UP_0209011 {{REDACTED }}. As another example, internal UP {{REDACTED

}} See {{REDACTED }} UP_0208474–505 at UP_0208486 {{REDACTED }}. {{REDACTED }} See workpaper 5-1.

203. The proposed merger will also result in harmful effects due to geographic bargaining if the combined UP-NS exercises its ability to foreclose other railroads. For example, a facility in the East may be sole-served by NS but has many options to procure an input from the West, some of which may be sole-served by UP and others sole-served by BNSF. Even though this facility is sole-served in the East, the shipper benefits from competition from different sources that are served by different railroads and are in different geographies. In Exhibit 32, I provide an illustrative example of such a shipper. Pre-merger, the shipper could source significant volume from facilities sole-served by BNSF and may bundle routes served by BNSF and pay rates ($2 per ton-mile) more favorable than UP's quote ($3 per ton-mile). The rate on the NS portion of the move is $5 per ton-mile, regardless of which railroad they interchange with.

204. Post-merger, the combined UP-NS can charge a higher rate on interchanges with BNSF ($6 per ton-mile). At the same time, UP-NS can offer a $1.50 per ton-mile rebate for volume or "bundle discount" if the shipper utilizes UP-NS only (for both the western and eastern portions of the move). This shipper chooses the cheaper option ($7.50 per ton-mile total), but is worse off post-merger, because they were paying $7 per ton-mile before.

Exhibit 32
Shippers benefit from source competition, and UP-NS will have an incentive to utilize its leverage to foreclose other competitor railroads



UP-NS raises the BNSF interchange price and offers a bundle rebate: **the shipper pays more**

Source: Hypothetical example
Note: The example above depicts a hypothetical shipper's bundling options following the proposed merger between UP and NS. The dashed line represents the shipper's chosen input. Pre-merger, they utilize the cheaper input from BNSF. Post-merger, UP-NS has an incentive to make BNSF interchanges more expensive, as reflected by the higher costs on those routes. As a result of UP-NS's imposed higher costs on BNSF interchanges, the shipper is paying $0.50 per ton-mile more post-merger.

205. As another example, the merged UP-NS can also use its leverage to weaken competition in the bids for portions of an interline movement, i.e. which railroad receives the longer portion of a move which can interchange in multiple locations. Specifically, shippers raised concerns that a combined UP-NS could use its increased leverage to win the longer haul without competing on the merits.[221] This ability to

[221] Joint Shipper Associations' Motion, p. 30 ("That could substantially increase the merged carrier's leverage in negotiations with customers to favor its long-haul routes over alternative interline routes by tying its rates on single-line routes to the customer's willingness to use the UP long haul routes on

avoid competing for longer haul on interline routes will increase the overall rate UP-NS can extract from shippers on these routes. Additionally, shippers are also concerned that if CSXT and BNSF are left to only serve short hauls, the reduced traffic would increase their average costs, which would increase their prices and/or lower their service quality across their entire network.[222] I discuss Applicants' failure to consider competition in the bids for interline moves where a longer haul is a source of shippers' negotiating leverage in Section 6.

206. UP's {{REDACTED

}}[223]

interline moves. … UP could short haul CSX and BNSF on all interline routes to CSX and BNSF destinations.").

[222] Joint Shipper Associations' Motion, p. 31 ("CSX and BNSF will experience the opposite: line-haul revenue erosion, reduced traffic density, higher cost per mile, and higher operating ratios across the traffic that remains on their networks.").

[223] See UP_0082686.xls, {{REDACTED

}}. See {{REDACTED
}}, UP_0097551–62 at UP_0097559 {{REDACTED }}; {{REDACTED
}} UP-STB-D13-0000430–51 at UP-STB-D13-0000436 {{REDACTED
}}; {{REDACTED }} UP_0023295–311 at
UP_0023305–6 {{REDACTED

}}

5.2. Empirical evidence, {{REDACTED }}, demonstrates that a combined UP-NS would have stronger geographic bargaining leverage, substantially harming shippers

207. In this section, I provide evidence that a combined UP-NS would have stronger geographic bargaining leverage and that this would substantially harm shippers. I first show that {{REDACTED

}}

208. Next, I perform my own analysis, {{REDACTED

}}, confirming shippers would pay substantially more in rates (or have their terms of service degraded) due to such a reduction in their bargaining leverage following a UP-NS merger.

(1) {{REDACTED }} UP-NS's increased leverage would harm a {{{REDACTED }}} number of shippers

209. {{REDACTED

[224]

}} [225] This analysis of potential competitive

[224] Deposition of John Turner (SVP Operations - Northern Region, UP), September 2, 2026, Exhibit 116, UP_0082882–936 at UP_0082914.

[225] {{REDACTED }} UP_0082459–553 at UP_0082536 {{REDACTED

harm {{REDACTED }} that advocated in this proceeding by the Joint Shipper Associations, which argued that "[t]he combined captive origins and destinations on UP and NS would give the merged entity a far greater concentration of closed industries."[226]

210. The same {{REDACTED }}.

Specifically, {{REDACTED

}}[227] Exhibit 33 shows

{{REDACTED

}}

}}

[226]Joint Shipper Associations' Motion, p. 30 ("The combined captive origins and destinations on UP and NS would give the merged entity a far greater concentration of closed industries.").

[227] See, e.g. {{REDACTED }} UP_0082459–553 at UP_0082508 {{REDACTED }}

Exhibit 33
{{REDACTED }}

{{REDACTED

}}

Source: Deposition of John Turner (SVP Operations - Northern Region, UP), September 2, 2026, Exhibit 116, UP_0082882–936 at UP_0082914

211. {{REDACTED

}}[228]

212. I extend {{REDACTED }} and find that a UP-NS combination will affect a {{REDACTED}} number of shippers and stations all across the U.S. {{REDACTED

}} In Exhibit 35, I supplement {{REDACTED}} as the underlying data source to get a measure that is not limited to {{REDACTED }}. To do this, I focus on shippers' non-intermodal traffic and calculate the number of stations {{REDACTED }}. I implement {{REDACTED }} by identifying (1) the shippers who utilized both traffic sole-served by UP and by NS in 2024, and (2) the sole-served UP and NS stations used by these shippers.[229] I then illustrate the scope and spread of these stations in a map. In this calculation, I define the unit of "a shipper" by performing a limited aggregation of shipper names in the data.[230]

[228] Deposition of John Turner (SVP Operations - Northern Region, UP), September 2, 2026, Exhibit 116, UP_0082882–936 at UP_0082914.

[229] Here, I define a sole-served facility as one where UP or NS is the only railroad that is observed originating or terminating traffic from the facility for one or more routes (defined at the 6-digit origin and destination SPLC code level) in the Six-Railroad Tapes Data.

[230] I perform limited aggregation of shipper names in this analysis. I aggregate shippers' names across tapes by expanding common contractions (e.g., "CORP" -> "CORPORATION"), removing white space, and removing punctuation. I make no other changes. I do not consider intermodal movements when determining whether a shipper relied on sole-served UP and NS stations.

Exhibit 34
Map of stations meeting {{REDACTED }} metric for increasing UP-NS's bargaining leverage over shippers

{{{REDACTED

}}}

213. When using a definition of whether stations are "sole-served" based on which railroads are observed to carry traffic on a route, I find that {{REDACTED}} stations

plausibly meet {{REDACTED }} for increasing UP-NS's bargaining leverage over shippers.[231] These stations represent {{REDACTED}} of all Class I stations and {{REDACTED}} of all UP and NS stations which had observed waybill traffic since 2019.[232] These stations are {{REDACTED }}, demonstrating the {{REDACTED }} from UP-NS's increased geographic bargaining leverage over shippers.

214. In Exhibit 35, I put into perspective the amount of railroad revenue utilized by the shippers who are {{REDACTED }} from reduced geographic bargaining leverage {{REDACTED }}. I first calculate the total railroad spending from the same set of shippers I analyzed above (shippers who utilized both traffic sole-served by UP and by NS in 2024 who, {{REDACTED }}, would be plausibly harmed by a loss of geographic bargaining leverage) as a measure of the potentially harmed traffic.[233]

215. As discussed above, because these shippers utilize *both* sole-served UP traffic and sole-served NS traffic, their bargaining leverage will be shifted to the merged railroad. The increase in bargaining leverage might not only impact these shippers' prices on existing UP and NS traffic but could theoretically subject the rest of their movements to

[231] These stations are utilized by {{REDACTED}} shippers based on the simple name aggregation I utilized. The number of shippers and stations are {{REDACTED }} if I use Dr. Israel's definition of which stations are sole-served. See workpaper 5-2. As I discuss in Section 12.1.3, Dr. Israel's definition assumes competition exists even if there has been no observed traffic by a railroad for the last five years.

[232] See workpaper 5-2.

[233] Some traffic may be more or less harmed due to geographic bargaining effects.

harm. For example, as discussed above, the merged UP-NS could use its increased leverage to win existing business from other railroads, or short-haul its interline partners. The total amount of spending among the shippers potentially subject to harm from a decline in geographic bargaining leverage is {{REDACTED }}.

216. For comparison, I then calculate all UP-NS interline spending in 2024, which is the amount of spending subject to Applicants' claimed "end-to-end efficiency." As shown in the exhibit, the amount of spending subject to Dr. Israel's claimed efficiency gains is {{REDACTED }}. Therefore, {{REDACTED

}} As discussed below, Dr. Israel does not analyze the possibility of geographic bargaining effects in his analysis.

Exhibit 35
Total railroad spending on shippers subject to harm by geographic bargaining following {{REDACTED }} total UP-NS interline spending subject to claimed end-to-end efficiency gain, 2024

{{REDACTED

}}

217. The revenue figures in this analysis provide conservative estimates of the amount of revenue theoretically subject to the combined UP-NS's increased bargaining leverage. As this analysis does not fully aggregate shipper names, it may leave out

revenue from shipper subsidiaries that only utilize UP-sole served traffic and subsidiaries that only utilize NS-sole-served traffic. Moreover, this analysis does not account for the fact that at facilities which may appear to be served by multiple railroads, shippers are still beholden to certain railroads for specific types of movements (e.g., for specific commodities) for reasons such as network availability, routing preferences, or allocation agreements among railroads.

218. For example, a facility may be served by both UP and BNSF, but BNSF's access may depend on trackage rights over UP's tracks that are restricted to certain movements, such as eastbound traffic. There are also similar separations of servable traffic or restrictions based on particular commodities, ability to serve certain destinations or any number of other factors. Applicants' documents acknowledge such patterns—in UP's recent agreement with CN related to this merger, they agreed to "eliminat[e] paper barriers,"[234] which, loosely speaking, is a recognition that various restrictions persist from the long history of railroads granting rights meant to be targeted for any number of reasons but which today amount to barriers so that not all railroads serving a facility can serve all movements to and from that facility.

[234] Applicants' Second Response to Decision No. 21, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, July 27, 2026, p. 207 ("Elimination of Paper Barriers. If Union Pacific (a) removes any paper barrier on the Kansas City Line, or (b) grants any exception to any paper barrier on the Kansas City Line, Union Pacific would similarly remove or grant an exception to CN for any paper barrier on the Kansas City Line").

219. In general, accounting for shippers' actual options based on observed traffic for specific types of movements will tend to find increases in shippers' degree of dependence on a single railroad. In the extreme, a shipper who may appear to have multiple rail options, based on their presence at a location (as Dr. Israel's definition relies upon), may in practice be fully dependent on a single railroad for all of their movements.

(2) A case study of chemical shipments shows increased railroad leverage would increase rates

220. The analysis in Exhibit 35 did not incorporate shippers' actual options for specific movements and did not fully aggregate shipper names across the tapes. I attempt to do both in the analysis I present below, which focuses on shippers in a single commodity—chemicals.[235] For chemicals, I have a reasonable expectation that service at the customer's facility could be identified from a narrow location—chemicals offer a commodity group that has both frequent practical and regulatory restrictions on a shipper's ability to truck chemicals to a rail facility I might not otherwise be measuring,[236] and common carrier obligations that help ensure any Class I railroad

[235] These shippers represent {{REDACTED}} of the total revenue associated with chemical shipments in 2019–2024. See workpaper 5-3. Cleaning and aggregating shipper names across the six Class I railroad tapes is enormously difficult due to misspellings, subsidiaries, differing punctuation, and other factors. Dr. Bailey's Six-Railroad Tapes Data does not contain shipper names. To conduct analyses using shipper names I revisit Dr. Bailey's data processing to include the relevant variables in the Six-Railroad Tapes Data.

[236] As an example, the National Hazardous Materials Route Registry limits travel routes for hazardous materials via truck, and there is specific licensing for drivers seeking to transport hazardous materials. See "National Hazardous Materials Route Registry," *Federal Motor Carrier Safety Administration*, available at https://www.fmcsa.dot.gov/regulations/hazardous-materials/national-hazardous-materials-route-registry; "HAZMAT Endorsement," *Transportation Security Administration*, available at https://www.tsa.gov/for-industry/hazmat-endorsement ("The Hazardous Materials

capable of transporting chemicals at a customer location is most likely to be observed in the data on those movements.[237]

221. To incorporate into my analysis shippers' actual options that reflect network availability and routing preferences, I use these shippers' chemical shipments and examine these shippers' dependence on specific railroads over the past six years. I start by focusing on individual stations, and measure how often chemical shippers are captive to each Class I railroad at a station. I then focus on each shipper's chemical movements within a corridor and evaluate whether that shipper is dependent on any Class I for movements between that origin and destination. Using this, I construct a measure that captures the extent to which each individual chemical shipper is dependent on each of the Class I railroads across the entirety of the shipper's chemicals movements. I use this measure to evaluate the relationship between a shipper's dependence on each Class I and the rates it pays to move its chemical shipments.

Endorsement Threat Assessment Program conducts a Security Threat Assessment for any driver seeking to obtain, renew or transfer a Hazardous Materials Endorsement on a state-issued commercial driver's license. You should apply if you have a state-issued CDL and you are required to transport materials that require placarding under the Department of Transportation hazardous materials regulations"). See also 49 C.F.R. §§ 1011 and 1111 (August 6, 2020), citing Olin ("Olin argues that the 500-mile threshold is unreasonable for its chlor alkali products and that this factor should be removed entirely for chlorine and other hazardous materials that cannot readily or feasibly move by truck.").

[237] See 49 U.S.C. § 11101(a) ("A rail carrier providing transportation or service subject to the jurisdiction of the Board under this part shall provide the transportation or service on reasonable request. … Commitments which deprive a carrier of its ability to respond to reasonable requests for common carrier service are not reasonable.").

222. First, I examine whether a station is captive to a railroad. If, for a given station, all chemical shipments to and from that station, and within a mile radius around that station, utilize a specific railroad, then I identify the station as captive to that railroad.[238] In the first results column of Exhibit 36, I show that {{{REDACTED}}} and {{{REDACTED}}} of chemical stations (weighted by revenue) are captive to UP and NS, respectively. This means that, post-merger, {{{REDACTED}}} of chemical stations (weighted by revenue) will be captive to the combined UP-NS.

[238] Because of the ability to utilize trucking as an alternative option, or to ship to another Class I, I treat all non-hazardous intermodal chemical movements as non-captive by default.

Exhibit 36
Shares of chemical revenue and stations that are captive to each Class I railroad

{{{REDACTED

}}}

223. Next, I examine whether a shipper's chemical movements between a given origin and destination are dependent on a single railroad. If for chemical movements between

an origin and destination, and within a 1-mile radius around that origin and destination, a shipper utilized routes which *always* involved a specific railroad (e.g., UP), I identify that shipper's movements in that corridor as captive to that railroad (in this example, UP).[239] I can then aggregate across all origin-destinations and across all chemical shippers to measure what share of chemical movements are captive to each Class I railroad.[240] I report these results in the rightmost column of Exhibit 36. Across chemical shippers, {{{REDACTED}}} of chemical revenues are captive to UP, and {{{REDACTED}}} of chemical revenues are captive to NS. Post-merger, {{{REDACTED}}} of chemical revenues will be captive to the combined UP-NS.

224. Within the subset of chemical shippers that I have matched and using the measure of a shipper's dependence on each Class I for movements in particular corridors, I can (i) establish the relationship between a decline in geographic bargaining leverage and the rates paid by the shipper and (ii) perform a back-of-the-envelope calculation of the magnitude of the merger effects. As discussed above, in previous smaller mergers, the potential impact of changing geographic bargaining leverage was small—the mergers were smaller and there was less consolidation in the railroad industry. So, rather than trying to project the effect of a UP-NS combination from earlier, very different merger events, I am instead looking at differences across shippers in their dependence on any

[239] A shipper's movements from a given facility can be dependent on more than one railroad. For example, a shipper may be dependent on (always use) UP for its movements going from Origin A to Destination B and dependent on (always use) BNSF for its movements going from Origin A to Destination C.

[240] As a conservative assumption, I treat any non-hazardous intermodal movements as not captive to any railroad (i.e., I assume that there is some other railroad they could have used).

given railroad, how that affects the rates they pay, and then how the merger will change each shipper's dependence on UP and NS and the rates it pays.

225. To examine the relationship between dependence on a single railroad and rates, I create a measure of how dependent a particular shipper is on a single railroad or set of railroads.[241] Using this metric of a shipper's geographic spread and its reliance on specific railroads, I utilize regression analysis to examine the relationship between that concentration and rates paid while controlling for the other observable factors in a given movement which are most likely to impact rates, such as the route traveled, the type of chemical shipped, and macroeconomic effects. I find that the more concentrated a shipper's movements, the higher rates paid across all movements.[242] That is, when a shipper's business is more reliant on a single or small number of railroads, that shipper tends to pay higher rates, on average.

226. Combining these regression results with each chemical shipper's individual change post-merger in how concentrated its business is on UP-NS, I can measure the merger's anticipated impact on shippers' bargaining leverage on the prices paid by chemical shippers. In Exhibit 37, I show that solely due to the merger's increase in concentration of their reliance on a merged UP-NS, these chemical shippers would pay an {{REDACTED }} per-year post-merger, an amount {{REDACTED }} the ostensible yearly benefit of Applicants' CGP after the first year. To put this in

[241] I discuss the construction of this metric, and its interpretation and applicability to shipper bargaining leverage in more depth in Appendix 12.3.1.

[242] For more details on the regression results, see Appendix Section 12.3.

context for shippers more generally, I perform two back-of-the-envelope calculations to estimate the total harm. In Approach 1, I apply the average harm among chemical shippers ({{REDACTED }}) to the shippers identified in Exhibit 35, who have at least one UP sole-served station and at least one NS sole-served station ("{{REDACTED }}"). The predicted harm to those shippers from a loss in geographic bargaining leverage would be approximately {{REDACTED }} per year.[243] In Approach 2, I apply a simple projection methodology based on the ratio of traffic among harmed chemical shippers to all non-intermodal traffic. Under Approach 2, I find that UP-NS's increased geographic bargaining leverage would translate into an {{REDACTED }} paid by shippers per year.

[243] As discussed in Section 12.3.3, I find that the average harmed chemical shipper pays rates which are approximately {{REDACTED}} higher. In Exhibit 35, I identified that a conservative estimate of the scope of harmed traffic is {{REDACTED }}. Assuming the shipper-level average increase in rates on {{REDACTED }} in traffic results in shippers paying an {{REDACTED }} per year due to reduced bargaining leverage. See Exhibit 37.

Exhibit 37
Predicted post-merger change in select chemical shippers' rates, and projections to all shippers

{{REDACTED

}}

227. Both this analysis and {{REDACTED }} demonstrate the importance of shipper bundling and geographic bargaining on prices. Dependence on a single railroad reduces shippers' bargaining leverage, forcing shippers to predominately or completely work with one railroad, and pay higher prices.

5.3. Applicants' experts ignore the possibility of geographic bargaining

228. Applicants' experts completely ignore the possibility of geographic bargaining. In their application, Applicants' experts did not provide any analysis investigating the impact of how the merger could reduce shippers' bargaining leverage, and whether individual shippers' increased dependence on a combined UP-NS could lead to higher rates.

229. Even though Dr. Israel admits that "a large fraction of interline rail shipments are governed by sophisticated contracts,"[244] he proceeds in his analysis as though each movement is negotiated entirely independently. In fact, Dr. Israel fails to acknowledge or analyze the possibility that the merger would shift bargaining leverage towards the merged UP-NS at all.[245]

230. Moreover, none of Dr. Bailey's screens identify any shipper's bundle of locations, and therefore none of her screens can purport to analyze the bargaining leverage shippers would lose as they become increasingly dependent on a combined UP-NS.[246]

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[244] Israel Second Errata VS, ¶ 20.

[245] Israel Deposition, pp. 65:7–66:1 ("Q. I guess I'm asking a more specific question. Is there any part of your verified statements that address the bundling concerns that are described on Page 30 of the Joint Shipper Associations submission? A. I don't think this sort of bundling statement as it's made here is addressed explicitly in my verified statements thus far. These bundling -- these sort of bundling theories have a history in economics. Economists generally find it difficult to find a bundling theory like this that holds up as a matter of economics. So it's not something I addressed in my verified statements, but given that comments are coming in on this basis, you know, perhaps it's something I would reply to, and so it's something that I'm -- that I've been considering.").

[246] I discuss the flaws in Dr. Bailey's screen further in Appendix Section 11.

a. For example, Dr. Bailey's "customer analysis" screen focuses on individual customer facilities that are currently served by both UP and NS.[247] But it does not identify all of a customer's facilities and therefore cannot identify how a shipper's dependence on a combined UP-NS would change, based on that shipper's bundle of locations.

b. Similarly, Dr. Bailey purportedly screens for geographic competition in her "between-corridor" analysis, but the "50/10" screens she uses are incapable of assessing the options provided at each of the multiple locations to/from which a shipper may require transportation. Rather, the "50/10" screen focuses on competition for all the shippers in one single area across all the plausible origins or destinations for the products they ship. That is a different aspect of geographic competition.

c. Finally, her "within-corridor" screen cannot identify the merger-induced harm a shipper like the ones I have described above will face. This analysis focuses on "horizontal competition to transport freight along the same segment of specific

[247] Bailey Second Errata VS, ¶¶ 106, 109 ("I analyze the scope for adverse competitive effects from situations where UP and NS both serve the same customer location or the same geographic area. … This review provisionally identifies customer facilities where a combination of UP and NS would reduce the number of railroads accessible to the customer from 2-to-1 or from 3-to-2."); Bailey Deposition, pp. 188:19–189:19 ("Q. The access to customer analysis only looks at whether UP and NS serve the same customer location, right? A. I mean, it's asking are they serving that customer facility. That's what it's -- that's what it's looking at. It's looking at access to customers. Q. But the access to customer analysis doesn't assess whether UP or NS serve different facilities for the same customer, right? A. So what I looked at here was access to the -- who has access to that facility. That's the work that I did here. I mean, I have other access that's looking within the corridor or between corridors, but -- but for customer facilities, I'm looking at each facility.").

corridors."[248] It does not identify individual customers, or individual customer facilities, and so cannot gauge whether shippers will become more dependent on a combined UP-NS (and how that might impact their bargaining leverage or the rates they face).

231. Similarly, Mr. Hunt's analysis of diversions assumes that shippers decide on movements in separate lanes completely independently.[249]

232. As Dr. Bailey acknowledged in her December 2025 verified statement, "[s]hort run competition between railroads with direct connections to customer facilities is not the only way in which railroads compete."[250] Applicants' analyses of the impact of the merger are completely at odds with the reality of railroad pricing, where railroads and

[248] Bailey Second Errata VS, ¶ 120.

[249] Hunt Deposition, Vol. II, pp. 611:3–612:22 ("Q. Okay. So I think I'm getting it slightly different. So let me see if we can get on the same page. So with respect to a specific diversion prediction, you are taking a lane and predicting, based on the improved characteristics post merger, what decisions shippers will make in that lane post merger, correct? A. Yes. Q. Okay. What that same shipper might do in a separate lane has no impact on your prediction in the first lane, correct? A. Those are -- the lane characteristics would be different. Those are independent decisions. Q. Right. Your model treats them as independent decisions, correct? A. That is correct. Q. Okay. Your model doesn't take into account whether a shipper might be negotiating several lanes at a time and whether those decisions might be made jointly as opposed to independently, correct? A. I do not use shipper information in the model, so that is not a consideration. Q. Okay. Is it your testimony that -- that what I described doesn't happen in the real world? A. That is not my testimony.").

[250] Verified Statement of Elizabeth M. Bailey, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, December 17, 2025, ¶ 68. Dr. Bailey removed this statement from later verified statements. In her deposition, Dr. Bailey admits that it "is possible" that she did not analyze all potential forms of horizontal competition in her VS. Indeed, I identify many instances of missed competition (by both Dr. Bailey and Dr. Israel) in Sections 4–6. Bailey Deposition, pp. 152:23–153:6 ("Q. So it's possible that there are other ways of horizontal competition that you did not assess in this report? A. I mean, anything is possible, but it's not necessarily probable. And so my -- my assignment was to analyze potential losses of horizontal competition. And so these are the ways that I did it.").

shippers frequently bargain across geographically disparate routes and leverage options to leave the bargaining table to turn to a different counterparty. As I show above, the merger will substantially shift bargaining leverage, allowing the merged UP-NS to raise prices.

5.4. Applicants' proposed remedies fail to address UP-NS's combined bargaining leverage

233. Applicants' offered remedies to particular facilities do nothing to address geographic bargaining leverage. Dr. Bailey and Ms. Novak seek to identify particular facilities which they identify as potentially losing access to a Class I as a result of the merger. For example, Dr. Bailey examines SCRS data in order to "identif[y] customer facilities where a combination of UP and NS would reduce the number of railroads accessible to the customer from 2-to-1 or from 3-to-2."[251] Ms. Novak outlines a similar process, where Applicants "carefully reviewed their records and other available information to identify 2-to-1 shipper facilities."[252]

234. As I discuss further in Section 11, these investigations into specific facilities completely miss the mark on the ability of the merged UP-NS to be able to leverage its unprecedented size and scope when bargaining with shippers across multiple geographies. If there is a shipper with two separate facilities, one sole-served by UP

[251] Bailey Second Errata VS, ¶ 109.

[252] Verified Statement of Katherine N. Novak, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," April 30, 2026 ("Novak VS"), ¶ 53.

and one sole-served by NS, they will be directly harmed by the merger due to a loss of geographic bargaining leverage. Neither Dr. Bailey nor Ms. Novak's analyses address these concerns.

235. Beyond promises of access to specific facilities, Applicants have also offered additional regulatory commitments in an attempt to address specific potential harms to shippers. Again, these commitments fail to address the impact of UP-NS's increased geographic bargaining leverage.

236. First, the TAP only relates to service disruptions—a shipper who is forced to shift their traffic to UP or pay higher rates does not benefit from this program unless there is a service reduction.[253] Second, commitments to written justifications for rate increases fail to limit railroads' ability to raise rates. Third, Applicants' proposed Rate ADR program relies on proving UP-NS's market dominance. If UP leverages market dominance in one area to increase rates in other areas the shipper operates, the arbitrator may find that the combined UP-NS does not have market dominance in the affected routes. Even outside of that concern, shippers can only win rate relief under this system if UP-NS's rates are above the relevant cost threshold, regardless of any other proof of market dominance.[254]

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[253] Applicants' Second Response to Decision No. 21, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway Company", Docket No. FD 36873, July 27, 2026, *SUPP.* p. 189.

[254] Applicants' Second Response to Decision No. 21, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway

237. Overall, Applicants' claimed remedies, either through voluntary commitments or via proposed access to specific facilities, do nothing to address the specific concern of a merged UP-NS's increased geographic bargaining leverage.

Company," Docket No. FD 36873, July 27, 2026, Supp. p. 198 ("Notwithstanding anything to the contrary, a carrier does not have market dominance for any rate with a revenue-to-variable cost (R/VC) ratio below 180%.").

6. The merger would eliminate competition between UP and NS for a greater portion of the interline movements in which they participate

238. In this section, I discuss another way shippers benefit from competition between UP and NS that Applicants' experts have not considered: competition to carry the middle of an interline movement. Although UP and NS provide complementary service at opposite ends of the movement, they can compete head-to-head to carry a middle segment that either railroad could serve, by competing over the interchange point.

239. The networks of UP and NS are such that there are often multiple possible interchange points on current UP-NS interlines, which introduces opportunities for each of them to win a greater portion of the profit from any particular interline move. Some interchange points give UP the "longer haul" and some interchange points give NS the "longer haul." The railroad that carries the "longer haul" (or the "middle" part of the movement) tends to earn higher revenues and higher margins. This opportunity to earn higher profits (or the threat of earning less) generates competition between the railroads to win the middle of the movement and an incentive to offer the shipper more competitive rates to influence the choice of interchange point

240. In this section, I first explain how shippers benefit from this competition, which would evaporate if UP and NS were to merge (Section 6.1). Second, I show that the empirical evidence suggests that this interchange point is often at issue (Section 6.2). Third, I explain that Applicants' economists do not analyze or even acknowledge the merger's implication for this competition that shippers currently enjoy, despite

claiming to analyze instances where UP and NS directly compete (Section 6.3). Finally, I explain that Applicants do not consider the horizontal competition over the middle of the movement in any of their proposed commitments. The commitment they claim will protect shippers will not replace the loss of shippers' ability to put UP and NS in competition over the middle of the movement (Section 6.4).

6.1. Shippers benefit from UP and NS each trying to get the longer haul to maximize their share of revenues in interline movements

241. Railroads that serve either end of a movement (like UP and NS) can be seen as offering complementary service: neither railroad can offer single-line service, so one railroad offers the originating service, and the other railroad offers the terminating service. However, these railroads can still have head-to-head competition with one another over a segment that either railroad could provide.

242. This form of competition occurs when the networks of the two interlining railroads are such that there are multiple possible interchange points. This is especially the case for many interline movements involving the UP and NS networks, and especially for movements that cross the Watershed. Some interchange points give UP the "longer haul," meaning that UP gets to ship the movement farther toward its destination before interchanging. Other interchange points give NS the "longer haul," meaning that NS gets to ship the movement further. Whichever railroad gets the longer haul effectively wins the "middle" of the movement, the portion of an interline

movement that either UP or NS could ship depending on the chosen interchange. Carrying the longer haul tends to earn the railroad higher revenues.

243. This opportunity to earn higher revenues (or the threat of earning less) generates competition between the railroads to win a greater share of the origin-destination mileage on a move—the middle of the movement—that either of them can provide. Though the winner of this extra share of mileage will bundle it with the end they can provide, rather than set a separate rate for it, the competition to win it is effectively head-to-head competition between UP and NS. The prospect of winning the middle segment is an incentive to offer the shipper more competitive rates on hauls that include the middle to influence the choice of interchange point.[255] This form of competition would not be accounted for in traditional screens that look only at the number of independent railroad pairings available to a shipper.

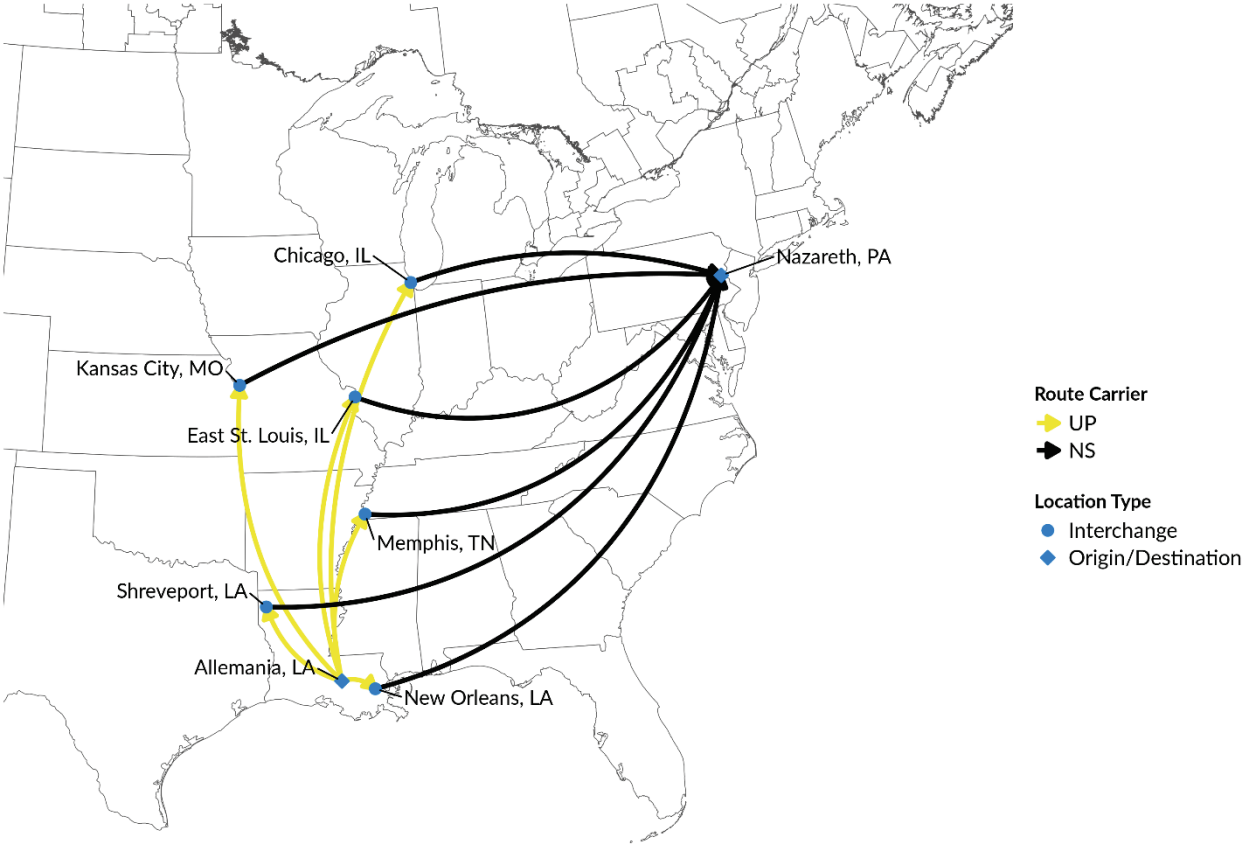
244. To see how this competition might play out in practice, consider a shipper that needs to move chemicals from Louisiana to Pennsylvania. The shipper is only served by UP in Louisiana and only served by NS in Pennsylvania. Neither UP nor NS could serve the full movement for this shipper (i.e., UP must always originate it, and NS must always terminate it), but both railroads could serve a large part of the movement as can be seen below in Exhibit 38. Because the UP and NS networks connect at multiple

[255] Applicants acknowledge this competition in their response to the motions seeking summary denial of the proposed merger application for failure to establish a prima facie case. See, e.g., Applicants' Prima Facie Response, p. 29 ("As the Interstate Commerce Commission recognized, 'Railroads compete with each other for the longest haul and maximum revenue on traffic.'").

points, the movement could interchange in, for example, Chicago, Kansas City, East St. Louis, Memphis, or New Orleans.[256] The interchange point will determine which railroad serves the larger part, i.e., carries the "middle" of the movement.

[256] I understand UP and NS both interchange in {{REDACTED }}. See e.g., {{REDACTED }} UP-STB-D13-0000381–402 at UP-STB-D13-0000389; {{REDACTED }} NS_STB_00001339–42 at NS_STB_00001339.

Exhibit 38
UP and NS can compete over the "middle" of a movement between Louisiana and Pennsylvania



Source: Hypothetical Example
Note: This exhibits shows a hypothetical example of various interchange points for a possible interline movement that UP originates in Allemania, LA and NS terminates in Nazareth, PA. Exhibit 29 shows the UP and NS rail networks. I understand UP and NS both interchange in {{REDACTED }}. See e.g., {{REDACTED }} UP-STB-D13-0000381–402 at UP-STB-D13-0000389; {{REDACTED }} NS_STB_00001339–42 at NS_STB_00001339.

245. As demonstrated in Exhibit 38, UP and NS compete over which railroad will carry the middle of the movement and for how long. For example, if the movement interchanges in New Orleans, UP will carry the movement just {{{REDACTED}}} miles from Allemania, LA to New Orleans representing just {{{REDACTED}}} of the total mileage, and NS will carry the movement for a longer haul from New Orleans, LA

to Nazareth, PA, representing {{{REDACTED}}} of the total mileage.[257] As the interchange point moves north, UP generally carries the movement longer and for a greater percentage of the total mileage. For example, if East St. Louis is the interchange point, UP will carry the movement {{{REDACTED}}} miles from Allemania, LA to East St. Louis, IL, representing {{{REDACTED}}} of the total mileage, and NS will carry the movement {{{REDACTED}}} miles from East St. Louis, IL to Nazareth, PA, representing {{{REDACTED}}} of the movement.[258] If the interchange point moved even further north (e.g., to Chicago, IL) UP would carry approximately {{{REDACTED}}} of the miles on the movement, and NS would carry approximately {{{REDACTED}}} of the miles on the movement.[259]

246. Based on the potential interchange points for the origin-destination pair in Exhibit 38, UP will carry the movement for at least {{{REDACTED}}} of the total mileage on its shortest possible movement. Similarly, NS will carry the movement for at least {{{REDACTED}}} on one of its shortest possible movements. So, the actual interchange point determines how much of the remaining "middle" (at least

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[257] See workpaper 6-1.

[258] See workpaper 6-1.

[259] {{{REDACTED

}}} UP carries the movement {{{REDACTED}}} miles, and NS carries the movement {{{REDACTED}}} miles. {{{REDACTED {{{REDACTED}}} {{{REDACTED}}}

}}} See workpapers 6-2, 6-3, and 6-4.

{{{REDACTED}}} of the mileage) each railroad gets to carry and correspondingly affects their split of the revenue.

247. This wide range permits the shipper to solicit—or either railroad to offer—competing packages built around different interchange points. Each railroad can lower its rate in exchange for the longer haul, and the shipper can select the package with the lowest total price.[260] After the merger, UP-NS would carry the entire movement by default and would no longer compete with itself over either the interchange point or the associated revenue, stripping shippers of the benefits of this competition.

6.2. UP and NS compete for the middle of interline movements

248. Competing over the middle of the movement is not only a hypothetical thought exercise: the data show that the choice of interchange point is often at issue. Railroads

[260] Railroads tend to earn higher profits on longer hauls because they can spread the fixed costs over more miles, lowering the average cost per mile. Applicants recognize this in their response to the Prima Facie case. See Applicants' Prima Facie Response, p. 29 ("As the Interstate Commerce Commission recognized, 'Railroads compete with each other for the longest haul and maximum revenue on traffic.'"). See also John D. Bitzan and Fecri Karanki, "Costs, Density Economies, and Differential Pricing in the U.S. Railroad Industry," *Transport Policy*, 119, 2022, pp. 67–77, at p. 68 ("…increased efficiency of longer hauls due to the spreading of fixed terminal costs over more miles."). See also Joint Shipper Associations' Motion, p. 31 ("…UP could short haul CSX and BNSF on all interline routes to CSX and BNSF destinations. Although the Application considers the first threat, it is silent on the second. Yet the second threat is more pervasive in scope and will have network impacts that redound well beyond just the directly affected movements. Also, unlike the first threat, which the Applicants claim as a public benefit because it would convert interline moves to single-line moves, the second threat offers no such benefit. The post-merger route will remain interline; only the interchange location will change. … First, CSX and BNSF will lose line-haul revenue as UPNS performs a larger share of the movement. Second, CSX and BNSF must recover substantially the same network fixed costs over fewer line-haul miles, increasing their average cost per remaining mile of service.").

(and specifically, UP and NS) compete for the longer haul in practice. {{REDACTED

}}[261]

249. Moreover, I can observe that UP and NS often interchange their traffic at locations that suggest they often compete for the longer haul between them rather than conform to their pre-agreed interconnect points.[262] That is, UP and NS have posted publicly available routing guidelines on their websites that outline the pre-arranged handoff points for general merchandise movements that are served by both UP and NS, as can be seen in Exhibit 39 below. For example, UP and NS provide guidance that general merchandise movements between the Livonia, LA ("LI") region and the mid-Atlantic ("A1") region (like a movement from Allemania, LA to Nazareth, PA, as depicted in Exhibit 38 above) will hand off in New Orleans, LA.[263]

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[261] {{REDACTED

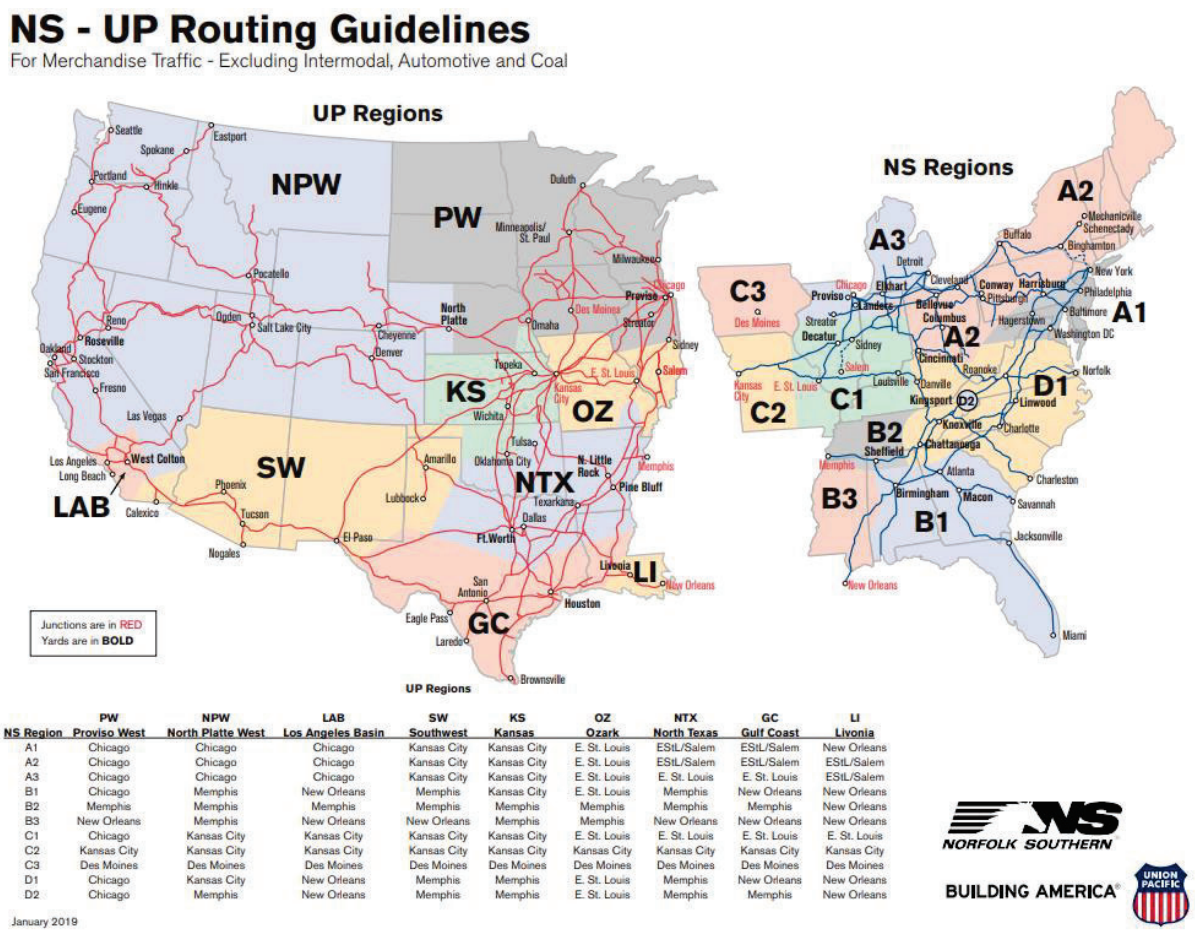
}} NS_00330522–30 at NS_00330524.

[262] This is not to say that every move that occurs at the pre-arranged interconnection point had no competition over the middle. During negotiations, the railroads and a shipper may make offers that include a set of rates at the designated location alongside other rates at other locations. Consequently, the data do not distinguish moves that had such negotiations from ones that may not have.

[263] I understand the UP-NS Routing Guidelines published on the UP website to be the current version. I understand {{REDACTED }} See, e.g., {{REDACTED

}} UP_1047843–87 at UP_1047851.

Exhibit 39
UP-NS routing guidelines for General Merchandise traffic



NS Region	PW Proviso West	NPW North Platte West	LAB Los Angeles Basin	SW Southwest	KS Kansas	OZ Ozark	NTX North Texas	GC Gulf Coast	LI Livonia
A1	Chicago	Chicago	Chicago	Kansas City	Kansas City	E. St. Louis	EStL/Salem	EStL/Salem	New Orleans
A2	Chicago	Chicago	Chicago	Kansas City	Kansas City	E. St. Louis	EStL/Salem	EStL/Salem	EStL/Salem
A3	Chicago	Chicago	Chicago	Kansas City	Kansas City	E. St. Louis	E. St. Louis	E. St. Louis	EStL/Salem
B1	Chicago	Memphis	New Orleans	Memphis	Kansas City	E. St. Louis	Memphis	New Orleans	New Orleans
B2	Memphis	Memphis	Memphis	Memphis	Memphis	Memphis	Memphis	Memphis	New Orleans
B3	New Orleans	Memphis	New Orleans	New Orleans	Memphis	Memphis	New Orleans	New Orleans	New Orleans
C1	Chicago	Kansas City	Kansas City	Kansas City	Kansas City	E. St. Louis	E. St. Louis	E. St. Louis	E. St. Louis
C2	Kansas City	Kansas City	Kansas City	Kansas City	Kansas City	Kansas City	Kansas City	Kansas City	Kansas City
C3	Des Moines	Des Moines	Des Moines	Des Moines	Des Moines	Des Moines	Des Moines	Des Moines	Des Moines
D1	Chicago	Kansas City	New Orleans	Memphis	Memphis	E. St. Louis	Memphis	New Orleans	New Orleans
D2	Chicago	Memphis	New Orleans	Memphis	Memphis	E. St. Louis	Memphis	Memphis	New Orleans

January 2019

Source: NS-UP Routing Guidelines For Merchandise Traffic – Excluding Intermodal, Automotive and Coal, as of September 25, 2026

250. When I examine where traffic in these corridors was actually interchanged, I find that the point of interchange often varies from the routing guidelines and that the difference in the portion of the route that each handle is often significant. Indeed, UP and NS {{{REDACTED }}} deviate from the publicly posted guidance. For instance, more than {{{REDACTED}}} of UP-NS interline general merchandise carloads between the LI and A1 regions do not use the designated interchange point (New Orleans, LA). Instead, almost {{{REDACTED}}} of these deviating carloads

({{{REDACTED}}}) interchange in {{{REDACTED }}}.[264] When this deviation from the designated routing happens, UP gains a longer haul compared to the length of haul it would have according to the published UP-NS routing guidelines, as can be seen in Exhibit 40 below.

[264] See workpaper 6-5.

Exhibit 40
UP wins a longer haul when it deviates to {{{REDACTED }}}, while NS wins a longer haul when it interchanges in New Orleans

{{{REDACTED

}}}

251. The Louisiana-Pennsylvania example is not isolated. This type of competition can be generated in many places and on many movements—anywhere the UP and NS networks have multiple interchange points to complete the movement along the corridor, allowing one railroad to win the longer haul.

252. To illustrate this, I show in Exhibit 41 the rate at which the interchange point for interline movements between UP and NS deviates from the interchange point laid out in UP's and NS's publicly posted guidelines.[265] This analysis makes clear that such deviations happen frequently. There are {{{REDACTED}}} UP-NS region pairs that have {{{REDACTED }}} deviating from the publicly available guidance each year.[266] This {{{REDACTED}}} deviation is consistent with UP and NS competing over the middle of the movement and suggests that this is one significant way that shippers benefit from competition today.

[265] This exhibit focuses only on region pairs where deviating total revenue averages {{{REDACTED }}} annually.

[266] See Exhibit 41. There are 99 region pairs designated in the routing guidelines. There are 9 UP regions and 11 NS regions, leading to 99 region pairs (11*9=99). See "NS-UP Routing Guidelines For Merchandise Traffic - Excluding Intermodal, Automotive and Coal," *Union Pacific*, available at https://www.up.com/content/dam/upcom/migration/uprr/customers/documents/up-pdf-nativedocs/pdf-up-shortline-ns-routing.pdf.

Exhibit 41
Share of interline revenue deviating from UP-NS routing guidelines for merchandise traffic, 2019–2024

{{{*REDACTED*

}}}

253. This indicates that UP and NS often engage in this direct competition over who gets the benefit of the longer haul (who wins their competition for the middle segment) particularly for the movements traversing the Watershed. Even when movements interchange in the designated interchange spots, UP and NS may still have been competing over the "middle" of the movement and just landed where they had pre-arranged. So, for many movements that UP and NS interchange, shippers today are likely able to benefit from competitive pressure on the overall bids as a result of options over and competition for the interchange point—competition that will evaporate if UP and NS are allowed to merge.

254. The amount of traffic exposed to this lost competition is {{{REDACTED }}}. UP and NS currently interchange traffic generating {{{REDACTED }}} in average annual revenues including {{{REDACTED }}} in revenue from general merchandise movements.[267] Traffic generating {{{REDACTED }}} in average annual revenues from general merchandise moves between origins and destinations that are served only by UP and NS.[268] If UP and NS were to merge, shippers on these movements would lose the ability to benefit from this competition (and lose the more favorable rates it engenders from UP and NS).

255. Beyond the fact that UP and NS are competing over the interchange point of the movement on moves they interchange, the data also show that these "middles" of the

[267] See workpaper 6-6. Routing guidelines are for merchandise movements.
[268] See workpaper 6-6.

movement that railroads bargain over are often substantial. As Exhibit 42 below shows, in {{{REDACTED }}} ({{{REDACTED}}} of {{{REDACTED}}}) of the region pairs identified above, UP and NS bargain over at least one third of the movement, i.e., the "middle" of the movement is often at least 33%. In {{{REDACTED }}} of the region pairs ({{{REDACTED }}}), UP and NS bargain over at least half of the movement.[269] The longer the "middle" of the movement (i.e., the longer each railroad could feasibly carry the movement), the greater the stakes in terms of the portion of revenue each railroad could win. Railroads are likely to compete more intensely for the "middle" of the movement if there is more revenue at play. That the "middles" of these movements are often substantial indicates that both UP and NS have an incentive to engage in this bargaining today, when the railroads compete with one another for the "middle" of the movements.

[269] Moreover, as discussed above, it is likely that the true "middle" of the movement that shippers and railroads bargain over is longer than the observed deviations, as the deviation point is an outcome of bargaining.

Exhibit 42
General merchandise region pairs and contested distance shares

{{{REDACTED

}}}

256. Were UP and NS to merge, they would no longer compete, and shippers would cease to benefit from any competition over the "middle" of the movements involving

both UP and NS. As demonstrated above, the merger would eliminate that competition across {{{REDACTED }}}.

6.3. Applicants' screens do not analyze competition for the middle of interline movements

257. Any analysis of the competitive effects of this proposed merger must include an analysis of how loss of competition for the "middle" of the movement will affect shippers. Yet Applicants and their experts fail to even acknowledge that this form of competition exists today, let alone that it is at risk if UP and NS were to merge. Therefore, their analysis ignores completely an area of significant potential loss of competition and risk of harm to shippers.

258. For example, a shipper that currently benefits from railroads directly competing over the middle of a movement would not be picked up by any of the three screens Dr. Bailey runs, despite Dr. Bailey claiming to analyze direct, horizontal competition.

a. Dr. Bailey's "customer analysis" screen focuses on individual customer facilities that are currently served by both UP and NS.[270] By definition, a shipper such as the one I described above, shipping a movement from Louisiana to Pennsylvania—is served by UP on one end of an interline movement, and NS on

[270] Bailey Second Errata VS, ¶ 106 ("I analyze the scope for adverse competitive effects from situations where UP and NS both serve the same customer location or the same geographic area."), ¶ 109 ("This review provisionally identifies customer facilities where a combination of UP and NS would reduce the number of railroads accessible to the customer from 2-to-1 or from 3-to-2.").

the other—would not be picked up by this screen, since this shipper is not served by both UP and NS at its facility.

b. Dr. Bailey's "within corridor" screen focuses on "horizontal competition to transport freight along the same segment of specific corridors."[271] Despite the fact that—as I explained above—UP and NS directly compete for the middle of the movement, Dr. Bailey's screen would not identify a shipper such as the one I described above. This is because the data only show the observed winner of the competition: that UP serves one end of the movement and NS serves the other. The fact that UP and NS competed directly for the middle of the movement (and the winner of the middle segment bundled it with the endpoint it serves) is lost by her screen.

c. Finally, Dr. Bailey's "between corridor" screen also would not identify competition over the middle of a movement. Dr. Bailey's "between corridor" screen relies on a 50/10 screen as the first stage to flag a list of origin-commodity pairs (or destination-commodity pairs). A pair is "flagged for further review if (1) a combination of UP and NS would have a share of more than 50 percent of shipments of that commodity, aggregated over all the destinations served by that origin, and (2) each of UP and NS individually has a share of at least 10 percent of traffic of that commodity, aggregated over all destinations served by that origin."[272]

[271] Bailey Second Errata VS, ¶ 120.
[272] Bailey Second Errata VS, ¶ 163.

> In other words, this analysis starts with an origin (destination) point and aggregates across all destination (origin) points. But the specific origin-destination pair (and the possible interchange points between the pair) are paramount to understanding the competition between UP and NS over the middle segment of a movement—competition that is not flagged by Dr. Bailey's screen for geographic competition.

259. Similarly, this loss of competition is not picked up by any of Dr. Israel's analyses. Dr. Israel's use of a counting algorithm to identify independent routes (discussed in Sections 4.2.2 and 12.4) only focuses on the identity of railroads used. For the purposes of identifying the number of independent routes, Dr. Israel's counting algorithm treats a routing where a shipper utilizes UP and interchanges with NS in East St. Louis (UP-ESTL-NS) the same as a routing with a Chicago interchange (UP-CHGO-NS). In his deposition, Dr. Israel admitted that, contrary to economic evidence, he doesn't consider competition over the middle of the move to be "competition," but rather a negotiation over a split.[273] He further admits that he doesn't analyze the loss of competition over the middle of the move in any of his analyses.[274]

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[273] Israel Deposition, p. 242:12–19 ("Q. In your answer, can you explain to me what you mean by 'It's not what an economist would call 'competition'? A. I mean, they're not competing for the ability to do the same thing. They each provide part of the service, right. I mean, they're negotiating over a split. I distinguish those two things.").

[274] Israel Deposition, at 243:5–21 ("Q. And in your analysis, do you analyze at all how the loss of this kind of competition between UP and NS to carry the longer portion of a route impacts the rates that negotiate -- or impacts the rates that negotiated shippers will pay after the transaction? A: I don't -- I mean, I discuss why the ability to single line -- I don't know if I discuss it in those terms. I discuss why single line creates advantages, and I think that implies why the single-line option would be better than what either of them could provide and, therefore, should lead to lower costs, lower prices than either of those options.").

6.4. Applicants offer conditions that do not address the loss of competition between UP and NS over the middle of the movement

260. Applicants also do not consider horizontal competition over the middle of the movement in any of their proposed conditions. The conditions Applicants claim will protect shippers (including sole-served shippers) will not replace the loss of their ability to put UP and NS in competition over the middle of the movement. CGP, TAP, the Rate ADR Program, and Applicants' voluntary gateway commitments do not address the fact that UP and NS would previously have competed over the middle of a movement, which gave shippers bargaining leverage even if they were sole-served at both ends.

7. Follow-on consolidation would compound the merger's harm and increase the risk of a rail duopoly

261. These competitive harms would be exacerbated by the further consolidation that UP-NS would likely trigger. UP-NS would create pressure for a BNSF-CSXT or other merger, culminating in a potential duopoly structure, which The Board's 2001 Rules require Applicants to address.[275] My empirical analysis indicates that two transcontinental railroads would not restore today's competition: prices are higher in comparable structures with two single-line railroads than where four independent railroads compete to interline (Section 12.2). Further consolidation would also increase shippers' dependence on individual carriers, which will have very little incentive to seek traffic where they have to compete with one another, and instead seek to enjoy the benefits of their increased bargaining power over their own bases of customers.

262. Looking back to Exhibit 7 and Exhibit 8, the West is full of counties where UP solely serves the end of moves while the East is full of counties where NS solely serves the end of moves. BNSF and CSXT must anticipate that their service will be degraded,

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[275] NS's CSO {{REDACTED }}. See Deposition of Michael R. McClellan (Chief Strategy Officer, Norfolk Southern Corporation), October 9, 2026, pp. 139:4–13 {{REDACTED

}}, {{REDACTED
}} NS_00569895–923 at NS_00569912 {{REDACTED
}}; Major Rail Consolidation Procedures, p. 581–582 ("[A]nother merger involving two very large railroads would not likely be an isolated event, but instead would trigger responsive proposals that, if granted, could well lead to a transcontinental railroad duopoly. … Because from this point on any proposed major transaction would have a significant effect on the structure of the entire industry, we will consider reasonable arguments about likely future transactions and about the future structure of the industry. … [T]here is general agreement that applicants should address the likely effects of any other merger that is actually proposed in response to a particular transaction[.]").

their equipment will be slowed in returns, their ability to price competitively will be undercut by leverage over the customer's locations, and any number of other impediments will hinder their ability to compete.

263. To compete on more equal terms with UP-NS, BNSF and CSXT would face pressure to merge and gain a similar ability to foreclose competing interline services. For shippers, that response would compound the loss of competition. Just as the maps identify areas where UP and NS could weaken BNSF and CSXT, they show many counties where BNSF or CSXT is the sole Class I carrier serving one end of a movement. A combined BNSF-CSXT would therefore have similar opportunities to weaken competing interline services, and the empirical relationships that demonstrate harm from a UP-NS combination indicate that a BNSF-CSXT merger would cause additional harm.[276] While a combined BNSF-CSXT would at least be more competitive in some regards, the net effect is also identifiable from the same regressions that showed the foreclosure effects of individual mergers at this scale and scope.[277]

264. Even when shippers have two single-line options, the empirical results presented in Exhibit 43 show that they will pay more than they do today (when they choose between four individual railroads) and even more than they would if UP and NS were to merge. Rates under a two single-line arrangements—representing the follow-on merger setting—are 21% higher than the current pre-merger baseline involving four

[276] See Section 4.2.

[277] See Exhibit 55 and Exhibit 57.

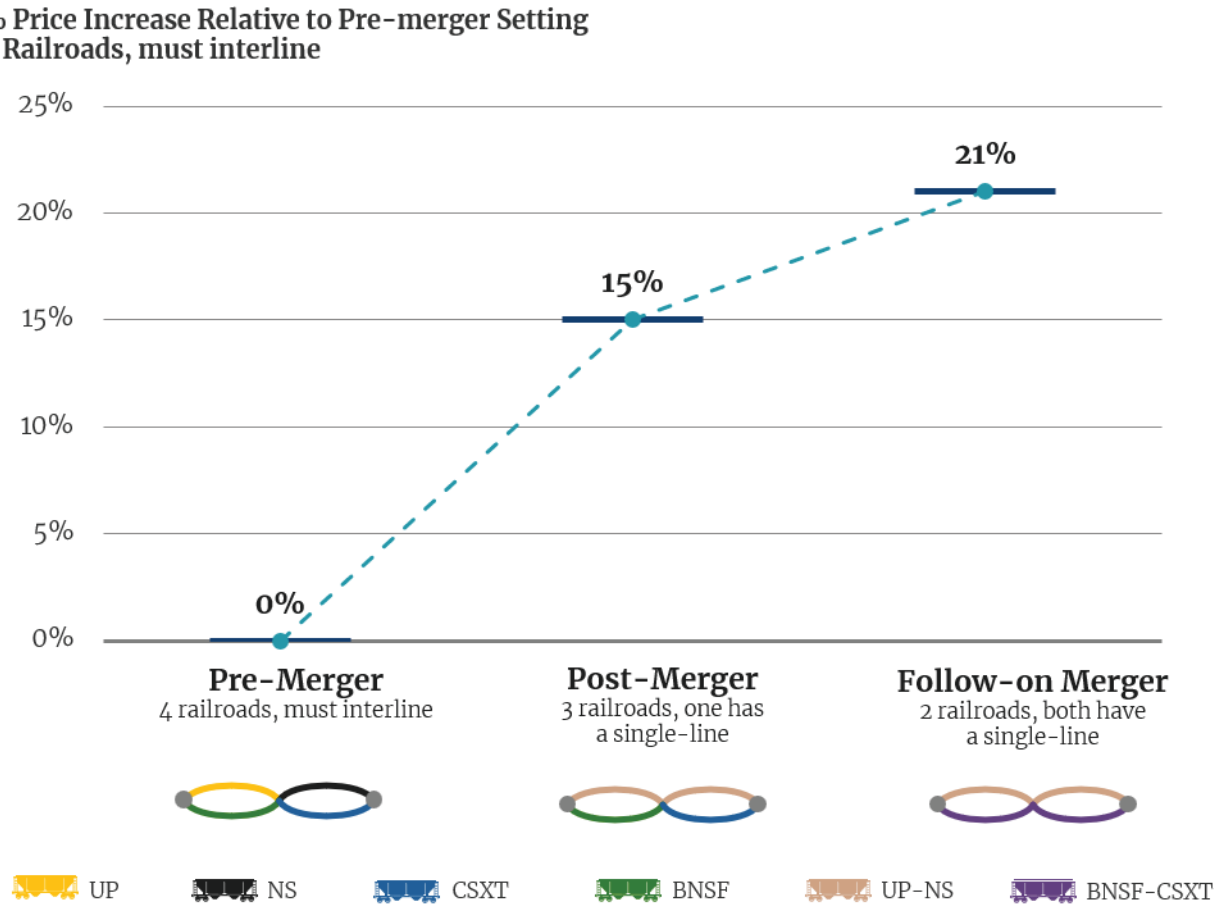
railroads (two on each side of a gateway); meanwhile, under the UP-NS post-merger setting of three railroads, rates under a one single-line arrangement are 15% higher than the pre-merger setting.[278] Fewer railroads to bargain with, an even higher concentration of shippers' overall bundle of rail needs on those fewer railroads, and just fewer levers overall for shippers to bargain prices down (e.g., bargaining for the longer haul) will lead to worse outcomes for shippers in this case.

265. Combining UP and NS does not make UP-NS more competitive. Instead, it harms shippers in numerous ways. Likewise, combining BNSF and CSXT will not make BNSF-CSXT more competitive. It will not bring back the competition that UP-NS takes away. Rather, UP-NS takes away competition such as CSXT competition with NS for the eastern portion of interlines (at least where UP is an important part of the interline) and BNSF competition with UP for the western portion (where NS is an important part of those interlines). A BNSF-CSXT deal would not restore that competition in those cases and the data show that shippers will continue to be harmed by the foreclosed competition.

[278]These individual estimates are all statistically significantly different from zero. However, it is worth noting that this can suggest a false sense of precision and that statistical significance does not extend to the comparisons across estimates. While the 21% point estimate of the net effect after a follow-on merger is significant and is larger than the point estimate of the proposed merger, the difference between those two estimates is not itself significant enough to conclude that a follow-on merger would necessarily be incrementally worse – just not a solution for shippers to the currently proposed merger. See workpaper 7-1.

Exhibit 43

In a follow-on merger setting, shippers will pay more than in the "pre-merger" setting in corridors served by two railroads at both sides of the gateway



Source: Six-Railroad Tapes Data

Note: This figure shows the percentage difference in price measured as revenue per carload-mile between corridors with single-line movements and those without single-line movements. The figure focuses on corridors that are served by two railroads at each end. The point on the left represents the pre-merger setting with four Class I railroads originating and terminating movements. This point is indexed to 100 as it represents the baseline. The point in the middle presents the indexed prices after the proposed UP-NS merger (post-merger setting). In the post-merger setting, three railroads originate and terminate movements and one of them provides single-line service. The point on the right presents the indexed prices after the proposed UP-NS merger and a following BNSF-CSXT merger (follow-on merger setting). In the follow-on merger setting, two railroads originate and terminate movements, and both railroads provide single-line service. I only consider corridors in which the Class I railroads that originate or terminate movements each accounts for at least one percent of the corridor's revenue. I only consider corridors in which the Class I railroads that originate or terminate movements each accounts for at least 1% of the corridor's revenue. The difference between the pre-merger and post-merger setting is statistically significant at the 95% confidence level, and the difference between pre-merger and follow-on merger setting is statistically significant at the 99% confidence level. For additional details, see Appendix 12.2.

266. Exhibit 43 isolates the empirical rate effect of moving from four railroads to two integrated carriers. It does not measure a separate risk: repeated interaction between two nationwide systems could further soften competition, particularly where each system controls different captive regions, customers, or traffic flows.

267. A two-system industry would increase the risk of tacit coordination.[279] Each carrier could observe the other's pricing and gateway conduct, anticipate retaliation, and have less incentive to compete aggressively for business concentrated on the rival's network. That risk is distinct from—and additional to—the higher rates shown in Exhibit 43; it does not depend on an express agreement between the carriers.

268. A BNSF-CSXT combination might be presented as restoring balance between the railroads, but it would level competition down for shippers by replacing today's four-railroad structure with two transcontinental systems. UP recognized where this is going in statements before The Board:

> "UP, which questions whether additional Class I mergers will ever be in the public interest, insists that we should evaluate the impact of and the need for any additional such mergers on the assumption that any such merger will be part of an "end game" that will result in transcontinental mergers and leave North America with only two major railroads… UP contends that, because any combination among the six largest remaining railroads in North America might well represent the start of the 'end game' in rail consolidations, we should

[279] Louis Kaplow and Carl Shapiro, "Antitrust" in *Handbook of Law and Economics*, (Vol II), (Amsterdam, Netherlands: Elsevier, 2007), pp. 1073–1224 ("Kaplow and Shapiro (2007)") at p. 1149 ("Mergers also can pose a risk to competition by increasing the likelihood that a collusive outcome will prevail. … [C]ollusion is generally thought to be easier to achieve and sustain when there are fewer suppliers in the industry.").

> consider, before approving any additional Class I merger, whether the "end game" would be in the public interest."[280]

269. Applicants' theory also offers no limiting principle against that result. If end-to-end combinations are presumed beneficial and foreclosure concerns may be dismissed without a fact-specific inquiry, the same reasoning would apply to other Class I combinations. That would depart from The Board's more nuanced approach, under which vertical effects depend on the transaction's actual incentives, ability, and competitive setting.[281]

270. Approval on that premise would also make follow-on consolidation more likely. BNSF and CSXT would have incentives to close the competitive gap created by UP-NS, replicate its single-line reach, and strengthen their bargaining position against shippers. The resulting pressure towards two transcontinental systems is itself a consequence The Board should consider before approving the first combination.

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[280] Union Pacific Corp. & Union Pacific Railroad Co., comments summarized in Major Rail Consolidation Procedures, Docket No. EP 582 (Sub-No. 1), 5 S.T.B. 1, September 25, 2000, pp. 116–117.

[281] Major Rail Consolidation Procedures, p. 582 ("We can meet our responsibility only if applicants file their preliminary evidence about the evolving structure of the industry that would likely result from their proposal and others like it; if they address the merits of such a structure; if they provide their views on how to deal with potential problems that structure could cause to service, efficiency, and competition[.]").

8. Shipper letters and voluntary commitments do not cure the merger's competitive harms

271. Applicants may claim that shipper letters filed in this proceeding or commitments they have made will, at least, preserve competition. Shipper support letters may identify benefits for particular shippers, but they do not establish the merger's overall competitive effects or answer the evidence of broader or longer-term harm. Indeed, shippers that are in favor of the merger sometimes have short-term or individualized benefits that do not weigh against the long-term harm to competition from this proposed consolidation.

272. Shippers have submitted letters both in support of and in opposition to the proposed merger. The proportion of letters on each side has been affected by Applicants' actions around this proceeding. While Applicants have facilitated letters of support,[282] they have also created fear of retaliation for any opposition, which appears to have chilled some shippers from participating.[283] The letters in this proceeding cannot be expected to give a comprehensive description of the merger's overall effects.

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[282] Some of these shipper letters in support of the proposed merger are based on templates prompted from Applicants. Rocker and Elkins Second Errata VS, ¶ 183 ("We've not been shy to admit that railroads haven't always been the easiest partners to work with. So when we asked thousands of stakeholders to share their views on this merger, we wanted to make it easy for them to participate, so we offered letters they could use if they wished. Some personalized the letters, some didn't. But everyone took the time to think about what this merger means for them and their community. Whether the words were polished or plain, those letters are theirs.").

[283] James Baratta, "Union Pacific Tried to Conceal 'Offhand' Remarks Threatening Shippers," *The American Prospect*, November 12, 2026, available at https://prospect.org/2026/11/12/union-pacific-tried-to-conceal-offhand-remarks-threatening-shippers/ ("Shipper associations like the Alliance for Chemical Distribution (ACD) have attested to the chilling effect customers have experienced in connection with the merger review proceeding. 'The fear of retaliation is real, and many customers cannot afford to risk their business relationships by speaking out against the merger,' ACD President and CEO Eric Byer said in a statement. 'No business should have to choose between protecting its livelihood and speaking up about a merger that could impact its future.'").

Rather, each letter presents insight into that shipper's individual situation and, perhaps, their individual reasons for participating in the process despite the context of Applicants' heavy thumb on the scale. Those individual situations can be particularly useful for confirming that a model or prediction fits the facts a real-world shipper perceives about their business with railroads.

273. For example, United Sugar Producers and Refiners ("USPR") submitted a letter opposing the merger.[284] In the letter, USPR expresses concern that the merger will limit its access to eastern markets from its facilities in Minnesota, North Dakota, and Wyoming.[285] USPR points to the example of Hershey, Pennsylvania, "a large sugar-consuming market that currently benefits from competition among distributors served by different rail routings."[286] For the Hershey destination, USPR reports that, "purchasers can buy from USPR, which uses BNSF in the West and NS in the East, or from our primary competitor west of the Mississippi River, which is served by UP in

[284] Prior to submitting their letter opposing the merger, UP approached them about submitting a letter of support. Letter from Michael Barth (Vice President, Transportation and Logistics, United Sugar Producers and Refiners Cooperative) to Chief of Case Administration, Surface Transportation Board, "STB Docket No. FD 36873, Union Pacific Corp., et al. – Control – Norfolk Southern Corp. et al.," August 26, 2026 ("USPR Letter"), at p. 2 ("In early 2026, UP requested a letter in support of the proposed merger from USPR.").

[285] USPR Letter, at p. 1 ("[O]ur western facilities in Minnesota, North Dakota, and Wyoming rely primarily on BNSF and NS to deliver sugar to eastern businesses. After the merger, shipments currently served by NS in the east would become UP destinations. USPR is concerned that UP/NS will have little incentive to offer competitive rates or short-haul options for our western facilities if it can instead reach the same eastern customers by originating shipments on UP's western lines through our competitors. This could leave USPR at a competitive disadvantage and will leave businesses that USPR serves with fewer rail transportation options.").

[286] USPR Letter, at p. 1.

the West and would also use UP in the East, if the merger is approved."[287] USPR predicts the merger may restrict its access to Hershey because "UP/NS will have little incentive to offer competitive rates or short-haul options for our western facilities if it can instead reach the same eastern customers by originating shipments on UP's western lines through our competitors."[288] USPR's concern is consistent with the fact that, as I describe in Section 4.1, the post-merger combined firm will have both the incentive and ability to foreclose competition, harming purchasers and shippers who rely on interline services that compete with new UP-NS single-lines.[289]

274. While USPR's letter is useful in that it confirms the real-world relevance of the economic models I used to identify avenues of competitive harm from the merger, I would not suggest that every shipper should be relied on to identify whether and how much overall harm will come from the merger. I do not believe this letter (on its own or combined with similar letters from other shippers) can do more than support the considerations in the analysis of overall competitive effects that are relevant to those shippers.

275. Likewise, letters supporting the merger do not disprove the concern of USPR or of the analysis I have done of effects on shippers more generally, especially given the

[287] USPR Letter, at p. 1.

[288] USPR Letter, at p. 1.

[289] Applicants may claim that CGP will enable USPR to access competitive pricing post-merger. However, as I discuss in Section 9.2, CGP price caps may not bind in practice and CGP increases the incentive for UP-NS to foreclose competitors whose lower rates on interlines would decrease CGP prices.

context of Applicants' thumb on the scale. Such letters generally outline a shipper's expectation that Applicants' claims of improved service seem credible and would be beneficial to that shipper.[290]. But, these letters only speak to the specific perspectives of individual shippers, which can be relevant but do not disprove the effects on shippers more generally.

276. Consider, for example, Poet, which is a bioethanol producer that submitted a letter in support of the merger. Poet states that the merger will help its Iowa plants reach markets in the east from which the price of interlining currently restricts its access.[291] Looking at the Six-Railroad Tapes Data, I constructed Exhibit 44 to summarize Poet's shipments of its {{{REDACTED }}}[292] from Iowa. Poet ships {{{REDACTED }}} of the {{{REDACTED}}} carloads it originates in Iowa to the West via UP single-line movements. The rate it pays on those moves, {{{REDACTED}}} per carload-mile, is {{{REDACTED

[290] For example, Applicants submitted letters from shippers supportive of the merger as Volume 3 of their April 30th, 2026, revised application. Many of these repeat near-identical wording to extoll the purported benefits of the merger: "improved service reliability," "reduced transit times," "increased investment," and "expanded reach." See, e.g. Amended Railroad Control Application, Volume 3, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway Company", Docket No. FD 36873, April 30, 2026., at p. 73 (A&K Railroad Materials, Inc.), p. 103 (Airlite Plastics Company), p. 281 (Commercial Metals Company CMC), pp. 291–92 (Cornerstone Ag, LLC), p. 334 (Drax).

[291] Letter from Ben Sweat (Chief Operating Officer, POET Biofuels) to Chief of Case Administration, Surface Transportation Board, "STB Docket No. FD 36873, Union Pacific Corp., et al. – Control – Norfolk Southern Corp. et al.," September 16, 2026 ("Poet Letter"), at p. 1 ("While many facilities effectively access western and southern markets, substantial portions of our Iowa production network have limited participation in eastern markets due to the economics associated with two-railroad service.").

[292] I understand STCC5 {{REDACTED}} to be defined as {{REDACTED}}. See Dr. Bailey's STCC Codes Dictionary.

}}}. Poet {{{REDACTED

}}}. In contrast, when Poet uses UP interlines to access eastern markets, it pays a {{{REDACTED

}}}.

Exhibit 44
Poet shipments of STCC** {{{REDACTED}}} **from Iowa illustrate that their circumstances are special

{{{REDACTED

}}}

277. The available data {{{REDACTED

}}}. They instead show that {{{REDACTED

}}}. Poet's individual expectation therefore does

not rebut the broader evidence that a combined UP-NS could raise rates and diminish competitive alternatives for other shippers.[293]

278. Even when shippers might benefit in the short-run from the merger, these benefits will not outlast the competitive harms of the merger. Schneider, for example, in announcing its deal to move its business from CSXT to NS in the East, described their expectation of benefits from the merger would be "icing on the cake."[294] Schneider is an example of the fact that Applicants can sign a deal and garner support from shippers that expect some benefits – though the terms of that deal will be for a much shorter term than the proposed merger will affect competition.

279. The USPR and Poet letters and Schneider's recent switch from CSXT to NS illustrate how individual shippers' circumstances can inform the analysis without establishing the merger's overall competitive effects. My point is not that every supporting shipper is wrong about its own preferences or that every opposing shipper has correctly predicted the future. Rather, individual letters may show that particular

[293] Poet Letter, p. 1. I have not attempted to examine whether Poet's overall portfolio of shipments is better or worse, in terms of the merger's effect on their bargaining position, than other firms that Poet may compete against. I have also not attempted to examine how long any better rate that Poet may be getting today might have to last to offset for Poet the fact that after any such sweetened deal expired they would face the diminished competition this merger presents immediately to other shippers. If one were attempting to establish the effect on all shippers by looking at each and every shipper's special circumstances, those are certainly considerations that would need to be taken into account.

[294] Kelly Stroh, "Norfolk Southern, Schneider National team to scale East Coast intermodal reach," *Supply Chain Dive*, November 2, 2026, available at https://www.supplychaindive.com/news/norfolk-southern-schneider-national-team-to-scale-east-coast-intermodal-re/873340/ ("The railroad's potential merger with Union Pacific is 'the icing on the cake' of the partnership, Schneider CEO Jim Filter said.").

competitive mechanisms have real-world relevance, but no single shipper's circumstances establish the transaction's effects on shippers as a whole.

9. CGP does not offset the merger's competitive harms and is unlikely to benefit shippers

280. Applicants' CGP proposal is a price-cap regulatory program, not a competitive enhancement. Regulation often has perverse incentives and leads to more harm than good. CGP is no different. As Dr. Israel acknowledges, CGP perversely "creates incentives to raise rates" on UP-NS traffic.[295] Rather than "expand[ing] the benefits of the UP/NS merger to more shippers,"[296] CGP will harm shippers who currently utilize UP-NS, exactly the shippers Applicants claim the merger is going to benefit.

281. Dr. Israel's model omits important competitive interactions and is demonstrably bad at predicting railroad pricing—generally failing to reproduce observed prices and estimating costs that are inconsistent and not credible. The failure of his model to reliably predict real-world rates is particularly troubling for a model that has already very little margin for error between the net increases and decreases it predicts for shipper prices, meaning any small change could easily find net harm. These flaws undermine the reliability of the model's narrow projected net benefit as a way to offset the significant competitive harms I identified throughout my statement.

[295] Israel Second Errata VS, ¶ 177 ("For interline shipments that are used as *inputs* to calculate the Committed Gateway Prices…the CGP proposal creates an incentive to compete less aggressively on some of the shipments used in the generation of Committed Gateway Prices.") and Israel Supplemental VS ¶¶ 46–47 ("CGP rates are calculated from UP/NS rates observed on those UP/NS and interline routes that are *not eligible* for CGP rates. These routes are called the 'input' set. … CGP price creates incentives to raise rates on some routes in the input set.") (emphasis in original).

[296] Novak VS, p. 3.

282. The remainder of this section explains why CGP cannot be credited as a meaningful merger benefit.

a. CGP's benefits are extremely small and are unlikely to outweigh any competitive harm. Moreover, CGP harms many shippers according to Dr. Israel's model (Section 9.1).

b. Dr. Israel's modeling of CGP precludes many strategic interactions that currently allow shippers to introduce more competition into negotiations – competition that Dr. Israel assumes away in his analysis (Section 9.2).

c. Dr. Israel assumes that shippers will retain the full benefit of CGP and ignores the possibility of CGP facilitating coordination (Section 9.3).

d. Because Dr. Israel ignores important aspects of competition, his model is highly inaccurate and does not properly account for the realities of the railroad industry (Section 9.4).

e. Dr. Israel's opinions on CGP are inconsistent with his stated views, and inconsistent with his own modeling of CGP (Section 9.5).

9.1. CGP's modeled benefits are small, temporary, concentrated, unrealistic, and result in substantial harm to individual shippers

(1) CGP's modeled benefits are small, and do not outweigh the many harms of the proposed merger

283. Taking Dr. Israel's modeling of CGP at face value, the net benefit he calculates is small, especially since he does not account for many risks to competition. In his Supplemental VS, Dr. Israel estimates that the total net benefit of CGP will be $86.5 million in the first year and then only $44.0 million in each year CGP continues.[297] All told, over the five years of CGP, the total benefit to shippers, as calculated by Dr. Israel, is $262.5 million.[298]

284. In comparison, as I showed in Section 4.3.3, Dr. Israel's estimates show UP has the potential to increase rates on NS shippers amounting to {{{REDACTED}}} billion in extra costs for shippers each year, before any theoretical CGP-related reduction in cost.[299] CGP as a $44.0 million per-year "enhancement" to competition is hardly a concession. Total revenue for UP and NS combined was $179.9 billion over 2021–2025.[300] This means that even if shippers fully benefitted from CGP as estimated by Dr. Israel, aggregate payments would decrease by only 0.15%.[301] Put simply, even if CGP does benefit shippers to the full extent modeled by Applicants, that benefit is

[297] Israel Supplemental VS, ¶ 33 and Figure 9.
[298] $44 × 4 + $86.5= $262.5
[299] See Exhibit 23.
[300] See workpaper 9-1, based on analysis of SEC Form 10-Ks for UP and NS from 2021–2025.
[301] $262.5 million divided by $179.9 billion is 0.146%

essentially a rounding error and unlikely to offset the competitive harms from the merger.

285. Further, the net benefit Dr. Israel presents in his Supplemental Verified Statement is an aggregation, meaning some shippers benefit and some are harmed, according to his model.[302] When asked to analyze the effects of expanding CGP to make more shipments eligible, Dr. Israel finds more net benefits, but with similar effects of benefitting some shippers while harming others.

286. The reason that Dr. Israel finds harm for some shippers is that CGP creates a balance of effects: a combined UP-NS has an incentive to raise prices on shippers whose rates determine the CGP price—any increase in these shippers' rates increases CGP prices and therefore UP-NS's profit. At the same time, Dr. Israel finds that a small number of shippers eligible for CGP receive an aggregate benefit, potentially outweighing the harm to other shippers. As I discuss in Section 9.4, Dr. Israel's model completely fails to capture important aspects of competition and is therefore unable to determine whether shippers truly benefit.

287. According to Dr. Israel, the net benefit of CGP is just $86.5 million in the first year and $44.0 million in each year until the oversight period ends.[303] These are small benefits and, as discussed above, Dr. Israel acknowledges the benefits could be even

[302] Israel Second Errata VS, ¶ 180.
[303] Israel Supplemental VS, ¶ 33 and Figure 9.

smaller since he finds that a merged UP-NS would have little incentive to invest in the additional interline service on CGP-eligible traffic that drives the net benefits he finds. The lack of investment on CGP-eligible traffic stems from UP-NS's reduced profit margin on high-value shippers utilizing CGP—because of the reduced profit motive, UP-NS has less incentive to invest.[304] As I discuss below, CGP also reduces UP-NS's incentive to invest on their own single-lines, an effect which Dr. Israel does not acknowledge.

288. In addition to unmodeled lower incentives to invest, Dr. Israel does not account for other harms in his modeling of CGP that would lower his predicted net benefits and will cause a net harm to specific shippers. As I showed in Exhibit 37, the negative impact of UP-NS's post-merger leverage over *just* chemical shippers {{REDACTED }} of CGP ($44.0 million per year after the first year). Simply put, the purported benefits of CGP are not only small but are also unlikely to outweigh any competitive harm.

289. Lastly, the time-limited nature of CGP means that even if the (small) benefits were understated, the harm to shippers is only offset for as long as CGP remains in effect. When CGP ends, even if it were beneficial, the harm to competition from the merger remains, and shippers will be worse off.

[304] Israel Supplemental VS, ¶ 53 ("[T]he CGP program reduces the profits that can be earned from [high-value customers], and thus economics predicts that it also reduces the incentive to invest to serve them.").

(2) The benefits of CGP are concentrated among very few shippers

290. Beyond CGP being small, Dr. Israel's model finds that the benefits of CGP accrue to only a {{REDACTED}} number of shippers and actually harms {{REDACTED}} others—according to Dr. Israel's estimates, {{REDACTED}} of shippers are harmed, while {{REDACTED}} of shippers benefit.[305] The remaining {{REDACTED}} shippers are unaffected.[306]

291. Dr. Israel's predicted gains for individual shippers are {{REDACTED}} and leave other shippers {{REDACTED }}. For example, according to Dr. Israel, {{{REDACTED }}} gains approximately {{{REDACTED }}} in annual benefit of CGP, based on a modelling result that they will ship nearly two and a half times their pre-CGP number of carloads. {{{REDACTED }}}'s per-year benefit represents approximately {{{REDACTED}}} of the yearly net benefit of CGP.[307]

292. Exhibit 45 shows the 20 shippers who gain the largest benefits from CGP and the share of each shipper's gain as a percent of CGP's modeled net benefits. Rather than CGP being a "windfall for shippers,"[308] as Applicants claim, {{REDACTED}} million

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[305] Calculated as the total number of unique shipper names in Dr. Israel's CGP model results, across both the input and application sets. {{{REDACTED }}} appear as separate shippers in Dr. Israel's data but are combined in the above calculation as {{{REDACTED }}}. Similarly, {{{REDACTED }}} are combined into {{{REDACTED }}} See workpaper 9-2.

[306] See workpaper 9-2.

[307] See Exhibit 45.

[308] Applicants' Second Response to Decision No. 21, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, July 27, 2026, *SUPP PAGE* 41 ("Applicants believe CGP's benefits to shippers…will be a windfall to shippers.").

out of the $44.0 million yearly net benefit {{REDACTED}} of CGP goes to only {{REDACTED}} shippers.

Exhibit 45
Revenue for top 20 winners from CGP

{{{REDACTED

}}}

(3) CGP's estimated gains are based on unrealistic assumptions of increased demand, which Dr. Israel did not investigate

293. Dr. Israel's estimated benefits of CGP are also based on unrealistic assumptions of shippers' increasing output. To estimate his CGP model, Dr. Israel calculates how

much additional traffic shippers will move in response to a change in price. Based on these modelling results, Dr. Israel predicts that many shippers would have substantial increases in output arising only from the purported rate changes due to CGP, rather than the economics of their own industries.[309] Exhibit 46 shows Dr. Israel's estimates of the impact of lower prices (due to CGP) on volume shipped by the same 20 shippers most benefiting from CGP.

[309] Israel Second Errata VS, Appendix C ¶ 23.

Exhibit 46
Carloads for top 20 winners from CGP

{{{REDACTED

}}}

294. Column [A] shows Dr. Israel's modeled estimate of each shipper's carloads shipped post-merger, absent the CGP program. Column [B] shows Dr. Israel's modeled estimate of those same shippers' carloads shipped post-merger with the CGP program in place. Dr. Israel's model predicts that several shippers see {{{REDACTED }}} projected increases in traffic:

- Dr. Israel predicts that {{{REDACTED }}} will ship {{{REDACTED}}} more carloads.
- Dr. Israel predicts that {{{REDACTED }}} will ship {{{REDACTED}}} more carloads.
- Dr. Israel predicts that {{{REDACTED }}} will ship {{{REDACTED}}} more carloads.
- Dr. Israel predicts that {{{REDACTED }}} will ship {{{REDACTED}}} more carloads.

295. For any shipper, the decision and ability to ship more is dependent on their ability to increase production and whether there is demand for additional sales. In every case, Dr. Israel did not investigate or model whether it would be feasible for any individual shipper to expand production, railroads to meet that expanded production, or whether there would be sufficient demand for those shippers' goods to warrant such a large increase in volume. For example,{{{REDACTED }}}[310] {{{REDACTED }}} If the shippers in CGP could not expand volume, or there was not sufficient demand for their products to warrant expanded volume, the predicted effects of CGP would be substantially lower.

(4) CGP harms many individual shippers, and Dr. Israel potentially underestimates their harm

296. While some shippers purportedly benefit from CGP, others are far worse off under the program. As discussed above, CGP incentivizes a merged UP-NS to raise prices on

[310] In Section 8 I also discuss how CGP does nothing to address {{{REDACTED }}}

the routes which determine CGP rates. For shippers who primarily ship on those routes, CGP results in them paying higher prices. Exhibit 47 shows the 20 shippers who are the largest losers from CGP, based on the output of Dr. Israel's model. These shippers are {{REDACTED}} million worse off due to CGP. In total {{REDACTED}} shippers are worse off by an amount of {{REDACTED}} million under CGP.[311]

[311] See workpaper 9-2.

Exhibit 47
Revenue for top 20 losers from CGP

{{{REDACTED

}}}

297. Again, Dr. Israel's model relies on an estimate of shippers' anticipated change in shipments due to CGP-caused higher prices. As a result of CGP, the shippers listed above are assumed to move less traffic. Dr. Israel does not investigate shippers' reduction in carloads, including whether it would make economic sense for their

industries. Exhibit 48 shows Dr. Israel's prediction for these shippers' change in carloads due to CGP.

Exhibit 48
Carloads for top 20 losers from CGP

{{{REDACTED

}}}

298. Column [A] represents Dr. Israel's modeled estimates of these specific shippers' carloads shipped post-merger, absent the CGP program. Column [B] represents Dr. Israel's estimates of those same shippers carloads shipped post-merger with the CGP program in place. In particular, Dr. Israel finds that:

- {{{REDACTED }}} will ship {{{REDACTED}}} fewer carloads.
- {{{REDACTED }}} will ship {{{REDACTED}}} fewer carloads.

299. Dr. Israel did not analyze whether such reductions are realistic and what the impact would be. For example, {{{REDACTED }}} may not reduce its shipments to only {{{REDACTED}}} of the {{{REDACTED }}} it normally ships.[312] It may just lead to increased {{{REDACTED }}}).

300. If, alternatively, these shippers cannot feasibly scale down production, or are in long term contracts and obligated to deliver goods, CGP will be substantially more harmful to these shippers than estimated by Dr. Israel.[313]

[312] See Dr. Israel's July 27, 2026 Production, Baseline Expanded CGP Simulation, {{{REDACTED }}}.

[313] Dr. Israel may seek to argue that if this were the case, shippers could source from alternative locations. As discussed above, this is not modeled in CGP and would suggest a form of competition that Dr. Israel does not acknowledge exists. As I discuss in Section 5, a combined UP-NS is likely to reduce shippers' ability to bargain via source competition.

9.2. Dr. Israel's CGP model omits important strategic interactions and how CGP creates adverse incentives

301. Dr. Israel's CGP model incorrectly assumes that railroads maximize profits movement by movement and assumes that railroads will not change their behavior in response to CGP.[314] It therefore omits several ways in which CGP would alter railroads' incentives, bargaining strategies, investment decisions, and treatment of eligible traffic.

302. First, as I discussed in prior sections of this statement, the empirical evidence indicates that the merger will lead to UP having additional market power and leverage over shippers, likely leading to higher prices, even on routes that are sole-served by UP and NS. Price increases on UP-NS routes will likely increase the price cap on CGP because {{REDACTED}} of the carloads in the "Input Set" that set CGP price cap are UP-NS routes.[315] Increasing the price cap of CGP results in less likelihood of CGP benefiting any shipper.

303. Second, CGP creates incentives for a merged UP-NS to encourage shippers to shift traffic or production away from routes that benefit from CGP and towards routes which do not. As discussed previously in Section 8, USPR currently utilize BNSF-NS to deliver to goods to Hershey, PA, while their competitors utilize UP-NS. In response to USPR's concerns about foreclosure, UP claims that USPR would benefit from

[314] Israel Second Errata VS, Appendix C ¶ 12.
[315] See workpaper 9-3.

CGP.[316] {{{REDACTED }}} What Dr. Israel's model does not account for is that CGP might give UP-NS an additional incentive to foreclose. Because of CGP, UP-NS {{{REDACTED }}} If USPR's prices are above the CGP rate, UP-NS is additionally incentivized to favor USPR's competitors who are not eligible for CGP.

304. Applicants' recent expansion of CGP to include routes with competition makes this effect worse by expanding the number of routes that a merged UP-NS will want to avoid or degrade service.[317] Dr. Israel does not consider in his model the incentives of a merged UP-NS to force shippers to change their source or destination away from CGP eligible routes.

305. Third, CGP's methodology only considers the rate.[318] As Dr. Israel discusses, rail contracts can "include volume commitments, different prices for different volumes, specific agreements on how much to ship, and so on."[319] Because CGP's methodology only considers the rate, UP has many workarounds to manipulate CGP prices. For example, if UP charges a very high rate on CGP "benchmark" routes and offers those shippers a rebate or a discount on an unrelated shipment, CGP quoted prices will

[316] Letter from Michael Barth (Vice President, Transportation and Logistics, United Sugar Producers and Refiners Cooperative) to Chief of Case Administration, Surface Transportation Board, "STB Docket No. FD 36873, Union Pacific Corp., et al. – Control – Norfolk Southern Corp. et al.," August 26, 2026, p. 2 ("UP's response was to point to its CGP proposal.").

[317] Israel Supplemental VS, Section III.B.

[318] Israel Second Errata VS, ¶ 167.

[319] Israel Second Errata VS, ¶ 75.

increase substantially. As a result, UP will be able to charge any price on the input set that determines the price cap for CGP eligible routes, allowing the price cap to grow and essentially have no effect.

306. Fourth, CGP gives a merged UP-NS an incentive to stop serving shippers who currently receive low prices on routes which determine CGP rates. For example, if an existing shipper on UP-NS has extremely low rates, this pulls down the CGP price. CGP gives UP-NS a stronger incentive to simply stop serving that low-margin carrier, because it will increase CGP prices, earning UP-NS additional profit on CGP-eligible traffic. Dr. Israel acknowledges this incentive in a footnote in his report but does not address it.[320]

307. Fifth, Dr. Israel notes CGP will have a "negative effect on investment incentives."[321] He claims that CGP's price cap lowers the incentive to invest in interchanges with BNSF and CSXT which serve high-value shippers but does not model this degraded quality. As an example, if a sole-served shipper currently uses UP-CSXT and has extremely high prices, UP would have an incentive to invest in an interchange with CSXT, reducing cost and generating additional profit. If that same shipper only has to pay the (capped) CGP rate, UP has less incentive to invest in that interchange.

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[320] See Israel Second Errata VS, fn. 100 ("To the extent higher rates below the 70th percentile reduce output, it will tend to shift upward the 70th percentile price.").

[321] Israel Supplemental VS, ¶ 51.

308. Further, as discussed above, this argument extends to the UP-NS single-lines that the merger would create. Among the UP-NS single-lines that set the CGP price cap, an investment in those single-lines that purportedly lowers prices on CGP-eligible routes would lower UP-NS' profit on those routes. This means that UP-NS will have a reduced incentive to make investments in their own single-lines.

9.3. Dr. Israel assumes BNSF and CSXT will not raise prices in response to CGP and does not analyze whether CGP could facilitate coordination

309. Beyond Dr. Israel's lack of accounting for important aspects of competition, his model does not account for BNSF and CSXT's incentive to increase their prices to in response to CGP capping UP-NS's price in CGP-eligible routes. CGP works by generating a "price cap" on certain routes. This cap theoretically benefits any shipper utilizing CGP who currently pays more than that cap.[322]

310. However, as Dr. Israel acknowledges, whether and how much shippers benefit from CGP depends on BNSF's and CSXT's strategic response to CGP.[323] Dr. Israel assumes that both BNSF and CSXT will keep their prices the same, meaning CGP fully benefits shippers. Alternatively, BNSF and CSXT could increase their prices to capture additional profit, meaning shippers wouldn't benefit. In fact, on routes sole-served by BNSF or CSXT this is exactly what Dr. Israel's simplistic one-lump theory would

[322] Israel Supplemental VS, ¶ 13.

[323] Israel Supplemental VS, ¶ 13 ("BNSF and CSX will pass through some or all of [the CGP] price reduction to the shipper").

predict. On BNSF or CSXT sole-served routes, the CGP price cap is a reduction in BNSF and CSXT's input costs. If, as Dr. Israel claims, that "nothing stops the sole-serving carrier from setting the monopoly price,"[324] basic economic theory would suggest that BNSF and CSXT will raise prices to capture some, if not all, of any CGP-related cost reduction. Rather than benefiting shippers, CGP will result in BNSF and CSXT raising prices on CGP-eligible routes which they sole-serve. Dr. Israel cannot have it both ways—either his one monopoly rent theory is false, or CGP will not benefit shippers as he claims.

311. For routes which were newly added to CGP (routes where UP or NS sole-serves one end of the move), the same logic applies. Here, because there is a UP-NS option, rather than increasing prices to the monopoly level, BNSF and CSXT will be able to raise shipper prices to the level of the UP-NS option. As I stated above, UP-NS prices on these routes will increase due to CGP, again harming shippers. This does not account for the likely possibility of UP-NS foreclosing on BNSF and CSXT on these routes.

312. Dr. Israel acknowledges that BNSF and CSXT might raise their rates between origin and gateway or gateway and destination in those situations where CGP provides them with a lower UP or NS rate factor than had previously been the case.[325] However,

[324] Israel Second Errata VS, ¶ 42.

[325] Israel Supplemental VS, Appendix I, p. 2 ("[T]he reduction in marginal cost … due to the CGP is passed through into the through rate by an amount that depends on the curvature of the demand curve.").

instead of testing for this possibility, Dr. Israel assumes a specific model where BNSF and CSXT will always keep their prices the same.[326] Dr. Israel even identifies an alternative economic model which could plausibly find that BNSF and CSXT would raise prices due to CGP. He does not test whether that model (or any other alternative model) is plausible, or whether it better fits the data. This fact further illustrates how he has engineered his CGP model to find benefits to shippers. The more likely outcome is that BNSF and CSXT will attempt to capture the benefits of CGP—in other words, CGP incentivizes BNSF and CSXT to share in monopoly profits.

313. In addition, because the CGP formula is well known, and based on published rates, it could facilitate coordination. Collusive behavior requires a method to detect and punish deviating entities, as well as a way for all parties to share in monopoly profits.[327] CGP offers both. First, the public rate formula offers a way to detect and punish deviations—on any route, BNSF and CSXT will be able to receive a CGP-quoted through rate and thereby receive information on (1) UP-NS maximum prices on the existing route and (2) aggregate information about all UP-NS rates which determine the relevant CGP rate. They would be able to "punish" UP-NS by using more CGP rates. Second, as discussed above, CGP generates a way for BNSF and CSXT to share

[326] Israel Supplemental VS, Appendix I, p 2. Dr. Israel utilizes "log-linear demand [which] has a constant pass-through rate of 1."

[327] Kaplow and Shapiro (2007), p. 1103 ("The key elements are (1) *reaching consensus*: some understanding must be reached among the otherwise-competing firms regarding what conduct is permitted under the terms of the collusive agreement, such as the prices that the firms will charge; (2) *detection*: some reliable means must exist by which departures from the agreement can be detected; and (3) *punishment*: some credible mechanism must be established by which such departures are punished if and when they are detected.") (emphasis in original).

in UP-NS's monopoly profits because BNSF and CSXT stand to benefit from CGP by charging shippers higher prices. Therefore, it would be straightforward for UP-NS, BNSF, and CSXT to coordinate around CGP rates, allowing them to avoid competing with one another and instead share all of the available surplus they can extract from shippers.

9.4. Dr. Israel's CGP model does not reliably reproduce observed railroad prices or costs

314. Due to Dr. Israel's simplistic modeling, which ignores the potential harms of CGP, his model fails to capture realities of the railroad industries and is clearly unsuitable to determine any plausible impact of CGP. As discussed above, and as acknowledged by Dr. Israel, whether CGP harms shippers is based on a key economic tradeoff: UP-NS has incentive to raise prices on routes which determine CGP rates, in order to push up CGP prices.[328] His model is, in theory, meant to evaluate this tradeoff, and he finds that shippers benefit.[329] As I show in the remainder of this section, Dr. Israel's model is completely incapable of capturing real-world railroad prices and has findings which are completely nonsensical. This is ultimately because his model is extremely simplistic and does not account for important aspects of railroad pricing, such as negotiated

[328] Israel Second Errata VS, ¶ 167 ("[U]sing [UP/NS] rate[s]…as an input for establishing the gateway rates can potentially create an incentive for [UP/NS] to compete less aggressively and transact at rates higher than would otherwise occur absent the gateway rate mechanism.").
[329] Israel Second Errata VS, ¶ 173.

contracts, which he fully acknowledges exist.[330] As a result, his model cannot be relied upon to evaluate this key economic tradeoff. The more likely outcome, given the negative impacts of CGP on investments and likelihood of collusion, is that CGP harms shippers.

(1) The CGP model does not reliably predict observed prices

315. Evidence shows that the CGP model, as constructed, is not able to adequately predict existing prices. In Exhibit 49, I utilize Dr. Israel's CGP model to examine whether it can accurately predict *existing* railroad prices. I plot the difference between Israel's predicted prices and real-world prices in percentage terms from largest positive difference to largest negative difference. Economists often test their models against real world data to demonstrate the reliability of the model.[331] If the model can, within reason, predict real-world prices, it would provide confidence in its ability to predict the impact of CGP. I find the opposite—{{{REDACTED}}}% of the prices he utilizes do not correspond, within 5%, to their real-world prices—confirmation that Dr. Israel's model is incapable of accurately capturing competitive dynamics in the railroad industry and, consequently, the impact of CGP.

[330] Israel Second Errata VS, ¶ 21 ("A significant fraction of rail shipments move pursuant to negotiated non-linear contracts.").

[331] Jeffrey M. Perloff, *Microeconomics*, (7th ed.), (Boston, MA: Pearson/Addison-Wesley, 2015), p. 4 ("Economists test theories by checking whether predictions are correct. … A good model makes sharp, clear predictions that are consistent with reality."), fn. 3 ("If a model's prediction is inconsistent with what actually happened, the model must be wrong, so we reject it."); Kaplow and Shapiro (2007), p. 1180 ("Werden, Froeb, and Scheffman (2004) emphasize that the weight given to merger simulations should depend on how well the specified model fits the industry, based on historical evidence.").

Exhibit 49
Differences between real prices and predicted prices in the CGP model

{{{REDACTED

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316. The predictions also are not systematic—{{{REDACTED}}}% of predicted prices are 5% larger than the actual price or above, and {{{REDACTED}}}% of predicted prices are 5% smaller than the actual price or lower.[332] In short, Dr. Israel's model is wrong in nearly every instance, and its errors do not consistently favor in one direction over the other.

317. The fact that Dr. Israel's model cannot reliably predict real-world prices provides strong evidence of the fact that his model is unreliable. Testing the ability of a model to fit existing data can help determine the model's accuracy. For example, when choosing between multiple models, it is important to evaluate the plausibility of the model.[333] At a minimum "empirical evidence should be provided that structural economic models can deliver reasonably accurate predictions."[334] In the context of merger simulations unreliability of a model can dramatically impact its ability to perform useful predictions.[335] In his analysis of CGP, Dr. Israel performed no tests to evaluate the reliability of his model or determine whether the model is appropriately capturing all aspects of railroad pricing. In fact, in his supplementary report, Dr. Israel identifies an

[332] See workpaper 9-4.

[333] See e.g., Daniel Greenfield, Nicholas Kreisle, and Mark Williams, "Simulating a Homogenous Product Merger: A Case Study on Model Fit and Performance," Federal Trade Commission Bureau of Economics Working Paper No. 327, October 2015, Abstract ("This hybrid model generates margins that are more plausible than those generated by the standard Cournot model.").

[334] Jonas Bjornerstedt and Frank Verboven, "Does Merger Simulation Work? Evidence from the Swedish Analgesics Market," *American Economic Journal: Applied Economics*, 8(3), 2016, pp. 125–164, p. 125 ("At a minimum, [Angrist and Pischke (2010)] write, empirical evidence should be provided that structural econometric models can deliver reasonably accurate predictions.").

[335] Vivek Bhattacharya, et al., "A Large-Scale Evaluation of Merger Simulations," NBER Working Paper 35473, 2026, p. 17 ("As such, one potential explanation for overprediction is that our demand estimates themselves could be biased.").

alternative model which could produce different estimates of CGP's benefits. Dr. Israel does not test whether that alternative models better fit the data.[336]

318. As discussed in prior sections of this statement, there are many aspects of railroad competition—bargaining over the longer haul, geographic bargaining effects, and options available for a move—which plausibly impact prices.[337] Dr. Israel has not modeled those aspects of competition and, as I have shown, his model is completely unable to capture real-world prices.

319. The fact that Dr. Israel's model is not able to generate appropriate predictions means that it cannot reliably estimate the crucial balance test that an analysis of CGP requires. As Dr. Israel acknowledges, CGP creates an incentive for UP-NS to raise prices on the movements which determine the CGP price. Whether this harm to shippers is outweighed by the ostensible benefit to other shippers is the crucial question his model seeks to answer. As I have shown, the fact that his model is incapable of replicating anything close to real-world prices suggests that it cannot accurately capture whether, on-balance, CGP would be beneficial or harmful to shippers.

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[336] Israel Supplemental VS, Appendix I, p. 2 ("[C]onsider three commonly used demand forms: linear, log-linear, and constant elasticity.") In his CGP model, Dr. Israel uses log-linear demand, which assumes BNSF and CSXT fully pass through any CGP price cap to shippers. See Israel Second Errata VS, Appendix C ¶ 12. A linear model would have less than full passthrough for shippers. There are alternative commonly used models that Dr. Israel does not mention which would also have BNSF and CSXT raise price.

[337] See Sections 4, 5, and 6.

(2) Dr. Israel's CGP model frequently produces implausible estimates of railroad costs

320. The fact that Dr. Israel's model cannot reliably predict existing prices is based on his simplistic assumptions on how railroads' costs are calculated, where for each movement, rather than relying on both firms' information on costs, he predicts one firms' cost (e.g. NS's cost) for a given route based on the *other* firms' data (e.g., UP's cost).[338] Evidence shows that this decision leads to substantial mis-predictions of costs, and therefore prices.

321. Following Dr. Israel's methodology, I utilize his model to calculate marginal costs for western railroads (UP, BNSF) based on the margins of the eastern railroad (NS, CSXT) which does the other end of a route. In Exhibit 50, I show that when following his methodology, Dr. Israel's model frequently finds {{{*REDACTED* }}} In fact, {{{REDACTED}}} of the predicted costs are negative, and {{{REDACTED}}} of the costs are more than 5% away from UP and BNSF's average costs, as estimated following his model. Put simply, his model frequently generates economically nonsensical results and completely fails to match real-world data.

[338] Israel Second Errata VS, Appendix C ¶ 39.

Exhibit 50
CGP model prediction of western railroads' costs using eastern railroads' margins

{{{REDACTED

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322. When doing the reverse, using western railroads' margins to estimate eastern railroads' costs (which represent the majority of cases in Dr. Israel's model), as I show in Exhibit 51, the effect is similar—{{{REDACTED}}} of the model predicted costs are negative, and {{{REDACTED}}} of the costs his model estimates are more than

5% away from CSXT and NS's marginal costs, using his methodology. Even when taken at face value, Dr. Israel's model fails to generate appropriate predictions, and frequently generates nonsensical results.

Exhibit 51
Eastern railroads' costs when using western railroads' margins

{{{REDACTED

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323. The fact that Dr. Israel frequently finds negative marginal costs flies in the face of both the observed facts in the data as well as basic economics. The cost data he utilizes *never* has negative marginal costs. It costs money to operate and move goods for shippers. The fact that Dr. Israel's finding suggests that railroads would benefit from moving goods *for free* suggests that his model is completely unreliable.

324. Even when he finds costs that are positive, in many instances they are completely outside the bounds of what the data suggests are reasonable. His model finds no apparent relationship between his estimates of true marginal costs and the predicted—if his model were simply imprecise we would expect to see *some* correlation between actual and predicted. Instead, we see no relationship between costs generated by his model relative to costs from the data. Again, Dr. Israel did not test whether the costs his model generated were reflective of costs in the industry or even made economic sense. Instead, he utilized a model which was guaranteed to find benefits to shippers and did not consider important aspects of railroad competition.

(3) Dr. Israel's CGP model does not account for systematic cost differences between eastern and western railroads, an example of its failure to capture real-world railroad pricing

325. Dr. Israel's model fails because it bears little resemblance to real-world railroad pricing. It ignores cross-route bargaining, contracting, competition for the longer haul, and the many other ways shippers negotiate with railroads—all of which the UP-NS merger would impair. These fundamental omissions would explain why the model

consistently mispredicts actual prices, produces nonsensical cost estimates, and cannot reliably estimate CGP's effects.

326. Dr. Israel's model even fails to account for the fact that the same route is used to estimate two CGP price caps, and he frequently predicts that the same route will have two different prices as a result. As an example, Dr. Israel's model predicts that CGP will result in two totally different prices for {{{REDACTED }}}. When being used to set the CGP price in the East, Dr. Israel's model predicts that the price would be {{{REDACTED}}} per carload-mile. Instead, when being used to set the CGP price in the West, Dr. Israel predicts that {{{REDACTED }}} would pay {{{REDACTED}}} per carload-mile.[339] Put simply, Dr. Israel predicts that the same route will have two totally different prices because his simplistic modeling doesn't even account for the fact that the same route is used to estimate two different CGP prices.

327. As an example of Dr. Israel's failure to accurately capture the realities of the railroad industry, in Exhibit 52, I follow Dr. Israel's methodology of estimating marginal cost for each route based on CCWS data. I find that western railroads (UP and BNSF) have {{REDACTED}} marginal costs than eastern railroads (NS and CSXT). On average, using the methodology for calculating costs from his model, western railroads' marginal costs are {{REDACTED}} per carload-mile and eastern railroads'

[339] See Dr. Israel's July 27, 2026 Production, Baseline Expanded CGP Simulation{{{REDACTED }}}

marginal costs are {{REDACTED}} per carload-mile. This fundamental difference is not accounted for in his model or in his analyses of the potential impact of the merger.

Exhibit 52
Marginal costs based on CCWS data, following Dr. Israel's modeling approach, eastern railroads versus western railroads

{{{REDACTED

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328. As I have shown, Dr. Israel's simplistic modeling choices clearly fails to account for the fundamental differences between eastern and western railroads. Rather than incorporate this fact into his model, he ignores it. Instead, his model finds costs that are

wildly out of step with the data and are often negative. These simplistic assumptions render the CGP model unreliable.

329. In practice, this lack of accounting for other railroads' costs can have a large impact on the estimates of the model. If Dr. Israel were to assume that any negative marginal cost were unreasonable (as he does for some railroads), it would result in an estimate that shippers were more price sensitive.[340] Whether this results in a net benefit or harm to shippers depends on which routes are affected, but the evidence is clear that Dr. Israel's model is simplistic, does not account for many methods of competition, and cannot accurately predict existing prices.

330. As discussed above, whether CGP benefits shippers is dependent on a tradeoff—harm to shippers whose prices are used to set CGP rates, and benefits for shippers who are eligible for CGP rates. As I have shown, Dr. Israel's model is completely unreliable, and is therefore not able to appropriately estimate this tradeoff.

[340] Israel Second Errata VS, Appendix C, fn. 12. Dr. Israel's failure to appropriately measure price elasticity *within* his model, and the ultimate relationship between shippers' price elasticity and rates is distinct from Dr. Israel's failure to account for BNSF and CSXT's incentive to raise prices. Before estimating his model, Dr. Israel assumes that BNSF and CSXT will not raise prices, even though he acknowledges that under different assumptions BNSF and CSXT would be able to raise prices on inelastic shippers. Taking his model as given (which I do not) the direction of harm based on his mismeasurement of price elasticity is unknown.

9.5. Dr. Israel's changing views further undermine his claim that CGP unambiguously benefits shippers

331. Dr. Israel's views on CGP have changed throughout the proceeding. Rather than fully investigating the impact of CGP, Dr. Israel's contrasting and evolving opinions demonstrate that his modeling of CGP was engineered to support a conclusion that CGP is beneficial.

332. Dr. Israel praises the CGP proposal, which only applies to current interline shipments, as "enhanc[ing] competition … for certain routes that would not directly participate in the vertical benefits of the merger."[341] He concludes that CGP represents "an unambiguous welfare enhancement to shippers and the US economy."[342]

333. Dr. Israel's opinions on the "unambiguous" benefits of CGP have evolved in his Supplemental Verified Statement. Initially, he said that CGP should be re-evaluated after the oversight period because "[m]arket conditions change over time."[343] But when asked to analyze CGP's benefits over a longer period of time, Dr. Israel now claims that CGP will reduce a merged UP-NS's incentives to invest,[344] a new CGP-generated harm that he had not identified previously. He claims that a smaller investment incentive will reduce service quality over time but does not offer an analysis of when service quality would degrade, or any impact on shippers, leaving open the possibility

[341] Israel Second Errata VS, ¶ 14.
[342] Israel Second Errata VS, ¶182.
[343] Israel Second Errata VS, ¶ 166.
[344] Israel Supplemental VS, ¶ 53.

that quality will degrade in the oversight period.[345] Dr. Israel does not model how his new negative opinion on CGP affects his predicted net benefit during the oversight period or after it.[346]

334. Dr. Israel's interpretation of the net benefits of CGP also changed in his Supplemental Verified Statement when asked to analyze the effects of further expanding eligibility of CGP.[347] Using his model of CGP, Dr. Israel examined the effect of further expanding CGP eligibility to specific excluded commodities, routes with competition at both ends, intermodal traffic, finished vehicles, additional interchange points, additional rail carriers, dimensional loads, and rail carriers' facilities.[348] Dr. Israel found, after the first year, additional expansion of CGP resulted in larger net benefits to shippers in all cases, and in some cases would *more than double* the ostensible benefit of CGP.[349] Instead of concluding that such estimated

[345] Israel Supplemental VS, ¶¶ 24, 51.

[346] Israel Supplemental VS, ¶ 51 ("In addition, the simulation of benefits does not consider the program's negative effect on investment incentives (similar to the investment-reducing effects of most rate regulation), the life of the program the greater the effects on investment (a long-lived decision) are likely to be.").

[347] In the "expansion" of CGP, Applicants have allowed the program to apply to routes with competition on one end and bulk unit train traffic. See Israel Supplemental VS, ¶ 33.

[348] Israel Supplemental VS, ¶ 32.

[349] Israel Supplemental VS, Figure 9. For example, if, in addition to the recent expansion CGP included intermodal movements, Dr. Israel found shippers would benefit by an additional $37.6 million per year. If, in addition to the recent expansion, CGP included additional rail carriers, Dr. Israel found that shippers would benefit by an additional $56.4 million per year, larger than the stated benefits of the expanded CGP.

increases in net benefits would be a positive outcome for shippers, Dr. Israel found fault with additional expanded eligibility or had no opinion at all.[350]

335. As an example of this dismissal, Dr. Israel states that dual-served end points are already low cost and would not benefit from CGP. Moreover, he argues that removing these low-cost movements from the set of movements used to calculate CGP rates will only increase CGP rates and reduce investment.[351] However, despite his theoretical arguments, he finds a net benefit after the first year of $7.6 million of further expanding CGP to include routes where shippers have competition at either or both ends.[352] He does not explain why he reaches a different opinion on expanding CGP with results similar to those he found in his initial VS. The fact that his model says one thing while his statements reflect the inability of his model to accurately capture important aspects of competition.

336. Dr. Israel refuses to engage with his own model's findings of CGP's benefit and instead argues for reduced investment incentives and the lack of need for CGP on specific routes, revealing that his analysis of CGP has continually been designed to reach a specific outcome: the "current" version of CGP will benefit shippers.

[350] Israel Supplemental VS, ¶¶ 24–26, 35.
[351] Israel Supplemental VS, ¶ 24.
[352] Israel Supplemental VS, Figure 9.

10. There is no remedy short of stopping the UP-NS combination that fully protects shippers – even the provisions requested by CPKC would only partially mitigate harm

337. Economists widely understand that competition (not regulation) maximizes social welfare over time by facilitating the efficient allocation of scarce resources and enabling players in a market to respond dynamically to changing economic conditions (Section 10.1).

338. Applicants' OGC would not restore incentives to support competing interline services, and facility-access and service-failure remedies do not protect bargaining leverage across a shipper's portfolio. Furthermore, Applicants' proposed transparency commitments and dispute resolution programs will not constrain prices as effectively as being able to leverage an alternative competitor. CPKC's proposed conditions would preserve some competitive alternatives and mitigate some harms, but even they would not, and could not, fully replace the interline options, geographic bargaining leverage, and competition for the middle of movements that shippers would lose, which I discuss in more detail in Majure VS Volume II (Section 10.2). Ultimately, the only way to fully prevent harm is to prevent the proposed merger. Anything else leaves harm to shippers, competitiveness, and the overall efficiency of this vital part of the economy (Section 10.2).

10.1. The economic literature generally finds that competition is preferable to regulatory rules to benefit customers

339. A central finding from the economic literature is that competition maximizes overall social welfare.[353] Competition allocates the resources of the economy efficiently. It does this by generating efficient (low-cost, high-value) production, investment, and innovation, all of which ensure supply can meet demand at competitive prices and quality. Importantly, competition allows this efficient allocation of resources to be dynamic and to update over time. In a competitive environment, as one railroad innovates to offer lower prices or better service, it will gain more business. As the efficient railroad gains more business, more movements will have lower costs (and therefore offer lower rates) than before the innovation, benefiting shippers. Conversely, if one railroad degrades its quality or increases its rates above the competitive level, it will lose business to railroads offering better service or lower rates.[354]

340. In the absence of competition, regulation would be necessary to prevent a railroad from charging higher rates or providing lower-quality service than competition would permit. However, the economic literature generally finds that even though regulations set out with well-meaning goals, they are nonetheless slow or unable to adjust in order

[353] Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization* (4th ed.), (Harlow, England: Pearson Education, 2015) ("Carlton and Perloff"), p. 93 ("The competitive equilibrium has desirable efficiency and welfare properties. Indeed, no one can be made better off without making someone else worse off in the competitive equilibrium."); W. Kip Viscusi, Joseph E. Harrington, Jr., and David E. M. Sappington, *Economics of Regulation and Antitrust* (5th ed.), (Cambridge, MA: MIT Press, 2018) ("Viscusi, Harrington, and Sappington"), p. 591 ("Recall that social welfare is maximized in a competitive equilibrium.").

[354] Carlton and Perloff, p. 295 ("Firms can compete for customers by spending money to improve product quality, lowering price, or both.").

to account for the many changes that happen in a marketplace over time.[355] A regulation written today may help remedy certain competitive concerns in the immediate short term, but it likely would soon become obsolete as market conditions change, meaning new regulations would have to be continually written in order to ensure resources are allocated efficiently.

341. In fact, as industries are de-regulated, they often become both more competitive and more efficient, ultimately benefiting shippers. The railroad industry represents a clear example of this via the Staggers Rail Act in 1980. According to the GAO, "During the 1970s [when the railroad industry was heavily regulated], the profitability of Class I railroads—the nation's largest railroads—was among the lowest of major industries. A number of railroads had gone, or were on the verge of going, bankrupt, and railroads had accumulated over $4 billion in deferred maintenance and delayed capital spending."[356] The Staggers Rail Act of 1980 de-regulated the railroad industry

[355] Carlton and Perloff, p. 729 ("Regulatory lag may be unattractive during periods of rapid increases in the costs of factors of production, as with energy costs in the 1970s. … When regulators finally act, they may be tempted to grant extremely large price increases to make up for these lost profits, resulting in prices that were too high in some periods and too low in others."); Viscusi, Harrington, and Sappington, pp. 540–541 ("Rate hearings typically take many months to conduct, because the issues addressed at a hearing can be quite complex. Predictions about future costs (and thus required revenues) vary with underlying assumptions about such factors as likely input prices, levels of consumer demand, and prevailing production technologies.").

[356] U.S. General Accounting Office, "Railroad Regulation: Economic and Financial Impacts of the Staggers Rail Act of 1980," May 16, 1990, available at https://www.gao.gov/assets/rced-90-80.pdf ("GAO/RCED-90-80"), p. 2. The GAO further reported that "if poor financial performance continued, the industry would accumulate a capital shortfall of between $13 billion and $16 billion by 1985." See GAO/RCED-90-80, p. 11. See also Viscusi, Harrington, and Sappington, pp. 640–641 ("[P]roductivity growth in the railroad industry was 3.3 percent in Canada but only 0.5 percent in the United States between 1956 and 1974. … This evidence suggests that regulation of the railroad industry likely induced substantial productive inefficiency.").

as Congress recognized "that markets generally function effectively as a result of competition rather than regulation."[357] Therefore, the Staggers Rail Act "made it federal policy… to rely on competition and the demand for [rail] services… rather than on regulation, to establish reasonable rates."[358] Following de-regulation, railroads became more profitable, investment in track and structures increased, accidents due to track defects decreased, rates declined, and service improved.[359] In other words, competition (rather than regulation) in the rail industry led to an efficient allocation of resources that benefitted shippers (and railroads). While regulation may be able to stem some of the competitive harm resulting from a UP-NS merger in the short term, it falls woefully short of the long-term, dynamic discipline that healthy competition would provide.

[357] Rate Reform Task Force, "Report to the Surface Transportation Board," April 25, 2019, available at https://www.stb.gov/wp-content/uploads/Rate-Reform-Task-Force-Report-April-2019.pdf, p. 2.

[358] GAO/RCED-90-80, p. 2.

[359] GAO/RCED-90-80, p. 2 ("Overall, the Staggers Rail Act has helped improve Class 1 railroads' financial health and rehabilitate rail facilities—the legislation's two primary purposes. For example, profitability increased during the 1980s compared with the 1970s, and increased capital spending on track and structures, in combination with declines in accidents caused by track defects during the 1980s, suggests improvement in the condition of rail facilities. In addition, the shipping industry has gained from lower rail rates and improved service.").

10.2. CPKC's proposed provisions would help to ameliorate some lost competition

342. As I discuss in more detail in Majure VS Volume II, CPKC has proposed conditions aimed at partially mitigating merger-induced harm.[360] These conditions include modifications to Applicants' CGP; restrictions that ensure a combined UP-NS could not hold shippers captive beyond pre-merger levels; enforceable service quality standards; the removal of contractual barriers for shippers and railroads seeking relief; constraints on the merged firm's voting power in governance of shared resources.[361] CPKC also proposes more specific, structural remedies in geographic areas likely to be acutely affected by merger-induced harm and/or in areas where CPKC would be able to provide another competitive Class I option.[362]

343. CPKC's specific, enforceable conditions are more likely to partially mitigate merger-induced harm than Applicants' vague proposed remedies. While CPKC's proposals would improve upon the conditions Applicants have proposed as remedies, even these more effective regulations are an inferior option to preserving the competition they would have to replicate. Given the lasting consequences of a rail

[360] Expert Statement of W. Robert Majure, Ph.D. Volume II of II, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026.

[361] CPKC's Comments on Application and Request for Conditions, Volume II, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026 ("CPKC Comment Part II"), Sections III–VII.

[362] CPKC Comment Part II, Section VIII.

merger, no regulation can fully protect shippers over the long term; only preventing the merger can do so.

10.3. The only way to fully protect shippers is to stop the merger

344. This merger, if allowed to proceed, will cause substantial harm to shippers by foreclosing competing interline options, weakening their bargaining leverage, and eliminating competition between UP and NS. The only way for The Board to fully protect shippers is to reject the merger. No set of regulatory conditions can replicate the competitive discipline supplied by independent railroads. Even an extensive regulatory framework would leave some harms unaddressed and constrain railroads' and shippers' abilities to adapt to changing economic conditions, while the loss of competition would be permanent.

345. However, if The Board decides to approve the merger, Applicants' proposed regulations will not come close to preventing harm to shippers. Meaningfully mitigating that harm would require a far more detailed and extensive regulatory framework. Even the complicated patchwork of conditions proposed by CPKC (which I discuss in Majure VS Volume II) would be only one of many sets of protections The Board would need to impose to address the merger's wide-ranging competitive harms.

11. Appendix: The limited and narrow screens Dr. Bailey runs are flawed and irrelevant

346. As I discuss throughout this statement, Dr. Bailey's screens are too narrow for a merger of this size. This results in Dr. Bailey completely ignoring any *indirect* competition between UP and NS (the type of competition that stems from a merger of this size and scale, as recognized by The Board's 2001 Rules). By ignoring indirect competition, her analyses cannot account for the kinds of leverage I discussed above in Sections 4-6 (e.g., the foreclosure of interline competition, loss of Rule 11 contracts, captivity and bundling, and loss of competition over the middle of a movement), which is highly relevant to the outcome of this proposed merger. In this Appendix, I discuss additional ways that even the limited screens Dr. Bailey does perform are flawed, as she relies on inappropriate data and makes questionable assumptions to justify her findings.

347. As I established in Section 3, the proposed merger between UP and NS is of an unprecedented size and scale. A combined UP-NS would go nearly everywhere, touch more than {{REDACTED}} of U.S. rail revenues and be nearly impossible for shippers to avoid.[363] Therefore, any analysis that purports to study the effects of this merger on competition and on shippers needs to account for its scale, including the indirect competition that a merger of this scale will affect. Dr. Bailey runs three screens: a "customer access" analysis, a "within corridors" analysis, and a "between corridors" analysis. None of these screens address the interline foreclosure, use of Rule

[363] See Exhibit 2.

11s, bargaining over the middle of a movement, and geographic bargaining competition analyzed above, and therefore do not measure the forms of competition most threatened by a merger of this scope.

348. First, Dr. Bailey runs a customer access screen, using the SCRS data to identify customers that would become sole-served as a result of the merger. However, her analysis does not consider how the shippers she identifies as becoming sole-served might lose bargaining power against the combined UP-NS if they: lose an option on one side of the gateway, can no longer generate Rule 11 rates for legs of movements, become captive across multiple facilities, or lose the competition between UP and NS over the middle of movements (like I do).[364] Furthermore, as I explained in Section 5.3 (and expand on below), Dr. Bailey's analysis falls short of my captivity and bundling analysis: it does not identify the full set of shippers that would become sole-served by the proposed UP-NS because she relies on SCRS data, which only contain a subset of

[364] Bailey Deposition, pp. 196:8–198:3 ("Q. So on a movement where UP serves the origin and NS serves the destination, it is often the case that UP and NS can interchange at different gateways, right? … Q. Which gateway UP and NS used to interchange traffic can affect which railroad carries the longer portion of the haul, right? …. [A.] That's not something I looked at in my report."), 199:22–200:3 ("Q. Next topic: Are you aware whether shippers and railroads negotiate with one another considering multiple segments at one time? … [A.] I think I'm not aware of when one or the other. That's not an analysis I did in my report."), 189:1–9 ("Q. But the access to customer analysis doesn't assess whether UP or NS serve different facilities for the same customer, right? A. So what I looked at here was access to the -- who has access to that facility. That's the work that I did here. I mean, I have other access that's looking within the corridor or between corridors, but -- but for customer facilities, I'm looking at each facility.").

shippers and customer facilities—namely the customer facilities and shippers in common service areas that have been manually added to the dataset.[365]

349. Second, Dr. Bailey's "within corridors" analysis is a subset of the analysis I ran when evaluating CP-KCS. She states: "The evaluation of prior railroad mergers has included analyses of the effect on the number of options that shippers have within corridors. *See* Majure VS at ¶¶ 49-53. My approach differs in that it focuses on horizontal overlaps."[366] Contrary to The Board's 2001 Rules, Dr. Bailey has *narrowed* the scope of a screen meant for a much smaller transaction by focusing on corridors where UP and NS operate in the same segment, but not where they serve different segments: for each BEA-BEA corridor, she counts the number of railroads with access to a given segment of that corridor, looking for horizontal overlap only.[367] Dr. Bailey then defers to Dr. Israel's "counting algorithm" for an analysis of indirect competition

[365] Indeed, as I discuss in Section 11.1, Dr. Bailey only identifies a subset of the shippers that another one of Applicants' experts (Dr. Israel) identified. Neither Applicants nor their experts explain the discrepancy in these analyses. See workpaper 11-1.

[366] Verified Statement of Elizabeth M. Bailey, December 17, 2025, fn. 95. See also Bailey Deposition, p. 192:1–12 ("Q. So, for example, that analysis can't flag a situation where UP serves many segments for a customer in one area and NS serves other segments for that same customer, right? A. Other segments that are not the segments that UP is serving? Q. Correct. A. Right. Correct. Because this is an analysis of within-corridor. So the analysis -- I mean just as the first sentence says, it's to transport freight along the same segment of the specific corridor.").

[367] For example, consider a hypothetical east-to-west corridor interchanging at a major gateway like Chicago with one UP-CSXT route and one BNSF-NS route as available options. My approach from CP-KCS would flag this as a 2-to-1 because a combined UP-NS would participate in both routes post-merger. In contrast, Dr. Bailey's narrower screen would not flag this corridor because UP and NS do not serve the same *portion* of the route. A "BEA area" is defined by the Bureau of Economic Analysis to refer to relevant regional areas, I refer to these as "BEAs" throughout my report.

within corridors.[368] I explain the deficiencies of Dr. Israel's "counting algorithm" in Section 4.3. Taken on its own, Dr. Bailey's screen does not allow her to evaluate how shippers will be affected by the proposed merger when UP and NS serve different parts of a movement. In the prior sections, I have demonstrated numerous ways in which this merger will likely harm shippers and other railroads that will occur regardless of the extent to which UP and NS overlap at particular locations. For example, I have shown the effect that concentration of a shipper's full set of locations will have—a loss that cannot be captured by Dr. Bailey's narrow screen. Furthermore, as I explain below, even where her arbitrarily narrow screen does flag corridors as competitive concerns, Dr. Bailey applies a set of arbitrary and unsupported assumptions to dismiss them.[369]

350. Third, Dr. Bailey runs a screen for geographic competition, which she claims is like the "between-corridors" analysis I ran when evaluating CP-KCS. She does not offer any explanation for why the assumptions that were appropriate to screen a combination of networks that do not pose anywhere near the same dominant scale over the shipments of many industries and numerous geographic areas are appropriate for evaluating the proposed UP-NS merger, which does have that scale and scope. Evaluating the movements into or out of one BEA at a time, as the 50/10 screen does, fits a CP-KCS combination that only connects the two networks in one BEA, but this

[368] Bailey Second Errata VS, ¶ 155 ("Moreover, corridors in which there is the loss of an independent route will generally either (1) feature UP and NS operating on the same segment of the corridor, in which case they would be included in my analysis of within-corridor competition in this verified statement, or (2) feature UP and NS operating at different ends of the corridor, in which case I understand that analysis of the corridor would be included in Dr. Mark Israel's verified statement.").

[369] I discuss this further in Section 11.2 below.

screen leaves a lot of room for effects that span numerous economic areas or bargaining over moves that are not even for the same BEAs as a UP-NS combination would. In a merger of this scope and scale, where UP and NS often compete over large portions of a movement and for a large group of shippers' facilities simultaneously, Dr. Bailey's chosen screen falls woefully short. Because this screen considers corridors in isolation, it cannot observe how shippers and railroads bargain over movements across multiple facilities (including bargaining over multiple movements/facilities simultaneously) — and therefore this screen cannot observe how UP-NS might gain bargaining leverage over shippers' portfolios, a competitive concern in a UP-NS combination. Furthermore, as I explain below, even when her poorly justified screen does flag a BEA, Dr. Bailey arbitrarily dismisses competitive concerns on the basis of Applicants' vague, incomplete commitments.[370]

351. Because her screens do not identify the indirect competition highlighted by The Board in its 2001 Rules, Dr. Bailey assumes—rather than shows—that the proposed merger will not harm shippers. That reliance on assumptions is even explicit with respect to the commodities where The Board has deemed that competition is sufficient to exempt the commodity from regulation, such as autos and intermodal traffic.[371] Dr.

[370] I discuss this further in Section 11.3 below.

[371] Dr. Bailey excludes autos and intermodal traffic from her analysis of independent corridors in her Exhibit 12 as well as commodity-corridors which are transported by more than 50% non-rail modes. See Bailey Second Errata VS, ¶ 133 ("This figure represents the carloads on those corridors in 2023 exclusive of intermodal and automotive shipments and commodities that primarily travel by truck or other non-rail methods."). Dr. Bailey excludes autos and commodities she identifies are principally transported in intermodal containers from her 50/10 screens in her Exhibits 14 and 15 and includes non-rail modes in her analyses. See Bailey Second Errata VS, ¶¶ 179–180 ("Certain commodities are

Bailey treats the exemption as if it guarantees competition will exist in perpetuity rather than recognizing it does nothing of the sort. Current competition may be high enough to justify an exemption from regulation, but if those levels are not preserved by The Board—if a UP-NS merger eliminates the competition—the exemption would make consequences for shippers even worse. These commodities should, at the very least, have been looked at to see if there is such a threat for The Board to deal with.

352. When I run analyses looking at aspects of competition that Dr. Bailey overlooked,[372] I find that there is substantial competition at risk if UP and NS were to merge—and that the loss of this competition would harm shippers. Therefore, Dr. Bailey's analyses are wholly insufficient to evaluate a merger of this scope and scale. Moreover, the analyses she does run are flawed, as I expand on further below.

11.1. Dr. Bailey's screen for customer facility access does not identify the full set of customers losing competitive options

353. Throughout this statement, I have discussed how Dr. Bailey's analysis of access to customer facilities fails to consider many of the ways that shippers will lose bargaining

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principally transported in intermodal containers. Commodities that have 50 percent or more movements in intermodal equipment are defined as 'intermodal.' … Automotive products are also excluded from the analysis for the reasons described above."); ¶ 177 ("As in section 4.3, non-rail modes are also included as competitive freight transport alternatives.").

[372] Namely, the merger would give the combined UP-NS the ability and incentive to foreclose competition (Section 4.2); harm shippers by reducing their options (Section 4.2) and by curbing their ability to generate competitive bids on legs of movements via Rule 11 contracts (Section 4.1.1); would increase UP-NS leverage and reduce shipper leverage for bundling (Section 5); and would strip shippers of the ability to benefit from competition between UP and NS over interchange point and length of haul (Section 6).

power after the merger. In this section, I explain that her methodology also fails to identify all 2-to-1 and 3-to-2 facilities that would result from the merger.

354. Using SCRS registration data from August 2025, Dr. Bailey counts how many Class I, II, and III railroads have direct or reciprocal-switching access to each customer facility. She then flags facilities where the merger would reduce that count from 2-to-1 or 3-to-2.[373] Dr. Bailey's conclusions from this screen are flawed—if not irrelevant—because she relies upon a source of data that cannot capture the true set of customer facilities that would lose access to a competing railroad.

355. The SCRS data lists customer facilities and their reciprocal switching conditions for customers who have requested reciprocal switching.[374] However, if a customer has never been manually entered into by a railroad, they would not appear in this dataset (even if this proposed merger would render them sole-served at certain—or perhaps

[373] Bailey Second Errata VS, ¶¶ 107–109, Exhibit 11. I understand that Dr. Bailey also runs the same analysis using only Class I railroads in her Supplemental VS, Exhibit 1 and Exhibit 2.

[374] The SCRS dataset provides reference information about customers, serving carriers, and reciprocal switch changes. Class I railroads (and some Class II and Class III railroads) are responsible for updating and maintaining SCRS. Railroads are responsible for updating information upon changes, additions, or expirations in operations. "Serving Carrier & Reciprocal Switch (SCRS) Business Rules Guide," *RailInc*, June, 2017, available at https://public.railinc.com/sites/default/files/documents/SCRS_BusinessRules.pdf; Karyn A. Booth, et al., "Seventh Circuit Vacates STB's Reciprocal Switching Regulations," *Thompson Hine*, July 15, 2025, available at https://www.thompsonhine.com/insights/seventh-circuit-vacates-stbs-reciprocal-switching-regulations/ ("Reciprocal switching allows a shipper or receiver that is 'captive' to a single serving railroad ('incumbent railroad') **to request access** to a competing carrier via a 'switch,' where the incumbent carrier handles the customer's freight between its facility at the origin or destination and the tracks of the competing carrier.") [emphasis added].

many—facilities).[375] Therefore, there are customer facilities losing access to a railroad that Dr. Bailey cannot identify using SCRS data that she could have identified had she used her own railroad tapes data build that she relies on in other analyses.

356. Indeed, there is evidence that Dr. Bailey has omitted relevant customers and customer facilities that would lose competitive options as a result of this proposed merger. As just one example, {{REDACTED

}} {{REDACTED

}}[376] {{REDACTED

[375] For example, I observe many customers and customer facilities at UP or NS stations in the railroad tapes and centralized station master files that I do not observe in the SCRS data. See workpaper 11-2.

[376] UP_0041664.xlsx, {{REDACTED }}; Supplemental Verified Statement of Dr. Elizabeth M. Bailey, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, July 17, 2026 ("Bailey Supplemental VS"), Exhibits 1–2, SUPP. PAGE 222–227, fns. 11, 19. {{REDACTED

}}.

}} {{REDACTED

}}[377] {{REDACTED

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357. Moreover, Dr. Bailey's use of SCRS data to perform this analysis is inconsistent with the rest of her VS. For her within-corridor and between-corridor analyses (which I discuss below), Dr. Bailey relies on observed traffic data from the railroad tapes from the six Class I railroads, in conjunction with data from the CCWS.[378] She does not provide a justification for why she does not use railroad tapes data (potentially in conjunction with the SCRS data) to conduct her analysis of the count of railroads with access to customer facilities if UP and NS were to merge.

358. Dr. Bailey's use of SCRS data to perform this analysis is also inconsistent with Dr. Israel's approach to identify areas that would become sole-served as a result of the merger. Dr. Israel identifies whether a Class I railroad serves a commodity in an area directly from observed waybill traffic, rather than relying solely upon SCRS data.[379]

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[377] See workpaper 11-3.

[378] Bailey Second Errata VS, Sections 4.3–4.4.

[379] Israel Second Errata VS, ¶¶ 50–51 ("My analysis considers two alternative definitions of competition: 'Competition Version 1,' which uses industry location data *and* observed traffic …

Using observed traffic data, Dr. Israel's methodology would identify areas that would become sole-served if UP and NS were to merge that Dr. Bailey omits from her analysis.[380] Thus, even by Applicants' own expert's standards, Dr. Bailey's analysis does not sufficiently assess the number of customers and customer facilities that would lose a competitive option or become captive to UP-NS if UP and NS were to merge. Moreover, as I discussed above, Dr. Bailey identifies fewer captive shippers than I do when I run my analysis of geographic bargaining (Section 5).

11.2. Dr. Bailey's "within-corridor" screen does not identify where shippers will lose independent, competitive options on a movement and assumes away competitive concerns

359. Throughout this statement, I discuss how Dr. Bailey's analysis of "within corridors" competition is narrower than how economic experts in prior mergers have analyzed within-corridor competition (including my analysis of CP-KCS, which considered the number of independent routes a shipper had within a corridor).[381] In this section, I explain that even when her narrow analysis does flag competitive concerns, Dr. Bailey relies on a set of arbitrary assumptions to dismiss them.

Using 'Competition Version 1' I find that roughly {{REDACTED}} percent of the through rate traffic under consideration is contracted with a carrier on the sole-served segment.").

[380] For example, Dr. Israel's flags for whether Class I railroads serve the origin or destination of movement would identify areas e.g., {{REDACTED }} as potential 2-1 but customers in these areas are not addressed by Dr. Bailey. See workpaper 11-1.

[381] Bailey Second Errata VS, ¶ 153 ("The evaluation of prior railroad mergers has included analyses of the effect on the number of options that shippers have within corridors. *See* Dr. Majure VS at ¶¶ 49–53. My approach differs in that it focuses on horizontal overlaps."). See also Verified Statement of Elizabeth M. Bailey, December 17, 2025, fn. 95.

360. Dr. Bailey does not dismiss competitive concerns based on evidence that shippers have alternative routes that they can credibly use. Rather, she excludes competitive concerns under four seemingly arbitrary categorical rules: a 50% non-rail-tonnage threshold,[382] an automotive and intermodal carve-out,[383] a single customer carve-out tied to a proposed commitment,[384] and a Kansas City-St. Louis carve-out based on shared terminal access.[385] Dr. Bailey primarily relies on the first rule, a 50% non-rail-tonnage threshold, to dismiss further analysis. She claims that "customers in corridors where trucks are a viable alternative have numerous competing truck options in addition to rail" and "[c]ustomers in corridors where water transport is a viable alternative also have competitive waterway options in addition to rail."[386] However, Dr. Bailey has not shown that shippers that use rail are willing or able to easily substitute to truck or waterway options, or that relevant routes even exist for shippers to do so. Dr. Bailey has not shown that there are no competitive concerns due to an elimination of options for shippers—she has instead made an assumption about the competitive importance of the options lost by shippers.

361. Moreover, this assumption is in tension with other analyses Applicants have put forward. In particular, the assumption that truck and waterway options are competitive if they carry 50% of the tons is difficult to reconcile with Applicants' own claimed

[382] Bailey Second Errata VS, ¶ 139.
[383] Bailey Second Errata VS, ¶ 140.
[384] Bailey Second Errata VS, ¶ 141.
[385] Bailey Second Errata VS, ¶¶ 142–145.
[386] Bailey Second Errata VS, ¶ 137.

benefits. Applicants have not explained how Mr. Hunt's claims of truck-to-rail diversion square with Dr. Bailey's claims of rail-to-truck and rail-to-barge diversion. Dr. Bailey assumes there is *already* intense close competition between transport modes whenever trucks or barges move a lot of a product. Indeed, she assumes it is so close that we can ignore any concern for lost competition within rail implicitly because so many shippers switch readily between transport modes. At the same time, Mr. Hunt assumes that rail cannot compete with other transport modes without a merger — that the large share of truck shippers represents a body of customers rail can only win if it can offer new single-line rail service, after which it will win them in large numbers. That is not at all compatible with the close existing competition Dr. Bailey assumed.

362. Similarly, Dr. Bailey *assumes* rather than *shows* that the other three categories for which she implements rules would not be affected by the proposed merger. She assumes that automotive and intermodal traffic will remain competitive due to The Board's carve-out.[387] But Dr. Bailey does not actually analyze whether this carve-out would continue to be reasonable in the face of a proposed merger of this scale, i.e., she does not analyze whether a combined UP-NS would have a large share of automotive or intermodal traffic, or if it would have an ability or incentive to foreclose competition in these types of movements. Indeed, UP-NS would participate in {{{REDACTED}}}of U.S. automotive revenues if they were to merge, casting doubt on the validity of this carve out, which Dr. Bailey applied without further analysis.[388]

[387] Bailey Second Errata VS, ¶ 140.

[388] Based on the Six-Railroad Tapes data from 2019-2024. See workpaper 11-4.

She also assumes that traffic in the Springfield, IL-MO–Evansville-Henderson, IN-KY corridor will remain competitive (despite the fact that it would be sole-served by UP-NS), because Applicants have committed to allowing another Class I railroad to serve a {{REDACTED}} customer in this corridor.[389] Finally, she assumes that traffic between Kansas City and St. Louis will remain competitive, despite some corridors being flagged as losing a competitive option, because she states that many Class I railroads can provide single-line service in, around, and between Kansas City and St. Louis via, e.g., the KCT and the TRRA.[390]

363. After applying these four seemingly arbitrary categorical rules, Dr. Bailey further dismisses competitive concerns by alleging that there may be "alternative feasible routes" that "are not observed in the combined waybill data."[391] These routes are not observed as actual routes used by customers. In her deposition, while she states that she has reasonable rules in place to identify these alternative routes, she admits that, hypothetically, shippers may not use these routes because they are too expensive.[392]

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[389] Bailey Second Errata VS, ¶ 141.

[390] Bailey Second Errata VS, ¶¶ 142–148.

[391] Bailey Second Errata VS, ¶ 150 ("The combined waybill data might not include movements on all the feasible routes that customers can choose from within a corridor. Many corridors have relatively few customers and customers may prefer to consolidate all of their volume in a corridor using just one route. To account for the possibility that alternative feasible routes exist on a corridor, traffic information in the combined waybill data on individual segments and traffic interchanges at the main gateways is used to add additional interline options that are available to customers, but which are not observed in the combined waybill data on a given route and so are not included when applying the initial screen.").

[392] Bailey Deposition, p. 220:15–23 ("Is one possible reason that those interline options are not observed in the data because they are too expensive for shippers? A. I mean, hypothetically, like

11.3. Dr. Bailey's "between-corridor" analysis uses the wrong screen to analyze geographic competition

364. Throughout this statement, I explain that Dr. Bailey's "between corridors" analysis relies on a 50/10 screen that is insufficient to analyze the sort of geographic competition that is relevant for a merger of this scale because it evaluates each movement in isolation. Treating a merger as having a relatively small effect on a shipper's overall portfolio of movements and their outside options (rather than evaluating if this is actually the case) dismisses rather than assesses any attempted exercise of market power. In this section, I explain how Dr. Bailey also errs when she claims that Applicants' various commitments (OGCs, CGP, and access commitments) will preserve competition in the corridors flagged by this screen.

365. Dr. Bailey analyzes competition between corridors (also referred to as geographic competition, or source and destination competition). For each origin-commodity and destination-commodity pair, she tests whether a shipper could substitute at the origin or destination, using the 50/10 screen followed by Critical Loss Analysis.[393] In her Second Errata VS, she concluded that every pair initially flagged by the screen was ultimately unflagged by the Critical Loss Analysis, finding no between-corridor competitive harm at all.[394] In her Supplemental VS, Dr. Bailey does not change the first-stage 50/10

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anything is possible … I wanted to rule out things that were unrealistic. And so that's -- that's in part why I impose those requirements on what is a feasible route.").

[393] Bailey Second Errata VS, ¶¶ 158-167, Appendix G.

[394] Bailey Second Errata VS, ¶¶ 182, 185, Exhibits 14–15.

screen, but updates the second stage of the analysis from a critical loss analysis to a remedy-coverage analysis (which I discuss below).[395]

366. When Dr. Bailey updates this analysis in her Supplemental VS, she claims that competition would be preserved in the majority of corridors flagged in her updated "between-corridors" analysis due to three remedies (OGCs, CGP, and access commitments). However, her analyses are flawed and incomplete:

a. She claims that OGCs and CGP would apply to particular facilities because she can find another source or destination for the shipper to ship to where those proposals would apply. But she makes no effort to determine whether such shipments are economical, practical, or likely to happen.

b. She is vague about (and does not provide) the Access Commitments (or any drafts) that she reviewed to form that opinion. She admits that: "The remedies have not been finalized … commitments proposed to these shippers are not accounted for in the current analyses because they have not been finalized,"[396] yet she does

[395] Bailey Supplemental VS, ¶¶ 21–22 ("I start from the analysis of competition between corridors from my April VS, which applied the two-step approach from prior mergers to identify areas and commodities where the merger might lead to a loss in geographic competitive constraints. Step 1 used the 50/10 screen to flag areas and commodities as warranting further review. … To address the STB's request, the analysis here uses the same origin-commodity and destination-commodity pairs from Step 1 …").

[396] Bailey Supplemental VS, ¶ 42, fn. 38.

attribute some carloads as being covered by these unfinalized, unproduced Access Commitments.[397]

c. In her deposition, she testified that she did not know if—and had not performed any economic analysis of whether—OGC, CGP, or access commitments would be "effective at preserving horizontal competition."[398]

367. Dr. Bailey also fails to use the most recent 2025 traffic tapes data for the analyses most important to her conclusions (e.g., the three screens in her Revised Application). Dr. Bailey used some of the available 2025 traffic tapes — but only for the customer-access counts requested by The Board in its Decision No. 21.[399]

368. Taken together, all of these gaps mean that Dr. Bailey has not actually tested her conclusion that competitive harm from this merger is limited. She does not properly identify customers and customer facilities that would become sole-served as a result of the proposed merger. She ignores indirect competition and assumes away competitive concerns by stating (without showing) that truck and waterways are competitive substitutes to rail (and similarly assumes that automotive traffic, intermodal traffic,

[397] See, e.g., Bailey Supplemental VS, Exhibits 5–7, column 5.

[398] Bailey Deposition, pp. 241:14–242:11 ("You do not know if these commitments are effective at preserving horizontal competition, correct? … [A.] What I wrote is if these commitments are effective at preserving horizontal competition for these customers. I did not write these commitments are effective at preserving horizontal competition for these customers. … Q. And you did not write: These commitments are effective at preserving horizontal competition because you don't know whether they are or not, correct? You didn't study that, correct? … [A.] That's why I wrote if these commitments are effective at preserving horizontal competition, that's why I wrote that.").

[399] Bailey Supplemental VS, ¶ 5.

traffic covered by proposed commitments, and traffic at the TRRA in Kansas City would not be affected by the proposed merger). Finally, she uses the wrong screen to analyze geographic competition for a merger of this scale—and does not provide justification for why the proposed remedies would assuage competitive concerns identified by her screen. Dr. Bailey has not run the proper analyses to determine if the proposed merger would harm shippers, and any conclusions she makes to this effect are baseless.

12. Appendix: Empirical analyses of railroad pricing and competition

369. Applicants' expert, Dr. Israel, puts forward a regression that purports to show that interline service is up to 29% higher priced than single-line service. This result suggests that single-line service is simultaneously a high-quality service and also offered at a substantially lower price. In this section, I show that Dr. Israel's regression results are the product of a flawed regression design that fails to answer the question at hand in this merger: what will shippers pay for services in corridors where UP and NS currently interline. I also present an improved regression that answers the question at hand. My regression simultaneously accounts for a new single-line service while also accounting for the change in competition over gateways from the merger. My results show that losing a railroad's competitive pressure over gateways will lead to higher prices even when a new single-line is available.

370. Dr. Israel also ignores that the combined UP-NS would have increased bargaining leverage over shippers, which I expand on from analyses I discussed above. I also expand on how his analysis of independent routes does not address the competitive harms of the merger.

12.1. Dr. Israel's regression comparing single-line and interline rates is flawed

371. In Figure 10 of his VS, Dr. Israel reports the results of a regression analysis that compares single-line and interline rates and includes various "control" variables to purportedly predict the benefit of the proposed merger. He claims his analysis shows

that interline service has rates that are 15%–29% higher than "comparable" single-line service.[400] This empirical result that Dr. Israel puts forward comes from a fundamentally flawed regression design, and Dr. Israel's interpretation of it—that it provides a reliable measure of benefits from the proposed merger—is wrong and misleading.

372. In this section, I show that his result comes from a poor regression design that fails to answer what will happen to prices if current UP and NS interline services become single-line services.

373. I first describe Dr. Israel's regression design, data selection, and processing choices, so that I can proceed to identify their flaws (Section 12.1.1).

374. I then describe how his "controls" are flawed and drive his flawed and misleading results (Section 12.1.2). I also explain other flaws in Dr. Israel's regression and data handling (Section 12.1.3). Finally, I explain how Dr. Israel's analysis ignores that the merged firm is likely to apply UP's pricing strategy to NS (Section 12.1.4).

375. Taken together, Dr. Israel's result that single-line service is substantially lower priced than interline service is driven by his flawed regression design, rather than anything substantive about the likely effect of the proposed merger on rates.

[400] Israel Second Errata VS, Figure 10.

12.1.1. Dr. Israel's regression design

376. Dr. Israel uses a regression to "test whether prices on comparable routes are lower for single-line service."[401] Because he cannot observe the rates UP and NS will charge once they can offer single-line services on the corridors affected by the merger, Dr. Israel compares single-line rates to interline rates across different corridors. He claims his regression compares, for example, "UP's single-line rate on a 1,000-mile shipment of plastic pellets to the total interline rate on a 1,000-mile shipment of plastic pellets that originates with UP and is delivered by another Class I carrier."[402] Dr. Israel claims to isolate the price effects of single-lining by relying on a set of control variables that he claims "ensure that the measured price differences are the result of interlining and not due to differences in shipment characteristics or costs."[403]

377. Dr. Israel uses the Six-Railroad Tapes Data to create his regression sample. He then aggregates and restricts to movements originating and terminating in the U.S. and involving UP and NS (either single-line movements or interline movements involving at least one of the two carriers).[404] Thus, he compares rates for only UP or NS single-line movements with rates for interline movements that involve one or both of UP and

[401] Israel Second Errata VS. ¶ 112.

[402] Israel Second Errata VS. ¶ 112.

[403] Israel Second Errata VS. ¶ 112.

[404] Israel Second Errata VS. fn. 32 ("Data are aggregated to the following unit of observation: railroad, route, commodity, shipper, year-month, car type, car owner, pricing document type, and unit train flag."), ¶ 113 ("The regression sample … is limited to UP and NS single-line movements as well as interline movements involving UP or NS, which originate and terminate within the United States."). Dr. Israel also runs an additional sensitivity including using rates data from all railroads. See Israel Second Errata VS, fn. 52.

NS. He further restricts his sample of interline movements to movements in corridors where UP or NS do not offer single-line service.[405]

378. In Figure 10 of his VS, Dr. Israel presents results from three different samples. In his first sample, he compares rates from UP and NS single-line movements against all interlines which involve UP, NS, or both. In his second sample, Dr. Israel compares UP and NS single-lines to interlines involving UP and NS which he determines to be "East ↔ West", requiring an eastern railroad (NS, CSXT) to interchange with a western railroad (UP, BNSF). In his third sample, he compares UP and NS single-lines to UP-NS interlines only.

12.1.2. Dr. Israel's regression design is fundamentally flawed

379. As I discussed in Section 4.3.2, Dr. Israel's own regression data show {{REDACTED }} Dr. Israel's regression, through a flawed design that purports to control for "other factors that affect pricing" but fails to do so, {{REDACTED }}.[406]

[405] Dr. Israel defines these interline moves as "simple interline" traffic meaning "moves involving two line-haul carriers on routes that do not have single-line service by UP or NS." As I discuss below, Dr. Israel's errors lead him to fail to appropriately implement these restrictions. Israel Second Errata VS, ¶ 114 ("The first two columns report the results from estimating the regression on a sample that includes single-line moves, as well as all 'simple interline' traffic, defined as moves involving two line-haul carriers on routes that do not have single-line service by UP or NS.").

[406] Israel Second Errata VS, ¶ 112.

380. In particular, Dr. Israel's regression design {{REDACTED }} fails to account for meaningful factors that affect railroad pricing. As I highlighted in Section 4.3.2, he fails to control for the inherent differences across movements in different parts of the country that affect railroad pricing. Instead of accounting for these factors, Dr. Israel employs a distance control, which is agnostic to factors that affect pricing of movements from one part of the country to the other. Dr. Israel's control for distance is flawed.

381. First, as discussed in Section 4.3.2, Dr. Israel's distance control does not account for where the distance is covered and how the specifics of that geography may differentially affect prices for movements that differ along other dimensions. That is, Dr. Israel's regression model, in his own words, assumes that a 1,000-mile movement of plastic pellets is comparable no matter where that movement occurs in the country.[407] But as I showed in Exhibit 21, this assumption leads to comparisons of movements that differ on more than just single-lining versus interlining and in ways that his control variables do not account for. As a result, his distance control forces apples-to-oranges comparisons.

[407] Israel Second Errata VS ¶ 112 ("To illustrate in simple terms, the regression compares, for example, UP's single-line rate on a 1,000-mile shipment of plastic pellets to the total interline rate on a 1,000-mile shipment of plastic pellets that originates with UP and is delivered by another Class I carrier. As with my regressions testing for foreclosure, above, I include controls for other factors that affect pricing, including: commodity, car owner, car type, unit trains, type of pricing arrangement (contract, private quote, etc.), the year-month of the shipments, the median rail distance between the origin and destination, and the average net weight per car").

382. Dr. Israel "controls for" distance in two different ways.[408] First, he analyzes rates as revenue per carload-mile, which controls for distance within the dependent variable. Second, he controls for distance again by including distance and the square of distance as control variables in his regression. In taking this non-standard approach, Dr. Israel forces the effect of distance on rates to take a specific form that cannot account for the peculiarities of moves of different distances.

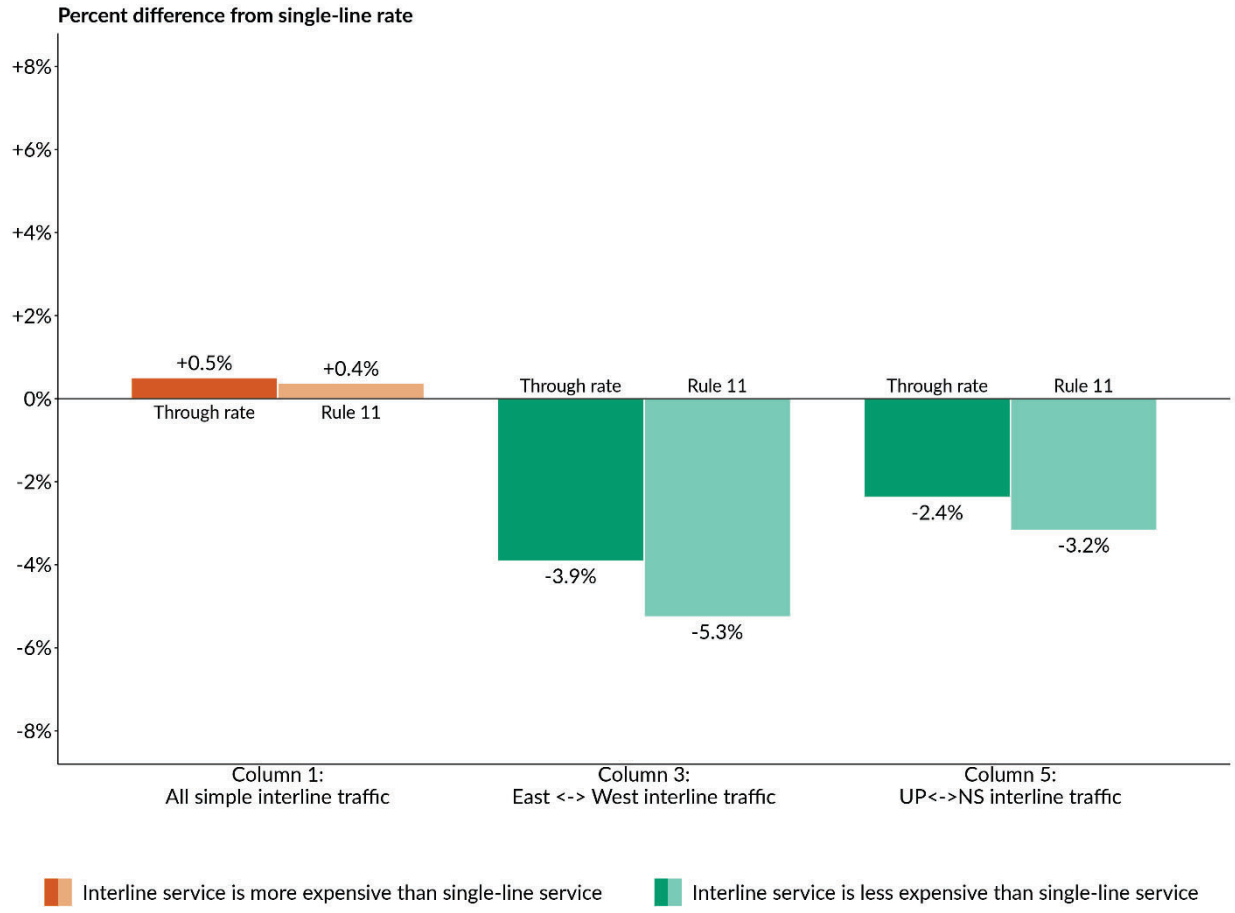
383. Finally, Dr. Israel's regression results depend solely on his flawed distance variable, rendering his results unreliable. Specifically, out of all the controls that Dr. Israel includes in his regression, the distance control is the one {{REDACTED }} and finding that single-lines are lower priced than interlines. Exhibit 53 presents the regression results replicating Dr. Israel's Figure 10 regression but excluding distance as a control among the explanatory variables. For the "All simple interline traffic" sample (the first set of bars), a regression excluding his distance controls shows slightly higher interlines rates compared to single-lines (0.4%–0.5%), but the differences are not statistically significant at the 90% confidence level. This finding shows stark contrast with Dr. Israel's own regression results where he includes the distance control (27–29%). The contrast is even stronger for the other two regression samples (the other two sets of bars). For both the "East↔West interline traffic" sample and the "UP↔NS

[408] Israel Second Errata VS, ¶ 112 ("As with my regressions testing for foreclosure, above, I include controls for other factors that affect pricing, including: commodity, car owner, car type, unit trains, type of pricing arrangement (contract, private quote, etc.), the year-month of the shipments, the median rail distance between the origin and destination, and the average net weight per car."), Figure 10, ("Dependent Variable: Ln (Rate per car-mile).").

interline traffic" sample which focus more closely on the set of traffic that will likely be impacted by the proposed merger, removing the distance control from Dr. Israel's regression yields finding that interline rates are 2–5% lower compared to single-lines. The finding in the "East↔West interline traffic" sample (second set of bars) are statistically significant at least at the 95% confidence level.[409]

[409] See Exhibit 53 backup.

Exhibit 53
Dr. Israel's regression without distance controls shows that single-lines are not cheaper than interlines



Source: Israel's Second Errata Backup (Tapes)
Note: This exhibit presents the percentage difference in rates of through rate and Rule 11 movements in relation to single-line movements. The coefficients are obtained from regressions analogous to Israel Second Errata VS Figure 10 excluding the distance and distance squared controls.

384. This exhibit shows that all other controls Dr. Israel includes to account for other factors in railroad pricing do not lead to his ultimate conclusion. Only distance, which misses how shipment characteristics vary across the country, achieves his result.

12.1.3. Dr. Israel's regression design and data handling have other flaws

385. Dr. Israel's regression model and data handling have a number of other flaws that contribute to his flawed results.

(1) Dr. Israel defines competition based on potential access, not on whether shippers actually use that access

386. Dr. Israel's approach to account for the competitive structure in his regression has several flaws. First, he relies exclusively on simple counts of railroads "present" at the origin and destination to account for competition. These basic controls fail to capture the actual routing options available to shippers or the bargaining leverage shippers derived from having viable alternatives on a given corridor. Second, Dr. Israel defines competition based on railroads' theoretical access to a station, rather than evaluating a shipper's economic or technical ability to rely on a given railroad for movements in a specific route.[410] As demonstrated in Exhibit 54, {{REDACTED
}}.

[410] Dr. Israel identifies that a Class I railroad has access to a given station (i.e. SPLC-SCAC-FSAC) if said railroad has direct access or access via a non-Class I railroad according to the Centralized Station Master (CSM) and Serving Carrier/Reciprocal Switch (SCRS); or the given Class I railroad originates, terminates, or interchanges more than 1% of carloads for a given group of commodities and SPLC according to the CCWS (2019-2023). Israel Second Errata VS, fn. 30 ("Access for a given Class I railroad at a particular station is determined using the centralized station master ("CSM") and Serving Carrier/Reciprocal Switch ("SCRS") files such that a particular railroad station, defined as the combination of: SPLC-SCAC-FSAC, is considered to be open to competition from another Class I carrier if the other Class I carrier has open access to one or more customers in common with the railroad/station in question."); Israel Second Errata VS, fn. 31 ("In particular, if a Class I railroad is observed originating, terminating, or interchanging more than 1% of carloads for a given group of commodities at a particular station (SPLC-6) in the STB confidential Carload Waybill Sample from 2019-2023, that railroad is determined to be competitive at that origin or destination for shipments of that commodity group.")

387. Exhibit 54 illustrates the stark disconnect between Dr. Israel's theoretical measure of potential competition and the actual competitive options shippers' choices reveal as practically available according to the Six-Railroad Tapes Data. The first row of the exhibit evaluates observations in Dr. Israel's regression sample that he claims are sole-served on one end and served by two railroads on the other end. The first cell indicates that {{REDACTED }} have those competitive options based on observed movements in the data (see note for details). Of these observations {{REDACTED }} have two options at either end based on observed movements, {{REDACTED }} Dr. Israel's definition. Dr. Israel {{REDACTED }} of these observations based on observed movements. Rows two and three display the analogous statistics for other competitive scenarios claimed by Dr. Israel and show {{REDACTED }}.

Exhibit 54
Measuring competition based on access to a station *{{REDACTED }}* ***shippers' real options***

{{REDACTED

}}

388. The stark disconnect between potential and observed competition confirms that railroad access, at least as Dr. Israel identifies it, does not equate to a viable competitive option. Relying on these theoretical options to measure competition ignores market realities such as restrictive switching agreements and economically unviable circuitous routes that prevent shippers from using these alternative carriers. Additionally, it ignores the possibility that a given route cannot be served with an interline because the railroad that currently offers a single-line has already foreclosed competition by refusing to interline with potential partners.

(2) Dr. Israel's data and regressions have unresolved data misconceptions and inaccuracies across multiple submissions

389. In addition to the conceptual errors in the comparison Dr. Israel seeks to calculate, his regression analysis also suffers from substantial conceptual and implementation errors in his data processing. As explained below, Dr. Israel aggregates the data without any justification and fails to process the data in the way he describes in his Verified Statement or in a coherent way.

390. The unit of observation in Dr. Israel's regression is aggregated in a way that lacks any economic meaning or justification. In the Six-Railroad Tapes Data processed by Dr. Bailey, each observation represents a waybill, i.e., a shipment.[411] Dr. Israel aggregates multiple shipments into a single observation in his regression when the shipments {{REDACTED }}.[412] Dr. Israel does not justify why aggregating the data to this level is the correct approach to evaluate the question at hand. Indeed, at his deposition, he testified that he believed his regression was estimated at the individual waybill level.[413] The arbitrary aggregation makes the

[411] Bailey Second Errata VS, Appendix C ¶ 64 ("For the analysis, the combined waybill data were aggregated to the shipment level by summing up the revenue, car count, and net tons for each waybill number, waybill date, lead equipment initial and number (bill of lading number for car-level data), origin SPLC, destination SPLC, and 7-digit STCC code.").

[412] Israel Second Errata VS, fn. 32 ("Data are aggregated to the following unit of observation: railroad, route, commodity, shipper, year-month, car type, car owner, pricing document type, and unit train flag."). As I discuss below, Dr. Israel {{REDACTED }}

[413] Israel Deposition, pp. 329:24–330:9 ("Q. I know we talked at length about Figure 10 earlier today on Page 54, but what's the unit of measure here? … A. So 54 is a progression where an individual -- so I think an individual observation in this is a waybill. I'd have to go back and check, but I'm pretty sure this is at the waybill level.").

regression results of Figure 10 difficult to interpret because it is unclear what each observation represents.

391. This arbitrary aggregation effectively introduces arbitrary weights in Dr. Israel's regression and impacts his empirical results. To see this, {{REDACTED}} of observations in Dr. Israel's aggregated data sample include more than {{REDACTED}} carloads per observation and likely combine multiple shipments. These observations altogether account for {{REDACTED}} of all carloads reported in Dr. Israel's version of the Six-Railroad Tapes Data ("Israel's Second Errata Backup (Tapes)"). In comparison, {{REDACTED}} of observations in Dr. Israel's regression sample include fewer than {{REDACTED}} carloads per observation and likely represent single shipments. These observations altogether account for only {{REDACTED}} of all carloads reported in Israel's Second Errata Backup (Tapes).[414] When I re-estimate Dr. Israel's regression by weighting each observation by the number of carloads it represents, the coefficients in Figure 10 of VS (Column 5, "UP↔NS Traffic") fall from 0.14 to 0.05 for through rate and from 0.20 to 0.11 for Rule 11 and are not statistically different from 0 at the 90% confidence level.[415] Furthermore, re-estimating his regression directly using the shipment level data in the Six-Railroad Tapes Data similarly reduces his estimates (as shown in Exhibit 55).[416]

[414] See workpaper 12-1.

[415] Israel Second Errata VS, Figure 10; see workpaper 12-2.

[416] Because Dr. Israel's dataset does not contain the number of shipments each observation represents, I cannot directly reweight his regression by the number of shipments.

392. In addition, Dr. Israel's implementation of his data aggregation is erroneous and differs from the level he intends. Dr. Israel claims that {{REDACTED }}[417] {{REDACTED

}}.

393. Dr. Israel also has {{REDACTED }}. Dr. Israel states that his regression sample is "limited to UP and NS single-line movements as well as interline movements involving UP or NS" and he further limits the interline movements to "'simple interline' traffic, defined as moves involving two line-haul carriers on routes that do not have single-line service by UP or NS."[418] However, his actual implementation {{REDACTED }}.

394. Dr. Israel's data processing erroneously {{REDACTED }}.

a. {{REDACTED

[417] Israel Second Errata VS, fn. 32 ("Data are aggregated to the following unit of observation: railroad, route, commodity, shipper, year-month, car type, car owner, pricing document type, and unit train flag.").

[418] Israel Second Errata VS, ¶ 113–114 ("The regression sample is based on Class I railroads' waybill data. It is limited to UP and NS single-line movements as well as interline movements involving UP or NS, which originate and terminate within the United States. … The first two columns report the results from estimating the regression on a sample that includes single-line moves, as well as all 'simple interline' traffic, defined as moves involving two line-haul carriers on routes that do not have single-line service by UP or NS.").

[419]}}

b. {{REDACTED

}}[420]

395. Dr. Israel's data processing also erroneously {{REDACTED

}}

a. {{REDACTED }}[421]

b. {{REDACTED

}}[422]

396. Dr. Israel's results are dependent on the unit of observation, as well as his implementation errors. Exhibit 55 replicates Dr. Israel's Figure 10 using the Six-

[419] See workpaper 12-3.
[420] {{REDACTED

}}
[421] {{REDACTED

}}
[422] {{REDACTED
}}

Railroad Tapes Data, instead of his aggregated data, and corrects Dr. Israel's implementation errors.[423] These corrections reduce the estimated price premium for Rule 11s from 29% to 20% in the "All Simple Interline Traffic" and the "East and West Traffic" samples. Moreover, for the "UP and NS Traffic" sample, which is the comparison of UP and NS single-line rates with UP-NS interline rates, these corrections reduce the estimated price premium to a much lower level—from 15% to 9% for through rates and from 23% to 8% for Rule 11. These estimates are also not statistically significant, even at the 90 percent confidence level.

[423] In the Six-Railroad Tapes Data, each observation is a waybill.

Exhibit 55

Estimating Dr. Israel's regression model in the Six-Railroad Tapes Data and correcting his implementation errors weakens his results

		ln(revenue per carload-mile)		
		All Simple Interline Traffic	East↔West Traffic	UP↔NS Traffic
	Dependent Variable	(1)	(2)	(3)
1.	**Through Rates**	**0.25*** **	**0.26*** **	**0.09**
1.a	Effect (%)	29%	29%	9%
1.b		(0.02)	(0.03)	(0.06)
2.	**Rule 11 Rates**	**0.18*** **	**0.18*** **	**0.08**
2.a	Effect (%)	20%	20%	8%
2.b		(0.02)	(0.02)	(0.06)
3.	**Observations**	38,356,226	36,014,379	28,404,442

Source: Six-Railroad Tapes Data

Note: This exhibit presents the difference in (log) revenue per carload-mile between movement types. I construct a sample analogous to Israel Second Errata VS Figure 10 using the Six-Railroad Tapes Data. The regression sample is restricted to single-line movements by Union Pacific (UP) and Norfolk Southern (NS) and "simple interline" movements defined as traffic involving two line-haul carriers on routes where UP and NS do not offer single-line service. Rule 11 rates are limited to rates for interline traffic involving UP and/or NS, for which it has been possible to merge the individual Rule 11 waybills and construct a combined rate that covers both portions of the move. Columns 2 restricts interline movements to the ones started by UP or BNSF and completed by NS or CSXT or vice versa. Columns 3 restricts interline traffic to interline movements between UP and NS. These regressions include controls for distance, distance squared, weight, and weight squared; and for the following local conditions at origin and destination: number of Class I railroads, (log) GDP per capita, (log) personal income per capita, and (log) population. These regressions further include the following fixed effects: 3-digit STCC, car owner, AAR car initial, type of pricing arrangement (e.g., contract, private quote), unit train, year-month, and reporting railroad dummies. The effect is calculated using the following formula: exp(b)-1. Standard errors are clustered at the 6-digit-SPLC origin-destination pair and shown in parentheses. An estimate followed by one asterisk (*) is statistically significant at the 90 percent confidence level. An estimate followed by two asterisks (**) is statistically significant at the 95 percent confidence level. An estimate followed by three asterisks (***) is statistically significant at the 99 percent confidence level.

12.1.4. Dr. Israel ignores that the merged firm is likely to apply UP's strategy of pursuing high rates and raise rates on NS routes

397. Dr. Israel fails to interpret his regression results holistically. In particular, he fails to consider the implication of his control for UP as the price-setter vs his control for NS as the price-setter. He estimates that UP charges much higher rates than NS.[424] This implies a likely effect of the merger is that rates on NS movements would increase to the level of rates on similar UP movements. Because he ignores this implication of his analysis, he does not recognize that the whole of his regression indicates {{REDACTED }} as the magnitude of his price-setter effect is {{REDACTED

}}

398. While Dr. Israel focuses on comparisons between interlines and single-lines, he completely ignores that his regression model also estimates the impact of UP's high-priced regime on existing NS routes.[425] To be more specific, Dr. Israel includes controls for UP and NS's involvement in a movement, which he calls his "reporting railroad" controls.[426] However, in practice, {{REDACTED

[424] See Exhibit 22.

[425] Israel Deposition, p. 37:2–19 ("Q. But, Dr. Israel, your regression indicates that NS's pricing is about 15 percent lower than UP's, after controlling for all the variables that impact pricing as identified in your verified statement. How do you explain that difference, if not the pricing policies and strategies that the two railroads have taken? … [A.] These are important controls among the controls you're talking about. These controls capture things like the cost structure and the set of routes that they're on and the quality and what customers they serve. If I took out -- I mean, they're not supposed to capture pricing strategy. Again, I'm not sure exactly what you mean by that.").

[426] See e.g. Israel Second Errata, Figure 10 ("Control variables include … reporting railroad dummies.").

}}.[427] Because Dr. Israel is effectively controlling {{REDACTED }},[428] {{REDACTED }}[429]

399. Therefore, Dr. Israel's regression directly examines the impact of the merger on shippers currently utilizing NS single-lines and interlines without UP. In Dr. Israel's framework, one direct impact of the merger is that {{REDACTED }} movements. As the higher "UP" coefficient captures something innate to the company after the shipment's characteristics and costs have been accounted for, it estimates how, as NS becomes part of UP, the change in management and approach to pricing will increase rates for shippers.

400. That is, Dr. Israel's coefficient estimates for these variables show that movements involving UP are substantially more expensive than movements involving NS, after controlling for the factors which he claims "ensure that the measured price differences

[427] See workpaper 12-4.

[428] Israel Second Errata VS, ¶ 112 ("These explanatory variables ensure that the measured price differences are the result of interlining and not due to differences in shipment characteristics or costs[.]").

[429] {{REDACTED }}

are…not due to differences in shipment characteristics or costs."[430] As discussed in Section 4.3.3, the merged UP-NS is likely to adopt UP's strategy of pursuing high prices on NS routes. Dr. Israel's regression implies that the merger would substantially increase rates for {{REDACTED

}}

401. Therefore, even if one takes Dr. Israel's results at face value (which I do not), the interpretation of these results would require {{REDACTED }}

402. To evaluate the merger's likely effect on rates for NS service not involving UP, I use Dr. Israel's Figure 10 backup files, which include the coefficient estimates for his controls for whether UP or NS are involved in an individual movement. I calculate the difference between the UP coefficient and NS coefficient as the implied "UP price premium" compared to NS. These results are reported in Exhibit 22, and the UP price premium ranges from {{REDACTED }}

403. Overall, as shown in Exhibit 23, the amount of rate increase on NS routes not involving UP implied from Dr. Israel's regression {{REDACTED }} Had Dr. Israel interpreted his regression results holistically, he would have found that {{REDACTED }}

[430] Israel Second Errata VS, ¶ 112.

404. In addition, when performing my own analyses, I continue to find evidence of {{REDACTED }}[431]

12.2. Evaluating the proposed merger's effect by correcting Dr. Israel's regression

405. In this section, I sequentially correct Dr. Israel's regression and present the estimated merger effects from these corrected regressions.

a. I first correct Dr. Israel's regression by replacing his interline versus single-line comparison with comparisons across corridors with competitive structures resembling the "pre-merger" and "post-merger" settings (Section 12.2.1).

b. I then further correct other flaws in Dr. Israel's regression, such as a failure to control for inherent differences in movements across different parts of the country (Section 12.2.2), along with robustness checks (Section 12.2.3).

406. My findings are consistent across all these regressions. They are also consistent with the data patterns in the raw Six-Railroad Tapes Data as shown in Exhibit 18. They all suggest that the UP-NS merger would likely increase rates and that a follow-on merger would not restore competition to the status quo.

[431] See workpaper 4-6.

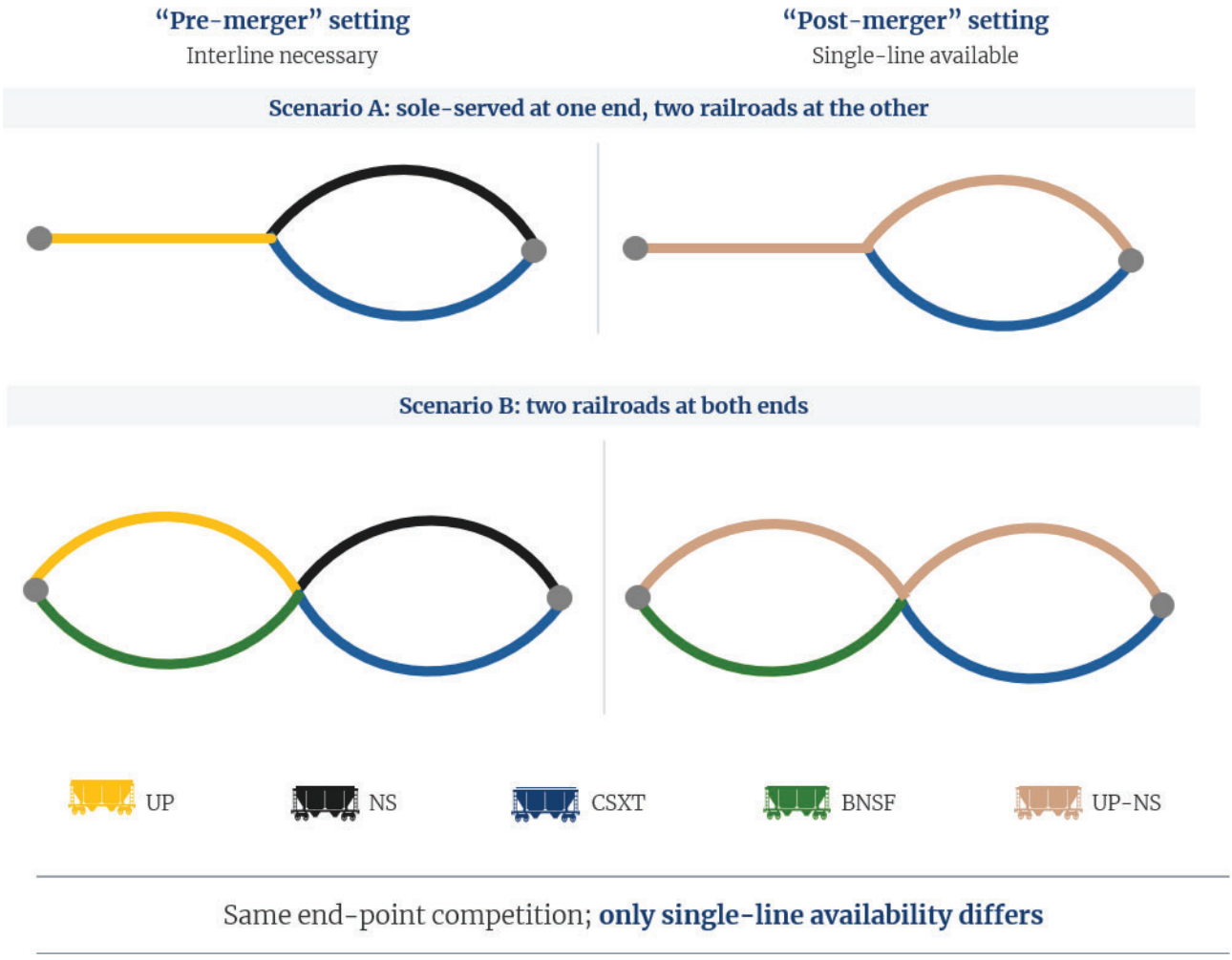
12.2.1. Correcting Dr. Israel's regression comparing single-line and interline rates to account for competitive structure

407. In this section I present the results from a "generalized form" of Dr. Israel's regression where I narrowly correct Dr. Israel's regression model to distinguish the effect on shippers of incentives to favor a single-line rather than simply comparing interline and single-line rates. That is, I replace his interline-vs-single-line explanatory variable with an indication of the competitive structure available to shippers but leave the rest of his flawed regression design and data handling unchanged (which I will further correct in Section 12.2.2 below). If Dr. Israel's implication of shipper benefit were correct, it would be evident in this bottom-line comparison (which is the sense in which I consider this a generalized form of his regression). Instead, these results suggest that the UP-NS merger will increase rates and that a follow-on merger would not restore competition to the status quo.

408. As explained in Section 4.1, an appropriate analysis of the proposed merger's effect should consider the change in competitive structure to examine whether shippers are harmed when they lose options on either side of a gateway. Dr. Israel's regression fails to do so. His regression comparing interline and single-line rates only accounts for the mode of production—how the railroads serve and operate on a route (among other flaws), a comparison that does not make conceptual sense as the rates of both movement types are affected by the competitive condition and would be affected by the merger.

409. To correct this flaw in Dr. Israel's regression, I replace his interline versus single-line comparison with comparisons across corridors with competitive structures resembling the "pre-merger" and "post-merger" settings. Specifically, I adopt Dr. Israel's definition of competition based on railroads' potential access to the end points of a corridor and focus on the two scenarios I discuss in Section 4.2.2: (A) corridors that are sole-served at one end and served by two railroads at the other end and (B) corridors that are served by two railroads at both ends. As illustrated in Exhibit 56 (a reproduction of Exhibit 17), for each scenario, I compare rates on corridors in which one single-line is available (resembling the "post-merger" setting) and corridors in which interlining is necessary (resembling the "pre-merger" setting). For Scenario B, I include an additional comparison to assess the effect of a follow-on merger using corridors in which two single-lines are available.

Exhibit 56
Corridors with competitive structures resembling the pre- and post-merger setting



Source: Illustrative Graphic.
Note: The "pre-merger" setting on the left illustrates competitive structures where interlines are necessary. The "post-merger" setting on the right illustrates competitive structures where a single-line option is available. Scenario A describes the scenario where a corridor is sole served at one end and served by two railroads at the other end. Scenario B describes the scenario where a corridor is served by two railroads at both ends.

410. Exhibit 57 below shows the results of the generalized form of Dr. Israel's regression that include the narrow correction I described above. I focus on movements from UP and NS (i.e., the "UP↔NS Traffic" sample in Dr. Israel's Figure 10), which focuses on traffic most likely to be affected by the proposed merger. These results

suggest that the UP-NS merger would likely increase rates and that a follow-on merger would not restore competition to the status quo. Specifically,

a. In Scenario A (corridors that are sole-served at one end and served by two railroads at the other end), rates are 9% higher when one of the potential interline pairings is replaced by a single-line.

b. In Scenario B (corridors that are served by two railroads at both ends), rates are 8% higher when one of the potential interline pairings is replaced by a single-line and 14% higher when the potential interline pairings are replaced by two single-lines.

Exhibit 57

Correcting Dr. Israel's regression to account for competitive structure suggests that rates are higher when a potential interline pairing is replaced with a single-line

		ln(revenue per carload-mile)
		Generalized form of Dr. Israel's regression (Figure 10)
	Dependent Variable	(1)
	Scenario A – One railroad at one end, two railroads at the other:	
1.	**2 railroads (one has a single-line) vs 3 railroads (must interline)**	**0.09*** **
1.a	Percent price difference for routes with and without single lines	9%
1.b		(0.02)
	Scenario B – Two railroads at each end:	
2.	**3 railroads (one has a single-line) vs 4 railroads (must interline)**	**0.08*** **
2.a	Percent price difference for routes with and without single lines	8%
2.b		(0.03)
	Scenario B – Two railroads at each end:	
3.	**2 railroads (both have a single-line) vs 4 railroads (must interline)**	**0.13*** **
3.a	Percent price difference for routes with and without single lines	14%
3.b		(0.03)
4.	**Observations**	2,811,596

Source: Israel's Second Errata Backup (Tapes)

Note: This exhibit presents the difference in (log) revenue per carload-mile between 6-digit-SPLC origin-destination pairs with different numbers of single-line options based on a generalized form of Dr. Israel's regression. I use the same regression sample as Column 5 ("UP↔NS Traffic") in Israel Second Errata VS Figure 10, which consists of UP and NS single-lines and UP-NS interlines. I replace Dr. Israel's indicators for single-line and interline movements and his controls for the number of Class I railroads at origin and destination with indicators for competitive structures. I otherwise use the same set of control variables as those in Figure 10 of Dr. Israel's VS. Specifically, this regression includes controls for distance, distance squared, weight, weight squared, and local conditions at the origin and the destination: (log) GDP per capita, (log) personal income per capita, and (log) population. It further includes the following fixed effects: 3-digit STCC, car owner, AAR car initial, type of pricing arrangement (e.g., contract, private quote), unit train, year-month, and reporting railroad dummies. The percentage rate difference is calculated using the following formula: exp(b)-1. Standard errors are clustered at the 6-digit-SPLC origin-destination pair and shown in parentheses. An estimate followed by one asterisk (*) is statistically significant at the 90 percent confidence level. An estimate followed by two asterisks (**) is statistically significant at the 95 percent confidence level. An estimate followed by three asterisks (***) is statistically significant at the 99 percent confidence level.

411. Notably, the findings in Exhibit 57 are consistent with similar comparisons in Exhibit 18 and Exhibit 20 which rely on the Six-Railroad Tapes Data and Dr. Israel's Second Errata Backup (Tapes) respectively without controlling for differences in route or commodity characteristics. Dr. Israel could have seen all three sets of results had he analyzed the raw data and set up his regression to account for competitive structure.

12.2.2. Further correcting Dr. Israel's regression framework allows an estimate that confirms the effect of the merger

412. In this section I present the results from another regression that makes a correction to control for changes in competitive structures similar to Section 12.1.2 and additional corrections to flaws in Dr. Israel's regression framework and data handling I discussed in Section 12.1. These results again suggest that the UP-NS merger would likely increase rates and that a follow-on merger would not restore competition to the status quo.

413. The comparison of interest in this regression is similar to the generalized form of Dr. Israel's regression in Section 12.2.1. I again compare the rates in corridors with competitive structures that resemble the pre- and post-merger settings. In addition, I make the following corrections to Dr. Israel's regression framework and data handling:

a. To account for the inherent differences in characteristics or costs across movements in different parts of the country and for different commodities, I use a more granular commodity type and, for each commodity type, introduce fixed

effects for origin Census Division-destination Census Division pairs. This also allows me to control for peculiarities of moves of different distances without the econometric issues of including that as both an explanatory variable and as the denominator for rates.

b. To accurately characterize the competitive structure, I correct Dr. Israel's approach that identifies competitors based solely on railroad presence at an endpoint with a measure based on options that shippers are actually observed to use.

c. I do not rely on Dr. Israel's arbitrary choices in data handling. I start over from the Six-Railroad Tapes Data keeping observations at the movement level and using movements from all six Class I railroads.

d. I refine Dr. Israel's control variables for local economic conditions and drop the car ownership variable as a control due to a significant share of missing values.

414. In the following, I explain the specific choices I make in more detail.

(1) Introducing origin Census Division-destination Census Division fixed effects

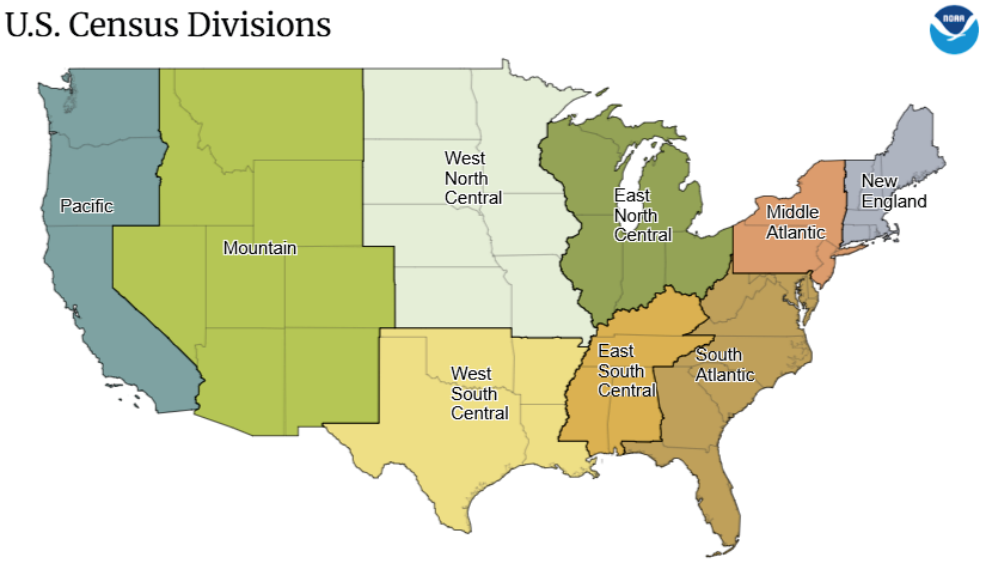
415. As I explained in Section 4.3.2, across movements in different parts of the country, there are inherent differences in characteristics or costs that will impact rates for each commodity. An appropriate regression framework needs to account for these differences in order to single out the comparison of interest. One way to do so is to

focus on comparing movements of similar commodities originating and ending in similar geographic areas using a regression fixed effect.

416. For this origin-destination pair fixed effect, I use Census Division (illustrated in Exhibit 58) as the geographic unit and interact it with commodity type.[432] Census Divisions capture important characteristics of shipments across the country. For example, a shipment from the Pacific to East North Central is longer and faces more congestion at the end of the move compared to a movement that originates and terminates in the Pacific. Census Divisions are large enough to retain rich variation in competitive structures going from a 6-digit SPLC to another 6-digit SPLC, which allows for meaningful comparisons. In addition, I also use a more granular commodity type than Dr. Israel. In his regressions, Dr. Israel uses a 3-digit commodity code combined with an indicator for whether the commodity is hazardous ("STCC3-Hazard"). I extend the 3-digit commodity code to 5-digit, controlling for commodity type at the STCC5-Hazard code level.

[432] The Six-Railroad Tapes Data also include movements originating or ending in Canada or Mexico. For these movements, I use Canadian province as the geographic unit, and I treat the entirety of Mexico as a geographic unit.

Exhibit 58
U.S. Census Divisions map



Source: "U.S. Census Divisions," National Oceanic and Atmospheric Administration, National Centers for Environmental Information, available at https://www.ncei.noaa.gov/access/monitoring/reference-maps/us-census-divisions
Note: This exhibit illustrates the nine Census Divisions in the U.S.

(2) Defining optionality and competitive structure based on observed traffic

417. As I explained in Section 12.1.3(1), it is important to define the competitive structure and the options available to shippers based on observed movements. This is also consistent with The Board's approach. Therefore, I define the competitive structure using observed movements and restrict the analysis to 6-digit-SPLC corridors in which each Class I railroad is involved in at least 1% of the 6-digit-SPLC corridor's

total revenue.[433] I restrict to these cases to ensure that shippers actually use those options.

(3) Relying on Six-Railroad Tapes Data as regression sample

418. As I explained in Section 12.1.3(2), Dr. Israel made an arbitrary choice in data aggregation. I instead use Six-Railroad Tapes Data at the movement level without any aggregation. In addition, I use movements from all six Class I railroads, similar to the analysis in footnote 52 of Dr. Israel's Second Errata VS. A larger regression sample is generally helpful for estimation precision.

(4) Refining additional regression controls

419. I replace Dr. Israel's controls for local economic conditions at the origin and destination locations with separate origin BEA and destination BEA fixed effects. This allows me to control for any additional differences between endpoints that Dr. Israel's controls do not account for. In particular, these fixed effects account for more granular differences across geographic areas within the same origin or destination Census Divisions, capturing systematic differences in shipments to or from a given BEA.[434] For

[433] Dr. Israel applies a similar threshold in defining a railroad's access to a station. He identifies that a Class I railroad has access to a given station (i.e. SCAC-FSAC) if said railroad has direct access or access via a non-Class I railroad according to the Centralized Station Master (CSM) and Serving Carrier/Reciprocal Switch (SCRS); or the given Class I railroad originates, terminates, or interchanges more than 1% of carloads for a given group of commodities and SPLC according to the CCWS (2019–2023). See Israel Second Errata VS, fn. 30–31.

[434] BEAs are not defined outside of the United States. For Mexican origin and destinations, I use Mexican States. For Canadian origins and destinations, a similar concept is embodied in the Economic Region defined by Statistics Canada, the Canadian national statistics office, and created as a "standard geographic unit for analysis of regional activity." See "Economic region (ER),"

example, to the extent that within the Pacific Census division, shipments originating in San Diego, California differ systematically from those originating in Portland, Oregon, this set of controls would account for those differences.

420. I remove the car ownership variable Dr. Israel uses from my regression because its value is missing for {{REDACTED}} of movements in the Six-Railroad Tapes Data.[435] Including car ownership fixed effects, as Dr. Israel does, would drop all these movements with a missing value from the analysis.

(5) Regression results

421. Exhibit 59 below shows the results of my regression that include the corrections I described above. These results again suggest that the UP-NS merger would likely increase rates and that a follow-on merger would not restore competition to the status quo. Specifically,

a. In Scenario A (corridors that are sole-served at one end and served by two railroads at the other end), rates are 7% higher when one of the potential interline pairings is replaced by a single-line.

b. In Scenario B (corridors that are served by two railroads at both ends), rates are 15% higher when one of the potential interline pairings is replaced by a single-line

Government of Canada, November 17, 2021, available at https://www12.statcan.gc.ca/census-recensement/2021/ref/dict/az/definition-eng.cfm?ID=geo022.

[435] See workpaper 12-5.

and 21% higher when the potential interline pairings are replaced by two single-lines.

422. These individual estimates are all statistically significantly different from zero. It is worth noting that this can suggest a false sense of precision and that the statistical significance does not extend to the comparisons across estimates. While the 21% point estimate of the net effect after a follow-on merger is significant and is larger than the 15% point estimate of the proposed merger, the difference between those two estimates is not itself significant enough to conclude that a follow-on merger would necessarily be incrementally worse – just not a solution for shippers to the currently proposed merger.[436]

[436] The two point estimates for Scenario B are not statistically significantly different. See workpaper 7-1. The statistical difference between the estimated effects for Scenario A and Scenario B is not directly testable because these estimates were derived from separate regressions.

Exhibit 59
Further correcting Dr. Israel's regression suggests that rates are higher when a potential interline pairing is replaced with a single-line

		ln(revenue per carload-mile)
	Dependent Variable	(1)
	Scenario A – One railroad at one end, two railroads at the other:	
1.	**2 railroads (one has a single-line) vs 3 railroads (must interline)**	**0.07*** **
1.a	Percent price difference for routes with and without single lines	7%
1.b		(0.02)
1.c	Observations	6,142,068
	Scenario B – Two railroads at each end:	
2.	**3 railroads (one has a single-line) vs 4 railroads (must interline)**	**0.14** **
2.a	Percent price difference for routes with and without single lines	15%
2.b		(0.06)
2.c	Observations	5,612,370
	Scenario B – Two railroads at each end:	
3.	**2 railroads (both have a single-line) vs 4 railroads (must interline)**	**0.19*** **
3.a	Percent price difference for routes with and without single lines	21%
3.b		(0.07)
3.c	Observations	5,612,370

Source: Six-Railroad Tapes Data
Notes: This exhibit presents the difference in (log) revenue per carload-mile between 6-digit-SPLC origin-destination pairs with different numbers of single-line options based on a regression further correcting flaws in Dr. Israel's regression. The regression sample is restricted to 6-digit-SPLC origin-destination pairs in which every railroad that has observed traffic has contributed to at least 1%of the total revenue within the 6-digit-SPLC origin-destination pair. This regression includes controls for weight and weight squared. It further includes the following fixed effects: AAR car initial, type of pricing arrangement (e.g., contract, private quote), unit train dummy, year-month, reporting railroad dummies, Census division origin-destination pair interacted with 5-digit STCC, origin BEA area, and destination BEA area. BEA areas are defined at the economic region level for Canada and at the state level for Mexico. Census divisions are defined at the province level for Canada and at the country level for Mexico. The percentage rates difference is calculated using the following formula: exp(b)-1. Standard errors are clustered at the 6-digit-SPLC origin-destination pair and shown in parentheses. An estimate followed by one asterisk (*) is statistically significant at the 90% confidence level. An estimate followed by two asterisks (**) is statistically significant at the 95% confidence level. An estimate followed by three asterisks (***) is statistically significant at the 99% confidence level.

423. The results in Exhibit 59 are consistent with the findings in Exhibit 57 where I narrowly correct Dr. Israel's regression to account for competitive structure, as well as

the raw data comparisons in Exhibit 18 and Exhibit 20 that do not control for differences in route or commodity characteristics.

12.2.3. The results in the regression fixing Dr. Israel's flaws are robust

424. In this section, I show that the regression results in Section 12.2.2 (Exhibit 59) are robust to a variety of alternative specifications.

425. The regression results in Section 12.2.2 are robust to the revenue-share threshold I use to define competitive options on a 6-digit SPLC corridor. Exhibit 60 shows regression results under alternative revenue-share thresholds, from a 0.5% threshold (Column 1) to a 5% revenue threshold (Column 4). The results are consistent when using different thresholds.

Exhibit 60
The results are robust to various revenue thresholds

		Ln(revenue per carload-mile)			
		0.5% threshold	1% threshold (Benchmark)	3% threshold	5% threshold
	Dependent Variable	(1)	(2)	(3)	(4)
	Scenario A – One railroad at one end, two railroads at the other:				
1.	**2 railroads (one has a single-line) vs 3 railroads (must interline)**	**0.06*** **	**0.07*** **	**0.08*** **	**0.10*** **
1.a.		(0.02)	(0.02)	(0.02)	(0.02)
1.b.	Observations	6,603,168	6,142,068	5,222,046	4,668,722
	Scenario B – Two railroads at each end:				
2.	**3 railroads (one has a single-line) vs 4 railroads (must interline)**	**0.21*** **	**0.14** **	**0.17*** **	**0.20*** **
2.a.		(0.06)	(0.06)	(0.06)	(0.07)
2.b.	Observations	6,151,822	5,612,370	4,644,454	4,278,581
	Scenario B – Two railroads at each end:				
3.	**2 railroads (both have a single-line) vs 4 railroads (must interline)**	**0.20*** **	**0.19*** **	**0.22*** **	**0.22*** **
3.a.		(0.07)	(0.07)	(0.07)	(0.07)
3.b.	Observations	6,151,822	5,612,370	4,644,454	4,278,581

Source: Six-Railroad Tapes Data
Note: This exhibit presents the difference in (log) revenue per carload-mile between 6-digit-SPLC origin-destination pairs with different numbers of single-line options based on a set of regressions further correcting flaws in Dr. Israel's regression. The regression samples are restricted to 6-digit-SPLC origin-destination pairs in which every railroad that has observed traffic has contributed to at least 0.5 percent, 1 percent, 3 percent, and 5 percent of the total revenue within the 6-digit-SPLC origin-destination pair, respectively. These regressions include controls for weight and weight squared. They further include the following fixed effects: AAR car initial, type of pricing arrangement (e.g., contract, private quote), unit train dummy, year-month, reporting railroad dummies, Census division origin-destination pair interacted with 5-digit STCC, origin BEA area, and destination BEA area. BEA areas are defined at the economic region level for Canada and at the state level for Mexico. Census divisions are defined at the province level for Canada and at the country level for Mexico. The percentage rates difference is calculated using the following formula: exp(b)-1. Standard errors are clustered at the 6-digit-SPLC origin-destination pair and shown in parentheses. An estimate followed by one asterisk (*) is statistically significant at the 90 percent confidence level. An estimate followed by two asterisks (**) is statistically significant at the 95 percent confidence level. An estimate followed by three asterisks (***) is statistically significant at the 99 percent confidence level.

426. The regression results in Section 12.2.2 are robust to the geographic unit and geographic scope I use for the origin-destination pair fixed effects. Exhibit 61 shows regression results using a coarser geographic unit – four US Census Regions (Column 1), or a more restrictive geographic scope requiring both ends of the movement to be

within the United States (Column 3). The results are consistent when using an alternative geographic unit or scope.

Exhibit 61
Different geographic levels for the O-D pairs lead to similar results

		Ln(revenue per carload-mile)		
		O-D Census Region FE	O-D Census Division FE (Benchmark)	O-D Census Division FE (U.S. only)
	Dependent Variable	(1)	(2)	(3)
	Scenario A – One railroad at one end, two railroads at the other:			
1.	**2 railroads (one has a single-line) vs 3 railroads (must interline)**	**0.17*** **	**0.07*** **	**0.07*** **
1.a.		(0.02)	(0.02)	(0.02)
1.b.	Observations	6,142,068	6,142,068	5,147,001
	Scenario B – Two railroads at each end:			
2.	**3 railroads (one has a single-line) vs 4 railroads (must interline)**	**0.18*** **	**0.14** **	**0.14** **
2.a.		(0.05)	(0.06)	(0.07)
2.b.	Observations	5,612,370	5,612,370	5,362,651
	Scenario B – Two railroads at each end:			
3.	**2 railroads (both have a single-line) vs 4 railroads (must interline)**	**0.21*** **	**0.19*** **	**0.21** **
3.a.		(0.05)	(0.07)	(0.08)
3.b.	Observations	5,612,370	5,612,370	5,362,651

Source: Six-Railroad Tapes Data
Note: This exhibit presents the difference in (log) revenue per carload-mile between 6-digit-SPLC origin-destination pairs with different numbers of single-line options based on a set of regressions further correcting flaws in Dr. Israel's regression. The regression sample is restricted to 6-digit-SPLC origin-destination pairs in which every railroad that has observed traffic has contributed to at least 1% of the total revenue within the 6-digit-SPLC origin-destination pair. All of these regressions include controls for weight and weight squared. They also include the following fixed effects: AAR car initial, type of pricing arrangement (e.g., contract, private quote), unit train dummy, year-month, reporting railroad dummies, origin BEA area, and destination BEA area. Column 1 includes fixed effects for Census Region origin-destination pair interacted with 5-digit STCC; Columns 2 and 3 include fixed effects for Census Division origin-destination pair interacted with 5-digit STCC; Column 3 also restricts the sample to movements that originate and terminate in the U.S. BEA areas are defined at the economic region level for Canada and at the state level for Mexico. Census divisions and Census regions are defined at the province level for Canada and at the country level for Mexico. The percentage rates difference is calculated using the following formula: exp(b)-1. Standard errors are clustered at the 6-digit-SPLC origin-destination pair and shown in parentheses. An estimate followed by one asterisk (*) is statistically significant at the 90% confidence level. An estimate followed by two asterisks (**) is statistically significant at the 95% confidence level. An estimate followed by three asterisks (***) is statistically significant at the 99% confidence level.

427. The regression results in Section 12.2.2 are robust to the controls I include in my regressions that differ from Dr. Israel's. Exhibit 62 shows regression results replacing the 5-digit commodity code with Dr. Israel's 3-digit one (Column 2), adding Dr. Israel's car owner fixed effects (Column 3), and replacing origin and destination BEA fixed effects with Dr. Israel's control for economic conditions (Column 4). The results are consistent when using alternative controls.

Exhibit 62
Results are robust to a different set of controls

		Ln(revenue per carload-mile)			
		Benchmark	Replacing STCC5 with STCC3	Adding Car Owner FE	Replacing BEA FEs with economic condition controls (US only)
	Dependent Variable	(1)	(2)	(3)	(4)
	Scenario A – One railroad at one end, two railroads at the other:				
1.	**2 railroads (one has single-line) vs 3 railroads (must interline)**	**0.07*** **	**0.05*** **	**0.08*** **	**0.05** **
1.a.		(0.02)	(0.02)	(0.02)	(0.02)
1.b.	Observations	6,142,068	6,142,068	5,995,047	5,146,120
	Scenario B – Two railroads at each end:				
2.	**3 railroads (one has single-line) vs 4 railroads (must interline)**	**0.14** **	**0.12** **	**0.12** **	**0.23*** **
2.a.		(0.06)	(0.05)	(0.06)	(0.07)
2.b.	Observations	5,612,370	5,612,370	5,049,554	5,362,651
	Scenario B – Two railroads at each end:				
3.	**2 railroads (both have single-line) vs 4 railroads (must interline)**	**0.19*** **	**0.17*** **	**0.17** **	**0.24*** **
3.a.		(0.07)	(0.06)	(0.07)	(0.06)
3.b.	Observations	5,612,370	5,612,370	5,049,554	5,362,651
4	**Fixed Effects:**				
4.a.	Origin and Destination BEA	✔	✔	✔	✘
4.b.	Census Division X STCC5 Hazard	✔	✘	✔	✔
4.c.	Census Division X STCC3 Hazard	✘	✔	✘	✘
4.d.	Car owner	✘	✘	✔	✘
5.	**Local Economic Condition Controls**	✘	✘	✘	✔
6.	**US Only**	✘	✘	✘	✔

Source: Six-Railroad Tapes Data

Note: This exhibit presents the difference in (log) revenue per carload-mile between 6-digit-SPLC origin-destination pairs with different numbers of single-line options based on a set of regressions further correcting flaws in Dr. Israel's regression. The regression sample is restricted to 6-digit-SPLC origin-destination pairs in which every railroad that has observed traffic has contributed to at least 1%of the total revenue within the 6-digit-SPLC origin-destination pair. These regressions include controls for weight and weight squared. They further include the following fixed effects: AAR car initial, type of pricing arrangement (e.g., contract, private quote), unit train dummy, year-month, and reporting railroad dummies. Columns 1, 2, and 3 include origin BEA area and destination BEA area fixed effects. Columns 1, 3, and 4 include Census Division origin-destination pair interacted with 5-digit STCC, and Column 2 includes Census Division origin-destination pair interacted with 3-digit STCC. Column 3 includes a car owner fixed effect. Column 4 restricts the sample to movements that originate and terminate in the U.S. and includes controls for local conditions at the origin and the destination: (log) GDP per capita, (log) personal income per capita, and (log) population. BEA areas are defined at the economic region level for Canada and at the state level for Mexico. Census divisions are defined at the province level for Canada and at the country level for Mexico. The percentage price difference is calculated using the following formula: exp(b)-1. Standard errors are clustered at the 6-digit-SPLC origin-destination pair and shown in parentheses. An estimate followed by one asterisk (*) is statistically significant at the 90% confidence level. An estimate followed by two asterisks (**) is statistically significant at the 95% confidence level. An estimate followed by three asterisks (***) is statistically significant at the 99% confidence level.

12.3. *Methodology for estimating effect of increased railroad leverage on shipper rates*

428. In this section, I outline the methodology utilized to create my estimates of the harm to shippers from reduced bargaining leverage, described in Section 5.

12.3.1. Calculation of shipper concentration metric

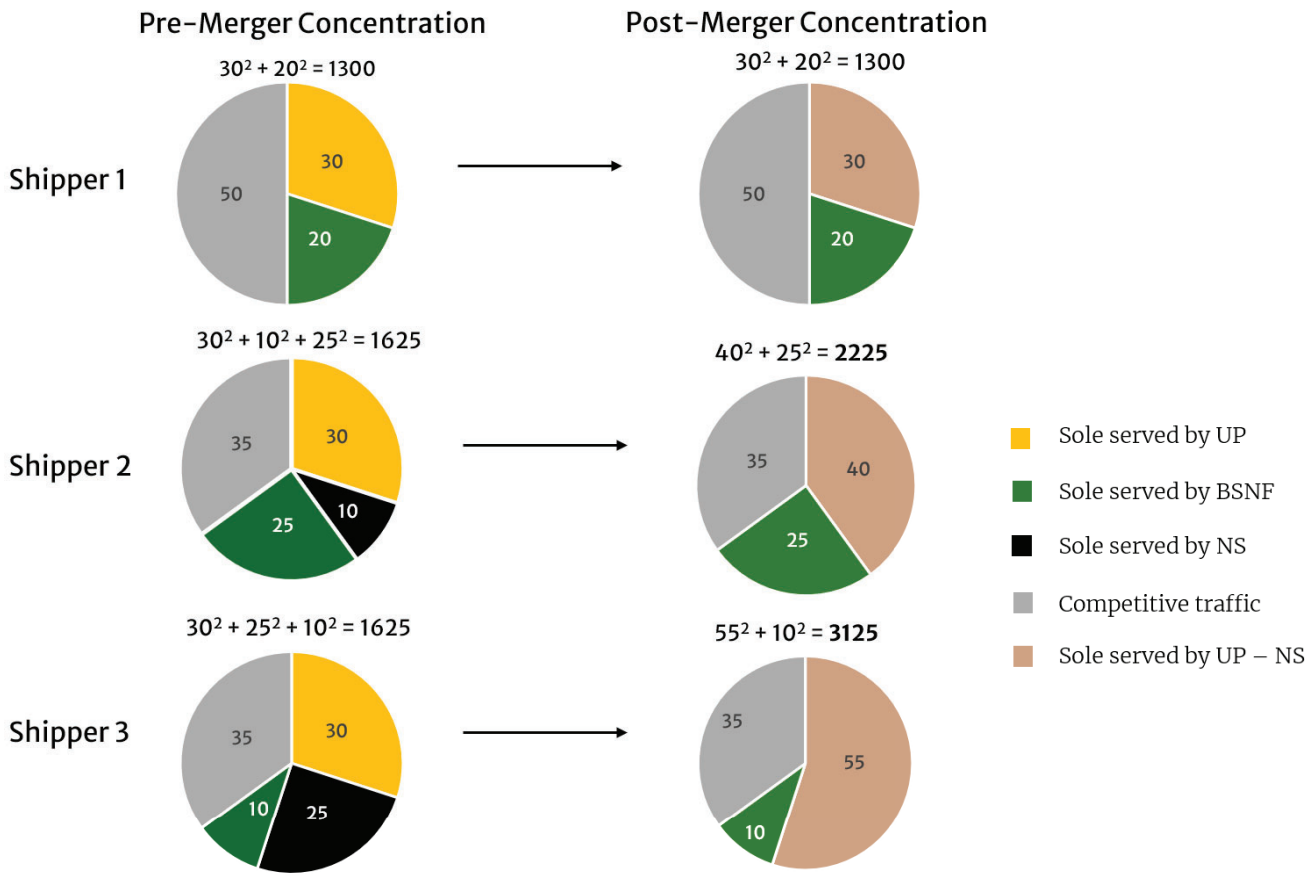
429. For my estimation of the shipper concentration metric, I adapt the commonly-used HHI measure of concentration in an industry and compute the shipper's concentration as if the negotiation with that shipper over their various rail movements was one industry. Specifically, I calculate the share of each shipper's rail revenue captive to each individual Class I. To avoid fractions, the concentration formula multiplies each share percentage by 100. The concentration for the shipper's business as a whole is the sum of squared shares for each railroad.[437]

430. To demonstrate how the shipper concentration measure corresponds to shippers' dependence on individual railroads and captures the implication of post-merger changes, in Exhibit 63, I provide a hypothetical example of three different shippers with different geographies of movements. For Shipper 1, who is highly dependent on UP and BNSF but not-at-all dependent on NS, its concentration will not change post-

[437] For example, a shipper whose movements are entirely captive to UP will have a concentration of 10,000 (which is 100 squared), while a shipper who is captive to UP for 50% of its movements, and captive to NS for 50% will have a concentration of 5,000 ($(50^2 + 50^2)$) and a shipper that divides its business equally among all six Class Is would have a concentration of about 1,667. As those examples may suggest, what competition economists like about the HHI is that each share contributes to the value, but the index puts particular emphasis on any outsized share.

merger (stays at 1,300). For Shipper 2, who is moderately dependent on both UP and NS, its concentration will increase slightly post-merger (from 1,625 to 2,225). For Shipper 3, who is almost entirely reliant on both UP and NS, its concentration will increase significantly post-merger (from 1,625 to 3,125). As illustrated in this example, this concentration measure summarizes a shipper's overall dependence on railroads across its geographic footprint, and the increase implied by the proposed UP-NS merger will be larger for a shipper that is currently heavily dependent on both UP and NS.

Exhibit 63
The shipper concentration measure I use corresponds to shippers' dependence on individual railroads



Source: Hypothetical example
Note: I present three hypothetical shippers and their varying dependence on individual railroads before and after the proposed merger between UP and NS.

12.3.2. Regression methodology for estimating impact of shipper-level reliance on a single railroad on rates paid

431. Using this metric of a shipper's geographic spread and its concentration on specific railroads, I utilize regression analysis to examine the relationship between that concentration and rates paid. Again, I use the same set of chemical shippers. Here,

regression analysis allows me to account for the factors in a given movement which are most likely to impact rates, such as the route traveled, the type of chemical shipped, and macroeconomic effects. The measure of price in the regression is the natural logarithm of the revenue per carload.[438]

432. The results of the regression analysis are shown in Exhibit 64. Using the estimate in Column 4, which accounts for types of chemicals shipped, whether or not the chemical was hazardous, directional corridor, tonnage, rate premium associated with UP or NS involvement, pricing arrangement type, car type, whether the shipment is a unit train, and the year and month when the good was shipped, I find that an increase in the shipper's concentration results in higher rates paid.[439]

[438] For this analysis, using revenue per carload is equivalent to the approach used by Dr. Israel in his Figure 7, where when controlling for the origin and destination Dr. Israel utilizes revenue per carload as his outcome of interest. See Israel Second Errata VS, ¶ 58. In this analysis, I am controlling specific origin and destination BEA pairs. This also aligns with shippers deciding based on the overall rate per carload, rather than the specific routing.

[439] In the specification I use to estimate {{REDACTED }} from geographic bargaining, I do not include the variable "car owner" which Dr. Israel utilizes in his regression analysis, because its value is missing for {{REDACTED}} of movements in the Six-Railroad Tapes Data. {{{REDACTED }}} See workpaper 12-5.

Exhibit 64

Higher concentration among a shipper's movements is associated with higher rates paid across all movements

	Ln(revenue per carload)				
	STCC + Year-Month	(1) + Car Type	(2) + UP and NS Participation	(3) + Unit Train and Doc Type Controls	(4) + Car Owner
Dependent Variable	(1)	(2)	(3)	(4)	(5)
Concentration	**0.25*** **	**0.14*** **	**0.12*** **	**0.12*** **	**0.10*** **
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)
Observations	6,811,719	6,746,826	6,746,826	6,650,688	6,196,952
Controls:					
Net tons	✓	✓	✓	✓	✓
Net tons squared	✓	✓	✓	✓	✓
UP Reports	×	×	✓	✓	✓
NS Reports	×	×	✓	✓	✓
Contract	×	×	×	✓	✓
Private Quote	×	×	×	✓	✓
Tariff	×	×	×	✓	✓
Other Non-Tariff	×	×	×	✓	✓
Fixed Effects:					
BEA-Corridor (Directional)	✓	✓	✓	✓	✓
STCC5 Hazard	✓	✓	✓	✓	✓
Year Month	✓	✓	✓	✓	✓
Car Type	×	✓	✓	✓	✓
Unit Train	×	×	×	✓	✓
Car Owner	×	×	×	×	✓

Source: Six-Railroad Tapes Data

Note: This table displays the (log) revenue per carload regressed on shipper-level concentration ranging from 0 to 1, with different fixed effects and controls. Data is filtered to chemical shipments, defined as commodity codes that start with 28, excluding 28211 (Plastics). Captivity concentration is calculated by computing the share of shipment revenue that is captive to each Class I railroad for a specific shipper. The shares of shipment revenues are then individually squared and summed to generate a concentration metric. A shipper-route pair is considered captive to a Class I railroad if all of the shipper's chemical shipments with the exact origin and destination station, or within a one-mile radius of either, for the period of 2019–2024, have involved the given railroad. Non-hazardous intermodal movements are considered non-captive. A movement is considered to be intermodal if the associated AAR car initial is P, Q, S, U, or Z. Share of captive revenue is calculated by taking railroad-specific revenue from captive movements, and dividing it by the total shipment revenue across all railroads. Movements where the shipper name is not populated or where total shipment revenue is non-positive are removed from this analysis. This analysis is limited to shippers whose names were standardized, representing approximately {{REDACTED}} of chemical revenue for the period of 2019–2024. See workpaper 5-3. Following Dr. Israel's methodology, STCC5 Hazard is the non-hazardous STCC code truncated to 5 digits followed by "-1" if the commodity was hazardous and "-0" if the commodity is non-hazardous. All observations which could not be joined onto the crosswalk Dr. Bailey relies on for geographic coordinates are excluded from the calculation of the shipper-level concentration metric. Observations with missing geographic coordinates are included in the regression sample. All observations which Dr. Bailey excludes from her within-corridors analysis are excluded from this analysis. Standard errors are clustered at the matched shipper level and are shown in parentheses. An estimate followed by one asterisk (*) is statistically significant at the 90 percent confidence level. An estimate followed by two asterisks (**) is statistically significant at the 95 percent confidence level. An estimate followed by three asterisks (***) is statistically significant at the 99 percent confidence level.

433. Using the regression results, I then calculate the change in concentration among shippers who are plausibly harmed due to geographic bargaining effects (i.e., will see an increase in concentration post-merger) and estimate each shipper's individual predicted rate increase due to UP-NS's combined bargaining leverage. In Exhibit 65, I provide the shipper-level distribution of predicted rate increases among the plausibly harmed shippers.

Exhibit 65
Distribution of predicted rate increases among plausibly harmed matched chemical shippers

{{REDACTED

}}

434. While many individual shippers have predicted rates that are {{REDACTED }}, some shippers see a {{REDACTED }} increase in rates due to geographic bargaining effects. For the chemical shippers that I examine, there is significant heterogeneity in how exposed they are to this particular effect. Nevertheless, the

average change in concentration among shippers who are harmed (i.e., see an increase in concentration) is approximately {{REDACTED}} points. This would correspond to an increase in rates paid, across all of their traffic, of approximately {{REDACTED}} due to the combined UP-NS's increased bargaining leverage.[440]

12.3.3. Calculation of harm to non-chemical shippers based on regression results

435. In Section 5.2(2), I outline the estimated effect of railroads' leverage on chemical shippers based on the regression results reported in Exhibit 64. To do so, I calculated the pre-merger and post-merger concentration metrics and estimated the predicted change in chemical shippers' rates paid following that regression methodology.

436. Extending this analysis to evaluate the potential harm for non-chemical shippers affected by the proposed merger would require linking movements for each individual shipper across all types and individual shippers in the data and accounting for shippers' different degrees of dependence on railroads across different commodities. Instead, to illustrate the potential magnitude of harm across all shippers, in Exhibit 37 I perform a back-of-the-envelope exercise to extend these results to other commodities. To do this, I use two approaches. In the first approach, I use the average effect on harmed chemical shippers {{REDACTED}} and apply that effect to the shippers identified by {{REDACTED }}. In the second approach, I apply the estimated

[440] See workpaper 12-6.

spending increase for chemicals proportionally to other commodities' non-intermodal movements.[441] Based on the estimated increase in chemical spending of {{REDACTED }}, and the fact that chemical spending accounts for approximately {{REDACTED}} of the spending of all non-intermodal movements,[442] a proportional extrapolation estimates that shippers' increased dependence on a combined UP-NS post-merger would increase total spending by {{REDACTED }} ({{REDACTED }}) per year.

437. Approach 2's extrapolation is conservative, in that it assumes that, by default, there will be no effect of UP-NS's combined leveraging impacting intermodal shipment rates. Based on the analysis of chemical shippers, I believe that this is unlikely—a combined UP-NS would likely be able to use a shipper's captivity on non-intermodal movements to leverage higher rates on intermodal movements as well. If we were to apply the effect to intermodal movements, the anticipated harm to shippers would be even higher.

12.4. Dr. Israel's analysis of independent routes does not address foreclosure and is inconsistent with his other claims about the inability of railroads to interline

438. In Dr. Israel's analysis of independent routes, he claims to follow an algorithm that I utilized for the CP-KCS merger and identifies 74 corridors where the merger will

[441] Because intermodal movements likely have a lower degree of dependence on railroads, I conservatively exclude them in my extrapolation analysis.

[442] See workpaper 12-7.

result in shippers having a reduction from three independent routes to two, or two independent routes to one. Applicants' expert, Dr. Israel, relies on new (and never observed in the data) interline cooperation among other railroads to constrain UP-NS which is inconsistent with his claim that UP and NS need to merge to be effective competitors. This leads him to incorrectly dismiss the harm from the merger eliminating competition between the independent routes he does identify that shippers have demonstrated are credible. Before turning to that analysis, however, I address a misrepresentation about what sort of competitive harms Dr. Israel's exercise can and cannot identify.

12.4.1. Dr. Israel's analysis of independent routes does not, as Applicants claim, examine vertical foreclosure

439. Applicants incorrectly claim that Dr. Israel analyzed the potential harm to shippers from a combined UP-NS acting on its incentives to foreclose competitors. They assert that "Dr. Israel directly addressed potential harms flowing from vertical foreclosure…us[ing] a counting algorithm deployed in the *CP/KCS* proceeding to identify all independent routings that create competition that could be diminished by the UP/NS merger."[443] That is not what the counting algorithm does. The algorithm asks a much narrower question: whether the merger could eliminate a fully independent

[443] Applicants' Prima Facie Response, p. 16.

alternative routing in a market where only one or two such alternatives would remain.[444]

440. The counting algorithm deliberately excludes partially independent routings—routes on which a shipper depends on a single railroad at one end of the move but benefits from competition among railroads that can serve as that railroad's interchange partner for the remainder of the move.[445] Yet those are precisely the routings for which foreclosure is a concern here. A combined UP-NS could use its control over the captive end of the movement to steer traffic toward its own network and away from a competing interchange partner, thereby reducing competition even though the shipper never had a fully independent end-to-end routing. The counting algorithm is not designed to examine these routings, and it does not test for—and cannot rule out—the foreclosure harms I identify above. It therefore provides no basis for Applicants' claim that they have adequately addressed the potential vertical harms from a UP-NS combination.[446]

441. The counting algorithm that Dr. Israel uses, and that I utilized in my evaluation of the CP/KCS merger, is specifically designed to evaluate potential losses of completely

[444] Majure CP-KCS VS (Public), ¶¶ 50–51.

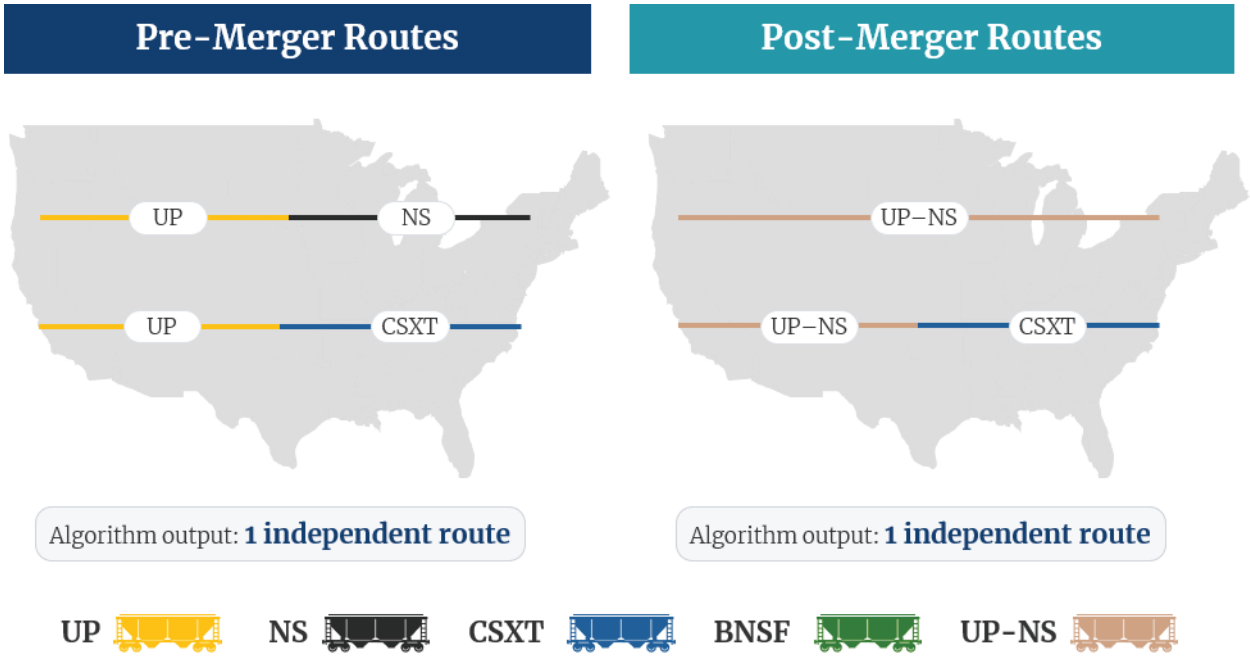
[445] For a route with UP in the West and NS and CSXT in the East the algorithm will identify one independent route pre-merger and post-merger, because the shipper is already sole-served by UP. As discussed in Section 4.2, on these routes, a combined UP-NS will have an incentive and ability to foreclose on the UP-CSXT routing. See Majure CP-KCS VS (Public), ¶ 50 ("For each corridor where CP and KCS participated in at least one observed movement in the Waybill Sample, I identify and count the number of independent routings observed in the data. I consider two routings independent of one another if they do not have any carriers in common.").

[446] Applicants' Prima Facie Response, p. 15.

independent competition. Simple examples demonstrate why this approach cannot address potential vertical foreclosure. In Exhibit 66 and Exhibit 67, I provide two such examples and demonstrate how Dr. Israel would have failed to identify the foreclosure issue in these routes using the change in the number of purely independent routes, since there is no change in the number of independent routes.

442. Reflecting the Scenario A that I analyzed in Exhibit 18, Exhibit 66 presents a corridor that is sole-served by UP on one end, and dual-served by NS and CSXT on the other. The counting algorithm would find that this corridor has only one completely independent route before and after the merger. The algorithm, consequently, cannot identify any loss of independent routes in this example. This reflects the design of the algorithm as a way to isolate situations where an independent route is lost, not an assurance that there can never be any competitively significant interaction between NS and CSXT for their side of this move. As I demonstrated in Section 4, there is a competitive loss from the merger in this scenario—it just is not what that particular screening algorithm is designed to identify.

Exhibit 66
A hypothetical example of one independent route



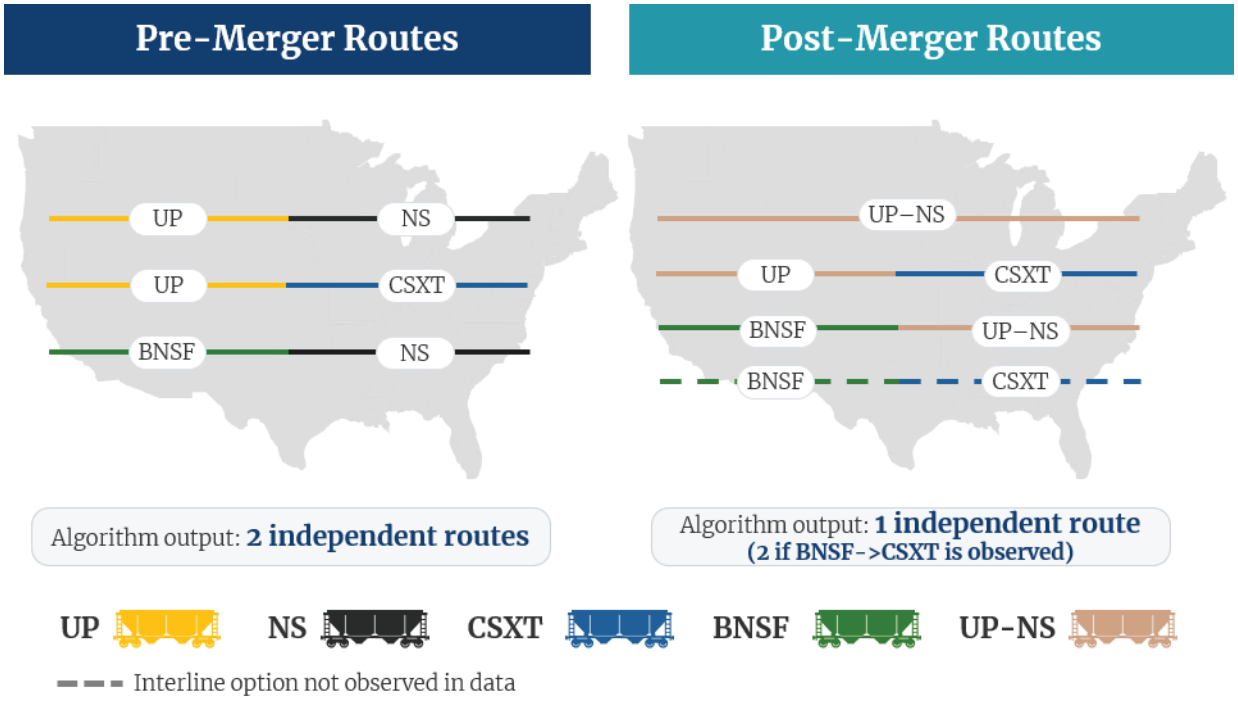
Source: Hypothetical example.
Note: This example illustrates an example of pre-merger and post-merger independent routings for a corridor where UP operates on one side of the gateway and NS and CSXT operate on the other side of the gateway. In both instances, there is one independent route, because it is not possible to move along this corridor without utilizing UP.

443. Exhibit 67 reflects the Scenario B that I analyzed in Exhibit 18. It shows a corridor that is dual-served by UP and BNSF on one side, and dual-served by NS and CSXT on the other. In this particular corridor, I want to consider a phenomenon that occurs in a number of the routes Dr. Israel identified and dismissed in his implementation of the algorithm. I will come back to the question of whether he was correct to dismiss them, but for now I want to illustrate how the algorithm does and does not work.

444. In this particular corridor, suppose we observe in the data that shippers never choose a routing that utilizes both BNSF and CSXT. In that case, the algorithm identifies two completely independent routes prior to the merger, but only one after.

That is because the merger makes a BNSF-NS routing dependent on the same merged UP-NS that a shipper would need a rate from on any of the other observed routings. In that sense, the algorithm correctly screens this corridor as one where a shipper's competitive options will be affected by the loss of completely independent competitive options – the type of competitive effect economists typically identify as a loss of horizontal competition.

Exhibit 67
A hypothetical example of two independent routes



Source: Hypothetical example.
Note: This example illustrates an example of pre-merger and post-merger independent routings for a corridor where UP and BNSF operate on one side of the gateway and NS and CSXT operate on the other side of the gateway. Pre-merger, there are two independent routes. Post-merger, there is one independent route.

445. Suppose, however, a BNSF-CSXT routing is a credible option for shippers in this example. The algorithm methodology allows a researcher to identify that fact from

either observed choices of shippers that were not in the original screening data or by examining other facts specific to this movement. In any event, it again does not identify the competition between NS and CSXT to carry their side of the move. Nor does it identify the similar competition between UP and BNSF for their side. It counts, at most, two completely independent routes. The algorithm also finds the same number of completely independent routes after a UP-NS merger, even if the merger allows UP-NS to completely foreclose shippers from ever again choosing a UPNS-CSXT route or a BNSF-UPNS route. As in the previous example, this is a product of the algorithm focusing on a different type of problem; it is not proof that the problem I demonstrated with Scenario B above is addressed. In summary, the counting algorithm is not capable of addressing potential vertical harms like Applicants claim.

12.4.2. Dr. Israel's methodology for analysis of independent routes incorrectly dismisses losses of head-to-head competition in 74 routes

446. In Dr. Israel's analysis of independent routes, he identifies 74 corridors, combining for a total of {{REDACTED }} annual carloads,[447] where shippers would see a reduction of independent routes from 3-to-2 or 2-to-1. The shippers using these corridors are directly harmed by the merger, yet Dr. Israel dismissed the problem identified in the algorithm in every case with no more investigation of the facts in these particular corridors.

[447] Israel Second Errata VS, Appendix D, ¶ 5. See also Exhibit 26. {{REDACTED }}.

447. Dr. Israel dismisses the algorithm's identification of these 74 corridors where shippers will lose horizontal competition among completely independent routes based on an assumption that a suitably competitive interconnect service can be readily established between the rail carriers that are not observed among the pairings that shippers choose in the data.[448] In the example of Exhibit 67, that is the missing BNSF-CSXT pairing. The data offer no explanation for why shippers seem to avoid this route pair. Likewise, the data offer no basis to assume a BNSF-CSXT pair would be (or would become) credible in bargaining after the UP-NS merger. Yet, Dr. Israel routinely assumes that will be the case whenever he observes that both railroads interchange any traffic at a common point which he describes as testing whether each route has a "viable alternative independent route [which] can be created through the connection of segments currently carrying traffic at the indicated interchange[.]"[449]

448. Dr. Israel suggests that his methodology is similar to analyses that I performed in the CP-KCS merger.[450] For that merger, I utilized CCWS data from one year, 2019, for screening and identified just seven corridors that the algorithm flagged as seeing a reduction in competition.[451] I then supported the credibility of alternative viable routes with evidence from the record specific to each of those corridors.[452] For six of those

[448] Israel Second Errata VS, Appendix D, ¶¶ 5–6.

[449] Israel Second Errata VS, Appendix D, ¶ 5.

[450] Israel Second Errata VS, fn. 38 ("This is consistent with the approach taken in the CP-KCS proceeding").

[451] Majure CP-KCS VS (Public), ¶ 56 ("In all seven corridors flagged in the initial screen, further examination shows that shippers in these corridors would not face a meaningful reduction in the competition available within the corridor.")

[452] Majure CP-KCS VS (Public), Section 4.2.2.

seven corridors, "additional viable routes exist[ed] that were not captured by the 2019 Waybill sample; the seventh…KCS being independent of CP [did] not appear to add significantly to competition."[453]

449. The 74 routes Dr. Israel dismisses have very different market realities than those in CP-KCS. He utilized the full Six-Railroad Tapes Data (representing 100% of Class I rail movements from 2019–2024) so a route would have to never be observed as the choice of any shipper since 2019 (the earliest year in his data) to trigger his screening, yet, he assumes these unobserved routes are "viable."[454]

[453] Majure CP-KCS VS (Public), ¶ 56.

[454] Israel Supplemental VS, fn. 38 ("However, I use six years of waybill data, rather than a single test year for identifying relevant routes[.]").

VERIFICATION

I, W. Robert Majure declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Further I certify that I am qualified and authorized to file this statement.



Executed this 18th day of November, 2026

W. Robert Majure

APPENDIX A

W. Robert Majure, Ph.D.
Senior Vice President

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ACADEMIC BACKGROUND

1990 – 1994 **Massachusetts Institute of Technology** Cambridge, MA
Ph.D., Economics
Specialization: Industrial Organization, Microeconomics, Econometrics
Thesis: Disequilibrium Game Theory

1986 – 1990 **University of Virginia** Charlottesville, VA
B.A., Economics and Mathematics

PROFESSIONAL EXPERIENCE

2019 – Present **Cornerstone Research, Inc.** Washington, DC
Vice President
Provide financial and economic analysis for commercial litigation matters. Support experts in preparing for deposition and trial testimony.

2010 – 2018 **Antitrust Division – U.S. Department of Justice** Washington, DC
Director of Economics
Senior career executive supervising the Antitrust Division's Economic Analysis Group. Helped formulate economic evidence and testimony for cases in industries such as software (*U.S. v. H&R Block, Inc., et al.*), telecommunications (*U.S. and Plaintiff States v. AT&T Inc., et al.*), video (*U.S. v. AT&T Inc., DirecTV Group Holdings, LLC, and Time Warner Inc.*), publishing (*U.S. v. Apple, Inc., et al.*), airlines (*U.S., et al. v. US Airways Group, Inc. and AMR Corp.*), oilfield services (*U.S. v. Halliburton Co. and Baker Hughes Inc.*), and health insurance (*U.S. and Plaintiff States v. Aetna Inc., and Humana Inc.* and *U.S. and Plaintiff States v. Anthem, Inc. and Cigna Corp.*).

2003 – 2010 **Antitrust Division – U.S. Department of Justice** Washington, DC
Chief of Competition Policy Section
Managed a section of about 18 economists and other staff. Supervised economic analysis of antitrust investigations in various industries including computer software (*U.S. v Oracle Corp.*), real estate (*U.S. v Kentucky Real Estate Commission*), and telecommunications (*U.S. v Cingular Wireless et al*). Testified in *U.S. v SBC Communications Inc. and AT&T Corp.* and *U.S. v. Verizon Communications Inc. and MCI, Inc.* Consulted on appellate arguments of the United States in Circuit Court (including *FCC v Prometheus Radio Project*).

1997 – 2003 **Antitrust Division – U.S. Department of Justice** Washington, DC
Assistant Chief of Economic Regulatory Section

Assisted with the management of a section of about 18 economists and other staff. Supervised economic analysis of antitrust investigations in various industries including telecommunications (*U.S. v WorldCom and Sprint*), computer software (*U.S. v Mathworks and Wind River*), publishing, radio and television advertising (*U.S. v Univision and Hispanic Broadcasting Corp*), electricity, and airlines. Consulted on appellate arguments of the United States in Circuit Court and the U.S. Supreme Court (including *Iowa Utilities Board v FCC and U.S.*).

1994 – 1997 **Antitrust Division – U.S. Department of Justice** Washington, DC
Economist
Performed economic analysis in antitrust investigations. Applied developments in the fields of industrial organization, microeconomics, and econometrics to practical questions raised in antirust analysis. Examined mergers or practices in telecommunications (including *U.S. v Sprint and Joint Venture Co.*), computer software, and banking. Testified in the merger of Union Pacific Railroad and Southern Pacific Railroad (before the Surface Transportation Board).

TESTIMONY

Library of Congress Copyright Royalty Judges Case No. 19-CRB-0010 CD (2018-21) – Submitted testimony in re: Distribution of Cable Royalty Funds on behalf of joint sports claimants.

STB Finance Docket No. 36744 – Submitted testimony on behalf of Canadian Pacific Kansas City on competitive effects and remedy in Canadian National Railway's proposed acquisition of Iowa Northern Railway

State of Ohio ex rel. Dave Yost, Ohio Attorney General vs. Google LLC – Testified in deposition on behalf of Google.

Library of Congress Copyright Royalty Judges Case No. 16-CRB-0009 CD (2014-17) – Submitted testimony in re: Distribution of Cable Royalty Funds on behalf of joint sports claimants. Testified at hearing.

STB Finance Docket No. 36500 – Submitted testimony in support of the application by Canadian Pacific Railway Limited, *et al*. to combine with Kansas City Southern, *et al*. Testified in deposition and at hearing.

STB Finance Docket No. 36514 – Submitted testimony on behalf of Canadian Pacific Railway Limited analyzing prospective combination of Canadian National Railway Company, *et al.* with Kansas City Southern, *et al*.

Real Estate Exchange, Inc. v Zillow, Inc. et al. – Filed declaration in support of motion for preliminary injunction.

U.S. v SBC Communications Inc. and AT&T Corp. and *U.S. v. Verizon Communications Inc. and MCI, Inc.* – Filed declarations in Tunney Act proceeding to explain the economic analysis of the United States for the proposed mergers and of the proposed consent decrees.

ICC Finance Docket No. 32760 – Submitted testimony on behalf of the U.S. Dept. of Justice analyzing prospective merger of Union Pacific Railroad and Southern Pacific Railroad. Testified in deposition.

PUBLICATIONS

"Is There a Better Approach to Vertical Merger Analysis," with Andrew Sfekas in *Antitrust Chronicle* June 2025.

"Evaluating Innovation Theories of Harm in Merger Review: Economic Frameworks and Difficulties" with Nathaniel Hipsman and Jessica Liu in *Getting the Deal Through—Merger Control 2022* September 2021

"Comparing Vertical Merger Guidelines Across Jurisdictions" with Peter Davis and Kostis Hatzitaskos in *Law360* February 2020.

"Revisiting Guidance on MFN Terms" with Andrew Sfekas in *Antitrust Chronicle* September 2019.

"Economics at the Antitrust Division 2016-2017: Healthcare, Nuclear Waste, and Agriculture," with A. Gerstle, H. Knudsen, D. Williamson, and J. Lee, *Review of Industrial Organization,* Vol 51, Issue 4, 2017, pp. 515-528

"The Year in Review: economics at the Antitrust Division: 2011," with F. Scott Morton, *Review of Industrial Organization*, Vol. 41, Issue 4, 2012, pp. 321-331

"The Antitrust Division: Economic Issues Presented in 2010-2011," *Review of Industrial Organization*, Vol 39, Issue 4, 2011, pp. 327-334

"The Year in Review: Economics at the Antitrust Division, 2004–2005," with E. Emch and K. Heyer, *Review of Industrial Organization*, Vol 27, Issue 3, 2005, pp. 197-221

"Ensuring Fair and Efficient Access to the Telecommunications 'Bottleneck'" with D. Rubinfeld, in C.D. Ehlermann and L. Gosling (eds.), Third Competition Law Annual 1998: Regulating Telecommunications (Hart Publishing: Oxford)

"An Empirical Analysis of Bank Branching: Portugal 1989-1991" with L. Cabral, in The Empirical Analysis of Industrial Organization Conference Report of the Centre for Economic Policy Research

WHITE PAPERS

"Comment on the January 2022 DOJ and FTC RFI on Merger Enforcement," with John Asker, Kostis Hatzitaskos, Nathan Miller, Aviv Nevo, and Ana McDowall, April 2022, available at https://downloads.regulations.gov/FTC-2022-0003-1847/attachment_1.pdf.

"Comments on the January 2020 Draft Vertical Merger Guidelines," with Kostis Hatzitaskos, Aviv Nevo, and Ana McDowall, February 2020, available at https://media.justice.gov/vod/atr/comments-draft-vmg/dvmg-0012.pdf.

"Comparison with the EU Non-Horizontal and the UK Merger Assessment Guidelines," with Peter Davis and Kostis Hatzitaskos, February 2020, available at https://media.justice.gov/vod/atr/comments-draft-vmg/dvmg-0011.pdf.

"Review: Selected Research of Andrew Sweeting, New Bureau of Economics Director" with Andrew Sfekas, Ross Askenazi, and Laurien Gilbert, January 2020, available at https://www.cornerstone.com/Publications/Articles/Selected-Research-of-Andrew-Sweeting.pdf

W. Robert Majure, Ph.D.
Senior Vice President

HONORS AND AWARDS

President's Award for Meritorious Executive	2017
Assistant Attorney General's Award for Excellence	2015
Attorney General's John Marshall Award for Legal Advice (Nominated)	2004
Assistant Attorney General's Award for Excellence	2001
Distinguished Service Award	1997
National Science Foundation Fellowship	1990 – 1993
Phi Beta Kappa	1989

CONFERENCE PARTICIPATION

8th Annual Bill Kovacic Antitrust Salon 2020
Discussed vertical merger guidelines and enforcement issues in a panel hosted by George Washington University School of Law and *Concurrences Review*.

"New Debates and Tensions in Antitrust: The 2020 Vertical Merger Guidelines" 2020
Discussed newly issued vertical merger guidelines with attorneys and economists in government and private practice.

ABA panel "Sequences & Sparks: Life Sciences Innovation Mergers." (podcast) 2020
Discussed issues of innovation competition, potential competition, and merger enforcement.

DOJ Workshop on Proposed Vertical Merger Guidelines 2020
Discussed issues of vertical merger analysis and suggested modifications to draft guidelines.

ICN Chief/Senior Economist Workshop 2016
Discussed tools and techniques of current interest with senior economists representing competition authorities around the world.

FCC Roundtable on Media Ownership Policies 2001
Discussed economic issues related to prospective changes in the FCC's rules governing media ownership.

PERSONAL

U.S. Citizen. Married with two daughters and one son.

APPENDIX B

Majure V.S., Vol. I, Materials Relied Upon

Academic Articles

- Daniel Greenfield, Nicholas Kreisle, and Mark Williams, "Simulating a Homogenous Product Merger: A Case Study on Model Fit and Performance," Federal Trade Commission Bureau of Economics Working Paper No. 327, October 2015
- John D. Bitzan and Fecri Karanki, "Costs, Density Economies, and Differential Pricing in the U.S. Railroad Industry," *Transport Policy*, 119, 2022, pp. 67–77
- Jonas Bjornerstedt and Frank Verboven, "Does Merger Simulation Work? Evidence from the Swedish Analgesics Market," *American Economic Journal: Applied Economics*, 8(3), 2016, pp. 125–164
- Vivek Bhattacharya, et al., "A Large-Scale Evaluation of Merger Simulations," NBER Working Paper 35473, 2026

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- NS_00041822–34
- NS_00103605–56
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- NS_00130381–85
- NS_00134944–61
- NS_00136603–9
- NS_00148838–47
- NS_00148874–80
- NS_00152716–34
- NS_00155457–9
- NS_00162764–67
- NS_00205551–71
- NS_00239039–97
- NS_00330522–30
- NS_00482221–26
- NS_00569895–923

- NS_STB_00001339–42
- UP-STB-D13-0000381–402
- UP-STB-D13-0000430–51
- UP_0023295–311
- UP_0039326
- UP_0041285–90
- UP_0041664.xlsx
- UP_0080839–53
- UP_0082459–553
- UP_0082686.xls
- UP_0082882–936
- UP_0097551–62
- UP_0208474–505
- UP_0209007–12
- UP_0215372–75
- UP_0282009–12
- UP_0694815–985
- UP_0884487–96
- UP_0890262–84
- UP_1047843–87
- UP_1123948–60
- UP_1535760–3
- UP_1559554–7
- UP_1626615–23
- UP_1641198–200
- UP_1858492–6
- UP_2168208–13
- UP_3141193–227

Books

- Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization* (4th ed.), (Harlow, England: Pearson Education, 2015)

- Jeffrey M. Perloff, *Microeconomics*, (7th ed.), (Boston, MA: Pearson/Addison-Wesley 2015)
- Jeffrey M. Wooldridge*, Introductory Econometrics: A Modern Approach* (6th ed.), (Boston, MA: Cengage Learning, 2016)
- Louis Kaplow and Carl Shapiro, "Antitrust," *Handbook of Law and Economics* (Vol II), (Amsterdam, Netherlands: Elsevier, 2007)
- N. Gregory Mankiw, *Principles of Economics* (8th ed.), (Boston, MA: Cengage Learning, 2018)
- W. Kip Viscusi, Joseph E. Harrington, and David E.M. Sappington, *Economics of Regulation and Antitrust* (5th ed.), (Cambridge, MA: The MIT Press, 2018)

Data

- "2010 County, Cartographic Boundary Files – Shapefile," U.S. Census Bureau, available at https://www.census.gov/geographies/mapping-files/time-series/geo/carto-boundary-file.2010.html#list-tab-1556094155 ("U.S. Census Bureau, U.S. County Shapefiles")
- Backup Materials to the Second Errata Verified Statement of David T. Hunt, September 4, 2026
- Backup Materials to the Second Errata Verified Statement of Mark A. Israel, September 4, 2026
- Backup Materials to the Supplemental Verified Statement of Elizabeth M. Bailey, July 27, 2026
- Backup Materials to the Supplemental Verified Statement of Mark A. Israel, July 27, 2026
- "Economic Areas, 2021 Census – Boundary Files," Government of Canada, available at https://www12.statcan.gc.ca/census-recensement/2021/geo/sip-pis/boundary-limites/index2021-eng.cfm?Year=21 ("Government of Canada, Economic Area Shapefiles")
- "Junction (JUNC), Railinc Publications," Railinc, available at https://public.railinc.com/products-services/publications ("RailInc Junctions Data")
- "Nacional, Marco Geoestadístico 2024," Instituto Nacional de Estadística y Geografía, available at https://en.www.inegi.org.mx/app/biblioteca/ficha.html?upc=794551132173 ("INEGI, Mexican State Shapefiles")
- "North American Rail Network Lines," U.S. Bureau of Transportation Statistics, October 20, 2026, available at https://geodata.bts.gov/datasets/usdot::north-american-rail-network-lines/about ("North American Rail Network Lines, Federal Railroad Administration/Bureau of Transportation Statistics")

Decisions and Comments, Surface Transportation Board Dockets

- 49 C.F.R. §§ 1011 and 1111
- 49 U.S.C. § 11101(a)

- Amended Railroad Control Application, Volume 1, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, April 30, 2026
- Amended Railroad Control Application, Volume 3, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, April 30, 2026
- Applicants' Response Regarding Their Prima Facie Case, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, August 26, 2026 (Public)
- Applicants' Second Response to Decision No. 21, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, July 27, 2026
- Complaint, "Omaha Public Power District v. Union Pacific Railroad Company," Docket No. NOR 42173, July 22, 2022
- CPKC's Comments on Application and Request for Conditions, Volume II, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026
- Decision No. 4, "Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern, et al.," Docket No. FD 36500, April 23, 2021
- Decision No. 35, "Canadian Pacific Railway Limited, et al. – Control – Kansas City Southern, et al.," Docket No. FD 36500, March 14, 2023
- Decision No. 44, "Union Pacific Corporation, et al. – Control – Southern Pacific Rail Corporation, et al.," Docket No. FD 32760, August 6, 1996
- Decision, "Central Power & Light Company v. Southern Pacific Transportation Company," Docket No. NOR 41242, December 27, 1996
- Joint Shipper Associations' Motion for Summary Denial, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, August 6, 2026
- Letter from Ben Sweat (Chief Operating Officer, POET Biofuels) to Chief of Case Administration, Surface Transportation Board, "STB Docket No. FD 36873, Union Pacific Corp., et al. – Control – Norfolk Southern Corp. et al.," September 16, 2026
- Letter from James Filter (President and CEO, Schneider National Carriers, Inc.) to Chairman Fuchs and Members of the Board, "Union Pacific Corporation and Union Pacific Railroad Company—Control—Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 11, 2026
- Letter from Michael Barth (Vice President, Transportation and Logistics, United Sugar Producers and Refiners Cooperative) to Chief of Case Administration, Surface Transportation Board, "STB Docket No. FD 36873, Union Pacific Corp., et al. – Control – Norfolk Southern Corp. et al.," August 26, 2026

- "Major Rail Consolidation Procedures," Docket No. EP 582 (Sub-No. 1), 5 S.T.B. 539, June 7, 2001
- "Market Dominance Determinations," Docket No. EP 627, 3 S.T.B. 937, December 10, 1998
- Opinion of the Court, *United States v. Philadelphia National Bank*, 374 U.S. 321, June 17, 1963
- Union Pacific Corp. & Union Pacific Railroad Co., comments summarized in Major Rail Consolidation Procedures, Docket No. EP 582 (Sub-No. 1), 5 S.T.B. 1, September 25, 2000

Depositions

- Deposition of David Welch (General Director of Corporate Strategy, Union Pacific Railroad Company), July 29, 2026, with Exhibits
- Deposition of Katherine N. Novak (General Director of Interline Operations, Union Pacific Railroad Company), September 24, 2026
- Deposition of Lance Fritz (former Chief Executive Officer, Union Pacific Railroad Company), November 3, 2026
- Deposition of Michael Houston (Director of Corporate Strategy, Union Pacific Railroad Company), July 30, 2026
- Deposition of Michael R. McClellan (Chief Strategy Officer, Norfolk Southern Corporation), October 9, 2026
- Deposition of David T. Hunt, Vol. I, October 7, 2026
- Deposition of David T. Hunt, Vol. II, October 8, 2026
- Deposition of Mark A. Israel, October 15, 2026
- Deposition of Elizabeth M. Bailey, October 29, 2026

Press Releases

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BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF W. ROBERT MAJURE Ph.D.

Volume II

CORNERSTONE RESEARCH
ECONOMIC AND FINANCIAL CONSULTING AND EXPERT TESTIMONY

BEFORE THE SURFACE TRANSPORTATION BOARD

Finance Docket No. 36873
UNION PACIFIC CORPORATION AND UNION PACIFIC RAILWAY COMPANY—CONTROL—NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

EXPERT STATEMENT OF W. ROBERT MAJURE, PH.D. VOLUME II OF II

November 18, 2026

HIGHLY CONFIDENTIAL MATERIAL: CONTAINS WAYBILL DATA

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1. Qualifications and assignment

1.1. Qualifications

1. My name is W. Robert Majure. I am a Senior Vice President at Cornerstone Research. Prior to joining Cornerstone Research, I worked for approximately 25 years in the Antitrust Division of the U.S. Department of Justice ("DOJ") as an economist, Assistant Section Chief, Section Chief, and ultimately as the Director of Economics.

2. I earned my Ph.D. in Economics from Massachusetts Institute of Technology in 1994 and a B.A. from the University of Virginia in 1990. My main area of expertise is the economics of industrial organization – particularly issues of competition.

3. While at the DOJ, I performed and supervised economic analyses of competition issues in various industries, including transportation, telecommunications, banking, computer software and hardware, heavy industry, mining and drilling, healthcare, entertainment, and railroads. I submitted testimony on competitive effects in the merger of the Union Pacific and Southern Pacific Railroads and on the suitability of remedy in *U.S. v. SBC Communications Inc. and AT&T Corp.* and *U.S. v. Verizon Communications Inc. and MCI, Inc.* I also served on the committee that drafted the 2010 Horizontal Merger Guidelines. I received awards for my work at the DOJ, including presidential recognition for my contributions as a senior executive of the civil service.

4. In my role at Cornerstone Research, I have worked with government agencies and private clients to examine competitive effects of contractual arrangements and mergers across many industries including support of the U.S. Department of Justice's challenges to a proposed merger of JetBlue and Spirit airlines and to a joint venture with the effect of a merger between American Airlines and JetBlue. I have testified for Canadian Pacific regarding the competitive effects of combining Canadian Pacific and Kansas City Southern ("CP-KCS") and on the effects of Canadian National acquiring Iowa Northern. I have also provided testimony in other proceedings which are described in my curriculum vitae which is attached as Appendix A.

1.2. Assignment

5. I have been asked by counsel for Canadian Pacific Kansas City ("CPKC") to evaluate whether the conditions it proposes in its Comment Vol. II and Responsive Applications would harm competition or would remedy competitive harm due to the proposed acquisition of Norfolk Southern ("NS") by Union Pacific ("UP").

6. Cornerstone Research is being compensated at my standard billing rate of $1,400 per hour. I have been assisted by staff at Cornerstone Research, who worked under my direction. Cornerstone Research's compensation in this matter is not in any way contingent or based on the content of my opinion or the outcome of this or any other matter, nor is my compensation.

7. Appendix B contains a list of materials I have relied upon in preparing this statement. My work is ongoing, and I reserve the right to supplement this analysis as proceedings continue.

2. The provisions requested by CPKC would partially mitigate harm from the merger, without harming competition

8. The proposed merger between UP and NS would give a combined UP-NS an increased incentive and ability to foreclose competition (including competition provided by CPKC), as discussed in Majure VS Vol. I, Section 4.[1] A combined UP-NS would also deprive shippers of the ability to generate competition between UP and NS with bargaining strategies such as using locations the shipper has on UP to discipline pricing at locations on NS (and vice versa) or using alternate interconnection points to induce competition between UP and NS for the "longer haul" (the middle of an interline move) as discussed in Majure VS Vol. I, Sections 5–6.

9. Applicants have offered inadequate remedies for shippers that would suffer from this loss of competition, as discussed in Majure VS Vol. I, Sections 4.5, 5.4, and 6.4. Regulation is generally inferior to competition, but Applicants' proposed remedies are particularly ineffective and unlikely to remedy merger-induced harm, as discussed in Majure VS Vol. I, Section 10.

10. CPKC has identified and requested a set of conditions aimed at better curbing UP-NS's ability to use its increased incentive to foreclose competition and preserving or, in some cases, replacing the competition that will be lost by the merger. These conditions are in two sets.

[1] Expert Statement of W. Robert Majure, Ph.D. Volume I of II, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026 ("Majure VS Vol. I").

a. The first is a set of more general conditions that would apply nationwide and involve requests that, among other things: expand or modify Committed Gateway Pricing ("CGP") (Section 2.1); introduce caps that would prevent UP-NS from holding shippers captive beyond pre-merger levels (Section 2.2); and propose enforceable service assurances, remove contractual barriers to allow structural relief for some shipments, and propose governance conditions (Sections 2.3–2.5).[2]

b. The second is a set of structural remedies aimed at preserving and promoting competition in areas subject to specific harms from the proposed merger or where CPKC would be able to provide shippers with an additional competitive Class I option: the Gulf Coast, New Orleans, Meridian Speedway, Dallas-Fort Worth, Kansas City gateway, St. Louis gateway, Kansas City-St. Louis, Chicago gateway, Chicago-Detroit, and Rosemount and Fairmont, Minnesota (Section 2.6).[3]

11. While these conditions are not a full replacement for the competition that today protects shippers and would be lost following the merger, they are more effective and partially address more of the harms the merger would cause than those offered by

[2] CPKC's Comments on Application and Request for Conditions, Volume II, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026 ("CPKC Comment Vol. II"), Sections III–VII.

[3] CPKC Comment Vol. II, Section VIII; Docket No. FD 36873 (Sub-No. 42) ("CPKC Gulf Coast Responsive Application"); Docket No. FD 36873 (Sub-No. 43) ("CPKC Baton Rouge Responsive Application"); Docket No. FD 36873 (Sub-No. 44) ("CPKC Lufkin Subdivision Trackage Rights Responsive Application"); Docket No. FD 36873 (Sub-No. 45) ("CPKC Wylie Responsive Application"); Docket No. FD 36873 (Sub-No. 46) ("CPKC KCT/Polo Line Responsive Application"); Docket No. FD 36873 (Sub-No. 47) ("CPKC Missouri Responsive Application"); Docket No. FD 36873 (Sub-No. 48) ("CPKC TRRA Responsive Application"); Docket No. FD 36873 (Sub-No. 49) ("CPKC Chicago-Detroit Responsive Application"); Docket No. FD 36873 (Sub-No. 50) ("CPKC Techny Responsive Application"). Docket No. FD 36873 (Sub-Nos. 42–50) are collectively referred to as "CPKC Responsive Applications."

Applicants, as discussed in Majure VS Vol. I. These conditions will not harm competition and will partially mitigate the harm from the merger.

2.1. Enforceable gateway conditions

12. In Majure VS Vol. I, I discuss the limitations of Applicants' proposed commitments that purport to preserve competition post-merger:

a. Applicants' open gateway commitments ("OGCs") lack specificity. Simply keeping gateways "open on commercially reasonable terms"[4] will not ensure the viability of a competitive interline option, particularly given a combined UP-NS would have the incentive and ability to foreclose these options (Majure VS Vol. I, Section 4.5).

b. Applicants' plan for CGP, TAP, and the Rate ADR program to terminate after a certain period will not protect shippers against the permanent effects of the merger in the long term; and shippers and other railroads will bear much of the cost of disputing merger-induced competitive harm, which may lead to underenforcement (Majure VS Vol. I, Sections 4.5, 5.4, and 6.4).

[4] See Second Errata Joint Verified Statement of Kenny Rocker.
and Claude E. Elkins, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, September 4, 2026 ("Rocker and Elkins Second Errata VS"), ¶ 164.

c. CGP's benefits will be small and concentrated among few shippers while the CGP program will affirmatively harm others. CGP also incentivizes a merged UP-NS to raise rates on routes that determine CGP rates (Majure VS Vol. I, Section 9).

13. CPKC has proposed conditions (e.g., expanding CGP, as well as implementing pricing, service, and enforcement protections) that would more effectively mitigate the competitive harms from the merger than what Applicants have committed to so far.

2.1.1. Expanded CGP coverage

14. As proposed by Applicants, CGP covers only a small subset of all traffic.[5] Where CGP does not apply, Applicants promise only to keep gateways open "on commercially reasonable terms," and that they will "not make it impossible to construct viable interline options for customers by refusing to quote commercially reasonable rates."[6] However, as I explain in Section 4.5 of Majure VS Vol. I, simply keeping gateways open—on commercially reasonable terms or otherwise—will not ensure robust competition when UP-NS retains both the incentive and ability to foreclose interline options through those gateways. Additionally, Applicants propose that CGP will remain

[5] Verified Statement of Katherine N. Novak, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, April 30, 2026 ("Novak VS"), ¶ 20 ("Committed Gateway Pricing will apply to manifest carload shipments between UP/NS sole-served facilities and facilities on short lines interchanging traffic solely with UP/NS, on the one hand, and BNSF and CSX sole-served facilities and facilities on short lines interchanging traffic solely with BNSF or CSX, on the other hand, that are interchanged between UP/NS and CSX or BNSF in Chicago, St. Louis, Memphis, or New Orleans."), ¶ 25 ("Committed Gateway Pricing will not apply to intermodal or unit train shipments, shipments of finished vehicles, or shipments to and from storage-in-transit facilities, which often have distinct pricing structures and service requirements.").

[6] Rocker and Elkins Second Errata VS, ¶¶ 164, 166.

in place "until the end of the oversight period in this proceeding, unless extended by the Board."[7] This would enable a combined UP-NS to simply wait until the end of the oversight period before removing CGP's price ceilings to reprice however they see fit, including to foreclose interline competition on certain routes. To address these flaws with Applicants' current proposal, CPKC proposes expanding CGP in several ways, including to make it permanent, and to expand it to apply to more railroads, interchanges, and facilities.[8]

15. CPKC's proposed conditions would limit opportunities for Applicants to circumvent CGP and act on their incentive to foreclose competing interline options. To the extent that another railroad uses a CGP rate under the program as proposed by Applicants, it would only do so if the rate that would otherwise be available would make that railroad even less competitive. Removing exclusions would thus broaden the availability of potentially more competitive interline options. The pricing, service, and enforcement protections discussed below remain necessary to address CGP's creation of perverse incentives identified in Majure VS Vol. I, Section 9.2.

2.1.2. Effective CGP rate formula

16. CPKC's proposed modifications to the CGP rate formula will help mitigate harm to competition and to shippers caused by Applicants' potential manipulation of their non-

[7] Novak VS, ¶ 45. See also Second Errata Verified Statement of Mark A. Israel, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, September 4, 2026, ¶ 166.

[8] CPKC Comment Vol. II, Section III.B.2.

CGP rates to raise the CGP rate ceiling. I explain in Sections 9.1–9.2 of Majure VS Vol. I that CGP can harm some shippers and will give UP-NS incentives to inflate the rates or manipulate the movements used to determine the CGP ceiling. Accordingly, CPKC proposes various modifications to the CGP rate formula.[9] Some of these modifications change the way CGP rate ceilings are calculated. For example, CPKC proposes setting CGP rate ceilings "no higher than the 50th percentile of comparable rates."[10] Holding the comparison set fixed, a ceiling no higher than the 50th percentile would be more protective than Applicants' 70th-percentile approach and would avoid setting the benchmark above the middle of that distribution. CPKC also proposes that the Board require "finer commodity segmentation," "narrower mileage bands," and more frequent rate recalculations than Applicants propose.[11] Further, CPKC proposes that the Board should retain the authority to set a rate below the 50th percentile ceiling if warranted by the circumstances.[12] These changes would help ensure that CGP rates are calculated using appropriate benchmarks that yield competitive rates, given that the current CGP segmentation and update frequency may lead to rates that do not track market conditions.[13] Other modifications CPKC proposes would narrow the scope for

[9] CPKC Comment Vol. II, Section III.B.3.

[10] CPKC Comment Vol. II, p. 26 ("The Board should require a ceiling no higher than the 50th percentile of comparable rates and should consider a lower ceiling in light of the substantially greater market power UP will hold after acquiring NS.").

[11] CPKC Comment Vol. II, p. 27 ("The Board should require finer commodity segmentation, narrower mileage bands, and a mechanism for timely adjustment of CGP rates when changing market conditions would otherwise render an interline offer commercially unusable.").

[12] CPKC Comment Vol. II, p. 26 ("The initial ceiling selected by the Board should be a maximum, not a safe harbor. Where evidence supports the conclusion that the rate-setting percentile would not produce a commercially usable offer for a particular category of traffic, the Board should retain authority to prescribe a lower level.").

[13] Verified Statement of John Brooks, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company,"

manipulation and limit opportunities for UP-NS to act on its incentive to raise CGP rate ceilings by manipulating non-CGP rates. For example, CPKC requests that the Board "prohibit manipulation of contract terms or the comparison set to inflate the [rate] ceiling," and that Applicants should disclose their rate calculation methodology in sufficient detail to detect circumvention.[14] Similarly, CPKC proposes that the Board should account for effective compensation that includes "rebates, discounts, and linked commercial terms" to "prohibit manipulation of contract terms or the comparison set" to inflate CGP rate ceilings.[15] This proposal could mitigate the concern that Applicants could use targeted rebates and discounts to manipulate CGP pricing, which I outline in Section 9.2 of Majure VS Vol. I. Taken together, CPKC's proposed conditions would help partially address the limitations of CGP that I identify in Majure VS Vol. I, Sections 9.1–9.2, without harming competition.

Docket No. FD 36873, November 18, 2026 ("Brooks VS"), ¶¶ 184–186 ("Applicants' proposed CGP framework is too coarse to track market conditions and is not nimble enough to allow rates to adjust rapidly to changing conditions[.] … The buckets used to calculate CGP rates are far too coarse. For example, 'Industrial Chemicals' and 'Metals & Ores I' span movements with materially different cost and demand characteristics. Mileage bands encompassing 500 miles (e.g., between 500 and 999 miles) ignore pricing differences between shorter and longer moves. … In today's marketplace, interline carriers adjust their rates and divisions continually in response to fuel and truck-market swings, seasonal demand, new competitive offerings, and individual bids. Under CGP, the legacy-UP or legacy-NS portion of the move would be fixed in advance, while UP-NS could price its own single-line alternative freely from bid to bid. By the time the annual reset caught up, the RFP would be over and the traffic would be gone.").

[14] CPKC Comment Vol. II, pp. 27–28 ("The approved methodology should account for effective compensation, including rebates, discounts, and linked commercial terms, and prohibit manipulation of contract terms or the comparison set to inflate the ceiling. Applicants should disclose to the Board the methodology, inputs, calculations, and changes in comparison-set composition needed to detect circumvention. The Board should retain authority to require corrected offers.").

[15] CPKC Comment Vol. II, p. 27 ("The approved methodology should account for effective compensation, including rebates, discounts, and linked commercial terms, and prohibit manipulation of contract terms or the comparison set to inflate the ceiling.").

2.1.3. Gateway choice and protection against route impairment

17. Shippers benefit from competition when railroads bargain over routing decisions. For example, as I explained in Section 6 of Majure VS Vol. I, railroads compete over who will ship the longer portion of movements, benefiting shippers by generating competitive rates for the entire movement. Therefore, even if the Board enacts CPKC's requested conditions in Sections 2.1.1 and 2.1.2 above, CPKC proposes that CGP should enable shippers and carriers to obtain a rate "covering Applicants' movement between a covered facility and the nearest efficient eligible interchange."[16] CPKC's proposal would preserve competitive options for shippers by requiring UP-NS to interchange with other railroads where it is most efficient to do so (preventing UP-NS from foreclosing interline competition).[17]

[16] CPKC Comment Vol. II, p. 29 ("To protect against those anticompetitive incentives, the Board should modify the proposed CGP framework to permit a shipper or eligible connecting carrier to obtain a rate covering Applicants' movement between a covered facility and the nearest efficient eligible interchange with a carrier independent of Applicants."), pp. 29-30 ("Efficiency should be assessed in light of the complete interline movement, including rail-route distance, available connections, operational feasibility, transit time, capacity, reliability, transportation cost, and competitive usefulness. Geographic proximity alone should not control, and Applicants' interest in retaining a longer haul should not determine the interchange.").

[17] CPKC makes additional requests pertaining to shippers' gateway choice under CGP that close loopholes through which a combined UP-NS could otherwise find ways to foreclose interline competition. These include that affected shippers and eligible carriers "should be entitled to request and obtain a CGP offer through any otherwise eligible gateway or interchange point, including the nearest efficient interchange to the relevant origin or destination," that access to a CGP rate "should not depend on proof that Applicants have impaired an existing route, that the traffic previously used the requested interchange, or that the requested routing preserves Applicants' historical length of haul," that efficiency should be assessed given a wide and detailed set of route information, and that when "Applicants' post-merger routing or operating changes impair an existing interline route, the Board should be able to require an effective alternative gateway and the associated pricing and operating arrangements necessary to preserve commercially usable interline service[.]" See CPKC Comment Vol. II, pp. 23, 30.

2.1.4. Independent service floor

18. If the Board imposes a condition requiring the expansions to CGP that CPKC proposes, more of the rates UP-NS offers will be capped by the CGP rate ceiling, though UP-NS could still price below this ceiling. Therefore, UP-NS will gain more incentive to manipulate the service quality it provides to steer traffic away from routes with low CGP rates and from competing interline options. Applicants currently propose to address this through non-discrimination, that is, that they will handle CGP traffic "without any discrimination in promptness, quality of service, or efficiency in favor of comparable traffic moving in UP/NS service."[18] However, non-discrimination is not sufficient because it would mean that Applicants set the standard against which they evaluate their own service quality commitments, which would incentivize them to manipulate those standards by diverting, eliminating, or otherwise degrading their measure of service quality for comparable traffic.[19] Accordingly, CPKC proposes that "[t]he Board should specify the service standards, reporting, and enforcement obligations" required to render UP-NS's service quality commitments effective.[20]

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[18] Novak VS, ¶ 43 ("Specifically, traffic UP/NS handles under Committed Gateway Pricing will be handled without any discrimination in promptness, quality of service, or efficiency in favor of comparable traffic moving in UP/NS service."); Applicants' Second Response to Decision No. 21, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, July 27, 2026 ("Applicants' Second Response to Decision No. 21"), Supp. p. 44 ("Rather than propose specific service benchmarks for measuring Committed Gateway Pricing service performance, Applicants have expressly committed to nondiscriminatory treatment of traffic moving under CGP.").

[19] Mr. Redd outlines the many factors one would need to consider to fully determine all relevant dimensions of service quality. See Verified Statement of Mark Redd, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026 ("Redd VS"), ¶¶ 101–102.

[20] CPKC Comment Vol. II, p. 32 ("The Board should specify the service standards, reporting, and enforcement obligations needed to make the commitment effective."). I discuss CPKC's proposed enforceable service assurance framework in Section 2.3 below.

CPKC's proposed condition would protect shippers and preserve competitive interline options by transferring authority over Applicants' service standards away from the Applicants themselves (without harming competition).

2.1.5. Expedited enforcement

19. Regulatory standards may fail to bind Applicants' behavior if the procedure for seeking relief is more costly or time-consuming for shippers or competing railroads than simply taking their business elsewhere.[21] Accordingly, CPKC proposes that any affected shipper or connecting carrier should be able to submit written notice of an alleged violation and seek interim relief along with an expedited Board resolution.[22] CPKC's proposed condition would increase shippers' and competitors' willingness to hold Applicants accountable for merger-related harms they experience (without harming competition).

[21] As Mr. Brooks outlines, timely enforcement matters. A later favorable decision may not restore an interline opportunity lost during a bid cycle, as the customer may have committed its traffic elsewhere (in a long-term contract), or the competing service may have "lost the density needed to support it." See Brooks VS, ¶ 176.

[22] CPKC Comment Vol. II, p. 34 ("To ensure effective enforcement, an affected shipper or connecting carrier, including CPKC and any participating Class II or Class III carrier, should be entitled to give written notice identifying an alleged violation and requested relief and to seek expedited Board resolution of eligibility or compliance under Section V.B, including interim relief preserving threatened routing options and service.").

2.2. Limitations on shipper captivity

20. As I explain in Section 3.2 of Majure VS Vol. I, a combined UP-NS would touch an unprecedented share of traffic shipped by rail across the country. Its size and scale would weaken geographic competition and deprive shippers of bargaining strategies that support more competitive rates and service offerings.[23] As I explain in Majure VS Vol. I, Section 5.2, shippers whose facility options are more concentrated on one railroad tend to pay more for their movements as a whole, consistent with shippers benefiting from competition across their locations even if particular locations are sole-served by UP and others are sole-served by NS. Accordingly, CPKC proposes conditions that would prevent this harm to shippers who would otherwise become more captive to a combined UP-NS than they currently are to either independent UP or independent NS.[24]

21. One of CPKC's conditions would require commercially and operationally effective independent-carrier access at enough customer-designated facilities that, for each customer or commonly controlled customer group, the number of remaining facilities sole-served by UP-NS would not exceed the larger of UP's or NS's pre-merger counts.[25] This condition would help to constrain the merger-created increase in sole-service exposure. Placing the selection of facilities to be opened in the hands of the

[23] Majure VS Vol. I, Section 5.

[24] CPKC Comment Vol. II, Section IV.

[25] CPKC Comment Vol. II, p. 50 ("To preserve and promote competition, the Board should impose a permanent structural condition ensuring that for each customer or commonly controlled customer group, the number of facilities that may remain sole-served by the combined UP–NS after consummation does not exceed the greater of: 1. the number of that customer's facilities sole-served by legacy UP immediately before consummation; or 2. the number of that customer's facilities sole-served by legacy NS immediately before consummation.").

customer matters because access at a facility lacking commercially useful routes or services would provide little bargaining value. CPKC also proposes a complementary condition prohibiting Applicants from using commercial terms on one legacy network to penalize a customer's choice of an independent carrier on the other or to foreclose effective competition for that business.[26] As I explain in Majure VS Vol. I, Section 5, bundling can benefit shippers, but captive business can also be used to impair competition for other traffic. The condition would preserve legitimate discounts reflecting volume, costs, or operating efficiencies. The relevant inquiry would examine whether adverse terms on business retained with Applicants reflect objective commercial consequences or a penalty that impairs competitive choice. Combining traffic across facilities would not alone establish a violation.[27]

2.3. Enforceable service assurance framework

22. As I describe above, service quality is one lever that UP-NS could use to foreclose competition. Accordingly, CPKC has proposed an enforceable service-assurance

[26] CPKC Comment Vol. II, p. 54 ("The Board should prohibit Applicants from using rates, discounts, rebates, service commitments, or other commercial terms at facilities or on lanes served by legacy UP to penalize a customer's use of an independent carrier at facilities or on lanes served by legacy NS, or to foreclose effective competition for that business, and vice versa.").

[27] In Section 5.2 of Majure VS Vol. I, I show that shippers' rates tend to increase as the share of their total revenue that is captive to a single railroad increases. Capping sole-served facilities is a more practical approach than capping sole-served revenues, and the same notion of bargaining leverage applies to sole-served facilities and sole-served revenue. Therefore, I would expect this remedy to at least partially mitigate the rate increases I predict there. This cap should apply to all customers without them having to demonstrate that they cannot shift production away to new locations, because as I point out in Section 5.1 of Majure VS Vol. I, the threat of shifting production between facilities is what gives shippers bargaining leverage. Competition between UP and NS over where shippers choose to produce is a type of competition the merger would eliminate.

framework to help "make the competitive rights and operating protections imposed as conditions effective in practice."[28] I understand that this framework includes features like preauthorization, activation by notice, and continuing effectiveness until affirmative Board action.[29] It also includes Applicant-funded, independent, ongoing monitoring that Mr. Redd finds necessary to monitor service quality across a combined UP-NS network.[30] These features address loopholes that, if left open, might be used to undermine the effectiveness of regulation. This framework would mitigate merger-induced harm to competition by limiting UP-NS's ability to foreclose competition by degrading the quality of interline routes, while lowering the cost for shippers and competitors to engage with the enforcement process. This framework also calls for an independent, Board-appointed monitor funded by Applicants, continuing access to operating records, prompt reporting, and expedited Board review.[31] Mr. Redd explains

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[28] CPKC Comment Vol. II, Section V.

[29] CPKC Comment Vol. II, p. 81 ("The Board should preauthorize the springing rights and remedies specified in Section VIII within their stated geographic and functional limits. Once the applicable activation requirements—including any performance trigger adopted through Section V.C and any expressly required cure opportunity—have been satisfied, CPKC should be entitled to activate the corresponding remedy by filing notice with the Board and serving Applicants and other directly affected parties. The notice should identify the ground, reasonably available supporting evidence, authorized operations, and permitted commencement date. Activation should take effect upon filing and service without a further Board merits determination, additional cure period, or new application[.] … Exercise should comply with the condition's commencement, safety, and qualification requirements. An objection or request for review should not suspend activation or continued exercise unless the Board grants a stay.").

[30] Redd VS, ¶ 98 ("CPKC has proposed a service assurance framework (the 'SAF') in its Comments. If the Board approves the merger, I support requiring this framework to give conditions imposed by the Board to safeguard service assurance and competitive access a realistic chance of working in practice. The SAF appropriately calls for the appointment of an independent, Board-appointed monitor funded by UP-NS, who would be responsible for monitoring compliance and proactively addressing operating problems and disputes.").

[31] CPKC Comment Vol. II, p. 65 ("To ensure effective monitoring and enforcement, the Board should appoint an independent monitor with substantial railroad operating expertise to serve for the duration of the permanent protections. … The monitor's role should include prompt initial findings or determinations within the authority lawfully assigned by the Board, subject to expedited Board

the need for a standing resource with operating expertise and the limitations of repeated negotiations or joint committees.[32] Ongoing monitoring enhances the likelihood that any impairment is identified before it defeats a competing service, while Applicants' funding of administration and reasonable good-faith enforcement costs would reduce barriers to securing compliance. The Board's technical process would calibrate customer-focused measures within the substantive rights and remedies established at approval, with initial standards and monitoring arrangements operative before consummation.[33] Location-specific numerical benchmarks are illustrative candidates for that process. Pre-merger levels are a good initial comparison point but will lose relevance over time. Continued adaptation would remain necessary as traffic and customer needs change. As I explain in Majure VS Vol. I, Section 10, even strict regulation cannot recreate independent competition; neither funding nor a monitor

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review, and recommendations for action reserved to the Board."), p. 66 ("Applicants should provide the monitor with regular service-performance and compliance reports, prompt notice of material service failures, and advance notice of planned operational changes capable of impairing protected service. They should also promptly furnish records, data, and explanations reasonably requested for the monitor's oversight duties, including information from elsewhere on the combined network needed to assess effects on protected service. These obligations should apply regardless of whether a complaint has been filed, a performance trigger has been met, or a dispute is pending. … Applicants should be required to fund the monitor and necessary staff and expertise without controlling its selection, conclusions, or reporting."), p. 68 ("Applicants should preserve and promptly provide the Board, the monitor, and affected beneficiaries the records needed to evaluate compliance, subject to standing confidentiality protections.").

[32] Redd VS, ¶¶ 98–100.

[33] CPKC Comment Vol. II, pp. 71–72 ("The Board should determine the measures used to administer those duties through an expedited technical conference or comparable process involving affected customers and carriers, Applicants, and, if appointed in time, the monitor and its staff. … Applicants should not consummate the Proposed Transaction or implement merger-related operating changes until the Board determines that the initial service standards and monitoring, reporting, and enforcement arrangements are in place and operative. … The Board should establish up front the substantive rights, governing duties, scope of conditional operating authority, and available remedies. The subsequent process would select and calibrate performance measures, thresholds, measurement conventions, reporting, and the conditions for applying those remedies within the authority granted[.]").

eliminates the shortcomings of regulation, and the Board will need to continue to exercise responsibility for those judgments.

2.4. Contractual barriers

23. Remedies to address merger-related harms can only protect affected parties if contractual restrictions or penalties do not make the authorized competing service commercially unusable. Shipper contracts that penalize or outright prohibit the shipper from using an option, say a CGP rate, or that disincentivize the use of competitors where they can meet a portion of the shipper's needs would undermine the effort of creating these options.[34] Similarly, restrictions on what a carrier can do with any granted access would limit the benefit to shippers of trying to create competitive options.[35] Accordingly, CPKC has proposed a series of conditions that would ensure affected shippers and carriers can actually use the Board-ordered remedies I discussed

[34] Brooks VS, ¶ 177 ("Many customers are also bound to their carrier by contract terms that make shifting traffic difficult, including minimum-volume commitments, exclusivity or percentage-of-traffic requirements, routing requirements, volume rebates, and shortfall penalties. A combined UP-NS could use those terms across a much larger network to limit how much traffic a customer can move to a competing interline route, even where a gateway remains open. Customers have also told us that they are reluctant to move traffic away from UP for fear that UP will respond on other lanes where the customer has no alternative.").

[35] Brooks VS, ¶ 206 ("{{REDACTED

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in Sections 2.1–2.3.[36] These conditions protect against merger-related harms by lowering barriers for affected shippers and carriers to access Board-ordered remedies.

2.5. Governance conditions

24. I understand that the proposed merger would increase Applicants' influence over multi-railroad equipment pools, including TTX, the Multilevel Pool, and the NABP.[37] Further, I understand that Applicants' proposal to reduce their stake in TTX will not

[36] CPKC Comment Vol. II, Section VI. It is important that both customers and carriers be granted these conditions because a potential competing option will falter if either the shipper or the railroad is constrained by contractual obligations to UP-NS. Moreover, customer-contract release and amendment of restrictive carrier agreements address distinct barriers: freeing the customer to choose a competing carrier does not enable a movement that the carrier's operating rights still prohibit. I discussed in Majure VS Vol. I, Section 5 that nominal carrier access does not necessarily provide an option for particular traffic. Protection against retaliation is also necessary because the threat of adverse treatment elsewhere can deter use of an otherwise valuable remedy or participation in enforcement. See also Brooks VS, ¶ 177.

[37] Verified Statement of Michael Walczak, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026 ("Walczak VS"), ¶ 40 ("The proposed Transaction raises profound concerns for the governance and equitable operation of TTX's flatcar and boxcar pools. If UP acquires control of NS, it will gain not only NS's rail network and traffic, but also NS's equity stake in TTX Company. That increase in UP's ownership share would give UP disproportionate influence over TTX's decision-making, which is influence that could be used—intentionally or not—to tilt the playing field in UP's favor at the expense of the other pool participants."), ¶ 71 ("[T]wo independent voices on the Executive Committee and on each steering committee on which both railroads now sit would come under the control of a single railroad. At the same time, the merged railroad would come to account for a substantial share of the automotive-related traffic and pool contributions on which the pool's fleet-size, distribution, and contribution recommendations are based. The result would be a meaningful concentration of both formal voting power and practical influence over key Multilevel Pool decisions, including decisions about optimum fleet size, distribution rules, and pool administration, in the hands of a single participant, on a scale that no other member of the pool would come close to matching."), ¶ 74 ("Combining UP's and NS's contributions would give the merged railroad approximately {{REDACTED}}% of the pooled fleet, and a corresponding share of the vote. Further, because UP holds an ownership interest in, and exercises meaningful influence over, FXE, a combined UP/NS acting together with FXE would account for more than {{REDACTED}}% of the pooled fleet. {{REDACTED }} No other participant would come close[.]").

remove Applicants' post-merger influence over TTX.[38] To the extent that the administration of these shared processes has an important bearing on carriers' ability to provide competitive service at competitive prices, Applicants' increased influence over these processes may present another opportunity for them to foreclose competition. For example, if UP-NS achieves Mr. Hunt's projected intermodal diversions, it may have an incentive to source intermodal railcars from TTX, while at the same time resisting expansion of TTX's fleet, which could constrain other railroads' access to these railcars and restrict their ability to compete for intermodal traffic.[39] Even without considering increased traffic, a combined UP-NS could use its influence to foreclose competition by degrading fleet integrity (i.e., dissolving, unwinding, or materially dismantling the TTX Flatcar and Railbox Pools) and reducing contributions to the Multilevel Pool and NABP.[40]

25. To prevent UP-NS from using its combined influence over these shared resources to harm competition, CPKC proposes to limit UP-NS's combined influence over TTX,

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[38] Walczak VS, ¶ 43 ("Applicants assert that, at 49%, UP would not have the ability to 'unilaterally approve, or even block' a matter submitted to the TTX board or shareholders. That is cold comfort. As I explain below, at 49% UP would need the support of only one of TTX's smaller owners not named FXE to carry or block any matter decided by majority vote.").

[39] Walczak VS, ¶ 13 ("The TTX flatcar pool invests in, maintains, and manages the distribution of intermodal and other flatcars that are indispensable to a wide range of freight movements.").

[40] Walczak VS, ¶¶ 78–79 ("It is not at all clear how a UP-NS withdrawal from the TTX pools would work…What is clear is that any such step would be massively disruptive and significantly undermine the ability of these pools to function, especially if the fleets were pared back significantly and the geographic boundaries of pooled fleet usage were shrunk to remove the UP-NS network. The Board should condition any approval on Applicants not causing or procuring the dissolution, unwinding, or material dismantling of those fleets[.]"), ¶ 80 ("The Multilevel Pool and NABP are contributory pools, meaning that unlike in the TTX pools, railroad participants contribute their own equipment to the pools, and as a result they can also choose to remove that equipment from the pools. … That degree of flexibility makes good sense today, when all pool participants are motivated to support the overall efficiency of these pools. Were that no longer the case—as will be true in the event UP and NS are allowed to merge.").

the Multilevel Pool, and the NABP.[41] CPKC also proposes conditions that would prevent UP-NS from using its increased influence to degrade these shared resources, either by de-funding the shared resources or by failing to abide by neutral allocation decisions. This includes the following:

a. "To address these governance harms, the Board should prohibit the combined UP-NS and all entities under their control from acquiring or exercising greater governance rights at TTX than UP possesses at its current, pre-transaction level."[42]

b. "For TTX's flatcar and Railbox pools, the Board should prohibit Applicants and their controlled affiliates and successors from causing or procuring dissolution, unwinding, or material dismantling of the pooled fleets. … They would not require additional TTX share purchases or equipment contributions beyond Applicants' obligations under the governing arrangements and these conditions."[43]

c. "To maintain that structure and ensure that the merged carrier does not increase its control of the Multilevel Pool, the Board should condition approval of the Proposed Transaction on UP, NS, and all entities under their common control collectively exercising no more than one membership, one representative, and one

[41] CPKC Comment Vol. II, p. 96 ("The conditions requested in this Section address the distinct governance, participation, and equipment-access arrangements of TTX, the Multilevel Pool, and the North American Boxcar Pool ('NABP'). Their purpose is to preserve effective access to shared railcar equipment on which competing service depends.").

[42] CPKC Comment Vol. II, p. 104.

[43] CPKC Comment Vol. II, pp. 111, 114.

vote on the Multilevel Pool Executive Committee and each applicable steering committee, including the Reload Carrier Steering Committee."[44]

d. "The Board should therefore require that UP, NS, and all entities under their common control collectively exercise no greater voting power in the NABP than UP's pre-merger contribution-based share of {{REDACTED}}%. Neither NS's contributions nor subsequent additions to Applicants' contributed fleet should increase their aggregate voting power above that cap."[45]

e. "For the Multilevel Pool and NABP, Applicants and their controlled affiliates and successors should give at least 18 months' advance notice before reducing the number of railcars in their combined contributions to either pool by five percent or more, whether through a single action or a series of related reductions."[46]

f. "Applicants should perform their contribution, return, interchange, car-movement, payment, information, and other obligations under the governing arrangements, subject to these conditions and any Board order."[47]

g. "Applicants should provide pooled equipment and associated services within their possession, control, or contractual responsibility without discrimination against CPKC or another participant."[48]

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[44] CPKC Comment Vol. II, pp. 106–107.
[45] CPKC Comment Vol. II, p. 108.
[46] CPKC Comment Vol. II, pp. 111–112.
[47] CPKC Comment Vol. II, p. 112.
[48] CPKC Comment Vol. II, p. 113.

26. These conditions would not harm competition and would mitigate UP-NS's ability to abuse its undue influence to govern shared processes, limiting its ability to foreclose competition.[49]

27. UP-NS may also gain more influence over the governance of important terminal railroads at major gateways, including the Belt Railway of Chicago ("BRC"), Indiana Harbor Belt Railroad ("IHB"), the Kansas City Terminal Railway ("KCT"), and the Terminal Railroad Association of St. Louis ("TRRA").[50] I discuss each of these terminal railroads in Section 2.6, along with CPKC's proposed conditions pertaining to them.[51] More broadly, Mr. Gameiro explains that UP could use any additional power to "drive the investment agenda, disinvest in facilities important to competition with UP single-line routes, and ultimately ensure that these entities did not support operations that were contrary to UP's own competitive interests."[52] As I explain in Majure VS Vol. I, Section 4, a combined UP-NS will become incentivized to avoid investment in

[49] As I explain both in Majure VS Vol. I, Section 10 and above, CPKC's conditions would only partially mitigate merger-induced harm. As one example of this, anticompetitive concerns can persist where CPKC's conditions preserve an existing voting share, because a combined UP-NS would have increased incentive to use that power to degrade competing routes. Mr. Gameiro describes the particular blocking and approval mechanisms for KCT, TRRA, BRC, and IHB, which should be addressed under the arrangements. See Verified Statement of Adolph Gameiro, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026 ("Gameiro VS"), ¶¶ 122–128 (KCT), ¶¶ 100–105 (BRC), ¶¶ 106–121 (IHB), ¶¶ 129–134 (TRRA).

[50] Gameiro VS, ¶ 92 ("A combined UP-NS would also gain the ability to undermine the effectiveness of key terminal railroads at the major Mid-Continent gateways upon which the efficiency of the U.S. rail network would continue to depend, but on which UP-NS would be less reliant. … Through their combined ownership interests and other levers of influence, UP-NS would have the ability to thwart investments and other initiatives—and even hold up routine annual budgeting—at the Belt Railway of Chicago ('BRC'), the Indiana Harbor Belt Railroad ('IHB'), KCT, and the Terminal Railroad Association of St. Louis ('TRRA').").

[51] See Sections 2.6.5, 2.6.7, 2.6.8.

[52] Gameiro VS, ¶ 93.

(or degrade) the infrastructure of interconnection at gateways between the East and West. To the extent that a combined UP-NS's influence over these terminal railroads would enable it to advantage itself at the expense of competitors, this represents another way that the merged firm could foreclose competition.

2.6. Structural remedies proposed by CPKC preserve (at least) some competition

28. In addition to the regulations discussed above, I understand that CPKC has proposed region-specific structural remedies centered around regions where a merged UP-NS might be able to inflict particular or specific competitive harms and/or regions where CPKC may be positioned to help specific shippers and mitigate the merger's more general harms. These regions are: Gulf Coast, New Orleans, Meridian Speedway, Dallas-Fort Worth, Kansas City gateway, St. Louis gateway, Kansas City-St. Louis, Chicago gateway, Chicago-Detroit, and Rosemount and Fairmont, Minnesota.[53]

29. CPKC's requested conditions aim to mitigate as much competitive harm in these regions as can be accomplished through regulation and the intrinsic limits of CPKC's network reach. These localized proposals rely on structural remedies to address specific areas where CPKC can step in to preserve some of the competition most acutely affected by the proposed merger, by maintaining or creating as independent a competitor as possible for shippers. Specific structural remedies are preferable to

[53] CPKC Comment Vol. II, Section VIII; CPKC Responsive Applications.

sweeping regulations even to the extent that there need to be behavioral restrictions to make an otherwise structural remedy practical.

30. I discuss the details of these structural remedies in this section. For each region, I explain the particular loss of competition (or the opportunity to mitigate harm for specific shippers) that each remedy addresses, and why that particular structural remedy will preserve and promote—rather than harm—competition.

31. Several of CPKC's proposed remedies simply preserve a competitive structure that already exists today, and as such would not necessarily entail operational or traffic changes relative to the pre-merger period. To the extent that some of the structural remedies would entail new operations, they would improve operational efficiency and/or create a new Class I option for shippers, to the benefit of shippers. Moreover, I find that CPKC's estimates of the traffic it would carry are consistent with a reasonably competitive share of existing traffic. Altogether, these structural remedies would help preserve competition and benefit shippers in the areas where they apply, without harming competition, although they would not replace all of the competition lost through the merger.

2.6.1. Gulf Coast

32. The Gulf Coast is an area where a combined UP-NS would be especially likely to impair competition, particularly competition CPKC provides. The Gulf Coast has "a large concentration of shippers of many commodities for which rail plays an important

transportation role—including chemicals, plastics, and refined products."[54] UP is already the dominant rail carrier in the Gulf Coast "serv[ing] more receivers and packaging facilities than any other carrier."[55] If UP were to merge with NS, its influence over this traffic in the Gulf Coast would expand. A combined UP-NS could foreclose previous competition between CPKC and UP for interline traffic in the Gulf Coast with NS by diverting this traffic to its own routes. A combined UP-NS could also degrade CPKC's service quality in many ways—for example, by reducing train frequency or connection priority at an interchange—and could do this without formally closing a gateway, making it hard to identify this foreclosure.[56] Finally, a combined UP-NS would have increased leverage over shippers' facilities for its sole-served customers.

33. Indeed, UP has already degraded CPKC's service quality, foreshadowing how a combined UP-NS could further harm competition with its increased influence. CPKC

[54] Brooks VS, ¶ 203 ("The region between Houston and Corpus Christi contains a large concentration of shippers of many commodities for which rail plays an important transportation role—including chemicals, plastics, and refined products.").

[55] Rocker and Elkins Second Errata VS, ¶ 98.

[56] Brooks VS, ¶ 169 ("Based on my experience, a merged UP-NS would have an endless variety of ways to make a competing interline route less attractive without ever outright refusing to connect at a gateway, meaning that, at best, there might be an argument about what economic or service terms are 'commercially reasonable.'"), ¶ 173 ("Among the countless tools UP would have to make a choice of an interline route comparatively unattractive, even if that route could (if supported) meet the customer's needs, include: … Reducing blocking, train frequency, or connection priority at the interchange."), ¶ 174 ("Many of the above actions would be difficult for a customer (or the Board) to recognize for what they are: reduced competition."); Gameiro VS, ¶ 19 ("As CPKC leadership has elsewhere explained, '[a]cross the parts of CPKC's network where it shares facilities with Union Pacific, UP has used its control of capacity investments to hold up work needed to support CPKC's traffic growth, while UP took advantage of other routes bypassing the track used by CPKC.'"); Redd VS, ¶ 164 ("Nor could CPKC independently remedy the line's capacity constraints: UP controls dispatching and capital work, leaving CPKC dependent on UP both to accommodate opposing movements and to undertake the infrastructure improvements needed to relieve the bottlenecks.").

notes that UP has restricted CPKC's operations on the Robstown-Beaumont corridor in Texas.[57] As a result, CPKC had to remove cars from affected trains to or from Mexico.[58]

34. CPKC's proposed conditions around the Gulf Coast area would curb UP-NS's incentive and ability to foreclose competition in the area. These conditions include a preservation of CPKC's track access, reciprocal switching, neutral terminal access, and access to sole-served (and future sole-served) customers in the Texas Gulf Coast (Robstown-Beaumont Corridor, Houston Terminal, Houston subdivision, Victoria-Bloomington, Corpus Christi), over the Texas-Louisiana border (Houston, TX to DeQuincy, LA), and in West Baton Rouge.[59] None of these conditions would result in

[57] Gameiro VS, ¶ 19 ("CPKC's rights over the UP Brownsville Subdivision between Robstown and Bloomington are an essential component of CPKC's main-line service route to the U.S.-Mexico border."), ¶ 29 ("UP has also used its control over operating rules on the Brownsville Subdivision to restrict CPKC's operations in pursuit of concessions elsewhere. In 2023, UP arbitrarily imposed an 8,000-foot maximum train length limit on CPKC's use of UP's Brownsville Subdivision. This limitation was not necessitated by infrastructure conditions because, as a result of KCS investments on the line, most sidings on the subdivision exceeded 10,000 feet.").

[58] Gameiro VS, ¶¶ 33–34 ("The events that culminated in UP's retaliatory action began in May 2023 … In October 2023, UP informed CPKC that it was imposing an 8,000-foot maximum train length limit on CPKC's use of UP's Brownsville Subdivision despite the fact that, as explained above, the Brownsville Subdivision is designed for trains above 10,000 feet. The restriction on the Brownsville Subdivision had an immediate operational and competitive impact on CPKC and its customers by forcing CPKC to remove cars from many of its trains going to and from Mexico.").

[59] CPKC Comment Vol. II, p. 121 ("1. Preserving and reforming CPKC's existing rights over UP between Robstown and Beaumont and its HBT and related Houston Terminal rights, including by removing specified traffic-scope and local-service restrictions while preserving existing exceptions and access rights; permanently preserving CPKC's Houston Subdivision rights regardless of directional-running practices; and providing permanent bidirectional Houston Subdivision rights if directional running ends or changes so that equivalent efficient and commercially effective CPKC access is no longer preserved; 2. Providing reciprocal-switching access to eligible existing and future UP sole-served facilities within the Bloomington and Corpus Christi switching zones defined in Section VIII.B.3(b); 3. Applying the traffic-scope reforms described above to Houston Port Terminal Railway Association ("PTRA")- and HBT-related traffic and protecting neutral, nondiscriminatory, and commercially effective access through the Houston Terminal; 4. Providing competitive access to eligible existing and future UP sole-served facilities within the West Baton Rouge route and

shippers losing a competitive option they enjoy today—instead they ensure that shippers will continue to benefit from high-quality service, competitive rates, and smooth operations generated by competition (including from CPKC) in the Gulf Coast.

(1) Texas

35. The UP-NS merger would change UP's incentives in Texas. Presently, sole-served shippers on UP track in Texas remain dependent on UP for local service, but can benefit from competition between NS and CSXT where commercially viable eastern connections are available.[60] The merger would give a combined UP-NS an additional incentive to favor its own routes (using the legacy-NS route) over a competing CSXT (or CPKC) connection. CPKC operates in the area and could offer competing line-haul service, including with CSXT where the destination and routing permit, but this would require the traffic reforms and customer access CPKC requests (described below).[61] A combined UP-NS would have the ability (and incentive) to foreclose competition, by

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connected customer trackage identified in Section VIII.B.5(b); and 5. Protecting CPKC service between Houston and DeQuincy through an integrated sequence of capacity and alternative-route remedies."). I understand that CPKC is submitting responsive applications for Texas, the Lufkin subdivision, and West Baton Rouge, which I discuss in more detail below.

[60] Brooks VS, ¶ 169 ("This environment would be a far cry from today's world, where UP is eager to work with CSXT (as well as NS), and NS is eager to work with BNSF and CPKC (as well as UP)."), ¶ 171 ("That independence disciplines the terms UP can offer at every gateway where it interchanges with CPKC. When UP prices its portion of an interline movement or sets its service at an interchange, it knows that shippers can often turn to a CPKC-NS routing if UP's terms are not competitive. After the merger, that alternative would no longer exist at any of those gateways.").

[61] Redd VS, ¶ 167 ("The removal of existing traffic restrictions on CPKC's use of its Robstown-Beaumont rights, coupled with access to certain solely-served UP customers, would open up competition for shippers by allowing CPKC the opportunity to serve (a) traffic to/from shippers along the Victoria-Robstown lines over which CPKC operates; (b) traffic served by transloads on, or build-ins/build-outs connecting to, CPKC's Rosenberg Subdivision; and (c) traffic to/from shippers already accessed by CPKC but currently restricted to movements that touch CPKC's line between Corpus Christi and Laredo (*i.e.*, preventing movements between South Texas and CPKC's U.S. network north of Beaumont).").

preferencing its own routes and degrading service quality of other railroads in these corridors.

36. In its responsive application regarding operations in Texas, CPKC (on behalf of its subsidiary KCSR) has proposed rights and access protections that would mitigate this foreclosure risk. These rights would remove specified traffic and local-service restrictions that operate as paper barriers for CPKC's existing authorized trackage between Robstown and Beaumont, and in the area of the Houston Terminal, while preserving its Houston Subdivision access.[62] Separately, reciprocal switching would provide access to eligible existing and future UP sole-served facilities within the defined Bloomington and Corpus Christi switching zones.[63] CPKC also requests reciprocal switching for facilities on or near the Victoria Industrial Lead rights that would allow CPKC to compete for line-haul traffic (with UP continuing to perform local customer movements).[64] Removing paper barriers would allow local shippers

[62] CPKC Gulf Coast Responsive Application, p. 8 ("First, CPKC seeks adjustments to its existing Robstown–Beaumont, HBT, and Houston Subdivision rights that remove the identified paper barriers, authorize local service, preserve access to PTRA and HBT-related traffic, and impose enforceable service, dispatching, capacity, information, and enforcement protections, including, for the UP-dispatched Victoria–Robstown segment, a springing transfer of dispatching if the adopted target remains unmet over a {REDACTED}-day cure period after notice."), p. 11 ("The requested terms remove the traffic-scope and local-service barriers, authorize operationally effective access, and protect service, dispatching, capacity, and enforcement.").

[63] CPKC Comment Vol. II, p. 158 ("The Board should require Applicants to provide reciprocal switching between CPKC and all eligible existing and future UP sole-served facilities within the following defined switching zones: (1) the Bloomington switching zone, comprising the territory within a 35-mile radius centered on Bloomington Yard on the Brownsville Subdivision; and (2) the Corpus Christi switching zone, comprising the territory within a 35-mile radius centered on the Common Interchange Yard (Nueces River Yard) on the Corpus Christi Subdivision.").

[64] CPKC Comment Vol. II, p. 155 ("For covered facilities on or directly accessible from the Victoria Industrial Lead, CPKC also seeks reciprocal-switching access under Section VIII.B.3(c), with UP performing the local customer movements and CPKC transporting the traffic under its protected trackage rights."); CPKC Gulf Coast Responsive Application, p. 9 ("CPKC seeks to formalize

(including sole-served shippers) to gain a new Class I option in the region.[65] In addition, consistent access to the Victoria Industrial Lead, in combination with service quality monitoring (and springing conditions related to decreases in service quality) on UP track {REDACTED },[66] would allow CPKC to be a more effective competitor to a combined UP-NS in the region.

37. CPKC estimates this transaction would enable it to carry {{REDACTED}} incremental carloads per year by the third year after implementation of this condition (referred to as "Year 3" by Mr. Brooks) in the Victoria-Bloomington, TX and Corpus Christi, TX areas via reciprocal switching to current sole-served UP customers.[67] Based on Dr. Bailey's Six-Railroad Tapes Data from 2019 to 2024,[68] CPKC's estimate of

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Victoria Industrial Lead rights between Bloomington and Victoria for through operations and customer service made possible by the Board's conditions.").

[65] Redd VS, ¶ 167 ("The removal of existing traffic restrictions on CPKC's use of its Robstown-Beaumont rights, coupled with access to certain solely-served UP customers, would open up competition for shippers by allowing CPKC the opportunity to serve (a) traffic to/from shippers along the Victoria-Robstown lines over which CPKC operates; (b) traffic served by transloads on, or build-ins/build-outs connecting to, CPKC's Rosenberg Subdivision; and (c) traffic to/from shippers already accessed by CPKC but currently restricted to movements that touch CPKC's line between Corpus Christi and Laredo[.]").

[66] CPKC Gulf Coast Responsive Application, p. 16 ("The requested operating protections and springing dispatching remedy are designed to make that access commercially effective if ordinary protections should fail."); Redd VS, ¶ 159 ("UP's dispatchers {REDACTED } the Victoria Industrial Lead, which provides a route between Victoria and Bloomington[.]").

[67] These carloads come from both extended-haul and new traffic, in both the Victoria-Bloomington and Corpus Christi areas. See Brooks VS, ¶ 205 ("First, I anticipate that CPKC would attract approximately {{REDACTED}} loads: {{REDACTED}} in the Corpus Christi area and {{REDACTED}} in the Victoria-Bloomington area via reciprocal switching access to facilities near our lines in South Texas that UP alone serves today."), fn. 64 ("Unless I state otherwise, each estimate reflects annual traffic in Year 3, the steady-state year after the applicable condition becomes effective.").

[68] References herein to Dr. Bailey's Six-Railroad Tapes Data refer to July 27, 2026, Six-Railroad Merged Tapes Data (Loaded) (2019–2024). I modify these data in the following ways: I use Dr. Bailey's BEA-SPLC Crosswalk ("191-A-FSAC_SPLC_FIPS_BEA.xlsx") for county information; I use Dr. Israel's stationmaster ("stationmaster_OW.dta") for station and latitude and longitude

incremental traffic amounts to {{{REDACTED}}} of all traffic originating or terminating from the relevant stations.[69] Of traffic originating or terminating from these stations, {{{REDACTED}}} of it originates or terminates in BEAs that CPKC serves, suggesting the estimated carloads may be up to {{{REDACTED}}} of traffic that CPKC could single-line to its destination if this transaction took place.[70] CPKC similarly estimates that it would carry {{REDACTED}} incremental carloads from access at PTRA. CPKC's estimate of incremental traffic amounts to {{{REDACTED}}} of all traffic originating or terminating from the relevant stations, regardless of the other endpoint of the movement. Of traffic originating or terminating from these stations, {{{REDACTED}}} of it originates or terminates in BEAs that CPKC serves, suggesting the estimated carloads may be up to {{{REDACTED}}} of traffic that CPKC could single-line to its destination if this transaction took place.[71]

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information; I filter to observations used by Dr. Bailey in her corridors analysis. I identify shipper names for stations based on Dr. Bailey's SCRS file ("UPRR_SCRS_Full_Desc_20250815.txt").

[69] See workpaper 1. I calculate this percentage as a share of total originating or terminating traffic at relevant stations in Dr. Bailey's Six-Railroad Tapes Data. I identify relevant stations in Corpus Christi and Victoria-Bloomington, TX as stations in the following Texas counties: Jackson, Calhoun, Victoria, San Patricio, Nueces, and Refugio, where the carrier is UP and the station is associated with at least one shipper from which Mr. Brooks estimates incremental traffic, according to the Brooks VS (Brooks Traffic Volume Projection Workpaper (HC).xlsx) {{REDACTED }}. When performing this calculation, I exclude CPKC's estimated incremental carloads {{REDACTED }} See Brooks VS ¶ 206 ({{REDACTED }} Based on our experience, I anticipate CPKC would attract {{REDACTED}} net new carloads if these barriers are removed.").

[70] See workpaper 1. For analyses of this type, I define BEAs CPKC serves as BEAs in Dr. Bailey's Six-Railroad Tapes Data with at least one observed originating or terminating movement by CPKC. I understand Dr. Bailey's BEA variable to reflect U.S. BEAs, Canadian Provinces, and Mexican States.

[71] See workpaper 1. I calculate this percentage as a share of total originating or terminating traffic at relevant stations in Dr. Bailey's Six-Railroad Tapes Data. I identify relevant stations as those within a 5-mile radius of PTRA (defined as within five miles of any SCAC equal to "PTRA") which are associated with at least one shipper from which Mr. Brooks estimates incremental traffic, according

These estimates suggest a reasonable estimate of credible competition for the business of these shippers.

38. Based on CPKC's estimates and my own analysis, this transaction is not anticompetitive. The shippers currently sole-served by UP along the affected track would gain access to a second Class I carrier via new reciprocal switching access and the associated removal of paper barriers prohibit CPKC from handling traffic to/from these customers. This additional option would serve as a credible constraint on any attempts to use those shippers' reliance on UP-NS at these facilities to foreclose competition on moves to the east from the Texas Gulf Coast or to force any of these shippers to accept less competitive options for their traffic more broadly. UP would retain the local switching role for facilities covered by CPKC's Robstown-Beaumont and Victoria Industrial Lead conditions, making enforceable switching and interchange protections essential to that competitive option. Those protections, service monitoring, and trackage rights on the Victoria Industrial Lead would ensure CPKC's continued ability to compete in the region.

(2) Lufkin subdivision

39. In its responsive application regarding operations in the Lufkin subdivision, CPKC requests (on behalf of its subsidiary KCSR) trackage rights over UP's Lufkin Subdivision (between Houston, TX and Shreveport, LA), subject to a springing condition. CPKC requests rights over UP track which are sufficient to connect the

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to the Brooks VS (Brooks Traffic Volume Projection Workpaper (HC).xlsx) {{REDACTED }}.

Lufkin subdivision with CPKC and MSLLC lines in Shreveport, and CPKC's existing rights on UP track in the Houston Terminal.[72]

40. CPKC does not request rights to new customer access on the Lufkin track, but instead seeks an alternative routing around anticipated merger-related congestion on UP track where it already operates.[73] These trackage rights (which are exercisable by notice establishing evidence of merger-related service issues on track between Houston, TX and DeQuincy, LA)[74] would preserve CPKC's ability to provide competitive and timely service in the Gulf Coast region. Without these conditions (and the incentive that the springing condition provides for a combined UP-NS to maintain service quality on CPKC's existing route), UP-NS would have incentives to favor its own operations on an increasingly congested line over CPKC's traffic while also having little incentive to

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[72] CPKC Lufkin Subdivision Trackage Rights Responsive Application, p. 3 ("KCSR seeks a springing condition establishing nonexclusive trackage rights over UP's Lufkin Subdivision between Houston, Texas and Shreveport, Louisiana, plus additional UP trackage needed to connect that route to KCSR and MSLLC lines at Shreveport and to KCSR's existing trackage rights in the Houston Terminal.").

[73] CPKC Lufkin Subdivision Trackage Rights Responsive Application, p. 6 ("CPKC is concerned that UP-NS's forecast of substantial merger-related increases in traffic in the Houston Terminal and between Houston and Livonia, LA will cause serious congestion on lines that CPKC and UP share east of Houston, especially at the single-track Neches River Bridge in Beaumont and on CPKC's trackage (over which UP has trackage rights) between Beaumont, TX and DeQuincy, LA."). See also Redd VS, ¶¶ 229, 231 ("CPKC's trackage rights on the Lufkin Sub could be triggered by evidence of merger-related service degradation on trackage CPKC shares with UP and where UP's volumes are anticipated to increase as a result of the merger, specifically between Houston (where the Lufkin Sub begins) and DeQuincy, LA. … The Lufkin Sub route would bypass the Houston-DeQuincy route that UP's merger-related traffic would use, allowing CPKC trains to move between Houston and Shreveport without needing to use the segments most vulnerable to merger-caused congestion.").

[74] CPKC Lufkin Subdivision Trackage Rights Responsive Application, p. 5 ("The requested rights would become effective upon consummation of the UP-NS merger, if approved by the Board, but would be exercisable as a springing condition only upon evidence of merger-related service degradation on the shared trackage between Houston and DeQuincy, Louisiana. If the requisite conditions occurred to activate the springing condition, KCSR would file supported notice with the Board establishing the qualifying degradation and UP-NS material contribution and activating the condition.").

avoid impacts of its expanded operations between Houston and DeQuincy, LA. These conditions aim to provide incentive for UP-NS to maintain reasonable service quality in the region and would not harm competition.

(3) West Baton Rouge

41. A combined UP-NS will have an incentive to foreclose competition in West Baton Rouge by limiting other Class I railroads' access to shippers—including through degrading other railroads' service quality over UP-owned track. To combat this, CPKC has requested reciprocal switching in West Baton Rouge,[75] which would allow it to compete for service to UP sole-served shippers in the area. According to Mr. Redd, the "reciprocal switching access CPKC seeks to UP-served customers in the vicinity of Baton Rouge would be feasible and would not disrupt UP's operations in the area."[76] Moreover, "[t]he traffic generated by CPKC's new customer access could readily be handled within its current manifest train design."[77] Under CPKC's planned request for reciprocal switching (and this transaction, if it were to take place), shippers would receive another Class I option in Baton Rouge, without losing any existing options. Given this condition would not negatively impact traffic in the area, while providing

[75] CPKC Comment Vol. II, pp. 178 – 179 ("The Board should require UP to provide reciprocal switching between CPKC and all eligible existing and future UP sole-served facilities within a reciprocal switching zone that encompasses all shipper facilities on or reached through the West Baton Rouge route extending from Lobdell to Addis over the Avoyelles Subdivision alignment and necessary connecting trackage at Addis, and continuing south over the Livonia Subdivision to MP 79.7, including the siding and industrial trackage along that route and the customer leads and connections necessary to reach the covered facilities.").

[76] Redd VS, ¶ 195.

[77] Redd VS, ¶ 203.

shippers with a second competitive Class I option, it would promote competition (without harming it).

42. To incentivize effective implementation and to provide a practical backstop if implementation or reciprocal switching falls short, CPKC also requests preauthorized direct-access rights exercisable by supported notice upon satisfaction of the adopted performance-based activation requirements or the separate material-switching-failure and applicable cure requirements.[78] CPKC has submitted a responsive application to support this backstop: it seeks to acquire springing, nonexclusive trackage rights that would grant KCSR direct access to eligible existing and future UP sole-served customer facilities within the defined West Baton Rouge route, comprising the shipper facilities from Lobdell to Addis (over the Avoyelles Subdivision) and adjacent to UP trackage in and around West Baton Rouge (including Plaquemine and Allemania, LA and points between).[79] The rights would become exercisable upon satisfaction of those service-failure and activation requirements.[80] The transaction CPKC requests in its

[78] CPKC Comment Vol. II, p. 183 ("The Board should therefore preauthorize nonexclusive direct operating rights over additional UP track necessary to connect the facility with CPKC's network, exercisable at CPKC's election upon satisfaction of the performance-based activation requirements adopted through the process described in Section VIII.B.5(c) or, under the separate substantive requirements below, a qualifying failure of UP-provided reciprocal switching to support effective competition. The preauthorized routes should also include UP's Livonia Subdivision trackage beyond Allemania to the extent reasonably necessary for headroom, runaround movements, and other incidental operations needed to serve the covered facilities. Exercise under either ground should begin upon supported notice under Section V.D, without a further Board merits determination.").

[79] CPKC Comment Vol. II, p. 191; CPKC Baton Rouge Responsive Application, p. 9 ("The relevant market is the market for freight rail transportation to and from customers at UP-only facilities in and around West Baton Rouge, LA, including customers in Plaquemine, Allemania and points in between.").

[80] CPKC Baton Rouge Responsive Application, p. 6 ("Because the trackage rights are contingent on the failure of the Reciprocal Switching Condition, there is not a fixed date at which KCSR would acquire the actual trackage rights (if it does at all).").

responsive application would ensure the protections it intends to secure from reciprocal switching.

43. If UP and NS were to merge, sole-served shippers such as these would be exposed to increased leverage from UP-NS in their negotiations across the shipper's movements. A combined UP-NS would have increased leverage over these shippers' facilities than UP or NS alone, allowing it to raise rates on captive shippers across their facilities, as I discuss in Majure VS Vol. I, Section 5. CPKC's responsive application condition (exercisable upon satisfaction of the prescribed service-failure and activation requirements)[81] would prevent that harm and promote competition—the responsive application would insulate these shippers' dependence on UP-NS for the covered movements by strengthening their negotiating alternatives. It would not eliminate a combined UP-NS's leverage over other facilities or movements in their bundle of locations.

44. CPKC estimates it would move {{REDACTED}} incremental carloads per year by Year 3.[82] Based on Dr. Bailey's Six-Railroad Tapes Data from 2019 to 2024, CPKC's estimate of incremental traffic amounts to {{{REDACTED}}} of all traffic originating from these stations. Of traffic originating from this station, {{{REDACTED}}} of it

[81] CPKC Comment Vol. II, p. 184 ("Upon satisfaction of the triggering conditions adopted through Section V.C, CPKC should be entitled to activate the preauthorized direct-access rights by written notice identifying the qualifying failures and supporting records, covered facility or facilities, authorized route, and commencement date. Satisfaction of the adopted requirements should establish the service-failure predicate without a further Board merits determination or requirements beyond those adopted for that trigger.").

[82] Brooks VS, ¶ 210 ("I anticipate that, with reciprocal switching or direct access to facilities between West Baton Rouge and Allemania, LA, as described in Mr. Redd's Verified Statement, CPKC would attract approximately {{REDACTED}} incremental annual loads ({{REDACTED}} newly handled and {{REDACTED}} extended-haul loads).").

terminates in BEAs that CPKC serves, meaning it expects to win {{{REDACTED}}} of eligible traffic, a reasonable estimate in line with enhanced competition.[83]

45. Based on CPKC's estimates and my own analysis, this transaction is likely to increase competition at the stations where CPKC would gain access (if it were to go into effect via the springing condition). Shippers currently sole-served by UP at these facilities will gain access to a second Class I carrier who can compete for traffic, limiting a combined UP-NS's ability to abuse its increased leverage over these shippers. Competition between UP-NS and CPKC will put downward pressure on rates and upward pressure on service quality, leaving shippers better off. Therefore, the proposed transaction protects (rather than impairs) competition for these shippers.

2.6.2. New Orleans

46. A combined UP-NS could harm competition in New Orleans by preferencing its own routes and foreclosing competition from interlines. Applicants' proposal to reconfigure the New Orleans interchange and increase traffic volume in the area would have the potential to harm other interline service offerings. For example, Applicants plan to modify their operations along the "Back Belt," a span of track upon which

[83] See workpaper 1. I calculate this percentage as a share of total originating or terminating traffic at relevant stations in Dr. Bailey's Six-Railroad Tapes Data. I identify relevant stations in Baton Rouge as stations in West Baton Rouge Parish or Iberville Parish where the carrier is UP and the station is associated with at least one shipper from which CPKC expects to win traffic, according to the Brooks VS (Brooks Traffic Volume Projection Workpaper (HC).xlsx) {{REDACTED
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CPKC depends to access its West Yard.[84] Therefore, CPKC requests conditions in the New Orleans gateway to preserve its ability to provide competitive interline options.[85]

47. For example, a CPKC-CSXT interline could provide shippers with a competitive alternative to UP-NS, but current limitations force them to interchange via an inefficient connection.[86] CPKC's requested access would allow CPKC-CSXT to provide a more competitive Class I interline option via New Orleans to put competitive pressure on a combined UP-NS, and would enhance (not remove) any existing options. Further, the requested service-assurance framework would combine measures tailored to CPKC's access and interchange movements with continued monitoring and expedited enforcement (as I discuss in Section 2.3 above).[87] These measures would

[84] Redd VS, ¶¶ 150–151 ("Applicants plan significant but somewhat opaque changes to operations in the New Orleans gateway, including a partial shutdown of NS's Oliver Yard. Applicants claim that they will improve fluidity on the Back Belt ('Back Belt') route connecting the Huey P. Long Bridge with NS's New Orleans-Birmingham line by downgrading UP-NS interchange that occurs on the Back Belt (with trains stopping on the mainline for crew changes there) and by shifting BNSF-NS interchange to Avondale Yard on the west side of the Mississippi River. Although CPKC does not have operating rights on most of the Back Belt, it uses a short segment of that line to access West Yard, CPKC's yard in New Orleans. … CPKC serves the Port of New Orleans and interchanges with NS and CSXT via the New Orleans Public Belt Railway ('NOPB'), which operates into and out of West Yard.").

[85] CPKC Comment Vol. II, p. 211 ("The Board should require Applicants to grant or confirm nonexclusive operating rights over their tracks solely to effect direct interchange between CPKC and CSXT through West Yard.").

[86] Redd VS, ¶ 152 ("Applicants' planned reconfiguration of New Orleans area operations, if successful, would highlight and magnify the disparity between the UP-NS connection via the Back Belt and the relatively inefficient connection between CPKC and CSXT via NOPB. As a result of CPKC's own line having been removed as a result of the 1977 public works project, and despite an understanding at the time of the project that CPKC would retain its pre-existing rights, a Catch-22 has emerged so that CSXT and CPKC lack the rights necessary to interchange directly with one another").

[87] CPKC Comment Vol. II, p. 210 ("The common service-assurance framework … should apply to the New Orleans Gateway.").

help preserve the operational effectiveness of those competitive options to serve Port traffic and connect with eastern carriers, in the event of the merger.[88]

2.6.3. Meridian Speedway and Meridian Terminal

48. A combined UP-NS could impair competition (particularly competition CPKC provides) on the Meridian Speedway by preferencing its own routes and foreclosing interline competition. NS {{REDACTED }}.[89] Today, for traffic within the scope of NS's exclusivity, NS primarily partners with UP to connect California and other western points with the U.S. Southeast using the Speedway, but it also has the option to partner with BNSF.[90] NS's ability to develop a competing western connection with BNSF gives customers an alternative to exclusive reliance on UP along this important corridor. If UP and NS were to merge, however, this constraint would diminish. The combined carrier would have an incentive to favor its own routes between the West and Southeast and less incentive to support a competing BNSF connection.

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[88] Redd VS, ¶ 153 ("If it does approve the merger, the Board should impose conditions aimed at ensuring that Applicants' merger does not disrupt the efficient function of the New Orleans gateway and enabling direct interchange among all carriers at New Orleans via the Back Belt.").

[89] Gameiro VS, ¶ 181 ("The MSLLC agreements granted NS {{REDACTED }} to so-called 'NS Traffic,' a defined category of specified intermodal traffic moving via the Speedway between points in the United States west of Dallas-Ft. Worth and points in the United States at or east of Meridian, including qualifying through traffic that does not require a Wylie lift or drop, subject to the governing agreements' definitions and exclusions.").

[90] Brooks VS, ¶¶ 224–225 ("Today, NS's primary interline partner for this exclusive traffic is UP. … NS is not limited to working with UP, however. Just as CPKC has developed good working relationships with both NS and CSXT … NS has the right to work with BNSF as well as UP for the so-called 'NS Traffic' between California and the Southeast.").

49. To avoid this, CPKC requests modifications to existing contractual restrictions, which would allow it to support these interline options via the Speedway involving BNSF that UP-NS would have reduced incentives to support. Specifically, CPKC would be freed to participate in interline traffic handed off between BNSF and CPKC in the vicinity of Dallas and handed off between CPKC and CSXT at Myrtlewood, Alabama (east of Meridian).[91] CPKC additionally requests a release from "obligations to NS under the DTMA … to give NS a two-week {{REDACTED }} on the movement of 'Dallas Intermodal Terminal Traffic.'"[92] If UP acquired NS, a combined UP-NS would have an increased incentive to foreclose competition for this intermodal traffic to or from Wylie Intermodal Terminal (including competition which CPKC provides), relative to a standalone NS.[93] Under CPKC's proposed conditions, Applicants would retain their underlying transportation rights and remain free to compete for traffic, but the availability of interline options involving CPKC, BNSF, and CSXT would be protected, mitigating UP-NS's increased incentive to foreclose use of the Speedway.

50. Beyond this, I understand that Applicants anticipate using the Meridian Speedway and the Meridian Terminal for additional traffic in the event that the merger is

[91] CPKC Comment Vol. II, p. 222 ("NS's exclusive commercial rights over certain transcontinental intermodal traffic limit CPKC's ability to develop competing service with other connecting carriers. Removing that exclusivity would preserve the potential for competing transcontinental service involving BNSF, CPKC, and CSX after the merger."), p. 223 ("To maintain that pro-competitive purpose if UP takes over NS, the Board should authorize CPKC to solicit, price, interchange, transport, or arrange competing intermodal service over the Speedway with BNSF, CSX, or another lawful connecting carrier.").

[92] Gameiro VS, ¶ 224.

[93] Gameiro VS, ¶ 224 ("When this arrangement was implemented, NS did not reach Dallas and so was willing to cooperate with KCSR in trying to market domestic intermodal traffic from Dallas to the east.").

approved.[94] Therefore, CPKC also requests that the Board require UP-NS to provide the capacity and operational infrastructure required before its additional traffic or changed operations would materially impair other authorized service, including that of CPKC.[95] I understand that this request, in combination with service-assurance requirements and targeted dispatching protections,[96] will help preserve commercially reliable interline options.[97] Requiring Applicants to address the delay and capacity costs their plans impose on others would constrain the foreclosure mechanism described in Majure VS Vol. I, Section 4.

51. In combination, these requests will help maintain competitive options on the Meridian Speedway and operational functionality of the Meridian Terminal. These

[94] Redd VS, ¶ 33 ("Applicants themselves say they will save 70-95 hours by routing other intermodal traffic onto the same Meridian Speedway routing: '[B]y routing traffic via Shreveport and Meridian rather than via Memphis, UP-NS will save approximately 70 hours of transit time on traffic moving from Southern and Northern California to the Southeast, including Georgia, Florida, and North Carolina, and approximately 95 hours on traffic moving in the opposite direction.'").

[95] CPKC Comment Vol. II, p. 227 ("The Board should require Applicants to provide, fund, and maintain the capacity and operating adjustments necessary to prevent material impairment of CPKC, Amtrak, short-line, and other authorized operations, with the work phased and completed before the adverse impacts it is intended to prevent occur, as specified in Section VIII.D.3(a). Monitoring, expedited enforcement, and preventive and corrective measures should secure compliance with those affirmative obligations, with the proposed additional dispatching remedy addressed in Section VIII.D.3(c).").

[96] CPKC Comment Vol. II, p. 231 ("Under Section VI.B, Applicants should amend or supplement relevant instruments, including the applicable MSLLC Joint Use, Operating, and LLC Agreements and the Meridian interchange, terminal, and dispatching instruments and protocols, and procure all necessary assents, to implement the capacity, operating, monitoring, and contingent dispatching obligations imposed here while preserving existing CPKC authority and MSLLC service standards except as expressly modified.").

[97] Mr. Redd describes how increased NS traffic from New Orleans to Birmingham will "bottle up" the Speedway. Redd VS, ¶ 133 ("By delaying those movements, NS's added New Orleans-Birmingham trains would also bottle up the Speedway and CPKC's own operations in both directions there.").

conditions do not remove options for any existing traffic and would not be anticompetitive.

2.6.4. Dallas-Fort Worth (Wylie Intermodal Terminal)

52. In its responsive application, I understand that CPKC has proposed for the Board to prevent UP-NS from acquiring or controlling the Wylie Intermodal Terminal {{REDACTED }}, and in the event NS has acquired CPKC property prior to the consummation of UP-NS control, a condition to require the restoration of CPKC's ownership, operation, and independent control of the Terminal {{REDACTED }}.[98] CPKC currently moves traffic through the Wylie Intermodal Terminal and uses it to compete with UP for intermodal traffic to and from the Dallas area.[99] NS holds a contractual option to acquire the Wylie Intermodal Terminal, and it notified CPKC in February 2025 that {{REDACTED }}.[100] {{REDACTED }}, and today the Wylie Intermodal Terminal and surrounding property remain owned

[98] CPKC Wylie Responsive Application, pp. 4–5 ("The Board should therefore preserve or restore CPKC's ownership, operation, and independent control of the WIT by terminating the option if not yet consummated or, if UP/NS has acquired the WIT, require UP/NS to reconvey covered interests acquired and preserve or restore lawful pre-exercise commercial and operating arrangements, subject to the traffic reforms ordered here, while unwinding acquisition-dependent conversions inconsistent with restoration.").

[99] Brooks VS, ¶ 108 ("CPKC originates and terminates intermodal trains at its Wylie Intermodal Terminal ('Wylie') near Dallas[.]"), ¶ 231 ("CPKC supports CPKC-NS intermodal traffic but also is unfettered in its ability to compete with UP for intermodal traffic using the Wylie Terminal[.]").

[100] Gameiro VS, ¶ 214 ("One of the MSLLC agreements—the Dallas Terminal Marketing Agreement ('DTMA')—granted NS {{REDACTED }} to acquire KCSR's Dallas area intermodal terminal."), ¶ 216 ("In late February 2025, after UP and NS preliminarily discussed the possibility of merging, NS notified CPKC that {{REDACTED }}.").

and operated by CPKC.[101] Mr. Brooks states that "UP already controls two of the intermodal facilities serving the Dallas/Ft. Worth region, and if it is allowed to acquire NS, and if {{REDACTED }}, UP would own three of four Dallas-area terminals, and CPKC would own none."[102] This would give UP-NS the ability to foreclose competition, including CPKC's ability to move intermodal traffic through Dallas. Therefore, CPKC proposes to prevent such ownership of Wylie Intermodal Terminal to ensure that it remains an independent competitor in the Dallas-Fort Worth area for intermodal traffic.[103] In my opinion, this transaction would not be anticompetitive.

53. Today, the Wylie Intermodal Terminal supports CPKC's intermodal service to and from the Dallas-Fort Worth area, including competition with UP in the Mexico–Dallas and Dallas–Chicago lanes.[104] It also supports CPKC's run-through interline services to the Southeast via Meridian and with CSXT via Myrtlewood, both using the Meridian Speedway.[105]

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[101] Gameiro VS, ¶ 218 ("{{REDACTED }} Both Wylie Intermodal Terminal and the property surrounding the Terminal remain owned and controlled by CPKC. CPKC's request for merger conditions addressing the additional property—in the event that {{REDACTED }} and that UP acquires NS—does not concede {{REDACTED }}.").

[102] Brooks VS, ¶ 228.

[103] CPKC Wylie Responsive Application, pp. 4–5.

[104] Brooks VS, ¶ 108 ("CPKC originates and terminates intermodal trains at its Wylie Intermodal Terminal ("Wylie") near Dallas and runs between there and Meridian, MS, where they are interchanged with NS."), ¶ 229 ("Were UP to acquire NS, however, 100 percent of CPKC's intermodal traffic would be directly competitive with UP's Mexico-Dallas, Dallas-Chicago, and Dallas-Atlanta (legacy-NS) services.").

[105] Redd VS, ¶ 36 ("Another example of efficient run-through train services where traffic density supports handing off a complete train from one railroad to another involves the 'SMX Express' service that CPKC and CSXT interchange at Myrtlewood, Alabama … CPKC originates the train at

54. The Dallas Terminal Marketing Agreement granted NS the option to exercise an acquiring interest in Wylie Intermodal Terminal.[106] {{REDACTED

}}, UP and NS had preliminarily discussed merging, but had not yet announced it.[107] An independent NS would have less incentive than a combined UP-NS to degrade CPKC's Mexico–Dallas and Dallas–Chicago services, because NS does not provide those services.[108]

55. However, the proposed UP-NS merger would materially change the competitive incentives associated with ownership of the Wylie Intermodal Terminal. If UP-NS controlled Wylie Intermodal Terminal, it would gain an increased ability to foreclose competition for intermodal traffic in Dallas, as it would control three of the four Dallas-Fort Worth intermodal terminals. Moreover, a combined UP-NS would have an

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its Wylie Intermodal Terminal near Dallas, TX … before operating via the Speedway and Meridian to the interchange with CSXT at Myrtlewood, Alabama, where CPKC hands the train off to CSXT for movement to Atlanta and other points in the Southeast. … [T]he interchange is conducted in minutes by a step-on/step-off crew change.").

[106] Gameiro VS, ¶ 214 ("One of the MSLLC agreements—the Dallas Terminal Marketing Agreement ('DTMA')—granted NS {{REDACTED }} to acquire KCSR's Dallas area intermodal terminal.").

[107] Gameiro VS, ¶ 216 ("In late February 2025, after UP and NS preliminarily discussed the possibility of merging, NS notified CPKC that {{REDACTED }} But instead of notifying CPKC that {{REDACTED }} NS expanded its claim to include: {{REDACTED

}}"). UP and NS announced their intent to merge in July 2025. See "Union Pacific and Norfolk Southern to Create America's First Transcontinental Railroad," *Union Pacific Newsroom*, July 29, 2025, available at https://www.up.com/press-releases/growth/norfolk-southern-transcontinental-nr-250729.

[108] Brooks VS, ¶ 229 ("Thus far in 2026, {{REDACTED }} of CPKC's Wylie traffic volume moved to or from points for which NS does not currently compete, but UP does (e.g., Mexico and Minneapolis).").

increased incentive to foreclose competition, including competition CPKC provides, relative to standalone NS, since NS {{REDACTED }}, but UP does.[109] With the merger, acquiring the terminal would therefore place facilities needed to support those CPKC services under the control of a competitor with significant incentives to divert the traffic to its own network.

56. Moreover, NS's continuing {{REDACTED }} would not eliminate that concern.[110] The obligation would preserve specified handling rights but would not preserve CPKC's ability to compete independent of control by its competitor over the facilities, operating resources, and development opportunities needed to compete and respond to customers' changing needs. Terminal-service priorities can themselves affect competition: in discussing {{REDACTED }}, NS's Chief Strategy Officer, Michael McClellan, {{REDACTED }}.[111]

[109] Mr. McClellan, the Chief Strategy Officer at NS, {{REDACTED }}. See Deposition of Michael R. McClellan (Chief Strategy Officer, Norfolk Southern Corporation), October 9, 2026 ("McClellan Deposition"), pp. 356:3–11 {{REDACTED }}. And as Mr. Brooks explains, a combined UP/NS would compete directly with CPKC's intermodal services in those lanes and in the Mexico–Dallas, Dallas–Chicago, and Dallas–Atlanta lanes. See Brooks VS, ¶ 229 ("Thus far in 2026, {{REDACTED }} of CPKC's Wylie traffic volume moved to or from points for which NS does not currently compete, but UP does (e.g., Mexico and Minneapolis). Were UP to acquire NS, however, 100 percent of CPKC's intermodal traffic would be directly competitive with UP's Mexico-Dallas, Dallas-Chicago, and Dallas-Atlanta (legacy-NS) services.").

[110] Gameiro VS, ¶¶ 220–221.

[111] McClellan Deposition, p. 355:7–11 {{REDACTED }}, pp. 357:20–358:15 {{REDACTED

57. {{REDACTED

}}. {{REDACTED

}}[112] In June 2025, NS told UP that it was {{REDACTED }}[113] Mr. Lehlbach, AVP of Strategic Planning at NS, explained that the {{REDACTED

}}[114] And Mr. McClellan, Chief Strategy Officer at NS, explained that {{REDACTED

}}[115] Taken together, this evidence

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[112] {{REDACTED }} NS_00181115–9, at NS_00181118 {{REDACTED }}

[113] {{REDACTED }} NS_STB_00001394–6 at NS_STB_00001394 {{REDACTED }}.

[114] Deposition of David Lehlbach (Assistant Vice President, Strategic Planning, Norfolk Southern Corporation), September 10, 2026, pp. 340:20–341:3 {{REDACTED }}, p. 342:6–13 {{REDACTED }}.

[115] McClellan Deposition, pp. 365:18–366:7 {{REDACTED

{{REDACTED

}} UP would acquire that leverage along with broader incentives to divert CPKC's traffic to its own network.

58. {{REDACTED

}}.[116]

59. Preserving or restoring CPKC's independent control would address both the broader post-merger incentives to impair intermodal competition {{REDACTED }} allowing CPKC to compete with a combined UP-NS. Additionally, preservation or restoration of CPKC's control would not itself require changes in existing traffic or

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[116] Gameiro VS, ¶ 221 ("{{REDACTED

}}, NS would be obligated to handle only CPKC intermodal traffic on any of the property NS acquired. CPKC's ability to continue those services could depend on obtaining additional rights or operating arrangements from NS or, after the merger, UP. The existing intermodal handling obligation therefore does not resolve the competitive harm threatened by NS's claims to the additional property."); Brooks VS, ¶ 230 ("In addition, CPKC's non-intermodal facilities at Wylie support substantial business that is also directly competitive with UP. CPKC moves a substantial amount of carloads through Wylie across a range of industries, including pulpboard and fiberboard, finished automobiles, trucks, Portland cement, kiln-dried lumber, and carbon dioxide. … If NS prevailed, it would threaten CPKC's ability to provide this non-intermodal service at Wylie.").

routings.[117] Shippers would benefit from retaining an independent Class I option, and Applicants would remain free to compete using their own facilities. By preserving competition that intermodal shippers in the Dallas-Ft. Worth area currently enjoy, the proposed transaction would not harm competition.

2.6.5. Kansas City gateway

60. A combined UP-NS would have an increased ability and incentive to preference its own service through the Kansas City gateway and foreclose interline options with other Class I railroads by degrading investment in this gateway, as well as by degrading its efficiency and operations.[118]

61. I understand that CPKC has requested several conditions aimed at preserving efficient operations in the area of the Kansas City Gateway,[119] including a responsive application for operating rights in the Kansas City Terminal via the Incline Track Route

[117] Brooks VS, ¶ 231 ("A condition requiring that UP relinquish to CPKC any rights NS might ultimately acquire in the Wylie Terminal would restore the current competitive environment, in which CPKC supports CPKC-NS intermodal traffic but also is unfettered in its ability to compete with UP for intermodal traffic using the Wylie Terminal, without simultaneously relying on UP to help CPKC compete with it.").

[118] This could come in the form of disinvestment or in the favoring of investments which preference UP-NS's single-line service. Mr. Gameiro notes, "[f]or example, UP could withhold approval for a critical infrastructure project until KCT agreed to revise its dispatching protocols or operating rules in a manner that UP believed would better support its planned operations, regardless of the impacts on other railroads serving the Kansas City Terminal." See Gameiro VS, ¶ 122.

[119] CPKC Comment Vol. II, p. 259 ("The Board should require Applicants to reduce or restrict the exercise of UP's voting power sufficiently that UP cannot alone force or block KCT action. If Applicants divest KCT shares to an independent railroad group outside KCT's pre-merger ownership group, the condition should also prevent UP together with any single other railroad-owner group from forcing or blocking action. A transfer to an existing independent owner, CPKC or BNSF, would remain subject to the first requirement.").

and preservation of CPKC's rights on the Polo Line (which I discuss in more detail below). These conditions aim to retain the current competitive state of the gateway by limiting the risk that UP-NS could foreclose competition. CPKC also requests monitoring and remediation conditions which would be triggered if performance degraded at KCT.[120] These governance protections would limit a combined UP-NS's ability to foreclose competition by, e.g., blocking investments or conditioning its support on operating concessions that disadvantage competing routes. Permanent monitoring and prompt corrective measures (backed by springing dispatch and Applicants-funded capacity relief) would mitigate a separate risk: additional UP-NS movements consuming capacity needed for competing services. Requiring Applicants to bear the costs of remedying their merger-related impacts would reduce their ability to shift those costs to competing railroads and their customers. In my opinion, these conditions would preserve (rather than impair) competition.

[120] CPKC Comment Vol. II, p. 259 ("The Board should require permanent gateway-specific monitoring, including measurement of track occupancy and delay associated with UP–NS movements between KCS Junction and Birmingham; prompt corrective operating measures when Applicants' operations impair terminal fluidity; and a binding Applicants-funded obligation to provide sufficient capacity to offset merger-related impacts when the applicable trigger under Section VIII.F.5 is satisfied. The existing Truman Bridge truss cannot accommodate an additional track; adding a main track at that crossing would require a new parallel span. Required relief should include double tracking the route between KCS Junction and Birmingham, including a new bridge parallel to the Truman Bridge; coordinated dispatching and signal-control arrangements; rerouting sufficient UP–NS trains via an alternative route between legacy-UP's 18th Street Yard and Birmingham, including via the Hannibal Bridge, to restore pre-merger levels of fluidity; and the Gateway connection and other remedial measures specified in Section VIII.F.5.").

(1) The Kansas City Incline Track Route and Polo Line

62. In its responsive application, I understand that CPKC has proposed for the Board to impose two conditions pertaining to CPKC's and UP's operations in the Kansas City area:

a. "Require [UP] to confirm, or grant outright, rights to traverse certain trackage in the Kansas City Terminal, including the so-called 'Incline Track,' to connect CPKC's Knoche Yard with KCT trackage on the west side of the Terminal; and"[121]

b. "Prohibit UP from terminating the Polo Line agreement and require other adjustments to CPKC's rights over that trackage."[122]

63. If UP and NS were to merge, a combined UP-NS would have an incentive to preference its own service through Kansas City, rather than interchanging other carriers. I describe below how CPKC's requested conditions would prevent UP-NS from acting on those incentives, preserving CPKC's (and other railroads') ability to offer competitive options for shippers.

64. CPKC's first requested condition would provide CPKC with confirmed access to a more direct UP-owned route that connects CPKC's Knoche Yard to BNSF's facilities on the western side of the Kansas City Terminal and local customers served by KCT.[123]

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[121] CPKC KCT/Polo Line Responsive Application, p. 1.

[122] CPKC KCT/Polo Line Responsive Application, p. 1.

[123] CPKC KCT/Polo Line Responsive Application, p. 1; Redd VS, ¶ 242 ("A condition confirming (or granting) CPKC's right to operate on UP trackage between Troost Avenue and a connection with Kansas City Terminal Railway ('KCT') trackage at Broadway … would enable the restoration of an efficient route that CPKC historically used to operate between Knoche Yard on the east side of the

CPKC had access to this connection until 2024, when UP cut off its use (a change CPKC disputes).[124] Without access to this more direct connection, CPKC must take a more circuitous route that lowers its service quality and increases its cost of service, which makes it harder for CPKC to offer competitive interlines with BNSF and compete for the traffic of local customers served by KCT.[125]

65. CPKC's second requested condition would preserve the Airline Junction–Polo paired-track arrangement for a 999-year term, including protection against material impairment and UP's corresponding access to CPKC-owned track.[126] If UP were to revoke, alter, or otherwise worsen this arrangement for CPKC by lowering CPKC's service quality and increasing the cost of its service, it would be harder for CPKC to offer competitive service north of Kansas City.[127] UP's existing maintenance

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Kansas City Terminal and points on the west side of the Terminal, including customer facilities served by KCT and interchange with BNSF at its Argentine Yard.").

[124] Gameiro VS, ¶ 51 ("In February 2024, UP announced its refusal to allow CPKC and BNSF to operate via the Incline Track, effective as of March 5, 2024. In February 2026, CPKC requested that UP allow CPKC to resume use of its rights to the Incline Track. While UP acknowledged CPKC's right to use the tracks and facilities covered by the 1984 Lease, UP disputed that the leased premises included the Incline Track.").

[125] Redd VS, ¶ 248 ("In summary, UP's blocking CPKC and BNSF from interchanging via the KCT Incline Track/North End Freight Line route would make CPKC-BNSF interchange less safe, less reliable and much less efficient, leading to additional yard congestion and congestion on the busy KCT Transcon line.").

[126] CPKC KCT/Polo Line Responsive Application, pp. 4–5; Gameiro VS, ¶ 155 ("As described above, under the Airline Junction-Polo paired-track arrangement, UP and CPKC use parallel tracks between Airline Junction and Polo as an integrated operating corridor. CPKC operates today over the UP-owned portion of the paired trackage.").

[127] Gameiro VS, ¶ 68 ("This trackage is vital to CPKC's main-line operations going north from Kansas City to Chicago and the remainder of the northern portion of CPKC's network. It is likewise critical to CPKC traffic from points north of Kansas City to points south of Kansas City.").

deficiencies and slow orders illustrate how reduced service quality can weaken CPKC's competitive offering, even while the agreement remains formally in place.[128]

66. By preserving CPKC's and other Class I railroads' ability to offer competing interline options for local traffic and traffic interchanging at Kansas City, these conditions will preserve (rather than impair) competition.

2.6.6. St. Louis gateway

67. A combined UP-NS would have an increased ability and incentive to preference its own service through the St. Louis gateway and foreclose interline options with other Class I railroads, by decreasing its investment in terminals and degrading their efficiency and operations. In particular, the merger would make "TRRA even more important to parties other than the Applicants,"[129] giving a combined UP-NS an increased ability (and incentive) to use its influence over TRRA to foreclose competition. To address this risk, CPKC has requested governance protections, commercially effective access through TRRA and surrounding UP-controlled facilities,

[128] Gameiro VS, ¶ 70 ("CPKC also noted that UP has had as many as nine to 15 slow orders in effect over this territory, resulting in ongoing operational delays and concerns.").

[129] Gameiro VS, ¶ 132 ("The merger would also shift St. Louis switching away from TRRA and onto UP-controlled facilities. Under Applicants' Operating Plan, eastbound UP-NS manifest traffic that the UP-owned Alton & Southern ('A&S') now hands to TRRA for blocking would instead be blocked at A&S's Gateway Yard, and intermediate manifest switching now performed at NS's Luther Yard would also move to Gateway Yard. Simultaneously, Applicants plan to run longer trains, including by increasing train lengths of legacy NS trains. Already, CPKC experiences delays due to over-length trains moving between the A&S and UP at Valley Junction and over TRRA track. Since June 2025, those delays have caused approximately 16 recrews on CPKC trains. This will only increase when UP folds NS traffic into its own. This makes TRRA even more important to parties other than the Applicants.").

and permanent monitoring backed by corrective measures and Applicants-funded remediation.[130] These conditions aim to retain the current neutrality of these terminals, limiting the risk that UP-NS could foreclose competition. CPKC also requests monitoring and remediation conditions which would be triggered by degradations in performance.[131] Together, these access and operating protections would help ensure that competing carriers' formal rights remain usable competitive options.

2.6.7. Kansas City – St. Louis Corridor: Missouri and TRRA

68. I understand that CPKC has submitted two responsive applications in which it proposes to acquire trackage rights, which would grant its subsidiary KCSR trackage rights and direct access to customer facilities:

[130] CPKC Comment Vol. II, p. 291 ("Accordingly, the Board should impose an integrated package of St. Louis Gateway conditions that: 1. requires Applicants before consummation to implement arrangements preventing any matter put to a TRRA vote from being voted up or down solely by UP or by UP together with any single other independent owner group, whether or not Applicants divest NS's interest; 2. preserves neutral, reasonable, nondiscriminatory, and commercially effective access through TRRA and the broader St. Louis Gateway; and 3. requires corridor-specific monitoring, prompt corrective operating measures, and Applicants-funded remediation if merger-related traffic or resource decisions materially impair service or capacity over shared gateway infrastructure.").

[131] CPKC Comment Vol. II, p. 298 ("The Board should therefore require gateway-specific monitoring, reporting, and enforceable corrective-action requirements to be in place before consummation and effective from consummation, with remedies administered under Section V. Existing services should be measured against a transparent and representative pre-merger baseline; new services should be measured against benchmarks reflecting the authorized operating plan, customer requirements, and comparable operations. The covered infrastructure should include, at a minimum, the MacArthur and Merchants Bridges and the terminal routes, approaches, interlockings, connections, yards, and interchange facilities on which competing services depend[.]"), pp. 298–299 ("When a warning or breach threshold is crossed, Applicants should promptly disclose the supporting data and cause assessment, consult with TRRA and affected carriers, and carry out the response prescribed by the Board-adopted procedures, including investigation, prevention, or corrective action as appropriate.").

a. CPKC requests access to NS's line from the CPKC–NS connection at Mexico, MO to NS–TRRA connection in St. Louis, along with access to shipper facilities along the line (via reciprocal switching or direct access).[132]

b. CPKC requests "close-the-gap" rights from the NS-TRRA connection in St. Louis to beyond CP Junction in East St. Louis, where it can connect with its own trackage and interchange with other carriers.[133]

69. Combined, the trackage rights granted by these transactions would allow CPKC to offer a new, shorter routing between the St. Louis area and Kansas City (through connections with its existing track between Mexico, MO and Kansas City).[134] This routing would enable CPKC to compete more effectively with a combined UP-NS, who

[132] CPKC Comment Vol. II, p. 311 ("To address the competitive harms identified above, the Board should require Applicants to grant CPKC overhead trackage rights over NS's line between CPKC's connection with NS at Mexico, Missouri, and NS's connection with the TRRA in St. Louis, Missouri, together with authority to serve shippers accessible from that route through reciprocal switching or direct local service, at CPKC's election."); CPKC Missouri Responsive Application, p. 5 ("CPKC seeks overhead and local/full-service rights over NS's line from the CPKC-NS connection at Mexico, Missouri (approximately NS Milepost S 110.2), to NS's connection with TRRA at or near May Street in St. Louis. Those rights would include authority to serve the General Motors facility at Wentzville, MO, and other shipper facilities adjacent to or served via the NS line over which KCSR would obtain trackage rights, together with access to other NS trackage (*e.g.*, yard, switching, staging, interchange, and other incidental rights) as may be necessary to serve local customers and interchange traffic with TRRA at St. Louis.").

[133] CPKC TRRA Responsive Application, pp. 4–5 ("CPKC seeks close-the-gap rights over TRRA from the NS-TRRA connection in St. Louis, which CPKC believes is referred to as 'May Street,' across the Merchants Bridge to CP Junction in East St. Louis. CPKC also seeks expanded rights on TRRA segments in East St. Louis beyond CP Junction so that it can connect with its own trackage and interchange with other carriers, including the additional terminal access needed to reach KCSR's East St. Louis Yard and CSXT's Rose Lake Yard.").

[134] Redd VS, ¶¶ 210–211 ("New trackage rights between Mexico, MO and East St. Louis would provide CPKC the ability to enhance competition with a more direct route that is faster and about 45 miles shorter than its existing route via Roodhouse, IL. … CPKC's use of the new route for its Kansas City-St. Louis trains would be carried out without downgrading the quality of service CPKC offers to customers served by its lines east of Mexico, MO (*i.e.,* Mexico-to-Springfield and Roodhouse-to-East St. Louis.)").

would otherwise control both premier routes between these cities.[135] Further, sole-served shippers on the track between St. Louis and Mexico, MO would benefit from a new Class I option (without removing any existing options).[136] In my opinion, this transaction would not have any anticompetitive effects and would preserve or enhance competition on multiple fronts.

70. First, UP and NS operate the two best routes between Kansas City and St. Louis, while CPKC's current alternative is less direct.[137] Competition on this route currently

[135] Brooks VS, ¶ 216 ("Kansas City and St. Louis are two of the most important Mid-Continent gateways and major industrial hubs. Today, UP and NS each operate direct routes between those cities and compete for traffic in that corridor. CPKC's former Gateway Western route connects these cities via Roodhouse, IL, a materially less direct route. The merger would place the two best routes under common control."). This differs from the rights described in Applicants' settlement with CN. I understand that the agreement gives CN limited rights over UP's track—but UP would maintain control of the track and therefore would still have the ability to act on its incentive to foreclose other Class I railroads in the corridor. See Applicants' Second Response to Decision No. 21, Attachment 1, Binding Settlement Memorandum of Understanding Regarding Proposed UP/NS Transaction, July 22, 2026. I also understand that CN would not have rights to local customers of NS in the St. Louis–Kansas City corridor. Applicants' Second Response to Decision No. 21, Appendix B, Commercial Terms for Haulage Arrangements for the Kansas City Line at Supp. p. 215 ("Kansas City Line: St. Louis to Kansas City. … To implement the local haulage, Local customer access shall be limited to the specified UP route and shall not extend to customers located on the NS line."). In comparison, CPKC would offer an alternative that is largely based on its own track and would be able to independently offer another Class I option to customers on the NS track where it is requesting rights. As such, I focus my discussion of CPKC's request on the loss of competition from a combined UP-NS's control of premier routes in this corridor.

[136] Brooks VS, ¶ 221 ("CPKC's access to GM's assembly plant at Wentzville (which is currently solely-served by NS) would make a particularly meaningful contribution to improving the post-merger competitive environment. … By providing GM with a rail transportation option other than UP, CPKC's access to this facility would help counteract the increased stranglehold that UP would have over this important shipper."); Redd VS, ¶ 218 ("CPKC has proposed to gain access to shipper facilities located between Mexico, MO and St. Louis. CPKC anticipates that this access would be via reciprocal switching service provided by NS via NS's local serving yards at St. Louis (Luther Yard) and Wentzville, MO.").

[137] Brooks VS, ¶ 216 ("Kansas City and St. Louis are two of the most important Mid-Continent gateways and major industrial hubs. Today, UP and NS each operate direct routes between those cities and compete for traffic in that corridor. CPKC's former Gateway Western route connects these cities via Roodhouse, IL, a materially less direct route. The merger would place the two best routes under common control.").

pits UP and NS against one another for this corridor, but this competition would vanish in the event of a merger. By shortening CPKC's route and improving its transit performance, the proposed trackage rights would strengthen an independent Class I alternative to offset some of the competition lost when UP and NS cease competing in this corridor.[138]

71. Second, if UP and NS merge, a combined UP-NS would have the incentive and ability to foreclose interline competition for movements west from sole-served facilities along NS's St. Louis-Kansas City line, where customers have access to UP, BNSF, and CPKC via interchange at Kansas City. By granting these shippers access to CPKC—an independent Class I carrier with an incentive to compete—CPKC's requests would give eligible current and future customers on, adjacent to, or served via the NS line between Mexico, MO and St. Louis, MO another Class I option, supported by the requested connections between St. Louis, MO and East St. Louis, IL.[139]

72. CPKC estimates this transaction would enable it to carry approximately {{REDACTED}} incremental carloads per year by Year 3 from new shipper access.[140]

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[138] Redd VS, ¶ 210 ("New trackage rights between Mexico, MO and East St. Louis would provide CPKC the ability to enhance competition with a more direct route that is faster and about 45 miles shorter than its existing route via Roodhouse, IL.").

[139] Although the requested grant would authorize direct service, CPKC anticipates using Applicants' switching services to assemble and interchange traffic. Enforceable switching standards would therefore be necessary to make that additional commercial option effective. Redd VS, ¶ 218 ("CPKC anticipates that this access would be via reciprocal switching service provided by NS via NS's local serving yards at St. Louis (Luther Yard) and Wentzville, MO."). See also CPKC Comment Vol. II, p. 314 ("When CPKC elects reciprocal switching, eligible online traffic should receive switching at Luther Yard and/or Wentzville, where operationally appropriate, on reasonable, nondiscriminatory terms and under Section V's service standards.").

[140] Brooks VS, ¶ 222 ("With local shipper access to customers on NS's St. Louis-Mexico line, I anticipate that CPKC would attract approximately {{REDACTED}} incremental annual loads:

Based on Dr. Bailey's Six-Railroad Tapes Data from 2019 to 2024, CPKC's estimate of incremental traffic amounts to {{{REDACTED}}} of all traffic originating or terminating from the relevant stations, regardless of the other endpoint of the movement. Of traffic originating or terminating from these stations, {{{REDACTED}}} of it originates or terminates in BEAs that CPKC serves, suggesting the estimated carloads may be up to {{{REDACTED}}} of traffic that CPKC could single-line to its destination if this transaction took place.[141] These estimates suggest a reasonable estimate of credible competition for the business of these shippers. Based on CPKC's estimates and my own analysis, this transaction is likely to preserve competition.

2.6.8. Chicago gateway

73. The Chicago gateway is one where UP-NS is especially likely to impair competition, particularly competition CPKC provides. It is an important area of interconnections between eastern, western, and Canadian railroads, handling nearly a third of U.S. rail freight.[142] Delays and congestion around Chicago have far-reaching

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approximately {{REDACTED}} newly handled loads at Wentzville, MO and approximately {{REDACTED}} loads to/from shipper facilities west of Wentzville (comprised of {{REDACTED}} newly handled and {{REDACTED}} extended-haul loads).").

[141] See workpaper 1. I calculate this percentage as a share of total originating or terminating traffic at relevant stations in Dr. Bailey's Six-Railroad Tapes Data. I identify relevant stations between Wentzville, MO and Mexico, MO as stations in the following Missouri counties: Audrain, Montgomery, Warren, and St. Charles, where the carrier is NS and the station is associated with at least one shipper from which Mr. Brooks estimates incremental traffic, according to the Brooks VS (Brooks Traffic Volume Projection Workpaper (HC).xlsx) {{REDACTED
}}.

[142] Redd VS, ¶ 138 ("Chicago is the principal interchange point connecting the major eastern, western, and Canadian railroads—and handles roughly one-third of U.S. rail freight[.]").

effects and can lead to disruptions across interconnected rail networks.[143] A combined UP-NS would have increased influence over Chicago operations including the IHB, BRC, and the Clearing Yard.[144] These particular assets—that today support efficient interconnections between various railroads—could be degraded or denied to competitors if UP-NS can influence or control them.[145] Further, CPKC does not outright own all of the tracks and yards it uses to move through Chicago; rather, it depends on UP-owned, NS-owned, and jointly-owned tracks and yards.[146] This makes

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[143] Redd VS, ¶ 138 ("History shows that operational disruption affecting the Chicago gateway poses a serious threat to the health of rail operations across the entire continent. … Because Chicago is the principal interchange point connecting the major eastern, western, and Canadian railroads—and handles roughly one-third of U.S. rail freight—delays there do not remain local: trains back up on lines approaching Chicago, equipment and crews fall out of cycle, and congestion propagates outward across interconnected railroad networks.").

[144] Gameiro VS, ¶ 101 ("By consolidating UP's and NS's ownership interests in BRC, Applicants would control outright four of the 12 votes on the BRC Board … Four of twelve votes would not, by themselves, allow UP to block a decision requiring {{REDACTED }}. But UP would need only {{REDACTED }} to withhold support to prevent approval. UP's expanded commercial relationship with CN, including their shared interest in the EJ&E bypass route, creates a material risk that their interests would align on decisions affecting investment in BRC."), ¶ 111 ("As can be seen in Table 3 above, the only way for IHB to promptly and reliably obtain shareholder or board of directors approval to act on matters requiring that approval is *for NS to agree* to that course of action. Even if CSXT and CPKC agree, the matter would not go forward because NS's disapproval would effectively mean a negative vote of the Conrail shares.").

[145] Redd VS, ¶ 60 ("Clearing Yard is a vital and efficient facility that saves time and resources that would have to be devoted to the processing of railcars elsewhere … Because Clearing Yard sits in the center of the Chicago Terminal and serves as a 'clearinghouse' … for traffic moving through the terminal, it very efficiently consolidates traffic flows from multiple sources and distributes them optimally to multiple recipients without unnecessary fragmentation or duplication of effort."); Gameiro VS, ¶ 100 ("CPKC and other carriers depend on BRC for efficient interchange across the terminal to connect with the smaller carriers that serve the Chicago area."), ¶ 113 ("[B]oth CSXT and NS are motivated to support IHB providing efficient and neutral connections with western carriers at Chicago. The proposed UP-NS transaction, however, would transfer NS's interest in Conrail's IHB shares to UP[.]").

[146] Redd VS, ¶ 142 ("CPKC depends on Clearing for its interchange of manifest traffic with CSXT, BNSF, CN, and many other smaller carriers at Chicago."), ¶ 147 ("CPKC also depends on efficient access to UP's 'Techny Line' to connect Bensenville Yard with CPKC's route between Chicago and the Twin Cities."), ¶ 253 ("CPKC's rights over those NS lines connect with the Belt Railway of Chicago at CP 509 and with the Indiana Harbor Belt via rights over NS between CP 502 and IHB's Gibson Yard[.]").

it particularly vulnerable to a combined UP-NS's ability to foreclose it from efficiently moving traffic through this important gateway.

74. CPKC's requests conditions in and around Chicago would discourage UP-NS from abusing its position in this area to impair competition. The first set of conditions would restrict UP-NS from combining existing voting rights of standalone UP and standalone NS and potentially gaining and exercising control of IHB, BRC, and Clearing Yard.[147] These conditions would help ensure proper governance of the IHB and BRC, and would help prevent a combined UP-NS from using its increased influence at IHB and BRC to foreclose competition or from using facilities like the Clearing Yard to degrade interline interchanges.[148] Based on the operating plan submitted by Applicants, the

[147] CPKC Comment Vol. II, p. 325 ("The Board should address the IHB governance risk through either separately exercisable CSX and NS voting interests or mandatory affirmative or negative voting direction based on the positions of a majority in number of the other independent owner groups. It should separately reduce Applicants' BRC voting power sufficiently that neither Applicants alone nor Applicants together with any single other independent owner group can defeat a matter requiring a {{REDACTED }}[.]"), p. 349 ("The Board should prohibit Applicants from using Clearing or another shared Chicago facility in a manner that materially impairs neutral interchange, classification, block-building, or capacity functions for other carriers. The prohibition should encompass unnecessary storage, re-humping, repeated processing, or overflow handling of traffic that returns to the UP–NS system[.]").

[148] Gameiro VS, ¶ 113 ("The proposed UP-NS transaction, however, would transfer NS's interest in Conrail's IHB shares to UP, and UP would not have the same interest in IHB providing effective and neutral connection between eastern carriers like CSXT and western carriers like BNSF and CPKC."); ¶ 118 ("The only way I see to overcome this problem would be to prevent UP from obtaining NS's effective veto position with respect to IHB or to constrain UP's exercise of the governance rights acquired through NS."), ¶ 101 ("By consolidating UP's and NS's ownership interests in BRC, Applicants would control outright four of the 12 votes on the BRC Board … Four of twelve votes would not, by themselves, allow UP to block a decision requiring {{REDACTED }}. But UP would need only {{REDACTED }} to withhold support to prevent approval. UP's expanded commercial relationship with CN, including their shared interest in the EJ&E bypass route, creates a material risk that their interests would align on decisions affecting investment in BRC."), ¶ 104 ("If the Board does approve the merger, it should condition its approval on UP reducing its voting power on the BRC board of directors sufficiently so that no vote {{REDACTED }} can be voted down solely through the votes of UP directors, acting alone or together with those of any single other independent owner group. … with the proposed change UP would no longer have the ability—by itself or working with a single ally like CN—to hold up formal actions of the BRC board

changes they propose could alter and disrupt the distribution of trains, blocks, yard work, and other operations, affecting CPKC and other rail carriers (including at BRC and Clearing Yard).[149] UP-NS would have an incentive to redesign its Chicago operations in a way that degrades competitors' service, which would impair competition.

75. CPKC's second and third proposed conditions seek to protect effective access between CP 502 and IHB, including Gibson Yard, and its continued use of the Techny Line to allow for its continued ability to provide efficient service in and around Chicago.[150] According to Mr. Gameiro, "CPKC's ability to carry finished automotive traffic (currently, from Canada) between Detroit and Gibson Yard is indispensable to its ability to provide efficient transportation of that commodity. If CPKC cannot operate between Gibson Yard and points east (i.e., Detroit) because it lacks a connection via CP 502, CPKC's ability to compete would be radically diminished."[151] Moreover, CPKC's access is at heightened risk because Applicants have proposed (but

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{{REDACTED }}"); Redd VS, ¶ 143 ("UP-NS is likely to rely less on Clearing to support efficient day-to-day flows of traffic to others, but to make *greater use of Clearing* as a backstop to protect the fluidity of the UP-NS network at the expense of others.") (emphasis in original).

[149] Redd VS, ¶ 139 ("Applicants plan massive changes to rail operations in Chicago, only some of which are detailed in the Application's Operating Plan. … Applicants plan to increase traffic substantially on a route through the heart of Chicago connecting the UP and NS networks via UP's Proviso Yard, the BRC, and NS's Ashland Avenue Yard."), ¶ 143 ("UP-NS is likely to rely less on Clearing to support efficient day-to-day flows of traffic to others, but to make *greater use of Clearing* as a backstop to protect the fluidity of the UP-NS network at the expense of others. In other words, to overcome challenges faced by UP-NS in their manifest network, where new blocking patterns may stress the capacity of other facilities, UP-NS is likely to treat Clearing as a form of 'bladder' into which it would dump overflow traffic during high traffic periods."). (emphasis in original).

[150] CPKC Comment Vol. II, p. 327 ("The Board should grant and protect the operating, interchange, yard, connection, and incidental rights necessary for CPKC to enter and exit the Chicago–Detroit route at CP 502, reach Gibson Yard and other necessary IHB points[.]").

[151] Gameiro VS, ¶ 146.

not specified) a redesign of their Chicago operations in the event of a merger.[152] As a result, CPKC's requested access will allow it to remain competitive in Chicago. I understand that CPKC is submitting a responsive application for its requested conditions regarding the Techny Line, which I discuss in more detail below.

(1) Techny Line

76. In its responsive application regarding the Techny Line, I understand CPKC requests a condition preventing UP from "terminating, suspending, declining to renew, restricting, narrowing, or materially impairing" CPKC's trackage and operating rights over its Techny Line, between Bryn Mawr, Illinois and CPKC's Tower A20.[153] CPKC has also proposed adjusted trackage rights terms that preserve its pre-merger access and capacity on the Techny Line, accompanied by service protections and springing dispatch rights if UP does not dispatch effectively.[154] This transaction seeks to maintain pre-merger conditions on the Techny Line and thus allow CPKC to continue to act as

[152] Redd VS, ¶ 139 ("Applicants plan massive changes to rail operations in Chicago, only some of which are detailed in the Application's Operating Plan.").

[153] CPKC Techny Responsive Application, p. 1 ("Specifically, this Responsive Application seeks: (1) a condition prohibiting Union Pacific Corporation and Union Pacific Railroad Company ('UP') and their successors from terminating, suspending, declining to renew, restricting, narrowing, or materially impairing CPKC's existing trackage and operating rights over UP's 'Techny Line' between Bryn Mawr, Illinois (near CPKC's Bensenville Yard) and CPKC's Chicago & Milwaukee Subdivision near Tower A20, including by requiring amendment of the Techny Line Agreement to conform its term and termination provisions to that protection[.]").

[154] CPKC Techny Responsive Application, p. 1 ("Specifically, this Responsive Application seeks: … (2) adjusted trackage rights terms preserving CPKC's practical access to and capacity on the Techny Line at no less than a representative pre-merger baseline, backed by enforceable service protections and a springing transfer of dispatching responsibility to CPKC upon failure to attain the adopted target over a {REDACTED} cure period after notice of initial violation.").

an effective and efficient competitor in this area.[155] As such, it would preserve rather than impair competition.

77. According to Mr. Redd, "CPKC is a major user of UP's Techny Line" today.[156] The Techny Line allows CPKC to route freight traffic efficiently through and around Chicago by avoiding commuter lines.[157] CPKC has been using the Techny Line to efficiently route freight traffic {{REDACTED }}, but the {{REDACTED }}.[158] This transaction would make the protected rights permanent (subject to modification by the Board) and would prohibit termination or material impairment of this efficient competing route; i.e., the transaction would prevent UP-NS from foreclosing competition.

78. Additionally, Mr. Redd explains that CPKC could readily dispatch the Techny Line,[159] in coordination with its adjoining lines. According to Mr. Redd, "doing so would be more efficient" and would "avoid delays to CPKC, Metra, and Amtrak

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[155] Redd VS, ¶ 268 ("From an operational perspective, granting the condition CPKC seeks would not change anything relative to pre-merger conditions relating to CPKC's operations between Bryn Mawr and Tower A-20.").

[156] Redd VS, ¶ 270.

[157] Redd VS, ¶ 268 ("CPKC's operations on this line connect the west end of Bensenville Yard with CPKC's Chicago & Milwaukee Division at Tower A-20. This route is important because it allows CPKC trains a route that avoids operating via Tower A-5, which requires traversing Metra's MD-W commuter line between Bensenville and Tower A-5 and Metra's MD-N commuter line between Tower A-5 and Tower A-20 (a route between Towers A-5 and A-20 that Amtrak also uses). The Techny Line is thus an important freight bypass that minimizes interference with passenger operations.").

[158] Gameiro VS, ¶ 149 ("{{REDACTED }} As a result, UP could terminate CPKC's use of the Techny Line on one year's notice any time {{REDACTED }}").

[159] Redd VS, ¶ 270 ("CPKC is a major user of UP's Techny Line. CPKC could readily support dispatching of operations over this trackage[.]").

operations at Tower A-20 that are occasioned by delays in UP dispatchers[.]"[160] CPKC requests a preauthorized transfer of dispatching responsibility in the event of a material Techny service failure based on objective criteria.[161] This condition would help prevent UP-NS from foreclosing competitive options through service degradation.

79. Preserving CPKC's existing Techny Line rights would not itself add trains or transfer ownership of the line, and the conditional dispatching remedy would address qualifying service failures while preserving neutral treatment of all authorized traffic.[162] These protections would help preserve CPKC as a competitive option to carry traffic efficiently in and around Chicago, and, as such, would not harm competition.

2.6.9. Chicago and Detroit

80. A combined UP-NS would have both increased incentive and ability to foreclose competition from CPKC between Chicago and Detroit, on the portion of NS track where CPKC currently has trackage rights, and would control the infrastructure,

[160] Redd VS, ¶ 270 ("CPKC could readily support dispatching of operations over this trackage from CPKC's dispatching center in Kansas City, and doing so would be more efficient because for the majority of trains, CPKC would already be dispatching them on CPKC's own lines south of Bryn Mawr and north of Tower A-20. CPKC expects that, if given control of dispatching on this line, its dispatchers would be able to avoid delays to CPKC, Metra, and Amtrak operations at Tower A-20 that are occasioned by delays in UP dispatchers providing CPKC freight trains with clearance to exit the Metra MD-N line onto the Techny Line, as well as delays to Metra at Tower B-17 occasioned by UP dispatchers not clearing CPKC trains onto the Techny Line at Bryn Mawr.").

[161] Redd VS, ¶ 271 ("CPKC would welcome UP's voluntary transfer of dispatching responsibility to CPKC, but CPKC is not insisting that such a transfer occur unless UP's continued dispatching generates outcomes that fall short of appropriate performance standards.").

[162] Redd VS, ¶ 268 ("From an operational perspective, granting the condition CPKC seeks would not change anything relative to pre-merger conditions relating to CPKC's operations between Bryn Mawr and Tower A-20.").

dispatching, operating rules, and capacity on which those services depend. Today, for example, NS handles Stellantis traffic for its own destinations and forwards traffic directly from the Detroit Shared Assets Area Plants to UP, BNSF, and CPKC.[163] A combined UP-NS would have incentive to preference its own routes for western destinations, including Mexico, over competing interline options for shippers.[164] In its responsive application, I understand CPKC has proposed (on behalf of itself and its subsidiary, Soo Line Railroad Company) protections for its existing Chicago-Detroit service and separate expansions of permitted traffic and access. These conditions would protect existing independent service and permit additional competition where CPKC can offer a commercially and operationally viable alternative.

81. First, CPKC seeks permanent protection against termination, narrowing, or material impairment of its existing Chicago-Detroit rights.[165] Those rights support through services connecting CPKC's Midwest and eastern Canadian operations through Chicago and Detroit. Protecting that route preserves the services already using it and

[163] Brooks VS, ¶ 54 ("Stellantis's plants in the Detroit Shared Assets Area present a related concern. On paper, those plants are served by Conrail. In practice, CSXT handles its share of the volume by trucking it to CSXT's New Boston, MI facility, while NS handles the volume for its own destinations and forwards traffic directly from the plants to UP, BNSF, and CPKC. After the merger, UP would control NS's role at these plants and could favor its own routes over BNSF, CSXT, and CPKC options for Western and Mexico destinations.").

[164] Majure VS Vol. I, Section 4.

[165] CPKC Chicago-Detroit Responsive Application, p. 3 ("[CPKC seeks] adjustments to Applicants' existing Chicago-Detroit rights and Detroit-area access, including … a prohibition on UP-NS terminating, nonrenewing, narrowing, or materially impairing CPKC's Chicago–Detroit rights[.]").

the operating foundation for the separately requested traffic and access expansions.[166] This protection does not itself grant access to additional Detroit-area customers.

82. Second, CPKC seeks removal of various MTRA restrictions on the traffic that CPKC is allowed to handle using its rights between Detroit and Chicago (as well as removal of an onerous penalty in the event CPKC were to haul automotive traffic using those rights); additional {{REDACTED }}; and authority {{REDACTED }} adjacent to the route.[167] The requested rights also protect the CP 502-IHB/Gibson connections,[168] and include enforceable service and dispatching obligations.[169] These changes would allow CPKC to compete for additional eligible traffic (including automotive and intermodal

[166] Gameiro VS, ¶ 7 ("CPKC's access over NS's Chicago-Detroit route is essential to connect CPKC's Midwest operations to CPKC's eastern Canada operations."), ¶ 8 ("[A] post-merger UP would control critical portions of CPKC's U.S. network … [including] 260.8 miles of trackage rights on NS between Chicago and Detroit[.]").

[167] CPKC Chicago-Detroit Responsive Application, p. 3 ("[CPKC seeks] adjustments to Applicants' existing Chicago-Detroit rights and Detroit-area access, including … removal of the MTRA's traffic-scope, local-service, and interchange restrictions and nullification of the automotive fee increase; [] interchange and connection rights, including access to an operationally appropriate Conrail interchange point in the Detroit area, interchange with the Ann Arbor Railroad at Milan, and the right to connect CPKC's own network or facilities with the trackage-rights line[.]"); Redd VS, ¶ 256 ("{{REDACTED }}").

[168] CPKC Chicago-Detroit Responsive Application, p. 4 ("CPKC seeks confirmation and permanence of its existing rights to enter and exit the Chicago–Detroit route at CP 502 and to operate between CP 502 and points on IHB, including Gibson Yard, and to CP 509 for any and all purposes, with the connections, terminal trackage, and incidental operating authority necessary to make the route operationally complete so that NS or its successor cannot terminate or withdraw those rights.").

[169] CPKC Chicago-Detroit Responsive Application, pp. 3–4 ("[CPKC seeks] adjustments to Applicants' existing Chicago-Detroit rights and Detroit-area access, including […] enforceable service and enforcement protections, including springing relief adequate to restore reliable service if persistent failures occur.").

traffic).[170] The conditions would also protect the practical usability of its existing through services.[171] Where CPKC has access to usable connections and reliable handling, it can provide an additional independent Class I option, which would strengthen shippers' leverage against a combined UP-NS's ability to charge higher rates or provide lower quality service.

83. While both NS and CSXT operate in Detroit today, their observed participation in the movement of finished autos {{{REDACTED }}}. Those carriers {{{REDACTED }}} for finished autos traffic, implying that CSXT has limited ability to put competitive pressure on a combined UP-NS for auto movements leaving Detroit. Based on Dr. Bailey's Six-Railroad Tapes Data from 2019 to 2024, for finished auto shipments from the Detroit BEA, NS participates in {{{REDACTED }}} and {{{REDACTED }}}, while CSXT participates in {{{REDACTED }}}, and {{{REDACTED }}}, all weighted by revenue.[172] {{{REDACTED

[170] Redd VS, ¶ 256 ("{{REDACTED

}}").

[171] Brooks VS, ¶ 214 ("CPKC attempts to participate in intermodal shipments of auto parts to/from Detroit via over-the-road movements between Detroit and our Bensenville intermodal facility outside Chicago, but drayage costs handicap our competitiveness. … Direct access for intermodal traffic to Detroit would lower drayage costs for CPKC's intermodal customers[.]").

[172] See workpaper 2. I adopt Mr. Hunt's definition of the "East," "West," and "Watershed" regions of the U.S., which are mutually exclusive and collectively exhaustive of the continental U.S. See Second Errata Verified Statement of David T. Hunt, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, September 4, 2026, Exhibit 4-8.

}}}, an additional competitive Class I option via CPKC for these movements would put downward pressure on rates and upward pressure on service quality offered by UP-NS.

84. CPKC estimates this transaction would enable it to carry {{REDACTED}} incremental annual movements by Year 3, made up of {{REDACTED}} new movements and {{REDACTED}} extended-haul movements. These movements are further broken down into "approximately {{REDACTED}} loaded auto-parts containers moving annually from Mexico and {{REDACTED}} annual return containers carrying parts racks," {{REDACTED}} annual autorack carloads, and {{REDACTED}} annual auto-parts boxcar loads; and {{REDACTED}} finished-vehicle carloads via Conrail.[173] Based on Dr. Bailey's Six-Railroad Tapes Data from 2019 to 2024, CPKC's estimate of incremental traffic (excluding empty returns) amounts to {{{REDACTED}}} of all traffic originating or terminating from the relevant stations via the Ann Arbor Interchange, regardless of the other endpoint of the movement.[174] Of traffic originating or terminating from these stations,

[173] Brooks VS ¶ 215 ("CPKC believes that the intermodal opportunity described above would encompass approximately {{REDACTED}} loaded auto-parts containers moving annually from Mexico and {{REDACTED}} annual return containers carrying parts racks. Separately, expanded interchange rights with Ann Arbor would allow CPKC to compete for approximately {{REDACTED}} annual autorack carloads and {{REDACTED}} annual auto-parts boxcar loads by Year 3. Together, these opportunities account for the {{REDACTED}} incremental annual movements identified above, consisting of {{REDACTED}} newly handled movements and {{REDACTED}} extended-haul movements. They are separate from the {{REDACTED}} finished-vehicle carloads through the Conrail interchange.").

[174] See workpaper 1. I calculate this percentage as a share of total originating or terminating traffic at relevant stations in Dr. Bailey's Six-Railroad Tapes Data. I identify relevant stations as those within a 5-mile radius of an Ann Arbor Railroad station (defined as within five miles of any SCAC equal to "AA") where the station is associated with at least one shipper from which Mr. Brooks estimates incremental traffic, according to the Brooks VS (Brooks Traffic Volume Projection Workpaper (HC).xlsx) {{REDACTED }}. Because CPKC expects to win traffic from {{REDACTED }}, I include all stations in the specified geographic area with any traffic in STCC 37 (Transportation Equipment). I include only loaded traffic as estimated by Mr. Brooks (i.e., I

{{{REDACTED}}} of it originates or terminates in BEAs that CPKC serves, suggesting the estimated carloads may be up to {{{REDACTED}}} of traffic that CPKC could single-line to its destination if this transaction took place. I similarly estimate that CPKC's estimate of incremental traffic amounts to {{{REDACTED}}} of all traffic originating or terminating from the relevant stations via the Conrail Interchange, regardless of the other endpoint of the movement. Of traffic originating or terminating from these stations, {{{REDACTED}}} of it originates or terminates in BEAs that CPKC serves, suggesting the estimated carloads may be up to {{{REDACTED}}} of traffic that CPKC could single-line to its destination if this transaction took place.[175] These estimates both suggest a reasonable estimate of credible competition for the business of these shippers.

85. Based on CPKC's estimates and my own analysis, this transaction is likely to preserve competition and give shippers a new Class I option. This additional option would strengthen the shippers' bargaining alternatives for covered movements and constrain UP-NS's ability to use dependence on these facilities to foreclose competing

exclude empty returns for consistency with Dr. Bailey's Six-Railroad Tapes data, which includes only loaded traffic).

[175] See workpaper 1. I calculate this percentage as a share of total originating or terminating traffic at relevant stations in Dr. Bailey's Six-Railroad Tapes Data. I identify relevant stations in the Detroit Area as stations in the following Michigan counties: Monroe, Wayne, Macomb, and Oakland, where the carrier is NS and the station is associated with at least one shipper from which Mr. Brooks estimates incremental traffic according to the Brooks VS Brooks Traffic Volume Projection Workpaper (HC).xlsx {{REDACTED }}. As a sensitivity, I assign relevant stations in the Detroit Area as those within a 5-mile radius of the origin locations identified by Mr. Brooks with at least one shipper from which Mr. Brooks estimates incremental traffic. This provides a qualitatively similar result.

service, as I discuss in Majure VS Vol. I, Section 5. However, it would not eliminate a combined UP-NS's leverage over all facilities and movements in a shipper's portfolio.

2.6.10. Rosemount and Fairmont, Minnesota

86. I understand that CPKC has proposed targeted conditions preventing the enforcement of paper barriers affecting the traffic it is allowed to serve using its existing operating rights and arrangements at the Roseport industrial park in Rosemount, MN and at Fairmont, MN.[176] The Roseport restriction currently limits CPKC's ability to serve customers for traffic traveling {{REDACTED }} while the Fairmont restriction limits local customer service.[177] Removing these restrictions would allow CPKC to compete for additional eligible traffic, where its existing network and arrangements provide a viable route.[178]

[176] CPKC Comment Vol. II, pp. 382–383 ("[The Board] should condition that approval on UP's targeted non-enforcement of the Rosemount and Fairmont paper barriers. For Rosemount, the condition should permit CPKC to serve otherwise eligible customers in the Roseport industrial park, including {{REDACTED }}, without the existing restrictions based on the direction or geographic origin or destination of the traffic, including movements over the legacy KCS network. … For Fairmont, the condition should permit CPKC to provide the requested local service over its existing Fairmont–Welcome route[.]").

[177] Gameiro VS, ¶ 184 ("In particular, CPKC cannot handle shipments between Roseport and {{REDACTED }}), ¶ 185 ("Between Fairmont and Welcome, MN, CPKC operated over a short stretch of trackage rights on UP. … Scroll forward, and there are now several important customers adjacent to the shared trackage that, because of a restriction inserted in the agreement in 1974, UP can serve but CPKC cannot.").

[178] Brooks VS, ¶ 233 ("CPKC's network is well positioned to compete for substantially more of Flint Hills' outbound traffic, but {{REDACTED

87. The proposed UP-NS merger would also increase a combined UP-NS's ability and incentive to foreclose competition (including from CPKC, which currently competes to carry traffic to the East—where a combined UP-NS could favor its own routes). As Mr. Brooks explains, the "merger would heighten the problem: the combined UP-NS network would extend east of Chicago and would include {{REDACTED }} of the traffic CPKC moves over Chicago, increasing UP-NS's ability to bundle and lock out competition."[179]

88. CPKC's proposed conditions would help constrain a combined UP-NS's ability to foreclose competition by giving affected shippers an additional independent Class I rail option that can serve more of a shipper's likely destinations—without removing the option that would be provided by UP-NS. This additional independent Class I option would also reduce customers' dependence on UP-NS in negotiations across their facilities and movements.[180] That benefit would partially offset the merger's broader bargaining effects; it would not restore NS as an independent eastern carrier. In my opinion, targeted removal of these restrictions would improve the affected shippers' competitive alternatives while leaving UP-NS free to compete for the same traffic.

}}").

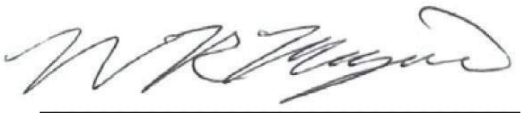
[179] Brooks VS, ¶ 234.

[180] Majure VS Vol. I, Section 5.

VERIFICATION

I, W. Robert Majure declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Further I certify that I am qualified and authorized to file this statement.

Executed this 18th day of November, 2026



W. Robert Majure

APPENDIX A

W. Robert Majure, Ph.D.
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ACADEMIC BACKGROUND

1990 – 1994 **Massachusetts Institute of Technology** Cambridge, MA
Ph.D., Economics
Specialization: Industrial Organization, Microeconomics, Econometrics
Thesis: Disequilibrium Game Theory

1986 – 1990 **University of Virginia** Charlottesville, VA
B.A., Economics and Mathematics

PROFESSIONAL EXPERIENCE

2019 – Present **Cornerstone Research, Inc.** Washington, DC
Vice President
Provide financial and economic analysis for commercial litigation matters. Support experts in preparing for deposition and trial testimony.

2010 – 2018 **Antitrust Division – U.S. Department of Justice** Washington, DC
Director of Economics
Senior career executive supervising the Antitrust Division's Economic Analysis Group. Helped formulate economic evidence and testimony for cases in industries such as software (*U.S. v. H&R Block, Inc., et al.*), telecommunications (*U.S. and Plaintiff States v. AT&T Inc., et al.*), video (*U.S. v. AT&T Inc., DirecTV Group Holdings, LLC, and Time Warner Inc.*), publishing (*U.S. v. Apple, Inc., et al.*), airlines (*U.S., et al. v. US Airways Group, Inc. and AMR Corp.*), oilfield services (*U.S. v. Halliburton Co. and Baker Hughes Inc.*), and health insurance (*U.S. and Plaintiff States v. Aetna Inc., and Humana Inc.* and *U.S. and Plaintiff States v. Anthem, Inc. and Cigna Corp.*).

2003 – 2010 **Antitrust Division – U.S. Department of Justice** Washington, DC
Chief of Competition Policy Section
Managed a section of about 18 economists and other staff. Supervised economic analysis of antitrust investigations in various industries including computer software (*U.S. v Oracle Corp.*), real estate (*U.S. v Kentucky Real Estate Commission*), and telecommunications (*U.S. v Cingular Wireless et al*). Testified in *U.S. v SBC Communications Inc. and AT&T Corp.* and *U.S. v. Verizon Communications Inc. and MCI, Inc.* Consulted on appellate arguments of the United States in Circuit Court (including *FCC v Prometheus Radio Project*).

1997 – 2003 **Antitrust Division – U.S. Department of Justice** Washington, DC
Assistant Chief of Economic Regulatory Section

Assisted with the management of a section of about 18 economists and other staff. Supervised economic analysis of antitrust investigations in various industries including telecommunications (*U.S. v WorldCom and Sprint*), computer software (*U.S. v Mathworks and Wind River*), publishing, radio and television advertising (*U.S. v Univision and Hispanic Broadcasting Corp*), electricity, and airlines. Consulted on appellate arguments of the United States in Circuit Court and the U.S. Supreme Court (including *Iowa Utilities Board v FCC and U.S.*).

1994 – 1997 **Antitrust Division – U.S. Department of Justice** Washington, DC
Economist
Performed economic analysis in antitrust investigations. Applied developments in the fields of industrial organization, microeconomics, and econometrics to practical questions raised in antirust analysis. Examined mergers or practices in telecommunications (including *U.S. v Sprint and Joint Venture Co.*), computer software, and banking. Testified in the merger of Union Pacific Railroad and Southern Pacific Railroad (before the Surface Transportation Board).

TESTIMONY

Library of Congress Copyright Royalty Judges Case No. 19-CRB-0010 CD (2018-21) – Submitted testimony in re: Distribution of Cable Royalty Funds on behalf of joint sports claimants.

STB Finance Docket No. 36744 – Submitted testimony on behalf of Canadian Pacific Kansas City on competitive effects and remedy in Canadian National Railway's proposed acquisition of Iowa Northern Railway

State of Ohio ex rel. Dave Yost, Ohio Attorney General vs. Google LLC – Testified in deposition on behalf of Google.

Library of Congress Copyright Royalty Judges Case No. 16-CRB-0009 CD (2014-17) – Submitted testimony in re: Distribution of Cable Royalty Funds on behalf of joint sports claimants. Testified at hearing.

STB Finance Docket No. 36500 – Submitted testimony in support of the application by Canadian Pacific Railway Limited, *et al*. to combine with Kansas City Southern, *et al*. Testified in deposition and at hearing.

STB Finance Docket No. 36514 – Submitted testimony on behalf of Canadian Pacific Railway Limited analyzing prospective combination of Canadian National Railway Company, *et al.* with Kansas City Southern, *et al*.

Real Estate Exchange, Inc. v Zillow, Inc. et al. – Filed declaration in support of motion for preliminary injunction.

U.S. v SBC Communications Inc. and AT&T Corp. and *U.S. v. Verizon Communications Inc. and MCI, Inc.* – Filed declarations in Tunney Act proceeding to explain the economic analysis of the United States for the proposed mergers and of the proposed consent decrees.

ICC Finance Docket No. 32760 – Submitted testimony on behalf of the U.S. Dept. of Justice analyzing prospective merger of Union Pacific Railroad and Southern Pacific Railroad. Testified in deposition.

PUBLICATIONS

"Is There a Better Approach to Vertical Merger Analysis," with Andrew Sfekas in *Antitrust Chronicle* June 2025.

"Evaluating Innovation Theories of Harm in Merger Review: Economic Frameworks and Difficulties" with Nathaniel Hipsman and Jessica Liu in *Getting the Deal Through—Merger Control 2022* September 2021

"Comparing Vertical Merger Guidelines Across Jurisdictions" with Peter Davis and Kostis Hatzitaskos in *Law360* February 2020.

"Revisiting Guidance on MFN Terms" with Andrew Sfekas in *Antitrust Chronicle* September 2019.

"Economics at the Antitrust Division 2016-2017: Healthcare, Nuclear Waste, and Agriculture," with A. Gerstle, H. Knudsen, D. Williamson, and J. Lee, *Review of Industrial Organization,* Vol 51, Issue 4, 2017, pp. 515-528

"The Year in Review: economics at the Antitrust Division: 2011," with F. Scott Morton, *Review of Industrial Organization*, Vol. 41, Issue 4, 2012, pp. 321-331

"The Antitrust Division: Economic Issues Presented in 2010-2011," *Review of Industrial Organization*, Vol 39, Issue 4, 2011, pp. 327-334

"The Year in Review: Economics at the Antitrust Division, 2004–2005," with E. Emch and K. Heyer, *Review of Industrial Organization*, Vol 27, Issue 3, 2005, pp. 197-221

"Ensuring Fair and Efficient Access to the Telecommunications 'Bottleneck'" with D. Rubinfeld, in C.D. Ehlermann and L. Gosling (eds.), Third Competition Law Annual 1998: Regulating Telecommunications (Hart Publishing: Oxford)

"An Empirical Analysis of Bank Branching: Portugal 1989-1991" with L. Cabral, in The Empirical Analysis of Industrial Organization Conference Report of the Centre for Economic Policy Research

WHITE PAPERS

"Comment on the January 2022 DOJ and FTC RFI on Merger Enforcement," with John Asker, Kostis Hatzitaskos, Nathan Miller, Aviv Nevo, and Ana McDowall, April 2022, available at https://downloads.regulations.gov/FTC-2022-0003-1847/attachment_1.pdf.

"Comments on the January 2020 Draft Vertical Merger Guidelines," with Kostis Hatzitaskos, Aviv Nevo, and Ana McDowall, February 2020, available at https://media.justice.gov/vod/atr/comments-draft-vmg/dvmg-0012.pdf.

"Comparison with the EU Non-Horizontal and the UK Merger Assessment Guidelines," with Peter Davis and Kostis Hatzitaskos, February 2020, available at https://media.justice.gov/vod/atr/comments-draft-vmg/dvmg-0011.pdf.

"Review: Selected Research of Andrew Sweeting, New Bureau of Economics Director" with Andrew Sfekas, Ross Askenazi, and Laurien Gilbert, January 2020, available at https://www.cornerstone.com/Publications/Articles/Selected-Research-of-Andrew-Sweeting.pdf

W. Robert Majure, Ph.D.
Senior Vice President

HONORS AND AWARDS

President's Award for Meritorious Executive	2017
Assistant Attorney General's Award for Excellence	2015
Attorney General's John Marshall Award for Legal Advice (Nominated)	2004
Assistant Attorney General's Award for Excellence	2001
Distinguished Service Award	1997
National Science Foundation Fellowship	1990 – 1993
Phi Beta Kappa	1989

CONFERENCE PARTICIPATION

8th Annual Bill Kovacic Antitrust Salon 2020
Discussed vertical merger guidelines and enforcement issues in a panel hosted by George Washington University School of Law and *Concurrences Review*.

"New Debates and Tensions in Antitrust: The 2020 Vertical Merger Guidelines" 2020
Discussed newly issued vertical merger guidelines with attorneys and economists in government and private practice.

ABA panel "Sequences & Sparks: Life Sciences Innovation Mergers." (podcast) 2020
Discussed issues of innovation competition, potential competition, and merger enforcement.

DOJ Workshop on Proposed Vertical Merger Guidelines 2020
Discussed issues of vertical merger analysis and suggested modifications to draft guidelines.

ICN Chief/Senior Economist Workshop 2016
Discussed tools and techniques of current interest with senior economists representing competition authorities around the world.

FCC Roundtable on Media Ownership Policies 2001
Discussed economic issues related to prospective changes in the FCC's rules governing media ownership.

PERSONAL

U.S. Citizen. Married with two daughters and one son.

APPENDIX B

Majure V.S., Vol. II, Materials Relied Upon

Bates Stamped Documents

- NS_00181115–9
- NS_STB_00001394–6

Data

- Backup Materials to the Second Errata Verified Statement of Mark A. Israel, September 4, 2026
- Backup Materials to the Supplemental Verified Statement of Elizabeth M. Bailey, July 27, 2026
- Backup Materials to the Verified Statement of John Brooks, November 18, 2026

Depositions

- Deposition of David Lehlbach (Assistant Vice President, Strategic Planning, Norfolk Southern Corporation), September 10, 2026
- Deposition of Michael R. McClellan (Chief Strategy Officer, Norfolk Southern Corporation), October 9, 2026

Decisions and Comments, Surface Transportation Board Dockets

- Applicants' Second Response to Decision No. 21, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, July 27, 2026
- CPKC's Comments on Application and Request for Conditions, Volume II, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026
- "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, (Sub-Nos. 42–50), November 18, 2026

Press Releases

- "Union Pacific and Norfolk Southern to Create America's First Transcontinental Railroad," *Union Pacific Newsroom*, July 29, 2025, available at https://www.up.com/press-releases/growth/norfolk-southern-transcontinental-nr-250729

Verified Statements

- Expert Statement of W. Robert Majure, Ph.D. Volume I of II, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026
- Second Errata Joint Verified Statement of Kenny Rocker and Claude E. Elkins, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, September 4, 2026
- Second Errata Verified Statement of David T. Hunt, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, September 4, 2026
- Second Errata Verified Statement of Mark A. Israel, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, September 4, 2026
- Verified Statement of Adolph Gameiro, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026
- Verified Statement of John Brooks, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026
- Verified Statement of Katherine N. Novak, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, April 30, 2026
- Verified Statement of Mark Redd, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026
- Verified Statement of Michael Walczak, "Union Pacific Corporation and Union Pacific Railroad Company – Control – Norfolk Southern Corporation and Norfolk Southern Railway Company," Docket No. FD 36873, November 18, 2026

If not listed, all other documents cited in my statement, appendices, exhibits, and production.

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF NICHOLAS E. POWERS Ph.D.

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF NICHOLAS E. POWERS, PH.D.

NOVEMBER 18, 2026

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I. QUALIFICATIONS AND ASSIGNMENT

1. I am a Principal in the Washington, DC office of The Brattle Group, an economic consulting firm. I hold a Ph.D. in Business Economics from the University of Michigan and a B.S. in Applied Economics and Management from Cornell University. I have more than 15 years of experience applying economics, econometrics, and data analysis to competition, regulatory, and litigation matters. My areas of specialization include industrial organization and regulatory economics.

2. A significant portion of my work has involved the transportation sector, including rail freight, trucking, air freight, automobile and truck manufacturing, airports, airlines, and postal services. My rail-related work has included economic and competitive analysis, analysis of railroad service and operating performance, valuation, and extensive work with confidential railroad datasets. I have provided analysis in matters before the Surface Transportation Board ("the Board") and in other regulatory and litigation matters involving the rail industry.

3. My rail experience includes work on railroad mergers and competitive effects, trackage rights, railcar markets and investment incentives, railroad valuation, rail service disruptions, and alleged anticompetitive conduct. That work has involved analysis of confidential railroad waybill, car-event, and car-hire data, as well as network modeling and economic analysis of railroad pricing, competition, service, and investment incentives. I have performed this work in connection with proceedings before the Surface Transportation Board and in other regulatory, litigation, and advisory matters. I also previously submitted a Verified Statement in

this proceeding in August 2026 concerning transit times and dwell for long-haul intermodal traffic exchanged between UP and NS.[1]

4. My work outside the rail industry has likewise involved the application of economic and econometric methods to questions of competition, pricing, market structure, regulation, and damages. I have provided economic consulting services to government agencies including the U.S. Federal Trade Commission and the Canadian Competition Bureau, and have submitted expert reports and appeared in proceedings in the United States and Europe. I have published research in peer-reviewed journals, including the *Review of Industrial Organization*, *Environmental and Resource Economics*, and *Energy Policy*.

5. My resume, which provides additional detail regarding my professional and educational experience, is attached as Appendix A.

6. I have been retained by Canadian Pacific Railway Company and its railroad subsidiaries (collectively, "CPKC")[2] in connection with the proposed acquisition of Norfolk Southern Corporation and Norfolk Southern Railway Company (collectively, "NS") by Union Pacific Corporation and Union Pacific Railroad Company (collectively, "UP") (collectively, together with NS, "Applicants").[3] My principal assignment is to evaluate the traffic-diversion analyses sponsored by David T. Hunt on behalf of Applicants, including his estimates of traffic

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[1] Verified Statement of Nicholas E. Powers, Ph.D, August 6, 2026 ("Powers Transit Time VS").

[2] CPKC was formed through the combination of Canadian Pacific ("CP") and Kansas City Southern ("KCS") in April 2023. CPKC also includes Kansas City Southern de México ("KCSM"), a subsidiary of KCS. Surface Transportation Board, "Decision No. 35," *Canadian Pacific Railway Limited, et al.—Control—Kansas City Southern, et al.*, Finance Docket No. 36500, March 15, 2023, available at: https://www.stb.gov/wp-content/uploads/FD-36500-CP-KC-March-15-2023-Decision.pdf, pp. 6, 175.

[3] Throughout this Verified Statement I refer to this proposed acquisition leading to common ownership of UP and NS as "the merger." *See also*, Amended Application, as revised by the Second Errata submitted September 4, 2026 ("Amended Application, Vol. 1"), p. 12, for the definition of Applicants.

that would shift from truck to rail and from other rail routes to a combined UP-NS network as a result of the merger.[4] Applicants rely on Mr. Hunt's analyses to support a substantial portion of the traffic growth, incremental revenue, shipper savings, highway benefits, and other public benefits they attribute to the merger.

7. In carrying out that assignment, I reviewed Mr. Hunt's Verified Statement, Supplemental Verified Statement,[5] supporting workpapers and data, discovery materials, and other information relevant to the assumptions and methods underlying his diversion estimates. I also conducted independent analyses using Applicants' and Mr. Hunt's data to evaluate, among other things, whether his methodologies reliably distinguish merger-related effects from pre-existing differences among routes and markets as defined by Mr. Hunt ("Hunt markets"),[6]

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[4] Verified Statement of David T. Hunt, April 29, 2026, as revised by Second Errata submitted on September 4, 2026 ("Hunt VS"). I also reviewed the Verified Statement of David T. Hunt and Matthew Schabas, December 18, 2025 ("Hunt & Schabas VS"), which I refer to occasionally where relevant.

[5] Supplemental Verified Statement of David T. Hunt, July 20, 2026, as revised by Errata submitted on September 11, 2026 ("Hunt Supp. VS").

[6] For simplicity, I refer to Mr. Hunt's principal diversion analyses as the truck-to-carload, truck-to-intermodal, and rail-to-rail models. I use "truck-to-rail models" to refer collectively to his truck-to-carload and truck-to-intermodal models. Mr. Hunt uses a separate methodology to estimate truck-to-rail diversions of finished automobiles, even though those movements are included within his reported carload diversions. Unless otherwise indicated, I use "carload" to refer to Mr. Hunt's truck-to-carload analysis involving merchandise and bulk traffic, discussed in Hunt VS, Section 4.2, but excluding Mr. Hunt's separate finished-automotive analysis, discussed in Hunt VS, Section 4.3. Mr. Hunt at times uses "carload" more broadly to encompass both categories. I have not included an analysis of Mr. Hunt's diversions of finished automobiles in this Verified Statement, as they represent less than 3 percent of his predicted truck-to-carload diversions (5,000 / 196,000 = 2.6 percent), and less than half a percent of total truck-to-carload diversions (5,000 / 1,397,000 = 0.4 percent). Their exclusion from this report should not be taken as an endorsement of Mr. Hunt's results or methodology. *See* Hunt VS, Exhibit 2-4, 4-1.

I refer to Mr. Hunt's truck-to-intermodal diversion analysis discussed in Hunt VS, Section 5.4, excluding the relatively small amount of additional diversions associated with long-haul drayage that Mr. Hunt separately estimates in Hunt VS, Section 5.5. The three principal models on which I focus account for nearly all of Mr. Hunt's estimated diversions and associated revenue. *See* Hunt VS, Exhibit 2-4, p. 18; Exhibit 8-1, p. 95. I have not included an analysis of Mr. Hunt's long-haul drayage diversions in this Verified Statement, as they represent less than 5 percent of his predicted intermodal diversions (70,000 / 1,532,000 = 4.6 percent), and Mr. Hunt excludes them from his calculation of net diversions. Their

whether the predicted traffic responses are reasonably related to the modeled changes in price and service, and whether the resulting estimates are consistent with observed market outcomes.

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exclusion from this Verified Statement should not be taken as an endorsement of Mr. Hunt's results or methodology. *See* Hunt VS, Section 5.5, Appendix B.3.3.E, Exhibit 2-4.

I use the term "Hunt market" to refer to a market as defined by Mr. Hunt in his truck-to-carload, truck-to-intermodal, and rail-to-rail models. My use of the term market is not intended to define or express an opinion regarding any relevant antitrust market for purposes of the Board's competitive analysis.

In the truck-to-carload model, Mr. Hunt defines a market as a directional origin-destination county pair, a two-digit STCC commodity, and a "truck equipment type." Mr. Hunt considers five truck equipment types: bulk, dry van, flatbed, reefer, and tank. *See* the detailed discussion in Section V.A, and Hunt VS, Section 4.1.1, pp. 37–38, Exhibit 4-4, Appendix B.5.2.A-B.5.2.B, pp. 151–153. In the truck-to-intermodal model, Mr. Hunt defines a market as a directional origin-destination intermodal terminal-market pair, with "terminal markets" usually corresponding to Bureau of Economic Analysis Economic Areas ("BEAs"), with adjustments to align with the UP-NS terminal network. *See* detailed discussion in Section V.B, and Hunt VS, Section 5.2, pp. 54–59, Appendix B.3 Intro, B.3.1–B.3.4, pp. 120–137.

I use the term "rail-to-rail" to refer to Mr. Hunt's multinomial logit model, described in Hunt VS, Section 6, which predicts the rail quad selected by a shipper (either a single railroad or a combination of railroads) based on that quad's routing characteristics relative to all other quads in the market. *See* Hunt VS, Exhibit 6-3, pp. 68–71.

In the rail-to-rail model, Mr. Hunt's market definitions vary by service type. Generally, a market is defined by an origin-destination pair, and a "quad" is defined as an origin, origin-railroad, destination, destination-railroad combination. By service type, (i) merchandise and bulk markets are defined as directional origin-destination SPLC pairs; (ii) intermodal markets are defined as origin-destination intermodal terminal-market pairs; (iii) automotive markets are defined as origin SPLC-destination BEA pairs. *See* the detailed discussion in Section V.C, and Hunt VS, Exhibit 6-3, Section 6.2.2, and A.4, pp. 102–103.

Across all three models, I use "route" to refer to a modeled rail path in Mr. Hunt's analysis connecting an origin and destination, potentially involving multiple railroads and interchanges.

See also, Hunt VS, p. 199, Exhibit E-1 summarizing the traffic segmentation definitions used in the three diversion models.

I use the term "diversion markets" to refer to Hunt markets in which Mr. Hunt predicts positive diversion after operational filters and operational considerations.

Standard Point Location Codes ("SPLC") are six-digit numbers that identify locations throughout North America, the smallest level of this six-digit number is called a point and references a specific city, town, village, community, or rail station. The nesting system is State-County-City (Point), using two digits to identify each. "Although not currently in use by the rail industry, an additional three-digit code may be added to each six-digit SPLC to further identify specific rate base location." Throughout this Verified Statement, I refer to the six-digit SPLC code, unless otherwise specified. *See* Surface Transportation Board, "Carload Waybill Sample Reference Guide," March 5, 2025, available at: https://stb.gov/wp-content/uploads/2023-STB-Waybill-Reference-Guide.pdf, p. 74. National Motor Freight Traffic Association (NMFTA), "SPLC History," last accessed November 3, 2026, https://help.nmfta.org/hc/en-us/articles/44464621722907-SPLC-History.

8. Certain issues addressed in my analysis also depend on the operational feasibility of Applicants' proposed service improvements. On those matters, I rely where appropriate on the Verified Statement of Raymond Elphick and Brian Nelson, which evaluates Applicants' Operating Plan, the claimed service improvements associated with that plan, and whether particular operating changes require a merger. I refer to that statement as the "CPKC Operating Experts VS."[7] I include a glossary of the terms used throughout this Verified Statement in Appendix C.

II. SUMMARY OF OPINIONS

9. Applicants have not demonstrated that a merger between UP and NS would cause the substantial traffic growth they project. In the real world, whether traffic moves on rail and which railroads it moves on depends on many factors including, but not limited to: customer characteristics, shipment characteristics, commodity type, market conditions, railroad pricing and commercial strategy, operating and service conditions, traffic density, rail and truck capacity, equipment, terminal constraints, first- and last-mile constraints, and interline initiatives. No factor is always dispositive and a shipper's actual decision whether to ship its good via rail often depends on a complex, customer-specific balancing analysis.

10. The multi-faceted nature of how traffic moves around the country is apparent based on a review of real-world data. Rail modal share (meaning the share of total rail and truck

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[7] Verified Statement of Raymond Elphick and Brian Nelson, November 18, 2026 ("CPKC Operating Experts VS"). Note that the Operating Plan is composed of three sub-components, including the "Base Plan," "Optimized Plan," and "Growth Plan," which are all based on MultiRail models sponsored by Applicants' experts. *See* Joint Verified Statement of Eric Gehringer and John F. Orr, April 29, 2026, as revised by Second Errata submitted September 4, 2026 ("Gehringer & Orr VS"), ¶¶ 22, 26, 31. Note that MultiRail is Oliver Wyman's proprietary network modeling software. MultiRail data refers to back-up data supporting Applicants' MultiRail models. *See* Hunt VS, p. 120, footnote 145. *See also,* Gehringer & Orr VS, ¶ 19. The Operating Plan is a detailed plan for how traffic will move through the combined network, including blocking, train, and scheduling details, as well as yard work demands.

volumes combined that move by rail) varies across and within different lengths of haul, geographies, market sizes, and commodities.[8] Most importantly, whether a lane has single-line or interline service has limited predictive value for whether that lane will have high rail modal share.

11. Applicants' diversion expert, David Hunt, ignores that complexity. For his truck-to-carload and truck-to-intermodal (together, "truck-to-rail") analyses, he groups origin-destination pairs based on four characteristics: single-line status, mileage, transit time, and price. He then purports to model how the merger will impact each of those characteristics and then uses the differences to perform what he refers to as a "lookalike" analysis. For his rail-to-rail analysis, Mr. Hunt models simplistic indicators for interline friction, estimates how the merger will reduce that friction, and then forecasts how traffic will move from other Class I railroads to a combined UP-NS.

12. Mr. Hunt's analyses do not support Applicants' projected diversions for many reasons. Mr. Hunt ignores many real-world factors that directly affect whether and how shippers choose to ship their goods over rail. Mr. Hunt takes as given the simplistic price and service improvements his model depends on, without conducting any independent analysis of whether the Operating Plan supports those service improvements, or whether the assumed price reduction is consistent with UP and NS's incentives after the merger, particularly in light of UP's historical emphasis on revenue quality and pricing. Mr. Hunt also fails to consider whether UP and NS could invest in better interline initiatives to facilitate growth short of a merger. Because Mr. Hunt

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[8] I use "rail modal share" to refer to rail traffic as a share of combined rail and truck traffic in a given Hunt market. This is equivalent to Mr. Hunt's use of the term "rail share" (*see, e.g.,* Hunt VS, pp. 23–24). My use of the term rail modal share is not intended to define or express an opinion regarding shares within any relevant antitrust market for purposes of the Board's competitive analysis.

does not acknowledge the reasons for UP and NS's low relative rail modal shares, he does not establish that the merger would cause the traffic that he predicts would divert.

13. Setting aside that Mr. Hunt ignores numerous real-world considerations, his models fail even on their own terms.

- In a basic diagnostic of his truck-to-rail models, I test how much diversion the models would predict if I strip away modeled changes to single-line status, mileage, transit time, and price that Mr. Hunt associates with the merger. In that scenario, holding those key characteristics to their pre-merger levels, I find that Mr. Hunt's models would still predict approximately 61 percent of Mr. Hunt's reported carload diversions and 30 percent to 39 percent of Mr. Hunt's reported intermodal diversions.[9] In other words, Mr. Hunt's models would predict diversions even if the merger changed nothing about the Applicants' railroads. This treatment inflates Mr. Hunt's diversion estimates by counting pre-existing differences as merger benefits—the very error he cautions against in defending his rail-to-rail model.[10]

- His carload methodology also counts positive differences between assigned benchmark and observed rail modal shares as potential diversion while setting negative differences generated by the same methodology to zero; the discarded negative differences are equivalent to approximately 100,000 carloads, more than half the magnitude of his reported positive diversions.

- Mr. Hunt's rail-to-rail framework, which compares a modeled baseline share with a modeled post-merger share, is unable to reproduce current routing choices of shippers in the real world. It frequently fails to identify the route carrying the largest observed share and, in some markets, assigns the highest predicted share to a route carrying zero observed traffic. A model that cannot reliably predict the routes shippers choose today cannot be relied upon as evidence of how shippers will route traffic if the merger is approved.

- I also find, within Mr. Hunt's own framework, that substantial rail-to-rail diversion associated with eliminating UP-NS interchange impedance could be generated by coordinated interline services consistent with those offered in the real world that do not require a merger to accomplish.

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[9] *See* Figure 32 and Figure 44. *See also*, Workpapers "T2R_Carload_Exhibits.xlsx" and "T2R_Intermodal_Exhibits.xlsx."

[10] *See* Hunt VS, pp. 9–11 (explaining that comparing a modeled post-merger outcome with observed pre-merger traffic would misattribute unexplained baseline differences to the merger). *See also*, Deposition of David T. Hunt, Vol. II, October 8, 2026, 622:11–624:21 (agreeing, in a truck-to-carload hypothetical, that the difference between the observed pre-merger share and a share predicted from comparable pre-merger markets would not reflect an effect of the merger).

14. My conclusions materially affect the validity of Applicants' claimed public benefits. First, Applicants' quantified revenue, shipper-savings, highway, environmental, and related benefits all depend on Mr. Hunt's unreliable diversion estimates. Because the diversion estimates are unreliable, the quantified benefits are unsupported. Second, Mr. Hunt incorrectly treats the transportation cost savings to a shipper that diverts from truck-to-rail as a shipper benefit, without accounting for differences in value the shipper places on truck and rail service. As a matter of economics, the proper measure of whether shippers actually benefit from the merger would be their surplus (i.e., the difference between what the purchaser is willing to pay for the service and what they paid to purchase it), which Mr. Hunt does not attempt to calculate. Third, any quantification of benefits to shippers would need a reliable prediction about post-merger pricing. Applicants have not established why the merged railroad would charge the prices assumed in their shipper-benefit calculations, and Mr. Hunt uses different post-merger pricing assumptions across his analyses.

15. The remainder of this Verified Statement develops these opinions in greater detail. Section III describes the real-world commercial, operational, market, customer, and network conditions affecting rail participation and routing. Section IV examines whether Applicants have established that the merger would address the conditions responsible for historical performance. Section V evaluates Mr. Hunt's diversion methodologies and the additional commercial and operational conditions required for the predicted traffic to materialize. Section VI addresses the supplemental analyses Mr. Hunt offers in response to the Board's requests, and Section VII evaluates the public benefits Applicants derive from his diversion estimates and related assumptions.

III. REAL-WORLD RAIL PERFORMANCE AND ROUTING CHOICES REFLECT A RANGE OF COMMERCIAL, OPERATIONAL, MARKET, AND NETWORK FACTORS

16. Mr. Hunt's analyses seek to predict how freight traffic would respond to changes associated with the merger. Evaluating those predictions requires understanding the broader context in which railroads compete for traffic and shippers choose among transportation alternatives. Rail modal share—the share of combined rail and truck tonnage carried by rail, ranging from zero to 100 percent—reflects railroads' commercial strategies and operating choices as well as their network structure and varies substantially even among Hunt markets with the same single-line or interline status. Indeed, Applicants' own commercial records identify numerous factors that can facilitate or constrain traffic growth. I discuss that real-world context in this section because it provides an important foundation for evaluating Mr. Hunt's diversion analyses below.

A. Historical Rail Performance Reflects Commercial Strategy and Market Conditions

17. Rail modal share reflects more than the physical configuration of a railroad's network. Railroads make commercial and operational choices concerning pricing, service design, asset utilization, capacity allocation, customer and traffic mix, and the relative priority placed on revenue, margin, and volume growth. The amount of traffic moving by rail therefore reflects both the opportunities available to a railroad and the choices it has made about which opportunities to pursue and on what terms.

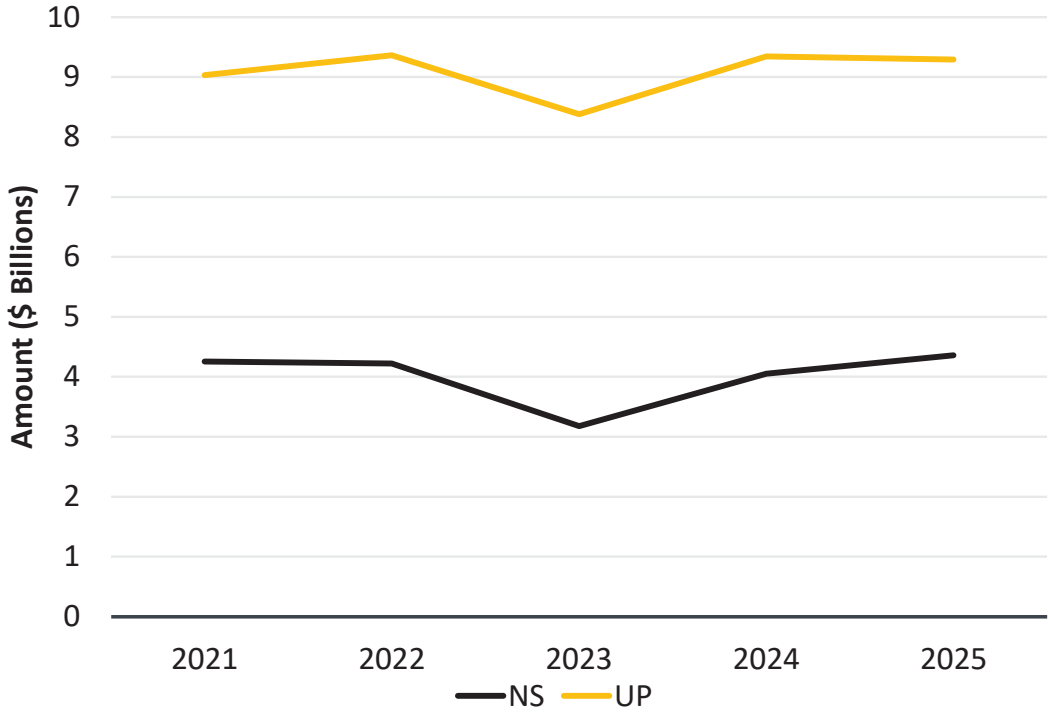
18. Applicants point to UP's and NS's historical performance as evidence of substantial unrealized growth opportunities that the merger would allow them to capture.[11] But relatively limited traffic growth does not establish that network structure or separate ownership

[11] Amended Application, Vol. 1, pp. 40–41, 49–50.

constrained that growth. It likely also reflects the railroads' commercial strategies, operating choices, and the market conditions they faced.

19. Applicants' relatively modest traffic growth has not inhibited their financial performance. UP and NS have indeed had substantial financial resources during a period of relatively modest traffic growth. As shown in Figure 1, from 2021 through 2025 UP generated roughly between $8.4 billion and $9.3 billion in annual net cash from operations, while NS generated roughly between $3.2 billion and $4.4 billion. Figure 2 shows how the two railroads deployed those resources over the same period: both made substantial capital investments while also returning significant amounts of capital to shareholders.

FIGURE 1: UP AND NS HAVE BOTH GENERATED SUBSTANTIAL OPERATING CASH FLOW IN RECENT YEARS

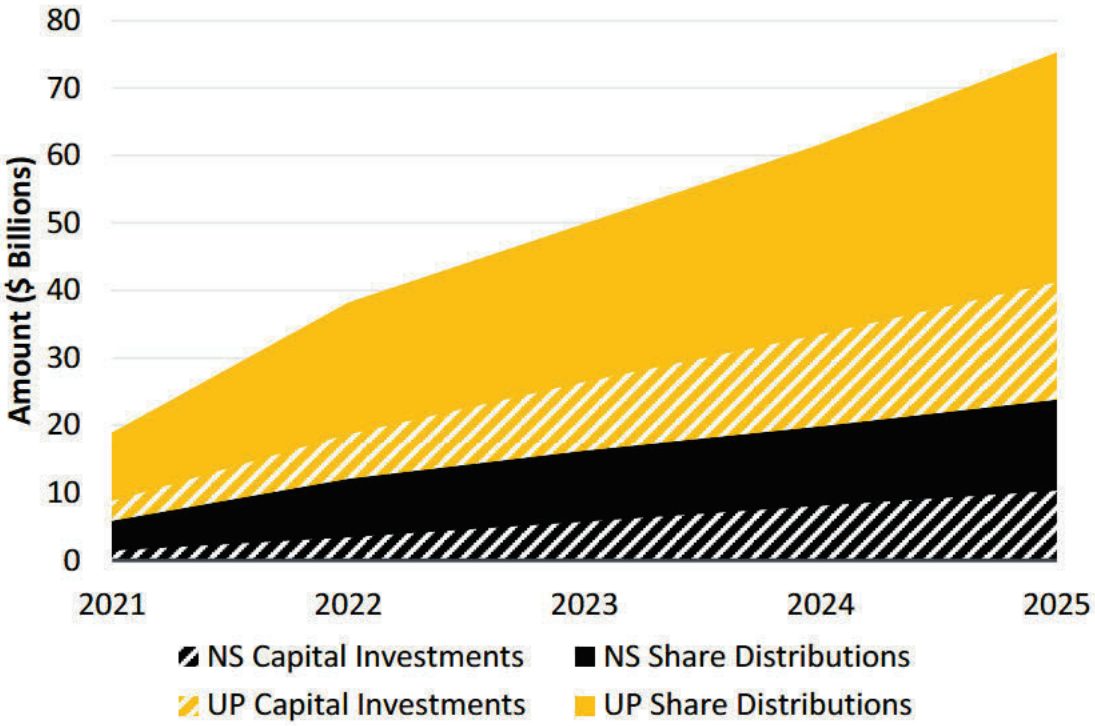


Sources and Notes: Union Pacific Corporation Form 10-K for the Fiscal Years Ended December 31, 2021, 2022, 2024, and 2025, available at: https://investor.unionpacific.com/financials/annual-reports; and Norfolk Southern Corporation Form 10-K for the Fiscal Years Ended December 31, 2021, 2022, 2024, and 2025, available at: https://norfolksouthern.investorroom.com/sec-filings.

2023 values extracted from 10-K filings for other years. *See* Workpaper "UP and NS Cash Flows and Shares.xlsx."

FIGURE 2: UP AND NS HAVE DISTRIBUTED SUBSTANTIAL CAPITAL TO SHAREHOLDERS WHILE CONTINUING TO INVEST IN THEIR NETWORKS

CUMULATIVE, 2021–2025



Sources and Notes: Union Pacific Corporation Form 10-K for the Fiscal Years Ended December 31, 2021, 2022, 2024, and 2025, available at: https://investor.unionpacific.com/financials/annual-reports; and Norfolk Southern Corporation Form 10-K for the Fiscal Years Ended December 31, 2021, 2022, 2024, and 2025, available at: https://norfolksouthern.investorroom.com/sec-filings. 2023 values extracted from 10-K filings for other years. Values shown are cumulative from 2021 through each year. Total shareholder distribution is the cumulative sum of dividends and share repurchases. Capital investments include projects such as laying new track, purchasing locomotives, building bridges, improving yards, etc. *See* Workpaper "UP and NS Cash Flows and Shares.xlsx."

20. Figure 2 above shows UP's and NS's capital investments over time. Importantly, not all of these investments relate to growth. In fact, from 2022 to 2025, the majority of UP's capital expenses have been for "renewal," with only a minority invested for "growth"; UP

estimates the same pattern for 2026.[12] Similarly, NS's 2026 proxy statement noted that the majority of its capital spend each year relates to maintenance.[13] In 2022 NS's CFO told investors that 55 to 65 percent of its capital investments relate to infrastructure maintenance.[14]

21. UP's record over the last quarter century illustrates how commercial choices can shape traffic outcomes. As shown in Figure 3 through Figure 5, UP's revenue over variable cost [redacted] relative to both UP's historical level and other Class I railroads. UP's revenue per ton-mile also [redacted], while its ton-mile growth was considerably [redacted]. Those patterns are consistent with UP commercial strategies that placed substantial weight on maximizing revenue quality (price) and margin, rather than growing traffic volume.

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[12] *See* Union Pacific Corporation, "Investor Pitchbook," April 2024, available at: https://www.up.com/cs/groups/public/%40uprr/%40investor/documents/investordocuments/pdf_unp_stifel_24_pitchbook.pdf, slide 32.

See also, Union Pacific Corporation, "Investor Pitchbook," November 2026, available at: https://investor.unionpacific.com/static-files/b5a6e0dc-550e-4305-90b2-fc930350533d, slide 16.

[13] Norfolk Southern Corporation, "Schedule 14A," 2026, last accessed October 30, 2026, https://www.sec.gov/Archives/edgar/data/702165/000119312526127620/nsc-20260327.htm, p. 87.

[14] Norfolk Southern Corporation, "Norfolk Southern Investor Day 2022 Transcript," December 6, 2022, available at: https://filecache.investorroom.com/mr5ir_nscorp/144/NSC%20Investor%20Day%202022%20Transcript.pdf, p. 7.

FIGURE 3: UP'S REVENUE OVER VARIABLE COST HAS [redacted] OVER THE LAST 25 YEARS



Sources and Notes: Calculated from CCWS, 1998–2024. Figure shows observed values of revenue over variable cost indexed to the 1998–2000 average of revenue over variable cost and includes all traffic in the CCWS. Due to merger activity, CN is excluded from 2002 onwards, and CP and KCS are excluded from 2023 onwards. Reindexing these series to the 2002–2004 average as an alternative baseline preserves the qualitative findings concerning UP's growth in revenue over variable cost shown in this figure. The alternative values are included in the accompanying workpapers. *See* Scripts "01_build_ccws.R"; "02_ccws_figures"; Workpaper "CCWS_Figures.xlsx." Note that "CCWS" refers to Confidential Carload Waybill Sample. *See* Surface Transportation Board, "Carload Waybill Sample Reference Guide," March 5, 2025, last accessed, November 6, 2026, https://stb.gov/wp-content/uploads/2023-STB-Waybill-Reference-Guide.pdf.

FIGURE 4: UP'S REVENUE PER TON-MILE HAS [redacted]



Sources and Notes: Calculated from CCWS, 1998–2024. Figure shows observed values of revenue per ton-mile indexed to the 1998–2000 average of revenue per ton-mile and includes all traffic in the CCWS. Ton-miles are calculated as expanded tons multiplied by route-segment mileage. Due to merger activity, CN is excluded from 2002 onwards, and CP and KCS are excluded from 2023 onwards. Reindexing these series to the 2002–2004 average as an alternative baseline preserves the qualitative findings concerning UP's growth in revenue per ton-mile shown in this figure. The alternative values are included in the accompanying workpapers. *See* Scripts "01_build_ccws.R"; "02_ccws_figures"; Workpaper "CCWS_Figures.xlsx."

FIGURE 5: UP'S TRAFFIC HAS [redacted] OVER THE LAST 25 YEARS



Sources and Notes: Calculated from CCWS 1998–2024. Figure shows observed values of ton-miles indexed to the 1998–2000 average of ton-miles and includes all traffic in the CCWS. Ton-miles are calculated as expanded tons multiplied by route-segment mileage. Due to merger activity, CN is excluded from 2002 onwards, and CP and KCS are excluded from 2023 onwards. Reindexing these series to the 2002–2004 average as an alternative baseline preserves the qualitative findings concerning UP's growth in ton-miles shown in this figure. The alternative values are included in the accompanying workpapers. *See* Scripts "01_build_ccws.R"; "02_ccws_figures"; Workpaper "CCWS_Figures.xlsx."

22. Consistent with the patterns observed above in the historical data, UP's internal materials demonstrate its emphasis on [redacted]. For example, a 2021 internal UP analysis identified [redacted]

[redacted].[15] That analysis [redacted] but later documents [redacted]. More recent commercial planning materials likewise [redacted].[16] Other internal updates [redacted][17] and [redacted].[18]

23. NS's contemporaneous internal discussions similarly [redacted]. In May 2021, then-Vice

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[15] *See* Union Pacific, "Carload Strategy Initiative, Steering Committee Update #3," January 15, 2021, UP_0890262, at -267, -270, -275–276. The document states that [redacted]" and identifies [redacted] and describes UP's historical [redacted] including a focus on meeting [redacted]

[16] *See* Union Pacific, "Marketing & Sales Update," August 8, 2024, UP_0406082, at -085–088. UP projects [redacted]. UP's 2025 pricing analysis also states that achieving [redacted] would create [redacted]." A separate scenario with [redacted].

[17] *See* Union Pacific, "January CEO Brief," UP_0209007, at -009–010. UP's 2025 Annual Operating Plan projects [redacted], and describes this result as [redacted]." UP's pricing update states that the [redacted]" and reports [redacted], which it describes as [redacted] and its [redacted]." Union Pacific, "January CEO Brief," UP_0209007, at -011. In discussing a 2025 bid for [redacted] traffic from [redacted], UP reports that it secured [redacted]. It states that the remaining business went to [redacted] in the [redacted], that [redacted]," and that [redacted]." *See also*, Union Pacific, "Commercial Update," August 8, 2024, UP_0405407, at -409. An internal UP commercial update presentation in August of 2024 instructed its team to [redacted]"

[18] *See* Union Pacific, "Marketing & Sales SSOE Deep Dive," July 11, 2024, UP_0208474, at -480, -482, and -485. The document reports a [redacted]. UP projects a [redacted], and states that it is [redacted]." UP also states that they [redacted] to [redacted]" for [redacted].

President of Strategic Planning Michael McClellan wrote that, [redacted],"
including through [redacted]. Senior NS executives responding to the email, including NS's CEO, stated that
they [redacted].[19]

24. Taken together, the historical and documentary evidence provides important context for Applicants' growth projections. Both UP and NS remained financially robust during a period of relatively modest traffic growth. As further evidence of that financial strength, Figure 6 shows that both railroads earned substantial returns on invested capital; UP had the highest return on investment among the Class I railroads in each of the last 10 years, while NS's returns generally fell within the range of the other Class I railroads.[20] For UP in particular, the longer-run evidence and its own more recent internal materials indicate that management has repeatedly placed substantial weight on [redacted] and [redacted] rather than [redacted]. Historical rail modal share therefore should not be treated as though it were

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[19] Email Exchange between Michael McClellan, NS CFO Mark George, and NS CEO James Squires, with subject "The Future State of the Industry," May 11–12, 2021, NS_00571615. Mr. George described Mr. McClellan's assessment as [redacted]" and [redacted]; Mr. Squires, NS's CEO, responded, [redacted]

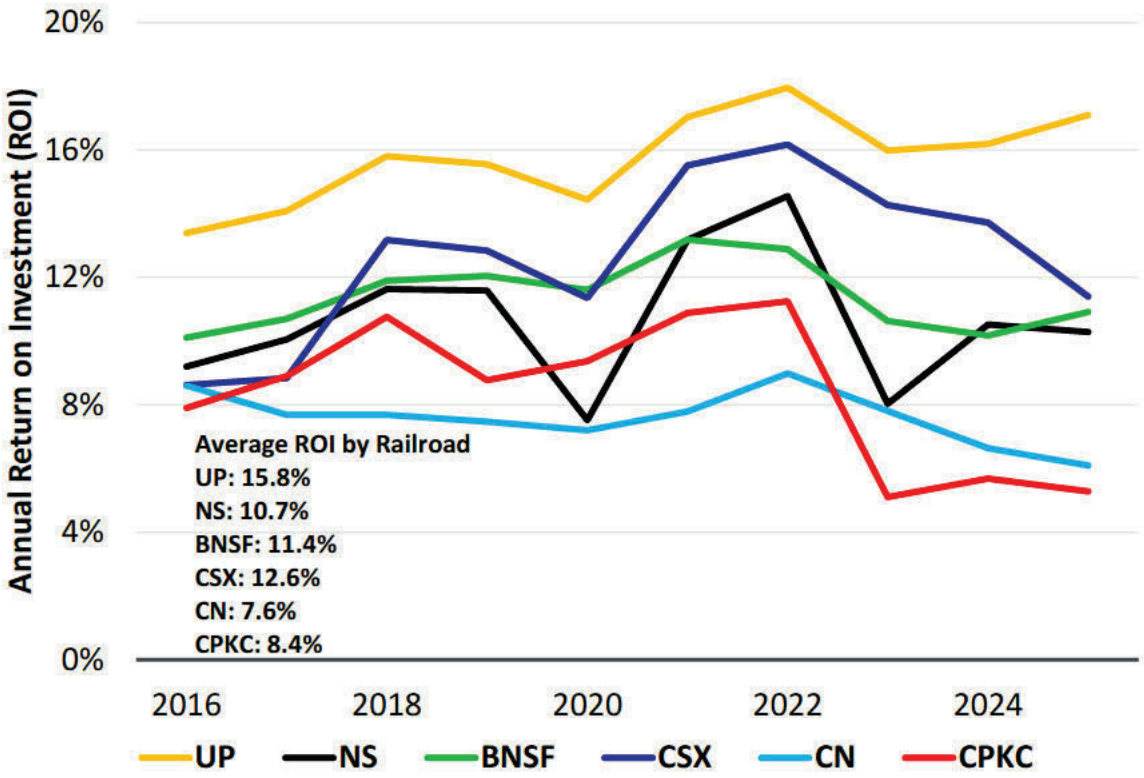
PSR refers to precision scheduled railroading, an operating and management approach often associated with cost reduction, asset utilization, and efficiency initiatives rather than traffic-growth initiatives. *See, e.g.*, U.S. Government Accountability Office, "Freight Rail: Information on Precision-Scheduled Railroading," GAO-23-105420, December 2022, available at: https://www.gao.gov/assets/gao-23-105420.pdf. *See also*, Expert Statement of W. Robert Majure, Ph.D., November 18, 2026 ("Majure VS"), Section 4.3.3. A 2023 NS presentation describing intermodal growth opportunities similarly noted that beginning in 2018, [redacted]" *See* Norfolk Southern, "Service Metrics for Growth," June 10, 2023, NS_00151071, at -078.

[20] Figure 6 also shows that each U.S. Class I railroad reported a positive return on investment in each of the years shown. That evidence does not indicate systemic financial distress or an industry-wide inability to reinvest in the freight rail network.

simply a product of Applicants' existing network and ownership structure. It also reflects the commercial priorities and operating choices under which the railroads were managed.

FIGURE 6: ANNUAL RETURN ON INVESTMENT

CLASS I RAILROADS, 2016–2025



Sources and Notes: Surface Transportation Board's annual revenue adequacy determinations, 2016–2024. In 2025, annual return on investment is calculated as Net Rail Operating Income divided by Net Investment, as reported in R-1 Schedule S250. CPKC's annual return on investment is calculated as the simple average of CP's and KCS's annual returns on investment for each year from 2016 through 2022. *See* Workpaper "ROI_Revenue_Adequacy.xlsx ," Surface Transportation Board, "Economic Data, Revenue Adequacy for 2016–2024," last accessed July 15, 2026, https://www.stb.gov/reports-data/economic-data/. Surface Transportation Board, "Annual Report Financial Data, Schedule S250 for 2025," last accessed July 16, 2026, https://www.stb.gov/reports-data/economic-data/annual-report-financial-data/.

B. Rail Competitiveness Varies Substantially Across Both Single-Line and Interline Hunt Markets

25. Applicants and Mr. Hunt contend that single-line service generally offers advantages over interline service, including with respect to price, transit time, and reliability.[21] Part of Mr. Hunt's analysis uses rail modal share as a measure of rail's competitiveness with trucking.[22] Comparisons of rail modal shares (or "rail shares" using Mr. Hunt's terminology) underpin Applicants' claimed truck-to-rail diversions and therefore a large portion of the claimed benefits of the merger. However, it is clear from the data used by Mr. Hunt that single-line status does not determine whether rail captures a high share of a Hunt market's traffic: many interline-only Hunt markets have high rail modal shares, while many single-line Hunt markets have zero or low shares.[23]

26. Mr. Hunt's original, December 2025 Verified Statement reported substantially higher rail modal shares in Hunt markets where single-line service is available.[24] That advantage

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21 *See* Hunt VS, pp. 27–30 & Exhibit 3-5.

22 *See, e.g.*, Hunt VS, pp. 23–27.

23 Mr. Hunt uses Quantanet, Oliver Wyman's proprietary rail routing software, to model the "best" rail routes and calculate their rail mileage under pre- and post-merger conditions, at the level of geographic aggregation specific to each of his truck-to-rail and rail-to-rail diversion models. The "best" route is defined as the one with the lowest modeled impedance, where "impedance" reflects the sum of i) rail mileage and ii) assumed mileage-equivalent penalties ("interchange penalty" or "junction penalty") associated with interchanges on that given route. *See* Hunt VS, 6.2.1–6.2.2; Appendix A.6, pp. 105–109; Appendix B.3 Intro, B.3.1–B.3.3.D, pp. 120–135; and Appendix B.5.2.B, pp. 152–153.

In his truck-to-rail and rail-to-rail diversion models, Mr. Hunt generally defines "single-line markets" as those in which the modeled "best" Quantanet route has junction frequency equal zero. In Exhibit 3-1, however, Mr. Hunt classifies carload markets as "single-line service available" if the modeled route involves at most one Class I railroad (and may include non-Class I railroads). In his truck-to-rail and rail-to-rail diversion models, Mr. Hunt generally defines "interline markets" as those in which the modeled "best" Quantanet route has junction frequency greater than zero. In Exhibit 3-1, however, Mr. Hunt classifies carload markets as "interline service only available" when the modeled route requires more than one Class I railroad. *See* Hunt VS, Exhibit 3-1 and footnote 24, pp. 23–25; Appendix A.5–A.7, pp. 104–110; and pp. 139, 154.

24 *See* Hunt & Schabas VS, Exhibits 3-1 and 3-2, pp. 12–14. *See also*, Hunt & Schabas VS, Exhibits 3-3 and 3-4, pp. 14–15.

was materially reduced in Mr. Hunt's April 2026 Verified Statement after he corrected an error whereby he treated Rule 11 interline traffic as if it were single-line traffic.[25] I discuss this issue in greater detail in Appendix B.2.

27. Even using Mr. Hunt's revised classification, however, the data underlying Mr. Hunt's analysis show that there is substantial variation among single-line Hunt markets and among interline Hunt markets, with substantial overlap between the two categories in any given mileage band. Figure 7 illustrates that point for carload Hunt markets between 1,000 and 1,499 miles, the mileage category in which Mr. Hunt predicts more truck-to-carload diversions than in any other mileage category.[26] The figure uses the data underlying Mr. Hunt's Exhibit 3-1 and

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[25] *See* Hunt VS, Exhibits 3-1 and 3-2, pp. 23–25. *See also*, Hunt VS, Exhibits 3-3 and 3-4, pp. 26–27.

Rule 11 is a rail billing arrangement under which an interline shipment involving multiple railroads is billed separately by each participating railroad, rather than under a single through waybill. *See* Hunt VS, p. 99 and footnote 121. *See* Surface Transportation Board, "Carload Waybill Sample Reference Guide," March 5, 2025, available at: https://stb.gov/wp-content/uploads/2023-STB-Waybill-Reference-Guide.pdf, p. 110. *See also,* Association of American Railroads, "Railway Accounting Rules," October 1, 2026, available at: https://public.railinc.com/sites/default/files/documents/RAR.pdf, Freight Mandatory Rule 11, p. 62.

In his December 2025 analysis, Mr. Hunt treated Rule 11 traffic as single-line. In his April 2026 analysis, after obtaining complete Class I traffic data, he treated Rule 11 traffic as interline, which is the correct categorization. The measured single-line advantage declined materially in several mileage categories. *See* Appendix B.2, Figure 53 and Figure 54.

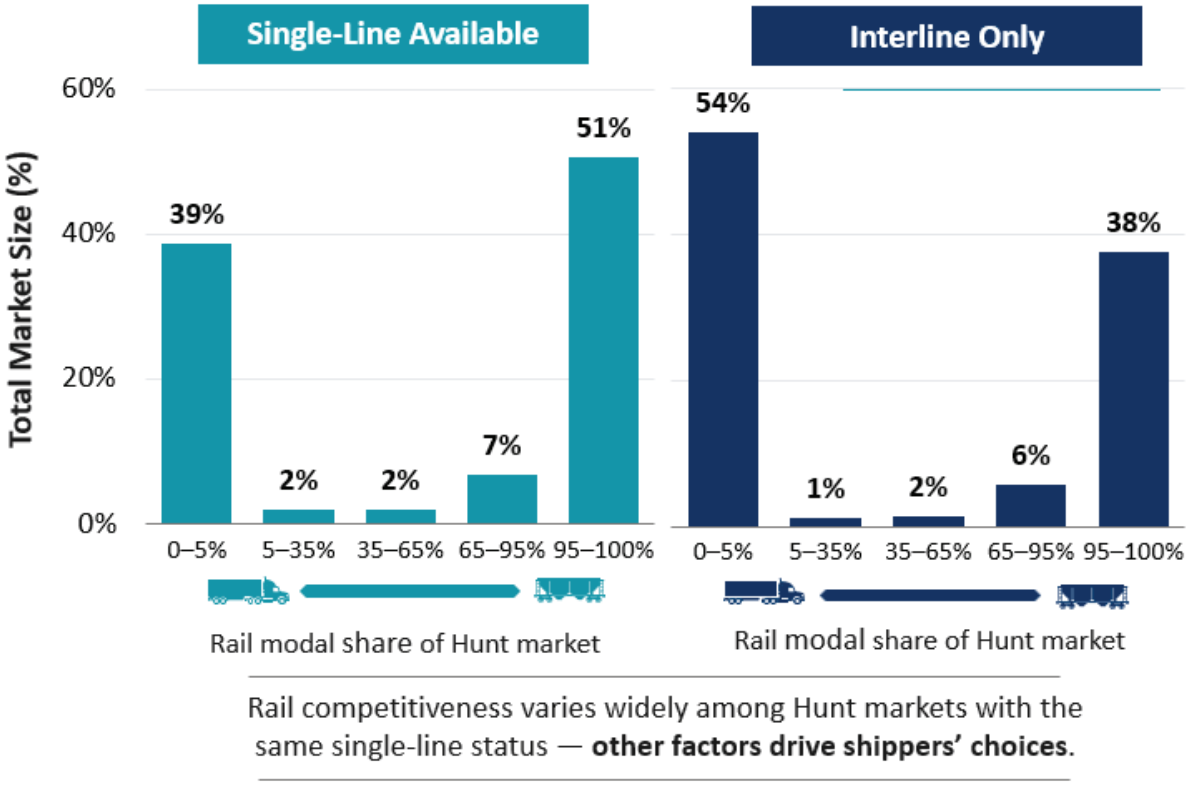
[26] I focus on the 1,000–1,499-mile category because Mr. Hunt predicts more truck-to-carload diversions in that category than in any other mileage category. *See* Hunt VS, Exhibit 4-12 for a breakdown of Mr. Hunt's predicted carload diversions by mileage bin. Exhibit 4-12 was pasted into Mr. Hunt's VS without the corresponding mileage bin labels, but the underlying data can be found with the mileage bin classifications in Hunt Workpaper, "C-Section 4 Exhibits vFinal.xlsx," tab '4-12.'

The analysis uses the data underlying Hunt VS, Exhibit 3-1, as incorporated into Mr. Hunt's truck-to-carload dataset. Hunt markets are defined at the origin-county, destination-county, STCC2 level, consistent with Mr. Hunt's carload diversion analysis. For purposes of Figure 7, I classify a Hunt market as interline-only when the "best" Quantanet route has junction frequency greater than zero, consistent with the definition used in Mr. Hunt's diversion analysis. Appendix B.1 presents comparable histograms for the remaining mileage categories. Those distributions similarly show substantial variation within the single-line and interline categories, although the extent of overlap and the average single-line advantage vary across mileage categories. *See* Workpaper "Rail_Shares.xlsx."

compares the distribution of observed rail modal shares in Hunt markets where single-line service is available with Hunt markets classified as interline-only. While single-line Hunt markets have a higher rail modal share on average, there is substantial variation within both groups. A significant amount of traffic in single-line Hunt markets is associated with very low rail modal shares, while substantial traffic in interline-only Hunt markets is associated with very high rail modal shares. The two distributions shown in Figure 7 below therefore exhibit similar patterns.

FIGURE 7: RAIL MODAL SHARES VARY WIDELY IN BOTH INTERLINE AND SINGLE-LINE HUNT MARKETS

1,000–1,499 MILEAGE BIN



Sources and Notes: Data in the figures from Hunt Workpaper, "t2r_2026.enhanced_transearch__T2Merch_output_2026_vFinal," based on Mr. Hunt's Exhibit 3-1. Hunt markets are defined at the origin county-destination county-STCC2 level. An "interline-only" Hunt market is one in which the "best" Quantanet route has junction frequency greater than

zero. The figure includes markets Mr. Hunt classifies as "competitive" and "rail-only"[27] and excludes coal (STCC 11), crude (STCC 13), hazardous materials (STCC 48 and 49), missing STCC (STCC 00 and 99), and routes to or from Alaska.[28] Many interline-only Hunt markets have high rail modal shares, and indeed often have modal shares higher than single-line Hunt markets. More precisely, more than 29,000 county-to-county, STCC2-level markets that Mr. Hunt classifies as interline-only have rail modal shares exceeding 80 percent.[29] These high-share interline-only Hunt markets span a broad range of railroads, lengths of haul, regions, commodities, and total freight volumes. Figure 8 summarizes those results in five panels. Bins include their upper endpoint; for example, a market with exactly 5 percent rail modal share is included in the 0–5 percent bin, not the 5–35 percent bin. *See* Script "01_rail_shares_workpaper_data_preparation.R."; Workpapers "Rail_Shares.xlsx" and "Single-Line_and_Interline_Figure.pptx."

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[27] In his truck-to-rail models, Mr. Hunt uses truck traffic data from S&P Global Markets' 2023 Transearch freight database. *See* Hunt VS, p. 38 & Exhibit 4-4.

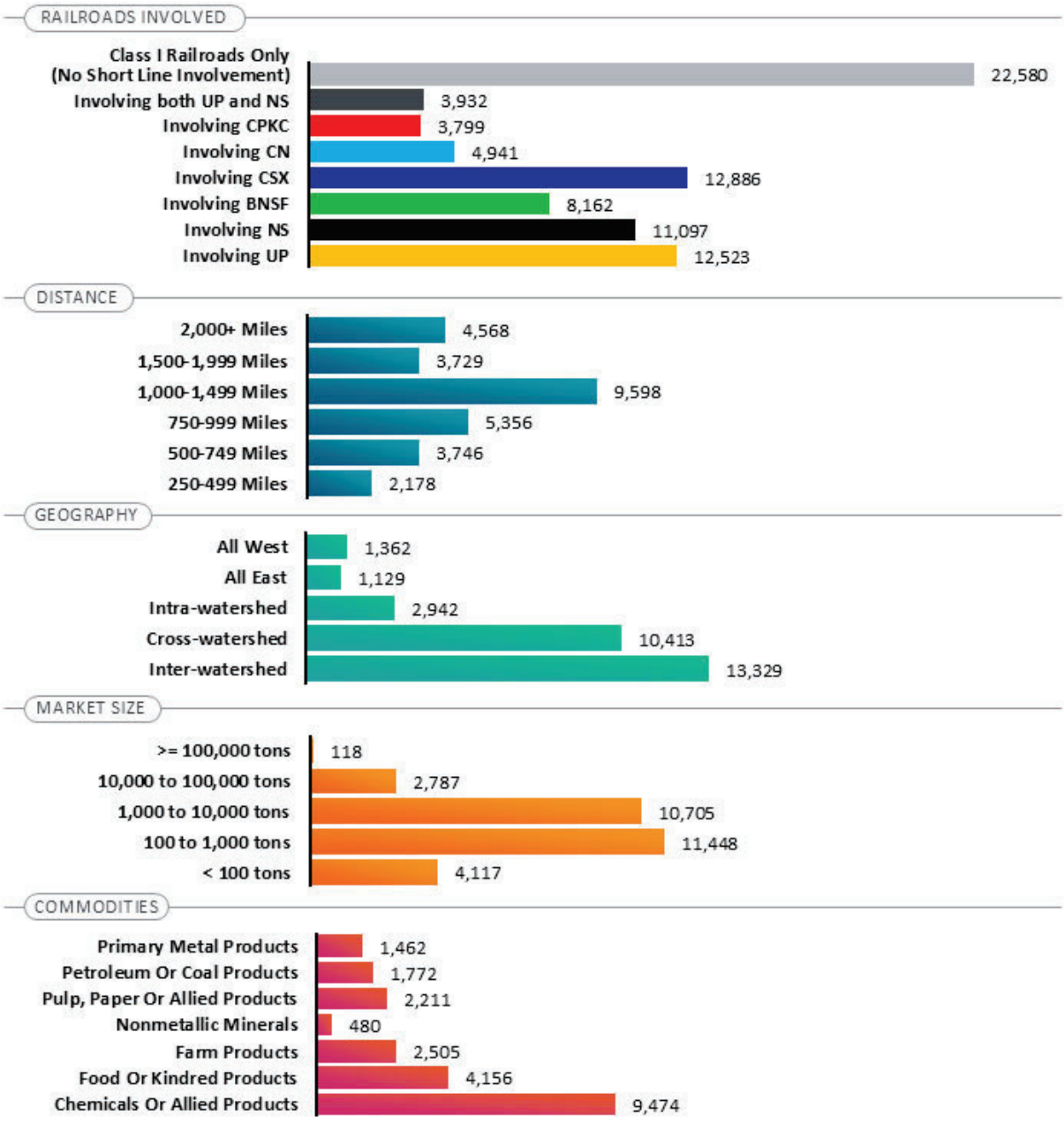
In his truck-to-carload analysis, Mr. Hunt defines a "competitive" market as a market (i.e. origin county-destination county-STCC2-truck equipment type) where "both truck and rail compete," meaning that truck traffic is reported in Transearch and a Quantanet rail route exists. Similarly, he defines a "rail-only" market as a one for which a Quantanet rail route exists but no truck traffic is reported in Transearch; and a "truck-only" market as one with truck traffic reported in Transearch but no Quantanet rail route exists. *See* Hunt VS, pp. 148–149, 153 and Hunt Workpaper, "MerchBuildAll_2026_vFinal.sql," lines 1352–1357.

[28] A Standard Transportation Commodity Code (STCC) is a standardized commodity description used by freight carriers. It is a seven-digit numeric code representing 38 commodity groupings. The first two ("STCC2"), three ("STCC3"), four ("STCC4"), and five ("STCC5") digits of a STCC are high-level aggregations of the full seven-digit commodities starting with those digits. *See* Railinc, "Standard Transportation Commodity Code," last accessed September 25, 2026, https://public.railinc.com/resources/standard-transportation-commodity-code; and Railinc, "Commodity Classification Systems," available at: https://public.railinc.com/sites/default/files/documents/STCC_CommodityClassSchemes.pdf, pp. 3–4.

[29] In this analysis, I apply Mr. Hunt's carload diversion criterion for an "interline-only" Hunt market: the "best" Quantanet route has junction frequency greater than zero. *See also*, footnote 441. In Exhibit 3-1, Mr. Hunt instead classifies markets as interline-only when the modeled route requires more than one Class I railroad. Even under that narrower classification, more than 24,000 Hunt markets have rail modal shares above 80 percent. The analysis uses the data underlying Hunt VS, Exhibit 3-1; Hunt markets are defined at the origin-county, destination-county, STCC2 level. *See* Workpaper "Rail_Shares.xlsx." *See also*, Workpaper "all_il_routes.xlsx" for a full list of these 29,000 interline-only Hunt markets, which can be obtained by filtering the column "rail_share_above_80" (column "Y") to 1.

FIGURE 8: CARLOAD INTERLINE-ONLY HUNT MARKETS CAN ACHIEVE HIGH RAIL MODAL SHARES ACROSS MULTIPLE DIMENSIONS

NUMBER OF CARLOAD INTERLINE-ONLY HUNT MARKETS WITH AT LEAST 80 PERCENT RAIL MODAL SHARE



Sources and Notes: Data in the figures from Hunt Workpaper, " t2r_2026.enhanced_transearch__T2Merch_output_2026_vFinal," based on Mr. Hunt's Exhibit 3-1. Hunt markets are defined at the origin county-destination county-STCC2 level. An "interline-only" Hunt market is one in which the "best" Quantanet route has junction frequency greater than zero, consistent with Mr. Hunt's diversion analysis. The figure includes markets Mr. Hunt

classifies as "competitive" and "rail-only" with a rail modal share of at least 80 percent and excludes coal (STCC 11), crude (STCC 13), hazardous materials (STCC 48 and 49), missing STCC (STCC 00 and 99), and routes to or from Alaska. Railroad assignments are based on Quantanet results and therefore do not necessarily identify the railroad(s) that actually carried the traffic; because interline routes involve more than one railroad, carrier categories are not mutually exclusive. An interline-only Hunt market involving more than one listed railroad appears in each applicable category. There are 29,175 unique Hunt markets shown in the top four panels. There are 22,060 unique Hunt markets displayed in the bottom panel, "Commodities." The other panels include other commodity codes not shown in the figure. *See* Script "01_rail_shares_workpaper_data_preparation.R"; Workpapers "Rail_Shares.xlsx" and "Interline_Only_High_Rail_Share_Figure.pptx"

28. The same general point is evident in intermodal traffic.[30] Figure 9 maps the highest-share existing interline intermodal Hunt markets in Mr. Hunt's current-state dataset.[31] The examples include long-haul Hunt markets connecting [redacted] with [redacted] as well as Hunt markets connecting [redacted] with [redacted] and [redacted]. Several of these services [redacted], which provides coordinated interline service [redacted] between [redacted] and [redacted].[32] These Hunt

[30] When discussing specifically intermodal traffic, I use the term "intermodal share" to refer to intermodal units as a share of combined intermodal and truck traffic in a given Hunt market. Mr. Hunt also uses the terms "intermodal rail market share," "intermodal share," and "rail share," when referring to intermodal traffic (*see, e.g.*, Hunt VS, pp. 24, 120, 142–143).

[31] The Hunt markets shown are the eight interline markets with the highest observed intermodal shares among Hunt markets in Mr. Hunt's current-state intermodal dataset. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Current_IM_routes.' See further information on the Hunt markets in Hunt's current-state intermodal dataset in footnote 211.

[32] I discuss [redacted] and its operating arrangements in greater detail in Section IV.D. The map is intended to illustrate existing interline service patterns, not to suggest that the same operating arrangement applies to every Hunt market shown.

[redacted]

markets are defined differently from the carload Hunt markets discussed above, but they likewise show that interline service can achieve substantial rail participation without a merger.

FIGURE 9: EXISTING INTERLINE INTERMODAL SERVICES CAN ACHIEVE HIGH INTERMODAL SHARES



Sources and Notes: "IM" refers to intermodal. Selected interline Hunt markets with high observed intermodal shares from Mr. Hunt's current-state intermodal dataset. Total market size equals intermodal plus truck units, and intermodal share equals intermodal units divided by total market size. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Current_IM_routes'; Script "03A_top_IL_map.R."

[redacted]. *See also*, Hunt VS, p. 109.

29. Rail modal share also varies substantially even among Hunt markets where single-line service is available. One dimension of variation involves the railroad that is positioned to provide single-line service. Figure 10 compares the average rail modal shares in single-line-available carload Hunt markets according to whether Mr. Hunt's modeled "best" route is provided by UP, NS, or by another Class I railroad.[33] The figures show the three mileage categories accounting for the largest number of Mr. Hunt's predicted truck-to-carload diversions.[34] Within each mileage category, average rail modal shares vary substantially depending on the identity of the railroad providing the modeled "best" single-line route, even though single-line service is available in all of the Hunt markets. As I explain in Sections IV and V, the underlying drivers for this variation likely include factors that Mr. Hunt's analysis does not examine, such as the commercial strategies of railroads serving the Hunt market, the commodity mix, the degree and intensity of rail-to-rail and modal competition in the Hunt market, among others. This variation, however, reinforces the point that single-line status alone does not determine rail competitiveness against other modes. Appendix B.1 presents corresponding figures for the remaining mileage categories and the distribution in rail modal shares across each mileage category.

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[33] The analysis uses the data underlying Hunt VS, Exhibit 3-1. Hunt markets are grouped according to whether the "best" Quantanet route is a single-line route operated by UP or NS or by another Class I railroad. Railroad identity therefore reflects Mr. Hunt's modeled route assignment and does not necessarily identify, for those Hunt markets where the rail modal share is positive, the railroad that carried all observed traffic in the Hunt market. *See* Workpaper "Rail_Shares.xlsx."

[34] *See* Hunt VS, Exhibit 4-12 for a breakdown of Mr. Hunt's predicted carload diversions by mileage bin. Exhibit 4-12 was pasted into Mr. Hunt's VS without the corresponding mileage bin labels, but the underlying data can be found with the mileage bin classifications in Hunt Workpaper, "C-Section 4 Exhibits vFinal.xlsx," tab '4-12.'

FIGURE 10: AVERAGE RAIL MODAL SHARES DIFFER BY THE RAILROAD PROVIDING MR. HUNT'S MODELED "BEST" SINGLE-LINE ROUTE



Sources and Notes: Data in the figures from Hunt Workpaper, "t2r_2026.enhanced_transearch__T2Merch_output_2026_vFinal," based on Mr. Hunt's Exhibit 3-1. Hunt markets are defined at the origin county-destination county-STCC2 level and are limited to markets in which Mr. Hunt's "best" Quantanet route has junction frequency equal to zero, consistent with Mr. Hunt's diversion analysis. The figure includes markets Mr. Hunt classifies as "competitive" and "rail-only" and excludes coal (STCC 11), crude (STCC 13), hazardous materials (STCC 48 and 49), missing STCC (STCC 00 and 99), and routes to or from Alaska. Hunt markets are grouped based on whether that modeled route is provided by BNSF, CN, CPKC

(including CPRS, KCS, and KCSM), CSX, UP, or NS. I combine CPRS, KCS, and KCSM together as CPKC, consistent with what Mr. Hunt did in his diversion analyses. *See* Hunt VS, p. 105 & Exhibit A-3. Railroad assignments are based on Quantanet results and therefore do not necessarily identify the railroad that actually carried the traffic. I include only railroads in these figures where the total market size across all Hunt markets where that railroad is the "best" single-line operator for that mileage bin is more than one million tons. Average rail modal share weighted by total market tons (rail plus truck tons). *See* Script "01_rail_shares_workpaper_data_preparation.R."; Workpaper "Rail_Shares.xlsx."

30. These results show that single-line service can be associated with higher rail participation on average, but they also show that single-line status is far from determinative of the resulting rail modal shares. Rail modal shares vary widely within both single-line and interline Hunt markets. High-share interline Hunt markets occur across a broad range of market conditions, and substantial variation remains even among Hunt markets where single-line service is available. Single-line status is therefore one factor associated with rail competitiveness, but it does not by itself explain why rail performs well in some Hunt markets and poorly in others.

31. Nor do Mr. Hunt's modeled price, transit time, and junction frequency capture all the considerations that affect whether shippers use rail, including customer preferences and the practical conditions for winning traffic.[35] As discussed in the next section, Mr. Hunt groups together markets that may differ substantially in both actual service quality and rail participation.

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[35] For example, Mr. Houston, who has worked at UP for nine years in roles including marketing and sales and, currently, in strategy, testified that [redacted]. Deposition of Michael Houston, July 30, 2026, 73:14–75:17. *See also*, Table 1

Applicants' own commercial materials, such as UP_0082695, similarly identify [redacted] as factors affecting UP's ability to grow traffic. *See* Section III.C for further discussion of the internal analyses that Applicants perform.

For example, UP identified an opportunity in which the customer indicated that it would shift volume to UP if UP [redacted]. *See* UP_0082695, Opportunity ID OPP-093047; Table 1.

C. Rail Competitiveness and Traffic Growth Depend on Numerous Commercial, Operational, Customer, and Market Conditions

32. Whether rail attracts and retains traffic in a particular market depends on numerous conditions beyond whether the service is single-line or interline. These include the characteristics of the commodity and shipment, customer requirements and facility access, traffic density and directional balance, price and service quality, equipment and capacity, first- and last-mile logistics, competing transportation alternatives, the commercial and operating choices made by railroads and their customers, and many other factors.[36] Historical service performance, including periods of unreliable service, can also affect subsequent traffic patterns by influencing

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Another example identifies a [redacted] opportunity in which UP was disadvantaged on one lane by the customer's preference for [redacted], despite UP making an attempt to obtain that additional volume. *See* UP_0082695, Opportunity ID OPP-090820; Table 1.

Similarly, a 2023 NS presentation on intermodal growth opportunities explained that [redacted]" *See* Norfolk Southern, "Service Metrics for Growth," June 10, 2023, NS_00151071, at -079. This suggests that there was some factor other than transit times holding back traffic growth in lanes whose schedules improved.

[36] These considerations are familiar in both rail-industry practice and the economic literature. For example, a member of the UP-NS integration management office and General Director of UP Corporate Strategy David Welch testified that [redacted]. Deposition of David Welch, July 29, 2026, 198:2–200:11. Mr. Welch also testified that [redacted]. Deposition of David Welch, July 29, 2026, 234:8–235:9. Mr. Welch is a member of the [redacted], which was created when UP and NS announced their intention to merge. He has been a part of [redacted]. *See* Deposition of David Welch, July 29, 2026, 10:4–18, 134:16–135:22.

Academic research likewise identifies geography, shipment distance, commodity mix, service quality, rates, and railroad incentives as determinants of rail freight share. *See* José Manuel Vassallo & Mark Fagan, "Nature or Nurture: Why Do Railroads Carry Greater Freight Share in the United States than in Europe?," *Transportation* 34(2) (2007): 177–193, p. 177. Applicants' own contemporaneous commercial opportunity records, discussed below, provide additional market-specific examples. Mr. Hunt similarly testified that "there are more truck-centric commodities and more rail-centric commodities." Deposition of David T. Hunt, Vol. I, October 7, 2026, 198:22–199:7. *See also*, Deposition of David T. Hunt, Vol. II, October 8, 2026, 559:6–14.

shippers' willingness to consider rail or a particular railroad.[37] The importance of these conditions varies across markets. Thus, two markets with similar network configurations—or even similar modeled price and transit-time characteristics—may nevertheless exhibit very different levels of rail participation. These conditions also change over time, potentially changing rail participation without any change in railroad ownership.

33. NS's experience provides a concrete example of how service history can affect traffic growth. In the presentation slides reproduced in Figure 11, NS connects [redacted].

- The first image contains a slide from a [redacted]." Each such [redacted] appears to have lasted approximately [redacted], with the most recent lasting [redacted], from early [redacted] through early [redacted]. The slide further notes that [redacted]."[38]
- The second image is a slide taken from a [redacted]. This slide [redacted]. The slide [redacted].[39]

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[37] For example, in an October 2024 article citing the East Palestine derailment and other service issues, NS's executive vice president and chief commercial officer noted that NS "lost business the past few years because of service and now are trying to win it back." Jeff Stagl, "Despite a Third Major Setback in Two Years, Norfolk Southern Remains Committed to Business Strategy," Progressive Railroading, October 2024, last accessed October 16, 2026, https://www.progressiverailroading.com/norfolk_southern/article/Despite-a-third-major-setback-in-two-years-Norfolk-Southern-remains-committed-to-business-strategy--72997. *See also*, Norfolk Southern, "Intermodal 2030 Growth Plan," January 17, 2023, NS_00219377, at -410 [redacted].").

[38] Norfolk Southern, "NS Strategy," March 2025, NS_00120237, at -240.

[39] Norfolk Southern, "Norfolk Southern Business Overview," June 14, 2024, NS_00527757, slide 8.

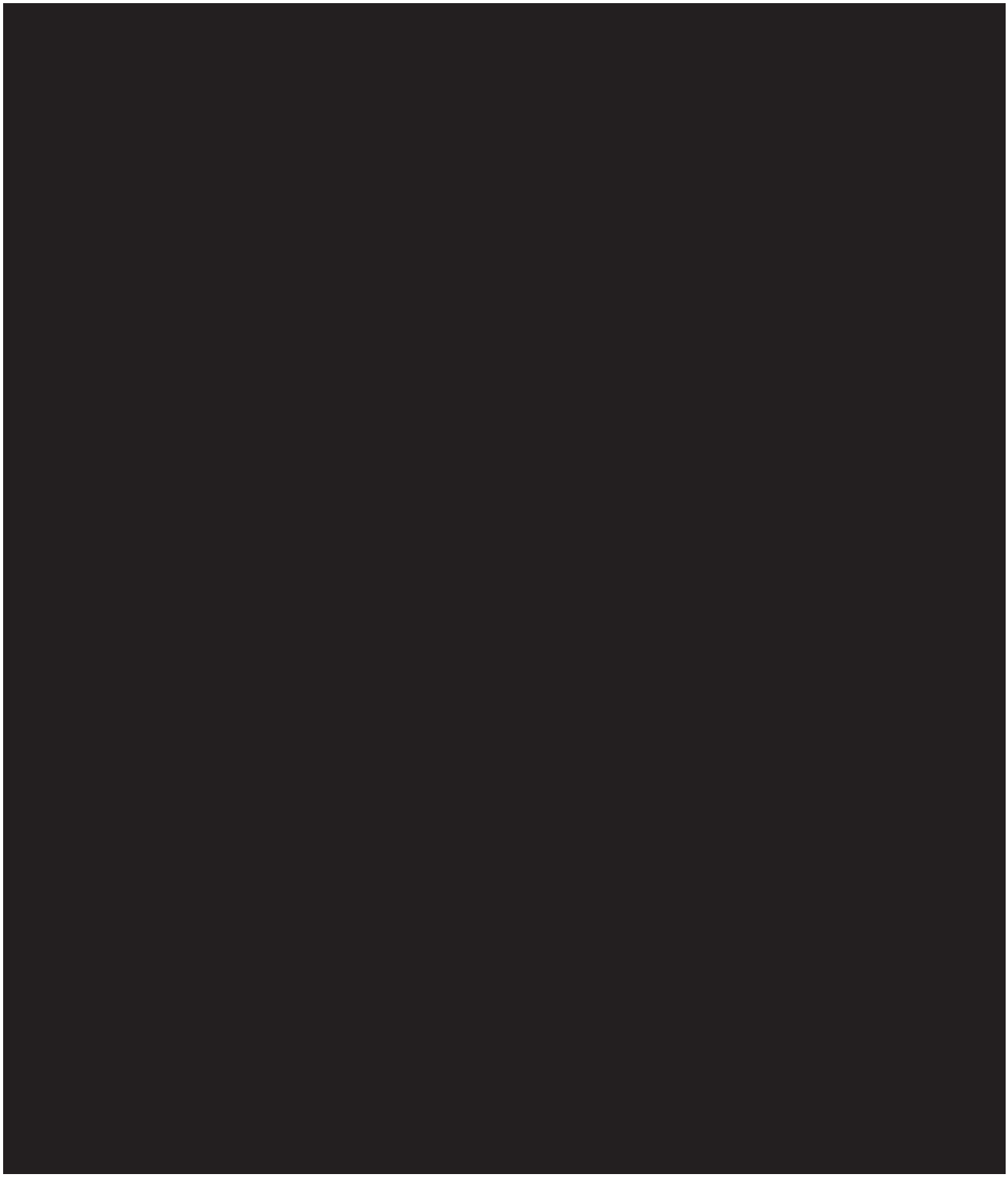
- The third image in this figure concerns [redacted]. Specifically, it notes that [redacted]."[40]

FIGURE 11: NS DOCUMENTS LINK ITS RECENT SERVICE PROBLEMS TO TRAFFIC OUTCOMES

[redacted]

[40] Norfolk Southern, "Investor Day," December 6, 2022, NS_00688226, slide 11.

The presentation of the slide suggests that the comment may have originated from an investor. Nevertheless, according to an article covering the event, Alan H. Shaw, President and Chief Executive Officer of Norfolk Southern made a similar statement in his remarks: "A company can't expect to provide sustainable growth if it provides its customers with a lousy service product every three years." *See* Jeff Stagl, "NS Pursues 'Resilience Railroading' as Part of New Service-Disruption Strategy," Progressive Railroading, last accessed October 20, 2026, https://www.progressiverailroading.com/railPrime/details/NS-pursues-resilience-railroading-as-part-of-new-service-disruption-strategy--68211.



Sources and Notes: *See* footnotes 38, 39, and 40.

34. NS made similar connections outside those presentations. In 2022, NS reported that lower network velocity contributed to volume declines and identified service disruptions and

terminal congestion among the causes of lower domestic intermodal volume.[41] Consistent with these reports, internal NS documents describe how [redacted]."[42] NS later explained that it had "lost business the past few years because of service" and was working to win that traffic back.[43] Consistent with that experience, NS's Chief Executive Officer has emphasized that sustained traffic growth requires a consistently reliable service product, and NS planning documents list [redacted]" as [redacted][44]

35. Publicly reported operating measures corroborate the deterioration in NS service leading up to 2023, the base year for Applicants' growth analysis. Several measures of NS

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[41] Norfolk Southern Corporation Form 10-K for the Fiscal Year Ended December 31, 2022, p. K23. NS reported that domestic intermodal volume declined 2 percent in 2022 and stated that the decline was "due to service disruptions, terminal congestion, strong over-the-road competition, and increased truck availability." NS also reported earlier in 2022 that volume declines were "partly attributable to lower network velocity." *See* Norfolk Southern Corporation, Quarterly Report on Form 10-Q for the quarter ended March 31, 2022, p. 17.

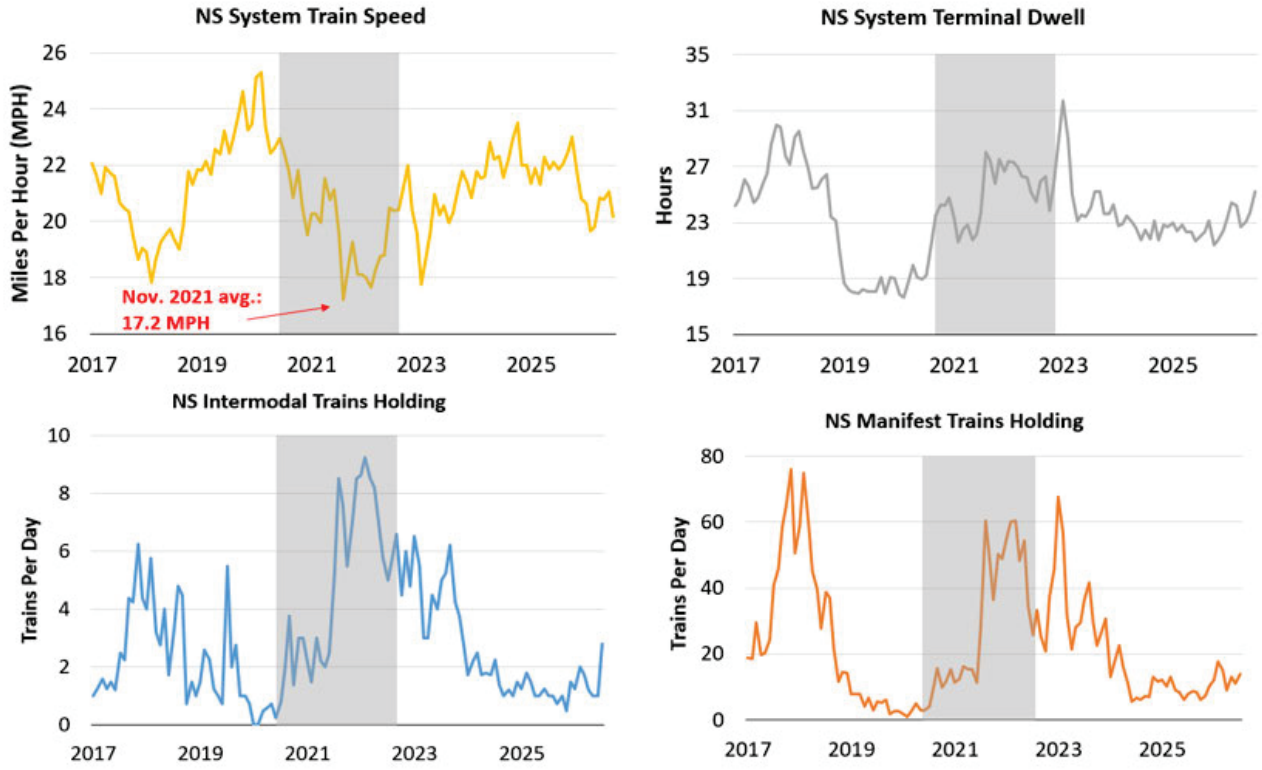
[42] This document notes that [redacted] *See* Norfolk Southern, "Service Metrics for Growth," June 10, 2023, NS_00151071, at -078.

[43] Jeff Stagl, "Despite a Third Major Setback in Two Years, Norfolk Southern Remains Committed to Business Strategy," Progressive Railroading, October 2024, last accessed October 16, 2026, https://www.progressiverailroading.com/norfolk_southern/article/Despite-a-third-major-setback-in-two-years-Norfolk-Southern-remains-committed-to-business-strategy--72997. NS Executive Vice President and Chief Commercial Officer Claude Elkins stated: "We lost business the past few years because of service and now are trying to win it back."

[44] Norfolk Southern, "Intermodal 2030 Growth Plan," January 17, 2023, NS_00219377, at -410. *See* Jeff Stagl, "NS Pursues 'Resilience Railroading' as Part of New Service-Disruption Strategy," Progressive Railroading, last accessed October 20, 2026, https://www.progressiverailroading.com/railPrime/details/NS-pursues-resilience-railroading-as-part-of-new-service-disruption-strategy--68211. According to the article, Alan H. Shaw, President and Chief Executive Officer of Norfolk Southern Corporation stated during Norfolk Southern's Investor Day on December 6, 2022: "A company can't expect to provide sustainable growth if it provides its customers with a lousy service product every three years." In discussing NS's "resilience" strategy, he also explained that NS had modeled "conservative estimates of missed revenue and additional operating costs in 2021 and 2022 due to service issues." *See* Norfolk Southern, "Remarks From President & CEO Alan Shaw," Investor Day, December 2022, available at: https://www.norfolksouthern.com/content/dam/nscorp/newsroom/story-yard/pdf/FINAL-NSC-AHS-IR-Day-Remarks-Full-Text-Design.pdf, p. 5.

operating performance deteriorated materially beginning in 2021 and remained weak through much of 2022 and into 2023, as shown in Figure 12. Average system train speed fell particularly sharply in late 2021, while terminal dwell and the number of intermodal and manifest trains held increased substantially. These changes followed a period of materially stronger operating performance in 2019 and 2020.

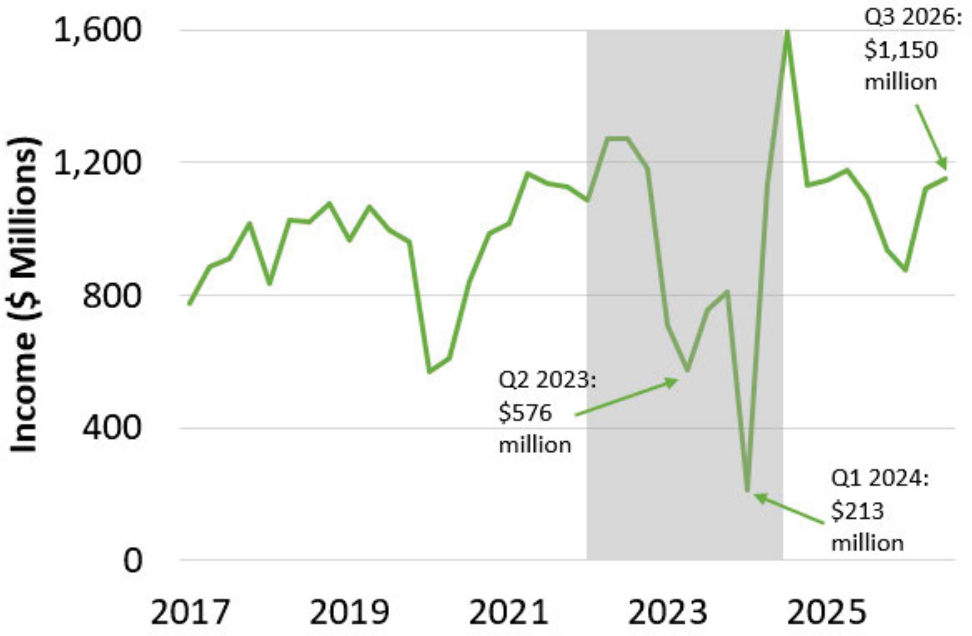
FIGURE 12: NS OPERATING PERFORMANCE DETERIORATED MATERIALLY IN 2021–2022



Sources and Notes: Surface Transportation Board, EP 724 service performance data, through October 30, 2026. *See* Script "01_NS_service_figures.R"; Workpaper "NS_Service_Performance.xlsx." Note that EP 724 is a publicly available dataset published by the Board with railroad-reported data on service metrics for all Class I railroads. *See* Surface Transportation Board, "Open Data Portal (Beta)," last accessed November 5, 2026, https://opendata.stb.gov/pages/homepage/, "ep724-public-data.csv." Public data filtered only to NS values prior to downloading. Gray shading highlights the period 2021-2022, when NS service performance deteriorated.

36. Additionally, NS's reported income from railway operations fell shortly after the period of deteriorating service documented above in Figure 12. As Figure 13 shows, quarterly income generally remained high through 2022 before substantially declining in 2023, the base year for Applicants' growth analysis.[45]

FIGURE 13: NS REPORTED QUARTERLY INCOME FROM RAIL OPERATIONS DECLINED IN 2023



Sources and Notes: Figure uses quarterly reported income from railway operations, in millions of dollars. Data collected from Q1 2017 through Q3 2026. The series uses reported results under U.S. generally accepted accounting principles ("GAAP"), rather than NS's adjusted, non-GAAP results. *See* Workpaper "NS_Service_Performance.xlsx." *See also,* Norfolk Southern's Quarterly Financial Data, "Financial Reports, Consolidated Statements of Income," 2017–2026, last accessed November 6, 2026, https://norfolksouthern.investorroom.com/financial-reports. Gray shading highlights the year 2023, when income from rail operations declined.

[45] NS's reported income from rail operations fell from $4,809 million in 2022 to $2,851 million in 2023. In 2023, NS reported $1,116 million in expenses related to a train derailment incident in Eastern Ohio. Excluding those expenses, income from rail operations would have been $3,967 million in 2023, which is $842 million, or approximately 18 percent, below 2022. *See* Norfolk Southern Corporation, "2023 Quarterly Financial Data Q4," available at: https://filecache.investorroom.com/mr5ir_nscorp/875/4Q_2023_Financial_Data.pdf, pp. 1–3.

37. Consistent with these data, a weekly public report, titled "The State of Rails," which "monitors operational trends for the North American Class I railroads," similarly identified deteriorated UP and NS services over the same period.[46] That report identified lower NS "network velocity" accompanied by increases in train holdings in 2023 relative to subsequent years.[47] It also found that UP's system velocity fell substantially during the 2021–2023 period. The declines in system velocity were accompanied by increases in train holdings and terminal dwell relative to more recent years.[48]

38. NS's experience illustrates why traffic observed in a particular year may reflect earlier service performance and customer experience, rather than only contemporaneous network characteristics. Service history is one source of variation across markets. Applicants' own commercial opportunity records identify another: the customer and market-specific conditions that affect whether a railroad can capture traffic even when an opportunity has been identified. In evaluating potential traffic opportunities, UP and NS consider [redacted].[49] Table 1 draws on UP's ordinary-course Salesforce records

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46 *See* Rick Patterson, "The State of the Rails," June 26, 2026, p. 1.

47 *See* Rick Patterson, "The State of the Rails," June 26, 2026, p. 22.

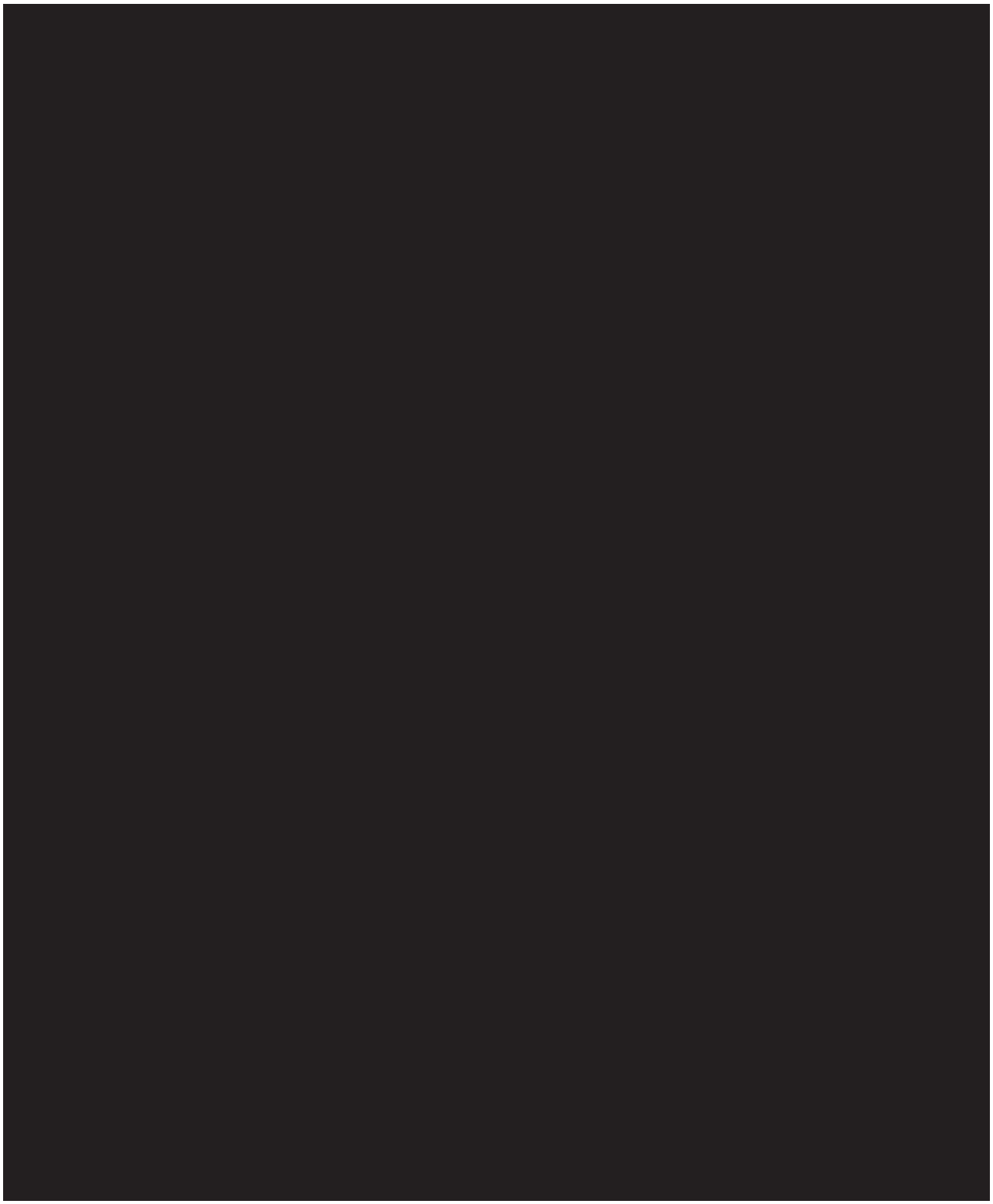
48 *See* Rick Patterson, "The State of the Rails," June 26, 2026, p. 7.

49 *See* UP_0082695 (UP Salesforce records identifying [redacted] as considerations affecting individual traffic opportunities); Email from Josh Perkes (UP), with subject "Friday Thoughts 3-8-24," March 8, 2024, UP_0557218 (internal UP communication explaining [redacted]). *See also*, Table 1 for selected examples. For example, an internal UP document considers that [redacted] matter, noting that [redacted]." *See* Union

to illustrate some of the factors its commercial personnel identified as affecting whether UP could capture a business opportunity. These examples show that whether an identified traffic opportunity can be captured may depend on a range of market-specific commercial and operating conditions.

Pacific, "M&S 2022 AOP Review Operating Committee," October 4, 2021, UP_1563143, at -153. NS also identifies [redacted] as a constraint on intermodal service performance, citing [redacted] and [redacted] and [redacted] *See* Norfolk Southern, "IM Domestic MCU," November 8, 2022, NS_00103234, at -257–259. Furthermore, NS documents note that [redacted] matters. An NS strategy document explains that [redacted]" when competing for new business. *See* Norfolk Southern, "Proposed New Strategy: Cost-Efficient Market Differentiation," NS_00159602, at -603. Another NS document records [redacted]," suggesting that these factors matter for winning new business. *See* Norfolk Southern, "Business Conditions," October 1, 2021, NS_00100234, at -254. Other documents note that [redacted]." *See* Norfolk Southern, "Service Metrics for Growth," June 10, 2023, NS_00152958, at -962.

TABLE 1: UP'S OWN COMMERCIAL OPPORTUNITY RECORDS IDENTIFY A WIDE ARRAY OF FACTORS AFFECTING ITS ABILITY TO ATTRACT AND RETAIN RAIL TRAFFIC GROWTH



Sources and Notes: UP_0082695 contains internal Salesforce records concerning UP commercial opportunities to attract traffic from trucks and other railroads. The records were last modified

through April 28, 2026. *See* UP_0082695. [1]: OPP-093047; [2]: OPP-097094; [3]: OPP-044123; [4]: OPP-096845; [5]: OPP-090820; [6]: OPP-034164; [7]: OPP-085134; [8]: OPP-095430; [9]: OPP-099566; [10]: OPP-095745. *See* Workpaper "Salesforce_Opportunities.xlsx."
[A]: Commodity identified in the Salesforce opportunity record.
[B]: Stage of opportunity as recorded in the Salesforce opportunity record.
[C]: Origin and destination identified in the Salesforce opportunity record.
[D]: Summary of the commercial or operational circumstances identified in the Salesforce opportunity record.
[E]: Broader factor illustrated by the circumstances described in [D].

39. NS's own intermodal growth planning identifies [redacted], and specifically the [redacted] as an important factor in enabling intermodal growth.[50] Its analysis also shows that [redacted] to NS terminals varies across metropolitan markets. For example, the share of large warehouse space located within [redacted] miles of an NS terminal ranges from [redacted] percent in Chicago to [redacted] percent in Columbus, compared with [redacted] percent in Atlanta and [redacted] percent in the Northeast.[51] Mr. Hunt's analysis does not account for those differences.

40. Numerous conditions affecting rail participation, including several of those described above, can also change materially over time. Mr. Hunt's analyses use 2023 traffic and market conditions as the empirical baseline, but factors relevant to rail-versus-truck competition have continued to evolve since then.[52] That evolution matters because Mr. Hunt applies relationships drawn from 2023 traffic to predict future outcomes without separately estimating or controlling for how changes in these other conditions would affect traffic absent the merger. Changes in those factors may therefore affect his ultimate results. Figure 14 illustrates that point

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50 *See* NS_00163218, at -219–220 (describing the desirable locations of NS intermodal terminals [redacted] and NS's intention to [redacted]).

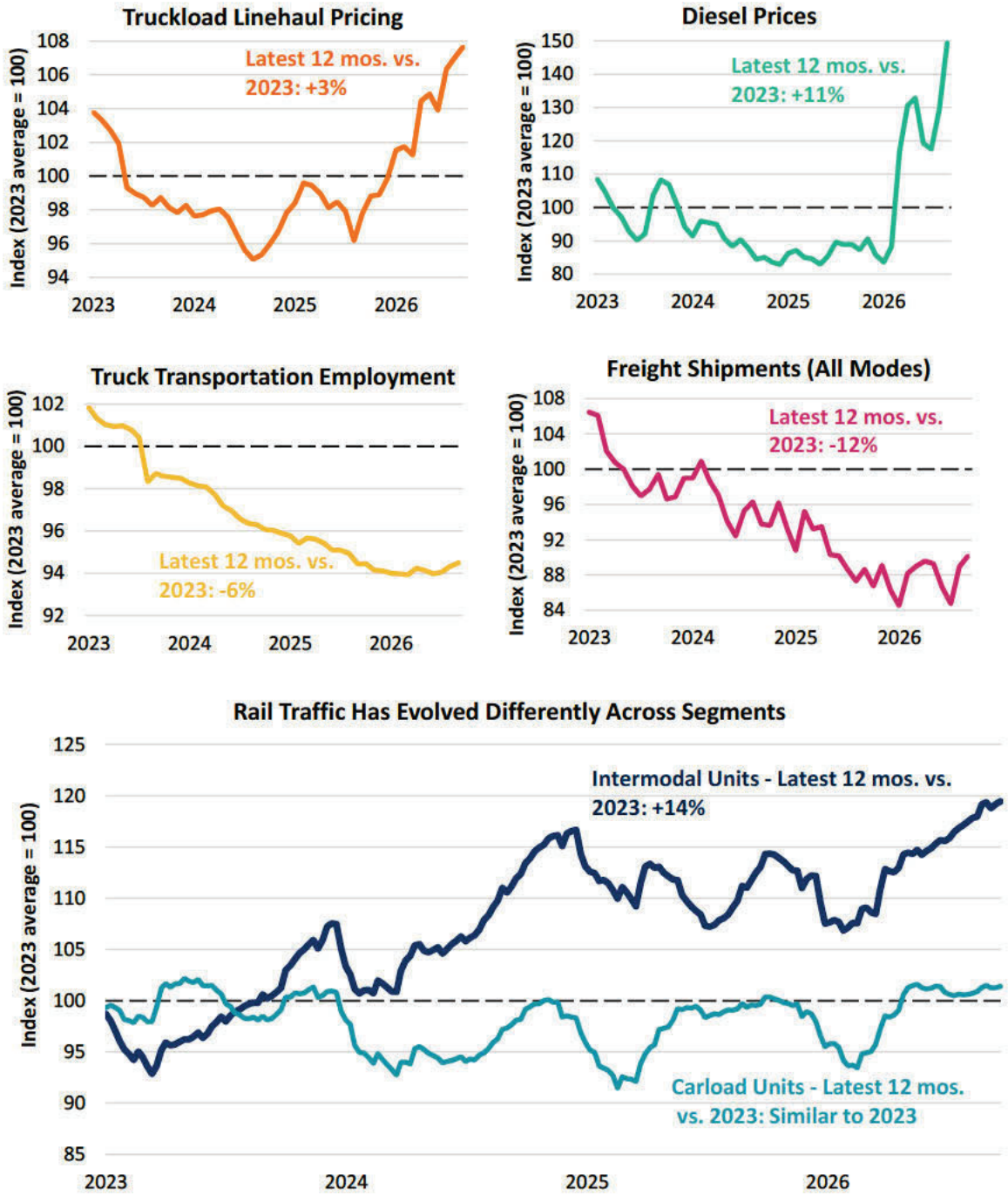
51 *See* Norfolk Southern, "Intermodal 2030 Growth Plan," January 17, 2023, NS_00219377, at -385.

52 *See* Hunt VS, Exhibit 4-4, p. 38 & Exhibit 6-3, p. 70; Hunt Supp. VS, pp. 39–41.

using several national freight-market indicators. The changes are not uniform: over the latest 12 months, truckload linehaul pricing was approximately 3 percent above its 2023 average and diesel prices were approximately 11 percent higher, while truck transportation employment (an indirect measure of trucking capacity) and broader freight shipments were below their 2023 averages. Rail traffic has also evolved differently across segments. Intermodal units were approximately 14 percent above their 2023 average over the latest 12 months, while total rail carloads were down by about 1 percent relative to their 2023 average.[53]

[53] *See* Workpaper "Freight_Market_Conditions_Comparison.xlsx."

FIGURE 14: FREIGHT MARKET CONDITIONS AND RAIL TRAFFIC HAVE EVOLVED SINCE 2023



Sources and Notes: Each series is indexed to its 2023 average (= 100). Weekly series are shown as 13-week moving averages. The reported latest-12-month comparisons are calculated from the underlying observations rather than the moving-average series. The vertical scale differs across figures. The indicators measure different aspects of national freight-market activity and are not directly comparable measures of modal market share. National averages may mask larger changes in individual freight markets. Percentages shown in the figures equal the average of the latest 12

months of underlying observations divided by the 2023 average for the same indicator, minus one. *See* Workpaper "Freight_Market_Conditions_Comparison.xlsx."

[1] (top left): Cass Information Systems, Inc., "Cass Truckload Linehaul Index," January 2023–September 2026. The index measures changes in U.S. truckload linehaul rates, excluding fuel and accessorial charges. *See* Cass Information Systems, Inc., "Cass Truckload Linehaul Index," last accessed October 30, 2026, https://www.cassinfo.com/freight-audit-payment/cass-transportation-indexes/truckload-linehaul-index.

[2] (top right): *See* U.S. Energy Information Administration, "Weekly Retail Gasoline and Diesel Prices," U.S. No. 2 Diesel Retail Prices (Dollars per Gallon), January 2023–September 2026, last accessed October 30, 2026, https://www.eia.gov/dnav/pet/pet_pri_gnd_a_epd2d_pte_dpgal_a.htm.

[3] (middle left): *See* U.S. Bureau of Labor Statistics, "All Employees, Truck Transportation," seasonally adjusted, January 2023–September 2026, retrieved through Federal Reserve Economic Data (FRED), Federal Reserve Bank of St. Louis, series CES4348400001, last accessed October 30, 2026, https://fred.stlouisfed.org/series/CES4348400001.

[4] (middle right): Cass Information Systems, Inc., "Cass Freight Index—Shipments," January 2023–September 2026. The index measures freight shipment activity based on freight invoices processed by Cass and reflects a broad range of North American freight activity. *See* Cass Information Systems, Inc., "The Cass Freight Index," last accessed October 30, 2026, https://www.cassinfo.com/freight-audit-payment/cass-transportation-indexes/cass-freight-index.

[5] (bottom): Association of American Railroads, weekly U.S. rail traffic reports, January 2023–September 2026. The series report weekly U.S. carloads and intermodal units, these totals exclude the U.S. operations of CPKC, CN, and GMXT. *See, generally,* Association of American Railroads, Weekly Rail Traffic Reports, https://www.aar.org/data-center/. To download all Association of American Railroads ("AAR") data*, see, e.g.,* "U.S. Rail Traffic, Week 40, 2022 – Ended October 8, 2022, available at: https://www.aar.org/wp-content/uploads/2022/10/2022-10-12-railtraffic.pdf, p. 1. To download additional weekly pdfs, adjust the dates in the URL.

41. Figure 14 provides another illustration of how the conditions affecting rail participation can change over time. Truck pricing, fuel costs, freight demand, trucking employment, and rail traffic have all moved since 2023, and not in the same direction. Intermodal traffic, for example, is materially above its 2023 level, while total carloads are roughly unchanged and broader freight-shipment measures remain below 2023 levels. These patterns reinforce the point that rail participation at any given time reflects a changing combination of market demand, relative transportation costs, capacity, service conditions, and

other competitive factors. The scale of these changes is also notable: total U.S. intermodal units over the most recent 12 months were approximately 1.75 million higher than in 2023, an increase larger than Mr. Hunt's approximately 1.2 million projected annual domestic truck-to-intermodal diversions.[54] The two quantities are not directly comparable, but the comparison illustrates the magnitude of traffic changes that can occur as market, commercial, operating, and other conditions evolve.

42. Figure 15 summarizes the broader point. Rail participation in any particular market can reflect a combination of customer and shipment characteristics, market and competitive conditions, commercial decisions, operating and service characteristics, and network and routing considerations. An analysis of rail participation that ignores these factors and their interrelationships can incorrectly attribute the effects of one factor on rail participation to an entirely different underlying factor, an error economists commonly refer to as omitted variable bias.[55] Observing low rail participation therefore does not identify which conditions are responsible for that outcome or establish whether and how the merger would change those conditions. In the context of Mr. Hunt's analysis, as I explain throughout this Verified Statement, even if Mr. Hunt had correctly implemented his intended comparisons of average rail participation (he has not), those comparisons of conditional average rail participation are not the same as estimating a causal effect.

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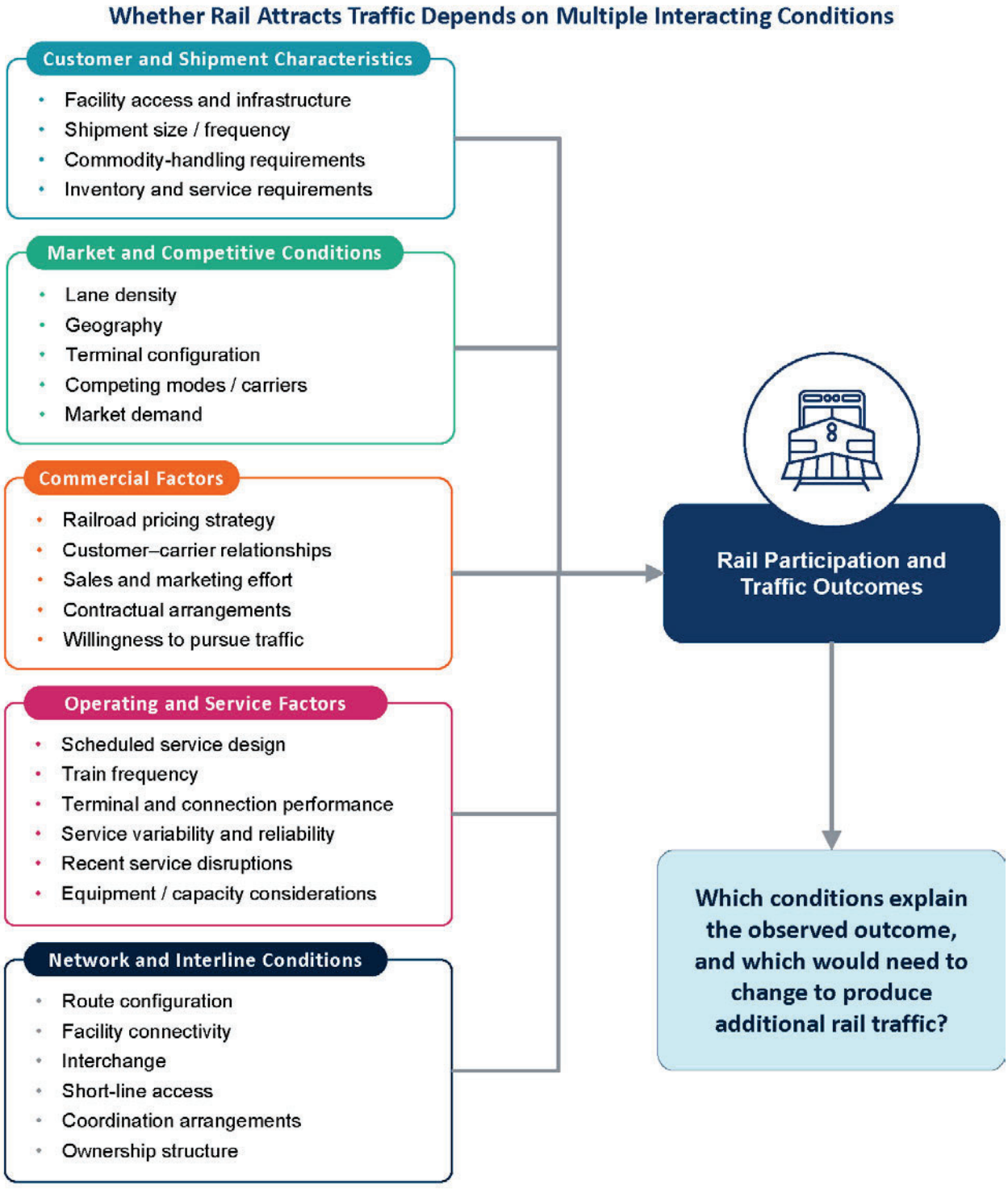
[54] *See* Workpaper "Freight_Market_Conditions_Comparison.xlsx" and Hunt VS, Exhibit 2-4. The AAR intermodal total is broader than the domestic truck-to-intermodal traffic modeled by Mr. Hunt, which is limited to domestic truck movements and domestic intermodal traffic. *See* Hunt VS, pp. 38, 46. maritime *See, generally,* Association of American Railroads, Weekly Rail Traffic Reports, https://www.aar.org/data-center/.

[55] *See* Jeffrey M. Wooldridge, *Introductory Econometrics: A Modern Approach*, 5th ed. (Boston, MA: Cengage Learning, 2013), pp. 88–90.

FIGURE 15: RAIL COMPETITIVENESS REFLECTS A RANGE OF CUSTOMER, MARKET, COMMERCIAL, OPERATING, AND NETWORK CONDITIONS



IV. APPLICANTS HAVE NOT ESTABLISHED THAT THE MERGER WOULD CAUSE THE TRAFFIC GROWTH MR. HUNT PREDICTS

43. Section III showed that rail competitiveness and traffic growth reflect a range of customer, market, commercial, operating, and network conditions. The relevant question here is whether Mr. Hunt addressed the factors actually responsible for the outcomes that Applicants project the merger will change. He has not. In this section, I examine the causal premise underlying Applicants' projected traffic growth: whether the merger would address the conditions responsible for the historical performance on which Mr. Hunt's projections are based.

44. I first show that Applicants' projected growth represents a sharp departure from their historical performance (Section IV.A). I then show that Mr. Hunt's projected diversions are concentrated in Hunt markets with low existing UP-NS participation (Section IV.B), and that Mr. Hunt does not demonstrate that the merger would address the factors responsible for that low participation (Section IV.C). Finally, I show that independent railroads can achieve substantial operational and commercial coordination without a merger (Section IV.D).

A. Applicants' Projected Growth Represents a Sharp Departure From Historical Performance

45. The merger would combine two of the largest Class I railroads into a single network accounting for nearly half of U.S. Class I rail operations, as discussed in Appendix B.3. Applicants project substantial traffic growth. Mr. Hunt projects that the merger would generate approximately 1.93 million additional annual rail loads, equivalent to roughly 13 percent of UP's and NS's combined 2023 traffic. He also projects approximately $4.0 billion in incremental annual revenue, equivalent to approximately 11 percent of combined base-year revenues.[56] These

[56] Hunt VS, pp. 17, 95 and Exhibits 2-4, 8-1. Mr. Hunt projects approximately $4.027 billion in additional annual revenue after three years. Combined base-year UP and NS revenues reported in

projections would therefore be a substantial change in the volume and composition of traffic carried by UP and NS.

46. Applicants' projected traffic growth also represents a marked departure from recent historical experience. As shown in Figure 16, three-year growth in combined UP and NS ton-miles has often been [redacted], as denoted by the gray region. The Operating Plan projects approximately 18.4 percent growth in ton-miles over three years, [redacted].[57] The projection therefore represents a [redacted] from Applicants' recent historical traffic performance rather than a [redacted].[58]

Applicants' Pro Forma Income Statements are approximately $36.275 billion. Amended Application, Vol. 1, Appendix F, Pro Forma Income Statements (Exh. 17), pp. 192, 195–199.

[57] The 18.4 percent increase includes the diversions projected by Mr. Hunt but also includes some "major" wins and losses by both UP and NS that have occurred since 2023. *See* Gehringer & Orr VS, p. 16 and Gehringer & Orr Workpaper, "C-Operating Plan Metrics vFinal.xlsx," tab 'Growth Plan' based on a comparison of the "Base Plan" to the "Growth Plan."

[58] Historical ton-miles are calculated from the CCWS as expanded tons multiplied by route-segment mileage. Projected three-year growth is calculated from the Operating Plan metrics. Three-year growth is measured as the cumulative percentage change relative to three years earlier and is not annualized. *See* Workpaper "CCWS_Figures.xlsx."

FIGURE 16: APPLICANTS' PROJECTED THREE-YEAR TRAFFIC GROWTH IS [redacted] THE RECENT HISTORICAL EXPERIENCE OF UP AND NS COMBINED



Sources and Notes: Calculated from CCWS, 2002–2024. Gray area indicates negative values. Observed ton-miles are summed in each year, with each railroad's ton-miles calculated as expanded tons multiplied by route-segment mileage. The historical series shows the percentage change in combined UP and NS ton-miles relative to three years earlier, beginning in 2005. Combined UP and NS ton-miles grew approximately [redacted] from 1998 to 2001. That earlier period spans NS's assumption of former Conrail operations in 1999 and UP's recovery from service disruptions following the UP-Southern Pacific merger. Those circumstances complicate comparisons with subsequent traffic growth. This figure focuses on three-year growth rates ending from 2005 through 2024 to characterize recent historical experience. (*See* Conrail, "About Conrail," last accessed November 11, 2026, https://conrail.com/about-conrail/history/; and William H. Miller, "Another Rail Meltdown?" IndustryWeek, December 21, 2004, last accessed November 11, 2026, https://www.industryweek.com/leadership/companies-executives/article/21950656/another-rail-meltdown.) The projected three-year growth rate is calculated from the Operating Plan metrics (Gehringer & Orr Workpaper, "C-Operating Plan Metrics vFinal.xlsx," tab 'Growth Plan') based on a comparison of the "Base Plan" to the "Growth Plan." *See* Scripts "01_build_ccws.R"; "02_ccws_figures."; Workpaper "CCWS_Figures.xlsx."

47. Even comparing the [redacted] to years affected by the Great Recession (2009) and the COVID-19 pandemic (2020) yields three-year traffic growth [redacted] Applicants' projected growth. Traffic grew by [redacted] percent from [redacted] to [redacted] and by [redacted] percent from [redacted] to [redacted]. As shown in Section III, those historical traffic patterns reflect not only network structure, but also commercial strategy, customer demand, service design, capacity, and other operating and market conditions. Applicants' projections therefore imply material changes in some of the conditions and choices that have shaped that historical performance. The crucial question is whether a merger provides a basis for expecting those changes. Mr. Hunt models the effect of changes in selected network and service characteristics, but does not establish that a merger would yield those changes, that a merger is the only way to produce such changes, or that those changes (from a merger or otherwise) would be sufficient to produce growth on the projected scale.

B. Low Existing UP-NS Participation Does Not, by Itself, Establish a Merger-Related Growth Opportunity

48. Mr. Hunt's projected diversions are concentrated in diversion markets in which UP-NS historically carried little or no traffic. Applicants have characterized that result as "unsurprising."[59] But the concentration of projected growth in historically weak UP-NS diversion markets does not validate the diversion estimates because it does not identify why UP-NS participation has been low or whether the merger would change the conditions responsible

[59] Letter from Michael L. Rosenthal (Covington & Burling LLP) to Chief of Case Administration, Surface Transportation Board, UP-67/NS-65, with subject "Re: Docket No. FD 36873, *Union Pacific Corp., et al. – Control – Norfolk Southern Corp., et al.*," June 26, 2026, available at: https://dcms-external.s3.amazonaws.com/DCMS_External_PROD/1782741006421/311682.pdf, p. 1 ("It should be unsurprising that Applicants' projected diversions are concentrated in commodity-corridor pairs in which Applicants historically had little or no traffic […]").

for that outcome.[60] Consistent with that fact, Mr. Hunt testified in his deposition that he "would not know the reason" why a diversion market may have a below-average share relative to other markets that share its pre-merger characteristics.[61] In such cases, Mr. Hunt agreed that these preexisting differences have nothing to do with the merger.[62]

49. The truck-to-carload results in Figure 17 illustrate the point most starkly. More than 92 percent of Mr. Hunt's predicted carload diversions arise in county-pair-STCC2 diversion markets with [redacted], and approximately 96 percent arise in diversion markets with rail modal shares [redacted]. Measured by existing UP-NS participation, the concentration is even greater: 96 percent of predicted diversions occur in diversion markets with [redacted], and 99 percent in diversion markets where UP-NS interline traffic carries [redacted].

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60 I use "UP-NS" to refer to traffic receiving interline service involving both UP and NS, including movements transferred from UP to NS or from NS to UP. Such movements may also involve a shortline railroad, but do not involve another Class I railroad. This definition is consistent with Mr. Hunt's treatment of interline service based on the number of Class I railroads participating in the movement. *See* Hunt VS, p. 16. *See also,* footnote 23.

61 Deposition of David T. Hunt, Vol. II, October 8, 2026, 623:5–624:22.

62 Deposition of David T. Hunt, Vol. II, October 8, 2026, 624:14–18.

FIGURE 17: MR. HUNT PREDICTS [redacted] TRUCK-TO-CARLOAD DIVERSIONS IN DIVERSION MARKETS WITH LITTLE OR NO EXISTING RAIL OR UP-NS TRAFFIC



Sources and Notes: Bars show the cumulative share of Mr. Hunt's predicted diverted carloads occurring in carload diversion markets with observed rail modal shares equal to zero, less than 10 percent, or less than 20 percent. A diversion market is a unique combination of origin county-destination county-STCC2-truck equipment type. "Total Rail Modal Share" equals observed rail tons divided by total rail and truck tons for the same diversion market. "UP-NS Modal Share" equals observed UP-NS tons divided by total rail and truck tons for the same diversion market. The zero percent UP-NS category includes diversion markets with no observed traffic on such routes. *See* Script "06_summarize_observed_rail_modal_share.R"; Workpaper "T2R_Carload_Exhibits.xlsx."

50. Figure 18 shows a similar pattern in Mr. Hunt's truck-to-intermodal analysis. Diversion markets with [redacted] account for 35 percent of predicted diversions; diversion markets with a UP-NS share [redacted] account for 76 percent; and diversion markets with a UP-NS share [redacted] account for 94 percent.[63]

FIGURE 18: [redacted] TRUCK-TO-INTERMODAL DIVERSIONS ARE IN DIVERSION MARKETS WITH LOW EXISTING UP-NS PARTICIPATION



Sources and Notes: Bars show the cumulative share of Mr. Hunt's predicted truck-to-intermodal diversions occurring in diversion markets with UP-NS shares equal to zero, less than 10 percent,

[63] Intermodal diversion markets are future terminal market directional pairs for which Mr. Hunt predicts positive truck to intermodal diversions after applying his operational considerations. Mr. Hunt provides the future markets used in this analysis, and I apply his operational considerations in Script "operational_functions.R." I define the UP-NS share as observed UP-NS interline intermodal traffic divided by total current truck and intermodal traffic in the future-state dataset. I measure observed intermodal traffic using the CRA_2026_processed_2 traffic tapes dataset ("Traffic Tapes"). *See* Script "01B_railroad_shares.R" and "02_prepare_markets.R."

or less than 20 percent. UP-NS share equals observed UP-NS interline intermodal units in the Traffic Tapes divided by total truck plus intermodal units in Mr. Hunt's future-state dataset for the same diversion market. The zero percent category includes diversion markets with no observed UP-NS interline intermodal traffic, whether because the market has no observed intermodal traffic or because its observed intermodal traffic moves on other railroads. *See* Workpaper "T2R_Intermodal_Exhibits.xlsx."

51. Mr. Hunt's rail-to-rail diversion results likewise predict substantial diversions to UP-NS routes that currently carry little or no traffic.[64] The pattern is especially pronounced for merchandise, bulk, and automotive traffic: 74 to 93 percent of Mr. Hunt's predicted diversions in those service types go to UP-NS routes carrying [redacted].[65] For those same service types, 88 to 98 percent of predicted diversions go to routes with observed UP-NS shares below [redacted].[66] A zero-volume route is not necessarily infeasible or incapable of attracting traffic. But the concentration of predicted diversions on such routes reinforces the broader concern. Mr. Hunt's framework can generate large traffic shifts toward routes that historically attracted no UP-NS traffic without establishing why those routes were unused or whether the modeled merger-related changes address the factors responsible.

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[64] The truck-to-rail diagnostics examine whether predicted diversions occur in diversion markets with little or no existing rail traffic, including traffic involving UP and NS. For rail-to-rail diversions, I focus on the particular route receiving the predicted traffic because a Hunt market may contain several routes involving UP and NS, only some of which receive diversions. A low historical share on a receiving route raises the question whether the merger would change the conditions that have limited traffic on that route. The result does not depend solely on this route-level choice: using UP-NS's aggregate historical share across routes in each Hunt market in his rail-to-rail analysis, I also find that a large share of predicted diversions occurs in markets with little or no existing UP-NS traffic in three of the four service types. *See* Workpaper "R2R_Low_Volume_Diversions_Sensitivity.R" and "R2R_Low_Volume_Diversions.xlsx."

[65] Mr. Hunt defines intermodal markets as terminal-market pairs, generally based on BEAs, that may include multiple origin and destination stations. Hunt VS, p. 103. Observed UP-NS traffic between one station pair gives the broader diversion market a positive UP-NS share even if other station pairs have no observed UP-NS traffic. This aggregation may partly explain why a smaller share of predicted intermodal diversion falls in diversion markets with [redacted] existing UP-NS traffic.

[66] *See* details in the Sources and Notes of Figure 19.

FIGURE 19: MR. HUNT PREDICTS [redacted] RAIL-TO-RAIL DIVERSION TO ROUTES WITH LITTLE OR NO EXISTING UP-NS TRAFFIC



Sources and Notes: *See* Workpaper "R2R_Low_Volume_Diversions.xlsx." Bars show the cumulative share of Mr. Hunt's predicted rail-to-rail diversions occurring on routes with observed UP-NS shares equal to zero, less than 10 percent, or less than 20 percent. UP-NS share equals observed UP-NS rail traffic on each route, divided by total observed rail traffic in the same diversion market. The zero percent category includes diversion markets with observed rail traffic but routes with no observed traffic.

C. Mr. Hunt Does Not Establish That the Merger Would Change the Factors Responsible for Low Existing UP-NS Participation

52. Figure 17 through Figure 19 establish that Mr. Hunt predicts substantial growth in low-volume diversion markets. But low existing UP-NS participation does not explain why those diversion markets or routes have carried little traffic. Mr. Hunt does not assess how much of that

low participation reflects problems associated with interchange between independent railroads, rather than other conditions, including traffic density,[67] facility access, first- and last-mile requirements, equipment or terminal constraints, customer relationships, service preferences, and pricing decisions.[68] NS's own planning documents illustrate the distinction between identifying

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[67] *See, e.g.,* Deposition of David Welch, July 29, 2026, 198:20–200:11 [redacted] ") Mr. Welch is a member of the [redacted], which was created when UP and NS announced their intention to merge. He has been a part of [redacted]. *See* Deposition of David Welch, July 29, 2026, 10:4–18, 134:16–135:22. *See also*, Table 1; and Deposition of David T. Hunt, Vol. II, October 8, 2026, 623:5–624:22.

Applicants' own commercial materials also illustrate how shipment size can affect suitability of rail service. For example, UP identified an opportunity in which [redacted]. *See* UP_0082695, Opportunity ID OPP-097094; Table 1.

[68] Applicants' own commercial materials and testimony identify several such potential constraints, `including the [redacted], particularly in light of [redacted].

For example, Mr. Welch testified that UP viewed the existing [redacted] relationship as increasing the cost of conversion and potentially requiring price concessions at levels UP might not be comfortable offering. *See* Deposition of David Welch, July 29, 2026, 234:8–235:9.

Another example identifies an opportunity for which UP needed to verify [redacted]. *See* UP_0082695, Opportunity ID OPP-034164; Table 1. *See also,* Kentucky Transportation Cabinet, "Kentucky Statewide Rail Plan," September 2025, available at: https://transportation.ky.gov/MultimodalFreight/Documents/2025%20Kentucky%20Statewide%20Rail%20Plan.pdf, p. 2-6. *See also,* Kentucky Transportation Cabinet, "Kentucky Statewide Rail Plan," April 2015, available at: https://transportation.ky.gov/MultimodalFreight/Documents/2015%20Rail%20Plan/Rail%20Plan/2015%20Kentucky%20Statewide%20Rail%20Plan.pdf, p. 2-9.

In another example, UP identified a [redacted] opportunity for which a [redacted]. *See* UP_0082695, Opportunity ID OPP-044123; Table 1.

An additional, truck-to-carload opportunity would require [redacted]. *See* UP_0082695, Opportunity ID OPP-096845; Table 1.

Another truck-to-carload opportunity involved [redacted]. *See* UP_0082695, Opportunity ID OPP-103146; Table 1.

potential traffic and determining whether it can be attracted profitably and sustainably: NS considered [redacted], and [redacted] when deciding which intermodal lanes to retain, rationalize, or expand.[69] Mr. Hunt does not establish that the merger-related changes he models would address the market-specific reasons for low existing UP-NS participation. Even where interchange frictions matter, independent railroads may be able to address some of them through coordination, as I discuss next.

D. Independent Railroads Can Achieve Substantial Coordination Without a Merger

1. The Applicants Themselves Engage in Operational Arrangements With Other Railroads to Improve Interline Service and Expand Commercial Access

53. Railroads routinely use operating and commercial arrangements to offer interline services that meet shipper needs by overcoming frictions that might otherwise be associated with the need for an interchange between independent railroads. As the CPKC Operating Experts explain, these arrangements include run-through trains, deeper blocking, coordinated schedules, bypass arrangements, haulage, and other practices that can reduce intermediate handling, dwell, and other sources of interchange friction.[70] Such arrangements may not eliminate every potential

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[69] *See* Norfolk Southern, "Intermodal Productivity Gains and Cost Reductions," March 5, 2024, NS_00143137, at -138–139, and at -145. NS's March 2024 materials describe [redacted]. *See also*, Norfolk Southern, "Intermodal," November 2024, NS_00144459, at -461, and at -465 (reporting that [redacted] and describing [redacted]).

[70] CPKC Operating Experts VS, Sections II.C, VI.A–B, where they present an extensive discussion of such arrangements, including a non-exhaustive list of example arrangements.

challenge associated with interline service, but the examples discussed below and by the CPKC Operating Experts show that they can use them to offer interline services that shippers find attractive and choose to use. To assess whether the merger is likely to drive rail traffic growth, the relevant comparison is the incremental improvement achievable through the merger relative to the kinds of coordination already in place or reasonably achievable without the merger. Mr. Hunt testified in his deposition that he did not model or perform that comparison when predicting diversions.[71]

54. Existing UP and NS operations provide concrete examples of such coordinated service. At New Orleans, UP and NS already use reciprocal blocking and run-through train arrangements for manifest traffic.[72] UP builds trains at [redacted] for NS destinations at [redacted] and [redacted], while NS builds corresponding westbound trains for UP destinations at [redacted] and [redacted]. The CPKC Operating Experts also demonstrate that UP and CSX likely use similar reciprocal arrangements at the same gateway.[73] These arrangements allow traffic to move deeper into the connecting railroad's network without being reclassified at the interchange, reducing intermediate handling and dwell without a merger.

55. Applicants themselves provide another example. In September 2025, UP and NS announced a new joint intermodal service linking Louisville with Western and Southwestern markets via Kansas City. They publicly described the service as offering "truck-competitive

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71 Deposition of David T. Hunt, Vol. II, October 8, 2026, 699:8–700:18.

72 CPKC Operating Experts VS, Section VI.H (describing UP-NS reciprocal blocking and run-through arrangements at New Orleans, including UP trains from Livonia to Birmingham and Chattanooga and reciprocal NS trains to Livonia and Houston).

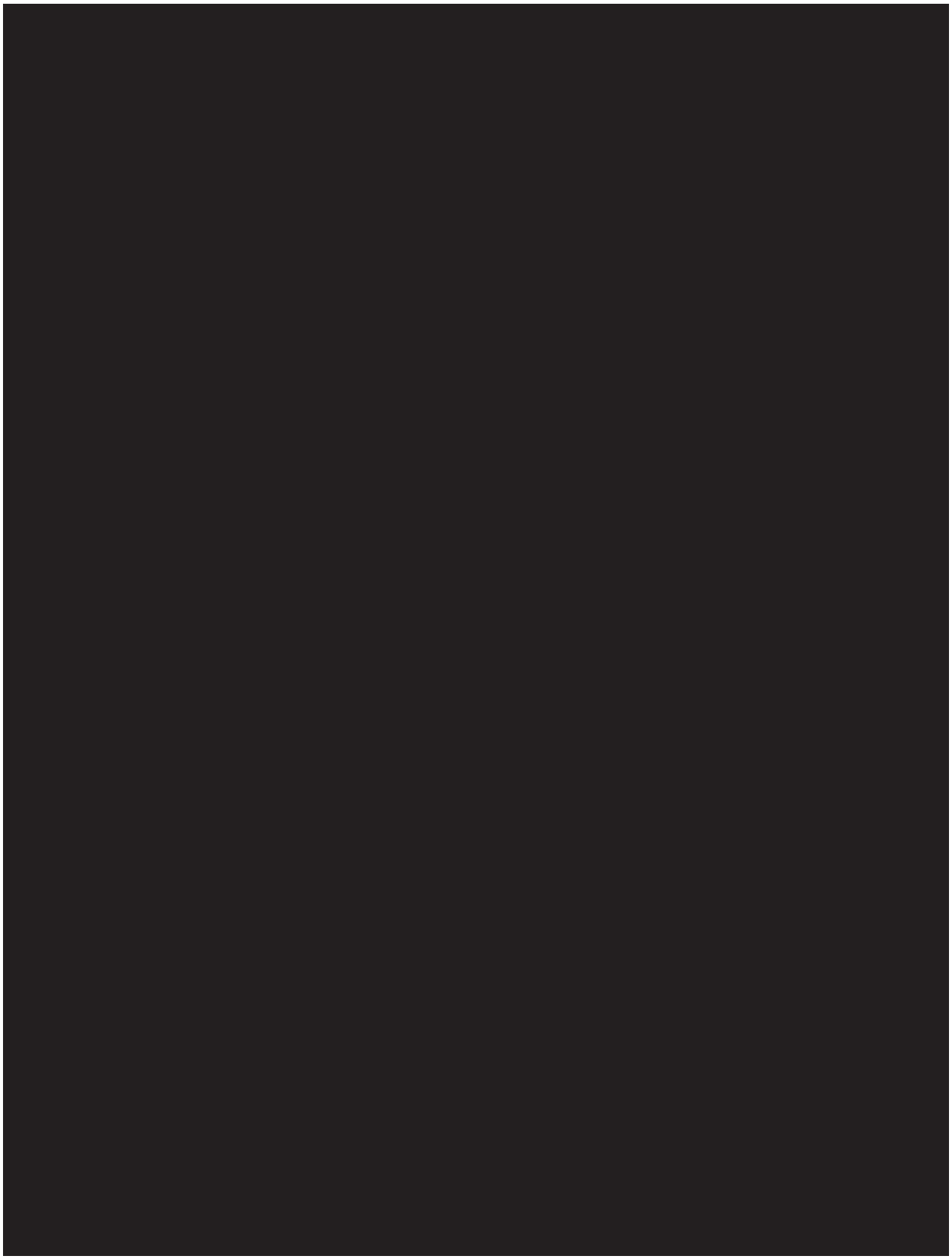
73 CPKC Operating Experts VS, Section VI.H.

transit times and expanded market reach."[74] The associated marketing materials, an example of which is reproduced in Figure 20, describe a [redacted]" between UP and NS and "[redacted]."[75] Thus, even while remaining separately owned, UP and NS have marketed interline service on the premise that coordinated operations can provide reliable, truck-competitive service.

[74] Union Pacific, "New Union Pacific and Norfolk Southern Intermodal Gateway Expands Market Access," September 15, 2025, last accessed September 14, 2026, https://www.up.com/news/growth/louisville-intermodal-service-it-250915. *See also*, Norfolk Southern, "New Union Pacific and Norfolk Southern Intermodal Gateway Expands Market Access," September 15, 2025, last accessed September 14, 2026, https://www.norfolksouthern.com/en/newsroom/news-releases/new-union-pacific-and-norfolk-southern-intermodal-gateway-expands-market-access.

[75] Union Pacific and Norfolk Southern, "Access to Key Western and Southern Markets Now Rolling," NS_00095664.

FIGURE 20: UP AND NS THEMSELVES MARKET INTERLINE SERVICE AS PROVIDING A [redacted]"



Source: Union Pacific and Norfolk Southern, "Access to Key Western and Southern Markets Now Rolling," NS_00095664.

56. UP has also developed coordinated interline services with other railroads. In September 2013, UP introduced *Eagle Premium*, an intermodal service developed with Ferromex to connect locations in Mexico and the United States. The service offers coordinated schedules, through pricing, and online tracking tools, allowing customers to move freight across the two railroads' network with a single price and bill.[76] In May 2023, UP, CN, and Grupo Mexico launched *Falcon Premium* to connect markets in Mexico and Canada via the United States through coordinated rail service and improve delivery time by one day compared to other available intermodal services.[77] In September 2023, UP reported shortening transit times on *Eagle Premium* and *Falcon Premium* by one day.[78]

57. In addition, UP's own website highlights two domestic interline container services offered in collaboration with other railroads, EMP ("Equipment Management Program")

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[76] *See* Union Pacific, "New Eagle Premium Service to Monterrey, Mexico," August 1, 2013, last accessed November 2, 2026, https://www.up.com/customers/announcements/intermodal/domesticservicelanesandschedules/IM2013-421.html; Union Pacific, "Eagle Premium Intermodal Service," last accessed November 2, 2026, https://www.up.com/shipping/intermodal/resource-center/eagle-premium. *See also*, Grupo México, "Results, Second Quarter 2026," July 21, 2026, last accessed November 2, 2026, https://gmexico.com/GMDocs/ReportesFinancieros/ING/2026/RF_EN_2026_2Q.pdf p. 14 (Ferromex shareholders are GMXT (74 percent)—subsidiary of Grupo México—and Union Pacific (26 percent)).

[77] *See* Union Pacific, "Falcon Premium - Our New Best-in-Class Intermodal Service," May 1, 2023, last accessed October 20, 2026, https://www.up.com/customers/announcements/premium/domesticintermodalpriceandservice/PR2023-47.html announcing the launch of Falcon Premium in May 2023, a joint intermodal service offered by UP, CN, and Grupo México. *See also*, Hunt Supp. VS, p. 41. *See also*, Union Pacific, "UP-CN CEO Meeting: Follow-up Action Items & Meeting Notes," March 29, 2023, UP_0022825, at -826–829 [redacted]).

[78] Union Pacific, "Union Pacific's Newest Offering Removes Full Day of Transit Between the U.S., Mexico and Canada," September 12, 2023, last accessed November 2, 2026, https://www.up.com/press-releases/service/unmatched-intermodal-services-nr-230912.

and UMAX, available for example to customers using the *Eagle Premium* and *Falcon Premium* services.[79] EMP provides another example of existing cooperation between UP and NS. This domestic interline container program includes a shared pool of "more than 40,000, 53-foot containers and chassis which serve most major U.S. cities." Through an online reservation system, customers can check availability in real time and reserve containers. Customers can also obtain a through rail rate for eligible lanes, with the container-use charge priced separately. UP and CSX offer a similar program, UMAX, which they describe as providing one container and one freight bill for a full interline shipment.[80]

58. Other Class I railroads have pursued intermodal interline arrangements. In August 2025, BNSF and CSX announced intermodal services connecting Southern California with Charlotte and Jacksonville, Phoenix with Atlanta, and East Coast ports with Kansas City. They described these offerings as integrated service spanning their western and eastern networks. BNSF subsequently announced additional lanes and faster schedules to CSX destinations.[81]

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[79] Customers using Eagle Premium have access to EMP and UMAX container fleet. *See* Union Pacific, "Eagle Premium Intermodal Service," last accessed November 2, 2026, https://www.up.com/shipping/intermodal/resource-center/eagle-premium. Customers using Falcon Premium have access to the EMP container fleet. *See* Union Pacific, "Falcon Premium Intermodal Service," last accessed November 2, 2026, https://www.up.com/shipping/intermodal/mexico-to-canada#up-expansion-panel-0e7af8bfe8-item-cd7ab2fed6 (FAQ, "What equipment types are eligible for this service?").

[80] Union Pacific, "What Is Intermodal?," last accessed October 20, 2026, https://www.up.com/shipping/intermodal/what. *See also*, Union Pacific, "EMP Domestic Container Program," last accessed October 30, 2026 https://www.up.com/shipping/intermodal/emp. *See also*, Union Pacific, "How EMP Works," last accessed October 30, 2026, https://www.up.com/shipping/intermodal/emp/empworks; and CSX, "CSX Intermodal and Union Pacific Railroad Announce UMAX Domestic Interline Container Program," February 24, 2010, last accessed October 20, 2026, https://www.csx.com/index.cfm/about-us/media/press-releases/csx-intermodal-and-union-pacific-railroad-announce-umax-domestic-interline-container-program/.

[81] *See* BNSF Railway, "BNSF, CSX Announce New Intermodal Services, Offering Seamless Coast-to-Coast Rail Solutions," August 22, 2025, last accessed October 30, 2026, https://www.bnsf.com/news-media/news-releases/newsrelease.page?relId=bnsf-csx-announce-new-intermodal-services-offering-seamless-coast-to-coast-rail-solutions; *See also*, CSX, "CSX, BNSF Announce New Intermodal Services,

59. The Meridian Speedway provides an especially important example of effective interline service because it involves coordinated long-haul service among UP, CPKC, and NS on lanes directly relevant to Applicants' projected traffic growth. As the CPKC Operating Experts explain, these services operate through coordinated handoffs at Shreveport and Meridian.[82] Applicants' own Service Assurance Plan benchmarking data show that several of the UP-CPKC-NS services via the Meridian Speedway operate at speeds comparable to or better than the UP and NS single-line benchmark services presented by Applicants. For example, despite involving three separately owned railroads, the Los Angeles–Jacksonville service is faster on an end-to-end basis than any of the UP single-line services shown in Applicants' benchmark analysis.[83] Figure 21 reproduces the CPKC Operating Experts' comparison. My earlier analysis of Applicants' 2023 container-event data provides a more detailed view of that and other UP-CPKC-NS interline services using the Meridian Speedway: [redacted].[84] The

Offering Seamless Coast-To-Coast Rail Solutions," August 22, 2025, last accessed October 30, 2026, https://www.csx.com/index.cfm/about-us/csx-bnsf-announce-new-intermodal-services-offering-seamless-coast-to-coast-rail-solutions/.

[82] CPKC Operating Experts VS, Section VIII.B, particularly subsection "UP and NS Engage in Numerous Cooperative Agreements and Have Failed to Demonstrate Why They Could Not Continue to Do So." *See also*, description of the Meridian Speedway in footnote 32.

[83] CPKC Operating Experts VS, Section VIII.B, figure titled "Comparison of Applicants' Pre-Transaction Interline Performance with Comparable Single-Line Performance Using Mr. Turner's Benchmarking Data." *See also*, Verified Statement of John W. Turner, April 29, 2026, as revised by Second Errata submitted on September 4, 2026 ("Turner VS") Workpaper, "Corridor Benchmarking Matrix.xlsx." CPKC Operating Experts' figure reports volume-weighted average end-to-end speed for the intermodal benchmark lanes identified by Applicants from 2022 to 2025. CPKC Operating Experts separately examine the location and magnitude of dwell on selected Meridian Speedway movements using Applicants' 2023 container-event data, and I address Mr. Hunt's treatment of Meridian Speedway routes in his truck-to-intermodal and rail-to-rail diversion analyses in Sections V.B and V.C. *See* CPKC Operating Experts VS, Appendix G.

[84] Powers Transit Time VS, Appendix A, Figures 2, 4, and 6–12. Each figure examines containers on the most common train sequence for its directional lane. Applicants' Response Regarding Their Prima Facie Case, *Union Pacific Railroad Company–Control–Norfolk Southern Corporation and Norfolk*

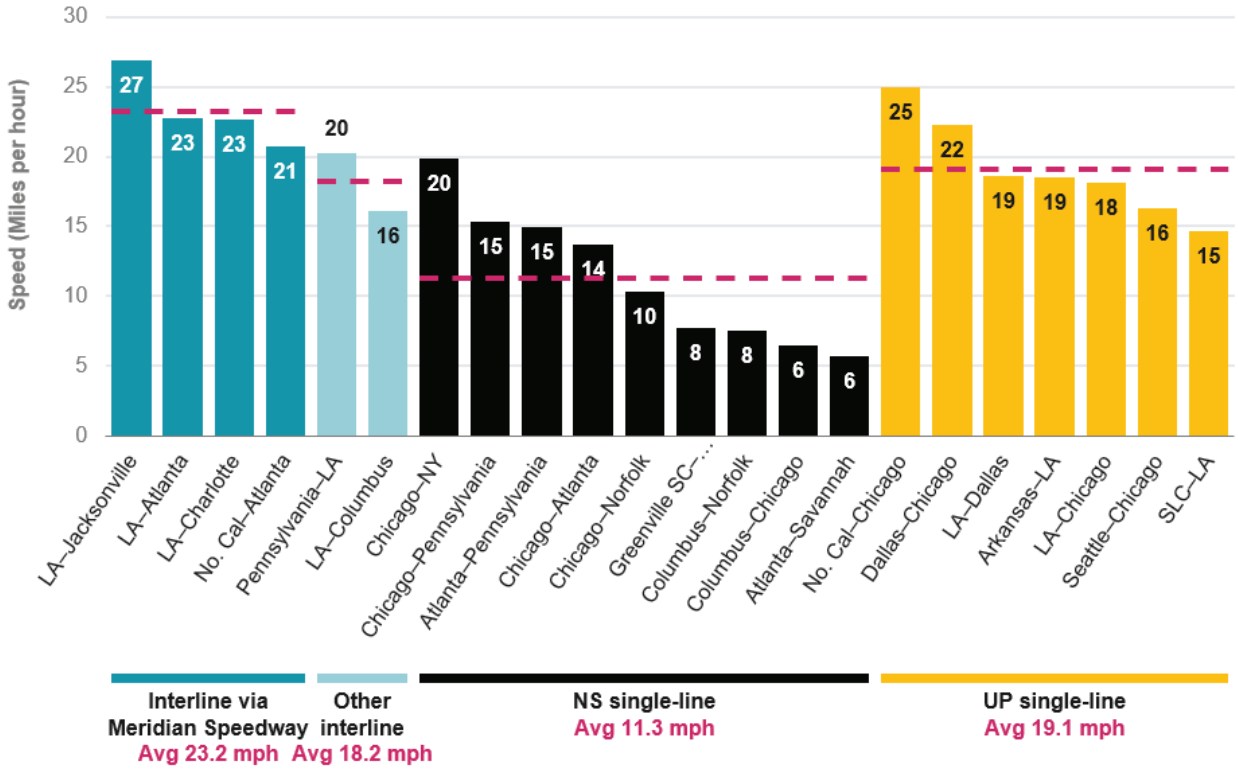
existing service therefore provides a concrete example of separately owned railroads coordinating across multiple handoffs while achieving competitive end-to-end service performance. And, as shown in Figure 9 above, intermodal lanes using the Meridian Speedway can achieve substantial intermodal shares.[85]

Southern Railway Company, Finance Docket No. 36873, UP-94/NS-93, August 26, 2026 ("Applicants' Prima Facie Response"), pp. 33–34, focuses on the [redacted] in Figures 1, 3, and 5 of the Powers Transit Time VS. [redacted]. *See* Powers Transit Time VS, Appendix A, Figures 1, 3, and 5.

The CPKC Operating Experts reproduce the figures from my Transit Time VS in their Appendix G. They also address other points raised in Applicants' Prima Facie Response, including why they view the transit-time savings attributed to a proposed [redacted] service bypassing the Meridian Speedway as implausible. *See* CPKC Operating Experts VS, Section VIII.B.2, Appendix G.

[85] Figure 9 includes several examples of intermodal Hunt markets using the Meridian Speedway with substantial observed intermodal shares, including Los Angeles, CA to Charlotte, NC, Atlanta, GA, and Jacksonville, FL.

FIGURE 21: EXISTING MERIDIAN SPEEDWAY INTERLINE SERVICES MATCH OR EXCEED THE SPEEDS OF THE UP AND NS SINGLE-LINE SERVICES IN MR. TURNER'S BENCHMARK



Meridian Speedway services are the fastest group on average (23.2 mph); **other interline routes (18.2) are close to UP single-line (19.1) and well ahead of NS (11.3)**

Sources and Notes: Reproduced from CPKC Operating Experts VS (Figure 147). Applicants' Corridor Benchmarking data for Service Assurance Plan from 2022 to 2025 for intermodal traffic lanes only. Average train speeds are weighted by volume. Bars labeled "Meridian Speedway" are routes by UP-CPKC-NS via the Meridian Speedway.

60. Applicants nevertheless contend that arrangements among independent railroads cannot fully replicate the coordination available under a merger. They point to several potential impediments to such arrangements, including changing management priorities, misaligned incentives, unequal work burdens, and differences in investment incentives.[86] Those

[86] *See* Applicants' Prima Facie Response, pp. 30–32 (arguing that contractual alliances cannot match the scale or scope of single-line service and citing, among other things, changing management teams, misaligned incentives, and unequal blocking responsibilities). *See also*, Joint Verified Statement of Kenny Rocker and Claude E. "Ed." Elkins, April 29, 2026, as revised by Second Errata submitted on

considerations may explain why a merger can facilitate additional coordination in some circumstances, but they do not establish that the specific operating and commercial improvements underlying Applicants' projected traffic growth require a merger.

61. Applicants' own experience under the I-5 Agreement illustrates the distinction.[87] The I-5 Agreement between UP and BNSF allows UP to quote rates and compete for traffic at certain BNSF-served locations in the Pacific Northwest. Applicants' commercial witnesses describe the arrangement as having produced substantial traffic growth and as enabling UP to compete for traffic that otherwise would have moved over BNSF's single-line route.[88]

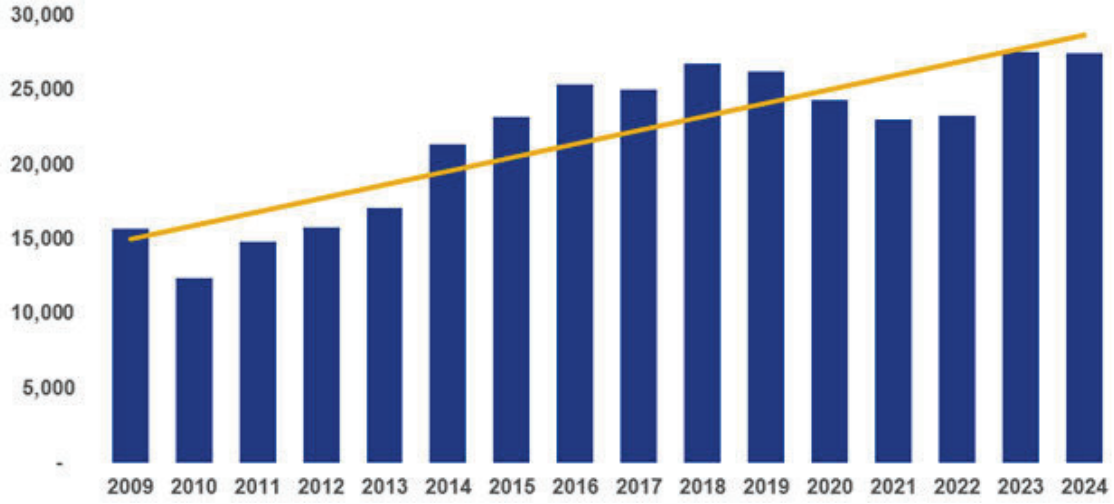
62. Figure 22 reproduces Applicants' summary of traffic growth under the I-5 Agreement. The experience shows that a structured commercial arrangement between separately owned railroads can support sustained traffic growth and expand the traffic that a railroad can compete for beyond locations it directly serves. An analogous arrangement would need to benefit both carriers. Those benefits could take different forms, including a share of the profits from additional traffic or reciprocal access to other markets, as I discuss in Section IV.D.2.c. The I-5 Agreement therefore provides a concrete example of coordination short of a merger producing material commercial benefits.

September 4, 2026 ("Rocker/Elkins VS"), ¶ 144; Verified Statement of Mark R. George, April 29, 2026, as revised by Second Errata submitted on September 4, 2026 ("George VS"), ¶ 7; Gehringer & Orr VS, ¶ 183.

[87] The I-5 Proportional Rate Agreement ("I-5 Agreement") was established in 1997 to allow UP to compete with BNSF for eligible traffic moving between the Pacific Northwest and Canada and the Southwest and Mexico. The agreement allows UP to quote rates for movements involving both railroads without seeking BNSF's concurrence for each rate. *See* Union Pacific, "Improved Shipping in the I-5 Corridor," last accessed November 6, 2026, https://www.up.com/shipping/metals-minerals-forest/i-5.

[88] *See* Rocker/Elkins VS, ¶¶ 175–177 and Figure 21. Applicants describe the I-5 Agreement as allowing UP to quote rates in competition with BNSF for traffic at certain BNSF-served locations in the Pacific Northwest and report substantial growth in traffic moving under the arrangement. Applicants later acknowledged that "CPKC is correct that the I-5 Agreement has been a success for UP and its customers," while arguing that the agreement arose from the UP-SP merger and that similar arrangements have not proliferated over the following 29 years. *See* Applicants' Prima Facie Response, pp. 32–33.

FIGURE 22: UP TRAFFIC UNDER THE I-5 AGREEMENT HAS MORE THAN DOUBLED SINCE 2010



Sources and Notes: Rocker/Elkins VS, Figure 21, p. 79.

63. Together, the examples of coordinated services, including but not limited to the Meridian Speedway and the I-5 agreement, demonstrate how independent railroads can use operating and commercial arrangements to improve service and expand the traffic they can pursue.[89] Such arrangements can reduce interchange frictions and extend commercial access without a merger.

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[89] Applicants' own ordinary-course commercial records include examples of business opportunities pursued through joint UP-NS interline initiatives. *See* rows 7 to 10 in Table 1.

See also, "UP / NS Interline Business Development Opportunity Scorecard, For June 18, 2021 Meeting," UP_0473399, tab 'Consolidated,' row 12. UP and NS [redacted]. More generally, the document includes [redacted].

See also, Norfolk Southern, "UP-NS Executive Interline Meeting," June 26, 2020, NS_00823382, at -389 (describing UP-NS interline initiatives, including: i) [redacted]; ii) [redacted]; iii) [redacted]; and iv) [redacted]).

2. Mr. Hunt's Predicted Diversions Suggest Opportunities for Profitable Further Interline Coordination

64. Mr. Hunt's truck-to-rail analysis predicts that lower prices and improved service would attract significant volumes of freight traffic that currently move by truck. If that opportunity is real, the volumes he forecasts could provide the traffic density needed to support coordinated interline service.[90] I therefore examine whether, taking his projected traffic opportunity as given, UP and NS could have an economic incentive to pursue some of that traffic while separately owned. I begin with a general examination of the contribution margin (revenue *minus* variable costs) available on existing UP-NS interline traffic after applying Mr. Hunt's modeled price reduction. I then extend that analysis to assess whether the traffic projected by Mr. Hunt would justify investment in coordinated interline service in one of the new intermodal train pairs proposed by Applicants.[91] Taking Mr. Hunt's traffic projections as given, I find that this coordinated interline service would generate a substantial positive net present value ("NPV") without the merger, undermining the premise that the merger is needed to justify the investment. Finally, I find that many of Mr. Hunt's predicted carload diversions occur near existing UP-NS gateways, suggesting that reciprocal access could provide another way to pursue some of that traffic without a merger.

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[90] CPKC Operating Experts VS, Section VI.B. The CPKC Operating Experts explain that whether a railroad can support a dedicated train, block, or other service depends materially on the volume and density of traffic available to support that operation. *See also*, CPKC Operating Experts VS, Sections II.C and VI.B.

[91] Among Applicants' planned new intermodal train pairs in Mr. Hunt's Exhibit 7-4, I examine Lathrop–Croxton and Croxton–Lathrop because the available traffic data provide better coverage for these trains. *See* Hunt VS, Exhibit 7-4, pp. 90–91. *See also,* Workpaper "IM_Profitability_Exhibits.xlsx."

a. Mr. Hunt's Modeled Price Reduction Leaves Substantial Contribution Margins

65. I first test whether the price reduction Mr. Hunt associates with single-line service would materially diminish the contribution margins available from interline traffic. Contribution margin refers to revenue minus variable cost, which can contribute toward fixed costs and investment. I apply a 4.2 percent revenue reduction for single-line service derived from Mr. Hunt's model—the larger of the intermodal price effects modeled by Mr. Hunt—to a broader set of directional UP-NS interline SPLC pairs for which he predicts diversion and sufficient observed data are available.[92] Table 2 illustrates the calculation for one SPLC pair; Appendix B.4.a presents the results for the broader set of SPLC pairs and tests alternative ways of allocating the revenue reduction between UP and NS.

66. For the directional SPLC pair from the terminal in [redacted] to the [redacted], existing traffic in 2023 generates average revenue of approximately $[redacted] per unit and variable cost of approximately $[redacted] per unit, yielding a contribution margin of approximately $[redacted] per unit.[93] I then reduce observed combined revenue by 4.2 percent while holding

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[92] Mr. Hunt estimates revenue for diverted intermodal traffic using power curves that specify revenue per ton mile by distance and junction frequency. This differs from the pricing used in his truck-to-intermodal diversion model, which relies on average directional revenue per unit mile by regional pair and does not vary directly with junction frequency. The 4.2 percent reduction is calculated as the percentage difference between the ton-mile-weighted average interline and single-line revenue-per-ton-mile estimates derived from Mr. Hunt's pricing analysis. I apply this reduction to observed combined revenue per unit to avoid understating the potential price reduction in this illustrative profitability analysis. *See* Hunt Supp. VS, pp. 18–20 & Exhibit PB6.1; Hunt Workpaper, "RevenuePerTM_Distance_JF.xlsx," tab 'Final-ST2'; Workpaper "IM_Profitability_Exhibits.xlsx."

[93] I use the [redacted] to [redacted] SPLC pair as an illustrative example because it is among the SPLC pairs that Applicants' planned new Lathrop–Croxton intermodal train pair would serve post-merger, as discussed in Appendix B.4.b, and Table 17. Among Applicants' planned new intermodal train pairs in Mr. Hunt's Exhibit 7-4, I examine [redacted]

variable cost constant.[94] After this adjustment, combined revenue is roughly $[redacted] per unit and the observed movement generates approximately $[redacted] in contribution margin per unit.[95] Even if variable costs were somewhat higher for coordinated interline service, the contribution margin would remain substantial. Thus, even after applying the lower revenue level implied by Mr. Hunt's single-line pricing analysis, an intermodal unit would continue to generate, on average, a substantial positive contribution margin for UP and NS.

TABLE 2: UP AND NS AVERAGE REVENUE REMAINS ABOVE VARIABLE COST AFTER APPLYING MR. HUNT'S MODELED PRICE REDUCTION: [redacted] TO [redacted]

[redacted]

Sources and Notes: Figures expressed in 2023 USD. Calculations use domestic loaded UP-NS movements from [redacted] to [redacted] identified by SPLCs [redacted] and [redacted], respectively. [redacted] refers to the intermodal terminal in

Croxton and Croxton–Lathrop because the available traffic data provide better coverage for these trains. *See* Hunt VS, Exhibit 7-4, pp. 90–91. *See also*, Workpaper "IM_Profitability_Exhibits.xlsx."

Figures expressed in 2023 USD, as reported in the underlying data. Calculations use domestic loaded UP-NS movements from [redacted] to the [redacted], identified by SPLCs [redacted] and [redacted]. Observed revenue per unit equals total UP and NS revenue divided by loaded intermodal units. *See* CRA traffic tapes dataset, "CRA_2026_processed_2_v4." Observed variable cost per unit equals total UP and NS variable cost divided by loaded intermodal units in the 2023 CCWS dataset "input_processed_ccws_2023." *See* Script "02_profitability_sample_route.R." *See also,* footnote 415 for a description of the data used to estimate variable costs.

94 *See* footnote 92.

95 Figures expressed in 2023 USD, as reported in the underlying data.

[redacted]. *See* Scripts "01_identify_directional_SPLC_pairs.R" and "02_profitability_sample_route.R"; Workpaper "IM_Profitability_Exhibits.xlsx."
[A]: Observed values.
[B]: Applies the modeled 4.2 percent single-line price reduction to combined revenue and holds variable cost constant. The 4.2 percent reduction represents the ton mile weighted difference between the average interline and single-line revenue per ton mile estimates derived from Mr. Hunt's revenue-distance power curves. *See* Hunt Workpaper, "RevenuePerTM_Distance_JF.xlsx," tab 'Final-ST2,' and Workpaper "IM_Profitability_Exhibits.xlsx."
[1]: Total observed UP and NS revenue divided by loaded intermodal units. *See* Charles River Associates ("CRA") traffic tapes dataset, "CRA_2026_processed_2_v4."
[2]: Variable cost divided by loaded intermodal units in 2023 CCWS dataset "input_processed_ccws_2023."
[3]: [1] - [2].

67. Table 2 illustrates a broader test reported in Appendix B.4.a. For directional SPLC pairs with observed UP-NS interline traffic and sufficient data, I apply the same 4.2 percent revenue reduction and compare the resulting revenue-to-variable-cost ratios (corresponding to the profitability index) with [redacted] and [redacted], values used as intermodal profitability assumptions in Applicants' internal analyses.[96] I use those values as reference benchmarks. Many of the tested SPLC pairs continue to generate positive contribution margins after the revenue reduction, and most pairs that exceed a given benchmark before the reduction remain above it afterward.[97] The appendix also tests assigning the full combined revenue reduction to either UP or NS. This combination of the observed economics of existing UP-NS interline traffic and Mr. Hunt's modeled price reduction suggests that, in the tested SPLC pairs, UP and NS would generally retain an incentive to pursue additional traffic through interline

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96 *See* Union Pacific, "Project Opal Update, Modal Conversion," April 2025, UP_0077644, at -656.

97 *See* Appendix B.4.a, Figure 56–Figure 58. The analysis includes directional SPLC pairs with observed domestic loaded UP-NS traffic and at least 30 observations in both the 2023 CCWS and the CRA traffic tapes dataset and positive diversions predicted by Mr. Hunt. I also test a minimum of 20 observations in both datasets and obtain similar results. *See* Workpaper "IM_Profitability_Exhibits.xlsx." Applicants' internal profitability-index benchmarks are identified in UP_0077644, at -656.

service at prices comparable to those he assumes after the merger. I next assess whether the projected contribution margins would justify the investment needed for one of the new intermodal train pairs proposed by Applicants.[98]

b. An Illustrative Run-Through Service Has a Positive NPV Without the Merger

68. As a further illustration, I evaluate whether UP and NS have an economic incentive to pursue the traffic that Mr. Hunt predicts will divert after the merger through coordinated interline service today. I conduct a standard investment analysis that evaluates the profitability of coordinated interline service accounting for the contribution margins, incremental investment, and income taxes, using a conservative set of assumptions that understate profitability. I conduct this analysis at the level of a specific new train pair that Applicants plan to introduce after the merger. I focus on the incremental intermodal traffic that Mr. Hunt assigns to the planned Lathrop to Croxton ("ZLTCX") and Croxton to Lathrop ("ZCXLT") trains as an illustrative example, which, among other locations, serve the Lathrop–Bethintermodal SPLC pair discussed in Table 2.[99] For the purposes of this analysis, I take Mr. Hunt's truck-to-rail, rail-to-rail, and long-haul-drayage diversion estimates, net of applicable offsets, as given and estimate

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[98] Among Applicants' planned new intermodal train pairs listed in Mr. Hunt's Exhibit 7-4, I use the Lathrop–Croxton and Croxton–Lathrop trains for this more detailed assessment because the available traffic data provide better coverage for that pair. The train pair has six directional SPLC pairs with at least 20 observations in both the 2023 CCWS (which I use to estimate variable costs) and the CRA traffic tapes dataset (which I use to estimate revenues) and positive diversions predicted by Mr. Hunt. *See* Hunt VS, p. 88 & Exhibit 7-4, pp. 90–91. *See* Workpaper "IM_Profitability_Exhibits.xlsx." *See* details in footnote 414.

Mr. Hunt describes the proposed new intermodal train pair between Lathrop, CA and Croxton, NJ (trains ZLTCX and ZCXLT), explaining that "[w]ith truck-to-rail diversions, there would be sufficient demand to introduce a new intermodal train pair between Lathrop, CA and Croxton, NJ that would bypass Chicago, IL. This removes intermediate handlings required in the UP-NS Optimized Plan. The new train has no planned work event in Chicago. […] The train also would serve Toledo, OH and Harrisburg, PA." Hunt VS, pp. 88–91 & Exhibit 7-4.

[99] *See* footnote 98.

the associated incremental revenue and variable cost. I then apply a 4.2 percent single-line price reduction derived from Mr. Hunt's model to observed UP-NS revenue and calculate an annual contribution margin from the projected traffic of approximately $[redacted] million for the planned Lathrop to Croxton and Croxton to Lathrop trains.[100] When combined with the necessary capital expenditures ("capex"), and income taxes, I estimate that offering coordinated interline service would generate an NPV of approximately $[redacted] million for the Applicants.[101] Not only would this [redacted], but [redacted] the weighted-average cost of capital ("WACC") for railroad investments of 11 percent (discussed below in paragraph 71), demonstrating that coordinated interline service for these trains appears to offer an attractive investment opportunity without the need for the merger.[102]

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[100] *See* Appendix B.4.b, Table 17. For details on the 4.2 percent price reduction, see footnote 92.

Offsets are negative adjustments to Mr. Hunt's diversions and revenue predictions that account for traffic and associated revenues already captured by UP or NS before the merger. Net diversions reflect Mr. Hunt's diversion predictions after having accounted for these adjustments. *See* Hunt VS, Exhibit 2-4, p. 18, Exhibit 8-1, p. 95, Appendix C, pp. 184–191, & Exhibit C-1, p. 191.

[101] Figures expressed in 2026 USD, applying inflation up to October 1, 2026. See description of inflation adjustment in Appendix B.4.b. *See also*, Workpaper "IM_Profitability_Exhibits.xlsx."

The estimated NPV reflects the combined revenues, variable costs, and investments of UP and NS associated with the trains ZLTCX and ZCXLT. Whether this service generates a positive combined NPV is distinct from how the railroads would divide the resulting returns and costs. I do not model that division.

[102] The WACC represents the "average rate of return needed to persuade investors to provide capital to the freight rail industry," and the IRR measures the rate of return on the upfront investment required to provide this coordinated interline service, calculated as the discount rate at which the NPV of the investment equals zero. As long as the IRR exceeds the WACC, adding the coordinated interline service would add value. For the definition of the WACC, *see, e.g.,* Decision, Surface Transportation Board, Docket No. EP 558 (Sub-No. 29), September 10, 2026, last accessed October 13, 2026, https://www.stb.gov/proceedings-actions/decisions/?action=stb_hook_modal_decision_details&id=53167, Railroad Cost of Capital for 2025, p. 1. For the definition of the IRR, *see, e.g.,* Aswath Damodaran, *Applied Corporate Finance*, Stern School of Business, NYU, available at: https://pages.stern.nyu.edu/~adamodar/pdfiles/acf4E/acf4Ebook.pdf, pp. 65–67.

69. I perform this analysis using a set of conservative assumptions that would tend to understate the economic attractiveness of offering these interline services. First, I assume that the upfront capex would generate contribution margins only for a period of ten years, which is substantially shorter than the useful lives of typical railroad assets.[103] Consistent with the Applicants' assumed three-year ramp-up period for traffic growth, I assume that the projected annual contribution margins (revenues minus variable costs) reach 40 percent of their full level in the first year, 70 percent in the second year, and 100 percent beginning in the third year.[104]

70. Second, I use conservative assumptions to model the capex required to offer this coordinated interline service. While the Applicants identify certain investment costs as necessary to accommodate projected diversion traffic, they do not assign specific investments to individual trains. I therefore identify terminal, yard, and mainline investments from the Applicants' own submissions that I assume would support the Lathrop to Croxton and Croxton to Lathrop trains.[105] I conservatively attribute the full capex of those selected investments to these two trains, even though the same investments almost certainly support the generation of additional contribution margins from other planned trains and additional traffic not reflected in my analysis. For example, Mr. Janke specifies capex of $[redacted] million to cover new lift equipment at intermodal terminals throughout the UP and NS networks, which could cover as many as [redacted] distinct intermodal facilities.[106] I conservatively attribute the entire $[redacted] million to the trains

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103 *See* footnote 424.

104 *See, e.g.,* Gehringer & Orr VS, p. 9. *See* Workpaper "IM_Profitability_Exhibits.xlsx."

105 I include the following investments: [redacted]. *See* Table 18. *See* Workpaper "IM_Profitability_Exhibits.xlsx."

106 The $[redacted] million capex estimate is the same whether expressed in 2023 or 2025 USD. *See* Verified Statement of Grant Janke, April 29, 2026, as revised by Second Errata submitted on September

ZLTCX and ZCXLT, even though that train pair would only operate through [redacted] of the [redacted] intermodal terminals for which Mr. Turner calculates capacity.[107] As another example, under Applicants' Growth Plan, the ZLTCX–ZCXLT train pair is not the only new service using the Toledo Airline terminal.[108] Another new intermodal train pair, ZCICX–ZCXCI, is also scheduled to perform work there. More broadly, projected average daily intermodal departures from Toledo Airline rise from roughly [redacted] under the Base Plan to roughly [redacted] under the Growth Plan, including new and existing services.[109] I nevertheless charge the Lathrop-Croxton train pair the full $[redacted] million cost of expanding the Toledo terminal, while counting none of the contribution margins from other services that are projected to benefit from

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4, 2026 ("Janke VS") Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment,' cells H29, M29, and H59, M59. Mr. Turner refers to Mr. Janke's merger-related investments in his VS. *See* Turner VS, Table 14, pp. 79–81, footnote 145. Neither Mr. Janke nor Mr. Turner specifies where the $[redacted] million would be spent. Mr. Turner does, however, calculate lift capacity for [redacted] NS terminals and [redacted] UP terminals. I assume that the contemplated investments would be limited to facilities for which he calculates capacity. *See* Turner Workpapers, "UP Manifest-Intermodal-Automotive Terminal Capacity Inputs & Calculations.xlsx," tab 'Intermodal Terminal Inputs' and "NS Manifest IM Auto Terminal Capacity Calculations.xlsx," tab 'Intermodal Terminal Inputs.'

107 *See* Gehringer & Orr VS, Appendix B, identifying Work Events at Croxton, Toledo Airline, Harrisburg, Bethlehem Imdl, Lathrop, Chicago 47th St, Sparks, and Denver terminals for the ZLTCX and ZCXLT trains. Toledo Airline is not identified as an intermodal terminal in the Turner Workpapers and has been excluded from this total. *See* Turner Workpapers "UP Manifest-Intermodal-Automotive Terminal Capacity Inputs & Calculations.xlsx," tab 'Intermodal Terminal Inputs' and "NS Manifest IM Auto Terminal Capacity Calculations.xlsx," tab 'Intermodal Terminal Inputs.' Toledo Airline refers to NS' Toledo Airline Junction intermodal terminal. *See* WSP, "Ohio Rail Plan, Appendices," August 2025, last accessed November 12, 2026, available at: https://dam.assets.ohio.gov/image/upload/q_auto/v1773404180/rail.ohio.gov/publications/rail-plan/Ohio-Rail-Plan-Appendices.pdf, p. A-15.

108 *See* Hunt VS, p. 88.

109 *See* Hunt VS, pp. 86–91 & Exhibit 7-4. *See also*, CPKC Operating Experts VS, Figures 42 and 48. *See also*, CPKC Operating Experts VS Workpaper, "Terminal Clocks.xlsx," tab 'Toledo Airline, OH,' columns AU (Base Plan) and AW (Growth Plan), rows 22 and 46 for ZCICX–ZCXCI, rows 83 and 85 for ZLTCX–ZCXLT, and total for rows starting with "2" for NS intermodal trains and starting with "Z" for UP intermodal trains. *See* Railroadfan.com, "NS Train Symbols," (200 Series – Intermodal), last accessed November 11, 2026, https://railroadfan.com/wiki/index.php/NS_Train_Symbols#200_Series_-_Intermodal; and Railroadfan.com, "UP Train Symbols," (Z Series - High Priority Intermodal), last accessed November 11, 2026, https://railroadfan.com/wiki/index.php/UP_Train_Symbols#Z_Series_-_High_Priority_Intermodal.

that expansion.[110] My allocation therefore certainly overstates the present value of the capex that would be attributable to the Lathrop–Croxton train pair on an economically reasonable allocation, and correspondingly understates the estimated NPV and rate of return for providing interline service.[111] Moreover, while Applicants phase this upfront capex across the first three years after the merger, I assume that the full $[redacted] million in initial capex for the selected investments are incurred in the first year.[112]

71. I discount the resulting annual cash flows using a discount rate of 11 percent,[113] my assumed after-tax WACC, which represents the "average rate of return needed to persuade investors to provide capital to the freight rail industry."[114] To develop this assumption, I consider the most recent available railroad-industry estimates from two established sources: Prof. Damodaran's January 2026 nominal after-tax WACC of 7.3 percent for the U.S. Transportation (Railroads) industry,[115] and the Board's 2025 composite after-tax WACC of 9.8 percent for the

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110 Janke VS, Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment,' cell M58. *See also,* Workpaper "IM_Profitability_Exhibits.xlsx."

111 Alternatively, one can consider my analysis as conservative because the capex that I include would be expected to generate additional contribution margins on other routes that are not included in my analysis.

112 Figures expressed in 2025 USD, as reported in the underlying data. *See* Turner VS, pp. 44–78 and footnote 31 (describing Applicants' merger-related capital improvement plan and identifying expected completion dates for post-merger projects in Years 1, 2, and 3). *See also*, Janke VS, p. 4 (outlining Applicants' planned capital improvements and timing of expenditures). *See also*, Janke VS Workpaper, "Synergies Transportation - Operating.xlsx," tab 'Capital Investment.' *See also*, Table 19.

113 *See* Workpaper "IM_Profitability_Exhibits.xlsx." I apply mid-year discounting assuming that the cash flow accrues on average halfway through each year.

114 Decision, Surface Transportation Board, Docket No. EP 558 (Sub-No. 29), September 10, 2026, last accessed October 13, 2026, https://www.stb.gov/proceedings-actions/decisions/?action=stb_hook_modal_decision_details&id=53167, Railroad Cost of Capital for 2025, p. 1.

115 Aswath Damodaran, "Cost of Equity and Capital (US)," for Transportation (Railroads) Industry using data as of January 5, 2026, last accessed October 13, 2026, https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/wacc.html, downloaded as excel file. *See also,* Workpaper "IM_Profitability_Exhibits.xlsx."

railroad industry.[116] I update the WACC to reflect current conditions given the recent increase in interest rates, as of October 1, 2026, that Applicants would face if they were to undertake the investment today.[117] These adjustments yield an after-tax WACC of 8.3 percent based on Prof. Damodaran's estimates and 10.6 percent based on the Board's estimates.[118] I therefore conservatively adopt an 11 percent discount rate to estimate the NPV, which will tend to understate the value that could be added if the Applicants coordinated to provide this service on an interline basis.

72. Figure 23 summarizes the results of the analysis. Over just the first ten years following the investment, I estimate $[redacted] million of contribution margins from the projected traffic in present value terms.[119] Relative to the $[redacted] million in capex (present value of upfront capex and assumed replacement capex over the investment evaluation period),[120] and $[redacted] million of taxes (assuming a combined state and federal rate of 25.5 percent)[121] these trains therefore would yield a NPV of [redacted] and likely

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116 Decision, Surface Transportation Board, Docket No. EP 558 (Sub-No. 29), September 10, 2026, last accessed October 13, 2026, https://www.stb.gov/proceedings-actions/decisions/?action=stb_hook_modal_decision_details&id=53167, Railroad Cost of Capital for 2025, p. 1.

117 *See* Workpaper "IM_Profitability_Exhibits.xlsx." *See* footnote 433.

118 *See* Workpaper "IM_Profitability_Exhibits.xlsx."

119 Figures expressed in 2026 USD, applying inflation up to October 1, 2026. *See* Workpaper "IM_Profitability_Exhibits.xlsx."

120 I assume replacement capex equal to 10 percent of the inflation adjusted upfront capex in each subsequent year. This is conservative because the investments will continue to have economic value even after the end of the 10-year economic life reflected in my analysis, but my calculation excludes this additional value.

121 Average combined federal and state corporate tax imposed in the United States as of July 1, 2026, including the states that impose no corporate income taxes. Garrett Watson, Alex Durante, "Combined State and Federal Corporate Income Tax Rates in 2026," Tax Foundation, October 9, 2026, last accessed October 28, 2026, https://taxfoundation.org/data/all/federal/combined-state-federal-corporate-income-tax-rates-2026/. Underlying source: state statutes, state tax forms and instructions, Tax Foundation calculations. *See also*, footnote 428.

substantially more given my conservative assumptions.[122] Appendix B.4 describes the contribution margin calculation, the selected investments, and the resulting NPV analysis in greater detail.

FIGURE 23: USING APPLICANTS' OWN TRAFFIC PROJECTIONS, LATHROP–CROXTON SERVICE GENERATES A POSITIVE NPV WITHOUT THE MERGER



Sources and Notes**:** Figures expressed in 2026 USD, applying inflation up to October 1, 2026.

This analysis uses Mr. Hunt's projected traffic diversions, applies a 4.2 percent revenue reduction

[122] Figures expressed in 2026 USD, applying inflation up to October 1, 2026. The estimated positive NPV leaves room for higher variable costs, even under the conservative assumptions I have adopted elsewhere in the analysis.

for single-line service derived from Mr. Hunt's model, and assigns selected investment cost to the Lathrop–Croxton and Croxton–Lathrop trains. *See* Workpaper "IM_Profitability_Exhibits.xlsx."

73. Applicants may argue that coordinated interline service cannot provide service quality comparable to single-line operation.[123] But the evidence discussed in Section IV.D.1 shows that railroads can coordinate to offer competitive interline service. Separately owned railroads can use run-through trains, coordinated blocking, schedules, and other operating arrangements to reduce intermediate handling and delay. Applicants' own benchmarking materials show that several existing UP-CPKC-NS services over the Meridian Speedway have achieved end-to-end speeds comparable to or better than selected long-distance single-line UP and NS services. This conclusion is confirmed by analysis of run-through trains using the Meridian Speedway, which demonstrates that interchanges need not be major sources of dwell.[124] Applicants' own marketing materials likewise describe coordinated interline services as [redacted].[125]

74. The relevant question is therefore whether the particular service improvements associated with the projected traffic require a merger, rather than whether coordinated interline service is inherently incapable of providing comparable service. If not, some of the predicted benefits that are attributed to the merger by Mr. Hunt could be achieved without the merger.

75. The exercise presented in Figure 23 is intended to be illustrative rather than a precise valuation of the proposed service. I take Mr. Hunt's projected traffic opportunity as given and use simplifying, but conservative, assumptions, including assigning the full cost of selected investments to the Lathrop–Croxton train pair and counting only contribution margins generated

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123 *See, e.g.,* Hunt VS, p. 15.

124 *See* Powers Transit Time VS, as well as footnote 84 above.

125 *See* Section IV.D.1.

over the first ten years. Even under these conservative assumptions, the analysis produces [redacted], suggesting that, if the traffic growth Mr. Hunt projects is real, UP and NS would have a meaningful economic incentive to pursue that traffic today without the merger; Applicants have not demonstrated how the merger would materially change those incentives.

76. I would expect the economic incentive illustrated by the Lathrop–Croxton analysis to extend to other potential interline services. Appendix B.4.a shows that [redacted] after applying a 4.2 percent revenue reduction for single-line service derived from Mr. Hunt's model. [redacted]. The result therefore casts doubt on the proposition that the merger is necessary to pursue the opportunity profitably. More broadly, the analysis reinforces the need to distinguish between traffic that is genuinely merger-dependent and traffic that may be achievable through coordination among separately owned railroads.

c. Predicted Diversions Near Existing Gateways Suggest Opportunities for Reciprocal Access

77. Mr. Hunt's projected truck-to-carload diversions also suggest opportunities for additional interline coordination near existing UP-NS gateways. Figure 24 and Figure 25 examine predicted diversions in Mr. Hunt's watershed region. The diversion markets shown also fall within the [redacted]."[126] Many of these diversion markets have an origin or destination near Chicago, St. Louis, Memphis, or New Orleans, principal

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126 Mr. Hunt defines the watershed region as comprising counties that fall within a 250-mile radius of one of four key gateways: Chicago, St. Louis, Memphis, and New Orleans. *See* Hunt VS, pp. 157–158 & Exhibit 4-8 and Union Pacific, [redacted]," February 2024, UP_0703629, at -630, -632, and -633. [redacted].

gateways between the two networks. Figure 24 maps those predicted diversions, while Figure 25 summarizes their proximity to the gateways.[127] The figures identify substantial predicted traffic for which reciprocal access or other gateway-based coordination could be considered, depending on the particular movement. Figure 24 also identifies Sidney, Illinois, where UP and NS already have a physical connection outside the four gateway regions shown. Applicants propose making greater use of that connection in their post-merger Operating Plan. Sidney is therefore a useful example of existing physical connectivity that predates the merger and could potentially support additional coordination without it.[128]

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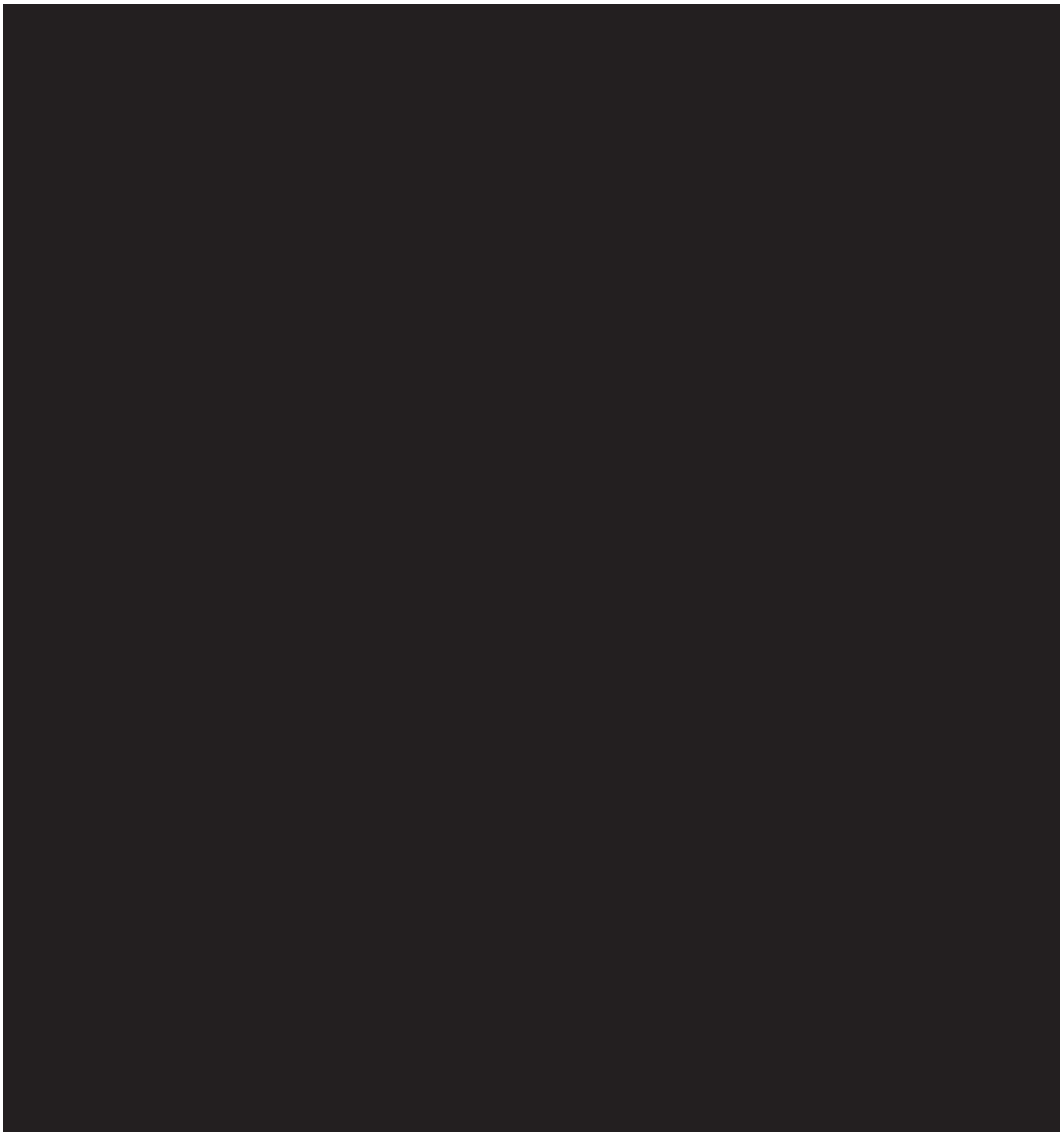
[127] Based on Mr. Hunt's truck-to-carload diversion workpapers and 2023 traffic data. Figure 24 shades counties by predicted diverted carloads with an origin or destination in the county and by whether UP, NS, or both serve the county. *See* Workpaper "Opportunity_Analysis.xlsx" and Script "01_opportunity_analysis.R."

[128] *See*, *e.g.,* Gehringer & Orr VS, pp. 40, 82–84, 91–92, 100, 114–116, 125, and 213. *See also*, Hunt VS, pp. 36, 49, and 109.

FIGURE 24: MANY OF MR. HUNT'S PREDICTED CARLOAD DIVERSIONS ARE LOCATED NEAR EXISTING UP-NS GATEWAYS



Sources and Notes: The map displays the number of Hunt-predicted diverted carloads starting or ending in counties served by UP (only), NS (only), or both UP and NS for counties within 250 miles of a gateway city identified by Mr. Hunt. *See* Hunt VS, Exhibit 4-8. A county qualifies as served by UP or NS if at least 10,000 tons of that railroad's carload traffic originated or terminated in the county in 2023, based on the Traffic Tapes. The location of each gateway city is identified by the centroid of the city, and the location of each county is identified by the centroid of that county based on 2023 census boundaries. The distance between each city centroid and each county centroid is measured in miles in a straight line. Darker shading indicates more Hunt-predicted diverted carloads with an endpoint in the county. Diverted carloads by county taken from Hunt

Workpaper, "HC-Lookalike Market Share vFinal.xlsx." *See* Script "01_opportunity_analysis.R" and Workpaper "hunt_predicted_diversions_county_map_from_R.png."

78. Figure 25 summarizes the same geographic pattern shown in Figure 24 by showing predicted diversions at specified distances from the major gateways. It shows substantial predicted diversion associated with counties served by each railroad at several distance increments from the major gateways—within 100 miles, 100 to 150 miles, 150 to 200 miles, and 200 to 250 miles. That pattern is potentially important because reciprocal arrangements are most relevant where each railroad has traffic opportunities near a gateway but would require access over the other railroad's network to extend its commercial reach. The figure therefore identifies several gateway regions where the geographic ingredients for reciprocal access appear to be present.

FIGURE 25: PREDICTED DIVERSIONS NEAR MAJOR GATEWAYS ILLUSTRATE THE POTENTIAL SCOPE FOR RECIPROCAL ACCESS ARRANGEMENTS



Sources and Notes: The figure displays the number of Hunt-predicted diverted carloads (in total 191,000 diverted carloads) starting or ending in counties served by UP (only) or NS (only) within the specified distance band of the specified gateway. A county qualifies as served by UP or NS if at least 10,000 tons of that railroad's carload traffic originated or terminated in the county in 2023, based on the Traffic Tapes. The location of each gateway city is identified by the centroid of the city, and the location of each county is identified by the centroid of that county based on 2023 census boundaries. The distance between each city centroid and each county centroid is measured in miles in a straight line. Counties served by both UP and NS are excluded from this figure. Diverted carloads by county taken from Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx." *See* Script "01_opportunity_analysis"; Workpaper "Opportunity_Analysis.xlsx."

79. These figures illustrate the potential scope for arrangements modeled on the same basic reciprocal-access principle that underlies the successful I-5 Agreement. Many of the

diversion opportunities identified by Mr. Hunt have an origin or destination near Chicago, St. Louis, Memphis, or New Orleans, and the analysis shows substantial predicted traffic on both the UP and NS sides of several of those gateways. Reciprocal access would not necessarily have to be matched at the same gateway; access granted by one railroad in one region could in principle be exchanged for access granted by the other elsewhere. In such circumstances, an arrangement that expands each railroad's ability to market and carry traffic to locations served by the other could allow the railroads to pursue traffic beyond the locations they serve directly, much as the I-5 Agreement allows UP to compete for traffic at BNSF-served locations in the Pacific Northwest.[129] An agreement modeled on that arrangement could establish the carriers' proportional-rate terms in advance, allowing one railroad to quote through service without renegotiating with the other for each customer opportunity, even when their haul lengths differ. Whether particular arrangements would be commercially and operationally attractive would depend on the traffic mix, density, facilities, and service design at the relevant gateway.

80. [redacted]

[redacted]

[redacted]

[

[redacted] undercuts Applicants' suggestion that arrangements resembling the I-5 Agreement could arise only in connection with a merger.[130]

81. Returning to Figure 24 and Figure 25, a substantial set of origins and destinations associated with Mr. Hunt's projected diversions lies near existing UP-NS gateways, where reciprocal access or other gateway-based coordination may be economically relevant alternatives to a merger. Assessing how many unique diversions a particular arrangement could capture would require a separate analysis. Mr. Hunt does not evaluate the extent to which such arrangements could capture part of the traffic opportunity he attributes to the merger.

V. MR. HUNT'S MODELS DO NOT IDENTIFY MERGER-RELATED DIVERSION AND OVERSTATE THE AMOUNT RELATED TO THE MERGER

82. Mr. Hunt uses three principal modeling frameworks to estimate traffic diversions resulting from the merger: truck-to-carload, truck-to-intermodal, and rail-to-rail.[131] The frameworks differ materially in their construction, and I therefore address them separately below. They nevertheless raise a common causal question: whether the merger will cause rail modal shares to increase. As discussed in Sections III and IV, observed rail modal share and routing reflect many commercial, operational, market, and network conditions that Mr. Hunt does not attempt to incorporate into his analysis. Mr. Hunt's models do not distinguish the effect of the

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130 Union Pacific, [redacted]," February 2024, UP_0703629, at -631–634; Email from Lisa Knight (UP) to Jim Vena and others, with subject "[redacted]," March 2024, UP_0703627, at -627–628. *See also*, UP_3208295, tab 'VJV Priority Projects' (July 16, 2025); UP_2743582, tab 'VJV Priority Projects' (September 25, 2025); UP_3157069, tab 'On Pause,' row 10 (December 22, 2025). The December entry retains the status "[redacted]" and the comment "[redacted]." *See also*, Applicants' Prima Facie Response, p. 32.

131 *See* footnote 6.

modeled merger-related changes from pre-existing differences among the Hunt markets and routes he studies.

83. My review finds that Mr. Hunt's models do not reliably make those distinctions. His truck-to-rail models infer post-merger outcomes from the historical performance of other Hunt markets without establishing that the modeled characteristics account for the relevant differences in rail participation. His rail-to-rail model likewise relies on a simplified representation of route choice that does not reliably reproduce observed routing. My work shows, across all of Mr. Hunt's diversion analyses, that Mr. Hunt's models are incapable of reliably predicting merger-related diversions.

84. I demonstrate these flaws in many ways. Perhaps most illustrative is the fact that Mr. Hunt's models predict substantial diversions even when I remove the assumed merger-induced rail service changes. Another is the fact that the magnitude of changes in the service and price improvements Mr. Hunt claims to model often have little effect on the magnitude of diversions predicted by Mr. Hunt's models. The sections below address how these issues arise in each model and what they imply for the value of Mr. Hunt's diversion estimates as measures of merger-caused traffic growth.

A. Mr. Hunt's Truck-to-Carload Model Does Not Reliably Identify Merger-Related Diversion

85. Mr. Hunt estimates that the merger would divert approximately 191,000 annual carloads from truck to rail and increase UP-NS revenue by approximately $1.3 billion.[132] My

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[132] *See* Hunt VS, pp. 35, 39–49, 95 & Exhibits 2-4, 4-1, 4-12, 8-1. The truck-to-carload model accounts for approximately 32 percent of Mr. Hunt's predicted revenue increase ($1,280 / $4,027 ≈ 32 percent). Of Mr. Hunt's 191,000 truck-to-carload diversions, 185,087 diverted carloads or 97 percent are from interline diversion markets that become single-line markets after the merger, 4,679 diverted carloads or 2 percent are from improvements to interline diversion markets, and 1,589 diverted carloads or 1

review of that analysis identifies five interrelated problems. First, Mr. Hunt's methodology does not isolate the effect of the characteristics he associates with single-line service from other differences among Hunt markets.[133] Second, his analysis assumes service improvements that are not established by the Operating Plan.[134] Third, diagnostic tests of the model itself show that much of the predicted diversion does not depend on modeled merger-related changes: when I rerun Mr. Hunt's model holding modeled characteristics at their pre-merger levels, it generates more than 60 percent of his predicted diversion.[135] Fourth, the model applies an asymmetric treatment that introduces upward bias by counting positive differences between benchmark and observed rail modal shares as evidence of potential traffic growth while disregarding negative differences generated by the same methodology.[136] Fifth, the aggregate diversion estimate changes almost imperceptibly when the assumed interchange delay is varied from zero to approximately 44 hours, or twice Mr. Hunt's assumed interchange penalty.[137] Taken together, these results indicate that Mr. Hunt's estimated carload diversion is driven by pre-existing differences among Hunt markets that Mr. Hunt's methodology does not capture rather than by the modeled changes associated with the merger.

1. Summary of the Truck-to-Carload Diversion Methodology

86. Figure 26 provides a simplified overview of Mr. Hunt's truck-to-carload methodology.[138] Mr. Hunt first (Step 1) identifies merchandise and bulk Hunt markets in which

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percent are from improvements to single-line diversion markets. *See* Workpaper "T2R_Carload_Exhibits.xlsx."

133 *See* Section V.A.2. *See* definition of markets in the truck-to-carload model in footnote 6.

134 *See* Section V.A.3.

135 *See* Section V.A.4.a.

136 *See* Section V.A.4.b.

137 *See* Section V.A.4.c.

138 *See* Appendix B.5 for a more detailed description of Mr. Hunt's truck-to-carload methodology.

truck and rail potentially compete with one another and, using Oliver Wyman's Quantanet model, he selects what he terms the "best," or lowest-impedance, rail route for each county-to-county pair before and after the merger.[139] Those modeled routes determine rail mileage and single-line status, which in turn (in Step 2) determine the modeled rail price and transit time.[140] Mr. Hunt then (in Step 3) identifies diversion-eligible markets in which his analysis predicts improved rail service (meaning a reduction in the number of junctions or mileage) and that satisfy additional eligibility screens.[141] Mr. Hunt then (in Step 4) assigns each diversion-eligible

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[139] Hunt VS, Appendix B.5.2.A–B, pp. 151–152; Appendix A.6.1–A.6.2, pp. 105–106. Mr. Hunt includes only what he defines as "competitive" markets where "both truck and rail compete" in this analysis. *See* Hunt VS, p. 148 & Exhibit B-20 and footnote 27.

Because Transearch reports merchandise and bulk truck traffic at the county level, Mr. Hunt defines these markets at the county-to-county level. Mr. Hunt uses "FIPS" codes to identify origin and destination counties for rail and/or truck traffic. FIPS codes, or Federal Information Processing Standard codes, are codes that uniquely identify states and counties across the United States. State-level FIPS codes have two digits, county-level FIPS codes have five digits of which the first two are the FIPS code of the state to which the county belongs. *See* Federal Communications Commission, "Federal Information Processing System (FIPS) Codes for States and Counties," last accessed November 8, 2026, https://transition.fcc.gov/oet/info/maps/census/fips/fips.txt. In Mr. Hunt's analysis, OFIPS refers to origin FIPS, DFIPS refers to destination FIPS. *See* Hunt VS, pp. 148–152, Exhibit B.23, p. 199, Exhibit E-1 summarizing the traffic segmentation definition in the truck-to-carload model. *See also*, Surface Transportation Board, "Carload Waybill Sample Reference Guide," March 5, 2025, available at: https://stb.gov/wp-content/uploads/2023-STB-Waybill-Reference-Guide.pdf, pp. 67–68.

[140] Hunt VS, pp. 160–164, 169–172.

[141] Hunt VS, pp. 38–41 & Appendix B.5.1–B.5.2.B, pp. 148–153. Mr. Hunt excludes, among others, Hunt markets in which rail prices are not at least 10 percent lower than truck prices, as well as Hunt markets in which the junction count does not decrease and the modeled rail mileage decreases by less than 163 miles. *See* Hunt VS, pp. 148–150. Mr. Hunt's workpapers define single-line status based on whether the Quantanet "best" route has no junctions, rather than solely on whether a railroad can serve both the origin and destination county. *See* Hunt VS, Appendix B.5.2.C, p. 154; Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 23–30.

In describing his truck-to-carload model, Mr. Hunt uses "lookalike" and "archetype" in ways that do not always distinguish the categories of markets from the existing markets used to calculate their benchmark shares. For clarity and consistency, I use the following terms throughout this Verified Statement when referring to Mr. Hunt's truck-to-carload model. An "archetype" is a category of markets defined by the characteristics Mr. Hunt uses in his lookalike analysis: truck equipment type plus modeled single-line status, rail mileage bin, rail transit time bin, and rail price bin. "Lookalike markets" are the existing county-pair-STCC2-truck equipment type markets characterized by their pre-merger characteristics and assigned to an archetype whose observed rail modal shares are used to calculate its

market to an "archetype" based on its modeled post-merger characteristics, using archetypes defined, for each of five truck equipment types, by modeled pre-merger single-line status, rail mileage, rail transit time, and rail price.[142] He then matches each diversion-eligible market to existing "lookalike" markets that share the characteristics defining the archetype.[143] The weighted-average pre-merger rail modal share observed in those lookalike markets becomes (in Step 5) the benchmark rail modal share applied to each diversion-eligible market assigned to the same archetype.[144] If the benchmark rail modal share exceeds the diversion-eligible market's current rail modal share, Mr. Hunt treats (in Step 6) the difference as potential truck-to-carload diversion, but if the current rail modal share already exceeds the benchmark, he does not predict a corresponding reduction in rail traffic.[145] Therefore, Mr. Hunt calculates potential truck-to-carload diversions by multiplying each diversion-eligible market's total rail and truck tonnage by its assigned benchmark rail modal share to obtain predicted rail tons, and subsequently subtracting the rail tons already associated with that diversion-eligible market, counting only

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benchmark rail modal share. Each directional county pair is identified by an origin and destination county, with movements in opposite directions treated as separate markets. "Diversion-eligible markets" are the carload county-pair-STCC2-truck equipment type markets Mr. Hunt subjects to his diversion calculation and assigns to archetypes based on their modeled post-merger characteristics. I use the term diversion markets for the subset of diversion-eligible markets in which his calculation predicts positive diversion after operational filters.

142 Mr. Hunt's analysis considers five truck equipment types: bulk, dry van, flatbed, reefer, and tank. Where a STCC2 commodity moves between an origin and destination county using multiple truck equipment types, he allocates rail tons across truck equipment types in proportion to truck tons for that commodity and county pair. Mr. Hunt groups diversion-eligible and lookalike markets by truck equipment type and four characteristics: single-line status (zero or at least one interchange), rail mileage (250-mile bins from 250 to 2,000 miles, then 2,000+), rail transit time (15-hour bins, with a bottom bin below 50 hours and a top bin of 350+ hours), and rail price (bins determined separately for each truck equipment type based on average pre- to post-merger price changes). *See* Hunt VS, Appendix B.5, pp. 151–155; Hunt Workpaper, "MerchBuildAll_2026_vFinal.sql."

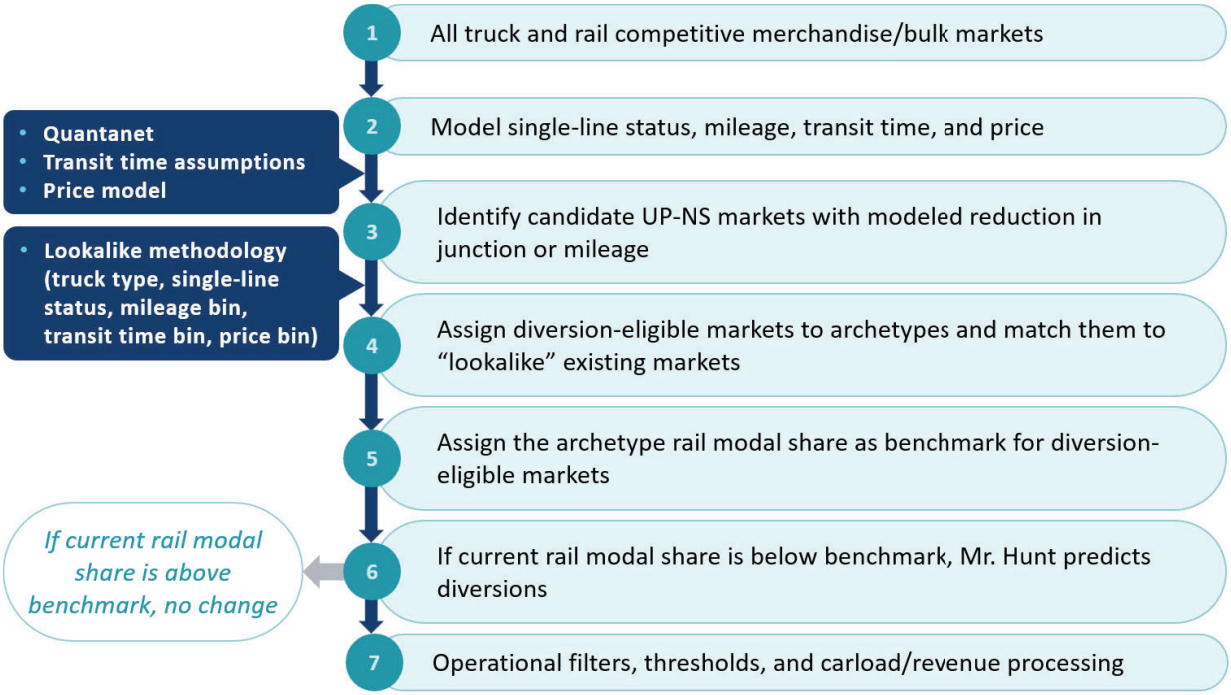
143 *See* Hunt VS, pp. 30–31, 38–41; Appendix B.5, in particular Appendix B.5.2.C.

144 *See* Hunt VS, p. 41 & Appendix B.5.2.C.

145 *See* Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 85–87. *See* further detail in Section V.A.4.b. *See also*, Figure 27.

positive differences as diversions.[146] Finally, he applies a series of operational filters and post-processing steps to the potential truck-to-carload diversions to obtain his final diversion results (Step 7).[147]

FIGURE 26: OVERVIEW OF MR. HUNT'S TRUCK-TO-CARLOAD DIVERSION FRAMEWORK



Sources and Notes: Hunt VS, pp. 94–95, 148–157, 160–174, 198–206, Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb." *See also*, Figure 27 for a visual representation of Steps 4–6.

87. As the above description of his methodology reveals, Mr. Hunt does not directly estimate how shippers would respond to the magnitude of any assumed or modeled change in price or service. Instead, his methodology predicts post-merger rail modal shares for diversion-eligible markets based on the average rail modal shares observed in existing lookalike markets.[148] Figure 27 below provides an illustration of that fundamental aspect of Mr. Hunt's

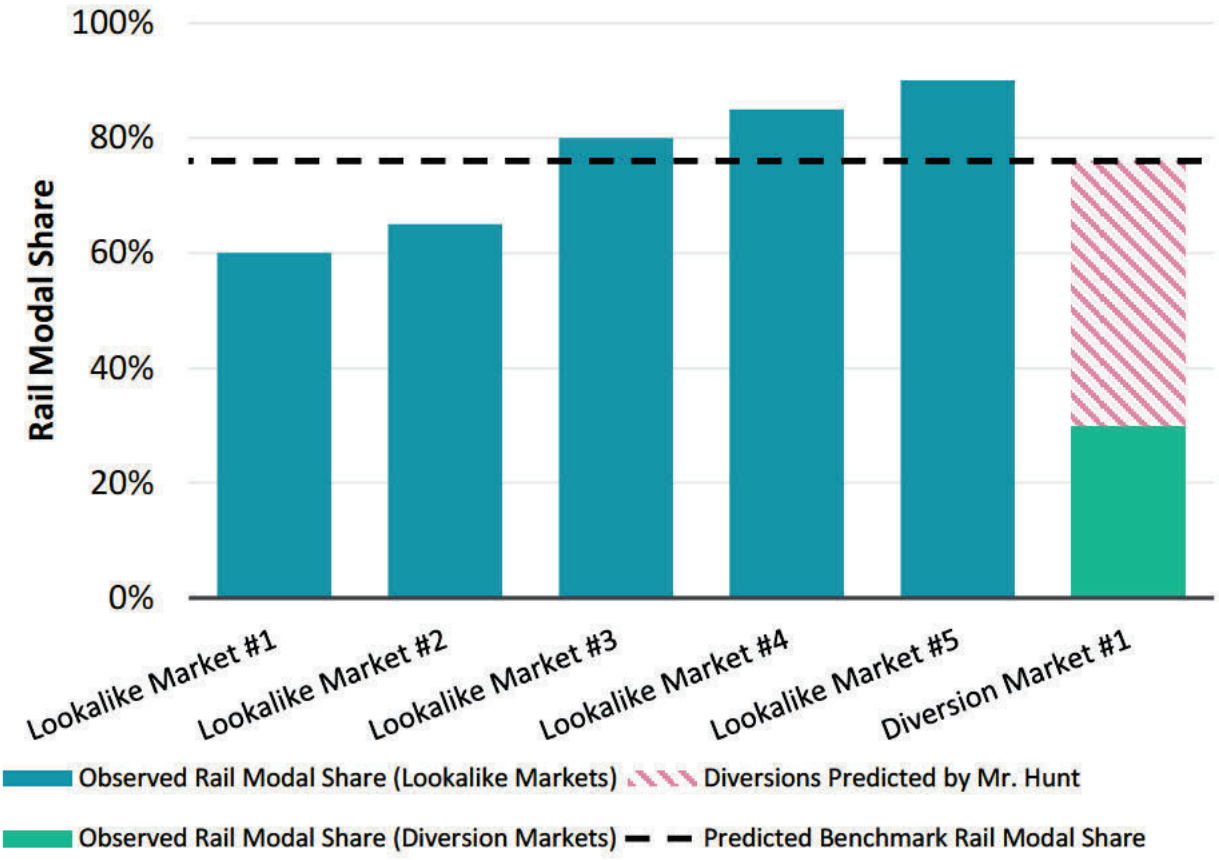
146 *See* Hunt VS, Appendix B.5.2.C.

147 *See* Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 89–98.

148 *See* Hunt VS, Appendix B.5.2.C, pp. 153–155.

methodology. Thus, the model's estimate of diversion for a given diversion-eligible market depends solely and critically on: (i) which existing lookalike markets are grouped together to construct the benchmark rail modal share; and (ii) the subject diversion-eligible market's observed rail modal share.

FIGURE 27: MR. HUNT PREDICTS DIVERSIONS IF THE CURRENT RAIL MODAL SHARE IS BELOW THE BENCHMARK RAIL MODAL SHARE FOR THAT ARCHETYPE



Sources and Notes: This figure is a visual representation of Steps 4–6 in Figure 26. The rail modal shares and predicted benchmark rail modal share are hypothetical numbers. The five hypothetical lookalike markets in this figure are all matched to the same archetype based on pre-merger characteristics. The weighted average rail modal share of these lookalike markets is used to calculate the benchmark rail modal share for this archetype. The hypothetical diversion-eligible market in this figure is matched to this archetype based on its predicted post-merger characteristics. Since the current rail modal share is below the predicted benchmark, Mr. Hunt's

model predicts diversions, so this Hunt market is a diversion market with positive predicted diversions. *See* Hunt VS, pp. 30–31, 38–41, Appendix B.5.2.C, pp. 153–157.

2. Mr. Hunt's Lookalike Methodology Does Not Isolate the Effect of Single-Line Service from Other Differences Between Lookalike Markets

88. Mr. Hunt applies rail modal shares observed in existing lookalike markets to pre-merger truck and rail traffic in diversion markets. That extrapolation requires both that the identified truck traffic can practically move by carload rail and that the lookalike and diversion markets are sufficiently comparable, on average, in other factors affecting rail participation. To test this, I first examine whether Mr. Hunt establishes practical rail access, a threshold example of a potentially important difference between those lookalike and diversion markets. I then show that rail participation varies substantially even within his archetypes. Finally, I examine commodity composition, one observable example of a source of that variation, and show that accounting for commodity type can materially lower the resulting diversion estimates.

a. Mr. Hunt Does Not Establish That the Truck Traffic He Identifies Can Practically Shift to Carload Rail

89. Mr. Hunt's carload diversion framework treats truck traffic as potentially contestable by rail based on county-level market definitions and the availability of a modeled rail route between the origin and destination counties.[149] In practice, however, the existence of a rail route does not establish whether particular truck shipments can actually divert to carload rail. Whether carload rail is a feasible alternative depends on the characteristics of the shipper, receiver, commodity, shipper facilities, and shipment patterns. Mr. Hunt's framework does not

[149] Hunt VS, pp. 105–109, 151–153.

establish whether the truck shipments he treats as eligible for diversion have practical rail access or otherwise meet those conditions.[150]

90. For example, to use rail, a shipper and receiver currently using truck transport must either have suitable direct rail access or be able to use workable transload arrangements. Direct rail service can require appropriate loading and unloading infrastructure, track and switching capability, suitable railcars, and operating arrangements that accommodate the carload shipment; transload service instead depends on available facilities capable of handling the relevant commodity, and economical first- and last-mile truck movements. Shipment size and frequency, inventory requirements and constraints, and existing logistics arrangements can also affect whether conversion from truck to carload rail is practical. In addition, rail transportation may involve costs beyond the line-haul rate, including switching, demurrage, and storage costs, which may affect the relative cost of rail and truck transportation. These factors can differ materially both within and across counties, and even among shipments within the same two-digit commodity classification.[151]

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[150] As discussed in Section III.C, practical rail participation can depend on facility access and infrastructure, shipment size and cadence, commodity handling requirements, equipment availability, first- and last-mile logistics, and customer operating practices. Mr. Hunt accounts for some commodity differences indirectly through truck equipment type and estimated rail price, but his archetype definition does not directly incorporate these shipment- and facility-specific conditions. *See* Hunt VS, Sections 4.1–4.2 & Appendix B.5. *See also*, Deposition of David T. Hunt, Vol. II, October 8, 2026, 630:16–631:7.

[151] *See* Section III.C; CPKC Operating Experts VS, Sections II.B–D. For example, Applicants' own commercial records identify locations where nearby rail infrastructure does not itself provide direct facility access. *See* Table 1 (OPP-044123) describing a proposed facility at [redacted]. A Union Pacific rail line is located approximately one mile from [redacted].

Mr. Hunt's truck-to-carload analysis defines markets at the county level and does not identify facility-specific access for the truck traffic included in those markets. *See* Hunt VS, Appendix B.5.2.A–B, pp. 151–153. Mr. Hunt also includes private-truck traffic in the universe potentially eligible for diversion. *See* Hunt VS, pp. 118–119.

91. Applicants may contend that these kinds of unobserved conditions also affect the lookalike markets used to calculate the archetype average and therefore need not be modeled individually. That response does not address the problem. Instead, it reflects an unstated and untested assumption that the omitted conditions are distributed similarly across the lookalike markets and the diversion markets. Mr. Hunt does not demonstrate that this assumption holds. If facility access, shipment cadence, handling requirements, or other omitted determinants of rail suitability differ systematically between the two groups, averaging across the lookalike markets does not eliminate their influence. Rather, it imports the lookalike markets' higher average rail modal shares into diversion markets with potentially different underlying conditions.

b. Mr. Hunt's Archetypes Explain Only a Limited Share of the Variation in Rail Participation

92. The detailed data underlying Mr. Hunt's lookalike analysis confirm that the lookalike markets grouped within an archetype can differ substantially in observed rail modal share. That variation indicates that the characteristics used to define the archetypes do not fully explain why shippers in some lookalike markets use rail while shippers in otherwise similarly classified lookalike markets use truck. This substantial variation also shows that the characteristics defining Mr. Hunt's archetypes leave much of rail participation unexplained, undermining his premise that those characteristics suffice to predict rail modal shares in the diversion markets.

93. Mr. Hunt's own example of the chemicals market from Nueces County, Texas to Morgan County, Alabama ("Nueces–Morgan") illustrates the point. He assigns that market to an archetype with a weighted-average rail modal share of 77 percent. The ten largest lookalike markets he presents in his Exhibit 4-7 have observed rail modal shares ranging from [redacted] percent to [redacted] percent. Figure 28 shows that the 77 percent weighted average also obscures

the [redacted] participation in most of the archetype's 2,210 lookalike markets: rail modal share is [redacted] in 1,924 of those lookalike markets, and 87 percent (1,933) of those lookalike markets have rail modal shares below [redacted] percent.[152] Mr. Hunt nevertheless applies the archetype's 77 percent weighted-average share to Nueces–Morgan, predicting that the Nueces–Morgan rail modal share will increase from zero before the merger to 77 percent after the merger.[153] The average does not establish that the conditions associated with high rail participation in other lookalike markets within the archetype are present, or would become present after the merger, in Nueces–Morgan. In fact, Mr. Hunt testified that he [redacted].[154]

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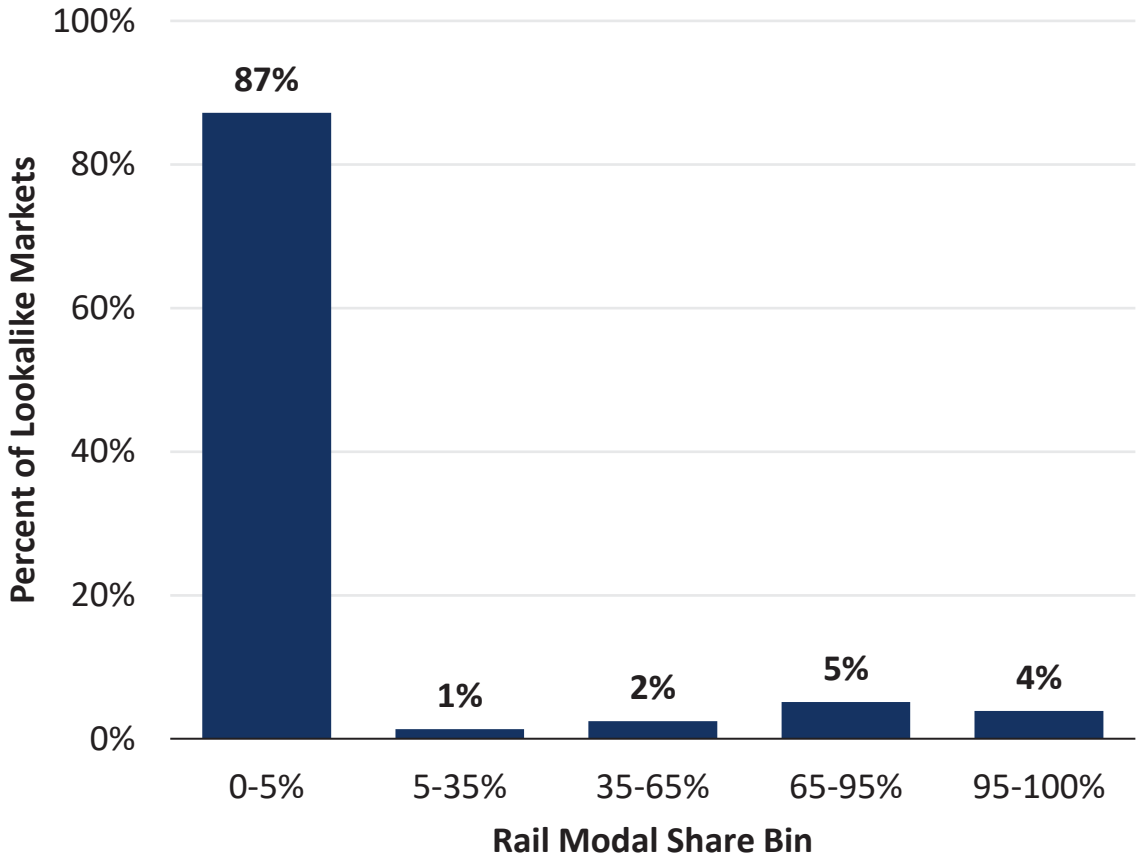
[152] *See* Hunt VS, Exhibit 4-7; Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx," tab 'Tank_Lookalike.' Filter the column Pre_Lane_Chars to the value [redacted] to display the list of 2,210 lookalike markets. Mr. Hunt's accompanying text states that the archetype includes 2,353 lookalike markets, while the workpaper contains 2,210 lookalike markets. Of those 2,210 lookalike markets, 1,924 have [redacted] and 1,933 (87 percent) have rail modal shares below [redacted]. The fraction of lookalike markets within an archetype that have [redacted] rail modal share can be even greater than this example. For example, in one archetype for bulk traffic, Mr. Hunt in his deposition [redacted]. *See* Deposition of David T. Hunt, Vol. II, October 8, 2026, 644:8–11. Similarly, Mr. Hunt in his deposition [redacted]. *See* Deposition of David T. Hunt, Vol. II, October 8, 2026, 647:12–19.

[153] *See* Hunt VS, pp. 41–42. *See also*, Deposition of David T. Hunt, Vol. II, October 8, 2026, 618:17–619:5.

[154] *See* Deposition of David T. Hunt, Vol. II, October 8, 2026, 619:22–620:2.

FIGURE 28: RAIL MODAL SHARES VARY WIDELY WITHIN MR. HUNT'S NUECES-MORGAN ARCHETYPE



Sources and Notes: Percent of lookalike markets (i.e. percent of origin county-destination county-STCC2 combinations) in each rail modal share bin for the archetype with the following pre-merger characteristics: [redacted]. Rail modal share based on total tons. Bins include their upper endpoint; for example, a market with exactly 5 percent rail modal share is included in the 0–5 percent bin, not the 5–35 percent bin. *See* Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx," tab 'Tank Post.' *See* Script "08_lookalike_analyses.R."; Workpaper "T2R_Carload_Exhibits.xlsx."

94. A regression analysis summarized in Table 3 illustrates that the Nueces–Morgan example reflects a broader feature in Mr. Hunt's lookalike methodology. I regress rail modal share on indicator variables for each observed archetype-truck equipment type combination, so that the analysis measures how much of the variation in rail modal share is explained by the

characteristics Mr. Hunt uses to group lookalike markets.[155] Across all lookalike markets, the resulting R^2 is approximately 0.20 (as shown in column [A]), meaning that the archetypes explain only about 20 percent of the observed variation in rail modal share.[156] This result is essentially unchanged when I restrict the analysis to lookalike markets with a pre-merger archetype-truck type that matches the post-merger archetype-truck type of a diversion market, as shown in column [B]. What this means is that substantial variation in observed rail participation remains among lookalike markets Mr. Hunt treats as comparable, and the characteristics defining his archetypes fail to explain it. This matters for his diversion estimates if the omitted economically relevant factors driving that variation differ between the lookalike and diversion markets. As I show next, commodity composition provides a concrete example of such a difference.

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[155] Mr. Hunt's truck-to-carload diversion analysis distinguishes markets by truck equipment type in addition to the four characteristics used to define the archetypes. Accordingly, the regression includes a separate indicator for each observed archetype-truck-type combination. Because most archetypes are associated with only one truck equipment type, I refer to these combinations as "archetypes" for ease of exposition. *See* Workpaper "T2R_Carload_Exhibits.xlsx."

[156] In econometrics, the R^2 measures the proportion of sample variation in the dependent variable (here, rail modal share) explained by the regression's explanatory variables. Because this regression uses indicators for archetype-truck equipment type combinations, the R^2 measures how much of the variation in rail modal shares is explained by differences in average shares across these groups. An R^2 of approximately 0.20 indicates that differences across groups explain only 20 percent of the observed variation in rail modal share, while the remaining 80 percent reflects differences among lookalike markets within the same group. *See* Jeffrey M. Wooldridge, *Introductory Econometrics: A Modern Approach*, 5th ed. (Boston, MA: Cengage Learning, 2013), pp. 38–39, 235–237.

TABLE 3: MR. HUNT'S ARCHETYPES EXPLAIN ONLY ABOUT 20 PERCENT OF THE VARIATION IN RAIL MODAL SHARE

		All Lookalike Markets [A]	Lookalike Markets Matched to Markets with Diversions [B]
Number of Markets	[1]	860,678	823,259
R^2	[2]	0.20	0.20
Number of Archetype-Truck Equipment Type Fixed Effects	[3]	1,542	921

Sources and Notes: The dependent variable in each regression is observed rail modal share. The regressions assume standard errors are IID, include archetype-truck equipment type fixed effects, and are weighted by total market size (rail plus truck tons). The weighting is consistent with Mr. Hunt's methodology, which calculates archetype rail modal shares using total market size weights. *See* Hunt VS, p. 155. Mr. Hunt likewise calculates the average rail modal shares reported in Exhibit 3-1 using aggregate rail and truck tons rather than assigning equal weight to each Hunt market. *See* Hunt VS, pp. 24–25. Unweighted versions of the regressions produce R^2 values below 0.04. *See* Script "07_lookalike_market_regressions.R"; Workpaper "T2R_Carload_Exhibits.xlsx."
[A]: The data in this regression includes all of Mr. Hunt's lookalike markets, defined at the origin county-destination county-STCC2-truck equipment type level, as in Mr. Hunt's dataset. *See* Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx," tabs 'Bulk_Lookalike,' 'DryVan_Lookalike,' 'Flatbed_Lookalike,' 'Reefer_Lookalike,' and 'Tank_Lookalike.'
[B]: The data in this regression include only the subset of lookalike markets from [A] with a pre-merger archetype-truck type matched to a diversion market with that archetype-truck type post-merger. *See* Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx," tabs 'Bulk_Post,' 'DryVan_Post,' 'Flatbed_Post,' 'Reefer_Post,' 'Tank_Post' for matching diversion markets.

c. Differences in Commodity Composition Materially Affect Mr. Hunt's Benchmark Shares

95. Commodity composition provides one observable way to test the impact of Mr. Hunt's omission of economically important factors from his analysis. Mr. Hunt's truck-to-carload framework does not control for commodity type. Instead, Mr. Hunt treats all commodities within an archetype as comparable. For example, one of Mr. Hunt's archetypes is comprised of both [redacted] and [redacted], treating them the same

within this archetype for the purposes of estimating diversions.[157] He uses the [redacted].[158]

96. In contrast, UP's own internal synergy analyses prepared to [redacted]. Those materials separately evaluated [redacted].[159] Other UP analyses likewise assigned [redacted].[160] Moreover, as I explained in Section III.C, Mr. Hunt testified that "[t]here are more truck-centric commodities and more rail-centric commodities."[161] These materials and Mr. Hunt's own testimony reinforce the economic relevance of commodity differences when evaluating rail participation. I therefore

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157 Deposition of David T. Hunt, Vol. II, October 8, 2026, 633:21–639:14. *See also*, Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx," tab 'Bulk_Lookalike.' Filter column G called "Pre_Lane_Chars" to [redacted] After applying this filter, column E called "stcc_2" is a mix of [redacted] and [redacted]. *See also*, Deposition of David T. Hunt, Vol. II, October 8, 2026, 641:3–18.

158 Deposition of David T. Hunt, Vol. II, October 8, 2026, 651:8–16. Mr. Hunt's archetype definition does not explicitly depend on commodity. Hunt VS, pp. 153–156.

159 *See* Union Pacific, "Revenue Synergies," UP_0034282, at -285; Union Pacific, "Project Opal Update, Revenue Synergy Deep Dive," May 12, 2025, UP_0041291, at -299; Union Pacific, "Project Opal Update, Modal Conversion and Rail Freight Commodity Overviews," May 6, 2025, UP_0077604, at -607; Union Pacific, "Revenue Synergies," UP_1412436, slide 9. These materials identify [redacted], exclude [redacted], and note that [redacted] *See also*, Section III.C.

160 Union Pacific, "Industrial Revenue Synergies Review," February 2, 2026, UP_0097551, at -551–562.

161 *See* Deposition of David T. Hunt, Vol. I, October 7, 2026, 198:22–199:7.

use more granular commodity information below as a diagnostic of whether Mr. Hunt's archetypes group together lookalike markets that differ in characteristics relevant to rail use.

97. The data confirm that information about the specific commodities being transported is an important driver of potential rail participation that Mr. Hunt's archetypes do not capture. I extend the regression analysis summarized above in Table 3 by adding measures of STCC4 commodity composition within each lookalike market.[162] In the subset of lookalike markets for which this analysis can be performed without introducing additional assumptions about Mr. Hunt's allocation of rail traffic across truck equipment types, the explanatory power of the model increases substantially—from an R^2 of approximately 0.34 using Mr. Hunt's archetype characteristics alone to approximately 0.62 after adding STCC4 commodity composition.[163] I use this analysis as a diagnostic, not as a proposed replacement for Mr. Hunt's model. The result shows that commodity composition is one of many key factors driving differences in rail modal shares across lookalike markets that Mr. Hunt treats as comparable.

98. The next question is whether the commodity composition of the lookalike markets used to construct an archetype's benchmark resembles the composition of the diversion markets

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[162] STCC2 refers to the first two digits of a full seven-digit STCC, and STCC4 refers to the first four digits. Both STCC2 and STCC4 are an aggregation of multiple STCC7 commodities, but a STCC2 aggregates more commodities than a STCC4. *See* footnote 28 for a description of STCC. *See* Appendix B.6 for a detailed description of how I incorporate STCC4 commodity information into my analyses using the materials provided by Mr. Hunt.

[163] *See* Appendix B.6, I first extend the regression analysis summarized in Section V.A.2.b to examine whether more granular STCC4 commodity composition helps explain variation in rail modal share that remains within Mr. Hunt's archetypes. I use STCC4 composition as a diagnostic rather than as a proposed replacement for Mr. Hunt's methodology. To avoid introducing additional assumptions into Mr. Hunt's allocation of rail traffic across truck equipment types, I restrict the analysis to county-pair-STCC2 lookalike markets for which he assigns all rail traffic to a single truck equipment type. As shown in Table 20, within that restricted sample, Mr. Hunt's archetype characteristics explain approximately 34 percent of the variation in rail modal share as measured by the R^2. When I add variables measuring STCC4 commodity composition within each lookalike market, the R^2 increases from 0.34 to approximately 0.62. These results indicate that more granular commodity composition contains substantial explanatory information not captured by Mr. Hunt's archetype definition.

to which that benchmark is applied.[164] If the lookalike markets contain a greater concentration of commodities with relatively high rail modal shares than the diversion markets, the resulting benchmark can project the strong rail performance of those commodities even when the diversion markets are composed more heavily of commodities with lower rail participation. In that circumstance, lookalike markets that Mr. Hunt treated as comparable may nevertheless differ in ways that materially affects the benchmark rail modal share applied to diversion markets.[165]

99. The Nueces County, Texas to Morgan County, Alabama chemicals market illustrates this issue. Mr. Hunt assigns the market to an archetype with a 77 percent benchmark rail modal share.[166] Within the lookalike markets used to construct that benchmark, STCC [redacted], the STCC4 commodity that includes the Nueces–Morgan movement, accounts for only about [redacted] percent of market tonnage and has an observed rail modal share of about [redacted] percent.[167] By contrast, STCC [redacted] accounts for about [redacted] percent of the tonnage in the diversion markets to which Mr. Hunt applies the same 77 percent benchmark.

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[164] Mr. Hunt's carload lookalike methodology applies rail modal shares observed in existing lookalike markets to pre-merger truck and rail traffic in diversion-eligible markets (*See* Section V.A.1 and Figure 26). In the commodity composition analysis presented in Section V.A.2.c & Appendix B.6, I focus on diversion markets, the subset of diversion-eligible markets in which Mr. Hunt predicts diversions, and I compare their commodity composition with that of his identified lookalike markets. I hold Mr. Hunt's sets of diversion and lookalike markets fixed throughout this analysis. *See* footnote 459.

[165] Appendix B.6 provides a simplified illustration of this mechanism and a detailed application using Mr. Hunt's data. *See also*, Hunt VS, Appendix B.5.2.C, pp. 153–157, describing the calculation of lookalike benchmark rail modal shares as weighted averages of the rail modal shares observed in the lookalike markets.

[166] *See* Hunt VS, p. 41 & Exhibits 4-6, 4-7.

[167] *See* Appendix B.6, Table 21, row [1]. *See* Workpaper "T2R_Carload_Exhibits.xlsx" for an excerpt of Mr. Hunt's processed Transearch trucking data showing the STCC4s within STCC 28 travelling between Nueces County, TX and Morgan County, AL that he considered in his truck-to-carload diversion analysis.

Reweighting the same commodity-specific rail modal shares using the commodity composition of the diversion markets produces a benchmark of about 41 percent rather than 77 percent.[168]

100. The Nueces–Morgan example is not isolated. To examine whether the same pattern appears more broadly, I calculate, for each archetype, the rail modal share of each STCC4 commodity in the lookalike markets and then reweight those commodity-specific shares using the STCC4 composition of the corresponding diversion markets. I compare that reweighted benchmark with Mr. Hunt's lookalike benchmark by subtracting the former from the latter. Figure 29 shows that the distribution of this difference is concentrated above zero, meaning that Mr. Hunt's benchmark rail modal share is generally higher than the benchmark obtained when the same commodity-specific rail modal shares are weighted using the commodity mix of the diversion markets.[169] For diversion markets accounting for approximately 95 percent of Mr. Hunt's predicted carload diversions, the commodity- reweighted benchmark is lower than his benchmark.[170]

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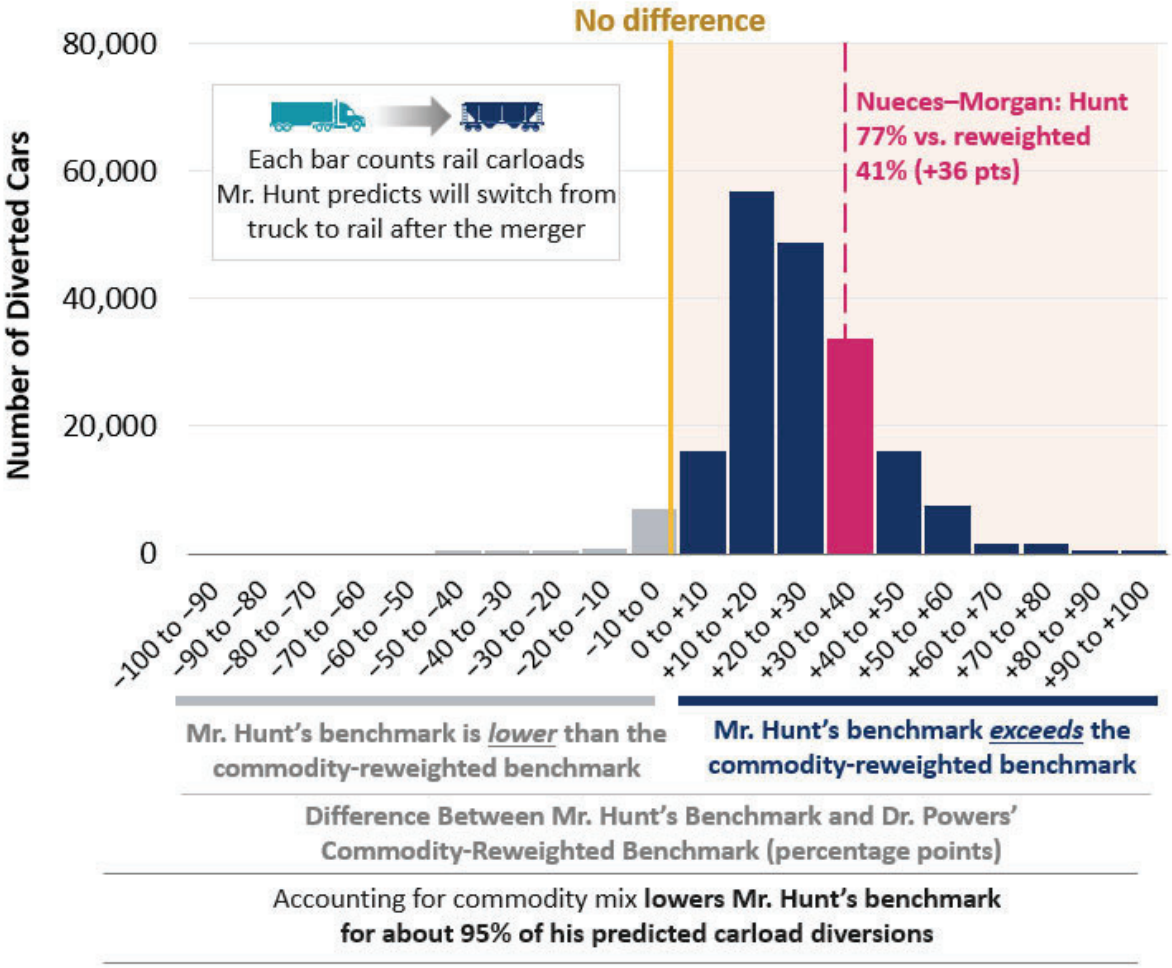
[168] *See* Appendix B.6, Table 21 to Table 23. Mr. Hunt's archetype for this market consists of [redacted]. The 77 percent benchmark estimated by Mr. Hunt is the weighted-average rail modal share of the lookalike markets in that archetype. The reweighted 41 percent figure uses the same STCC4-specific rail modal shares observed in the lookalike markets but weights them according to the STCC4 composition of the diversion markets. I do not treat 41 percent as the "correct" benchmark; the calculation is a diagnostic of the effect of commodity-mix differences. *See* Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx," tab 'Tank Post'; Workpaper "T2R_Carload_Exhibits.xlsx."

[169] *See* Appendix B.6 for the detailed construction of this diagnostic and supporting tables. Positive values in Figure 29 indicate that Mr. Hunt's benchmark exceeds the commodity-reweighted benchmark. *See* Workpaper "T2R_Carload_Exhibits.xlsx."

[170] *See* Workpaper "T2R_Carload_Exhibits.xlsx."

FIGURE 29: MR. HUNT'S BENCHMARK IS GENERALLY GREATER THAN A BENCHMARK REWEIGHTED BY COMMODITY MIX IN DIVERSION MARKETS



Sources and Notes: For each archetype-truck equipment type, I calculate the percentage point difference between Mr. Hunt's benchmark rail modal share (weighting by the size of lookalike markets) and my reweighted rail modal share (weighting by the size of the diversion markets at the STCC4 level). I then count the number of diverted carloads under Mr. Hunt's approach associated with each bin displayed in the histogram. The dashed red line shows the difference between Mr. Hunt's benchmark rail modal share (77 percent) and my reweighted rail modal share (41 percent) for the archetype to which Nueces–Morgan STCC 28 belongs [redacted]. The yellow line shows where there is no difference between Mr. Hunt's benchmark rail modal share and my reweighted rail modal share. Bins include their upper endpoint; for example, a difference of exactly zero percentage points is included in the -10 percent to zero percent bin, not the zero percent to 10 percent bin. *See* Script "10_stcc4_analyses.R"; Workpapers "T2R_Carload_Exhibits.xlsx" and "Benchmark_Comparison_Figure.pptx."

101. This analysis does not establish that the reweighted benchmark is the correct forecast of post-merger rail participation. Rather, it demonstrates that commodity composition, a characteristic omitted from Mr. Hunt's archetype definition, materially affects the benchmark his methodology produces. Because the commodity mix of the lookalike and diversion markets differs systematically, averaging across the lookalike markets does not eliminate this source of heterogeneity.[171] This result provides direct evidence that lookalike and diversion markets Mr. Hunt treats as comparable can and do differ in characteristics relevant to rail participation, and that those differences can materially overstate his predicted diversions.

3. Applicants Do Not Establish the Merger-Related Service Improvements Assumed by Mr. Hunt Can or Will Actually Be Achieved

a. The Operating Plan Does Not Independently Support the Post-Merger Service Characteristics Used in the Carload Model

102. Applicants' Operating Plan does not validate the service improvements assumed in Mr. Hunt's truck-to-carload model. Mr. Hunt's modeled routes and transit times are not derived from the blocking and train assignments in the Growth Plan, and even if they were, the CPKC Operating Experts identify material questions about whether the service represented in the plan could be operated as modeled, and Mr. Hunt [redacted].[172]

103. Mr. Hunt's truck-to-carload model uses modeled values for single-line status, mileage, transit time, and price to assign diversion-eligible markets to archetypes and

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171 Mr. Hunt excludes certain commodities and specific Hunt markets from his addressable truck market based on judgments. Those exclusions do not address whether the STCC4 composition of the remaining lookalike markets is comparable to that of the diversion markets to which he applies their average rail modal shares. *See* Hunt VS, pp. 149–151.

172 These observations also apply to Mr. Hunt's truck-to-intermodal model, which I discuss in Section V.B. *See* CPKC Operating Experts VS, Sections V.B–V.C (comparing Mr. Hunt's modeled routes and transit times with the Growth Plan); Deposition of David T. Hunt, Vol. II, October 8, 2026, 691:20–22 (testifying that he had not reviewed the Operating Plan).

subsequently predict their post-merger rail modal shares.[173] For those predictions to provide evidence of merger-related diversion, the modeled service improvements must have a reasonable basis in the service Applicants propose and can reasonably be expected to operate. As I explain below, Mr. Hunt does not establish such a basis.

104. Mr. Hunt's modeled service is not derived from Applicants' Operating Plan. As the CPKC Operating Experts explain, his diversion study selects a lowest-impedance route through the rail network and estimates carload transit time using an average of 163 car-miles per day, with approximately 22 additional hours for each modeled interchange.[174] These inputs do not model the specific block routings, train connections, intermediate work, crew changes, and schedules that would govern a movement under Applicants' proposed plan. Because carload traffic may move on multiple trains and be swapped or reclassified at intermediate yards, his calculation does not establish that the modeled transit times would result from the proposed train and block plan. Indeed, when asked whether he had reviewed the Operating Plan, Mr. Hunt testified, "I did not."[175]

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[173] Hunt VS, pp. 38–41, 148–157. Mr. Hunt uses Quantanet to identify the lowest-impedance rail route before and after the merger and then estimates the corresponding single-line status, mileage, transit time, and price, used in his diversion analysis. A lower-impedance post-merger route need not have lower rail mileage. Hunt VS, pp. 41, 153–157. Mr. Hunt's archetypes are defined using truck equipment type together with modeled single-line status, mileage, transit time, and price; the weighted-average rail modal share of the resulting archetype becomes the benchmark used to calculate potential diversion.

[174] CPKC Operating Experts VS, Section V.C (explaining that the service characteristics assumed in Mr. Hunt's diversion analysis do not necessarily correspond to the block routings, intermediate work, and dwell expected for diverted traffic under Applicants' plan).

[175] Deposition of David T. Hunt, Vol. II, October 8, 2026, 691:20–22. In the same exchange, Mr. Hunt testified that he reduced the modeled impedance for the Meridian Speedway because the movement would involve two railroad companies rather than three, although the two physical interchanges would remain. Asked to identify any handling, crew activity, or other operation the merger would eliminate, he said that was "not something that I considered at diversion level." Deposition of David T. Hunt, Vol. II, October 8, 2026, 690:9–691:6, 692:12–20. Although the questioning arose in connection with an intermodal route, Counsel asked whether Mr. Hunt had reviewed the Operating Plan in this case, and his answer was unqualified. His description of the carload methodology likewise identifies Quantanet routes

105. I further understand that the Applicants' Operating Plan has material operational shortcomings that call into question whether its projected service improvements would occur as modeled. As the CPKC Operating Experts explain, an executable Operating Plan must integrate traffic inputs, blocking and train plans, achievable schedules, yard and line capacity, crew and equipment requirements, and sufficient traffic density to support the proposed service.[176] Their review of Applicants' Optimized Plan identifies recurring concerns in several of these areas, including schedules that, by Applicants' own admission, have not been calibrated to real-world train performance, substantial pickups and set-outs with little or no scheduled dwell, trains that are unusually long or unusually short over portions of their routes, handling reductions that do not always reconcile with Applicants' underlying train and block data, and transit time improvements that have limited basis in historical train performance.[177] Addressing those concerns could require Applicants to change train frequencies, train lengths, block assignments, or schedules, which would in turn change the service characteristics represented in the Operating Plan and relevant for Mr. Hunt's diversion analysis.

106. The North Platte–Conway service (planned train MNPCW) provides one example from the CPKC Operating Experts' analysis. They identify omitted or inadequate dwell for substantial work, substantial variation in train length over the route, and potential disruptions to

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and an average car-miles-per-day calculation, rather than the trains, blocks, and schedules in that Plan, as the basis for his modeled transit times. *See* Hunt VS, pp. 169–171.

176 CPKC Operating Experts VS, Sections II.B–D.

177 *See* CPKC Operating Experts VS, Section IV.C. The CPKC Operating Experts identify such issues for, among other services, MNPCW, MALEK, MCWAL, MNLCW, and MNLCT/MCTNL. Their review identifies omitted or inadequate dwell for substantial work events, potential train-length and traffic-density concerns, and differences between some advertised handling savings and the changes reflected in Applicants' underlying MultiRail data.

other services as reasons why MNPCW may not operate as represented in Applicants' filed plan.[178] Figure 30 illustrates these issues.

FIGURE 30: NORTH PLATTE–CONWAY SERVICE ILLUSTRATES OPERATING-PLAN CONCERNS IDENTIFIED BY THE CPKC OPERATING EXPERTS



Sources and Notes: CPKC Operating Experts VS, Figure 28.

[178] CPKC Operating Experts VS, Section IV.C.3. For MNPCW, the CPKC Operating Experts identify, among other things, [redacted] and modeled train lengths ranging from more than [redacted] feet near Chicago to approximately [redacted] feet between Toledo Airline and Conway. Here, "route" refers to the path of the train, MNPCW, not the rail path that Mr. Hunt uses in his analysis.

107. More broadly, the CPKC Operating Experts identify a disconnect between the service characteristics assumed in Mr. Hunt's diversion study and the train service reflected in Applicants' Operating Plan.[179]

108. Even if Applicants had demonstrated that a modeled service improvement is achievable, a separate question is whether Mr. Hunt's assumed service improvements are specific to the merger. As discussed in Section IV.D, independent railroads—including UP and NS today—use run-through trains, coordinated schedules, deeper blocking, haulage arrangements, and other forms of cooperation to reduce intermediate handling and dwell.[180]

b. Mr. Hunt's Generic Terminal-Dwell Assumption Does Not Measure Lane-Specific Service Changes

109. Relatedly, Mr. Hunt has not established that eliminating an interchange would save the approximately 22 hours he assumes.[181] He derives that value from 2023 terminal-dwell statistics by averaging dwell times reported to the Board across the Class I railroads. Those statistics measure the amount of time cars spend at reported terminals. They do not measure, or purport to measure, the incremental delay caused by an interline interchange relative to an otherwise comparable single-line movement.

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[179] CPKC Operating Experts VS, Section V.C. The CPKC Operating Experts explain that Mr. Hunt's diversion analysis assumes direct service characteristics that do not necessarily correspond to the block routings, intermediate work events, and dwell that diverted traffic is actually expected to take in the Growth Plan, and conclude that there is a significant disconnect between the service assumed in the diversion study and the service modeled in the Operating Plan.

[180] CPKC Operating Experts VS, Section VIII (discussing run-through trains, coordinated schedules, deeper blocking, haulage arrangements, and other forms of interline coordination that do not require a merger).

[181] Hunt VS, pp. 29–30 and 170–171. Mr. Hunt uses an interchange-dwell assumption of approximately 21.74 hours, derived from 2023 average terminal-dwell statistics reported to the Board under 49 CFR part 1250.

110. The terminals included in the reported statistics are not limited to interline gateways. Even if they were, terminal dwell can reflect classification, blocking, switching, crew activity, congestion, connections, and other work, many of which may remain necessary whether the movement is interline or single-line. As the CPKC Operating Experts explain, eliminating an interchange does not necessarily eliminate the physical work associated with moving the traffic. Where that work remains necessary, it may instead be shifted elsewhere in the network.[182] More generally, the time required for intermediate work depends on the particular work performed, the facility, train and block configuration, track availability, and connecting operations. A systemwide average terminal-dwell statistic therefore does not establish that eliminating a particular interchange would reduce transit time in a particular diversion-eligible market by approximately 22 hours.[183] Mr. Hunt's assumed 22-hour saving is therefore a generic input, with no demonstrated basis in Applicants' Operating Plan or in any other analysis of the delay that the merger might actually eliminate.

4. Diagnostics of the Truck-to-Carload Model Show that Mr. Hunt Significantly Overstates Merger-Related Diversion

111. In this section, I assess Mr. Hunt's truck-to-carload model using four diagnostics. Together, they show that his reported diversion estimate includes traffic that cannot be attributed to the modeled merger-related changes and does not reliably reflect the magnitude of those changes:

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[182] *See* CPKC Operating Experts VS, Sections II.C and IV. The CPKC Operating Experts explain that eliminating an interchange simplifies operations only to the extent that it actually eliminates work events. Where classification, block swaps, inspections, or other intermediate work remains necessary, that work and associated dwell may persist or shift to another facility.

[183] As discussed in Section V.A.4.c below, a separate diagnostic shows that Mr. Hunt's aggregate diversion estimate is also largely insensitive to the magnitude of this assumed interchange-delay reduction.

- With the modeled merger-related changes removed, the framework still predicts approximately 117,000 diverted carloads, or 61 percent of Mr. Hunt's reported total.

- Mr. Hunt counts positive differences between assigned benchmark and observed rail modal shares but discards negative differences generated by the same method. The discarded differences are equivalent to approximately 100,000 carloads.

- Varying the assumed interchange delay from zero to twice Mr. Hunt's approximately 22-hour value has virtually no effect on the aggregate diversion estimate.

- The model predicts disproportionately large increases in rail modal share of roughly 39 to 54 percentage points across truck equipment types, despite relatively modest modeled changes in price and service. Those increases also exceed the average historical differences between single-line and interline markets in Mr. Hunt's data.

a. Mr. Hunt's Framework Predicts Substantial Diversion Even When the Modeled Merger-Related Changes Are Removed

112. A diversion study should not predict traffic diversions when there would be no change in any relevant factor determining shippers' choice of transportation options. If it does, the predicted diversion cannot be attributed to any modeled merger-related changes, and instead reflect omitted factors or other methodological flaws. Economists commonly analyze the reliability of their econometric models by testing whether their model correctly estimates no effect when there is in reality no change in the variable or variables under study.[184] I perform such a test of Mr. Hunt's model by rerunning Mr. Hunt's truck-to-carload model under a "no-change" scenario. I remove the merger changes he claims by holding constant at pre-merger

[184] Placebo (or "anti-") tests are a type of falsification test and are a standard tool for assessing the reliability of an econometric methodology by applying it in circumstances where no effect should be detected. If an apparent effect is nevertheless found, this provides evidence that the assumptions underlying the methodology may be incorrect. *See* Andrew M. Jones, "Panel Data Methods and Applications to Health Economics," in *Palgrave Handbook of Econometrics, Vol. 2: Applied Econometrics*, eds. Terence C. Mills and Kerry Patterson (Palgrave MacMillan, 2009), p. 574; Nick Huntington-Klein, *The Effect: An Introduction to Research Design and Causality* (Boca Raton, FL: CRC Press, 2022), p. 169.

levels all modeled characteristics on which he based his predicted diversions—namely, single-line status, mileage, transit time, and price—while retaining all of the other elements of his modeling framework.[185]

113. Mr. Hunt's truck-to-carload methodology fails this no-change test. It predicts substantial diversions even when there is no merger-related change. The Nueces County, Texas to Morgan County, Alabama chemicals market provides an intuitive example. As discussed above, there was no observed rail traffic in that market in 2023.[186] Mr. Hunt assigns that market a post-merger benchmark rail modal share of approximately 77 percent.[187] When I remove the modeled merger-related changes and instead assign that market to an archetype based on its pre-merger characteristics, matching it to existing interline lookalike markets, his same methodology still produces a benchmark rail modal share of approximately 63 percent, reflecting the fact that many interline lookalike markets that "look like" Nueces–Morgan today under Mr. Hunt's lookalike methodology already have substantial rail traffic. Thus, even without the modeled changes associated with the merger, the framework predicts that nearly two-thirds of the predicted post-merger truck traffic would move by rail. Appendix B.7 presents the underlying lookalike markets and calculation in greater detail.[188]

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185 *See* Workpaper "T2R_Carload_Exhibits.xlsx." The no-change diagnostic retains Mr. Hunt's market definitions, lookalike methodology, truck-type classifications, and other aspects of the truck-to-carload framework, but assigns diversion-eligible markets to archetypes using their modeled pre-merger single-line status, mileage, transit time, and price rather than the modeled post-merger values. This analysis also retains Mr. Hunt's asymmetric treatment of cases in which the assigned benchmark rail modal share falls below the diversion-eligible market's observed rail modal share, discussed in Section V.A.4.b below.

186 *See* Hunt VS, p. 41, Exhibit 4-6.

187 *See* Hunt VS, p. 41, Exhibits 4-6 and 4-7.

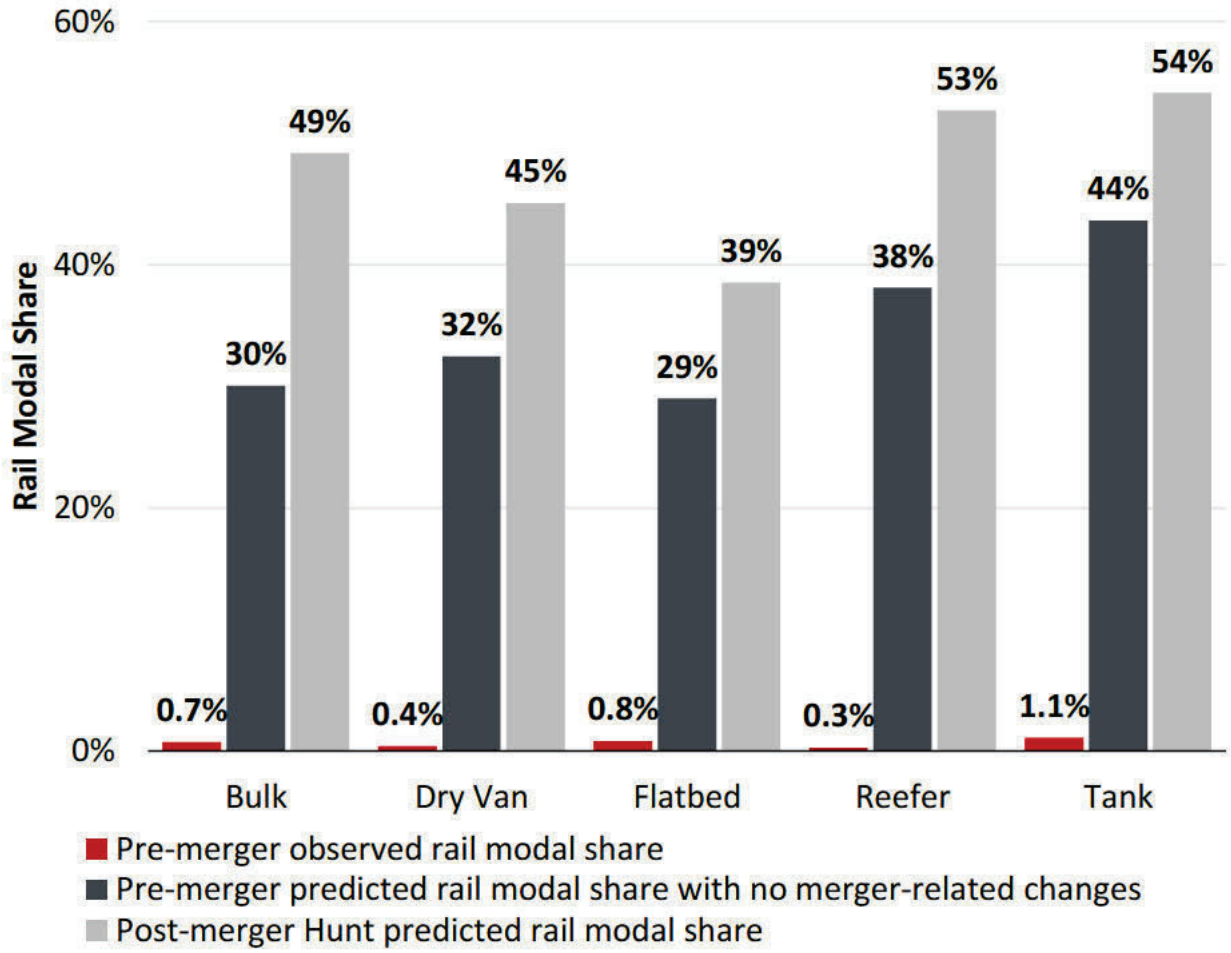
188 *See* Table 24 in Appendix B.7; Workpaper "T2R_Carload_Exhibits.xlsx." I use the pre-merger characteristics that Mr. Hunt reports for the Nueces County, Texas to Morgan County, Alabama chemicals market to identify its corresponding archetype. The lookalike markets in that archetype have a

114. Mr. Hunt's methodology systematically fails this no-change test. Figure 31 summarizes the results across truck types, comparing the average observed pre-merger rail modal shares in the diversion markets, the average rail modal shares predicted by Mr. Hunt's framework under the no-change scenario, and his reported post-merger predictions. Across truck equipment types, the average observed rail modal shares in the diversion markets range from approximately zero to one percent, while the no-change scenario predicts average rail modal shares of approximately 29 to 44 percent. Mr. Hunt's reported post-merger predictions for average shares range from approximately 39 to 54 percent.[189] Thus, Mr. Hunt's truck-to-carload methodology predicts substantially higher rail modal shares than are observed in the real-world data even when the modeled merger-related changes are removed. In fact, the rail modal shares predicted by Mr. Hunt's truck-to-carload model in the no-change scenario are closer to his predicted post-merger rail modal shares than they are to the real-world data.

weighted-average rail modal share of approximately 63 percent, compared with Mr. Hunt's 77 percent post-merger benchmark. *See* Hunt VS, Exhibits 4-6 and 4-7. The 63 percent figure tests Mr. Hunt's methodology; it does not estimate the rail modal share that would prevail absent the merger.

[189] *See* Figure 31 and associated sources and notes.

FIGURE 31: MR. HUNT'S TRUCK-TO-CARLOAD MODEL PREDICTS RAIL MODAL SHARES FAR ABOVE OBSERVED SHARES EVEN WITHOUT MODELED MERGER-RELATED CHANGES

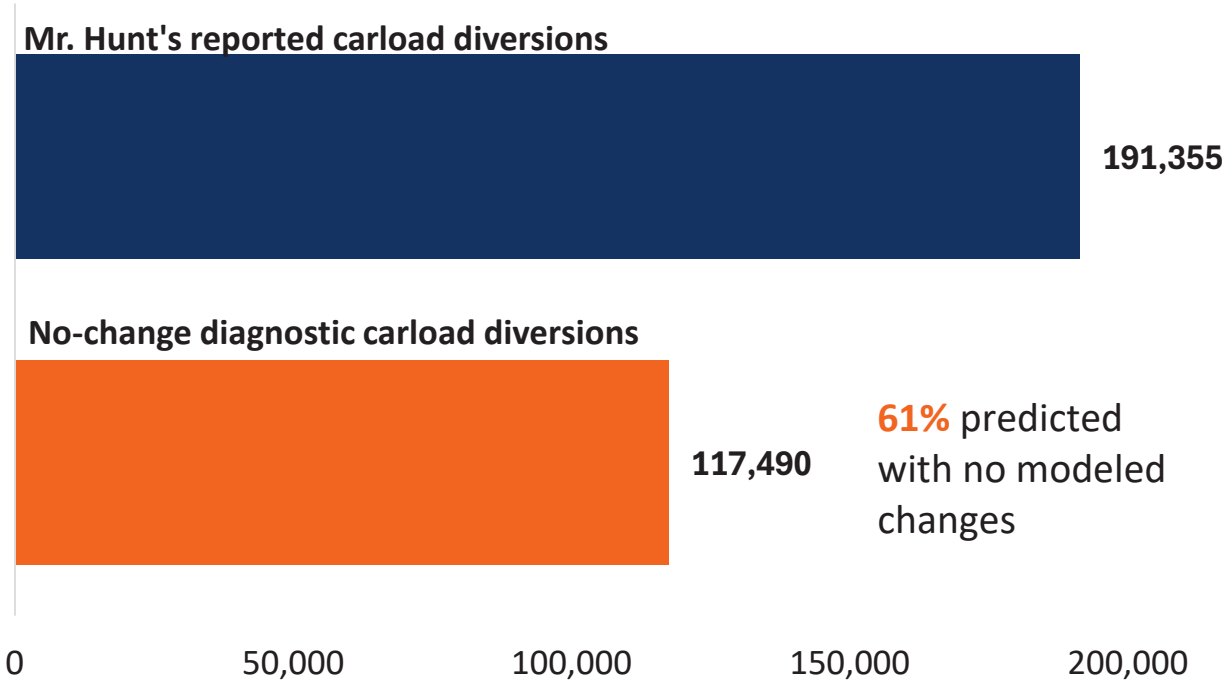


Sources and Notes: Based on Mr. Hunt's truck-to-carload workpapers and the data underlying Hunt Exhibit 4-5. *See* Hunt Workpapers, "HC-Lane Level Diversions Mileage vFinal.xlsx" and "HC-Lookalike Market Share vFinal.xlsx." Note that the numbers displayed in the figure may not match those displayed in Hunt Exhibit 4-5 due to rounding. Diversion markets and truck equipment type categories are defined consistently with Mr. Hunt's analysis. "Pre-merger observed rail modal share" is the average pre-merger rail modal share observed in the diversion markets for which Mr. Hunt reports positive truck-to-carload diversions. "Post-merger Hunt predicted rail modal share" is the corresponding average rail modal share predicted by Mr. Hunt after applying his modeled merger-related changes. "Pre-merger predicted rail modal share with no merger-related changes" applies Mr. Hunt's lookalike methodology using each diversion market's pre-merger characteristics, without the modeled changes in single-line status, mileage, transit time, or price. Approximately 7,000 no-change diversions, equal to roughly 4 percent of Mr. Hunt's reported carload diversions, arise in diversion markets where the predicted rail modal

share under the no-change scenario exceeds Mr. Hunt's predicted rail modal share, therefore producing a larger diversion estimate absent the modeled merger-related changes. *See* Script "09_diversion_analyses.R"; Workpaper "T2R_Carload_Exhibits.xlsx."

115. Figure 32 shows the total carload diversions predicted by his truck-to-carload model under the no-change scenario. Under the no-change scenario, Mr. Hunt's framework predicts approximately 117,000 diverted carloads, equal to approximately 61 percent of his reported 191,000 carload diversions. These predicted diversions cannot be attributed to modeled changes in single-line status, mileage, transit time, or price, because those changes have been removed. They arise instead from assigning lookalike-market rail modal shares to diversion-eligible markets whose observed rail modal share is substantially lower.

FIGURE 32: MR. HUNT'S TRUCK-TO-CARLOAD MODEL PREDICTS 61 PERCENT OF HIS TOTAL CARLOAD DIVERSIONS EVEN WITHOUT THE MODELED MERGER-RELATED CHANGES



Sources and Notes: The 117,490 no-change diversions are calculated using Mr. Hunt's methodology while holding single-line status, mileage, transit time, and price at their pre-merger levels, and they represent approximately 61 percent (117,490 / 191,355) of Mr. Hunt's total predicted carload diversions. *See* Script "09_diversion_analyses.R"; Workpaper "T2R_Carload_Exhibits.xlsx."

116. The no-change result exposes a fundamental design flaw in Mr. Hunt's diversion calculation. He compares traffic implied by his *predicted* post-merger rail modal share with *observed* pre-merger rail traffic, counting positive differences as diversions. That comparison includes the gap between observed traffic and what his model predicts under pre-merger conditions. As described above, the model's failure of the no-change test is itself evidence that its predictions are unreliable. Even if Mr. Hunt's model reliably predicted rail traffic under both pre- and post-merger conditions, which it does not, the merger-related change implied by his model would be the difference between those two predictions.

117. As Mr. Hunt testified in his deposition, his lookalike methodology compares the observed rail modal share in his diversion markets to "whatever the average is across the country" of the lookalike markets in the archetype to which they are matched.[190] To the extent that a diversion market has a lower pre-merger rail modal share than other lookalike markets with the same pre-merger characteristics, Mr. Hunt testified that it would simply mean that this particular lane is below average.[191] Mr. Hunt agreed that these differences would have nothing to do with the merger, and that he "would not know the reason that it's below average."[192]

118. When discussing his rail-to-rail model, Mr. Hunt also recognizes that traffic outcomes reflect "unmeasured market conditions, which can vary across the thousands of railroad marketing personnel and shipper logistics managers making rail transportation decisions."[193] His examples include a railroad reducing its rate to win a customer and a logistics manager avoiding a railroad after a bad experience—factors that can affect choices between

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190 Deposition of David T. Hunt, Vol. II, October 8, 2026, 621:19–622:9.

191 Deposition of David T. Hunt, Vol. II, October 8, 2026, 623:5–624:2.

192 Deposition of David T. Hunt, Vol. II, October 8, 2026, 624:14–624:22.

193 Hunt VS, pp. 9–10.

modes as well as among railroads. Those same kinds of conditions also affect whether a shipper uses rail at all, rather than truck. Along with the other factors discussed earlier in this Verified Statement, they contribute to differences among markets that Mr. Hunt's framework treats as comparable.

119. Mr. Hunt himself distinguishes pre-merger prediction error from the claimed merger effect when defending his rail-to-rail model. He illustrates the distinction with a stylized example: a route carries no traffic before the merger, while his model predicts 50 pre-merger carloads and 75 post-merger carloads. He attributes 25 carloads, rather than 75, to the merger because the larger figure would "incorrectly label unexplained pre-merger variations from the baseline as a merger benefit."[194] His truck-to-carload model nevertheless does just that.[195] It calculates diversion by subtracting *observed* pre-merger rail traffic from traffic implied by an estimated post-merger benchmark.[196]

120. The 61 percent no-change result does not validate the remaining predicted diversions or quantify the full extent of overstatement.[197] Rather, it exposes a fundamental error in Mr. Hunt's calculation of the merger effect: he counts positive gaps between predicted and observed pre-merger rail traffic as merger-related diversions. The model itself, and therefore its

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194 Hunt VS, p. 11.

195 Hunt VS, pp. 9–11 (explaining that predicted pre-merger shares serve as a baseline and that the comparison should be with the modeled baseline, "not between the modeled post-merger condition and the historical data used to develop the modeled baseline"); Deposition of David T. Hunt, Vol. II, October 8, 2026, 621:8–622:1 (Mr. Hunt had not calculated the share his lookalike model would assign to the Nueces–Morgan market using its pre-merger characteristics); 622:11–624:18 (in a hypothetical using a 30 percent pre-merger lookalike share, agreeing that its difference from the observed zero share would indicate below-average performance among similar lanes, not an effect of the merger); 625:8–21 (Mr. Hunt did not perform the corresponding exercise across the markets in his analysis or use it to validate the model).

196 Hunt VS, Appendix B.5.2.C, pp. 155–156.

197 *See* Figure 32.

predicted diversions, remain subject to the other concerns discussed above, including whether the diversion and lookalike markets are sufficiently comparable and whether the assumed service changes are supported.

b. Mr. Hunt Applies His Benchmark Asymmetrically, Counting Implied Increases but Disregarding Implied Decreases

121. Mr. Hunt does not apply his model uniformly across his diversion-eligible markets. Specifically, Mr. Hunt's lookalike methodology sometimes assigns diversion-eligible markets a benchmark rail modal share that is *below* the diversion-eligible market's observed pre-merger rail modal share. In those cases, Mr. Hunt does not use his model to predict the level of post-merger rail traffic. Instead, he zeros out those differences and assumes there will be no reduction in the volume of rail traffic relative to observed levels.[198] In other words, he does not allow the negative difference to reduce his diversion estimate; instead, predicted truck-to-carload diversion for the diversion-eligible market is set to zero.[199] By contrast, when the assigned benchmark exceeds the diversion-eligible market's observed rail modal share, the positive difference can contribute to predicted diversion.[200]

122. This asymmetric treatment introduces an upward bias into Mr. Hunt's diversion estimate. Positive differences between benchmark and observed rail modal shares are counted as

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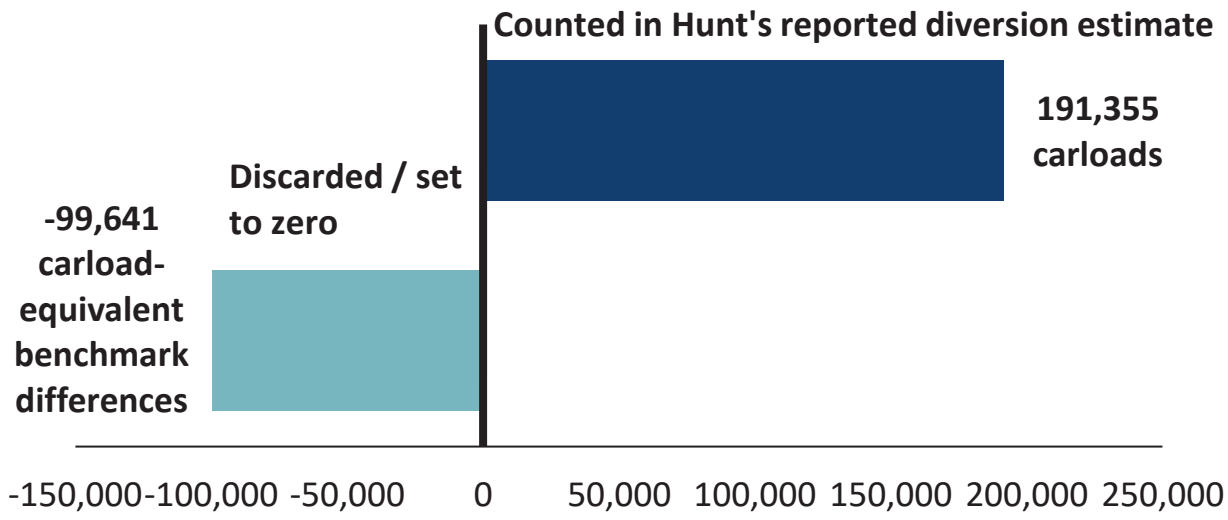
198 *See* Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 85–87. At deposition, Mr. Hunt confirmed this treatment. Deposition of David T. Hunt, Vol. II, October 8, 2026, 680:12–681:1.

199 *See* Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 85–87. At deposition, Mr. Hunt confirmed this treatment. Deposition of David T. Hunt, Vol. II, October 8, 2026, 681:3–17.

200 *See* Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 85–87 and "HC-Lookalike Market Share vFinal.xlsx." In diversion-eligible markets where the assigned benchmark rail modal share is below the market's observed rail modal share, Mr. Hunt's methodology sets predicted truck-to-carload diversion to zero rather than allowing the negative difference to offset positive predicted diversions elsewhere. *See also,* Deposition of David T. Hunt, Vol. II, October 8, 2026, 680:12–682:7.

evidence of additional rail traffic, while negative differences generated by the same methodology are discarded. The scale of the discarded outcomes is substantial in Mr. Hunt's revised analysis: the negative differences between benchmark and observed rail modal shares are equivalent to a shortfall of approximately 100,000 carloads, or about 52 percent of Mr. Hunt's approximately 191,000 reported positive diversions, as shown in Figure 33.[201] The magnitude of the discarded negative benchmark differences shows that the one-sided treatment materially increases the reported diversion estimate.

FIGURE 33: MR. HUNT COUNTS POSITIVE BENCHMARK DIFFERENCES BUT DISCARDS NEGATIVE DIFFERENCES



Sources and Notes: Negative benchmark differences are not interpreted as predicted rail-to-truck diversion. They are shown to illustrate the one-sided treatment of benchmark differences in Mr. Hunt's methodology. The -99,641 carloads shown represent carload-equivalent negative

[201] The approximately 100,000-carload figure is the carload equivalent of the negative difference between observed and assigned benchmark rail modal shares in diversion-eligible markets where the benchmark is lower. *See* Appendix B.7.b, Table 25; Workpaper "T2R_Carload_Exhibits.xlsx." I do not treat those differences as predicted rail-to-truck diversions or net them against Mr. Hunt's positive diversion estimates. Mr. Hunt and Mr. Schabas discussed and tabulated smaller "excluded diversions" in their December 2025 analysis. Mr. Hunt's April 2026 Verified Statement does not separately discuss or tabulate the corresponding excluded outcomes, even though they are materially larger in the revised analysis. *See* Appendix B.7.b for additional detail.

benchmark differences for diversion-eligible markets where the assigned benchmark rail modal share falls below the diversion-eligible market's observed pre-merger rail modal share; these negative differences are set to zero in Mr. Hunt's diversion calculation. The 191,355 carloads are from diversion markets where the assigned benchmark rail modal share exceeds the diversion market's observed rail modal share. *See* Script "02_lookalike_analysis_2026_keep_negatives.ipynb."; Workpaper "T2R_Carload_Exhibits.xlsx."

c. The Diversion Estimates Are Insensitive to the Magnitude of the Assumed Interchange Delay

123. Mr. Hunt presents the elimination of his assumed interchange delay, and the resulting transit-time improvement, as one important basis for his predicted carload diversions.[202] But his aggregate diversion estimate is essentially unaffected by the magnitude of that assumed improvement. As shown in Table 4, I vary the assumed interchange dwell from zero to twice Mr. Hunt's approximately 22-hour value, while otherwise holding constant all of the other inputs of his methodology, including the list of diversion-eligible markets where he predicts a service improvement post-merger.[203] Across that entire range, the framework continues to predict approximately 191,000 carload diversions. Thus, eliminating or doubling a major component of Mr. Hunt's modeled transit-time improvement has virtually no effect on the aggregate result.

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[202] *See* Hunt VS, pp. 29–30, 170–171 & Exhibit B-45. Mr. Hunt incorporates an assumed interchange dwell of approximately 21.74 hours into his modeled carload transit times and removes that dwell when an interchange is eliminated.

[203] The interchange dwell-time assumption does not by itself determine the diversion-eligible markets which Mr. Hunt treats as receiving improved post-merger service. *See* Hunt VS, Exhibit B-45; Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 23–30. I therefore retain the set of diversion-eligible markets identified by his methodology and vary the dwell-time value used to calculate modeled transit times. *See* Workpaper "T2R_Carload_Exhibits.xlsx" and Script "04_lookalike_analysis_2026_carload_dwell_time.ipynb."

TABLE 4: CARLOAD DIVERSION ESTIMATES ARE INSENSITIVE TO INTERCHANGE DWELL TIME PENALTY

Dwell Time [A]		Diverted Cars [B]	Change from Hunt's Diversions (%) [C]
Zero Hours	[1]	191,438	0.04%
50% of Hunt's Dwell Time	[2]	191,346	0.00%
Hunt's Dwell Time (22 Hours)	[3]	191,355	–
150% of Hunt's Dwell Time	[4]	191,500	0.08%
200% of Hunt's Dwell Time	[5]	191,688	0.17%

Sources and Notes: *See* Script "04_lookalike_analysis_2026_carload_dwell_time.ipynb."; Workpaper "T2R_Carload_Exhibits.xlsx."

[A]: Alternative values of interchange dwell time used to model rail transit time. Mr. Hunt assumes interchange dwell time of 21.74 hours, as shown in row [3]. I re-run Mr. Hunt's diversion script (Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb") using different values of dwell time to recalculate rail transit time pre- and post-merger using Mr. Hunt's methodology in Exhibit B-45.

[B]: Predicted number of diverted carloads using alternate dwell time values in column [A].

[C]: ([B] / [B][3]) – 1. Baseline row is shown with a dash.

124. This insensitivity is not evidence that Mr. Hunt's diversion estimate is robust to the magnitude of the service improvement. Instead, it demonstrates that Mr. Hunt's model does not reliably estimate merger-induced diversion. Mr. Hunt's framework does not estimate how shipper demand responds to an 11-hour, 22-hour, or 44-hour reduction in interchange delay. Rather, the assumed interchange penalty enters the modeled transit time used to assign a diversion-eligible market to an archetype.[204] When a diversion-eligible market is modeled as becoming single-line after the merger, that interchange-related penalty is removed from the post-merger transit time. As a result, whether the assumed penalty is zero, approximately 22 hours, or

[204] Hunt VS, pp. 153–156, 170–171 & Exhibit B-45. *See also,* Hunt Workpapers, "MerchBuildAll_2026_vFinal.sql," lines 1178–1210 and "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cell 39.

approximately 44 hours, the diversion-eligible market is generally matched to the same or a very similar post-merger archetype and receives essentially the same benchmark rail modal share. The aggregate diversion estimate therefore changes very little as the assumed interchange-delay improvement changes substantially. Mr. Hunt's model accordingly does not establish that the magnitude of his predicted carload diversions reflects shipper responses to the specific transit-time improvements he attributes to the merger.

d. The Model's Very Large Predicted Rail Modal Share Increases Illustrate Its Failure to Isolate Merger Effects

125. The disconnect between Mr. Hunt's relatively modest modeled changes in price and service and the very large increases in rail modal share he predicts illustrates the attribution problems identified above. Across the markets in which he predicts truck-to-carload diversion, pre-merger rail modal shares average approximately zero to one percent, while his post-merger predictions range from roughly 39 percent to 54 percent, depending on truck equipment type.[205] These are substantial predicted changes in shipping behavior. A relevant question is whether the modeled changes in single-line status, mileage, transit time, and price are sufficient to explain them.

126. The Nueces County, Texas to Morgan County, Alabama chemicals market provides a concrete illustration. Before the merger, Mr. Hunt models rail in this market as substantially cheaper than truck, approximately $0.069 per ton-mile compared with $[redacted] for truck, but also substantially slower, 180 hours compared with 32 hours.[206] After the merger,

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[205] *See* Hunt VS, Exhibit 4-5; Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx." More than 92 percent of Mr. Hunt's reported truck-to-carload diversions arise in diversion markets with a 2023 rail modal share of zero. *See* Figure 17; Workpaper "T2R_Carload_Exhibits.xlsx."

[206] Hunt VS, Exhibit 4-6; Table 27; Appendix B.7.c; Workpaper "T2R_Carload_Exhibits.xlsx."

he models relatively modest changes: rail mileage falls by fewer than 100 miles from 1,063 to 967 (a reduction of less than 10 percent) miles, one interchange is eliminated, rail transit time falls from 180 to 145 hours (a reduction of less than 20 percent, still leaving the rail transit time 4.5 times the truck transit time), and rail price falls from $0.069 to $0.057 per ton-mile (a reduction of only 17 percent).[207] Despite these modest relative changes, Mr. Hunt nevertheless predicts that rail modal share rises substantially, from zero to approximately 77 percent.[208]

127. While these modeled changes make rail relatively more attractive under Mr. Hunt's model, they do not explain the substantial shift in shipper behavior embedded in his predicted increase in rail modal share, either in an individual diversion market or in the aggregate. Rail was already substantially cheaper than truck before the merger, when the market nevertheless had essentially no rail traffic, and it remains substantially slower than truck afterward. Mr. Hunt does not identify what prevented rail participation in this Hunt market in his 2023 baseline or demonstrate why the incremental changes he models would overcome those factors and cause rail to capture a majority of traffic in this Hunt market.

128. The same basic pattern appears across Mr. Hunt's diversion markets more generally. Figure 34 places the average modeled changes in rail service characteristics across diversion markets alongside the increase in rail modal share predicted by Mr. Hunt's framework. The modeled changes in mileage, transit time, and price are modest compared with the very large increases in rail participation the model predicts, which range from approximately 39 to 54 percentage points across truck equipment types.

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207 Hunt VS, Exhibit 4-6; Table 27; Appendix B.7.c; Workpaper "T2R_Carload_Exhibits.xlsx."

208 Hunt VS, p. 41 & Exhibit 4-6.

FIGURE 34: MODEST MODELED CHANGES ACCOMPANY LARGE PREDICTED INCREASES IN RAIL MODAL SHARE IN TRUCK-TO-CARLOAD DIVERSION MARKETS



Sources and Notes: *See* Scripts "11_market_characteristic_changes.R."; "05_lookalike_analysis_2026_keep_market_characteristics.ipynb."; Workpaper "T2R_Carload_Exhibits.xlsx."

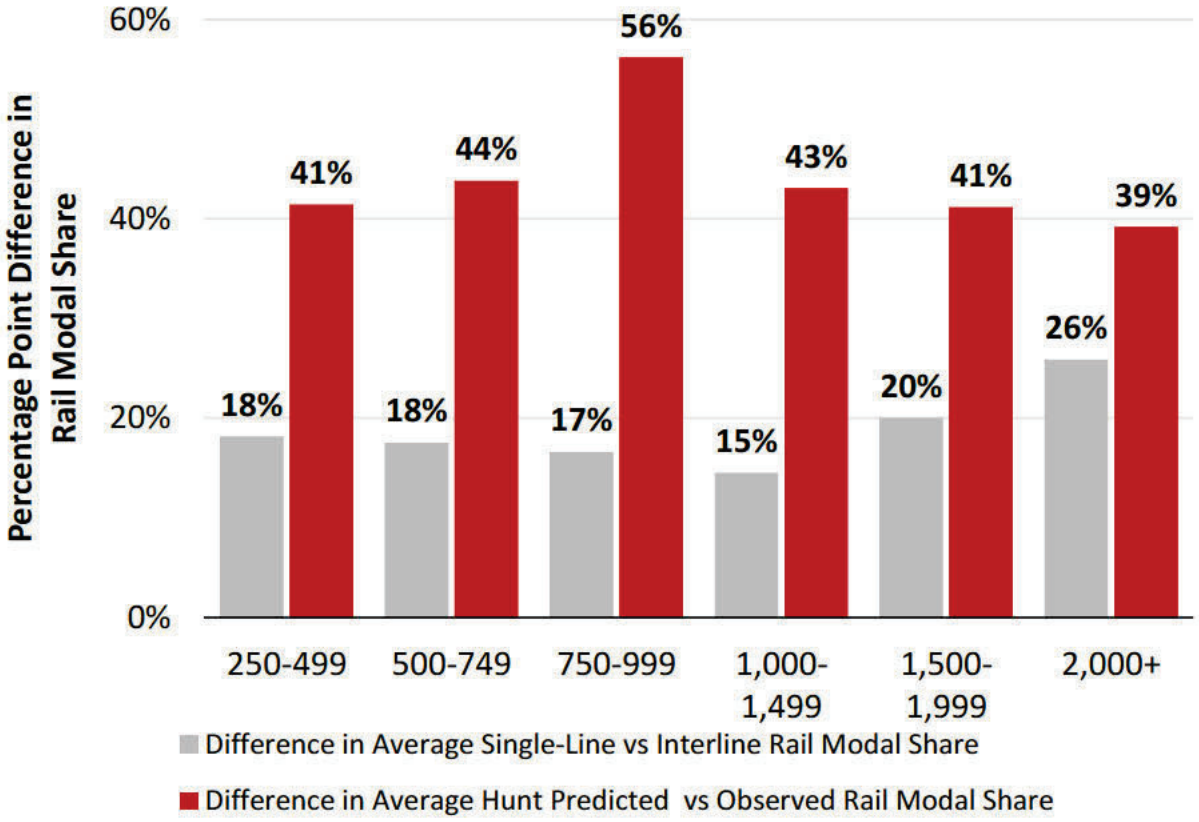
[A], [B]: For all truck-to-carload markets where Mr. Hunt calculates positive diversions, average pre-merger (or post-merger) value for each rail characteristic (weighted by diverted carloads) divided by the average value for each truck characteristic (weighted by diverted carloads).

The chart on the right is based on Mr. Hunt's truck-to-carload workpapers and the data underlying Hunt VS, Exhibit 4-5. *See* Hunt Workpapers, "HC-Lane Level Diversions Mileage vFinal.xlsx" and "HC-Lookalike Market Share vFinal.xlsx." Note that the numbers displayed in the figure may not match those displayed in Hunt Exhibit 4-5 due to rounding. Diversion markets and truck equipment type categories are defined consistently with Mr. Hunt's analysis. "Pre-merger observed rail modal share" is the average pre-merger rail modal share observed in the diversion markets for which Mr. Hunt reports positive truck-to-carload diversions. "Post-merger Hunt predicted rail modal share" is the corresponding average rail modal share predicted by Mr. Hunt after applying his modeled merger-related changes.

129. A separate comparison provides another perspective on the magnitude of these predicted share increases. In Mr. Hunt's own historical data, the average difference in rail modal share between interline and single-line Hunt markets is substantially smaller than the increase in

rail modal share his truck-to-carload model predicts after the merger. Figure 35 compares those two quantities by mileage band. Across each mileage band, the predicted post-merger increase in rail modal share materially exceeds the historical single-line/interline difference measured by Mr. Hunt.

FIGURE 35: MR. HUNT'S PREDICTED CARLOAD DIVERSIONS SHOW RAIL MODAL SHARE INCREASES LARGER THAN THE AVERAGE SINGLE-LINE/INTERLINE DIFFERENCES IN EXHIBIT 3-1



Sources and Notes: The gray bars in this figure show the average single-line rail modal share minus the average interline rail modal share in Mr. Hunt's Exhibit 3-1. *See* Hunt Workpaper, "C-Section 3 Exhibits vFinal.xlsx." The red bars in this chart show Mr. Hunt's average post-merger predicted rail modal rail (weighted by total market size) minus the average pre-merger observed rail modal share (weighted by total market size) in his carload diversion markets. These averages are calculated using data from Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx," tabs 'Bulk_Post,' 'DryVan_Post,' 'Flatbed_Post,' 'Reefer_Post,' 'Tank_Post.' *See* Script "09_diversion_analyses.R"; Workpaper "T2R_Carload_Exhibits.xlsx."

130. The very large predicted share increases in Figure 34 and Figure 35 are a visible consequence of the problems identified above. Mr. Hunt's framework applies benchmark shares drawn from other markets to diversion markets with little observed rail traffic, counting positive differences while discarding negative ones. It does not estimate how rail modal share responds to the magnitude of the modeled service changes. His framework thus predicts a dramatic change in rail participation but he fails to establish that the merger would cause it.

B. Mr. Hunt's Truck-to-Intermodal Model Does Not Reliably Identify Merger-Related Diversion

131. Mr. Hunt estimates that the merger will divert approximately 1.2 million annual truck movements to intermodal rail and increase UP-NS revenue by approximately $2.1 billion.[209] Those diversions represent roughly 44 percent of the truck traffic his analysis identifies as addressable by post-merger intermodal service and constitute a high portion of Applicants' claimed merger-related rail traffic growth.[210] Mr. Hunt's truck-to-intermodal model is similar in many ways to his truck-to-carload model I analyze in Section V.A, including the use of a lookalike methodology to predict post-merger intermodal shares based on the observed

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[209] More precisely, Mr. Hunt identifies approximately 1.201 million truck-to-intermodal diversions. He also identifies about 70,000 long-haul drayage diversions. *See* Hunt VS, p. 18 & Exhibit 2-4. I focus on the former. Of Mr. Hunt's 1.2 million truck to intermodal diversions, 1,174,032 diverted intermodal units or 98 percent are from 141 interline diversion markets that become single-line markets after the merger, 26,822 diverted intermodal units or 2 percent are from improvements to 5 diversion markets which lose one interchange but remain interline because the predicted post-merger rail path includes a shortline railroad. *See* Workpaper "T2R_Intermodal_Exhibits.xlsx." *See also*, Hunt VS, p. 95, Exhibit 8-1. The truck-to-intermodal model accounts for approximately 52 percent of Mr. Hunt's predicted revenue increase ($2,110 / $4,027 ≈ 52 percent).

[210] Mr. Hunt estimates approximately 2.722 million annual truckloads in the addressable post-merger intermodal market and approximately 1.201 million truck-to-intermodal diversions. The 1.201 million diversions represent approximately 44 percent of the addressable truck market and approximately 78 percent of Mr. Hunt's total 1.532 million projected intermodal diversions. *See* Hunt VS, Exhibit 5-2 & Exhibit 2-4.

performance of current markets.[211] It thus suffers from many of the same problems as the truck-to-carload model, as well as others unique to this model.

132. My review identifies three related problems with Mr. Hunt's truck-to-intermodal model similar to those in his carload model in Section V.A. First, he uses intermodal shares from established current markets to predict participation in future markets without establishing that the two groups are comparable in the other conditions affecting rail use. Railroads other than UP and NS, including BNSF and CSX, carry much of the traffic in the established current markets that have the greatest influence on Mr. Hunt's diversion estimates. Mr. Hunt uses those markets' observed intermodal shares to predict post-merger rail participation in future markets without establishing that the conditions behind the other railroads' performance would exist there. His complicated fallback and price-group override procedures compound the problem by assigning benchmark shares from markets that do not match the future markets even on the characteristics he chose to model. Second, he does not establish that the service changes assumed in his model would result from the merger: his modeled service is not derived from Applicants' Operating

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211 *See* definition of markets in the truck-to-intermodal model in footnote 6. Mr. Hunt defines intermodal markets as terminal-market pairs, generally based on BEAs, that may include multiple origin and destination terminals. *See* Hunt VS, pp. 128–130, 192 & Exhibit D-1.

In describing his truck-to-intermodal model, Mr. Hunt uses "lookalike," "segment" and "archetype" in ways that do not always distinguish the categories of markets from the existing markets used to calculate their benchmark shares.

For clarity and consistency, I use the following terms throughout this Verified Statement when referring to Mr. Hunt's truck-to-intermodal model. An "archetype" is a category of markets defined by the characteristics Mr. Hunt uses in his lookalike analysis: single-line status, intermodal mileage bin, intermodal transit time relative to truck bin, and intermodal price relative to truck bin. "Current markets" are the directional terminal-market pairs in Mr. Hunt's current-state dataset, characterized by their pre-merger characteristics. Each directional pair is identified by an origin and destination terminal market, with movements in opposite directions treated as separate markets. Qualifying current markets determine the benchmark share for each archetype. "Future markets" are the directional terminal-market pairs in Mr. Hunt's future-state dataset that he subjects to his diversion calculation and assigns to archetypes based on their modeled post-merger characteristics. "Diversion markets" are the subset of future markets for which Mr. Hunt predicts positive diversions after applying operational considerations.

Plan, and his generic interchange-dwell assumption does not measure the delay the merger would eliminate. Third, diagnostic tests expose problems in the diversion calculation itself. The reported total changes little when the magnitude of assumed service improvements varies, and the framework still predicts an amount equal to approximately 30–39 percent of Mr. Hunt's reported diversion when all modeled characteristics are held at pre-merger levels.[212]

133. Taken together, these results indicate that it is the structure and assumptions of Mr. Hunt's lookalike methodology, not changes associated with the merger that drive his intermodal diversion estimates.

1. Summary of the Truck-to-Intermodal Diversion Methodology

134. Figure 36 provides a simplified summary of Mr. Hunt's truck-to-intermodal diversion methodology. Mr. Hunt first constructs a current-state set of intermodal terminal-market pairs and calculates each current market's intermodal share of the total market size, defined as intermodal units divided by the sum of truck and intermodal units (Steps 1–3 in Figure 36).[213] He groups those current markets into archetypes based on four characteristics: single-line

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212 *See* Section V.B.4.a and Figure 44.

213 The future-state dataset can include markets that do not appear in the current-state dataset, including markets with no existing intermodal traffic. *See* Hunt VS, p. 120; Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tabs 'Current_IM_routes' and 'Future.' Mr. Hunt groups intermodal terminals into terminal markets that are largely based on BEAs, with adjustments to align with the UP-NS terminal network (Step 1). He then uses Oliver Wyman's Quantanet routing model to generate rail mileage and junction values for terminal-to-terminal markets (Step 2). For each county-to-county truck movement, his model then identifies feasible intermodal terminal pairs based on drayage distance, circuity, and other terminal catchment assumptions and selects the route with the lowest combination of rail mileage, junction penalties, and drayage penalties. These assignments determine the truck traffic associated with each terminal-market pair and the addressable truck market size. He then aggregates the assigned truck traffic to terminal markets and models intermodal mileage, transit time, and price (Step 3). *See* Hunt VS, pp. 120, 128–130, 133–134, 138–139.

For the rail portion of intermodal transit time, Mr. Hunt converts modeled rail mileage to hours using an average intermodal train speed of 30.7 miles per hour from EP 724. He adds assumed average dwell of six hours at origin, 12 hours at destination, and 22 hours at each modeled railroad interchange; he separately accounts for drayage time. *See* Hunt VS, pp. 139–140 & Exhibit B-13. The EP 724 train-speed

status, intermodal mileage, intermodal transit time relative to truck, and intermodal price relative to truck.[214] Within each archetype, he calculates a weighted average intermodal share using the traffic in the current markets assigned to that archetype.[215] When an archetype contains fewer than three matching current markets, Mr. Hunt uses fallback procedures that relax one or more matching characteristics to construct a benchmark share.[216] Mr. Hunt's workpapers also reveal

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measures generally exclude intermediate terminal time. *See, e.g.,* Union Pacific, "UP Metrics – Explanation of Methodology – EP 724 (Sub 4)," last updated March 1, 2022, available at: https://www.stb.gov/wp-content/uploads/UP-Methodology-EP-724-03.01.22.pdf, p. 1, Item 1 (calculating train speed using train miles and origin-to-destination hours less intermediate terminal time). Mr. Hunt's use of an average reported speed therefore does not provide a separate allowance for dwell at the intermediate work events in Applicants' planned routes; his stated calculation adds dwell at origin, destination, and modeled interchanges.

[214] Mr. Hunt groups current and future markets by single-line status (zero or at least one interchange), intermodal mileage (500-mile bins up to 2,000 miles, then 2,000+), transit time relative to truck (within 24 hours, 24–72 hours, or over 72 hours slower), and price relative to truck (more than 10 percent higher, within 10 percent, or at least 10 percent lower). Mr. Hunt describes the mileage characteristic used to assign intermodal current and future markets to archetypes as intermodal mileage. His workpaper, however, calculates the mileage measure as the smaller of modeled intermodal miles and average truck miles. *See* Deposition of David T. Hunt, Vol. I, October 7, 2026, 327:16–328:5. Hunt VS, pp. 138–141. He estimates intermodal price using modeled drayage costs and linehaul revenue, with linehaul revenue based on average directional revenue per unit mile for each IANA region pair and modeled rail miles based on the CRA traffic tapes dataset, and applies a 36 percent gross margin to the sum. *See* Hunt VS, pp. 138–141; Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Current_IM_routes.' Note that IANA regions are regions defined by the Intermodal Association of North America ("IANA"). *See, e.g.*, Intermodal Association of North America, "Third Quarter Intermodal Report," 2025, available at: https://www.railwayage.com/wp-content/uploads/2025/11/IANA_Q3_IntermodalQuarterlyReport.pdf, p. 5.

[215] Mr. Hunt applies two volume thresholds to the current-state markets used in this analysis. First, his "truck_to_im_vFinal.py" script excludes terminal markets with fewer than 3,650 annual domestic intermodal units before constructing the current-state market dataset. *See* Hunt Workpaper, "truck_to_im_vFinal.py," lines 1709 and 1878. Mr. Hunt does not disclose this threshold in his Verified Statement. Second, Mr. Hunt applies a minimum density requirement of 12 intermodal units per day in either direction of a terminal-market pair to classify the market as supporting existing intermodal service. He discusses that requirement as an operating consideration for predicted diversion markets, but does not state that the same threshold also applies when constructing the archetype benchmark shares. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tabs 'Control panel,' cell C5, and 'Current_IM_routes,' columns BC–BD. The 'Segmentation' tab then restricts the markets used to calculate archetype shares based on this current service indicator. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Segmentation,' columns B and H–L. *See* Hunt VS, Section 5.3.

[216] Mr. Hunt states that, when an archetype contains fewer than three matching current markets, he first considers shorter mileage categories and then progressively relaxes price, transit time, and junction

that he applies an override of the model's results that inflates his diversion estimate.[217] This "price group override" replaces an archetype's intermodal share with the intermodal share of a different archetype when the archetypes match on all characteristics except price, and the alternative archetype has both a higher intermodal share and higher relative intermodal price.[218]

135. Mr. Hunt identifies future markets with existing intermodal service and previously unserved markets that meet his criteria for improved rail service after the merger.[219] The addressable truck market size can differ between the current and future states because modeled routing changes can alter which truck movements are assigned to a terminal market, and because Mr. Hunt applies different assumptions when constructing the two datasets.[220] He

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count. *See* Hunt VS, pp. 141–143. His workpapers implement a different sequence: first relaxing price, then transit time, then both junction count and price, and only afterward considering shorter mileage categories. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Segmentation.' Mr. Hunt agreed in his deposition that [redacted]." Deposition of David T. Hunt, Vol. I, October 7, 2026, 393:18–394:7.

[217] Removing the price group override while retaining all other aspects of Mr. Hunt's methodology produces 1,101,185 predicted diversions, approximately 8 percent less than his 1,200,854 predicted diversions. *See* Script "02H_diversions_no_price_override.R"; Workpaper "T2R_Intermodal_Exhibits.xlsx."

[218] Mr. Hunt applies a "price group override" to archetypes that already contain at least three matching current markets. He compares the archetype's intermodal share with those of archetypes that match on junction count, mileage bin, and transit time but have a less favorable price category. If one of those archetypes contains at least three current markets and has a higher intermodal share, Mr. Hunt substitutes that higher share. Mr. Hunt does not describe this price group override in his verified statement. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Segmentation.'

[219] *See* Hunt VS, pp. 59–61, 120.

[220] Mr. Hunt's use of post-merger Quantanet routing can change the truck traffic treated as addressable for a terminal-market pair. Lower modeled rail impedance can make additional intermodal routings feasible and allow more truck movements to satisfy Mr. Hunt's circuity, drayage, and related assignment requirements. As a result, modeled post-merger service changes can increase the size or alter the composition of the truck market assigned to a terminal-market pair. Mr. Hunt also does not construct the current and future addressable truck markets using identical assumptions. His "truck_to_im_vFinal.py" script restricts the current-state service matrix to terminal-market pairs with at least 3,650 annual intermodal units. *See* Hunt Workpaper, "truck_to_im_vFinal.py," lines 1709 and 1878. The future state instead uses a separate list of terminal-market pairs where Mr. Hunt assumes intermodal service will be available, including pairs with no existing intermodal traffic. *See* Hunt Workpaper, "truck_to_im_vFinal.py," lines 1960–1964, 2124–2138. The script also applies market-specific inclusions

assigns each future market to an archetype based on its modeled post-merger characteristics (Step 4).[221] He then assigns each future market the benchmark intermodal share calculated from current markets in the corresponding archetype (Step 5).[222] Figure 27 illustrates the analogous step in Mr. Hunt's carload model, which also uses observed traffic in current markets to assign a benchmark share to future markets.

136. Mr. Hunt calculates predicted diversions by multiplying that benchmark share by his estimate of the future market's total traffic, consisting of truck and existing intermodal units, and subtracting the future market's existing intermodal units (Step 6).[223] If this calculation produces a negative value, he sets diversions to zero.[224] He then applies additional operational considerations to the resulting positive diversions and estimates the associated revenues (Step 7).[225]

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and exclusions to the future service network based on operational and other considerations, including exclusions involving Greensboro and Valley, Nevada, restrictions on new Denver service, and specified inclusions or exclusions involving South Texas, Minneapolis, Council Bluffs, Tacoma, and other markets. *See* Hunt Workpaper, "truck_to_im_vFinal.py," lines 1967–2122.

221 *See* Hunt VS, p. 143.

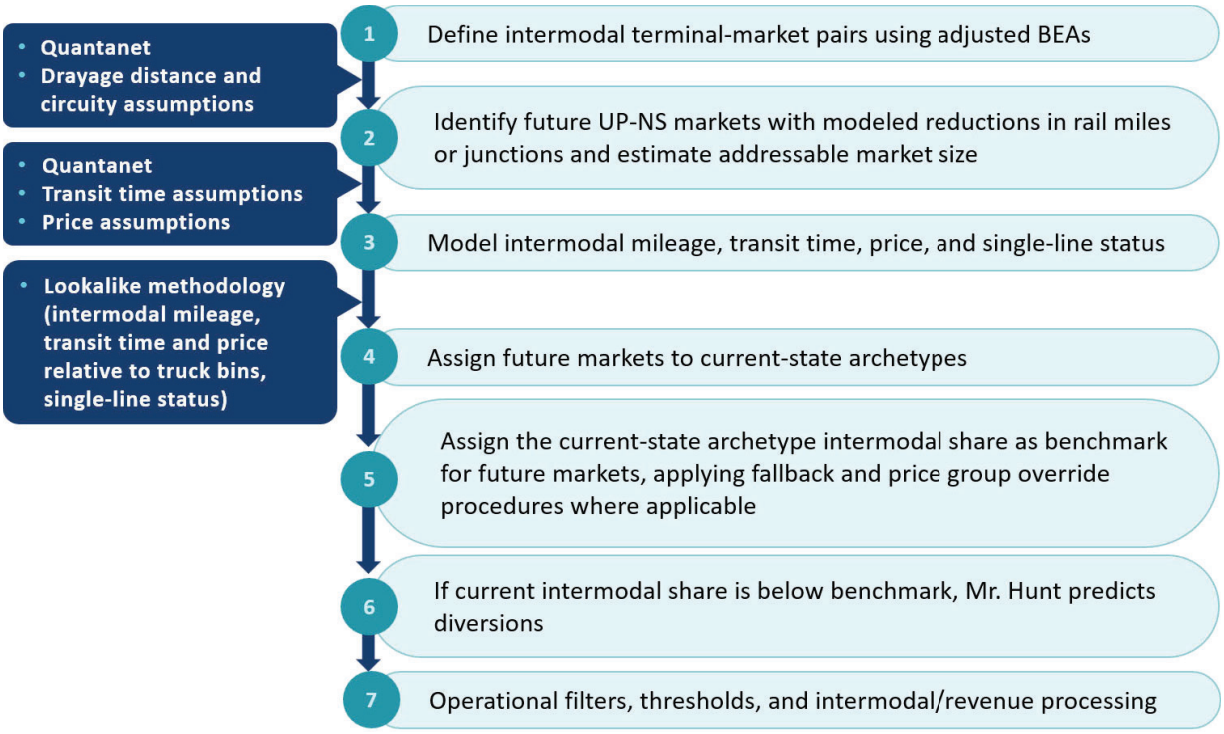
222 *See* Hunt VS, p. 143; Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Future.' Mr. Hunt's principal intermodal archetypes group current and future markets by four modeled characteristics: single-line status, intermodal mileage, intermodal transit time relative to truck, and intermodal price relative to truck. Intermodal mileage, transit time, and price consider both linehaul rail and drayage. Mr. Hunt also employs a "fallback" matching methodology, which I discuss in more detail in Section V.B.2.e. *See* Hunt VS, pp. 138–143.

223 *See* Hunt VS, p. 143

224 *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Future.'

225 *See* Hunt VS, pp. 59–64, 94–95. By "operational considerations," I refer to Mr. Hunt's additional screens for whether predicted intermodal traffic can support feasible post-merger service. These include a minimum density requirement of 12 intermodal units per day, availability of UP or NS terminals at both ends of the movement, feasible train service, and market-specific exclusions and capacity considerations. *See* Hunt VS, Section 5.3; Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tabs 'Instructions,' 'Control panel,' 'Excluded growth lanes,' and 'Future_UPNS_TerminalTerminal_2.'

FIGURE 36: SIMPLIFIED OVERVIEW OF MR. HUNT'S TRUCK-TO-INTERMODAL DIVERSION FRAMEWORK



Sources and Notes: Hunt VS, Section 5.3 & Appendix B.3; Hunt Workpapers, "HC-Intermodal Diversions Model vFinal.xlsx" and "truck_to_im_vFinal.py."

137. Mr. Hunt's modeled service changes can affect the diversion estimate through two distinct mechanisms. First, post-merger changes in the modeled rail path, including changes in rail mileage and the number of junctions, can cause a county-to-county truck movement to be assigned to a different intermodal terminal pair. That reassignment can change drayage distance and therefore increase or decrease the addressable truck market size for a particular terminal pair.[226] Second, the modeled service characteristics determine the archetype to which a future

[226] Mr. Hunt reruns the terminal catchment model using the post-merger rail routes and reevaluates county to county truck movements across the resulting intermodal alternatives. A truck movement must satisfy Mr. Hunt's limits on maximum drayage distance, drayage as a share of total intermodal mileage, and intermodal circuity relative to truck. When a reduction in junctions improves the modeled rail route serving a terminal market, the post-merger assignment can therefore favor that market for county pairs that were assigned elsewhere in the current state, including counties farther from the terminal. *See* Hunt VS, pp. 124, 128–131.

market is assigned and therefore the intermodal benchmark share applied to that future market.[227] Thus, assumed merger-related service improvements can affect both the amount of truck traffic exposed to the diversion calculation and the share of that traffic predicted to move by intermodal.[228] The resulting diversion estimate reflects both an expansion in the truck traffic Mr. Hunt treats as contestable by intermodal service and substantial increases in predicted intermodal participation within those future markets.

138. The reliability of Mr. Hunt's diversion estimate therefore depends on (i) whether Mr. Hunt's assumed service improvements are supported by the available facts, (ii) whether a merger is required to achieve those service improvements, and (iii) whether the selected current markets used to calculate his benchmark provide a reliable basis for predicting the intermodal share of the future markets. As I explain below, the available evidence and Mr. Hunt's own model demonstrate that Mr. Hunt's methodology does not isolate the effect of the merger.

2. Mr. Hunt's Lookalike Methodology Does Not Isolate the Effect of Single-Line Service from Other Differences Between Current Markets

a. Single-Line Intermodal Shares Vary Substantially Across Railroads and Current Markets

139. As discussed above, Mr. Hunt uses a lookalike methodology to calculate benchmark intermodal shares from current markets with characteristics that match the modeled

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227 *See* Hunt VS, pp. 138, 143.

228 Mr. Hunt's current-state analysis includes terminal-market pairs with at least 3,650 annual intermodal units. *See* Hunt Workpaper, "truck_to_im_vFinal.py," lines 1709, 1875–1878, 1895. His future-state analysis allows a broader set of terminal-market pairs, including markets with no existing intermodal traffic, and reassigns truck traffic using the future rail network. *See* Hunt VS, Appendix B.3. The current and future states therefore use different sets of available intermodal markets and can assign different amounts and compositions of truck traffic to a given terminal market. Of Mr. Hunt's predicted 1,200,854 intermodal diversions, 480,519 diversions, or 40 percent, are attributable to modeled changes in the size and composition of the addressable truck market in the future state, while 720,336 diversions, or 60 percent, are attributable to the increase in intermodal share predicted by the assigned benchmark. *See* Script "02C_diversions_current_size.R" and Workpaper "T2R_Intermodal_Exhibits.xlsx."

post-merger characteristics of future markets.[229] His benchmarks can only provide a reliable basis for predicting those future markets' intermodal shares if the matched current and future markets are sufficiently similar in other characteristics that materially affect intermodal participation. As I show below, there is strong evidence that they are not.

140. Mr. Hunt's model omits many conditions that distinguish established current markets from less successful ones. As explained in Section III.C, shippers consider many factors beyond transit time and single-line status. Current markets assigned to the same archetype may therefore remain materially different in the operating and commercial conditions that influence whether shippers use intermodal rail. Consequently, Mr. Hunt's analysis merely documents an average association between single-line service and higher intermodal participation, but he does not establish how much of that association is *caused* by single-line status rather than by the other characteristics embedded in the current markets used to calculate the benchmark.

141. The variation in intermodal shares within Mr. Hunt's archetypes illustrates that fact. For example, Figure 37 shows the intermodal shares for current markets Mr. Hunt assigns to the archetype defined by single-line service, at least 2,000 intermodal miles, intermodal transit time no more than 24 hours longer than truck transit time, and intermodal prices within 10 percent of truck prices.[230] Despite sharing Mr. Hunt's modeled characteristics, the observed intermodal shares differ substantially across current markets, from 36 percent to 89 percent.

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229 *See* Hunt VS, pp. 31, 55, 58, 138. Mr. Hunt states that the model examines outcomes in "comparable," "lookalike" or "archetype" markets providing the observed shipper behavior used to forecast how an improved market will perform once mature, and that the intermodal methodology assesses modal-shift potential based on observed shipper behavior in comparable markets.

230 This archetype has the highest average intermodal share among Mr. Hunt's archetypes. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Segmentation.'

FIGURE 37: MR. HUNT'S MODELED CHARACTERISTICS DO NOT DETERMINE INTERMODAL SHARE



Sources and Notes: [redacted]. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tabs 'Current_IM_routes' and 'Segmentation'; Workpaper "T2R_Intermodal_Exhibits.xlsx."

142. There is similar dispersion among Mr. Hunt's interline archetypes. Figure 38 shows the intermodal shares among current markets included in the archetype defined by interline service, at least 2,000 intermodal miles, intermodal transit time between 24 and 72 hours longer than truck transit time, and intermodal prices within 10 percent of truck prices. As in Figure 37, the observed intermodal shares differ substantially across current markets, from 15 percent to 82 percent, even though the current markets share the characteristics Mr. Hunt uses to define the archetype.

FIGURE 38: INTERMODAL SHARES VARY WIDELY WITHIN INTERLINE ARCHETYPES



Sources and Notes: [redacted] *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tabs 'Current_IM_routes' and 'Segmentation'; Scripts

"03A_map_current_markets_to_segments.R" and "02_prepare_markets.R"; Workpaper "T2R_Intermodal_Exhibits.xlsx."

143. This figure shows that, even within the interline archetypes Mr. Hunt constructs, interline service can be associated with both relatively high and relatively low intermodal participation. Consistent with the empirical patterns I described in Section III.B, the high degree of dispersion within Mr. Hunt's archetypes indicates that the characteristics Mr. Hunt uses to construct his archetypes are insufficient to determine the level of intermodal participation. Other market-specific conditions must be taken into account to assess differences among current markets sharing the characteristics that Mr. Hunt treats as important predictors of intermodal participation, but Mr. Hunt's model does not account for those factors.

b. Successful Current Markets Differ in Density, Frequency, Terminal Conditions, Service Maturity, and Other Relevant Characteristics

144. The dispersion shown in Figure 37 and Figure 38 provides evidence that characteristics beyond those included in Mr. Hunt's archetypes are determinants of intermodal rail participation. Current markets that match on all of Mr. Hunt's modeled characteristics nevertheless achieve very different intermodal shares. This matters because Mr. Hunt uses the observed shares of established current markets to predict intermodal participation in future markets. Observed intermodal shares may therefore reflect operating and commercial conditions that his archetypes do not capture, including traffic density, service frequency, terminal conditions, network connectivity, equipment availability, market maturity, and commercial relationships, as discussed in Section III. Future markets may not share those conditions, even when they match the current markets on all four archetype characteristics.

145. As discussed in Sections III and IV, rail participation depends on factors beyond the single-line status, mileage, transit time, and price included in Mr. Hunt's archetypes.

Applicants' internal analyses of intermodal service identify additional factors specific to intermodal service that Mr. Hunt's archetypes do not consider. One is [redacted]. NS explains that [redacted].[231]

146. Applicants' internal analyses also identify other intermodal-specific factors that Mr. Hunt's archetypes omit. For example, existing intermodal traffic density also affects how railroads provide service. NS observes that [redacted] and [redacted].[232] Customer proximity to intermodal terminals is another relevant factor. NS [redacted].[233] Although Mr. Hunt estimates drayage distances using representative county-level locations, he does not establish that future markets have customer access comparable to the current markets whose intermodal shares he applies.[234]

147. Figure 37 and Figure 38 show that the characteristics Mr. Hunt uses to match markets do not explain the substantial differences in intermodal share among those markets. Applicants' own historical analyses expose the related flaw in treating changes in those

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231 *See* Norfolk Southern, "Service Metrics for Growth," June 10, 2023, NS_00152958, at -962, -969.

232 *See* Norfolk Southern, "Service Metrics for Growth," June 10, 2023, NS_00152958, at -959–960, -970.

233 *See* Norfolk Southern, "Intermodal 2030 Growth Plan," January 17, 2023, NS_00219377, at -385–386.

234 Mr. Hunt testified during his deposition that he does not account for differences in drayage speed that, for example, may arise due to differences in traffic congestion between urban and rural areas or other differences across geographic regions. *See* Deposition of David T. Hunt, Vol. II, October 8, 2026, 583:7–584:17. Instead, Mr. Hunt testified that he assumes an identical speed for all truck movements, including drayage. *See* Deposition of David T. Hunt, Vol. II, October 8, 2026, 585:2–24.

characteristics as determinants of growth. NS's historical internal analyses illustrate this limitation for transit time. NS found that [redacted].[235] That experience undercuts Mr. Hunt's inference that the transit-time reductions he models will produce the intermodal share gains he predicts.

c. Mr. Hunt's Benchmark Shares Are Disproportionately Influenced by a Small Number of Large Current Markets

148. Mr. Hunt's intermodal predictions depend heavily on whether a handful of high-volume current markets are representative of the future markets to which he applies their shares. He calculates each archetype's benchmark share as a weighted average of the current markets' intermodal shares, with each market weighted by its total units (truck plus intermodal). His fallback procedure and price group override, described above, mean that a given current market is often used in calculating benchmarks for more than one archetype. As a result, just four current markets, each involving Chicago, account for approximately 47 percent of the calculated contribution from current markets underlying his predicted truck-to-intermodal diversions.[236] Chicago current markets collectively account for approximately 68 percent of that contribution.[237]

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[235] *See* Norfolk Southern, "Service Metrics for Growth," June 10, 2023, NS_00152958, at -959, -966.

[236] I calculate a current market's relative contribution by first calculating each archetype's share of total diversions. I then calculate each current market's share of total units across all current markets within each archetype, and multiply that unit share by the archetype's share of total diversions. Under Mr. Hunt's fallback methodology and price group override, the same current market may be used to construct the intermodal share of multiple archetypes, so I sum the current market's resulting contributions across all archetypes in which it appears. Specifically, [redacted]. *See* Script "01C_relative_contribution.R" and Workpaper "T2R_Intermodal_Exhibits.xlsx."

[237] *See* Script "01C_relative_contribution.R" and Workpaper "T2R_Intermodal_Exhibits.xlsx."

149. This concentration matters because Mr. Hunt explicitly assumes that shippers facing similar price, transit time, and service tradeoffs make mode choices consistently across the United States.[238] Chicago, however, differs from many other terminal markets in ways that his archetype variables do not capture. Chicago is served by all six Class I railroads, giving shippers access to an unusually broad set of carriers and routes. It also handles exceptionally large volumes of intermodal traffic and sits at the principal junction between the eastern and western Class I networks.[239] These conditions can support service frequency, network connectivity, equipment availability, and commercial density that may not be present in other terminal markets. Mr. Hunt's archetypes do not account for those differences, and he does not establish that the future markets receiving Chicago-influenced benchmark shares will have access to comparable conditions.

150. To illustrate the impact of including current markets that may differ in material ways, I assess how much of Mr. Hunt's diversion estimates depend on the Chicago current markets. Specifically, I remove the current markets that originate or terminate in Chicago and rerun Mr. Hunt's analysis while otherwise retaining his methodology. Predicted diversions fall by approximately 43 percent, from approximately 1.20 million to 688,000.[240] This substantial

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238 *See* Hunt VS, p. 58.

239 *See* Chicago Metropolitan Agency for Planning, "Maintain the Region's Status as North America's Freight Hub," last accessed October 13, 2026, https://cmap.illinois.gov/regional-plan/goals/recommendation/maintain-the-regions-status-as-north-americas-freight-hub/; Association of American Railroads, "AAR Applauds $132 Million Federal Grant to Improve Chicago Rail Traffic Flow," June 5, 2018, last accessed October 13, 2026, https://www.aar.org/news/aar-applauds-132-million-federal-grant-to-improve-chicago-rail-traffic-flow/.

240 I exclude all current markets that originate or terminate in Chicago and recalculate the archetypes and archetype shares using the updated set of current markets and the same set of procedures used by Mr. Hunt. *See* Script "02G_diversions_no_chicago.R" and Workpaper "T2R_Intermodal_Exhibits.xlsx."

decline shows that a single distinction Mr. Hunt's matching criteria omit—here, whether a current market involves Chicago—can materially change his diversion estimates.

151. At the same time, Mr. Hunt draws these influential current markets from a restricted pool. His minimum-volume screens exclude terminal-market pairs with little or no intermodal traffic, including terminal-market pairs whose low rail participation could lower the benchmarks applied to future markets.[241] The resulting benchmarks therefore describe terminal-market pairs where intermodal service has already attracted sufficient traffic, rather than the full range of terminal-market pairs in which truck and intermodal service could compete.

152. Figure 39 illustrates the effect of Mr. Hunt's volume screens for the archetype shown in Figure 37. It adds three terminal-market pairs, shown as diamonds, that match the archetype's characteristics but fail the volume screens and therefore do not contribute to its benchmark intermodal share. These excluded terminal-market pairs have observed intermodal shares substantially lower than the current markets Mr. Hunt uses to calculate the benchmark.[242] The fact that those markets would receive little weight if included compounds the concern: his weighting allows large current markets, such as those involving Chicago, to dominate the predicted diversions and materially pulls his estimate upward, as the 43 percent decline when Chicago current markets are removed demonstrates. Mr. Hunt provides no basis for treating

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[241] As I explained in Section V.B.1 and footnote 215, Mr. Hunt first excludes terminal-market pairs with fewer than 3,650 annual domestic intermodal units from his current-state dataset. He then requires at least 12 intermodal units per day, or 4,380 annually, for a terminal-market pair to qualify as having existing intermodal service in the benchmark calculation.

[242] For example, Mr. Hunt excludes from the current markets that inform the benchmark of the archetype shown in Figure 37 [redacted], and [redacted], which have observed intermodal shares of approximately [redacted] respectively. Figure 39 also shows how the exclusion of these terminal-market pairs can understate the degree of dispersion in intermodal share within an archetype. Mr. Hunt excludes 13 other single-line terminal-market pairs from the set of current markets that inform the benchmark for the archetype included in Figure 37. *See* Workpaper "T2R_Intermodal_Exhibits.xlsx" and "current_markets_no_IM_minimum.xlsx."

those high-density current markets as better comparators than the smaller, lower-share current markets his ad hoc screens exclude, despite the fact that high-density markets involving Chicago exhibit characteristics that his smaller diversion-eligible markets are unlikely to share.

FIGURE 39: MR. HUNT SCREENS OUT LOW VOLUME TERMINAL-MARKET PAIRS FROM HIS BENCHMARK SHARE CALCULATIONS



Sources and Notes: The figure shows terminal-market pairs assigned to the archetype defined by single-line service, at least 2,000 intermodal miles, intermodal transit time no more than 24 hours longer than truck transit time, and intermodal prices within 10 percent of truck prices. Solid circles identify current markets that Mr. Hunt includes in calculating the archetype's benchmark intermodal share. Red circles identify current markets with shares below the benchmark, while

green circles identify current markets with shares above it. Hollow red diamonds identify selected terminal-market pairs that satisfy the archetype criteria but fail Mr. Hunt's minimum volume requirement and therefore do not contribute to the benchmark. The dashed line shows Mr. Hunt's 72 percent weighted-average intermodal share for the included markets. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tabs 'Current_IM_routes' and 'Segmentation'; Workpapers "current_markets_no_IM_minimum.xlsx" and "T2R_Intermodal_Exhibits.xlsx."

d. Mr. Hunt Conflates the Success of Class I Railroads Other than UP and NS with Inherent Single-Line Advantages

153. Railroad identity provides further evidence that Mr. Hunt's archetypes do not capture all the factors affecting intermodal participation. As I explain in Section V.B.1, Mr. Hunt defines intermodal archetypes using single-line service, intermodal mileage, intermodal transit time relative to truck, and intermodal price relative to truck, without accounting for railroad identity. Yet railroads serving the same intermodal market do not necessarily offer identical service nor do they necessarily have the same commercial strategies. As one example, UP's April 2021 analysis of competing routes between [redacted] and [redacted] estimated that [redacted].[243]

154. One logical implication of these operational and strategic differences is that the various railroads serving a given market will vary in their ability to meet customer needs and attract rail traffic from trucking options. Figure 40 compares UP with BNSF in Western single-line current markets and NS with CSX in Eastern single-line current markets where both railroads carry intermodal traffic.[244] Across all relevant mileage categories, BNSF's average

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243 *See* UP_0034502, tab 'Better Big Routes by Run Time.'

244 I refer to current markets served by UP and BNSF as "Western current markets" and markets served by NS and CSX as "Eastern current markets," consistent with the regions in which these railroads primarily operate. These classifications identify the railroad pairs used for comparison rather than the geographic locations of individual markets. I include single-line current markets that contribute to a benchmark share ultimately applied to a future market with positive predicted diversions. *See* Scripts "03A_map_current_markets_to_segments.R"; "01C_relative_contribution.R"; "02_prepare_markets.R."

share exceeds UP's in the Western current markets that inform the benchmark intermodal shares, and CSX's average share exceeds NS's in the Eastern current markets, with the disparity largest in the long-haul current markets that are most relevant to Mr. Hunt's diversion estimates.[245]

For Western markets, I compare UP and BNSF where each railroad accounts for at least 1 percent of Class I intermodal units and the two railroads together account for at least 90 percent. For Eastern markets, I apply the same criteria to NS and CSX. Qualification in either direction is sufficient to include both directions of a market pair. *See* Scripts "01B_railroad_shares.R"; "02_prepare_markets.R"; "03B_RR_SL_performance.R." Figure 61 in Appendix B.8 shows railroad shares at the individual market level for all current markets with positive contributions to benchmark intermodal shares. Each bar's width is proportional to the market's contribution to predicted diversions. That figure shows that BNSF carries a majority of intermodal traffic in many of the current markets that exert the greatest influence on Mr. Hunt's diversion estimates.

[245] Using the current markets described in footnote 244, I calculate each railroad's intermodal share within each current market and take an intermodal unit weighted average across current markets. BNSF's average share exceeds UP's by approximately 26 percentage points in Western markets, while CSX's average share exceeds NS's by approximately 17 percentage points in Eastern markets. *See* Script "03B_RR_SL_performance.R."

FIGURE 40: BNSF AND CSX CARRY MOST TRAFFIC IN THE LONG-HAUL SINGLE LINE BENCHMARK MARKETS THAT MOST INFLUENCE MR. HUNT'S DIVERSIONS



Sources and Notes: I use single-line current markets that contribute to benchmark shares assigned to future markets with positive predicted diversions. For Western current markets, I include current market pairs where UP and BNSF together account for at least 90 percent of Class I intermodal units and each railroad accounts for at least 1 percent in either direction. I apply the analogous criteria to NS and CSX for Eastern current markets. I group the included current markets into 500-mile intervals based on modeled intermodal mileage. Within each interval, each railroad's share equals its intermodal units divided by total intermodal units across the included current markets. *See* Scripts "01B_railroad_shares.R," "01C_relative_contribution.R," "02_prepare_markets.R," and "03B_RR_SL_performance.R"; Workpaper "current_markets.xlsx."

155. I cannot determine from these data why BNSF and CSX outperform UP and NS in the current markets shown in Figure 40. The differences may reflect pricing, service or

consistency of service, or other commercial and operational choices. Mr. Hunt does not investigate those differences or establish that merging UP and NS would cause the merged entity to perform like BNSF or CSX.

156. These within-market differences matter because Mr. Hunt applies the aggregate intermodal shares observed in established current markets to future markets without establishing that UP-NS would achieve post-merger single-line performance comparable to BNSF or CSX's pre-merger performance.[246] Figure 40 shows that, among current markets served by both railroads in each comparison, BNSF and CSX capture substantially more intermodal traffic than UP or NS. Mr. Hunt's benchmark shares therefore incorporate performance that may depend on operating and commercial characteristics or strategies specific to BNSF and CSX.

e. Mr. Hunt's Fallback and Override Procedures Undermine His Matching Criteria and Inflate Diversions

157. As described in Section V.B.1, Mr. Hunt uses fallback and override procedures that relax the characteristics used to match current markets to future markets. These procedures further undermine his claim of comparability: not only does his analysis omit other characteristics relevant to intermodal participation, but in many cases the current markets used to set a benchmark differ from the future markets even on characteristics he does consider. In particular, his price group override can replace benchmark intermodal shares that are otherwise valid within his framework with higher shares calculated from current markets with less favorable intermodal pricing.[247] The need for this override exposes a weakness in the matching

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246 *See* Hunt VS, pp. 58, 138–139

247 For archetypes with sufficient matching current markets, Mr. Hunt's price group override compares the archetype's calculated intermodal share with the shares of archetypes that have the same single-line status, mileage, and transit time categories but less favorable intermodal pricing. He then

approach: even among otherwise matched archetypes, more favorable intermodal pricing does not consistently correspond to higher observed intermodal shares.[248] In his deposition, Mr. Hunt indicated that [redacted].[249] Mr. Hunt also progressively relaxes one or more characteristics used to match current markets to an archetype when that archetype lacks at least three current markets that match all four of the archetype's characteristics. Consequently, the current markets used to calculate the benchmark shares applied to future markets do not match the modeled characteristics of those future markets in many cases.

158. Figure 41 shows the share of Mr. Hunt's predicted diversions associated with the fallback and override procedures. Diversions are divided into three categories: future markets whose benchmark share comes from an archetype with at least three exact matching current markets ("Exact Match"); future markets whose archetype contains at least three exact matching current markets but for which Mr. Hunt substitutes a higher share from a less favorable price group ("Price Group Override"); and future markets whose archetype contains fewer than three exact matching current markets and therefore relies on one of Mr. Hunt's fallback procedures ("Fallback Override").

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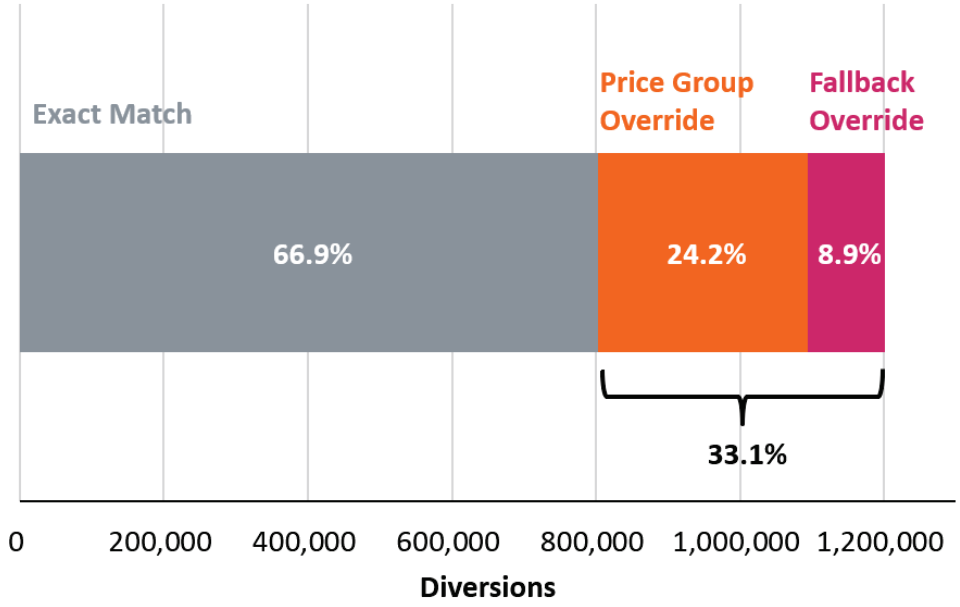
assigns the highest of these shares, even when it exceeds the share calculated from current markets that match all four characteristics. Thus, the override can replace a benchmark share that is otherwise valid within his framework with a higher share from current markets with less favorable pricing. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Segmentation,' column N.

248 I examine this issue more fully in Section V.B.4.c.

249 In his deposition, Mr. Hunt testified that [redacted]." Deposition of David T. Hunt, Vol. I, October 7, 2026, 402:5–403:7. Yet his workpapers show an archetype with four matching current markets and an observed share of 46.3 percent receiving a benchmark share of approximately 72 percent. *See* Deposition of David T. Hunt, Vol. I, October 7, 2026, 404:18–405:23.

FIGURE 41: ABOUT ONE-THIRD OF MR. HUNT'S PREDICTED INTERMODAL DIVERSIONS RELY ON BENCHMARK SHARES FROM CURRENT MARKETS THAT DO NOT MATCH ON ALL ARCHETYPE CHARACTERISTICS



Sources and Notes: The horizontal axis shows Mr. Hunt's predicted truck-to-intermodal diversions. The percentages shown within each segment equal that category's share of total predicted diversions. "Exact Match" includes future markets whose assigned benchmark intermodal share comes from at least three current markets matching on single-line status, intermodal mileage, intermodal transit time relative to truck, and intermodal price relative to truck. "Price Group Override" includes future markets with at least three exact matching current markets for which Mr. Hunt instead assigns a higher share from current markets with the same single-line status, intermodal mileage, and transit time relative to truck but less favorable intermodal pricing. "Fallback Override" includes future markets with fewer than three exact matching current markets for which Mr. Hunt relaxes one or more matching criteria to construct the benchmark share. The bracketed percentage shows the combined share of predicted diversions associated with the Price Group Override and Fallback Override categories. *See* Scripts "03A_map_current_markets_to_segments.R" and "02_prepare_markets.R"; Workpaper "T2R_Intermodal_Exhibits.xlsx."

159. Approximately one-third of Mr. Hunt's predicted truck-to-intermodal diversions rely on benchmark shares derived from current markets that do not match the future markets on all the characteristics Mr. Hunt includes in his model. The fallback and override procedures thus contradict the premise that his benchmark shares reflect the performance of current markets

comparable to those where he predicts diversion, and the price-group override alone increases his predicted diversions by approximately 100,000 units.[250]

3. Applicants Do Not Establish that the Merger-Related Service Improvements Assumed by Mr. Hunt Can or Will Actually be Achieved

a. The Operating Plan Does Not Independently Support the Service Improvements Assumed in the Intermodal Model

160. The same Operating Plan concerns discussed in Section V.A.3.a for Mr. Hunt's truck-to-carload model also apply to his truck-to-intermodal model. First, Mr. Hunt's modeled routes and transit times do not account for the specific train operations in Applicants' Growth Plan, including traffic-to-block and block-to-train assignments. The CPKC Operating Experts identify specific discrepancies between Mr. Hunt's assumptions and the Growth Plan, and Mr. Hunt himself testified that he had not reviewed the Operating Plan.[251] Mr. Hunt's model effectively treats a reduction in the number of railroads involved as a service improvement in itself, without identifying any specific operational changes that would produce that improvement

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[250] The extent of this mismatch can be even greater at the archetype level. Mr. Hunt agreed in his deposition that [redacted]. *See* Deposition of David T. Hunt, Vol. I, October 7, 2026, 390:5–24. For each of these [redacted] archetypes, Mr. Hunt [redacted]. *See* Deposition of David T. Hunt, Vol. I, October 7, 2026, 391:1–11.

As summarized in footnote 217, Mr. Hunt's price group override has the effect of increasing predicted diversions by approximately 100,000 units.

[251] *See* CPKC Operating Experts VS, Sections V.B–V.C (comparing Mr. Hunt's modeled routes and transit times with the Growth Plan); Deposition of David T. Hunt, Vol. II, October 8, 2026, 691:20–22 (testifying that he had not reviewed the Operating Plan).

for the affected traffic.[252] Second, the CPKC Operating Experts identify material reasons to question whether the Growth Plan's proposed service can be operated as represented.[253]

161. The Growth Plan's failure to substantiate Mr. Hunt's modeled post-merger service levels matters in two ways in the truck-to-intermodal model. First, Mr. Hunt's assumed rail routes affect which county-to-county truck movements are assigned to a particular terminal pair and therefore the amount of addressable truck traffic he estimates. Second, the modeled characteristics of those routes determine the benchmark intermodal share applied to a future market in order to calculate the incremental rail traffic Mr. Hunt attributes to the merger.[254] In future markets where Mr. Hunt's model assumes a more favorable service level than the Growth Plan actually provides, his model would both include more addressable truck traffic and predict a larger share of that expanded market size will divert to intermodal rail service. Even if the assumption of lower impedance expands the addressable truck market within Mr. Hunt's model, that modeled expansion need not require a merger: his framework also assigns reduced impedance to coordinated run-through interline service, which could also change terminal assignments. Mr. Hunt does not estimate how much of that modeled expansion could also result from coordinated service short of a merger.

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252 *See* Hunt VS, pp. 109–110, 138–141; CPKC Operating Experts VS, Sections V.B–V.C. Mr. Hunt's treatment of Meridian Speedway movements illustrates the point. He reduced their modeled impedance from 180 to 90 mile-equivalents because the movement would involve two railroad companies rather than three after the merger, although he agreed that the two physical interchanges would remain. At deposition, when asked to identify any handling, crew activity, or other interchange operation the merger would eliminate, he responded that this was "not something that I considered at diversion level." Although the questions concerned Meridian Speedway movements, that explanation appears to describe a broader limitation of his diversion analysis. *See* Deposition of David T. Hunt, Vol. II, October 8, 2026, 688:5–692:20.

253 *See* CPKC Operating Experts VS, Sections V.B and V.C.

254 *See* Hunt VS, pp. 58–59, 141–143.

162. The CPKC Operating Experts identify examples in which Mr. Hunt models a more direct route than Applicants' Growth Plan provides:[255]

- **East Minneapolis–Appliance Park**: Mr. Hunt assumes a direct route for the diverted traffic, while the Growth Plan routes the traffic less directly and includes five block swaps. Those work events require as much as [redacted] of dwell that Mr. Hunt's service calculation omits. Thus, the Growth Plan does not reflect the service or transit time improvements assumed by Mr. Hunt's model.

- **Northern California–Southeast**: Mr. Hunt assumes that diverted traffic will use a shorter route through Texas and the Meridian Speedway. In the Growth Plan, however, the vast majority of this traffic is assigned to the [redacted], which follows a longer path via Kansas City and Louisville and avoids the Meridian Speedway. According to Applicants' own model, the Growth Plan path is approximately [redacted] miles longer than existing service, whereas Mr. Hunt's calculation assigns a 90-mile-equivalent reduction in route impedance. The assumed route improvement that helps generate diversion in Mr. Hunt's model is therefore untethered from the service Applicants plan to operate.

The CPKC Operating Experts explain that these examples are illustrative. They further show that the Growth Plan consistently assumes longer and /or slower post-merger performance than Mr. Hunt assumes.[256]

163. Even where Applicants' Operating Plan identifies specific new intermodal trains, the CPKC Operating Experts show that those trains will not achieve Applicants' advertised transit times.[257] Table 5 shows that, for four illustrative proposed trains, the CPKC Operating Experts' estimated transit times based on actual UP and NS historical train performance and

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255 CPKC Operating Experts VS, ¶¶ 369–371, 374–375.

256 CPKC Operating Experts VS, Section V.C.

257 *See* CPKC Operating Experts VS, Section IV.C & Figure 22 (estimating transit times from historical train performance and allowances for planned work and crew changes). Their review of Applicants' MultiRail train-detail schedules identifies, among other examples, material differences between the advertised and underlying scheduled transit times for the proposed [redacted] services.

allowances based on historical data for planned work and crew changes are approximately [redacted] to [redacted] percent longer than the times presented by Applicants.

TABLE 5: PLANNED TRANSIT TIMES FOR NEW TRAINS IN OPTIMIZED PLAN COMPARED WITH TRANSIT TIMES ESTIMATED FROM HISTORICAL PERFORMANCE

[redacted]

Sources and Notes: *See* CPKC Operating Experts VS, Figure 160.

[A]: Optimized Plan train symbol and corridor.

[B]: Track time is the elapsed time in the car event data between departure from the origin and arrival at the destination, excluding dwell, and is calculated separately for each leg. Where possible, the CPKC Operating Experts used the historical train symbols whose schedules the Applicants cited in the Gehringer and Orr VS Workpaper, "Transcon Lane Level Transit Time & Comps.xlsx." The endpoints used for these historical comparisons sometimes differ slightly from those of the corresponding new train services.

[C]: The number of work events for each train is obtained from MultiRail table TrainExpandedRoute and multiplied by the average dwell at UP or NS work events for historical intermodal traffic.

[D]: The number of crew changes for each train is obtained from MultiRail table TrainExpandedRoute. The CPKC Operating Experts assume each crew change takes 20 minutes. When a crew change coincides with a work event lasting more than 20 minutes, the CPKC Operating Experts add no dwell time beyond the work event's duration.

[E]: [B] + [C] + [D].

[F]: Transit time for new service based on Gehringer and Orr VS Workpaper, "Transcon Lane Level Transit Time & Comps.xlsx."

[G]: [E] / [F] x 100.

164. Applicants claim, for example, that the proposed Southern California–Northeast trains would save approximately 17 hours eastbound and 19 hours westbound.[258] The CPKC Operating Experts show that, based on historical speeds in the relevant corridors, the planned times are unrealistic, and that applying more realistic speeds increases Applicants' planned times by approximately [redacted] and [redacted] hours, respectively.[259] Applying realistic train performance thus eliminates nearly all of Applicants' claimed transit-time savings in both directions.

165. The Meridian Speedway provides an especially stark illustration of the gap between Mr. Hunt's assumed improvements and real-world service levels. Approximately 14 percent of Mr. Hunt's predicted truck-to-intermodal diversions, or 172,465 units, rely on his assumed but unfounded Meridian Speedway service improvement.[260] UP, CPKC, and NS already provide coordinated intermodal service between California and the Southeast. As discussed in Section IV.D.1, Applicants' benchmarking data show that several of these interline services are among [redacted][261] My analysis of Applicants' 2023 container-event data found that nine of the twelve directional movements using this coordinated service had average dwell of less than three hours at each operational handoff.[262] The physical interchanges at Shreveport and Meridian would

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258 *See* Amended Application, Vol. 1, pp. 60–61; *See also*, Hunt VS, Section 7.1 & Exhibit 7-4 (describing additional planned intermodal service improvements).

259 CPKC Operating Experts VS, Figure 22 (estimating [redacted] hours for ZLCCX versus Applicants' [redacted] hours, and [redacted] hours for ZHBLC versus Applicants' [redacted] hours).

260 I identify markets with at least 100 observed UP-NS intermodal units traveling via the Meridian Speedway, based on routes containing "SHRPT" in the Traffic Tapes. I then calculate the share of Mr. Hunt's predicted truck-to-intermodal diversions associated with those markets. *See* Script "01A_MSLLC_markets.R"; Workpaper "T2R_Intermodal_Exhibits.xlsx."

261 *See* CPKC Operating Experts VS, Section VIII.B.2 and Figures 145–146.

262 *See* Section IV.D.1; Powers Transit Time VS, Appendix A, Figures 2, 4, and 6–12. Each figure examines containers on the most common train sequence for its directional lane.

remain after the merger, and Applicants have not identified an operational change at either location that would account for the improvements Mr. Hunt assumes.[263] Mr. Hunt nevertheless reduces the route's impedance from 180 to 90 mile-equivalents, removing a 90-mile penalty that he describes as approximately three hours of crew-change time. In a separate step, his transit time calculation assumes one fewer interchange and a reduction of approximately 22 hours.[264] That reduction is more than seven times the number of hours associated with the removed impedance penalty. Mr. Hunt testified that [redacted], and that [redacted].[265] Applicants have identified no operating change that would account for the modeled 22-hour reduction. Approximately 14 percent of his predicted truck-to-intermodal diversions thus rely on an unfounded and internally inconsistent treatment of Meridian Speedway service improvement: Applicants have identified no operational change supporting either the approximately three-hour impedance adjustment or the 22-hour transit-time reduction.

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263 *See* CPKC Operating Experts VS, Sections VIII.B and VIII.C, and Deposition of David T. Hunt, Vol. II, October 8, 2026, 688:5–692:20.

264 *See* Hunt VS, pp. 109–110, 126, 140 & Exhibit B-13. Mr. Hunt assigns the Meridian Speedway route an impedance of 180 mile-equivalents before the merger and 90 afterward; his intermodal transit-time calculation also assigns 22 hours of dwell to an interchange.

265 Mr. Hunt testified that he reduced the impedance along the Meridian Speedway simply because the number of railroads, as distinct from the number of interchanges, involved in the move would fall by one. *See* Deposition of David T. Hunt, Vol. II, October 8, 2026, 688:5–692:20. Mr. McClellan, the chief strategy officer at NS, testified in his deposition that the [redacted] along the Meridian Speedway. Deposition of Michael R. McClellan, October 9, 2026, 15:10–12, 347:16–348:1. Mr. Gehringer, UP's Vice President of Operations, similarly testified that the physical haulage currently performed by CPKC between Shreveport and Meridian will be similar post-merger to today. *See* Deposition of Eric Gehringer, October 13, 2026, 304:16–24.

b. Applicants' Planned Service Depends on the Traffic Growth it is Invoked to Explain

166. As summarized in Figure 42, Mr. Hunt's service rationale for projected intermodal growth is circular: he points to improved service to explain the growth, while Applicants rely on that growth to support the planned service. Mr. Hunt begins with the premise that single-line service and fewer interchanges will improve service characteristics and therefore attract traffic to UP-NS.[266] Applicants then incorporate his predicted diversions into the Growth Plan. The CPKC Operating Experts explain that new Growth Plan train services are almost entirely dependent on these diverted volumes for sufficient density.[267] In Section 7 of his statement, Mr. Hunt points to those planned trains and their improved transit times when discussing how the predicted traffic would be served.[268] The forecast traffic thus helps justify certain planned services, which Mr. Hunt then cites to illustrate how Applicants propose to serve that traffic. Those plans do not independently establish that the forecast traffic will materialize. If the expected traffic does not materialize, the CPKC Operating Experts explain that UP-NS will need to combine trains, reduce frequency, hold traffic while volume accumulates, or otherwise modify the planned service.[269] Those changes could alter the quality and availability of the service Applicants cite in explaining their projected traffic growth.

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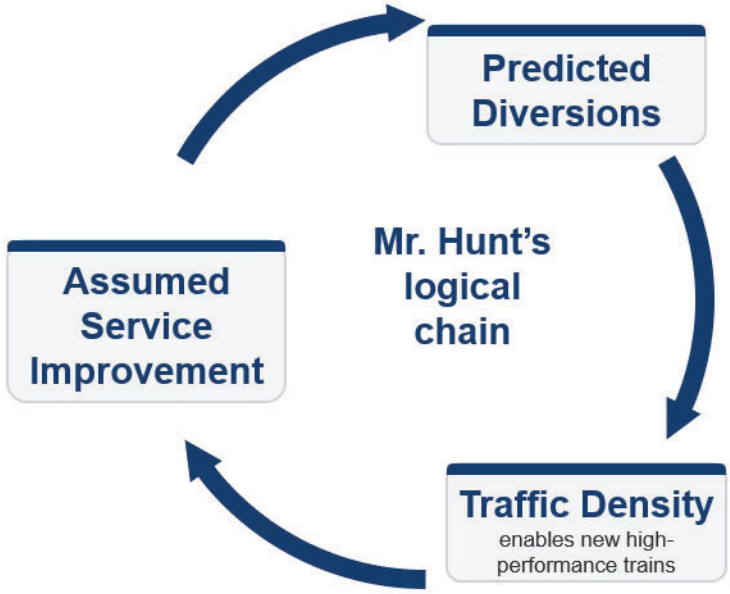
266 *See* Amended Application, Vol. 1, pp. 60–61; Hunt VS, pp. 58–59.

267 *See* CPKC Operating Experts VS, Section V.D (explaining that Applicants use projected merger-related traffic to create the density needed to support new train pairs and other service improvements).

268 Amended Application, Vol. 1, pp. 19, 57, 60–61; Hunt VS, pp. 86–90 & Exhibit 7-4.

269 *See* CPKC Operating Experts VS, Sections IV.B and V.D (discussing changes to train service if traffic does not provide sufficient density).

FIGURE 42: MR. HUNT INVOKES SERVICE IMPROVEMENTS ENABLED BY HIS PREDICTED DIVERSION AS SUPPORT FOR THAT SAME DIVERSION



Mr. Hunt cites the projected performance of trains that **depend on the traffic his model predicts**

167. Starting with assumed service improvements does not resolve the concern: Mr. Hunt has not established that the improvements motivating his diversion forecast require a merger, as discussed in Sections IV.D and V.B.3.a. Starting instead with the Growth Plan's new trains does not independently validate the forecast, because those trains depend on the predicted diversion for sufficient traffic density. Mr. Hunt's diversion analysis does not test whether the planned services Applicants invoke to support the forecast would remain commercially and operationally sustainable if the predicted traffic is lower, develops more slowly, or materializes in different lanes. As the CPKC Operating Experts explain, some new train services in the Growth Plan have questionable density even if diversions materialize as Applicants predict.[270]

[270] *See* CPKC Operating Experts VS, Section V.B.

They further explain that all of the new intermodal train services proposed in the Growth Plan depend heavily, and in some cases almost entirely, on diversion traffic; if that traffic falls short, Applicants will not run the new trains as planned.[271] This circularity concerns Mr. Hunt's stated service rationale for the forecast, which differs from the mechanics of *how* his model generates diversions, as discussed in Section V.B.4.d.

c. The Truck-to-Intermodal Model Relies on the Same Generic Interchange-Dwell Assumption Discussed Above

168. Similar to Mr. Hunt's carload model (analyzed in Section V.A.3.b), in the intermodal analysis Mr. Hunt also assumes that removing an interchange will remove approximately 22 hours of dwell time regardless of the future market or interchange in question. This 22-hour transit-time assumption is not derived from a measure of delay caused by an interline interchange. As discussed in Section V.A.3.b, Mr. Hunt derives the value from system-wide terminal-dwell statistics reported by the Class I railroads.[272] Those statistics measure time spent at reported terminals across rail networks, not just those involving an interchange. The array of work performed at those terminals is broad, including classification, blocking, switching, crew changes, and other terminal work. They therefore do not measure the incremental delay caused by transferring a movement between two railroads. A systemwide average of terminal dwell provides no meaningful basis for concluding that eliminating an interchange on a particular intermodal route will reduce transit time by approximately 22 hours.

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271 *See* CPKC Operating Experts VS, Section V.D. This same critique also applies to the new manifest train services in the Growth Plan.

272 *See* Hunt VS, Exhibit B-13, p. 140; Hunt Workpaper, "truck_to_im_vFinal.py," line 81 and lines 1487–1488.

169. This concern is distinct from whether Applicants can operate the trains and transit times in the Growth Plan, as discussed in Section V.B.3.a. Even if they could, those planned transit times do not establish the 22-hour saving Mr. Hunt uses in his diversion calculation. For example, I understand that the CPKC Operating Experts have analyzed the dwell time Mr. Hunt assumed for post-merger routes for truck-to-intermodal diversions between Minneapolis and Cincinnati. They found that the planned route in the Operating Plan is far longer than the route assumed by Mr. Hunt, and it includes [redacted] block swaps.[273] They found that Mr. Hunt omitted as much as [redacted] hours of dwell time resulting from these block swaps even before considering the shorter route length assumed by Mr. Hunt.[274] Across all intermodal diversions included in the Growth Plan, the CPKC Operating Experts find an average of [redacted] intermediate handlings per container and estimate [redacted] to [redacted] hours of additional work-event dwell per container, depending on the dwell time assumed for those handlings.[275] Rather than measuring the change in transit time for the particular service Applicants propose, his model applies that generic adjustment to *all* modeled interchanges, including on routes with coordinated run-through service where my prior analysis found that the actual handoff dwell was less than three hours.[276]

4. Diagnostics of the Truck-to-Intermodal Model Show That Mr. Hunt Significantly Overstates Merger-Related Diversion

170. In this section, I assess Mr. Hunt's truck-to-intermodal model using four diagnostics. Together and along with the problems already discussed, these diagnostics show that

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273 *See* CPKC Operating Expert VS, Section V.C and Figure 87.

274 *See* CPKC Operating Expert VS, Section V.C and Figure 88.

275 *See* CPKC Operating Expert VS, Section V.C and Figure 90.

276 *See* Hunt VS, p. 140; Hunt Workpaper, "truck_to_im_vFinal.py," lines 1470–1515, which assumes 21.74 hours of dwell time per railroad interchange.

the model materially overstates merger-related diversion and expose related flaws that undermine its reliability:

- The model predicts substantial diversion when its modeled merger-related changes are removed;
- Most predicted diversion occurs in markets that do not meet Mr. Hunt's own stated conditions for strong intermodal competitiveness;
- More favorable modeled price or transit time does not consistently correspond to higher intermodal share; and
- Despite Mr. Hunt invoking service improvements to explain predicted diversion, his intermodal diversion total changes by only 0.15 percent across large changes in the assumed interchange delay.

a. Mr. Hunt's Framework Predicts Substantial Diversion Even When the Modeled Merger-Related Changes are Removed

171. As I explained in Section V.A.4.a in the context of his truck-to-carload model, a diversion study should not predict traffic diversions when there would be no change in any relevant factor determining shippers' choice of transportation options. If it does, then it is likely that there are omitted factors or other artifacts of the methodology that confound the results, and the study is unreliable. I find that, just as his truck-to-carload model fails this standard "no-change" diagnostic test, so too does his truck-to-intermodal model.

172. Specifically, I apply Mr. Hunt's lookalike methodology after removing the merger-induced changes he claims by holding constant at pre-merger levels all modeled characteristics on which he bases his archetypes—namely, single-line status, intermodal mileage, intermodal transit time relative to truck, and intermodal price relative to truck. Mr. Hunt's truck-to-intermodal methodology fails this no-change test: it predicts substantial intermodal share gains, and therefore diversions, even when there is no claimed merger-related change. Figure 43 illustrates Mr. Hunt's predicted intermodal shares for five diversion markets with substantial

predicted diversions. For each diversion market, the figure shows the current intermodal share ("Current Share"), the share Mr. Hunt's framework assigns using pre-merger market characteristics ("No-Change Share"), and his reported post-merger prediction ("Hunt Share"). For each of these diversion markets, Mr. Hunt's framework predicts a substantial increase over the observed intermodal share even when the diversion market is assigned an archetype using its pre-merger characteristics. For example, the observed intermodal share in the [redacted] diversion market is [redacted] percent. The no-change diagnostic predicts an increase from [redacted] to [redacted] percent, accounting for more than half of the share gain implicit in Mr. Hunt's predicted [redacted] percent share.

FIGURE 43: MR. HUNT'S FRAMEWORK PREDICTS LARGE INTERMODAL SHARE INCREASES EVEN WITHOUT MODELED SERVICE CHANGES



Sources and Notes: Five diversion markets that rank among the largest predicted diversions across the "no-change" exercises. "Current Share" equals intermodal units divided by total units in Mr. Hunt's future-state dataset. "No-Change Share" equals the intermodal share associated with the archetype assigned using current-state characteristics. "Hunt Share" equals Mr. Hunt's predicted intermodal share based on the archetype assigned using future-state characteristics. *See* Script "02B_2_diversions_no_change.R"; Workpaper "T2R_Intermodal_Exhibits.xlsx."

173. Figure 43 illustrates the no-change share gains in selected diversion markets. To assess the aggregate or average "no-change" effect across the full set of future markets, I must apply those shares to an estimate of addressable truck traffic. As discussed in Section V.B.1, and in contrast to his truck-to-carload model, Mr. Hunt's modeled post-merger service affects both

the benchmark share assigned to a future market and the amount of addressable truck traffic. He applies the benchmark share to addressable truck traffic, so both inputs affect his calculated diversions. However, the current and future addressable markets using differ in part because Mr. Hunt applies different eligibility screen and market-assignment rules in constructing them.[277] Those methodological differences can change how much truck traffic is counted as addressable even without a modeled service improvement.[278] His calculation can therefore attribute diversions to the merger that arise from how the addressable market is constructed, rather than from assumed improvements in rail service. As a result, a diagnostic that rebuilds the addressable market size under pre-merger conditions necessarily changes other features of his current-state construction, while retaining his post-merger addressable traffic also retains some assumed and modeled effects of the merger that impact the addressable truck traffic but not the intermodal shares per se.[279] I therefore report aggregated results of the no-change test for Mr. Hunt's truck-to-intermodal model once using each of Mr. Hunt's two sets of estimated addressable truck traffic.

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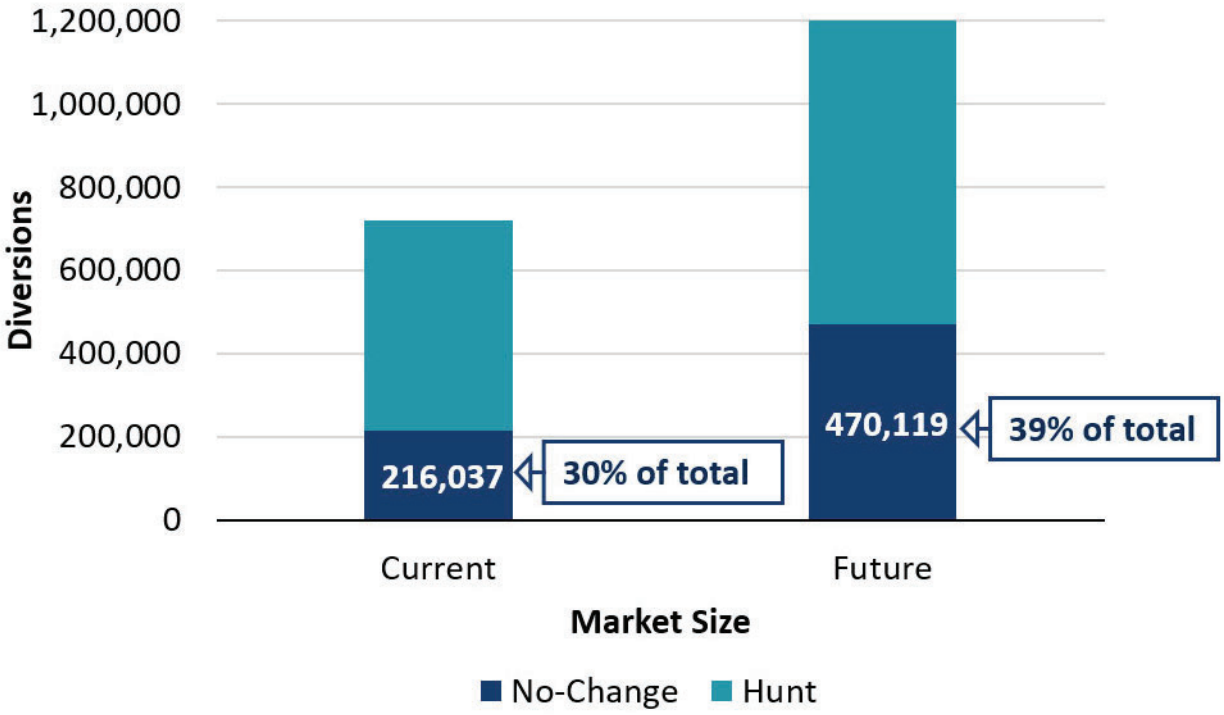
277 *See* footnote 220.

278 Mr. Hunt assigns each truck movement only to terminal-market pairs available in the service network for that state. His current-state screen, however, is based on intermodal volume, not on whether a pair has rail service. Pairs with existing intermodal service but fewer than 3,650 annual units are therefore unavailable in the current state but available in the future state. A truck movement may thus be assigned to such a pair, and counted as addressable, only in the future state, even though the pair already had a pre-merger rail route. Mr. Hunt's market-specific inclusions and exclusions, which apply only to the future state, further change which pairs are available, and therefore how truck traffic is assigned. *See* Hunt VS, pp. 61, 128–131; footnote 220.

279 Some terminal-market pairs with positive future diversions do not appear in the current-state dataset used in Mr. Hunt's workpapers. Mr. Hunt's script excludes terminal-market pairs with fewer than 3,650 annual intermodal units, while the future state can include additional potential intermodal markets. *See* Hunt Workpaper, "truck_to_im_vFinal.py," lines 1876–1880. To obtain pre-merger characteristics for the same diversion markets, I rerun the current-state analysis without the 3,650-unit threshold. This modification allows the diagnostic to evaluate the future markets using pre-merger characteristics, but it also changes the set of current markets generated by Mr. Hunt's methodology. *See* "01_market_assignment.py"; "01B_current_routes_no_IM_minimum.R."

174. Figure 44 compares the diversions predicted by Mr. Hunt's model under the no-change diagnostics discussed above with those predicted when retaining his assumed post-merger service improvements. The left bar (labeled "Current") holds the addressable truck market at pre-merger levels, while the right bar ("Future") uses the addressable truck market under Mr. Hunt's post-merger assumptions. For each market size, the total height of the bar represents predicted diversions when retaining Mr. Hunt's assumed post-merger rail service improvements. The dark blue portion represents diversions under the corresponding no-change diagnostic, which assigns benchmark intermodal shares based on pre-merger service characteristics. The upper portion represents the additional diversions predicted when applying benchmark shares based on post-merger service characteristics while holding market size constant.

FIGURE 44: MR. HUNT'S MODEL PREDICTS SUBSTANTIAL TRUCK-TO-INTERMODAL DIVERSIONS EVEN WITHOUT ASSUMED POST-MERGER SERVICE CHANGES



Sources and Notes: The figure compares predicted truck-to-intermodal diversions under different combinations of addressable market size and benchmark intermodal shares. "Current Market Size" uses truck and intermodal volumes from a modified current-state market assignment that removes Mr. Hunt's 3,650-unit minimum existing intermodal volume requirement. *See* Scripts "01_market_assignment.py" and "01B_current_routes_no_IM_minimum.R." "Future Market Size" uses the addressable truck market size constructed under Mr. Hunt's post-merger routing and future-state market assignment. "Current Shares" assigns benchmark intermodal shares based on current-state rail service characteristics, while "Future Shares" assigns shares based on modeled future-state characteristics. For each market-size assumption, the lower portion of the bar shows diversions calculated using current shares, and the upper portion shows the increase from applying future shares. The total height represents diversions calculated using future shares. All scenarios retain Mr. Hunt's other applicable diversion calculations and operational adjustments. *See* Scripts "02B_1_IANA_prices.R," "02B_2_diversions_no_change.R," "02C_diversions_current_size.R," "02D_diversions_no_change_current_size.R"; Workpaper "T2R_Intermodal_Exhibits.xlsx."

175. Figure 44 exposes the same fundamental attribution error found in Mr. Hunt's truck-to-carload model: a substantial portion of the truck-to-intermodal diversion he reports

reflects gaps between observed shares and the shares his framework predicts under pre-merger service characteristics. Using Mr. Hunt's future addressable truck traffic, the no-change calculation nonsensically predicts 470,119 diversions, or 39 percent of Mr. Hunt's reported total.[280] Using Mr. Hunt's measure of the current addressable truck traffic, the model again predicts diversion despite the absence of modeled service changes: 216,037 diversions, or 30 percent of the amount his model predicts when post-merger benchmark shares are applied to the same addressable market size estimates.[281] Neither result represents traffic that I predict would divert without the merger, and neither establishes that the remaining predicted diversion is valid. Both show that Mr. Hunt counts substantial pre-existing gaps between observed and model-predicted intermodal shares as merger-related diversion, contrary to the principle he invoked in defending his rail-to-rail model and confirmed in his deposition.[282]

176. These findings expose a fundamental problem with Mr. Hunt's methodology. As discussed in Section V.A.4.a, a difference between a market's observed pre-merger rail modal share and the average share of markets with similar values on a limited set of pre-merger

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280 *See* Script "02B_2_diversions_no_change.R"; Workpaper "T2R_Intermodal_Exhibits.xlsx."

281 *See* Script "02D_diversions_no_change_current_size.R"; Workpaper "T2R_Intermodal_Exhibits.xlsx." As discussed above, reconstructing the addressable truck market size using pre-merger characteristics requires rerunning Mr. Hunt's current-state analysis without the 3,650-unit threshold. Accordingly, this diagnostic removes modeled post-merger routing changes while also modifying Mr. Hunt's current-state construction. *See* "02D_diversions_no_change_current_size.R."

282 As I highlighted in Section V.A.4.a, Mr. Hunt agreed in his deposition that he would not know why pre-merger rail shares in his diversion markets may be below the average rail share of markets with similar characteristics, but that such differences could not be attributable to the merger. *See* Deposition of David T. Hunt, Vol. II, October 8, 2026, 623:18–624:21. In Section 2 of his VS, Mr. Hunt likewise explains, in defending his rail-to-rail model, that comparing a modeled post-merger outcome with observed pre-merger traffic would incorrectly attribute unexplained differences between the modeled baseline and actual traffic to the merger. *See* Hunt VS, pp. 9–11.

characteristics does not measure the effect of the merger.[283] Mr. Hunt nevertheless treats positive differences between observed intermodal traffic and the traffic implied by his assigned benchmark shares as merger-related diversions, without accounting for the differences his model would predict under pre-merger conditions. These no-change diagnostics show that hundreds of thousands of the truck-to-intermodal diversions claimed by Mr. Hunt are an artifact of the methodology rather than any claimed merger-induced improvement, and fundamentally undermine the predictive value of his model, even setting aside its other flaws.

b. Mr. Hunt's Own Competitiveness Benchmark is Inconsistent with Existing Traffic and His Model's Predicted Diversions

177. Mr. Hunt identifies price and transit time as important dimensions of his intermodal archetypes. He also states that a shipper is likely to strongly consider intermodal as a competitive substitute for truck when intermodal is no more than one day slower than truck and at least 10 percent less expensive.[284] He uses those thresholds to help define the price and transit time bins in his archetype framework and, in turn, to determine which current markets contribute to the benchmark intermodal share for future markets.[285] Yet, as shown in Table 6,

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283 *See* discussion in Section V.A.4.a, including footnote 195. A related issue is that, as described in Section V.B.1 and V.A.4.b, Mr. Hunt's framework moves future markets with below-benchmark observed intermodal shares toward the average share of matched current markets but does not make an offsetting adjustment when a future market's observed share already exceeds the applicable benchmark. As a consequence, Mr. Hunt applies his lookalike methodology asymmetrically: the methodology effectively preserves existing high intermodal shares while allowing below-benchmark future markets to move upward toward their assigned averages. Seven future markets with UP-NS access and improved impedance post-merger are assigned benchmark intermodal shares below their observed pre-merger intermodal shares, implying reductions totaling [redacted] units if Mr. Hunt's benchmark methodology were applied symmetrically. Using the abbreviated terminal-market names, these are [redacted]. *See* Script "02F_diversions_negative.R" and Workpaper "T2R_Intermodal_Exhibits.xlsx."

284 Hunt VS, p. 138.

285 *See* Section V.B.1 (describing Mr. Hunt's intermodal archetype construction); Hunt VS, pp. 138–141.

approximately 94 percent of existing intermodal units are in current markets that do not satisfy Mr. Hunt's competitiveness benchmark, while approximately 85 percent of his predicted diversions occur in future markets that also do not satisfy it.[286] Thus, the price and transit time conditions Mr. Hunt identifies as making intermodal particularly competitive with truck are neither necessary to explain most existing intermodal traffic nor satisfied in the future markets accounting for most of his predicted diversions.

TABLE 6: MOST PREDICTED DIVERSIONS AND CURRENT INTERMODAL TRAFFIC OCCUR IN DIVERSION AND CURRENT MARKETS THAT FAIL MR. HUNT'S OWN COMPETITIVENESS BENCHMARK

Market Type		Current Markets		Diversion Markets	
		Markets [A]	IM Units [B]	Markets [C]	Diversions [D]
Competitive	[1]	23	275,240	25	183,405
Total	[2]	223	4,592,278	146	1,200,854
Share That Are Not Competitive	[3]	89.7%	94.0%	82.9%	84.7%

Sources and Notes: *See* Workpaper "T2R_Intermodal_Exhibits.xlsx."

[A] and [B]: Current markets in Mr. Hunt's current-state dataset. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Current_IM_routes.'

[C] and [D]: Diversion markets. Mr. Hunt reports diversions after applying operational considerations only at the Operating Plan level. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Future_UPNS_TerminalTerminal2.' I identify diversion markets by replicating his calculation in Script "02A_diversions_replication.R." *See* Workpaper, "div_markets_with_vars.xlsx."

[286] Based on analysis of Mr. Hunt's current- and future-state intermodal datasets. I classify current and diversion markets as satisfying Mr. Hunt's competitiveness benchmark when intermodal transit time is no more than 24 hours slower than truck and intermodal price is at least 10 percent lower than truck. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tabs 'Current_IM_routes' and 'Future'; Workpaper "T2R_Intermodal_Exhibits.xlsx."

[1]: Mr. Hunt characterizes intermodal service as competitive when its transit time exceeds truck transit time by no more than one day and its price is at least 10 percent below the truck price. *See* Hunt VS, p. 138.
[3]: 1 - [1] / [2].

178. These findings reveal a fundamental inconsistency between Mr. Hunt's stated conditions for intermodal competitiveness and the price and transit time characteristics his model assigns to markets with substantial existing intermodal traffic. Either his stated conditions do not adequately describe when intermodal competes with truck, his modeled price and transit time measures do not accurately capture the conditions shippers face, or both. In either case, Mr. Hunt has not established that crossing the 24-hour or 10-percent threshold corresponds to a meaningful difference in intermodal competitiveness. This inconsistency undermines his use of those thresholds as dividing lines between archetypes whose benchmark shares determine predicted diversions.

c. Predicted Intermodal Shares Do Not Consistently Respond to More Favorable Model Price and Model Transit Time

179. Mr. Hunt's archetypes permit a basic directional test: holding his other archetype characteristics constant, does a more favorable modeled price or transit time correspond to a higher observed intermodal share? They fail that test. Holding his other archetype characteristics constant, more favorable modeled price or transit time can correspond to a lower, rather than higher, observed intermodal share. These reversals show that factors omitted from Mr. Hunt's model meaningfully impact the intermodal shares on which his predictions depend.[287]

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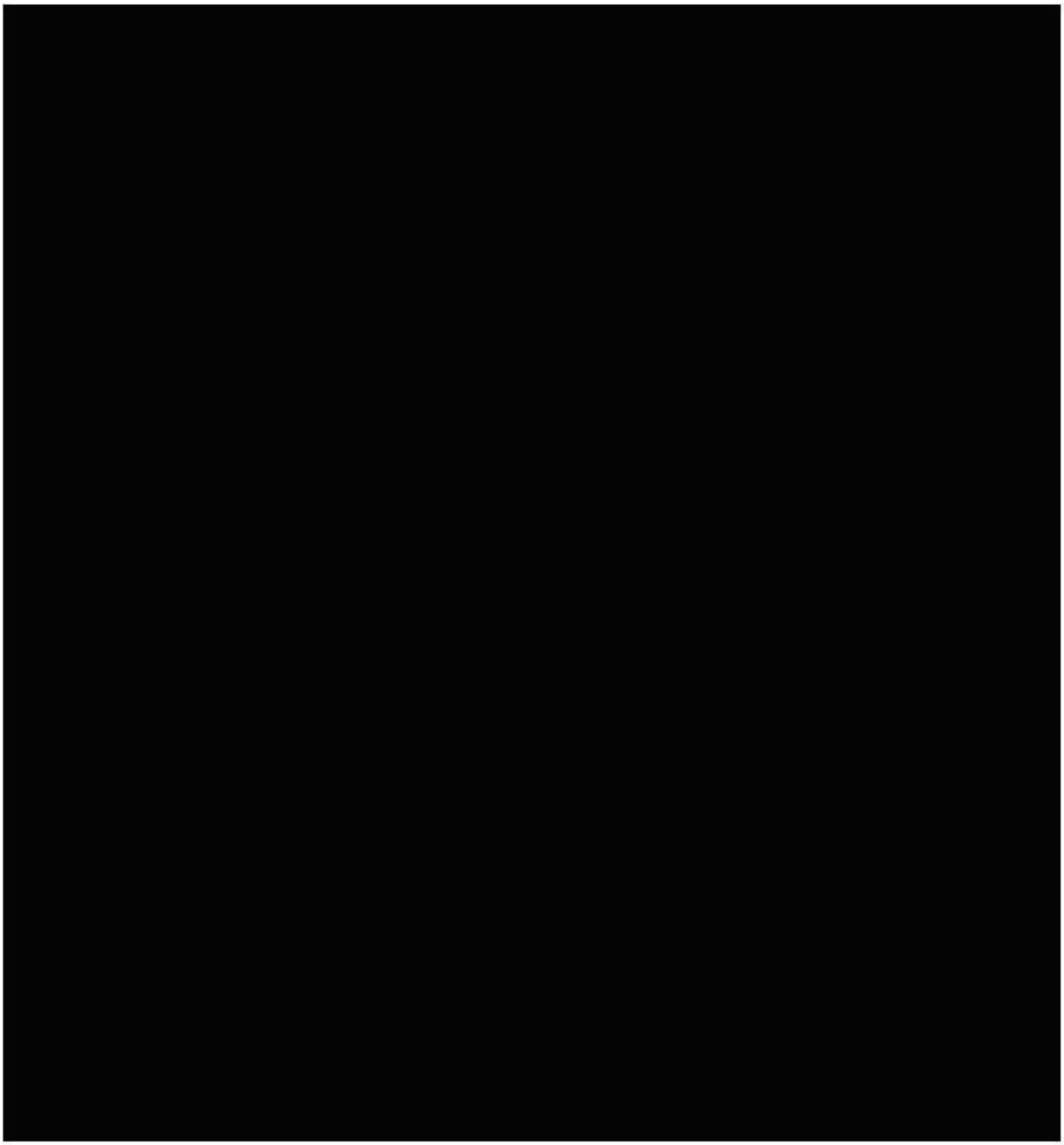
[287] Mr. Hunt attributes the higher intermodal shares observed in single-line current markets to the additional time, variability, and cost associated with interline service, and separately identifies lower pricing as a reason shippers choose single-line service when both single-line and interline options are available. *See* Hunt VS, pp. 30–31 (describing price, reliability, and transit time as the "core factors" driving shipper mode and route choice). When the worse-priced archetype has a higher observed

180. Figure 45 below shows the average intermodal share for current markets that match the characteristics of certain archetypes. I select groups for which at least two archetypes are assigned to diversion markets with positive predicted diversions, so the comparison focuses on archetype combinations that directly affect Mr. Hunt's diversion estimates. Average intermodal share rises with the modeled price advantage in only one comparison shown. In the others, a more favorable price either has no consistent relationship with intermodal share or corresponds to a lower share. Mr. Hunt's price-group override obscures this pattern in the assigned benchmark shares: when a less favorably priced archetype with at least three current markets has a higher observed share, he substitutes that higher share for the share of the better-priced archetype.[288]

intermodal share, that reversal raises a question about whether Mr. Hunt's archetypes capture the factors driving intermodal participation. His override does not resolve that question. Instead, it raises the benchmark for the better-priced archetype to the higher observed share. Lowering the benchmark for the worse-priced archetype would also restore his presumed price ordering. I do not propose either adjustment as a corrected prediction; the point is that his one-sided rule chooses the adjustment that increases predicted diversion without addressing the underlying lack of fit.

[288] *See* Section V.B.2.e.

FIGURE 45: INTERMODAL SHARE DOES NOT CONSISTENTLY INCREASE AS MODELED PRICE BECOMES MORE FAVORABLE



Sources and Notes: Each panel holds single-line status, length-of-haul bin, and transit time bin fixed and compares observed intermodal shares across price bins. Intermodal shares are calculated from exact matches on all four archetype characteristics and do not reflect Mr. Hunt's fallback or price group override rules. The figure shows the groups in which at least two archetypes have an observed intermodal share and are assigned to diversion markets with positive predicted truck-to-intermodal diversions. Navy bars identify archetypes assigned to at least one such diversion

market; teal bars identify archetypes that are not. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Segmentation;' Workpaper "T2R_Intermodal_Exhibits.xlsx."

181. Figure 46 shows the same problem for transit time: holding the other archetype characteristics fixed, faster modeled intermodal service can correspond to either a higher or a lower observed intermodal share.[289]

FIGURE 46: INTERMODAL SHARE DOES NOT CONSISTENTLY INCREASE AS MODELED TRANSIT TIME BECOMES MORE FAVORABLE



Sources and Notes: Each panel holds single-line status, length-of-haul bin, and price bin fixed and compares observed intermodal shares across transit time bins. T+24 indicates intermodal transit time no more than 24 hours longer than truck transit time; T+72 indicates intermodal transit time more than 24 but no more than 72 hours longer. Intermodal shares are calculated from exact matches on all four archetype characteristics and do not reflect Mr. Hunt's fallback or price group override rules. The figure shows the groups in which both archetypes have an observed intermodal share and are assigned to diversion markets with positive predicted truck-to-intermodal diversions. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Segmentation;' Workpaper "T2R_Intermodal_Exhibits.xlsx."

[289] I hold junction count, mileage bin, and price bin fixed and compare archetypes that differ only in transit time. Among the archetypes assigned to future markets with positive predicted diversions, only two groups contain more than one transit time category. This is consistent with Mr. Hunt's transit time methodology because modeled intermodal transit time is largely determined by mileage and junction count. Future markets within the same mileage and junction categories therefore tend to fall into the same transit time category. *See* Workpaper "T2R_Intermodal_Exhibits.xlsx."

182. These price and transit-time comparisons reinforce the central problem with Mr. Hunt's lookalike methodology. Differences between archetype averages reflect factors beyond the single-line status, mileage, transit time, and price he models. The omitted factors undermine the premise that differences between archetype shares reveal how shippers respond to changes in price or transit time. Without that premise, moving a market from one archetype to another cannot establish the merger-related diversion Mr. Hunt predicts.

d. Predicted Diversions are Insensitive to the Magnitude of the Assumed Interchange-Dwell Improvement

183. As I explained in Section V.A.4.c in the context of the carload model, Mr. Hunt presents the elimination of interchange delay, and the resulting transit-time improvement, as one basis for his predicted carload diversions.[290] However, as with his carload model, his aggregate diversion estimate is practically unaffected by the size of his modeled service improvements. In other words, Mr. Hunt's framework predicts approximately the same amount of diversion regardless of the assumed interchange delay.

184. Table 7 below demonstrates this finding. It shows the diversion predicted by Mr. Hunt's intermodal model for assumed interchange dwell times ranging from zero to twice Mr. Hunt's approximately 22-hour value, while otherwise retaining his methodology. Across the entire range of assumed dwell times, the predicted diversions vary by just 0.15 percent of Mr. Hunt's reported intermodal diversions.

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[290] Mr. Hunt assumes 22 hours of dwell for each interchange when calculating intermodal transit time and uses transit time relative to truck as one of the characteristics defining his intermodal archetypes. He also states that post-merger service improvements can shift future markets with existing intermodal traffic from one archetype to another. *See* Hunt VS, pp. 58–59, 138–140.

TABLE 7: INTERMODAL DIVERSION ESTIMATES ARE INSENSITIVE TO INTERCHANGE DWELL TIME PENALTY

Dwell Time [A]		Diversions [B]	Change from Hunt's Diversions (%) [C]
Zero Hours	[1]	1,201,747	0.07%
50% of Hunt's Dwell Time	[2]	1,202,619	0.15%
Hunt's Dwell Time (22 hours)	[3]	1,200,854	–
150% of Hunt's Dwell Time	[4]	1,201,016	0.01%
200% of Hunt's Dwell Time	[5]	1,201,016	0.01%

Sources and Notes: *See* Script "02E_diversions_vary_dwell.R" and Workpaper "T2R_Intermodal_Exhibits.xlsx."

[A]: Assumed interchange dwell time used to calculate intermodal transit time. Mr. Hunt uses 21.74 hours of dwell per junction. *See* Hunt Workpaper, "truck_to_im_vFinal.py," lines 81, 1483–1488. For each alternative, I retain the same current and future intermodal terminal markets and change the dwell time assigned to interline service in both sets.

[B]: Predicted diversions under each dwell time assumption.

[C]: ([B] / [B][3]) – 1.

185. The insensitivity of Mr. Hunt's model is also apparent at the individual diversion market level. Table 8 illustrates this result for several diversion markets with large predicted diversions.[291] These diversion markets start with different intermodal shares and experience different modeled service changes, yet Mr. Hunt predicts the same post-merger intermodal share for each of them. Table 8 therefore shows that Mr. Hunt's model does *not* translate differences in the magnitude of the price and service changes he identifies as central to shipper choice into corresponding differences in predicted post-merger shares. Consistent with these results, Mr.

[291] Table 8 shows diversion markets with the largest predicted diversions among those that appear in both Mr. Hunt's current and future-state datasets. The table reports each market's current intermodal share, modeled changes in intermodal price and transit time relative to truck, and predicted future intermodal share.

Hunt testified at his deposition that his model [redacted]

[redacted].[292]

TABLE 8: MODELED SERVICE CHANGES LEAD TO SIMILAR PREDICTED INTERMODAL SHARES ACROSS SELECTED DIVERSION MARKETS

[redacted]

Sources and Notes: *See* Script "02_prepare_markets.R"; Workpaper "T2R_Intermodal_Exhibits.xlsx."

The ten diversion markets with the largest predicted truck-to-intermodal diversions among those included in both Mr. Hunt's current-state and future-state datasets. Each is an interline current market that Mr. Hunt assigns post-merger to the single-line archetype with at least 2,000 intermodal miles, intermodal transit time no more than 24 hours longer than truck transit time, and intermodal prices within 10 percent of truck prices. *See* Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tabs 'Current_IM_routes' and 'Future.'

[A] and [B]: Abbreviated terminal market names.

[C], [E], [G]: Observed characteristics of the corresponding current market. See Script "02_prepare_markets.R"; Workpaper "current_markets.xlsx."

[D], [F], [H]: Diversion markets. *See* Scripts "02A_diversions_replication.R" and "02_prepare_markets.R"; Workpaper, "div_markets_with_vars.xlsx."

[C] and [D]: (Modeled intermodal price - truck price) / truck price. Negative values indicate that the intermodal price is below the truck price.

[E] and [F]: Modeled intermodal transit hours - truck transit hours.

[G]: Observed intermodal units / observed total units.

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[292] *See* Deposition of David T. Hunt, Vol. I, October 7, 2026, 340:24–341:5.

[H]: Mr. Hunt's predicted benchmark intermodal share used to calculate diversions.

[10]: The post-merger price falls in Mr. Hunt's price bin of at least 10 percent below truck. Mr. Hunt assigns the benchmark intermodal share of the within-10-percent price bin under his price group override.

186. As with the analogous result I discussed for the truck-to-carload model in Section V.A.4.c, these patterns show that Mr. Hunt's framework does not estimate shipper response to the magnitude of service improvements. Instead, intermodal transit time and price determine which archetype is assigned to a future market; and, once the archetype is selected, the observed intermodal share of the current markets becomes the benchmark. Materially different assumptions about service improvements can therefore produce essentially the same predicted diversions.

C. Mr. Hunt's Rail-to-Rail Model Does Not Reliably Identify Merger-Related Diversion

187. Mr. Hunt estimates that the merger would cause approximately 467,000 annual carloads and intermodal units to shift from existing rail routings to UP-NS routes and increase UP-NS revenue (on net) by approximately $610 million.[293] Unlike his truck-to-rail analyses, which predict whether traffic would shift between transportation modes, his rail-to-rail analysis predicts how existing rail traffic would be reallocated among competing rail routes. He attributes the predicted shifts to changes in the relative attractiveness of UP-NS routes resulting from

[293] *See* Hunt VS, pp. 67, 94–95 & Exhibits 6-1, 8-1. Mr. Hunt projects rail-to-rail diversions would generate $1,525M in new revenue, but also $915M in offsets, equal to total offsets of $1,029M less $114M in offsets associated with long-haul drayage (1,525 – (1029 – 114) = 610). *See* Hunt Supp. VS, Exhibit PB2.6 (top panel). On net, the $610M revenue increase represents 15 percent of the total $4,027 million in additional net revenue the Applicants' projection to generate as a result of the merger (15 percent = 610 / 4,027).

reductions in modeled route impedance and junction frequency.[294] To estimate those shifts, Mr. Hunt uses a route-choice model that, he argues, predicts how traffic is distributed among available routes based on those two characteristics.[295]

1. Summary of the Rail-to-Rail Diversion Methodology

188. Figure 47 summarizes Mr. Hunt's rail-to-rail methodology. Mr. Hunt first uses Quantanet to identify all possible rail paths for each origin station–origin railroad–destination station–destination railroad combination included in his model. (Step 1 in Figure 47).[296] Within each Hunt market, these candidate paths include those with observed traffic recorded in the traffic tapes and may also include paths without historical traffic that satisfy his feasibility criteria.[297] Quantanet then calculates each path's impedance as the sum of its rail mileage and the

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294 *See* Hunt VS, pp. 68–69. Mr. Hunt defines route impedance as the sum of i) rail mileage and ii) assumed mileage-equivalent penalties assigned to particular junctions, and "junction frequency" as the number of interchanges between railroad families on the route.

295 Hunt VS, Appendix A.7.1–A.7.3, pp. 110–115. Mr. Hunt describes the model as a multinomial logit model that predicts the share of traffic assigned to each available route based on its indexed impedance and junction frequency relative to competing routes in the same market.

296 Hunt VS, Appendix A.4–A.6.2, pp. 102–106. In the rail-to-rail model, Hunt market definitions vary by service type. Generally, Hunt markets are defined by origin-destination pairs, and origin station-origin railroad-destination station-destination railroad combinations define routes within an origin-destination Hunt market. By service type, (i) merchandise and bulk Hunt markets are defined as directional origin-destination SPLC pairs; (ii) intermodal Hunt markets are defined as origin-destination intermodal terminal-market pairs; (iii) automotive Hunt markets are defined as origin SPLC-destination BEA pairs. *See* Hunt VS, Exhibit 6-3, Section 6.2.2, Appendix A.4–A.6.2, pp. 102–107. Within a Hunt market, Quantanet generates a set of potential paths between stations in each market using Freight Station Accounting Codes (FSAC). I use the term paths to refer to the set of potential routes Quantanet identifies prior to optimization. Observed traffic patterns present in the traffic tapes are also referred to as paths, as traffic has not been optimized to take a single lowest-impedance route. *See* Hunt VS, Appendix A.3–A.4, pp. 100–103.

297 *See* Hunt VS, Appendix A.5, pp. 104–105 Mr. Hunt states that "[a]ll historical traffic revenue routes were included in the calibration phase." However, in his script that implements the multinomial logit choice model, the code cell beginning with the comment "Drop generated rows for which historic traffic exists" does the opposite. It drops historical records whenever a generated zero-volume counterpart exists with the same origin station-origin railroad, destination station-destination railroad. *See* Hunt Workpaper, "Choice_Model.ipynb."

assumed mileage-equivalent penalties assigned to junctions along that path.[298] For each origin station–origin railroad–destination station–destination railroad combination, Mr. Hunt uses the lowest-impedance path identified by Quantanet as the modeled route for that combination.[299] Mr. Hunt performs this procedure using both the pre- and post-merger junction penalties he assumes for each scenario (Step 2 in Figure 47).[300]

189. After identifying the station-level routes within each Hunt market, Mr. Hunt consolidates the selected routes into "quads," which he defines as origin-origin railroad, destination-destination railroad combinations.[301] He does so by summing the historical traffic associated with all routes within a quad and using the lowest impedance route's characteristics to represent all traffic within that quad (Step 3a in Figure 47). These quads are the units of observation used to calibrate Mr. Hunt's multinomial logit model coefficients.[302]

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298 *See* Hunt VS, Section 6.2.1, p. 69; Appendix A.6.2, p. 106; Appendix A.6.4, p. 108, Exhibit A-5.

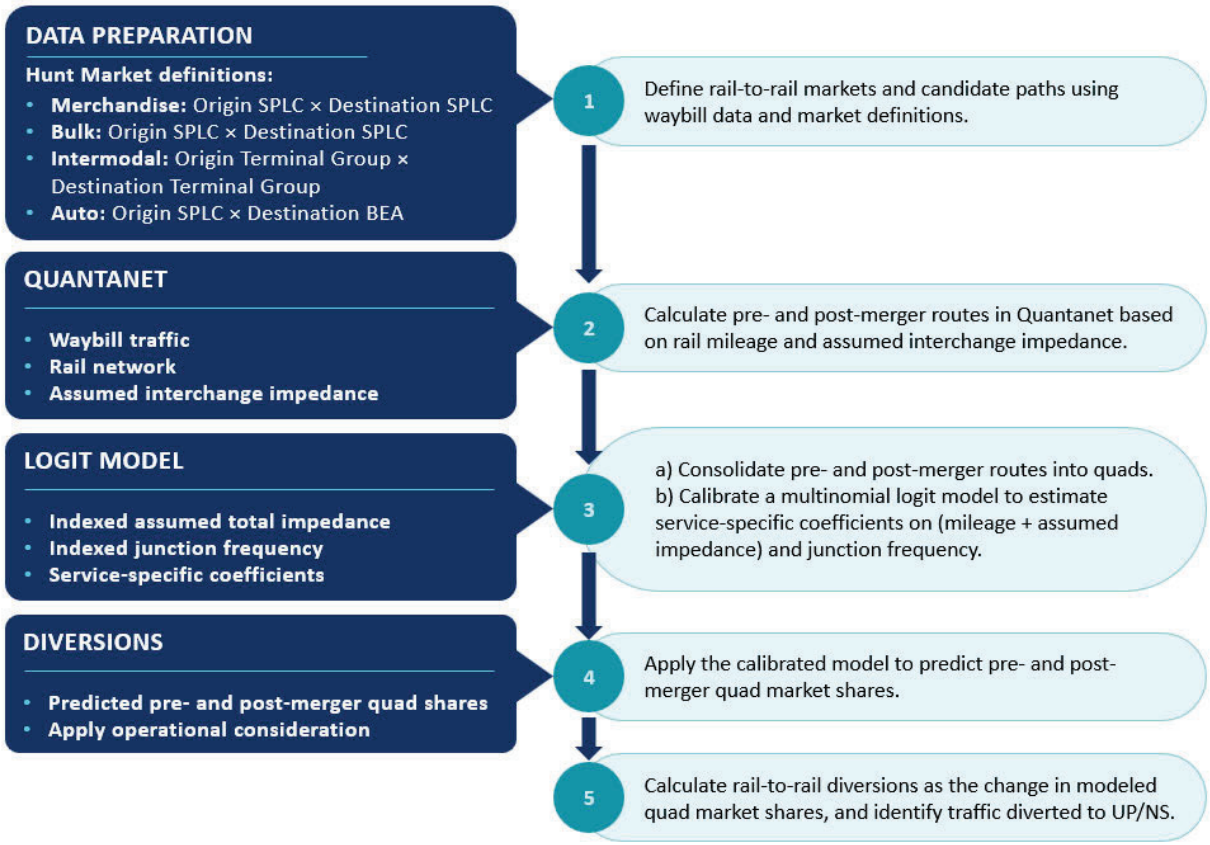
299 For example, a given origin station–origin railroad–destination station–destination railroad combination may have multiple paths present in the traffic tapes. Mr. Hunt models only the lowest impedance path, as identified by Quantanet. Where paths are the set of potential routings Quantanet identifies, I use the term routes to represent the lowest-impedance observations Quantanet retains when it optimizes for mileage and assumed mileage-equivalent junction penalties. *See* Hunt VS, Appendix A.6.2. *See* Hunt Workpapers, "Market_Definition_And_Quanta_Network.ipynb" and "rail_mileage_code.py" lines 536–552, 1164–1168, and 1291–1295.

300 *See* Hunt VS, Appendix A.6.1, pp. 105–106, Appendix A.7.3, pp. 114–115. *See also*, Hunt Workpaper, "Market_Definition_And_Quanta_Network_Orchestration.ipynb" code cell 3.

301 Mr. Hunt uses different geographic units of analysis for each service type. *See* Hunt VS, Exhibit E-1. I discuss the consolidation process further in Appendix B.9.a.

302 *See* Hunt VS, Appendix A.4, p. 103; Appendix A.7.2, pp. 110–111. *See also*, Hunt Workpaper "Choice_Model.ipynb" cell starting with "if (calibration_or_prediction == CalibrationOrPrediction.calibration)".

FIGURE 47: SIMPLIFIED OVERVIEW OF MR. HUNT'S RAIL-TO-RAIL DIVERSION FRAMEWORK



Sources and Notes: *See* Scripts "02_Market_Definition_And_Quanta_Network.ipynb," "01_Choice_Model.ipynb," and "02_Choice_Model_Calibration.ipynb." *See also*, Hunt VS, Section 6.2, Appendix A, Hunt Workpapers "Market_Definition_And_Quanta_Network.ipynb," "Choice_Model.ipynb," and "Choice_Model_Calibration.ipynb."

190. Mr. Hunt then calibrates a logit choice model separately for each service type using pre-merger route characteristics and volume share data to generate coefficients for indexed impedance and junction frequency (Step 3b in Figure 47).[303] Using these coefficients, Mr. Hunt

303 Impedance incorporates rail mileage and mileage-equivalent penalties assigned to junctions, while junction frequency measures the number of interchanges between railroad families. For estimation, Mr. Hunt indexes both measures relative to the lowest values among competing routes in the same market. Hunt VS, pp. 68–69; Appendix A.6.4, pp. 108–109; Appendix A.7.1–A.7.3, pp. 110–115. For the automotive service type, "the impedance term was not used," and the estimated coefficient on impedance is reported as zero. Mr. Hunt argues that this decision is conceptually justified "since automotive manufacturers prefer to consolidate deliveries at a common unloading ramp for the final-mile truck

predicts pre-merger and post-merger Hunt market shares for each quad (Step 4 in Figure 47). Mr. Hunt's predicted pre-merger traffic then becomes the modeled baseline against which he calculates diversion. Diversions are reallocations of traffic between quads within a Hunt market.[304] Mr. Hunt then applies operational filters and considerations to these predictions to compute his final diversion totals (Step 5 in Figure 47).[305]

191. This framework cannot provide a reliable measure of merger-caused diversion unless: (1) the modeled quads and their assigned routing characteristics reasonably represent the alternatives shippers and railroads actually face in the real world; (2) the model captures the principal determinants of routing choice sufficiently well to reproduce observed routing behavior; and (3) the changes assigned to the post-merger routes reflect service improvements

operation." *See* Hunt VS, Section 3.5, pp. 32–33; Appendix A, p. 112, Exhibit A-6. However, the zero coefficient reflects the fact that the model was estimated with an imposed lower bound of zero. I demonstrate that the automotive impedance coefficient is sensitive to the lower bound and convergence varies depending on the choice of lower bound. The impact of the impedance term on automotive results is therefore only zero as a result of Mr. Hunt's selected lower bound. *See* Workpaper "R2R_Auto_Impedance_Coefficient.xlsx" and Script "02_Choice_Model_Calibration_auto_impedance_sensitivity.ipynb." *See also*, Hunt Workpaper "Choice_Model_Calibration.ipynb."

304 Diversions are the product of rail traffic in a Hunt market and the difference between modeled post-merger and modeled pre-merger share. Mr. Hunt caps predicted diversions within a Hunt market such that those diversions, when added to observed pre-merger UP-NS traffic, do not exceed the observed total rail traffic in that Hunt market. Hunt VS, Appendix A.7.3–A.8, pp. 114–116; Section 2.2, p. 12.

305 Mr. Hunt eliminates diversions in certain markets where the "diversions [are] not claimed by the railroads, based on operating expert review of feasibility and terminal capacity" ostensibly to "focus on traffic that can realistically divert on the combined UP-NS network." For merchandise and bulk Mr. Hunt claims to remove diverted traffic based on "discussions with UP and NS personnel," because of preexisting long-term contracts with the incumbent railroad or a lack of access by UP-NS. *See* Hunt Workpaper, "README.md," Section 6, Step 2; Hunt VS, pp. 71, 115, 185–187. Based on "Oliver Wyman knowledge and confirmation with subject matter experts at UP and NS," Mr. Hunt excludes auto diversions associated with locations that do not have available auto ramps. *See* Hunt VS, p. 82. For rail-to-rail intermodal traffic, Mr. Hunt excludes certain "forbidden" markets and applies screens for modeled impedance improvement, terminal availability, traffic volume, and capacity. *See* Hunt Workpaper, "HC-Section 2 Exhibits vFinal.xlsx," tabs 'r2r_auto_fnl_2026' and '2-4,' and Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tabs 'Forbidden Markets,' 'Included R2R IPI only Lanes,' and 'Future_UPNS_TerminalTerminal2.'

attributable to the merger. The analyses below show that Mr. Hunt's rail-to-rail model fails each of those requirements.

2. Mr. Hunt's Route Construction and Model Specification Do Not Reliably Represent Actual Routing Choices

192. Mr. Hunt's model often assigns observed traffic the characteristics of paths it did not take, then predicts route choice using only impedance and junction frequency. The tests below show the consequence: even when applied to pre-merger Hunt markets, the model frequently fails to identify the route carrying the most traffic and sometimes ranks a route carrying no traffic as the most attractive.

a. Mr. Hunt's Estimation Data Frequently Assigns Observed Traffic the Characteristics of Routings That Were Not Actually Used

193. Before estimating his route-choice model, Mr. Hunt processes the underlying traffic records into a dataset that associates observed traffic with modeled route characteristics. As summarized in Figure 48, that process can assign observed traffic the characteristics of junctions and paths that the traffic records show the traffic did not actually use.[306] In those cases, the traffic volume is not reassigned to a different Hunt market, but may be assigned an optimal route different from the path taken in traffic tapes.

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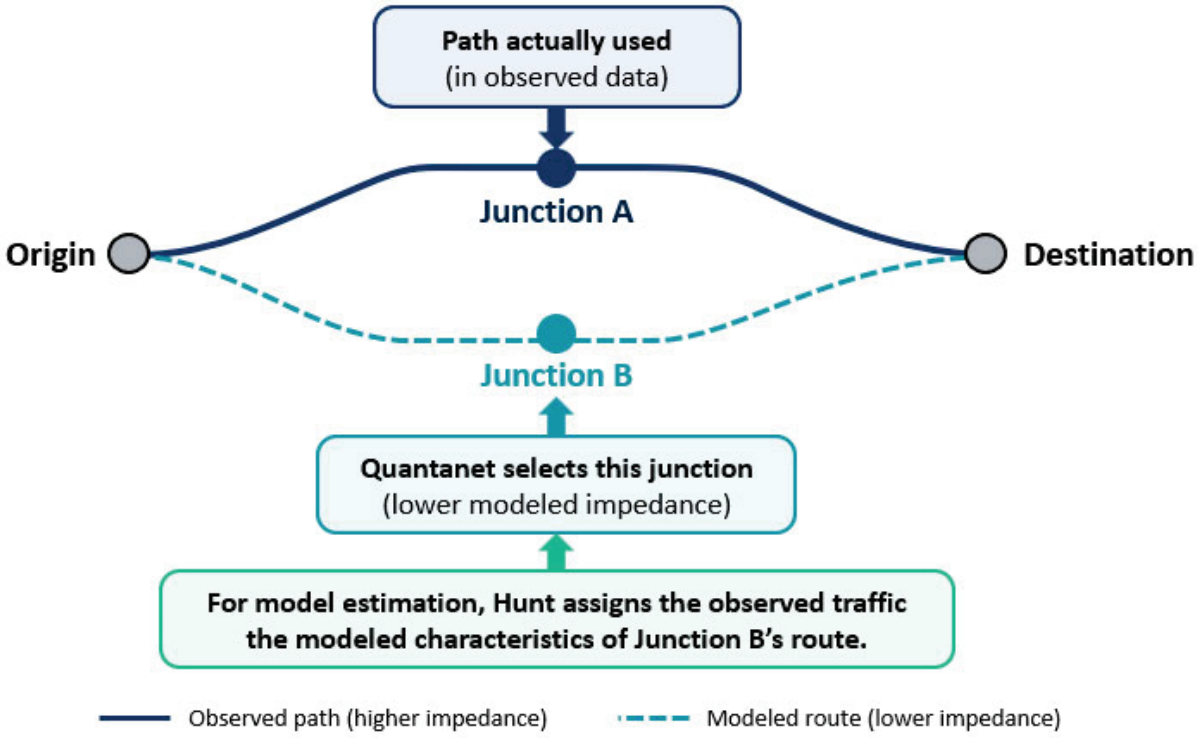
306 *See* Hunt VS, Appendix A.4–A.6, pp. 102–110; Hunt Workpaper, "Market_Definition_And_Quanta_Network.ipynb"; Workpaper 01_Quantanet, "02_Market_Definition_And_Quanta_Network.ipynb." As discussed below, Quantanet can select a junction or station combination different from the one reflected in the underlying traffic records, and Mr. Hunt then associates the observed traffic with the impedance of that modeled route.

FIGURE 48: MR. HUNT'S DATA CONSTRUCTION CAN ASSIGN OBSERVED TRAFFIC THE CHARACTERISTICS OF A ROUTE IT DID NOT ACTUALLY USE



Sources and Notes: *See* Scripts "02_Market_Definition_And_Quanta_Network.ipynb" and "R2R_Quad_Aggregation.R."

194. This mismatch can arise in two ways. First, using the network inputs and assumed mileage-equivalent junction penalties supplied to it, Quantanet selects the path with the lowest modeled impedance for a given station pair, without requiring that the selected junction be one actually used by the observed traffic.[307] Mr. Hunt then assigns the impedance of that modeled route to the associated traffic. Second, when multiple origin-destination station combinations are grouped into the same quad, Mr. Hunt aggregates the associated traffic but represents the

[307] Quantanet generates the set of paths a station level using FSAC pairs, where a FSAC exists within a given Hunt market. *See* footnote 296 for more detail.

resulting quad using the minimum impedance among those station combinations.[308] In either case, the route characteristics used to estimate the model can differ from the characteristics of the paths on which the observed traffic actually moved.

195. These are not merely theoretical possibilities. I test the first type of mismatch by focusing on single-interchange movements, for which the junction selected by Quantanet can be compared directly with the junction reflected in the underlying traffic records.[309] As shown in Table 9, Quantanet frequently selects a different junction from the one actually used. The mismatch affects approximately 24 percent of merchandise traffic, 11 percent of intermodal traffic, 32 percent of bulk traffic, and 35 percent of automotive traffic in the single-interchange movements included in this comparison.[310]

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[308] Hunt VS, Appendix A.6.2–A.6.4, pp. 106–109; Hunt Workpaper, "Choice_Model.ipynb," code cell starting with the comment "Consolidates records where there are multiple SCAC/FSAC […]." *See* Script "R2R_Quad_Aggregation.R." *See also,* Appendix B.9.a.

[309] I limit this comparison to single-interchange movements because, for those movements, the junction selected by Quantanet can be compared directly with the single junction reflected in the underlying traffic records. Observations with interchange codes that cannot be associated with a specific junction are excluded. I also perform a sensitivity to this analysis where observations are restricted to those with only Class I origin and destination railroads. The qualitative results are unchanged. *See* Workpaper "R2R_Junction_Choice.xlsx" and Script "R2R_Junction_Choice.R"

[310] *See* Workpaper "R2R_Junction_Choice.xlsx." Percentages are calculated over the single-interchange movements included in this comparison and therefore should not be interpreted as the share of all rail traffic affected by a routing mismatch.

TABLE 9: QUANTANET FREQUENTLY SELECTS A DIFFERENT JUNCTION FROM THE ONE OBSERVED IN THE TRAFFIC DATA

		Total Unmatched Share of Traffic [A]
Merchandise	[1]	23.6%
Intermodal	[2]	10.9%
Bulk	[3]	32.0%
Automotive	[4]	34.8%

Sources and Notes: *See* Workpaper "R2R_Junction_Choice.xlsx" and Script "R2R_Junction_Choice.R." This analysis compares single-interchange routes in Mr. Hunt's model to single-interchange paths present in the Traffic Tapes. Traffic Tapes contain interchanges labeled as 'STN' or '_STN_'. These observations cannot be associated with specific interchanges and have been excluded from the table.
[A]: Reflects the percent of traffic associated with unmatched junctions. Computed based on the total traffic associated with the single-interchange paths identified in this analysis.

196. These mismatches reveal two problems. First, Quantanet's lowest-impedance rule frequently fails to identify the junction actually used: the mismatch affects up to 35 percent of traffic in the single-interchange movements examined in Table 9. Whether the cause is the assumed junction impedance penalties, the modeled mileage, or factors not considered by Mr. Hunt or Quantanet, that result indicates that lowest modeled impedance does not reliably identify the path railroads actually use. Second, the mismatch casts doubt on Quantanet's identification of merger-related route improvements. If Quantanet often selects a path different from the one traffic actually uses, one cannot assume that a merger-related change in its lowest-impedance path reflects a real improvement in the relative attractiveness of competing routes.

197. Second, Mr. Hunt purports to estimate the relationship between observed routing choices and the modeled characteristics assigned to those choices. But since he assigns observed traffic the characteristics of paths that traffic did not actually travel, the estimated relationships (i.e., Mr. Hunt's calibrated logit coefficients) Mr. Hunt subsequently uses to predict rail-to-rail

diversions do not accurately reflect the relationship between shipper choices and the service characteristics Mr. Hunt models, namely impedance and junction frequency. As a result, his diversion predictions lack a reliable empirical foundation.

198. Mr. Hunt's Supplemental Statement reinforces the importance of distinguishing modeled routes from the routings railroads actually use. In addressing the Board's request concerning the viability of competing routes, Mr. Hunt explains that a route-level analysis would require knowledge of "the exact routing used, including all intermediate yards and interchange Locations," and that this level of detail is not known without complete service-design plans for the railroads.[311] He notes, for example, that [redacted], and that the available information does not establish which physical lines would be affected if traffic were removed. Mr. Hunt makes that observation in a different context, but the same distinction is relevant here: the route generated by his modeling process is not necessarily the path over which the observed traffic actually moved. His Supplemental Statement therefore does not resolve the route-construction issue identified above.

b. Mr. Hunt's Simplified Route-Choice Model Omits Important Commercial and Operational Determinants of Shipper Choice

199. Mr. Hunt's rail-to-rail model predicts route choice based on two variables: route impedance and junction frequency.[312] As described above, route impedance combines rail

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311 Hunt Supp. VS, Section 6.2, p. 23. Mr. Hunt states that route-level analysis requires knowledge of "the exact routing used, including all intermediate yards and interchange Locations," and that "[t]his level of detail is not known without having the complete service design plan for every railroad, including assumptions about how future traffic might move." He illustrates the point with [redacted].

312 Mr. Hunt does not use the absolute values of route impedance and junction frequency directly in the logit model. Instead, he indexes each route's values relative to the minimum values within the relevant market. Hunt VS, Appendix A.7.2–A.7.3, pp. 110–115.

mileage with assumed mileage-equivalent penalties assigned to junctions, while junction frequency measures the number of interchanges between railroad families. The junction penalties are not estimated from the observed routing data. Instead, for most interchanges, he assigns one of four fixed penalties, ranging from 350 to 650 mile-equivalents, based on the highest volume of loaded units interchanged by any railroad pair at that junction.[313]

200. Mr. Hunt's two-variable specification cannot capture the many commercial and operational conditions that affect observed rail routing. As discussed in Section III, those conditions include rates, schedules, train frequency, service commitments, reliability, capacity, gateway and terminal performance, blocking plans, train design, equipment availability and flows, customer relationships, commodity-specific requirements, and contractual or other commercial arrangements.[314] Mileage, junction count, and assumed mileage-equivalent junction penalties do not distinguish among those conditions, many of which vary materially across routes, gateways, customers, and service offerings.

201. The assumed junction penalties are particularly ill-suited to capture the operational significance of an interchange. The same gateway can involve materially different handling, dwell, blocking, connection, capacity, and service conditions depending on the

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313 Hunt VS, pp. 68–70; Appendix A.6.4, pp. 108–109. Mr. Hunt assigns penalties of 650, 550, 450, and 350 mile-equivalents at thresholds of 2, 10, and 50 loaded units interchanged per day. Mr. Hunt applies the penalty associated with the highest-volume railroad pair to the other pairs at the same junction, even if their own volumes would place them in a different category. He provides no empirical or operational explanation for the volume cutoffs or the mileage-equivalent penalties assigned to them.

314 *See* Section III.C above. *See also,* CPKC Operating Experts VS, Sections II.C (discussing how to build a proper operating plan), II.D (discussing how to adjust an operating plan based on traffic changes, including consideration of equipment), and VII.B (summarizing factors determining whether a service is operationally and commercially sustainable). *See also*, UP_0034502, tab 'All,' showing UP analysis of route competitiveness, including elevation change and track curvature.

movement and the way the participating railroads operate it.[315] A single mileage-equivalent penalty treats those differences as if they were represented by the same fixed increment to route impedance. It therefore cannot distinguish, for example, between a conventional interchange requiring additional handling and a coordinated movement involving run-through service or deep blocking.[316]

202. This point matters because Mr. Hunt carries those simplified route characteristics forward into the diversion calculation. Reducing a route's modeled impedance or junction frequency mechanically increases its predicted attractiveness, but the model does not establish that the conditions responsible for the route's historical performance would change. If a UP-NS route historically attracted little traffic because of schedules, capacity, rates, commercial commitments, customer preferences, or other conditions outside the model, changing the two modeled variables does not establish that the traffic would shift as predicted.[317] Mr. Hunt's model therefore does not identify whether the modeled changes address the factors actually responsible for the historical routing choices from which his diversion predictions begin.

c. Mr. Hunt's Rail-to-Rail Model Does Not Reliably Reproduce Observed Routing Choices

203. As a result of these flaws and others, Mr. Hunt's model is unable to reproduce basic features of observed pre-merger routing. There is therefore no reason to believe Mr. Hunt's model is capable of reliably predicting post-merger diversions. Mr. Hunt is correct that a

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315 *See* CPKC Operating Experts VS, Section II.C (particularly subsections "Blocking Plan" and "Train Schedules"). *See also,* Section IV.D above regarding the operational significance of different forms of interline coordination.

316 The junction mismatches discussed in Table 9 provide an empirical illustration: mileage and Mr. Hunt's assumed junction penalties do not consistently rank gateways in the order reflected in observed traffic.

317 Hunt VS, Appendix A.7.1–A.7.3, pp. 110–115. *See also*, Section IV.C above.

statistical model need not reproduce every observed quad market share exactly.[318] But if a model calibrated to pre-merger traffic frequently assigns the highest predicted share to a different quad from the one carrying the most observed traffic, or even to a quad carrying *no* observed traffic, that indicates that the variables included in the model do not adequately capture important determinants of observed routing choices, a recurring issue in all of Mr. Hunt's models.

204. Mr. Hunt offers "positive match rates" for impedance and junction frequency as support for his choice of explanatory variables.[319] However, those rates depend on how routes and Hunt markets are counted.[320] More fundamentally, his exhibits assess impedance and junction frequency separately; they do not test whether the calibrated model using both variables reproduces observed routing choices.[321]

205. I therefore test two basic features of the model's pre-merger predictions. For each service type, I examine: (1) how often the quad receiving the highest predicted share within a given Hunt market differs from the quad carrying the highest observed share of traffic, and (2) how often the quad receiving the highest predicted share in a Hunt market carries *no* observed traffic.[322] These tests do not require the model to reproduce exact quad market shares. They ask

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318 Hunt VS, Section 2.2, pp. 10–11.

319 Hunt VS, Appendix A.7.2, Exhibit A-7.

320 Mr. Hunt scores routes rather than markets. For example, if one route in a five-route market has both the uniquely lowest impedance and the uniquely largest observed share, his method counts five matching route records rather than one successful market-level comparison. Mr. Hunt reports an 83 percent impedance match rate for merchandise; limiting the comparison to markets with more than one route and scoring each market once reduces that rate to 67 percent. Similar results hold for the other two service types for which impedance enters Mr. Hunt's model. *See* Hunt VS, pp. 112–113, Exhibits A-7–A-8; Hunt Workpaper, "HC-Filtered 100% Waybill Data Calibration.xlsx"; Workpaper "R2R_Predictive_Validation.xlsx" and Script "R2R_Predictive_Validation.R," lines 142–156.

321 Hunt VS, pp. 112–114, Exhibits A-7–A-10.

322 *See* Workpaper "R2R_Top_Routes.xlsx" and Script "R2R_Top_Routes.R." For these tests, I examine Hunt markets with more than one modeled quad and exclude tied cases in which the actual winning quad is also tied for the highest predicted share.

instead whether the model reliably identifies the quads that are actually used most heavily and distinguishes those quads from alternatives that are not used at all.

206. The results show that the model frequently fails to identify the quad that carries the most observed traffic. In merchandise Hunt markets with more than one modeled quad, the quad assigned the highest predicted pre-merger share differs from the quad with the highest observed share in approximately 33 percent of Hunt markets. The corresponding mismatch rate is approximately 38 percent for intermodal traffic, 26 percent for bulk traffic, and 13 percent for automotive traffic, as shown in Table 10.[323] These failures are not small deviations in predicted shares; in each case, the model identifies a different quad as the prevailing alternative than the one observed in the historical data.

207. A sharper indication of the model's limitations is that it sometimes identifies a quad carrying *no* observed traffic as the prevailing alternative. This scenario occurs in approximately 24 percent of merchandise Hunt markets, 23 percent of bulk Hunt markets, 11 percent of automotive Hunt markets, and 8 percent of intermodal Hunt markets, as shown in Table 10.[324] These results show that the route that appears most attractive based on Mr. Hunt's modeled factors is often not the quad chosen in practice. That can occur for many reasons, including commercial, operational, service, capacity, or customer-specific considerations that are not captured by impedance and junction frequency, as discussed at length earlier in this Verified

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[323] *See* Workpaper "R2R_Top_Routes.xlsx" and Script "R2R_Top_Routes.R." These results undercount failures, as they do not account for the fact that Quantanet can select the incorrect junction for a modeled quad. The analysis instead takes the modeled quad as given and computes whether it was the quad with the highest market share in the historical and modeled pre-merger worlds.

[324] *See* Workpaper "R2R_Top_Routes.xlsx" and Script "R2R_Top_Routes.R," lines 179–198. When an actual winning quad ties a zero-volume quad for highest predicted share, I count the Hunt market as correctly predicting the actual winner and I do not count this as an instance of predicting a zero-volume winner. Winner-take-all routes are less common in Intermodal markets than other service types, resulting in fewer zero-volume winning quads.

Statement. The implication for Mr. Hunt's merger analysis is important: even if the merger improves an UP-NS route along the dimensions included in his model, that does not establish that the quad will attract the traffic gains his model predicts.

TABLE 10: RAIL-TO-RAIL MODEL FAILS TO ACCURATELY PREDICT WINNING QUADS

		Share of Hunt Markets	
		Observed Winning Quad ≠ Predicted Winning Quad [A]	**Predicted Winning Quad Has Zero Volume [B]**
Merchandise	[1]	33%	24%
Intermodal	[2]	38%	8%
Bulk	[3]	26%	23%
Automotive	[4]	13%	11%

Sources and Notes: *See* Workpaper "R2R_Top_Routes.xlsx" and Script "R2R_Top_Routes.R." I limit this analysis to Hunt markets with more than one quad.

[A]: Percent of Hunt markets where Mr. Hunt's rail-to-rail model assigns the highest predicted pre-merger share to a quad other than the quad with the highest observed share. Note, when an actual winning quad ties a zero-volume quad for highest predicted share, the market is counted as correctly predicting the actual winner.

[B]: Percent of Hunt markets where Mr. Hunt's rail-to-rail model assigns the highest predicted pre-merger share to a quad with zero observed carloads. Note, when an actual winning quad ties a zero-volume quad for highest predicted share, the Hunt market is not counted as predicting a zero-volume winner.

208. These validation results show that calibrating Mr. Hunt's two-variable model to historical traffic fails to reliably capture the effects of price, reliability, service, and other factors omitted from those two variables.[325] His calibrated model frequently selects a different prevailing quad from the one observed and, in a material share of Hunt markets, ranks quads carrying *no* traffic as the most attractive. Calibration does not make impedance and junction

[325] *See* Hunt Supp. VS, Section 2, p. 5 (arguing that calibration to historical route shares incorporates competitors' responses through pricing, service levels, reliability, and transit time); Section 5, p. 19 (describing junction frequency as a proxy for price, service quality, and transit time).

frequency reliable substitutes for the commercial and operational factors that determine routing choices. Mr. Hunt's predicted post-merger quad market share changes therefore do not provide a reliable basis for quantifying the rail-to-rail diversions attributable to the merger.

3. Mr. Hunt Does Not Establish That His Modeled Route Improvements Will Occur or are Merger-Specific

a. Mr. Hunt's Assumed Merger-Caused Impedance Reductions are Unsupported by Operational Realities

209. Mr. Hunt's rail-to-rail methodology assigns impedance penalties to interline routes and removes those penalties when the merger eliminates an interchange between UP and NS.[326] The resulting reduction in modeled impedance is therefore treated as a merger-related change. But Mr. Hunt does not establish that the merger would produce an operational improvement on each affected route corresponding to the magnitude of the modeled reduction. That concern is particularly important because, as discussed above, the interchange penalties themselves are assumed rather than estimated from observed routing or operating data.[327]

210. Eliminating an interchange in a corporate or ownership sense does not necessarily eliminate the physical work performed on a movement. Some or all of the blocking or other work events may remain necessary and simply be shifted to an upstream or downstream location, with associated dwell occurring elsewhere in the network.[328] As the CPKC Operating Experts explain, separately owned railroads can also use run-through trains, coordinated blocking, haulage arrangements, coordinated schedules, and other operating practices to reduce

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326 Hunt VS, Exhibit 6-3, p. 71. *See also*, Hunt VS, Appendix A.6.4–A.6.5, pp. 108–110.

327 *See* Section V.C.2.b above; Hunt VS, Appendix A.6.4–A.6.5, pp. 108–110.

328 CPKC Operating Experts VS, Section II.C. The CPKC Operating Experts explain that removing a work event at one location may not eliminate the need for that work, but instead shift it upstream or downstream, and that bypass blocking can similarly shift work to neighboring facilities.

intermediate work and associated delay without a merger.[329] Existing coordination can therefore reduce the amount of operational friction that remains to be eliminated by a merger, while additional coordination short of a merger may reduce it further. Mr. Hunt does not estimate that merger-specific increment.

211. Mr. Hunt's own methodology recognizes that some coordinated interline arrangements may involve less operational friction than a conventional interchange. For certain run-through haulage arrangements, such as those along the Meridian Speedway, he assigns a reduced 90-mile-equivalent impedance penalty rather than the full interchange penalty otherwise used in his model.[330] I do not independently estimate the appropriate penalty for any particular arrangement; it would depend on how the service operates.[331] The significance of Mr. Hunt's treatment is narrower: within his own modeling framework, an interline handoff can remain in place while some of the modeled disadvantage associated with interchange is reduced.

212. The Meridian Speedway represents an illustrative example of the disconnect between operational realities and Mr. Hunt's rail-to-rail assumptions. As I explained in Section V.B.3.a, Mr. Hunt testified in his deposition that two interchanges would remain post-merger, that he does not know whether there would be any operational improvements, and that he did not read the Operating Plan, whose proposed services he later invokes in support of his diversion

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329 CPKC Operating Experts VS, Section VIII. The CPKC Operating Experts explain that transit time depends on the physical work performed on a movement and that separate railroads can use deeper blocking, run-through service, and other coordinated arrangements to reduce intermediate work.

330 Hunt VS, Section 6.2.2, p. 71; Appendix A.6.4–A.6.5, pp. 108–110. Mr. Hunt describes the 90-mile-equivalent penalty used for certain run-through haulage arrangements as corresponding to an assumed three-hour crew-change delay.

331 As discussed in Section IV.D.1, Applicants' own benchmarking data show that several existing UP-CPKC-NS services over the Meridian Speedway have achieved end-to-end speeds comparable to or better than selected long-distance single-line UP and NS services. That evidence further cautions against treating a fixed 90-mile-equivalent penalty as a precise measure of the operational effect of a particular coordinated interline service.

forecast.[332] Mr. Hunt nonetheless assumed further merger-related reduction in the modeled impedance along the Meridian Speedway without identifying a corresponding operational improvement.[333] This example alone materially affects Mr. Hunt's results: eliminating the assumed but unfounded post-merger changes to the relevant operating characteristics reduces rail-to-rail intermodal diversions by approximately [redacted].[334]

b. Mr. Hunt's Own Model Demonstrates That Substantial Diversions Are Achievable Through Coordination Agreements

213. To illustrate the degree to which Mr. Hunt's own model and assumptions demonstrate the ability of coordination agreements to attract traffic without a merger, I re-run his rail-to-rail diversion model under an illustrative Interline Coordination scenario. In that scenario, I hold each route's junction frequency at its pre-merger level and assign a 90-mile impedance to

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[332] Mr. Hunt testified that he reduced the impedance along the Meridian Speedway simply because the number of railroads, as distinct from the number of interchanges, involved in the move would fall by one. *See* Deposition of David T. Hunt, Vol. II, October 8, 2026, 688:5–692:20. Mr. McClellan, the chief strategy officer at NS, testified in his deposition that the [redacted] along the Meridian Speedway. Deposition of Michael R. McClellan, October 9, 2026, 15:10–12, 347:16–348:1. Mr. Gehringer, UP's Vice President of Operations, similarly testified that the physical haulage currently performed by CPKC between Shreveport and Meridian will be similar post-merger to today. *See* Deposition of Eric Gehringer, October 13, 2026, 304:16–24. For Mr. Hunt's later discussion of the Growth Plan trains and their projected transit times in connection with his predicted intermodal traffic, see Hunt VS, Section 7.1.1, pp. 86–91 & Exhibit 7-4.

[333] With CPKC, UP and NS already provide coordinated intermodal service over the Meridian Speedway between Shreveport and Meridian. Applicants' benchmarking shows that several such services perform comparably to or faster than selected long-distance single-line UP and NS services. *See* Figure 21. Mr. Hunt reduces these routes' junction impedance penalties from 180 to 90 mile-equivalents because [redacted], but the physical handoffs at Shreveport and Meridian would remain. *See* Hunt VS, Appendix A.6.5, pp. 109–110; Deposition of David T. Hunt, Vol. II, October 8, 2026, 688:5–692:20; Deposition of Michael R. McClellan, October 9, 2026, 347:16–348:1. Mr. Hunt states that railroad operating departments validated the adjustment but does not identify a corresponding change in how the trains would operate.

[334] *See* Workpapers "R2R_Meridian_Speedway.xlsx." and "01_Choice_Model_meridian_sensitivity.ipynb." The overall percent of intermodal rail-to-rail diversions attributable to Meridian Speedway is approximately [redacted]. For a discussion of diversions on Meridian Speedway involving quads with existing UP-NS traffic, *See* Appendix B.9.b.

UP-NS handoffs, using the same reduced penalty Mr. Hunt applies to certain run-through haulage arrangements.[335] I compare that result with an Impedance Improvement scenario that also holds each route's junction frequency at pre-merger levels but retains Mr. Hunt's assumption that UP-NS junction impedance falls to zero post-merger. The comparison therefore isolates the portion of modeled diversion associated with Mr. Hunt's assumed reduction in interchange impedance.[336]

214. The Interline Coordination scenario produces a substantial share of the diversions associated with Mr. Hunt's assumed elimination of UP-NS interchange impedance. Table 11

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[335] Hunt VS, Section 6.2.2, p. 71; Appendix A.6.4–A.6.5, pp. 108–110. In the Interline Coordination scenario, I re-run Quantanet with an assumed junction impedance for UP-NS interchanges of 90. Each route's junction frequency remains at pre-merger levels. Automotive traffic is excluded from this analysis because the impedance coefficient in Mr. Hunt's automotive model is zero (*See* Hunt VS, Appendix A.7.2, p. 112, Exhibit A-6); holding junction frequency unchanged therefore eliminates all modeled automotive rail-to-rail diversions. *See* Workpaper "R2R_Runthrough_Impedance_Counterfactual.xlsx," Script "R2R_Runthrough_Impedance_Counterfactual.R," and Script "02_Market_Definition_And_Quanta_Network_Counterfactual.ipynb."

[336] In Mr. Hunt's framework, impedance (through the assumed mileage penalties) and junction frequency are related measures of the claimed disadvantages associated with interline service. Mr. Hunt has not clearly articulated how the effects captured by these two variables differ, or shown that they represent distinct service improvements. The difference between the Interline Coordination scenario and Mr. Hunt's full merger estimate therefore cannot, simply by subtraction, be treated as diversions that only a merger could produce. Furthermore, Mr. Hunt's framework provides no straightforward way to adjust junction frequency for coordinated run-through service. He counts most run-through handoffs as one junction—the same value he applies for regular interchanges—while assigning a reduced 90-mile-equivalent impedance penalty. On Meridian Speedway routes, he assigns a single junction but *two* 90-mile-equivalent penalties before the merger, then removes one penalty and reduces junction frequency by one after the merger, although the physical handoffs remain. His treatment therefore does not supply a consistent rule for translating a run-through improvement into junction count. *See* Section V.C.3.a. *See also*, Hunt VS, Appendix A.6.5, pp. 109–110. *See* Workpaper "R2R_Runthrough_Impedance_Counterfactual.xlsx," Script "R2R_Runthrough_Impedance_Counterfactual.R." Additionally, Mr. Hunt applies his adjustments to junction impedance for run-through handoffs after having generated the network of routes using junction impedance of zero for UP-NS handoffs. *See* Hunt Workpapers, "Market_Definition_And_Quanta_Network.ipynb" cell 55 and "impedance_changes.py." I implement the counterfactual run-through adjustment prior to generating the network of routes. This difference in route construction further complicates treating the gap between the counterfactual scenario and Mr. Hunt's full estimate as diversion that only a merger could produce. *See* Script "02_Market_Definition_And_Quanta_Network_Counterfactual.ipynb."

shows that 69 to 71 percent of the diversions in the Impedance Improvement scenario.[337] The majority of diverted traffic Mr. Hunt's model attributes to eliminating UP-NS interchange impedance can therefore also be generated while retaining an interline handoff and separate ownership. Moreover, as I explained above, I compute diversions in the Interline Coordination scenario by applying the same 90-mile impedance penalty to UP-NS handoffs that Mr. Hunt assumes for other run-through haulage arrangements. To the extent that coordinated service brings dwell time at an interline handoff closer to what a comparable movement would experience within a single railroad's network, an incremental penalty below 90 miles and approaching zero could better approximate such agreements within Mr. Hunt's framework, moving predicted diversions from the Interline Coordination result toward the Impedance Improvement result. As I explained in Section IV.D, Mr. Hunt testified in his deposition that he did not analyze how much of his predicted diversion could be achieved through merger alternatives such as interline coordination agreements.[338]

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337 *See* Workpaper "R2R_Runthrough_Impedance_Counterfactual.xlsx" and Script "R2R_Runthrough_Impedance_Counterfactual.R." Using Mr. Hunt's code and supplied data, I first replicate his rail-to-rail model's calibrated coefficients with de minimis differences and corresponding diversions to the nearest whole number. *See* Workpaper "06_Section_VC_R2R/02_Choice and Logit Models." Subsequently, I consider two scenarios, namely Interline Coordination and Impedance Improvement. Under each scenario, I consider the set of markets that also appear in Mr. Hunt's results because Mr. Hunt does not establish what operational considerations or commercial adjustments, if any, he would apply to modeled diversions in additional markets. I restrict the comparison to markets that appear in both scenarios and have positive diversions in Mr. Hunt's results, ensuring that both scenarios' diversion totals cover an identical set of markets. *See* Hunt Workpapers, "HC-Intermodal Diversions Model vFinal.xlsx" and "README.md." *See also*, footnote 305.

338 Deposition of David T. Hunt, Vol. II, October 8, 2026, 699:8–700:18.

TABLE 11: WITHIN MR. HUNT'S MODEL, MUCH OF THE DIVERSION ASSOCIATED WITH ELIMINATING UP-NS INTERCHANGE IMPEDANCE CAN BE ACHIEVED WITH INTERLINE SERVICE

		Interline Coordination Diversions [A]	Impedance Improvement Diversions [B]	Interline Coordination / Impedance Improvement [C] = [A]/[B]
Merchandise	[1]	35,241	50,102	70.3%
Intermodal	[2]	96,161	135,744	70.8%
Bulk	[3]	5,948	8,676	68.6%

Sources and Notes: *See* Workpaper "R2R_Runthrough_Impedance_Counterfactual.xlsx" and Script "R2R_Runthrough_Impedance_Counterfactual.R." The Interline Coordination scenario is an illustrative diagnostic and does not assume that 90 miles is the correct impedance for a coordinated interline handoff or that the resulting diversion estimates represent an alternative forecast.

[A]: Predicted diversions assuming Interline Coordination. Interline Coordination holds each route's junction frequency at its pre-merger level and assigns a 90-mile impedance to UP-NS handoffs, using the reduced penalty Mr. Hunt applies to certain run-through haulage arrangements. The Interline Coordination scenario is an illustrative diagnostic and does not assume that 90 miles is the correct impedance for a coordinated interline handoff or that the resulting diversion estimates represent an alternative forecast. *See* Hunt VS, Section A.6.5.

[B]: Predicted diversions assuming Mr. Hunt's Impedance Improvement. Impedance Improvement also holds each route's junction frequency at its pre-merger level but reduces UP-NS junction impedance to zero, consistent with Mr. Hunt's post-merger assumption.

[C]: [A] / [B], represents the share of the Impedance Improvement diversions captured by Interline Coordination.

215. Overall, these results show that Mr. Hunt does not establish either that the full modeled reduction in interchange impedance will materialize as an actual service improvement or that any resulting improvement is uniquely attributable to the merger. Existing coordinated services already reduce interchange-related friction in some markets, and Mr. Hunt's own framework recognizes that run-through and haulage arrangements can substantially reduce friction relative to a conventional interchange. The diagnostic above further shows that a substantial share of the diversion associated with eliminating UP-NS interchange impedance can

be reproduced within his model while retaining a run-through interline handoff. Mr. Hunt's rail-to-rail analysis therefore does not isolate the incremental service improvement, or resulting diversion, attributable to the merger.

D. The Shortcomings in Mr. Hunt's Analyses Cause Him to Overstate Merger-Caused Traffic Likely to Materialize

1. Realizing Mr. Hunt's Predicted Diversion also Requires Commercial and Operational Conditions His Models Do Not Establish

216. Even if Mr. Hunt's diversion estimates were accepted on their own terms, the predicted traffic would not materialize automatically. Capturing that traffic would require the merged railroad to make commercial decisions about pricing, marketing, and customer development, and to accommodate the additional volume through an executable Operating Plan with sufficient trains, crews, equipment, terminal and yard capacity, and other resources. Similarly, at least some shippers will incur costs when switching their transportation mode, and these switching costs could prevent traffic that Mr. Hunt predicts would divert from actually doing so.[339] Mr. Hunt's diversion analyses do not evaluate—or even consider—whether those commercial and operational conditions would in fact be satisfied at the scale implied by his predicted traffic growth.[340]

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[339] Deposition of David T. Hunt, Vol. II, October 8, 2026, 590:16–23. Despite that fact, Mr. Hunt testified that a determination of the extent of such switching costs "is not something we included in this study." Deposition of David T. Hunt, Vol. II, October 8, 2026, 591:18–592:3. Mr. Hunt further testified that "[t]here are differences" in the costs private carriers face relative to a shipper who hires a third-party carrier when evaluating whether to convert from their own trucking operation to rail. Deposition of David T. Hunt, Vol. II, October 8, 2026, 564:10–19. Nonetheless, Mr. Hunt did not distinguish between these types of shippers when estimating diversions and instead "treated all trucks the same." Deposition of David T. Hunt, Vol. II, October 8, 2026, 565:4–12. *See also*, Deposition of David T. Hunt, Vol. II, October 8, 2026, 563:5–22.

[340] *See, generally*, CPKC Operating Experts VS, Sections II.B–D, IV & V. The CPKC Operating Experts address the operating requirements associated with incorporating substantial additional traffic into Applicants' proposed network and whether Applicants' Operating Plan demonstrates that those volumes can be handled as modeled.

217. Applicants' own testimony raises doubt as to whether the commercial choices needed to capture this traffic would in fact be made. Mr. Houston testified that [redacted].[341] That testimony is consistent with the broader historical evidence discussed in Section III.A; UP has repeatedly placed substantial weight on [redacted]. Mr. Hunt's analysis does not examine whether the merged railroad would adopt the pricing and customer-development strategies necessary to convert the modeled traffic opportunities into actual traffic growth, even though [redacted].[342]

218. Applicants themselves appear to recognize that identifying traffic that may be commercially attainable requires a different kind of exercise from that which Mr. Hunt performs. Mr. Welch described [redacted]. That exercise is distinct from Mr. Hunt's diversion models, which, at the time of Mr. Welch's deposition, had [redacted]

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341 *See* Deposition of Michael Houston, July 30, 2026, 265:4–16.

342 Instead, Mr. Hunt models post-merger traffic using assumed changes in the characteristics of rail service, including pricing where applicable, and then predicts diversion mechanically from those modeled characteristics. In his truck-to-carload analysis, for example, he estimates pre- and post-merger rail prices using national average single-line and interline price relationships by length-of-haul, uses those prices in defining the post-merger archetype, and then assigns the diversion market the observed rail modal share of that archetype. His analysis does not separately establish that the merged railroad would have the incentive to adopt the modeled pricing, would in fact do so, or would undertake the commercial efforts necessary to capture the resulting traffic. *See* Hunt VS, Sections 3.2, 3.5, 4.2.1, and Appendix B.5.2.C & B.6, pp. 27–31, 39–41, 154–155, 160–164.

[redacted].[343] I do not evaluate that separate exercise here as I understand it was not presented as part of the Application. Its existence nevertheless underscores the distinction between mechanically predicting traffic from modeled service characteristics and determining whether particular traffic opportunities can actually be pursued and captured on economically attractive terms.

219. Applicants' own integration projections assume that substantial revenue growth will be achieved with materially fewer marketing and sales personnel. As shown in Figure 49, Applicants project an approximately [redacted] percent increase in revenue by Year 3, while reducing UP marketing and sales personnel by approximately [redacted] percent and NS marketing and sales personnel by approximately [redacted] percent. That plan appears inconsistent with treating Mr. Hunt's modeled traffic gains as self-executing and reinforces the broader point: Mr. Hunt does not attempt to engage with the critical step of whether the merged railroad will make the commercial decisions and take the operational actions necessary to capture the traffic his models predict.

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[343] Deposition of David Welch, July 29, 2026, 76:18–78:16, 88:4–13.

FIGURE 49: POTENTIAL INCONSISTENCIES IN OBJECTIVES BETWEEN PREDICTED REVENUE GROWTH AND MARKETING PERSONNEL REDUCTION



Sources and Notes: Values indexed at Pro-Forma Year 0. "M&S" refers to Marketing & Sales. Verified Statement of Joshua Perkes, April 29, 2026 ("Perkes VS") Workpaper, "Management_Workpapers_Employee Impact.xlsx," tab 'Workpaper_Impact by Departm,' and tab 'Workpaper_Impact by Level.' Amended Application, Volume 1, Appendix F, Pro Forma Income Statements (Exh. 17), pp. 192, 195–198. *See* Workpaper "Management_Workforce_Reductions.xlsx."

220. Capturing the predicted traffic would also require Applicants to translate commercial opportunities into executable railroad operations. Additional volume must be incorporated into service and train plans and supported by sufficient crews, equipment, terminal

and network capacity, and other operating resources. As the CPKC Operating Experts explain, Applicants have not presented a feasible Operating Plan to accommodate the new volumes.[344]

221. These operational requirements matter because, in the real world, the merged railroad's response to additional demand likely would not be simply to add the volume at the prices and service levels assumed in Mr. Hunt's models. UP's historical pricing strategy, together with ordinary economic incentives, suggests that the merged railroad would consider its market power, available capacity, and other market conditions when setting prices for additional traffic.[345] Where capacity or other operating resources are constrained, UP may ration capacity through pricing, defer traffic growth, or require additional investment before the traffic can be accommodated.[346] Mr. Hunt's diversion analyses do not account for those choices. Those analyses instead assume that the modeled service and price characteristics would be offered to the predicted traffic and that the resulting traffic response would automatically follow.

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[344] *See* CPKC Operating Experts VS, Sections V.A and V.B. Applicants' own testimony also recognizes the distinction between identifying commercial opportunities and incorporating traffic actually won into railroad operations. Mr. Welch described UP's [redacted]. Deposition of David Welch, July 29, 2026, 121:3–122:18, 282:11–284:7.

[345] For example, Dr. Majure has found that UP's historical pricing practices are consistent with a firm that can insulate itself from competitive pressures. *See* Majure VS, Section 4.3.3. Similarly, Dr. Majure has found that the merger would weaken shippers' ability to bargain for more competitive rates and service offerings, and that UP-NS would have the ability and incentive to foreclose competition post-merger. *See* Majure VS, Section 2.

[346] A recent UP example illustrates the interaction between capacity and pricing. In June 2026, UP identified certain intermodal markets as constrained and imposed a $500-per-container surcharge on incremental Los Angeles/Inland Empire volumes above contracted baseloads, while also stating that it was repositioning equipment and increasing train capacity where feasible. *See* Union Pacific, "Mutual Commitment Program Announcement," PR2026-36, June 11, 2026, last accessed September 14, 2026, https://www.up.com/announcements/intermodal/2026/PR2026-36; Union Pacific, "Mutual Commitment Program Announcement," PR2026-42, June 25, 2026, last accessed September 14, 2026, https://www.up.com/announcements/intermodal/2026/PR2026-42.

2. Mr. Hunt's Models Do Not Establish Merger-Caused Traffic Growth

222. My analyses of Mr. Hunt's three principal diversion models in Sections V.A through V.C identify a common limitation across Mr. Hunt's three principal diversion models. Each model predicts traffic by applying benchmark rules or modeled relationships to changes in a limited set of characteristics. Those calculations show what Mr. Hunt's frameworks predict when those assumptions and modeled changes are applied. They do not establish that the factors represented by those changes are the factors responsible for the low current rail participation or UP-NS routing from which he predicts growth, or that changing those factors would produce the traffic response his models predict.

223. The diagnostics in Sections V.A through V.C illustrate different reasons why Mr. Hunt's predicted diversions do not reliably measure merger-caused traffic growth. In the carload model, approximately 61 percent of Mr. Hunt's predicted diversion remains when the modeled merger-related changes are removed; substantial diversion likewise remains in the intermodal model without the modeled changes.[347] The rail-to-rail model frequently fails to identify the route that actually carries the most traffic and, in a material share of Hunt markets, identifies a route carrying *no* actual traffic as the dominant route.[348] And, within Mr. Hunt's own rail-to-rail framework, approximately 69 to 71 percent of the diversion associated with eliminating UP-NS interchange impedance can be reproduced while retaining an interline handoff and separate ownership.[349] These diagnostics address different features of the three models, but each indicates that Mr. Hunt's models do not reliably predict the effect of the merger, if any, on rail traffic.

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347 *See* Figure 32.

348 *See* Table 10.

349 *See* Table 11.

224. These issues cannot be fixed with a single adjustment nor by applying a uniform discount to Mr. Hunt's estimates. Mr. Hunt's truck-to-rail models use outcomes from existing markets as benchmarks for the rail modal shares in his diversion markets without showing that the same conditions hold where diversion is predicted. His rail-to-rail model predicts route shares from a simplified measure of route attractiveness despite its limited ability to reproduce observed routing. Nor does Mr. Hunt establish that the modeled service changes will ultimately occur, address historical underperformance, or result from the merger rather than improvements achievable without it. The estimates therefore do not reliably measure merger-caused traffic growth. The diagnostics provide no basis for a correction factor, and I have not attempted to derive an alternative estimate.

VI. MR. HUNT'S SUPPLEMENTAL STATEMENT DOES NOT CURE HIS METHODOLOGICAL FLAWS

225. In Decision No. 21, the Board stated that several aspects of the Amended Application were "unclear or underdeveloped" and requested supplemental information to evaluate Applicants' projected traffic diversion and associated public benefits.[350] Among other things, the Board asked how competitive responses enter the diversion estimates, how likely responses would affect those estimates, and what business, commercial, or pricing changes Applicants plan or model to attract the projected traffic.[351] Mr. Hunt addresses some of these subjects in his Supplemental Verified Statement.[352] In this section, I assess the supplemental

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350 Decision No. 21, Surface Transportation Board, Docket No. FD 36873, May 28, 2026, pp. 18, 24.

351 Decision No. 21, Surface Transportation Board, Docket No. FD 36873, May 28, 2026, pp. 24–25 (requests PB-1, PB-2, and PB-6).

352 Hunt Supp. VS, Exhibit 1-1, pp. 3–4 (summarizing the Board's requests for supplemental information concerning competitive-response assumptions, likely competitive responses, business/commercial and pricing changes, impacts on competing or alternative routes, and recent industry transactions).

analyses most closely related to Mr. Hunt's core traffic-diversion methodologies and to the criticisms I discussed above. In particular, I address his treatment of competitive responses, his "give-back" allocations under hypothetical responsive mergers, and his discussion of post-merger pricing.

226. Mr. Hunt's supplemental analyses and responses to the Board largely rely on the diversion estimates produced by his truck-to-rail and rail-to-rail models. They therefore inherit the methodological flaws in those models that I discussed above. I further find that his claim that his methodologies account for likely competitive responses to the merger is fundamentally incorrect. Observed traffic volumes are equilibrium outcomes that reflect all supply and demand factors, including competitive interactions. Mr. Hunt's failure to explicitly model and control for those competitive interactions means that his model is incapable of isolating the effect of competitive interactions or estimating how those competitive interactions would impact traffic volumes when the market structure changes. Finally, I explain that Mr. Hunt's treatment of so-called structural competition and post-merger pricing are ad hoc and unsupported.

A. Mr. Hunt Does Not Model, Identify, or Control for Likely Competitor Responses to the Merger

227. In his Supplemental Verified Statement, Mr. Hunt argues that his truck-to-rail and rail-to-rail diversion methodologies already account for what he calls "normal course" competitive responses to the introduction of single-line service. He distinguishes those responses, such as changes in price or service offered by competing railroads, from "structural" responses such as subsequent railroad mergers. Mr. Hunt states that both diversion models "directly incorporate" normal-course competitive responses because they rely on historical data from Hunt markets in which carriers have already responded to single-line service. On that basis, he concludes that additional assumptions about how competitors might adjust their prices,

reliability, transit times, or other service characteristics are unnecessary because those responses are "already embedded in the market data."[353]

228. Mr. Hunt's claim reflects a fundamental misunderstanding of causal inference. A basic principle of econometrics, applicable to causal analysis regardless of method, is that an observed outcome may reflect the combined influence of multiple factors and therefore does not, by itself, reveal the causal effect of any single factor. Identifying that effect requires distinguishing the influence of the factor of interest from other factors that also affect the outcome.[354] In this case, historical market outcomes necessarily reflect the combined effects of competitive conduct, shipper preferences, service characteristics, market structure, customer and commodity characteristics, and other conditions prevailing in those Hunt markets.[355] They show what happened after all of those conditions played out. They do not alone tell us what effect competitors' responses had on the observed share or how competitors would respond to this merger.

229. Notably, observed rail modal shares alone do not identify how much of an observed outcome is attributable to competitors' responses to existing single-line service, much less how competitors would respond to new services the Applicants claim the merger would create. Nor do those shares establish that competitors in another Hunt market would respond in the same way if new single-line service were introduced. The fact that a competitive response

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353 Hunt Supp. VS, Section 2, p. 4. Mr. Hunt distinguishes between "structural changes" and "non-structural normal course competition," states that the truck-to-rail and rail-to-rail models "directly incorporate normal course competitive responses," and explains that competitive responses in price, reliability, transit time, and other service characteristics are "already embedded in the market data."

354 *See* Jeffrey M. Wooldridge, *Introductory Econometrics: A Modern Approach*, 5th ed. (Boston, MA: Cengage Learning, 2013), p. 12; and Joshua D. Angrist and Jörn-Steffen Pischke*, Mastering 'Metrics: The Path from Cause to Effect* (Princeton University Press, 2014), pp. 10–11.

355 *See* Section III.A

may be reflected somewhere in one Hunt market's observed share does not mean that Mr. Hunt's model has identified that response or can reliably apply it to another Hunt market. Even if historical data could somehow identify an average historical competitive response to existing single-line service, Mr. Hunt does not show—and it is unreasonable to assume—that the same response would apply under the potentially different competitive conditions created by transcontinental UP-NS service. Using historical data therefore is not the same as modeling or identifying the competitive response to the merger.

230. This problem applies to both Mr. Hunt's truck-to-rail and rail-to-rail analysis. With respect to his truck-to-rail analysis, Mr. Hunt explains that his methodology looks to markets where single-line rail service already exists and uses the rail modal shares observed in those markets to predict rail participation in markets where UP-NS would introduce new single-line service. He argues that those comparator shares reflect the "market equilibrium" that emerged after truck and rail competitors adjusted their price and service offerings and that his model therefore captures their competitive responses.[356] That is the central problem: the comparator's rail modal share is an outcome, not a measure of competitive response. It tells us how much traffic moved by rail in that market. It does not tell us how much of that share was caused by truck carriers changing price, railroads improving service, or a litany of other factors, nor does it tell us how those factors influence one another. Mr. Hunt's lookalike methodology does not identify which portion of the comparator market's observed rail modal share resulted

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[356] Hunt Supp. VS, Section 2, pp. 4–5. Mr. Hunt states that the truck-to-rail model reflects the "market equilibrium" that emerges after truck and rail carriers adjust their pricing and service offerings and that it looks to carload lookalike markets (or current intermodal markets) where an analogous competitive process has "already run its course."

from competitive responses, or establish that the same competitive conditions and responses would prevail in the market to which that share is transferred.[357]

231. The same problem is even clearer in Mr. Hunt's rail-to-rail model. Mr. Hunt states that, because the model is calibrated to historical route shares, it incorporates the effects of competing railroads' responses through changes in pricing, service levels, reliability, and transit time. He therefore contends that the model does not assume that competing railroads "do nothing."[358] But the model does not contain separate variables for competitors' pricing responses, service changes, reliability improvements, or transit-time changes. Instead, it uses impedance and junction frequency as proxies for underlying differences in price, service quality, and transit time and estimates their relationship with observed historical route shares. Mr. Hunt likewise explains elsewhere in his Supplemental Statement that junction frequency acts as a proxy for price, service quality, and transit time in the rail-to-rail model.[359] Even if a variable were to reflect those many underlying conditions, it would not identify whether, or how, a competitor changed one, several, or none of them in response to single-line service. Mr. Hunt's claim that calibrating these proxies to historical route shares accounts for competitors' responses far overstates what his model can establish. Any such responses reflected in the historical shares

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357 As discussed in more detail in Sections V.A and V.B, Mr. Hunt adopts a lookalike methodology in his truck-to-rail models. In his truck-to-carload model, Mr. Hunt uses lookalike markets to calculate benchmark rail modal shares for each archetype and applies those benchmarks to diversion-eligible markets to predict diversions, subject to operational filters. In his truck-to-intermodal model, Mr. Hunt uses current markets to calculate benchmark intermodal shares for each archetype and applies those benchmarks to future markets to predict diversions, subject to operational considerations.

358 Hunt Supp. VS, Section 2, p. 5. Mr. Hunt states that calibration to historical data means the rail-to-rail model reflects markets where competing rail carriers have already responded through pricing, service levels, reliability, and transit time, and therefore does not assume that other railroads "do nothing."

359 Hunt Supp. VS, Section 5, p. 19. Mr. Hunt states that junction frequency "acts as a proxy for price, along with service quality and transit time" in the rail-to-rail model.

are commingled with the many other observed and unobserved factors that produced those shares.

232. Calibrating to an observed outcome is not the same as explaining why that outcome occurred, particularly when several important variables are omitted from the model.[360] A model can be calibrated using observed historical market shares without separately identifying whether a particular share resulted from lower prices, improved service, stronger customer relationships, superior network access, traffic density, equipment availability, or other conditions. A famous cautionary example in economics about measuring the returns to education illustrates the distinction:[361] A researcher comparing the wages of people with many years of education to those with few years of education may (incorrectly) conclude that differences in educational attainment caused the wage gap. However, individuals with greater innate ability may simultaneously pursue more education and earn a higher wage. Thus, while the observed wage difference may reflect the effects of educational attainment, that comparison alone does not identify the effects of education on wages specifically.

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[360] A model's ability to fit observed data does not, by itself, establish that it has identified the causal relationships underlying those observations. *See* Joshua D. Angrist and Jörn-Steffen Pischke, *Mostly Harmless Econometrics* (Princeton, NJ: Princeton University Press, 2009), pp. 51–52. For example, Huntington-Klein (2022) illustrates that an observed negative correlation between avocado prices and quantities sold does not, by itself, establish the existence, magnitude, or even direction of a causal relationship because observed market outcomes are jointly determined by supply and demand, both of which can be influenced by other market conditions. *See* Nick Huntington-Klein, *The Effect: An Introduction to Research Design and Causality* (Boca Raton, FL: CRC Press, 2022), pp. 72–74. Train (2009) similarly illustrates how omitted factors can bias estimated relationships in transportation choice models. For example, commuters' unobserved preferences for public transit may influence both where they choose to live and their travel times, potentially biasing estimates of how travel time affects their choice of transportation mode. *See* Kenneth E. Train, *Discrete Choice Methods with Simulation*, 2nd ed. (New York, NY: Cambridge University Press, 2009), pp. 315–316.

[361] *See* Jeffrey M. Wooldridge, *Introductory Econometrics: A Modern Approach*, 5th ed. (Boston, MA: Cengage Learning, 2013), pp. 13–15 (Example 1.4, "Measuring the Return to Education").

233. That distinction is especially important here because Mr. Hunt uses the resulting historical relationships to predict how traffic would change after the merger. His methodology does not establish that the competitive adjustments that occurred in the historical Hunt markets would occur to the same extent, or have the same effect, in the particular markets where he predicts diversion.

234. The empirical results I discuss elsewhere illustrate the problem. Mr. Hunt's rail-to-rail model does not reliably reproduce observed routing even in the historical Hunt markets used to develop and evaluate it, and his truck-to-rail lookalike methodologies predicted substantial diversion when it should find none. Those results provide additional reason not to interpret the models' reliance on historical market outcomes as demonstrating that they have reliably accounted for competitors' future responses to the merger.[362]

B. Mr. Hunt's Structural-Response Analysis Relies on Ad Hoc "Give-Back" Allocations

235. In response to the Board's request concerning potential competitive responses to the merger, Mr. Hunt evaluates three hypothetical railroad combinations: BNSF-CSX, CPKC-CSX, and BNSF-CPKC-CSX. He does not, however, rerun his rail-to-rail or truck-to-rail diversion models to estimate how shippers would choose among UP-NS, another merged railroad, trucking, and other rail alternatives under those scenarios. Instead, Mr. Hunt starts with the traffic his existing models predict would divert to UP-NS and applies a series of additional rules to determine how much of that traffic should be "given back" to another hypothetical

362 *See* Sections V.A–V.C above.

merged railroad.[363] The estimated effect of each responsive merger therefore depends directly on those allocation rules.

236. For rail-to-rail diversion, those rules generally assign either all of the traffic or enough traffic to produce a 50/50 split, depending on the historical route and the railroads involved.[364] For truck-to-carload traffic, Mr. Hunt instead uses relative route mileage to assign fixed shares. A competing merged railroad receives 80 percent of the predicted diversion if its route is more than 15 percent shorter than the UP-NS route, 60 percent if it is between 5 and 15 percent shorter, 50 percent if it is no less than 5 percent shorter or more than 5 percent longer, 40 percent if its route is between 5 and 15 percent longer, and 20 percent if it is at least 15 percent longer.[365] For intermodal traffic, Mr. Hunt uses a still different rule: predicted diversion is generally split 50/50 where the competing routes are within 250 miles of one another, and 60/40 where one route is more than 250 miles shorter.[366]

237. Mr. Hunt does not establish that his simplifying assumptions reliably measure how traffic would be divided between competing railroads. The 50/50, 60/40, and 80/20 shares are not estimated from observed shipper choices, historical competition between the relevant railroads, or a model relating relative mileage to market share. Mr. Hunt states that the mileage bands used for carload traffic were informed by the distribution of mileage ratios in the carload

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363 *See* Hunt Supp. VS, Section 3, pp. 5–6, pp. 9–11. Mr. Hunt evaluates hypothetical BNSF-CSX, CPKC-CSX, and BNSF-CPKC-CSX combinations. He explains that he used his existing UP-NS traffic study as the baseline and "did not create a new diversion model" to estimate whether or how much traffic would be diverted from UP-NS as a result of a structural response.

364 Hunt Supp. VS, Section 3.2, pp. 10–11. For example, historical BNSF-CSX traffic diverted to UP-NS is fully returned to BNSF-CSX, while certain BNSF-NS and UP-CSX traffic is "given back" only to the extent necessary to produce a 50/50 split.

365 Hunt Supp. VS, Section 3.3, pp. 11–12.

366 Hunt Supp. VS, Section 3.4, pp. 12–13.

diversion markets. The distribution of mileage ratios can help describe how many diversion markets fall within a particular range; it does not establish that, for example, a railroad with a route 10 percent shorter should receive 60 percent of the traffic rather than 55 percent, 70 percent, or some other share.[367] The same issue applies to the 50/50 and 60/40 allocations used for intermodal traffic.

238. These assumptions matter because they determine the quantitative effect that Mr. Hunt attributes to responsive mergers. Under a hypothetical BNSF-CSX merger, for example, his analysis reduces predicted UP-NS truck-to-intermodal diversion by approximately 574,000 units, from about 1.2 million to about 627,000.[368] That reduction does not emerge from re-estimating shipper choices in diversion markets where UP-NS and BNSF-CSX would compete. It results from applying Mr. Hunt's assumed allocation rules to the diversion his original model had already predicted. His supplemental analysis therefore does not establish how much traffic a competing merged railroad would actually retain or attract; it shows how the original diversion estimates change when traffic is reallocated using arbitrary, unvalidated shares.

C. Mr. Hunt's Supplemental Pricing Analysis Does Not Resolve the Flaws in His Pricing Assumptions

239. The Board asked Applicants to provide additional information concerning the business, commercial, and pricing changes expected following the merger. Mr. Hunt's Supplemental Statement does not identify a specific post-merger pricing strategy or estimate how Applicants would change prices in the markets where he predicts diversion. Indeed, Mr. Hunt

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367 Hunt Supp. VS, Section 3.3, pp. 11–12. Mr. Hunt explains that he selected the mileage-ratio ranges after reviewing the distribution of mileage ratios and used equal ranges around a 50/50 split, but does not provide an empirical analysis connecting those mileage differences to the assigned traffic shares.

368 Hunt Supp. VS, Section 3.4, p. 12.

states that his revenue calculations "did not assume any changes to business or commercial pricing strategies or practices beyond what is observed in the data relating to reductions in rail-to-rail interchanges."[369] Instead, he explains that his analyses already incorporate the lower prices historically associated with single-line service. For truck-to-carload diversion, modeled rail rates enter the archetypes used to identify lookalike markets; for rail-to-rail diversion, junction frequency serves as a proxy for price, along with service quality and transit time.[370] Thus, the Supplemental Statement does not add a separately modeled post-merger commercial or pricing strategy; it continues to rely on historical average relationships between single-line service, junction frequency, and observed prices. That response effectively assumes that historical average pricing differences associated with single-line service will accompany the modeled reduction in junctions, without establishing that Applicants would actually make the pricing decisions necessary to produce those differences in the particular diversion markets at issue.

240. Notably, Dr. Majure finds that the historical pricing data do not consistently show the single-line price advantage on which Mr. Hunt relies. In important comparisons, those data in fact show the opposite. For example, Dr. Majure examined a regression performed by Dr. Israel that purports to show single-line service is cheaper than interline service.[371] Dr. Majure found that the average single-line rail price charged by UP and NS is higher than the average rail price for interline moves involving either UP or NS in the data underlying Dr. Israel's regression.[372]

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369 Hunt Supp. VS, Section 5, p. 18.

370 Hunt Supp. VS, Section 5, pp. 18–19. Mr. Hunt states that the truck-to-rail diversion model uses rail rates derived from the curves in Exhibit PB6.1 and that, in the rail-to-rail model, junction frequency "acts as a proxy for price, along with service quality and transit time."

371 *See* Majure VS, Section 4.3.2. *See also,* Majure VS, Appendix 12.1.

372 *See* Majure VS, Section 4.3.2. *See also,* Majure VS, Exhibit 20.

Using Dr. Israel's own regression methodology, Dr. Majure further shows that shippers tend to pay less in corridors that resemble pre-merger competitive structures than in those that reflect post-merger competitive conditions.[373] Dr. Majure also finds good reason to expect UP to raise prices, particularly on newly-acquired NS routes, consistent with UP's longstanding price-maximizing strategy. Movements involving UP tend to be priced higher than similar movements involving NS, and that difference more than outweighs the single-line advantage estimated by Dr. Israel.[374] Based on this and other evidence, Dr. Majure concluded that the merger is likely to cause a net increase, not decrease, in shippers' costs on existing UP-NS moves.[375] Dr. Majure also found that the average difference between single-line and interline prices in Dr. Israel's data varies by length of haul.[376] In the length-of-haul ranges accounting for the majority of Mr. Hunt's predicted intermodal diversions, average interline rail rates are lower, rather than higher, than average single-line rates.

241. Mr. Hunt's response also does not address Applicants' post-merger pricing incentives. If, as Applicants contend, the merger would create materially higher-quality single-line service than competing interline alternatives (and in some diversion markets the only single-line option) the merged railroad would not necessarily need to reproduce the average historical price difference between single-line and interline service to attract traffic. A profit-maximizing railroad would generally be expected to reduce price only to the extent necessary to attract the

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373 Dr. Majure treats corridors with at least three railroads and in which interlining is necessary as representative of pre-merger competitive conditions. He treats corridors with at least two railroads but only one single-line option as representative of post-merger competitive conditions. *See* Majure VS, Section 4.2.2. *See also,* Majure VS, Exhibit 17. *See also,* Majure VS, Exhibit 18.

374 *See* Majure VS, Section 4.3.3. *See also,* Majure VS, Exhibit 22. *See also,* Majure VS, Exhibit 23. *See also,* my discussion of UP documents chronicling UP's historical pricing policy in Section III.A.

375 *See* Majure VS, Section 4.3.3. *See also,* Majure VS, Exhibit 23.

376 *See* Majure VS, Section 4.3.4. *See also,* Majure VS, Exhibit 25.

traffic. If a merger-related service improvement itself makes UP-NS more attractive to shippers, the price reduction required to induce diversion could be smaller than the historical average difference Mr. Hunt observes between single-line and interline service.[377] Treating that average historical price difference as though it would accompany the change to single-line service therefore may overstate the price reduction Applicants would actually have an incentive to offer.[378]

242. The distinction between average historical price differences and UP-NS's actual post-merger incentives to lower prices illustrates a more fundamental problem with Mr. Hunt's response. His lookalike methodology does not estimate how shippers respond to a merger-induced change in price, transit time, or another service characteristic. The modeled future characteristics determine which archetype a market enters, and the model then assigns the average observed rail modal share of markets in that archetype.[379] Thus, the predicted increase in rail modal share is the difference between the market's current observed share and the average share of a coarsely matched group of historical markets. It is not an estimate of the incremental response to the particular price, transit-time, or other improvements that Mr. Hunt attributes to

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377 *See* Hunt VS, pp. 27–28 & Exhibit 3-5; Hunt Supp. VS, pp. 18–19 & Exhibit PB6.1.

378 Mr. Hunt's Supplemental Statement states that the truck-to-rail diversion model uses "single-line pricing" and rates derived from junction-frequency curves to define comparable archetypes. *See* Hunt Supp. VS, pp. 18–19. That description does not apply to his truck-to-intermodal model. Mr. Hunt calculates intermodal rail price using average revenue per unit-mile for the applicable directional IANA region pair and modeled rail miles based on the CRA traffic tapes dataset, then adds estimated drayage costs. The average revenue per unit-mile does not vary with single-line status or junction frequency. Eliminating an interchange therefore does not, by itself, reduce the modeled intermodal price. Like his carload analysis, however, the intermodal model uses single-line status, intermodal mileage, intermodal transit time relative to truck, and intermodal price relative to truck, to assign each future market to an archetype whose observed average intermodal share becomes the benchmark for that future market. *See* Hunt Workpaper, "truck_to_im_vFinal.py," lines 1143–1279, 1333–1438; Hunt Workpaper, "HC-Intermodal Diversions Model vFinal.xlsx," tab 'Current_IM_routes.'

379 *See* Hunt VS, pp. 143, 155–156.

the merger. As discussed in Section V, that distinction is central to why his lookalike methodology does not reliably identify merger-caused diversion.

243. Mr. Hunt's Supplemental Statement therefore does not resolve the underlying pricing issue. Pointing to historical pricing differences associated with single-line service does not establish that those differences would arise automatically from a merger, identify the pricing actions Applicants would take to produce them, or demonstrate the resulting shipper response in the markets where Mr. Hunt predicts diversion. These issues also carry through to Applicants' claimed revenue and shipper-savings benefits, which depend on the prices that diverted traffic would actually pay after the merger, as I discuss in Section VII.C.

VII. APPLICANTS' CLAIMED PUBLIC BENEFITS DEPEND ON FLAWED DIVERSION ESTIMATES AND ADDITIONAL UNSUPPORTED ASSUMPTIONS

244. Mr. Hunt's benefits calculations are predicated on an erroneous assumption: they treat reductions in transportation expenditures as economic benefits without accounting for differences in the value shippers place on truck and rail service. Properly accounting for these differences shows that Mr. Hunt's calculations can materially overestimate the economic benefits attributable to any given amount of diversion.

245. Even setting aside that conceptual error, the Applicants' benefit calculations are flawed for other reasons. Specifically, Applicants rely on Mr. Hunt's diversion estimates as the foundation for several categories of public benefits they attribute to the merger, including incremental revenue, shipper savings, and highway, environmental, and related benefits.[380] The

[380] *See* Hunt VS, Sections 8.1–8.2 & Exhibit 8-1; Hunt Supp. VS, Sections 3.7–3.8. Amended Application, Volume 1, pp. 14, 18, 57–58. Janke VS, Section I, III, IV, pp. 5–6, 19–20. Verified Statement of Matthew Graham, April 29, 2026, as revised by Second Errata submitted on September 4, 2026 ("Graham VS"), Sections III.A–III.D, pp. 10–13.

reliability of those downstream estimates therefore depends substantially on whether Mr. Hunt has reliably identified traffic that would divert because of the merger.

246. Applicants' benefits case also depends on additional assumptions that are distinct from the diversion estimates themselves. In particular, the claimed revenue and shipper savings depend on assumptions about the prices that would prevail after the merger.

247. Table 12 below summarizes the principal categories of claimed benefits, identifies which depend on Mr. Hunt's diversion estimates, and highlights additional issues with Applicants' claimed benefits, which I address in this section. Applicants also assert that the merger would stimulate manufacturing and broader economic growth, a benefit they do not quantify. I assess the support for that claim in Appendix B.10 and find that Applicants have not established that the existing rail network has constrained such growth.

TABLE 12: APPLICANTS' CLAIMED BENEFITS DEPEND ON MR. HUNT'S DIVERSION ESTIMATES AND OTHER ASSUMPTIONS

Applicants Claimed Benefit [A]		Dependent on Hunt Diversion Estimates? [B]	Additional Assumptions or Dependencies [C]
Operating revenue benefits from traffic gains	[1]	✓	Revenue estimates depend on post-merger rail pricing; higher prices increase projected revenue.
Shipper truck-to-rail savings	[2]	✓	Savings estimates depend on post-merger rail pricing; higher prices decrease calculated savings.
Highway, environmental, and related benefits from truck-to-rail diversion	[3]	✓	Dependent on the amount and composition of traffic actually diverted from truck to rail.
Broad economic growth	[4]		Economic underperformance of watershed states; material economic constraints driven by existing rail network structure

Sources and Notes: *See* Workpaper "Hunt_Assumptions.xlsx." Table does not reflect a complete list of assumptions or dependencies within the Hunt traffic models.

[1]: *See* Sections VII.B–VII.C. *See also*, Hunt VS, pp. 94–95 & Exhibit 8-1.

[2]: *See* Sections VII.A–VII.C. *See also*, Hunt VS, pp. 95–96.

[3]: *See* Section VII.B. *See also*, Hunt VS, pp. 20–21 & Exhibit 2-5.

[4]: *See* Appendix B.10.

A. Mr. Hunt Conflates Reductions in Transportation Expenditures With Shipper Benefits

248. Applicants treat the difference between the estimated truck price and rail price as a transportation-cost saving to a shipper that diverts from truck to rail. That calculation measures the reduction in the shipper's transportation expenditure. It does *not* measure the shipper's economic benefit from changing modes because it does not account for differences in the value the shipper places on truck and rail service.

249. Specifically, economists often measure consumers' economic benefits from purchasing a product or service using the concept of "consumer surplus." Consumer surplus is measured as the difference between a consumer's willingness-to-pay for a product and the expenditure incurred to purchase it.[381] In that way, consumer surplus reflects the tradeoff consumers face when purchasing a high value, but expensive, product, because it nets out the cost incurred to obtain the high-value product. Although truck transportation is generally more expensive than rail, many shippers choose truck because they value its faster transit, flexibility, door-to-door delivery, and, in many cases, greater reliability.[382] In the context of this merger, a shipper choosing between two discrete transportation options will select the option that yields the

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381 *See* Hal R. Varian, *Intermediate Microeconomics: A Modern Approach*, 8th ed. (W. W. Norton & Company, 2010), pp. 253–255.

382 *See* U.S. Department of Transportation, Federal Highway Administration, "Comprehensive Truck Size and Weight Limits Study: Modal Shift Comparative Analysis Technical Report," last accessed November 7, 2026, https://ops.fhwa.dot.gov/freight/sw/map21tswstudy/technical_rpts/mscanalysis/app_a_desk_scan.htm, Appendix A: Modal Shift Desk Scan, Chapter 2 - Summary of Key Modal Shift Studies and Related Databases and § 2.1.7 (explaining that rail freight is generally cheaper, while trucking offers advantages in flexibility and speed, and often reliability). *See also*, Hunt VS, p. 29 (acknowledging that shippers do not expect rail to be faster than truck and are more likely to switch to rail if it narrows the transit-time gap, improves reliability, and remains less expensive). *See also*, Norfolk Southern, "Service Metrics for Growth, Intermodal and Automotive," February 23, 2023, NS_00157756, slide 6 (comparing estimated door-to-door transit times on selected domestic lanes and showing substantially longer times by rail than by truck).

highest surplus, and the change in shippers' surplus from switching from one transportation option to another is not generally equal to the change in their transportation spending. For example, shippers switching from truck to rail will experience a smaller change in surplus than the change in their transportation expenditure when their willingness-to-pay is higher for truck than for rail.[383]

250. Table 13 illustrates Mr. Hunt's error using a simplified example based on the average price for transporting 10,000 ton-miles via truck, pre-merger rail, and post-merger rail in Mr. Hunt's truck-to-carload diversion markets.[384] Both before and after the merger, truck service provides the shipper with value of $1,190 and costs $1,090, producing $100 of shipper surplus. Rail service is less expensive but also less valuable to the shipper, who values aspects of truck service such as flexibility, reliability, and transit time enough to pay more for it. The difference between the shipper's value ($700) and cost ($650) to using a rail service in this example yields a shipper surplus of $50 in the pre-merger world. The shipper therefore chooses truck.

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383 Applied to a shipper switching from truck to rail service, the change in consumer surplus is: $\Delta CS = (v_{rail} - p_{rail}) - (v_{truck} - p_{truck}) \Leftrightarrow (p_{truck} - p_{rail}) - (v_{truck} - v_{rail})$, where v represents the shipper's valuation of each transportation service and p represents its price. Applicants incorrectly treat the reduction in transportation expenditures, $p_{truck} - p_{rail}$, as the full economic benefit to shippers, without accounting for the difference in the value shippers place on truck and rail, $v_{truck} - v_{rail}$. The idea that an improvement inducing a switch between transportation modes need not translate into an equal gain in consumer surplus is also discussed in U.S. Government Accountability Office, "Public Transportation: Improvements Are Needed to More Fully Assess Predicted Impacts of New Starts Projects," GAO-08-844, July 2008, available at: https://www.gao.gov/assets/gao-08-844.pdf, Appendix III, p. 60.

384 The average price per ton-mile for truck, pre-merger rail, and post-merger rail across Mr. Hunt's truck-to-carload diversion markets is $0.109, $0.065, and $0.052, respectively. *See* Appendix B.7.c, Table 26. Because Mr. Hunt does not estimate shippers' willingness-to-pay for truck or rail transportation services, I instead assume values as an illustration.

251. After the merger, the value of rail service increases from $700 to $750 and its price falls from $650 to $520.[385] The shipper now receives a surplus of $230 when choosing rail, which is larger than the surplus it receives from truck. It therefore chooses rail. While its transportation expenditure fell by $570 ($1,090 − $520), its surplus increased by only $130: the increase in surplus from $100 before the merger to $230 afterward. In this illustrative example, the reduction in transportation expenditures is more than four times the increase in shipper surplus. That ratio could be larger or smaller in any particular market, depending on prices and how shippers value the available truck and rail services. The $440 difference between the reduction in transportation expenditures and the increase in shipper surplus reflects the lower value the shipper places on rail service relative to truck service, not an additional benefit created by the merger. Mr. Hunt's calculations instead treat the full $570 reduction in transportation expenditures as the economic benefit received by shippers.[386]

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385 In this illustrative example, the post-merger increase in the shipper's value of rail service to $750 would yield $100 in surplus even if the rail price remained at $650, making the shipper indifferent between rail and truck. A price reduction of less than the $130 assumed here would therefore be sufficient to induce a switch. This illustrates why the price actually charged by Applicants matters to the calculation of shipper benefits. *See* Section VII.C.

386 This treatment is also inconsistent with Mr. Hunt's own analytical framework. Throughout his diversion analyses, Mr. Hunt recognizes that shippers value service characteristics such as transit time, reliability, and other service characteristics when choosing between truck and rail. *See, e.g.*, Hunt VS, p. 23.

TABLE 13: SHIPPER BENEFITS ARE NOT MEASURED BY DIFFERENCES IN TRUCK AND RAIL TRANSPORTATION COSTS

		Pre-Merger [A]	Post-Merger [B]
Truck value	[1]	$1,190	$1,190
Truck price	[2]	$1,090	$1,090
Shipper surplus from truck	[3]	$100	$100
Rail value	[4]	$700	$750
Rail price	[5]	$650	$520
Shipper surplus from rail	[6]	$50	$230
Shipper choice	[7]	Truck	Rail
Value to shipper from chosen option	[8]	$1,190	$750
Transportation expenditure	[9]	$1,090	$520
Shipper surplus	[10]	$100	$230
Change in shipper value	**[11]**		**-$440**
Change in transportation expenditure	**[12]**		**-$570**
Increase in shipper surplus	**[13]**		**$130**

Sources and Notes: *See* Workpaper "Savings_Surplus.xlsx."

[1], [4]: Assumed.

[2], [5]: Average cost of transporting 10,000 ton-miles via truck, pre-merger rail, and post-merger rail across Mr. Hunt's truck-to-carload diversion markets. $10{,}000 \times \$0.109 = \$1{,}090$. $10{,}000 \times \$0.065 = \$650$. $10{,}000 \times \$0.052 = \$520$. Prices used are based on the average per-ton prices in Mr. Hunt's truck-to-rail diversion markets. *See* Appendix B.7.c, Table 26.

[3]: [1] - [2].

[6]: [4] - [5].

[7]: Shipper choice is the transportation mode with the greatest surplus (based on rows [3] and [6]).

[8]: Value of chosen option (based on option chosen in row [7] selecting value from row [1] or [4]).

[9]: Transportation expenditure equals the price of the selected transportation mode (based on rows [2] and [5]).

[10]: Shipper surplus equals greater of [3] or [6].

[11]: Change in shipper value equals post-merger value to shipper from chosen option less pre-merger value to shipper from chosen option (difference of values in row [8]).

[12]: Expenditure reduction equals post-merger transportation expenditure less pre-merger transportation expenditure (difference of values in row [9]).
[13]: Increase in shipper surplus equals post-merger shipper surplus less pre-merger shipper surplus (difference of values in row [10]).

252. Separate from the problem that changes in transportation expenditures do not generally measure shippers' economic benefits from switching modes, Mr. Hunt omits switching costs that would further reduce his estimate of those benefits. Specifically, Mr. Hunt testified that at least some shippers will incur costs to switching their transportation mode.[387] Nonetheless, Mr. Hunt testified that a determination of the extent of such switching costs "is not something we included in this study."[388] Thus, even taking as given Mr. Hunt's diversion models, pricing assumptions, and approach to measuring shippers' economic benefits, his calculation overstates those benefits by omitting switching costs.

253. Correctly quantifying the benefit to diverting shippers would require substantially more analysis than Mr. Hunt performs, even if one were to accept his estimated truck and rail prices. A shipper who switches because post-merger rail service is only slightly more attractive than trucking may gain little in surplus, even if its transportation expenditures fall substantially, because that shipper would be giving up other attributes of trucking they find almost as valuable as the rate reductions achieved by switching to rail. Mr. Hunt's simple calculation of transportation-expenditure savings should not be mistaken for a reliable measure of shipper benefits. His calculation counts the full reduction in expenditures without accounting for the value of any truck service characteristics the shipper gives up when switching to rail.

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387 Deposition of David T. Hunt, Vol. II, October 8, 2026, 590:16–23.

388 Deposition of David T. Hunt, Vol. II, October 8, 2026, 591:18–592:3.

B. Mr. Hunt's Flawed Diversion Estimates Form the Foundation of Applicants' Claimed Benefits

254. Even setting aside the conceptual error described in Section VII.A, many of Applicants' claimed public benefits use Mr. Hunt's diversion estimates as the primary inputs.[389] Projected operating revenue depends on the quantity and composition of the traffic he predicts will divert. Shipper transportation savings depend on the amount of traffic predicted to move from truck to rail and on the assumed difference between truck and rail transportation expenditures. Estimates of reduced highway traffic, environmental benefits, and related benefits likewise depend on the amount and composition of predicted truck-to-rail diversion.

255. Those benefit estimates therefore inherit the reliability problems in the underlying diversion analyses. As discussed in Section V, Mr. Hunt's models do not reliably measure traffic that would divert because of the merger. Accordingly, the revenue gains, shipper savings, highway benefits, and related public benefits calculated from those estimates likewise do not provide reliable measures of benefits attributable to the merger.

C. The Additional Pricing Assumptions Applicants Impose to Compute Claimed Revenue and Shipper Savings Are Unsupported

256. Applicants' projected operating revenue and shipper savings depend not only on the amount of traffic Mr. Hunt predicts will divert, but also on the prices that traffic would pay after the merger.[390] As discussed in Section V.D, pricing decisions may also affect whether the

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389 *See* Hunt VS, Section 8.1–8.2 & Exhibit 8-1; Hunt Supp. VS, Section 3.7–3.8. *See also*, Applicants' Second Response to Decision No. 21, *Union Pacific Railroad Company–Control–Norfolk Southern Corporation and Norfolk Southern Railway Company*, Finance Docket No. 36873, UP-80/NS-78, July 27, 2026, Supp. pp. 76–77 (describing the estimated shipper savings and highway, safety, tax, and environmental benefits associated with the traffic Mr. Hunt predicts will divert from truck to rail).

390 *See* Hunt VS, Sections 8.1–8.2 & Exhibit 8-1; Hunt Supp. VS, Sections 3.7–3.8. Mr. Hunt's projected revenues depend on the revenues associated with predicted diverted traffic, while his shipper-savings estimates depend on the difference between estimated truck and rail transportation expenditures for traffic predicted to divert.

merged railroad can attract the traffic Mr. Hunt predicts in the first place. Holding the predicted traffic fixed, however, those two categories of claimed benefits move in opposite directions as the assumed rail price changes: higher post-merger rail prices increase projected railroad revenue but decrease calculated shipper savings, while lower prices have the opposite effect. No conclusion can be drawn regarding the magnitude of these benefits without a reliable and consistent basis for estimating the prices that would prevail post-merger on the diverted traffic, yet Applicants provide none.

257. Instead, Mr. Hunt uses different pricing assumptions across his diversion analyses without explaining why. For example, in his truck-to-carload diversion model, he estimates rail prices using power curves that specify revenue per ton-mile by distance and single-line status, and uses those estimated rail prices to assign markets to archetypes. In contrast, his truck-to-intermodal diversion model uses region-to-region price estimates that do not vary with single-line versus interline status.[391] His rail-to-rail model takes a different approach. His rail-to-rail model does not include any variable capturing price differences between routes; it instead uses junction frequency as a "proxy" for price, service quality, and transit time.[392] It therefore does

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391 *See* Hunt VS, Appendices B.3.4.B, B.5.2.C, B.6; Hunt Supp. VS, pp. 18–20 & Exhibit PB6.1; Hunt Workpaper, "truck_to_im_vFinal.py," lines 1140–1281, 1403–1420.

Furthermore, Mr. Hunt changed the methodology for estimating intermodal linehaul prices in his truck-to-intermodal model from the approach used in the December 2025 Hunt and Schabas VS. In their December 2025 analysis, Mr. Hunt and Mr. Schabas estimated intermodal linehaul prices using a regression based on the 2023 CCWS data, with rail mileage, average tons per intermodal unit, and directional traffic imbalance as explanatory variables. In his April 2026 VS, Mr. Hunt replaced the regression-based approach with a methodology that estimates intermodal linehaul prices using average directional revenue per unit-mile for IANA region pairs, based on the Traffic Tapes. Mr. Hunt does not explain why he changed the approach. He lists the change among several adjustments he describes as having "small impacts on the results," and asserts only that the directional regional approach "provides a good approximation of linehaul rates for new lanes." *See* Hunt & Schabas VS, pp. 122–123; Hunt VS, pp. 141, 210-211.

392 *See* Hunt VS, Section 3.5 & Appendix A; Hunt Supp. VS, p. 19 (explaining that junction frequency acts as a proxy for price, service quality, and transit time).

not isolate the role of price in predicted route choice nor establish what post-merger price change, if any, is reflected in shippers' responses.

258. The inconsistency extends to the prices Mr. Hunt uses at different stages of the same analysis. For truck-to-intermodal diversions, he uses different pricing assumptions to calculate the associated benefits than he uses to predict the diversions themselves. Mr. Hunt cites historical differences between single-line and interline prices as evidence that single-line service is more attractive to shippers.[393] But the prices used in his intermodal diversion model are region-to-region averages that do not vary based on whether rail service is single-line or interline.[394] He then uses a separate power-curve methodology to estimate the post-merger revenues associated with predicted diverted traffic.[395] Thus, the historical pricing relationship Mr. Hunt invokes to motivate diversion is not the relationship used in the diversion model, and neither of those two methodologies is used to calculate post-merger revenue. Mr. Hunt does not explain why he uses different pricing relationships or establish that those assumptions are mutually consistent.

259. Even setting aside the pricing inconsistencies within and across Mr. Hunt's analyses, he does not establish how prices would change after the merger. His historical average pricing relationships do not identify price changes in the markets where he predicts merger-related diversion.[396] As Dr. Majure explains, the merger will change competitive conditions; Mr.

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393 *See* Hunt VS, Exhibit 3-5.

394 *See* Hunt VS, pp. 140–141 & Appendix B.3; Hunt Workpaper, "truck_to_im_vFinal.py."

395 Mr. Hunt uses a separate power-curve approach to estimate revenue associated with diverted intermodal traffic. *See* Hunt Supp. VS, pp. 18–20, Exhibit PB6.1. *See also*, Hunt Workpaper, "RevenuePerTM_Distance_JF.xlsx," tab 'Final-ST2'

396 For example, Mr. Hunt cites historical differences between single-line and interline prices as evidence that single-line service is more attractive to shippers. *See* Hunt VS, Exhibits 3-5, B-32 and B-34; Hunt VS, pp. 30–31; Hunt Supp. VS, pp. 18–20 & Exhibit PB6.1.

Hunt's models do not isolate the pricing effects of those changes, as I explain in Sections VI.A and VI.B.[397] This problem is especially clear where the merger would introduce the first single-line service, as it would in most of Mr. Hunt's diversion markets.[398] The availability of competing rail options and other market-specific conditions will affect the prices Applicants have an incentive to offer, yet Mr. Hunt applies historical pricing relationships rather than attempting a market-specific estimate of post-merger prices.[399] Basic economic theory predicts that, where the merger reduces competitive pressure, Applicants would have less incentive to pass the advantages of single-line service through to shippers in lower prices. In markets where the merger reduces competitive pressure, Mr. Hunt's assumed price reductions are likely too large, and his calculated shipper savings are correspondingly overstated.

260. Applicants' internal revenue-synergy analysis underscores the importance of the pricing assumption. Mr. Houston testified that [redacted]

[397] For example, Dr. Majure has found that the merger would (1) eliminate competition between UP and NS, (2) weaken geographic competition and weaken shippers' ability to bargain for more competitive rates and service offerings, and (3) give UP-NS the incentive and ability to foreclose competition. *See* Majure VS, Section 2.

[398] As explained in footnotes 132 and 209, most of Mr. Hunt's diversion markets are those that would switch from interline in his pre-merger data to single-line in his post-merger calculations.

[399] *See* Hunt VS, Exhibit 3-5; Hunt VS, pp. 30–31; Hunt Supp. VS, pp. 18–20 & Exhibit PB6.1. At best, Mr. Hunt's descriptive single-line/interline pricing comparisons summarize historical outcomes across existing markets; they do not separately identify the causal effect of converting a particular market from interline to single-line service. As discussed in Section V.D.1, post-merger pricing also affects whether Applicants can attract the traffic Mr. Hunt predicts. Rail prices higher than those incorporated in his diversion analyses would make rail less attractive to truck shippers and, all else equal, reduce predicted diversion. In this section, I hold predicted traffic fixed to isolate the effect of pricing on Applicants' claimed shipper benefits.

[redacted].[400] Applicants' failure to substantiate why the merged railroad would offer price reductions of the magnitude Mr. Hunt's analysis depends upon is particularly important in light of UP's historical decisions, discussed in Section III.A, to prioritize revenue quality and pricing over maximizing traffic volume.[401]

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400 Deposition of Michael Houston, July 30, 2026, 239:1–240:16, 260:19–266:1, 269:9–270:19. Mr. Houston testified that [redacted].

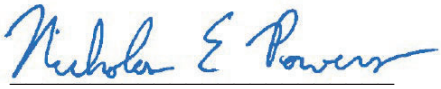
401 *See also,* Majure VS, Section 4.3.3-4.3.4.

VERIFICATION

I reserve the right to supplement or revise the opinions expressed in this Verified Statement as appropriate in light of additional information that may become available, including additional data, workpapers, testimony, discovery responses, or other materials relevant to my analysis.

I, Nicholas E. Powers, declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this Verified Statement.

Executed on this 18th day of November, 2026.



Nicholas E. Powers, Ph.D.

Appendix A: CV

Nicholas Powers

PRINCIPAL

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Dr. Powers specializes in conducting econometric and economic analysis and applying concepts from industrial organization and regulatory economics in competition, regulatory, and other litigation matters, with a focus on the transportation sector.

Dr. Powers has experience involving confidential railroad data, rail service and operational issues, and other transportation matters. His transportation work has included analysis of railroad mergers, trackage rights, rail car hire, rail-service disruptions, railroad valuation, and related matters.

Dr. Powers also frequently provides economic analysis of cartel behavior, damages, merger effects, and exclusionary practices. His antitrust work has included matters involving transportation, air cargo, trucking, online rental-listing platforms, and other industries.

In regulatory proceedings, Dr. Powers has extensive experience conducting analysis for and submitting expert reports that often involve regulatory costing or rate-making issues. This includes extensive analysis of regression-based costing models and other economic issues in the postal industry and econometric analysis of innovative pricing programs in the electric industry. He also has varied experience in the electricity industry, including damages assessments and analyses of price effects, market power, and anticompetitive behavior in several litigation proceedings arising from the California electricity crisis of 2000–2001, as well as analyses of the cost and feasibility of renewables-only energy portfolios.

AREAS OF EXPERTISE

- Antitrust & Competition

- Collaborations & Cartels
- Electricity Litigation & Regulatory Disputes
- Regulatory Economics, Finance & Rates
- Transportation

EDUCATION

- University of Michigan, Ross School of Business
  PhD in Business Economics
- **Cornell University**
  BS in Applied Economics and Management

PROFESSIONAL EXPERIENCE

- **The Brattle Group (2010–Present)**
  Principal (2021–Present)
  Senior Associate (2013–2020)
  Associate (2010–2013)

TESTIMONY

- Petition of FirstEnergy Pennsylvania Electric Company for Approval of Its Default Service Program for the Period June 1, 2027 to May 31, 2031 | Pennsylvania Public Utility Commission | Docket No. P-2026-3060298 | Direct and Rebuttal Testimony of Nicholas E. Powers, Ph.D. (February and May 2026).
- **Expert Report of Dr. James Reitzes and Dr. Nicholas Powers** | District Court of Amsterdam | European trucks cartel litigation | Analyzing the competitive effects of gross list price coordination and estimating overcharges using regression analysis (April 30, 2026).
- **Four expert reports submitted to the District Court of Amsterdam** | Case No. C/13/486440: C/13/561169 Equilib | Co-authored with James D. Reitzes on behalf of claimants in litigation concerning alleged price-fixing by international cargo airlines. The reports addressed volume of commerce, overcharge methodology, and overcharge estimates. (2019, 2020, 2022, and 2025)

- **Before the Surface Transportation Board** | Docket No. EP 334 (Sub-No. 8A) | Verified Statement of Nicholas E. Powers on behalf of the Railway Supply Institute's Equipment Leasing Committee (March 2024).
- ***Dover Chemical Corporation v. City of Dover, Ohio, et al.*** | Court of Common Pleas, Tuscarawas County, Ohio | Case No. 2021 CV 020097 | Expert Testimony of Nicholas E. Powers, Ph.D. (June 2023).
- **Before the Pennsylvania Public Utility Commission** | Docket Nos. R-2021-3030012, R-2021-3030013, R-2021-3030014, R-2021-3030021. | Direct and Rebuttal Testimony of James D. Reitzes and Nicholas E. Powers (December 2021 – March 2022)
- ***Turo Inc. v. City of Los Angeles*** | The United States District Court, Central District of California Western Division | *Case 2:18-cv06055-CAS-GJS, Document 1* (January 2022)

SELECTED CONSULTING EXPERIENCE

Rail and Other Transportation

- On behalf of the Railway Supply Institute's Equipment Leasing Committee, filed a Verified Statement in a proceeding before the Surface Transportation Board concerning whether the current system for determining car hire rates fosters an economically appropriate long-term supply of boxcars.
- Supported expert report quantifying damages in rail freight fuel surcharge antitrust litigation.
- Co-authored a report analyzing the extent and scale of nationwide rail-service disruptions, in support of testimony before a state public utility commission.
- Advised the Cincinnati Southern Railway Board of Trustees regarding the railroad's fair market valuation in support of its negotiations with Norfolk Southern.
- Analysis of confidential waybill sample data to identify potential competitive concerns from the proposed CN-KCS railroad merger.
- Managed analysis for life cycle assessment of greenhouse gas emissions associated with a proposed railroad.

- Managed the analysis in support of multiple verified statements filed in a railroad trackage rights proceeding before the Surface Transportation Board, leveraging the Brattle Rail Network Model and confidential rail data sources.
- In the context of a proposed public-private partnership toll road project, performed due diligence on traffic and revenue forecasts.
- For Frontier Airlines, supported expert testimony in a breach of contract matter involving lease cancellations. The damages calculated by our team were awarded in full.
- For a European airline, quantified lost profits resulting from the grounding of the Boeing 737-MAX. Our analysis included detailed examination of fleet plans, flight operations, and cost structure, and helped procure a favorable settlement for the airline.
- For the City of Los Angeles, submitted expert testimony analyzing the economic arguments for airport rental car regulations, and assessing potential economic harms from uneven application of those regulations.
- For a class of Australian owners of Volkswagen vehicles, analyzed the impact of the diesel emissions issue on resale prices for VW vehicles affected by non-compliant emissions "defeat devices."
- In a lawsuit brought by the City of Ontario, CA against Los Angeles World Airports, evaluated the reliability of plaintiff's claim for damages in excess of $3 billion for alleged mismanagement of the Ontario airport.
- Manage the development and maintenance of the Brattle Rail Network Model, a geocoded database of all rail lines in the United States. Information contained in the database identifies for each rail segment in the database which railroad or railroads own the facility, and which railroads, if any, possess trackage rights allowing them to operate over that facility.

Antitrust

- Supported economic analysis and expert testimony on behalf of the Federal Trade Commission and plaintiff states in their investigation and litigation challenging agreements between Zillow and Redfin concerning multifamily rental advertising. Analyses addressed

market definition, competitive effects, pricing, listings, customer migration, and indirect network effects.

- Supported economic analysis and expert testimony on behalf of defendant in alleged price-fixing case involving undersea transmission cables.
- Retained as expert in alleged boycott matter involving trucking industry. Matter settled.
- Assessed and advised counsel on potential competitive concerns in mergers and transactions in a variety of industries, including music data, hospital beds, venue management, and specialized B2B software.
- Supported defendant in a matter involving alleged collusion in the chemical industry.
- Analyzed the anti-competitive impacts resulting from a proposed merger in the television broadcast industry.
- Oversaw preparation of expert report and quantification of damages, on behalf of plaintiffs, stemming from exclusionary conduct in the cotton industry.
- In the European truck manufacturers cartel matter before the District Court of Amsterdam, co-authored expert report analyzing theory of harm and estimating cartel overcharges using regression analysis.
- In European air cargo price-fixing matter, co-authored expert reports on volume of commerce and overcharge methodology issues. Presented results of volume of commerce analysis and opinion on overcharge methodology to Court of Amsterdam.
- Advise counsel representing a large multinational industrial firm by estimating overcharges stemming from a series of price-fixing conspiracies covering several input commodities.
- On behalf of purchasers of air cargo (plaintiffs) in a class action civil suit, conducted econometric and other statistical analyses in order to estimate economic damages from alleged price-fixing. Supported the expert testimony of Nobel laureate Daniel McFadden.
- Supported testifying expert, on behalf of plaintiffs, in a competition matter related to vertical restraints in the carpet industry.

- Identified flaws in the econometric analysis of opposing experts in the context of settlement negotiations arising from price-fixing allegations in the plastics manufacturing industry.
- Performed econometric estimates of the price effects resulting from competitor entry and exit in geographic product markets to support expert testimony that assessed anti-competitive effects from a proposed joint venture in the airline industry.
- In a large civil case concerning alleged collusion in the corrugated packaging industry, executed the econometric analysis forming the basis of a report critiquing plaintiff's damages estimates. Supported the expert testimony of Nobel laureate Daniel McFadden.
- Conducted econometric analysis in evaluation of expert testimony that sought to quantify network effects in the payment card industry.

Regulatory and Energy

- For FirstEnergy's Pennsylvania utilities, sponsored witness testimony before the Pennsylvania Public Utility Commission, analyzing the cost and risk associated with the Companies' proposed default service supply plans. Analysis included estimates of the implied price premium for covering volumetric and pricing risk that was associated with past procurements of full-requirements power supplies, showing that this premium was relatively modest in size.
- For multiple transmission developers, on multiple occasions, served as independent manager of open solicitation processes. Responsibilities include filing short reports with the Federal Energy Regulatory Commission.
- On behalf of a large industrial client, conduct a far-reaching search and manage an RFP to identify low-cost, high-renewables electric supply options among several competing utilities and jurisdictions.
- For the City of Dover, Ohio, submitted expert testimony providing electric industry background and economic context as it pertains to a legal dispute between the City's municipal electric utility and Dover Chemical Corporation, the City's largest electric customer.

- On behalf of a fuel distributor, analyzed and prepared arguments in the course of a State Attorney General investigation into alleged price-gouging following the invasion of Ukraine. Our analysis showed that any increase in the prices charged by the fuel distributor were driven by cost increases, rather than the opportunistic behavior alleged in the investigation.
- For Baltimore Gas & Electric, designed and oversaw the cost-benefit analysis of several programs underlying proposed Performance Incentive Mechanisms. Programs analyzed included reduction of oil-based circuit breaker equipment and a change to the best practices on gas main abandonment jobs to reduce emissions.
- For multiple regulated utilities in Pennsylvania, on multiple occasions, designed and managed the procurement of solar power and solar photovoltaic alternative energy credits (SPAECs).
- On behalf of a coalition of mailer associations, submitted expert declaration critiquing aspects of changes to the system for regulating Postal Service rates for market dominant products as proposed by the Postal Regulatory Commission in Docket No. RM2017-3.
- For an expert report submitted as part of a revenue requirements proceeding, benchmarked BC Hydro's non-fuel operations and maintenance costs against those of US investor-owned utilities.
- Coauthored a report analyzing the economics and reliability of alternative energy portfolios (approaching 100% renewable power) for the City of Memphis.
- Submitted an expert report analyzing the rate of return of a land-based telecommunications network in Alaska for a proceeding before the Federal Communications Commission.
- In conjunction with a Maryland Public Service Commission-mandated time-of-use ("TOU") pricing pilot, analyzed the impacts of TOU prices on peak load and conservation in three Maryland electric utilities. Designed and implemented a matching-based regression methodology.
- On behalf of Growth Energy, coauthored a report analyzing the role that higher ethanol blends of gasoline (E85) could play in meeting the proposed 2017 renewable volume obligations (RVOs) under the Renewable Fuel Standards (RFS) program. The report was

filed with Growth Energy's comments in the Environmental Protection Agency's rulemaking docket regarding proposed renewable fuel standards.

- For a Southeastern generation and transmission electric cooperative, oversaw preparation of expert damages report and advised counsel on same in the context of an arbitration proceeding stemming from an alleged breach of contract.
- Advised a large nonprofit energy buying consortium in a procurement of retail electric service for their members, assessing offers over a variety of products, services, and geographic areas, and assisting in negotiations with several large retail electric suppliers.
- For the Department of Energy and Pacific Northwest National Laboratory, coauthored a report on the valuation of electric power systems and technologies as part of the Quadrennial Energy Review process.
- On behalf of United Parcel Service, managed analysis and provided expert services in several regulatory dockets before the Postal Regulatory Commission. Conducted econometric analyses and assisted in the preparation of reports and filings in a number of Dockets before the Postal Regulatory Commission, including Dockets No. ACR2014, RM2015-7, RM2016-2, RM2017-1, RM2020-9, RM2022-2, and RM2022-3. Co-authored expert report critiquing a proposed change to costing principles in the Purchased Highway Transportation cost segment, in Docket No. RM2016-12.
- For the Department of Energy and Pacific Northwest National Laboratory, coauthored a baseline report on electric transmission, distribution, and storage infrastructure in the United States as part of the inaugural Quadrennial Energy Review process.
- For a valuation matter concerning a back-office IT services provider to retail energy suppliers, supervised the analysis for and supported industry witness in a report assessing the status and prospects of the retail energy service business in restructured states.
- Supervised the analysis for four cases in support of testimony in federal court cases relating to alleged New Source Review (NSR) violations at coal-fired power plants.
- For an express package delivery carrier, managed the construction of an integrated Excel-based cost and demand financial forecasting model of the United States Postal Service

(USPS), based on public USPS data and filings in previous Postal Regulatory Commission dockets.

- For a mid-Atlantic utility, estimated economic benefits to ratepayers from natural gas service, as portion of eventual PUC filing justifying investments related to storm resilience of distribution system.
- For a utility in the Southeastern United States, conducted a review of NERC region load forecasts. This consisted of econometric analysis to weather-normalize actual loads and evaluate the portion of the forecast error that could be attributed to variations in weather.
- Researched alternative rate plans and presented results to senior management of a mid-sized electric utility as part of a regulatory strategy consulting engagement.
- For the California parties, conducted several key pieces of analysis evaluating effects of tariff violations in the summer of 2000 on CAISO market prices and drafted portions of expert testimony, in a litigation matter before the FERC arising from the California electricity crisis.
- For the California parties, conducted econometric analyses detecting the exercise of market power and price discrimination in the 2001 "CERS" period of the California electricity crisis. This analysis formed the basis of key parts of the testimony of two expert witnesses.

SELECTED ADDITIONAL REGULATORY FILINGS

- "PC44 Time of Use Pilots: End-of-Pilot Evaluation," with Sanem Sergici, Ahmad Faruqui, Sai Shetty, and Ziyi Tang, prepared for Maryland Joint Utilities and Filed with the Maryland Public Utility Commission (October 4, 2021)
- "PC44 Time of Use Pilots: Year 1 Evaluation," with Sanem Sergici, Ahmad Faruqui, Sai Shetty, and Jingcheng Jiang, prepared for Maryland Joint Utilities and filed with the Maryland Public Utility Commission (September 15, 2020)
- "Expert Declaration of Kevin Neels and Nicholas Powers," before the Postal Regulatory Commission and related to the Statutory Review of the System for Regulating Rates and Classes for Market Dominant Products, in Docket No. RM2017-3 (February 2020)

- "Evaluation, Measurement and Verification Plan for the PC44 Time-of-Use Rate Pilots," with Sanem Sergici and Ahmad Faruqui, prepared for Maryland Public Service Commission PC44 Rate Design Work Group (June 2018)
- "Rate of Return Analysis of GCI's TERRA Network," with William P. Zarakas and Agustin J. Ros, prepared for GCI Communication Corp. (March 2018)
- "Report of Dr. Kevin Neels and Dr. Nicholas Powers to Accompany UPS Comments in Docket No. RM2016-12," before the Postal Regulatory Commission, related to costing principles in the highway transportation segment; reply report also submitted (October 2016)
- "Peeking Over the Blendwall: An Analysis of the Proposed 2017 Renewable Volume Obligations," with Marc Chupka, J. Michael Hagerty, and Sarah Germain, prepared for Growth Energy; filed with comments in Docket EPA-HQ-OAR-2016-0004 (July 2016)

ACADEMIC PUBLICATIONS

- "Competitive Effects of Exchanges or Sales of Airport Landing Slots," with James D. Reitzes, Brendan McVeigh, and Samuel Moy, *Review of Industrial Organization* (August 2014)
- "Measuring the Impact of the Toxics Release Inventory: Evidence from Manufacturing Plant Births," US Census Bureau Center for Economic Studies Working Paper Series (March 2013)
- "Does Disclosure Reduce Pollution? Evidence from India's Green Rating Project," with Allen Blackman, Thomas P. Lyon, and Urvashi Narain, *Environmental and Resource Economics* (March 2011)
- "Do State Renewable Portfolio Standards Promote In-state Renewable Generation?" with Haitao Yin, *Energy Policy* (February 2010)

OTHER REPORTS AND ARTICLES

- "Will Merger Improve the Financial Performance of CP and KCS?" with Kevin Neels and Ivy Yang. *Journal of Transportation Law, Logistics and Policy* (December 2022)
- "Differing Proof Requirements for Global Class Actions: Using Economic Analysis to Guide Future Policymakers," with John Roberti and Kelse Moen. *Antitrust Magazine* (August 2021)

- "Power to Memphis: Options for a Reliable, Affordable, and Greener Future," with Jürgen Weiss, Judy Chang, and Kai Van Horn, prepared for Friends of the Earth (January 2019)
- "Valuation of Electric Power System Services and Technologies," with Ira H. Shavel, Michael Hagerty, Yingxia Yang, and Roger Lueken, prepared for the US Department of Energy, Office of Electricity Delivery and Energy Reliability (August 2016)
- "Electricity Baseline Report for the US Power System," with Ira Shavel, J. Michael Hagerty, and Yingxia Yang, prepared for Pacific Northwest National Laboratory and the US Department of Energy (April 2015)
- "Developing a Market Vision for MISO – Supporting a Reliable and Efficient Electricity System in the Midcontinent," with Samuel A. Newell and Kathleen Spees, prepared for the Midcontinent Independent System Operator, Inc. (MISO) (January 2014)

SELECTED PRESENTATIONS

- "The Incremental Cost Test When Technology Choice is Endogenous" at the Center for Research in Regulated Industries Eastern Conference (2018)
- "Analyzing the Competitive Effects of Exchanges or Sales of Airport Landing Slots" at the International Industrial Organization Conference (2012)
- "The Toxics Release Inventory and Manufacturing Plant Births" at Penn State University (2010), University of Maryland (2010), US Census Center for Economic Studies (2009)
- "Does Disclosure Reduce Pollution? Evidence from India's Green Rating Project", at Association for Public Policy Analysis and Management Fall Conference (2009), Allied Social Sciences Association Annual Meetings (2008), Southern Economics Association Annual Meetings (2007)

SELECTED HONORS & AWARDS

2022	*Concurrences* Antitrust Writing Awards: Best Article in the Business, Private Enforcement Category, for the article "Differing Proof Requirements for Global Class Actions: Using Economic Analysis to Guide Future Policymakers," with John Roberti and Kelse Moen. *Antitrust* Magazine (August 2021)
2005–2009	Fred and Barbara Erb Fellowship, University of Michigan
2007	Thomas W. Leabo Memorial Award, University of Michigan

PROFESSIONAL ASSOCIATIONS & MEMBERSHIPS

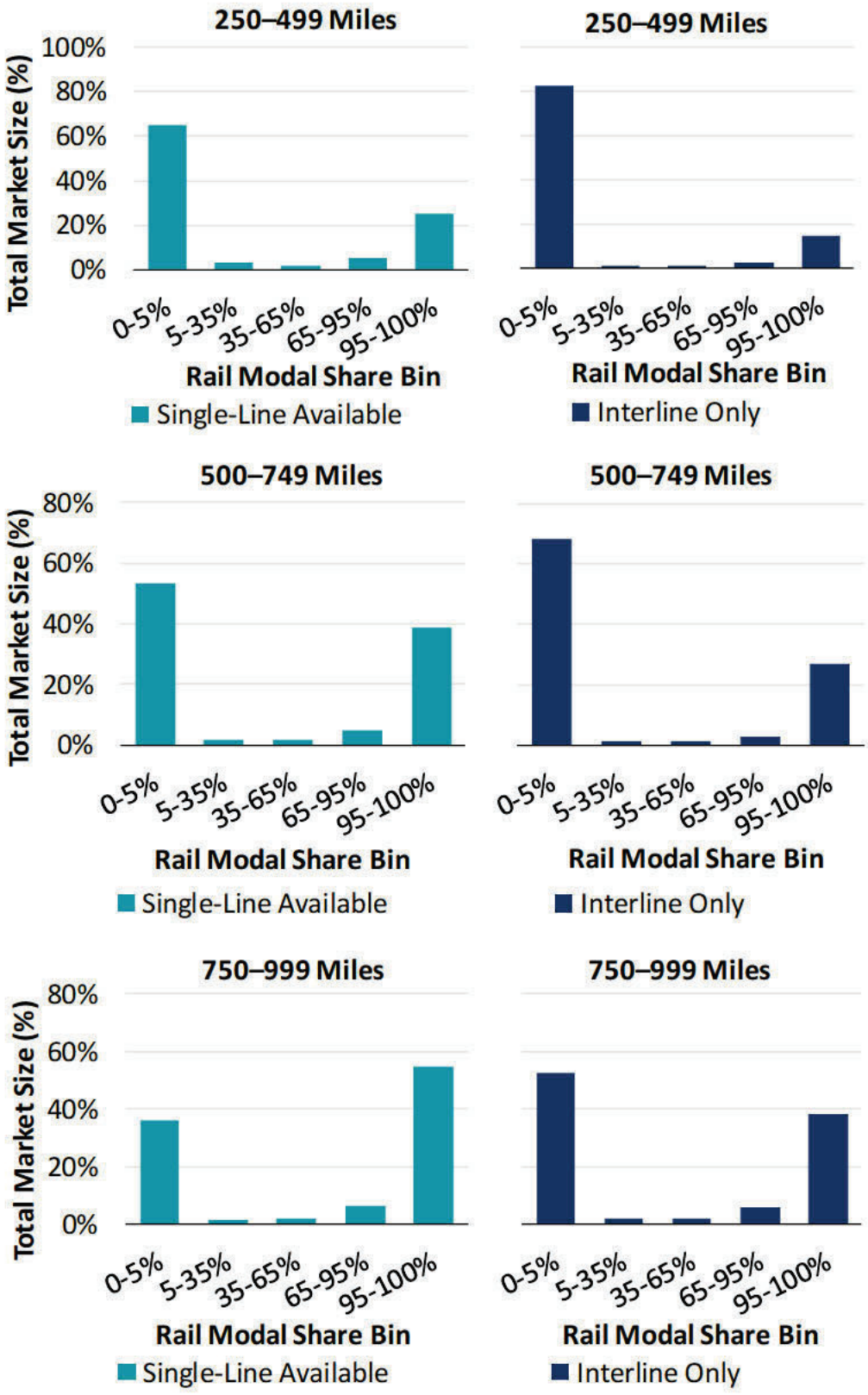
- American Economic Association
- American Bar Association – Antitrust Section

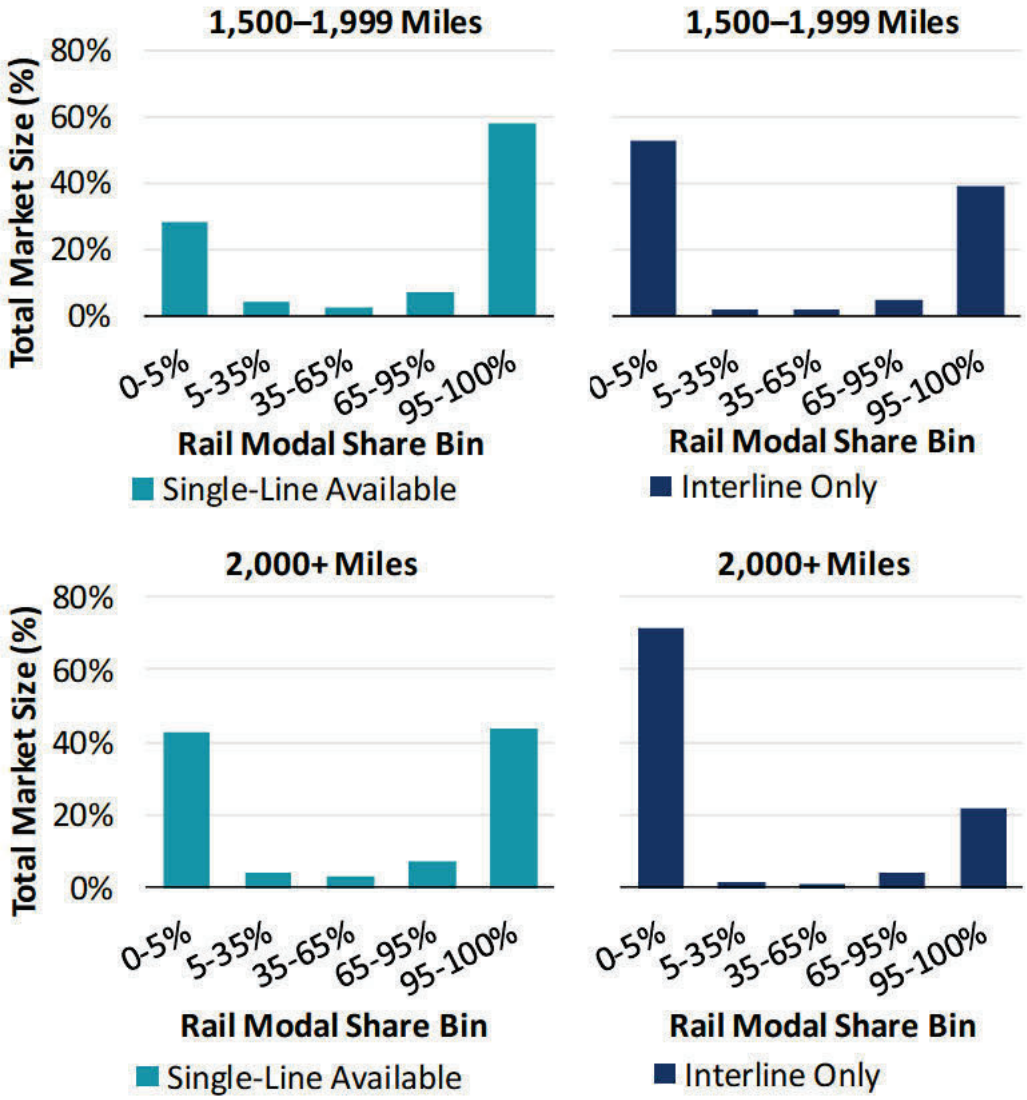
Appendix B: Additional Analyses Relating to Mr. Hunt's Traffic-Diversion Estimates and Merger-Specificity

B.1 Additional Evidence on Rail Participation in Single-Line and Interline Hunt Markets

261. In Section III.B, I explained that rail modal shares vary substantially both across Hunt markets where single-line service is available and across Hunt markets served only by interline service. Figure 7 illustrates this variation for routes with lengths of haul between 1,000 and 1,499 miles. Figure 50 shows similarly wide variation in both single-line and interline rail modal shares across other lengths of haul.

FIGURE 50: RAIL MODAL SHARES VARY WIDELY IN BOTH INTERLINE AND SINGLE-LINE HUNT MARKETS





Sources and Notes: Data in the figures from Hunt Workpaper, " t2r_2026.enhanced_transearch__T2Merch_output_2026_vFinal," based on Mr. Hunt's Exhibit 3-1. Hunt markets are defined at the origin county-destination county-STCC2 level. An "interline-only" Hunt market is one in which the "best" Quantanet route has junction frequency greater than zero. The figure includes markets Mr. Hunt classifies as "competitive" and "rail-only" and excludes coal (STCC 11), crude (STCC 13), hazardous materials (STCC 48 and 49), missing STCC (STCC 00 and 99), and routes to or from Alaska. Bins include their upper endpoint; for example, a market with exactly 5 percent rail modal share is included in the 0–5 percent bin, not

the 5–35 percent bin. *See* Script "01_rail_shares_workpaper_data_preparation.R."; Workpaper "Rail_Shares.xlsx."[402]

B.1.a *Examples of Interline Carload Hunt Markets with High Rail Modal Shares*

262. In Section III.B, I explained that high rail modal shares in interline Hunt markets are not isolated occurrences. Figure 8 shows that these interline Hunt markets span a wide range of railroads, lengths of haul, regions, market sizes, and commodities. In fact, Mr. Hunt's datasets contain more than 29,000 examples of interline Hunt markets with rail modal shares at or exceeding 80 percent, as discussed in Section III.B.[403] Table 14 below provides a selection of examples of these Hunt markets across a range of commodities and lengths of haul.

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[402] I include "rail-only" markets in this analysis and related analyses because Mr. Hunt includes "rail-only" markets in his Exhibit 3-1. However, he excludes "rail-only" markets from his truck-to-carload model. *See* Hunt Workpaper, "C-Section 3 Exhibits vFinal.xlsx," tab '3-1,' cell M7 (SQL query showing that Mr. Hunt fails to exclude rows with no truck traffic) and Hunt VS, p. 148 & Exhibit B-20 (showing that Mr. Hunt considers only "competitive" traffic where "both truck and rail compete" in his truck-to-carload diversion model).

[403] *See* Workpaper "all_il_routes.xlsx" for a full list of these 29,000 interline-only Hunt markets, which can be obtained by filtering the column "rail_share_above_80" (column "Y") to 1.

TABLE 14: EXAMPLE CARLOAD INTERLINE-ONLY HUNT MARKETS WITH HIGH RAIL MODAL SHARES



Sources and Notes: Example Hunt markets identified from the dataset Mr. Hunt used to create Exhibit 3-1, including markets Mr. Hunt classifies as "competitive" and "rail-only" and excluding coal (STCC 11), crude (STCC 13), hazardous materials (STCC 48 and 49), missing STCC (STCC 00 and 99), and routes to or from Alaska. Hunt markets are defined at the origin county-destination county-STCC2 level. A Hunt market is identified as interline if the "best" rail route (as identified by Mr. Hunt) requires service by two Class I railroads. Hunt markets sorted in descending order based on rail modal share. *See* Script "01_rail_shares_workpaper_data_preparation.R."; Workpaper "Rail_Shares.xlsx."
[A]-[G]: From Hunt Workpaper, "t2r_2026.enhanced_transearch__T2Merch_output_2026_vFinal," based on Mr. Hunt's Exhibit 3-1.
[D]: Description of STCC2 Commodity Classification.

[E]: This column reflects the "best route" predicted by Quantanet. The Traffic Tapes show that in some cases, traffic of the specified commodity between the specified counties is carried by multiple railroad pairs.
[F]: Total market size is rail plus truck tons for the Hunt market defined by columns [A]–[D] across all railroads.
[G]: Rail tons for the Hunt market defined by columns [A]–[D] across all railroads divided by market size in [F].

B.1.b *Even Within Single-Line Hunt Markets, Rail Modal Share Varies by Carrier Identity*

263. In Section III.B, I showed that average rail modal shares vary across carriers in Hunt markets where single-line service is available. Figure 10 illustrates this variation for the three lengths of haul with the most predicted carload diversions, while Figure 51 extends the comparison to the remaining lengths of haul.[404] Figure 52 further illustrates differences in rail modal shares between UP or NS and the other Class I railroads, considered collectively, across all lengths of haul.

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404 *See* Hunt VS, Exhibit 4-12 for a breakdown of Mr. Hunt's predicted carload diversions by mileage bin. Exhibit 4-12 was pasted into Mr. Hunt's VS without the corresponding mileage bin labels, but the underlying data can be found with the mileage bin classifications in Hunt Workpaper, "C-Section 4 Exhibits vFinal.xlsx," tab '4-12.'

FIGURE 51: AVERAGE RAIL MODAL SHARES DIFFER BY THE RAILROAD PROVIDING MR. HUNT'S MODELED "BEST" SINGLE-LINE ROUTE



Sources and Notes: Data in the figures from Hunt Workpaper, "t2r_2026.enhanced_transearch__T2Merch_output_2026_vFinal," based on Mr. Hunt's Exhibit 3-1. Hunt markets are defined at the origin county-destination county-STCC2 level and are limited to markets in which Mr. Hunt's "best" Quantanet route has junction frequency equal to zero, consistent with Mr. Hunt's diversion analysis. The figure includes markets Mr. Hunt classifies as "competitive" and "rail-only" and excludes coal (STCC 11), crude (STCC 13), hazardous materials (STCC 48 and 49), missing STCC (STCC 00 and 99), and routes to or from Alaska. Hunt markets are grouped based on whether that modeled route is provided by BNSF, CN, CPKC (including CPRS, KCS, and KCSM), CSX, UP, or NS. I combine CPRS, KCS, and KCSM together as CPKC, consistent with what Mr. Hunt did in his diversion analyses. *See* Hunt VS, p.

105 & Exhibit A-3. Railroad assignments are based on Quantanet results and therefore do not necessarily identify the railroad that actually carried the traffic. I include only railroads in these figures where the total market size across all Hunt markets where that railroad is the "best" single-line operator for that mileage bin is more than one million tons. Average rail modal share weighted by total market tons (rail plus truck tons). *See* Script "01_rail_shares_workpaper_data_preparation.R."; Workpaper "Rail_Shares.xlsx."

FIGURE 52: EVEN WITHIN SINGLE-LINE HUNT MARKETS, RAIL MODAL SHARE VARIES BY CARRIER IDENTITY



[redacted]

Sources and Notes: Data in the figures from Hunt Workpaper, "t2r_2026.enhanced_transearch__T2Merch_output_2026_vFinal," based on Hunt VS, Exhibit 3-1. Hunt markets are defined at the origin county-destination county-STCC2 level and are limited to markets in which Mr. Hunt's "best" Quantanet route has junction frequency equal to zero, consistent with Mr. Hunt's diversion analysis. The figure includes markets Mr. Hunt classifies as "competitive" and "rail-only" and excludes coal (STCC 11), crude (STCC 13), hazardous materials (STCC 48 and 49), missing STCC (STCC 00 and 99), and routes to or from Alaska. Hunt markets are grouped based on whether that modeled route is provided by UP or NS or another Class I railroad. Railroad assignments are based on Quantanet results and therefore do not necessarily identify the railroad that actually carried the traffic. Bins include their upper endpoint; for example, a market with exactly 5 percent rail modal share is included in the 0–5 percent bin, not the 5–35 percent bin. *See* Script "01_rail_shares_workpaper_data_preparation.R."; Workpaper "Rail_Shares.xlsx."

B.2 Mr. Hunt Initially Overstated the Single-Line Advantage by Misclassifying Rule 11 Traffic

264. As discussed in Section III.B, although Mr. Hunt associates single-line service with higher rail modal shares and greater competitiveness with trucking, the observed data show that rail modal shares vary substantially across both single-line and interline Hunt markets, indicating that single-line status alone does not determine rail competitiveness.

265. Moreover, Mr. Hunt's revised analysis materially weakens the empirical support for his premise that higher rail modal shares in single-line Hunt markets indicate that single-line service is more competitive with trucking. As Mr. Hunt explains, a principal revision to his April 2026 analysis was replacing the 2023 CCWS with 100 percent Class I traffic data, which allowed more accurate identification and stitching of interline movements, including Rule 11 rebills and movements represented by otherwise unconnected waybills.[405] In his original analysis, Mr. Hunt

[405] Hunt VS, pp. 5–8 & Exhibit 2-1. Mr. Hunt explains that use of 100 percent Class I traffic data allowed CRA to more accurately stitch together waybills forming interline movements, including Rule 11 rebills and otherwise unconnected waybills, and substantially increased the share of rail traffic identified as interline.

treated Rule 11 traffic as single-line and reported a large difference between rail modal shares in single-line Hunt markets and those in interline-only Hunt markets.[406] After obtaining 100 percent traffic data and treating Rule 11 traffic as interline, that measured difference declined substantially. Figure 53 and Figure 54 compare the original and revised results. The correction is significant because Mr. Hunt relies on historical differences between single-line and interline Hunt markets as evidence supporting the large traffic gains he attributes to the merger.[407] The original analysis therefore materially overstated the empirical support for Mr. Hunt's claimed single-line advantage, especially with respect to carload and long-haul intermodal traffic.

266. The problem was not merely that more complete data later became available. Rule 11 is a billing convention under which an interline movement can appear in the CCWS as separate single-line movements. Rule 11 records therefore are not reliable evidence that the underlying transportation was in fact single-line.[408] An analysis intended to measure the historical difference between single-line and interline performance should account for that limitation before treating those records as single-line traffic, or at minimum identify the resulting comparison as subject to potentially material misclassification. The April revision did more than improve precision: it corrected a classification issue that had materially affected the empirical comparison Mr. Hunt relied upon.

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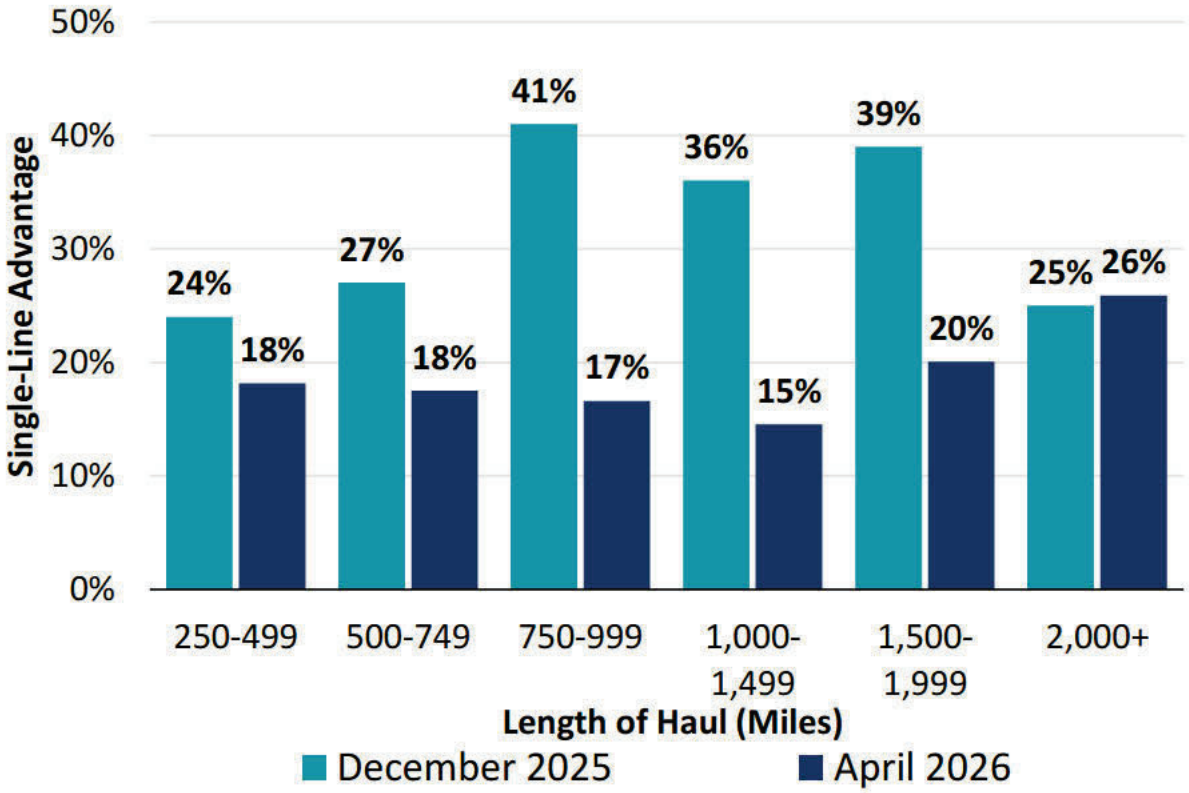
406 Hunt & Schabas VS, Exhibits 3-1 and 3-2.

407 *See* Hunt VS, pp. 23–25 & Exhibits 3-1 and 3-2, pp. 30–31, 39–40; Hunt & Schabas VS, pp. 12–14 & Exhibits 3-1 and 3-2.

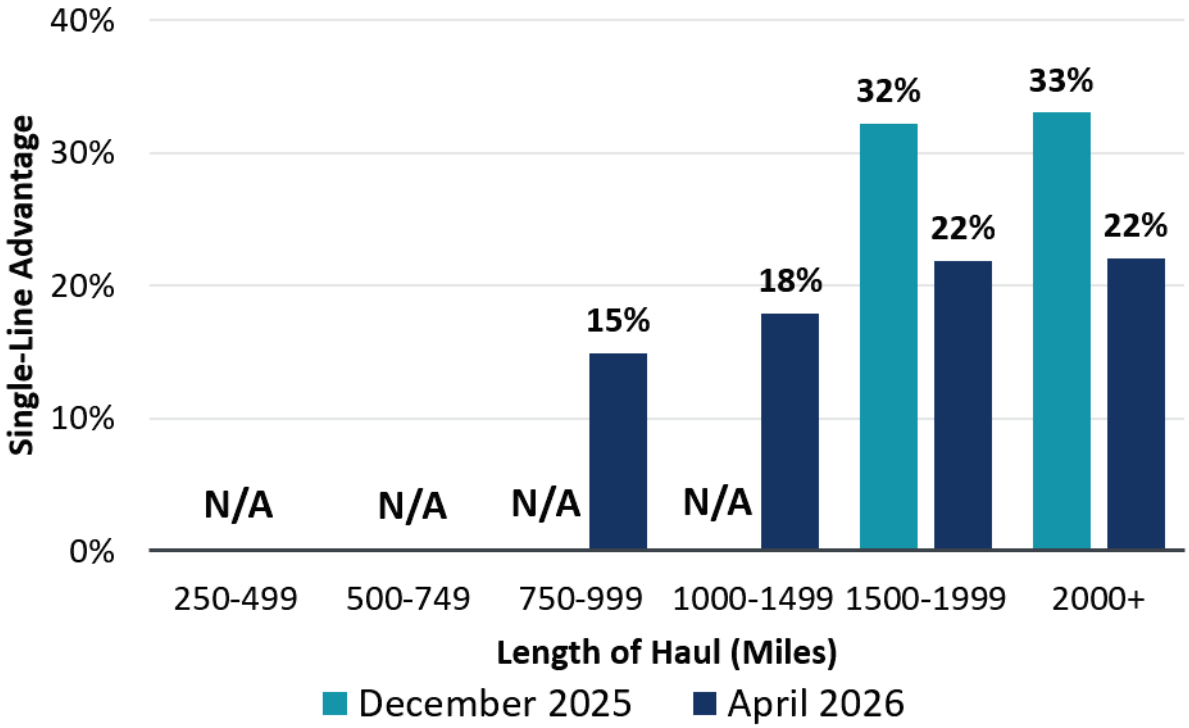
408 *See* Hunt VS, p. 99, footnote 121, pp. 206–208 & Exhibits F-2–F-3.

FIGURE 53: CARLOAD SINGLE-LINE ADVANTAGE DEPENDS ON MR. HUNT'S RULE 11 TRAFFIC CLASSIFICATION



Sources and Notes: The graph follows the methodology used in Exhibit 3-1 of the December 2025 Hunt & Schabas VS and April 2026 Hunt VS to calculate the underlying rail modal share values. The two statements rely on different sets of Hunt markets and differ in certain minor methodological respects. For each mileage bin, I calculate the single-line advantage as the single-line rail modal share minus the interline rail modal share. *See* Workpaper "T2R_Carload_Exhibits.xlsx."

FIGURE 54: INTERMODAL SINGLE-LINE ADVANTAGE DEPENDS ON MR. HUNT'S RULE 11 TRAFFIC CLASSIFICATION



Sources and Notes: The graph follows the methodology used in Exhibit 3-2 of the December 2025 Hunt & Schabas VS and April 2026 Hunt VS to calculate the underlying intermodal-share values. The two statements rely on different sets of current intermodal Hunt markets and differ in certain minor methodological respects. For each mileage bin, I calculate the single-line advantage as the single-line intermodal share minus the interline intermodal share. I do not calculate a single-line advantage where a mileage bin contains only single-line current markets and therefore lacks a corresponding interline intermodal share. This applies to the 250–499, 500–749, 750–999, and 1,000–1,499 mileage bins in the December 2025 analysis and to the 250–499 and 500–749 mileage bins in the April 2026 analysis. *See* Script "03B_exhibit_3.2_replication.R"; Workpaper "T2R_Intermodal_Exhibits.xlsx."

B.3 Scale of the Combined UP-NS Network

267. As explained in Section IV.A, the merger would combine two of the largest Class I railroads into a single network of extraordinary scale. Table 15 below shows that the combined UP-NS network would encompass approximately 52,000 route miles and would account for roughly 45 percent of total U.S. Class I route miles and revenues, 46 percent of originated

carloads, and 49 percent of terminated carloads.[409] Those shares are measured before accounting for any of the additional traffic growth that Applicants claim the merger would generate.

TABLE 15: A COMBINED UP-NS WOULD ACCOUNT FOR NEARLY HALF OF CLASS I RAIL OPERATIONS

Railroad		Route Miles [A]	Cars Loaded (thousands) [B]	Cars Terminated (thousands) [C]	Revenue ($ millions) [D]
UP	[1]	32,880	5,359	5,501	$24,189
BNSF	[2]	32,781	4,463	3,375	$23,747
NS	[3]	19,152	2,820	2,996	$12,122
CSX	[4]	19,701	2,748	3,230	$13,278
CN	[5]	3,116	1,679	1,701	$3,727
CPKC	[6]	8,394	696	675	$3,598
UP-NS	[7]	52,032	8,179	8,498	$36,311
Class I Total	[8]	116,024	17,766	17,479	$80,661
UP-NS Share of Class I	[9]	45%	46%	49%	45%

Sources and Notes: 2024 data from the Board's annual financial reporting for Class I railroads. *See* Surface Transportation Board, "Annual Report R-1," 2024, last accessed November 5, 2026, https://www.stb.gov/reports-data/economic-data/annual-report-financial-data/. CN and CPKC data reflect their U.S. operations; "Route Miles" for all railroads is based on U.S. mileage only. *See* Workpaper "Combined_UP_NS_by_RR.xlsx" *See also,* footnote 409.

[A]: Miles of road operated at year end, including owned, leased, jointly held, and trackage-rights. *See* Surface Transportation Board, "Annual Report R-1, Schedule 700," 2024, last accessed November 5, 2026, https://www.stb.gov/reports-data/economic-data/annual-report-financial-data/. For CN (referenced as GTC), I use the PTC Supplement to the 2024 R-1 because the regular 2024 Schedule 700 was unavailable. *See* Surface Transportation Board, "PTC Supplement to Annual

409 The totals presented in Table 15 reflect 2024 data, which provides the closest match to the route mile figure Applicants present in the Amended Application. *See, e.g.,* Amended Application, Vol. 1, pp. 70–71. Using data from 2023 or 2025 would also show that a combined UP-NS would account for nearly half of Class I rail operations on these metrics. *See* Workpaper "Combined_UP_NS_by_RR.xlsx." The table illustrates the scale of the merger but is not intended as a substitute for competitive analysis. CPKC witness Dr. Majure addresses competitive concerns related to the merger in his Verified Statement. *See, generally,* Majure VS.

Report R-1," 2024, last accessed November 5, 2026, https://www.stb.gov/reports-data/economic-data/annual-report-financial-data/. For NS, I also reference Schedule 702 to identify and exclude any miles of road operated in Canada. *See* Surface Transportation Board, "Annual Report R-1, Schedule 702," 2024, last accessed November 5, 2026, https://www.stb.gov/reports-data/economic-data/annual-report-financial-data/.

[B]: Total cars loaded, including those carrying intermodal containers. *See* Surface Transportation Board, "Cars Loaded and Terminated, for Form STB-54," 2024, last accessed November 5, 2026, https://www.stb.gov/reports-data/economic-data/cars-loaded-and-terminated/.

[C]: Total cars terminated, including those carrying intermodal containers. *See* Surface Transportation Board, "Cars Loaded and Terminated, for Form STB-54," 2024, last accessed November 5, 2026, https://www.stb.gov/reports-data/economic-data/cars-loaded-and-terminated/.

[D]: Total railway operating revenues. *See* Surface Transportation Board, "Annual Report R-1, Schedule 210," last accessed November 5, 2026, https://www.stb.gov/reports-data/economic-data/annual-report-financial-data/.

[7]: [1] + [3].

[8]: Sum of [1] through [6].

[9]: [7] / [8].

268. Applicants have publicly argued that the combined UP-NS network would be "the same size as BNSF," relying on ton-miles to support that comparison.[410] Ton-miles are a useful measure of transportation output, and I use them for that purpose in portions of this Verified Statement, but they capture a different dimension of scale than the measures reported in Table 15. Because ton-miles reflect both shipment weight and mileage, they place greater weight on heavy commodities moving over long distances.

269. Figure 55 illustrates why that distinction matters. When all traffic is included, BNSF and combined UP-NS have roughly similar ton-mile totals. But a substantial portion of BNSF's ton-miles is attributable to coal and grain traffic. Excluding coal and grain, combined

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410 *See, e.g.*, Kenny Rocker, "Let's Talk Facts: It Doesn't Surprise Me the Opposition is Nervous," UP-NS Transcontinental, July 9, 2026, last accessed September 14, 2026, https://www.up-nstranscontinental.com/news-details/lets-talk-facts-it-doesnt-surprise-me-the-opposition-is-nervous ("That would make the combined entity the same size as BNSF, and no one has said the BNSF is too big to fail.").

UP-NS has approximately [redacted] more ton-miles than BNSF, while BNSF's remaining ton-miles are [redacted] UP alone. Thus, the apparent parity between BNSF and combined UP-NS on total ton-miles is materially influenced by BNSF's concentration of heavy, long-haul bulk traffic. This is why the ton-mile shares of BNSF and combined UP-NS are comparable while all the other measures shown in Table 15 above (including route miles, originated carloads, terminated carloads, and revenue) show substantially higher shares for combined UP-NS compared to BNSF.

FIGURE 55: APPLICANTS' TON-MILE COMPARISON DEPENDS ON HEAVY BULK TRAFFIC



Sources and Notes: Ton-miles are calculated from the 2024 CCWS as expanded tons multiplied by route-segment mileage. Grain is defined as STCC 0113; coal is defined as STCC 11. *See* Scripts "01_build_ccws.R"; "02_ccws_figures."; Workpaper "CCWS_Figures.xlsx."

270. Similarity in total ton-miles does not establish similarity in overall railroad scale. Revenue ton-miles are a valid measure of transportation output, but they do not capture the combined system's network footprint, traffic base, revenues, customer reach, or presence across the western and eastern United States. On those broader measures, Table 15 shows that combined UP-NS would be materially larger than any existing Class I railroad.

B.4 Additional Analyses of Coordinated UP-NS Intermodal Service and Profitability

271. This appendix provides additional analyses supporting the discussion in Section IV.D of whether the merger is necessary to capture the intermodal traffic opportunities identified by Mr. Hunt. Section IV.D considers both whether coordinated interline service can achieve service characteristics comparable to the single-line service Applicants could provide post-merger and whether the lower pricing Mr. Hunt associates with single-line service would materially change the economics of pursuing that traffic. The analyses that follow address this second question.

B.4.a *Mr. Hunt's Modeled Single-Line Pricing Does Not Materially Alter the Economics of Many Existing UP-NS Intermodal Diversion Markets Where He Projects Traffic Growth*

272. Section IV.D examines whether UP and NS could profitably pursue intermodal traffic identified by Mr. Hunt at prices reflecting the reduction he associates with single-line service. This appendix provides additional analysis supporting that discussion. I first test alternative assumptions about how the modeled reduction in combined UP and NS revenue would be allocated between the two railroads for the [redacted] to [redacted] movement. I then extend the analysis across a broader set of directional SPLC pairs with observed UP-NS traffic.

273. Table 16 presents observed revenue, variable cost, and profitability measures for the [redacted] movement and evaluates three alternative allocations of Mr. Hunt's modeled price reduction, holding variable costs constant across scenarios. Column [A] reports observed interline contribution margin. Column [B] applies a 4.2 percent reduction to each railroad's observed revenue, consistent with the calculation presented in Section IV.D. Column [C] instead holds NS revenue at its observed level and assigns to UP the full dollar reduction in combined UP and NS revenue. Column [D] holds UP revenue at its observed level and assigns the full dollar reduction to NS. The total reduction in combined revenue is therefore identical across the three cases, while the amount borne by each railroad differs.

274. The 4.2 percent reduction in combined revenue equals approximately [redacted] per unit for the [redacted] movement. Assigning the full reduction to UP reduces its revenue by [redacted] percent, while assigning the full reduction to NS reduces its revenue by [redacted] percent. Under each allocation, [redacted],[411] and both UP and NS [redacted] regardless of how the burden of the reduction in combined revenue is allocated between the Applicants.

411 The profitability index is computed as the ratio of average revenue to average variable cost.

TABLE 16: UP AND NS CONTINUE TO EARN POSITIVE CONTRIBUTION MARGIN UNDER ALTERNATIVE ALLOCATIONS OF MR. HUNT'S MODELED PRICE REDUCTION: [redacted] TO [redacted]

[redacted]

Sources and Notes: Figures expressed in 2023 USD, as reported in the underlying data.

Calculations are for domestic loaded UP-NS movements from [redacted] to [redacted], identified by SPLCs [redacted] and [redacted]. [redacted] refers to the intermodal terminal in [redacted]. *See* Scripts "01_identify_directional_SPLC_pairs.R" and "02_profitability_sample_route.R"; Workpaper "IM_Profitability_Exhibits.xlsx."

[A]: Observed values in the data.

[B]: Applies the modeled 4.2 percent single-line price reduction to observed revenue and holds variable cost constant. I calculate the 4.2 percent reduction as the percentage difference between weighted average interline and single-line revenue per ton mile using Mr. Hunt's revenue per distance power curves. *See* Hunt Workpaper, "RevenuePerTM_Distance_JF.xlsx," tab 'Final-ST2.'

[C]: Allocates the full combined revenue reduction to UP. NS revenue remains unchanged. The resulting reduction in UP revenue is [redacted].

[D]: Allocates the full combined revenue reduction to NS. UP revenue remains unchanged. The resulting reduction in NS revenue is [redacted].

[1]: Total observed UP and NS revenue divided by loaded intermodal units in CRA traffic tapes dataset "CRA_2026_processed_2_v4."

[2], [8], [14]: Percentage reduction from observed revenue.

[3], [9], [15]: Variable cost divided by loaded intermodal units in 2023 CCWS dataset "input_processed_ccws_2023."

[4], [10], [16]: 100 x (revenue per unit / variable cost per unit - 1).

[5], [11], [17]: Revenue per unit / variable cost per unit.

[6], [12], [18]: Revenue per unit - variable cost per unit.

[7]: Total observed UP revenue divided by loaded intermodal units in CRA traffic tapes dataset "CRA_2026_processed_2_v4."

[13]: Total observed NS revenue divided by loaded intermodal units in CRA traffic tapes dataset "CRA_2026_processed_2_v4."

275. Figure 56 extends the analysis to a broader set of directional UP-NS interline SPLC pairs for which Mr. Hunt predicts diversions and sufficient observed data are available,[412] comparing the estimated profitability indices with reference values of [redacted] and [redacted]

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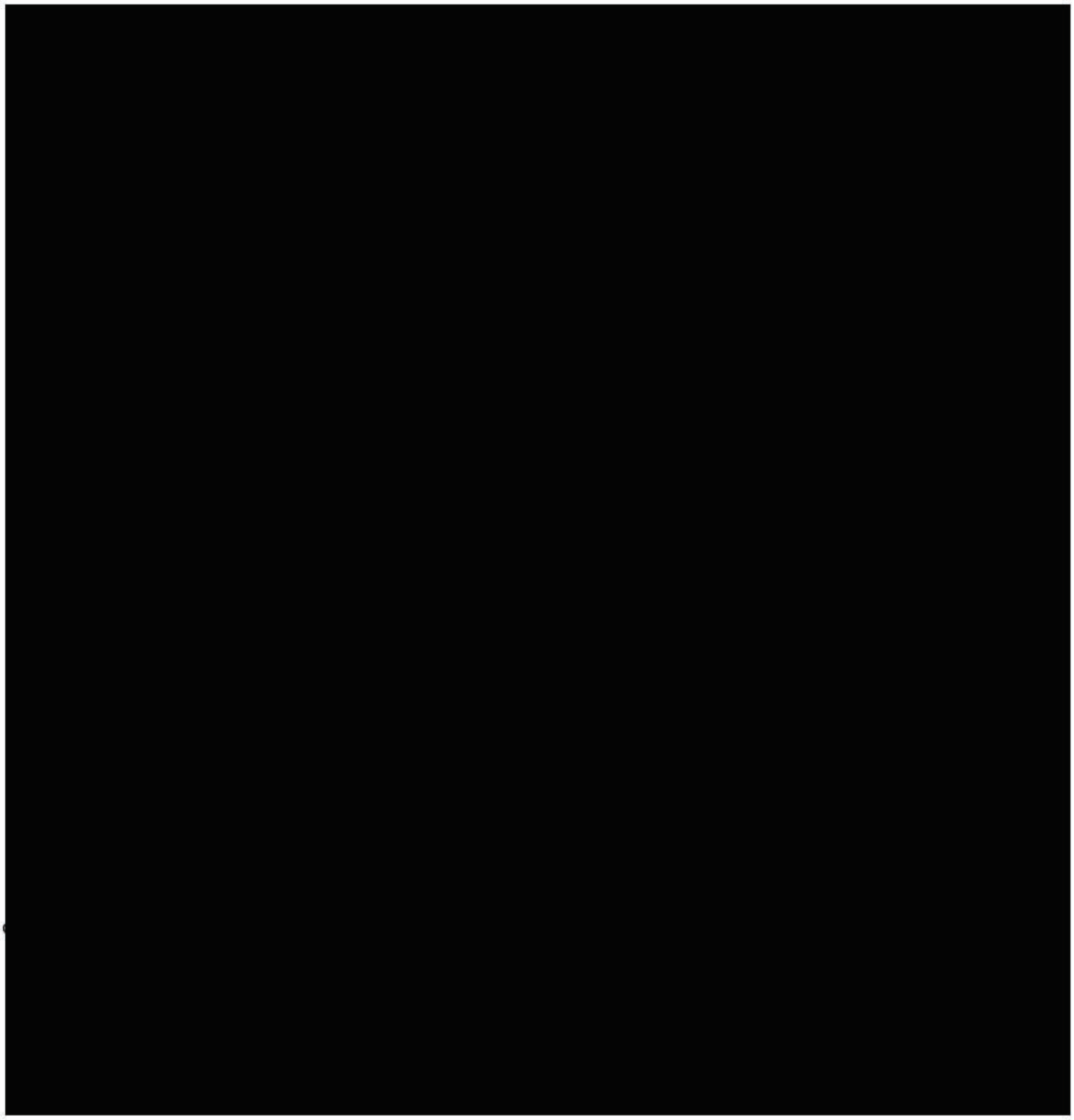
412 I include directional SPLC pairs with observed domestic loaded UP-NS traffic and at least 30 observations in both the 2023 CCWS (which I use to estimate variable costs) and the CRA traffic tapes dataset "CRA_2026_processed_2_v4" (which I use to estimate revenues). I retain pairs associated with positive truck-to-intermodal diversions or rail-to-rail intermodal diversions, identifying the former at the terminal-market level and the latter at the directional SPLC-pair level. *See* Script "01_identify_directional_SPLC_pairs.R." In my workpapers, I also report the results with a broader set of SPLC pairs, lowering the threshold for inclusion to a minimum of 20 observations in both datasets, and obtain similar results. *See* Workpaper "IM_Profitability_Exhibits.xlsx."

For this profitability analysis, I use the "CRA_2026_processed_2_v4" rather than "CRA_2026_processed_2," which Mr. Hunt uses in his truck-to-intermodal model because the former contains the railroad-specific revenue variables "up_revenue" and "ns_revenue." *See* Hunt Workpaper, "truck_to_im_vFinal.py"; Workpaper "IM_Profitability_Exhibits.xlsx."

assumed for UP and NS respectively in the Applicants' internal documents.[413] Among the tested SPLC pairs that satisfy the applicable reference benchmarks before the modeled price reduction, [redacted], and many movements remain [redacted] a profitability index of 1.00. Figure 57 and Figure 58 present corresponding sensitivities in which the full combined revenue reduction is assigned to UP or NS, respectively. The results provide [redacted] tested routes.

413 The referenced document includes profitability benchmarks for UP and NS, referred to [redacted], respectively. *See* Union Pacific, "Project Opal Update, Modal Conversion," April 2025, UP_0077644, at -656. *See also*, Union Pacific, "Financial Analysis Update, Project Opal," May 7, 2025, UP_0039711, at -712.

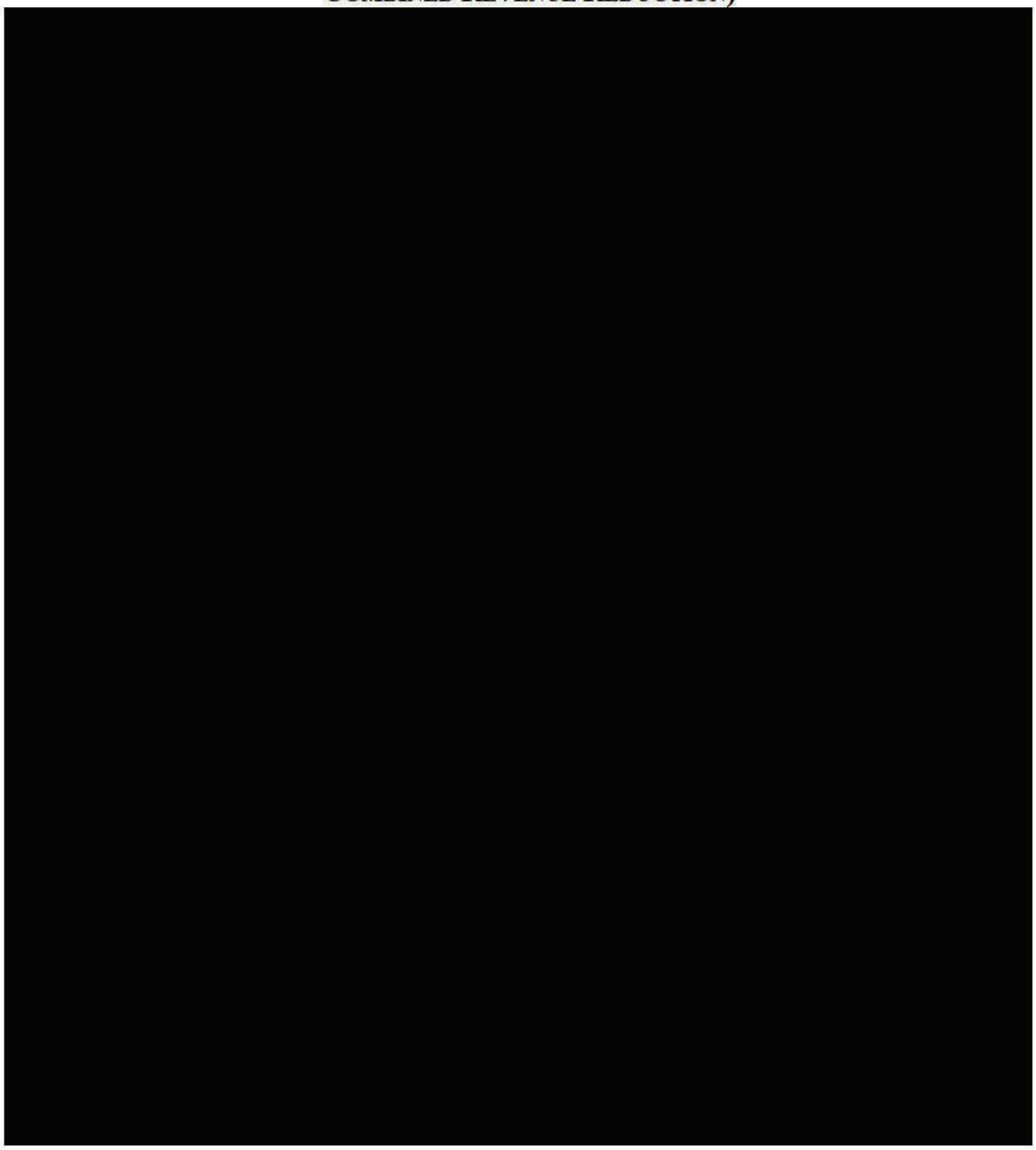
FIGURE 56: MOST TESTED ROUTES DO NOT CROSS PROFITABILITY THRESHOLDS AFTER APPLYING MR. HUNT'S MODELED PRICE REDUCTION



Sources and Notes: Analysis uses revenue and variable cost data expressed in 2023 USD. The figure includes directional SPLC pairs with at least 30 observations in both the 2023 CCWS and the CRA traffic tapes dataset "CRA_2026_processed_2_v4" that have positive truck-to-intermodal or rail-to-rail intermodal diversions as defined by Mr. Hunt. For each pair, the profitability index equals average combined UP and NS revenue per unit divided by average combined variable cost per unit. "Observed" uses revenue data from the CRA traffic tapes and variable cost data from the 2023 CCWS. "After Assumed Single-Line Price Reduction" applies the modeled 4.2 percent reduction to observed revenue and holds variable cost constant. The [redacted] and [redacted]

reference lines identify UP and NS profitability benchmarks reflected in Applicants' internal documents. *See* Union Pacific, "Project Opal Update, Modal Conversion," April 2025, UP_0077644, at -656; Script "03_PI_calculations.R"; and Workpaper "IM_Profitability_Exhibits.xlsx."

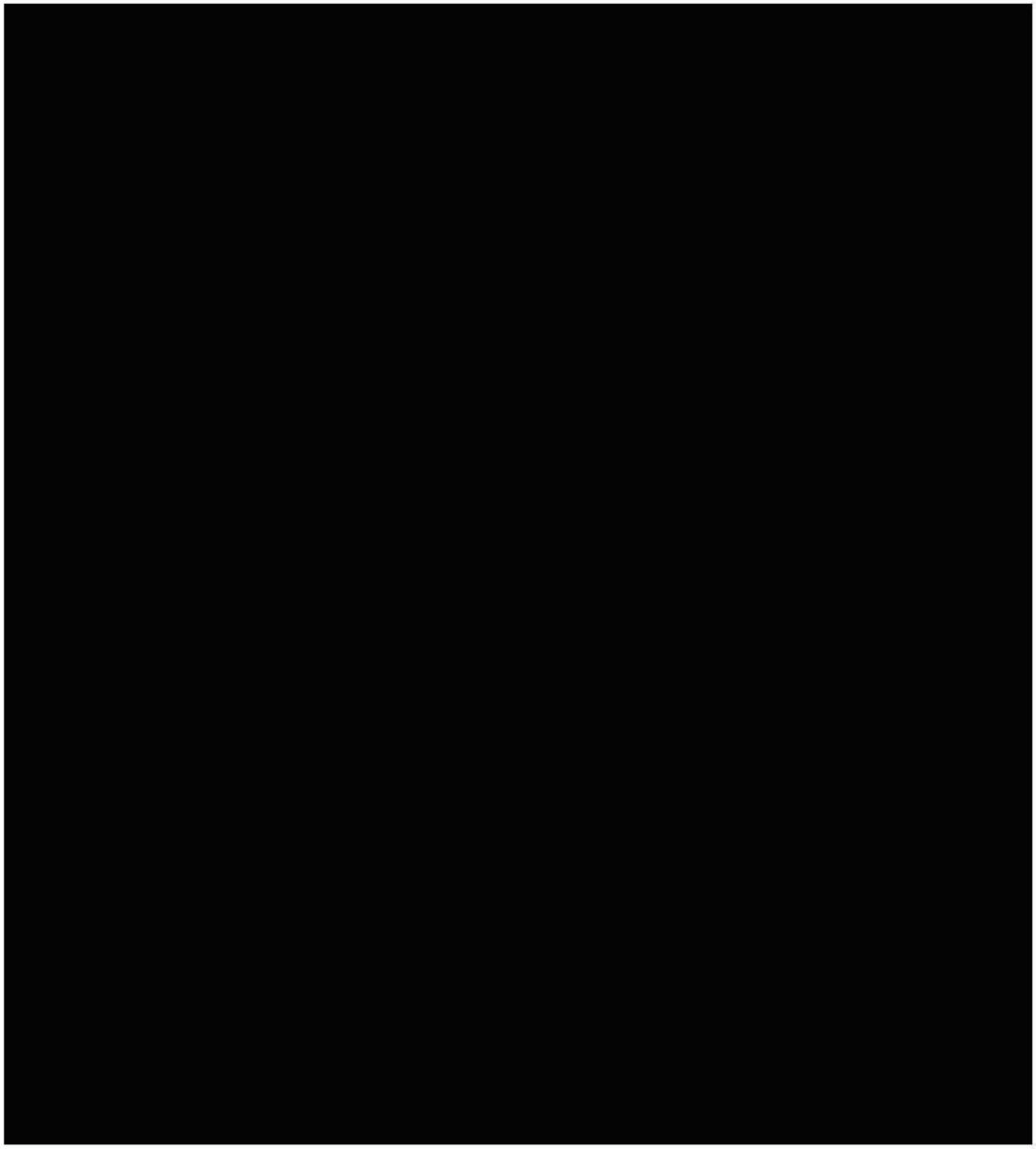
FIGURE 57: MOST TESTED ROUTES DO NOT CROSS PROFITABILITY THRESHOLDS AFTER APPLYING MR. HUNT'S MODELED PRICE REDUCTION (WHEN UP BEARS THE ENTIRE COMBINED REVENUE REDUCTION)



Sources and Notes: Analysis uses revenue and variable cost data expressed in 2023 USD. The figure includes directional SPLC pairs with at least 30 observations in both the 2023 CCWS and the CRA traffic tapes dataset "CRA_2026_processed_2_v4" that have positive truck-to-intermodal

or rail-to-rail intermodal diversions as defined by Mr. Hunt. For each pair, the profitability index equals average UP revenue per unit divided by average UP variable cost per unit. "Observed" uses UP revenue data from the CRA traffic tapes and UP variable cost data from the 2023 CCWS. "UP Bears Assumed Single-Line Price Reduction" applies the full dollar reduction in combined UP and NS revenue to UP revenue and holds UP variable cost constant. The [redacted] reference line identifies UP's profitability benchmark reflected in Applicants' internal documents. *See* Union Pacific, "Project Opal Update, Modal Conversion," April 2025, UP_0077644, at -656; Script "03_PI_calculations.R"; and Workpaper "IM_Profitability_Exhibits.xlsx."

FIGURE 58: MOST TESTED ROUTES DO NOT CROSS PROFITABILITY THRESHOLDS AFTER APPLYING MR. HUNT'S MODELED PRICE REDUCTION (WHEN NS BEARS THE ENTIRE COMBINED REVENUE REDUCTION)



Sources and Notes: Analysis uses revenue and variable cost data expressed in 2023 USD. The figure includes directional SPLC pairs with at least 30 observations in both the 2023 CCWS and the CRA traffic tapes dataset "CRA_2026_processed_2_v4" that have positive truck-to-intermodal or rail-to-rail intermodal diversions as defined by Mr. Hunt. For each pair, the profitability index equals average NS revenue per unit divided by average NS variable cost per unit. "Observed" uses NS revenue data from the CRA traffic tapes and NS variable cost data from the 2023 CCWS. "NS Bears Assumed Single-Line Price Reduction" applies the full dollar reduction in combined UP and

NS revenue to NS revenue and holds NS variable cost constant. The [redacted] reference line identifies NS's profitability benchmark reflected in Applicants' internal documents. *See* Union Pacific, "Project Opal Update, Modal Conversion," April 2025, UP_0077644, at -656; Script "03_PI_calculations.R"; and Workpaper "IM_Profitability_Exhibits.xlsx."

B.4.b *Additional Detail on the Illustrative Investment Analysis for Lathrop–Croxton Service*

276. Section IV.D presents an illustrative analysis derived using conservative assumptions evaluating whether the additional intermodal traffic Mr. Hunt predicts could support investments associated with a coordinated Lathrop–Croxton service while UP and NS remain separately owned. The analysis takes Mr. Hunt's projected traffic opportunity as given and compares the contribution margin (revenue *minus* variable costs) that traffic could generate with a conservative approximation of the investments Applicants identify in connection with the planned service. This appendix provides additional detail on that calculation.

277. Table 17 estimates the annual contribution margin from the subset of Mr. Hunt's projected incremental traffic that Applicants' Operating Plan assigns to the planned Lathrop–Croxton trains, ZLTCX and ZCXLT, which serve, among other locations, the Lathrop–Bethintermodal SPLC pair discussed in Table 16.[414] I identify the directional SPLC pairs associated with those trains and calculate average revenue and variable cost per loaded

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414 Among Applicants' planned new intermodal train pairs in Mr. Hunt's Exhibit 7-4, I examine Lathrop–Croxton and Croxton–Lathrop because the available traffic data provide better coverage for these trains. The 2023 CCWS (which I use to estimate variable costs) and the CRA traffic tapes dataset "CRA_2026_processed_2_v4" (which I use to estimate revenues) contain at least 20 interline UP-NS observations in each direction for three SPLC pairs the trains would serve: [redacted]. I exclude [redacted], which the ZLTCX and ZCXLT trains would serve, because the 2023 CCWS contains no UP-NS observations for those SPLC pairs. *See* Workpaper "IM_Profitability_Exhibits.xlsx"; Script "04_profitability_investments_contribution.R."

I assume that these exclusions understate the planned trains' total contribution margin because Applicants would not be expected to pursue additional traffic on a SPLC pair if that traffic reduced the trains' overall contribution margin after accounting for movements in both directions.

intermodal unit for each pair.[415] Consistent with the analysis above, I reduce observed UP-NS revenue using a 4.2 percent revenue reduction for single-line service derived from Mr. Hunt's model while holding variable cost constant. I then multiply the resulting contribution margin per unit by Mr. Hunt's projected net diversion volume assigned to each SPLC pair. The projected diversion volumes incorporate Mr. Hunt's projected truck-to-intermodal, rail-to-rail, and long-haul drayage diversions, adjusted for the applicable offsets.[416] Aggregating across the SPLC pairs assigned to the two trains produces approximately $[redacted] in annual revenue, $[redacted] in annual variable cost, and $[redacted] in annual contribution margins.[417]

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[415] I use data on domestic loaded UP-NS interline intermodal movements from the 2023 CRA traffic tapes dataset ("CRA_2026_processed_2_v4") to estimate average revenues and from the 2023 CCWS ("input_processed_ccws_2023") to estimate average variable costs. *See* Workpaper "IM_Profitability_Exhibits.xlsx." The CCWS reports variable cost estimates based on Uniform Railroad Costing System ("URCS"). *See* the Waybill and URCS manuals, for more detail. *See also,* Surface Transportation Board, "Carload Waybill Sample Reference Guide," March 5, 2025, available at: https://stb.gov/wp-content/uploads/2023-STB-Waybill-Reference-Guide.pdf, p. 78. *See also,* Surface Transportation Board, "The Railroad Cost Program (Microsoft Excel Version)," 2021, available at: https://www.stb.gov/wp-content/uploads/STBRailroadCostProgram_ManualForExcel.pdf, pp. 1, 3, 5, 8.

[416] Mr. Hunt does not estimate revenue offsets on a train-by-train basis to account for traffic for which UP or NS already provide part of the interline movement before the merger. For purposes of this illustrative analysis, I make approximations to allocate the relevant offsets to the Lathrop–Croxton and Croxton–Lathrop trains. For each directional SPLC pair, I allocate loaded offsets at its origin based on the pair's share of all loaded diversions from that origin, including diversions assigned to other trains. I make the same calculation at its destination using all loaded diversions to that destination. I subtract the two allocated offsets from the pair's gross diversions to obtain its net diversion volume. I use the Applicants' MultiRail Operating Plan data for the diversion and offset records. *See* Workpaper "IM_Profitability_Exhibits.xlsx."

[417] Figures expressed in 2023 USD, as reported in the underlying data. *See* Workpaper "IM_Profitability_Exhibits.xlsx."

TABLE 17: CONTRIBUTION MARGIN FROM PROJECTED INCREMENTAL TRAFFIC ASSIGNED TO TRAINS ZLTCX AND ZCXLT



Sources and Notes: Figures expressed in 2023 USD, as reported in the underlying data.

[redacted] refers to the intermodal terminal in [redacted]. Table excludes the [redacted] SPLC pairs in both directions because there are no UP-NS interline observations for these SPLC pairs in the 2023 CCWS. Calculations use underlying unrounded values.

I use the SPLC codes reported in MultiRail where available and supplement missing SPLC codes for NS locations using a nearest-neighbor by haversine distance matching approach based on Station Master data ("20250902 Unified Station Access Master v1.1_StationMaster.csv"). Haversine distance measures the shortest distance between two points based on their longitude and latitude coordinates. *See, e.g.*, Jianqing Wu, Xukai Xiao, Yitao Zhou, Bo Du, Jun Shen, Yishan Chen, Bi Wang and Qiang Wu, "A Railway Network Dataset Incorporating Multi-Type Train Operation Records and Train Scheduling," *Scientific Data* 13 (77) (2026), available at: https://www.nature.com/articles/s41597-025-06385-8, p. 7*; See* Script "NS_SPLC_matching.R." The Station Master geographic location file contains data about rail and motor carrier points for North America and international areas. Station Master rail station records are uniquely identified by combination of the Standard Carrier Alpha Code ("SCAC") field and Freight Station Accounting Code ("FSAC") field or by their respective SPLC. *See* Railinc, "Centralized Station Master," last accessed November 6, 2026, https://public.railinc.com/resources/centralized-station-master.

The modeled 4.2 percent single-line price reduction equals the weighted average difference between Mr. Hunt's modeled interline and single-line revenue per ton mile using his revenue per distance power curves. *See* Workpaper "IM_Profitability_Exhibits.xlsx"; Script

"04_profitability_investments_contribution.R"; and Hunt Workpaper, "RevenuePerTM_Distance_JF.xlsx," tab 'Final-ST2.'
[A]: Name of Origin SPLC in the Station Master.
[B]: Name of Destination SPLC in the Station Master.
[C]: Projected net intermodal diversions at the SPLC pair level, including Mr. Hunt's truck-to-intermodal, rail-to-rail and long-haul drayage diversions, adjusted for applicable offsets.
[D]: Average revenue per loaded intermodal unit for domestic UP-NS traffic in the CRA traffic tapes dataset "CRA_2026_processed_2_v4."
[E]: Average variable cost per loaded intermodal unit for domestic UP-NS traffic in the 2023 CCWS data.
[F]: [D] - [E].
[G]: [D] x (1 - modeled single-line price reduction) - [E].
[H]: [C] x ([D] x (1 - modeled single-line price reduction)).
[I]: [C] x [E].
[J]: [H] - [I].
[7]: Sum of [1] through [6].

278. Applicants also identify substantial merger-related investments as necessary to accommodate the projected traffic growth that they attribute to the merger. The next step is therefore to compare the contribution margin from the projected incremental traffic assigned to the Lathrop–Croxton trains with an estimate of the investments that would be required to support that service. Because Applicants do not assign those investments to individual trains, I identify the subset of terminal, yard, crossover, signal, and other investments that I assume would support the planned trains ZLTCX and ZCXLT. Mr. Janke identifies approximately $[redacted] million in total mainline, yard, and terminal investments to support the growth Applicants attribute to the merger.[418] From that total, I identify approximately $[redacted] million in projects associated with

[418] Figures expressed in 2025 USD as in the underlying data. Janke Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment,' cell M65.

the routes used by the trains ZLTCX and ZCXLT or with major facilities serving those trains.[419] I assign the full $[redacted] million cost of these projects to ZLTCX and ZCXLT, although the projects support other planned trains or traffic.[420] This deliberately conservative allocation attributes more investment cost to the train pair than it alone would bear, thereby understating the NPV of coordinated interline service Table 18 summarizes the selected investments.

TABLE 18: SELECTED INVESTMENTS ASSUMED FOR THE TRAINS ZLTCX AND ZCXLT

[redacted]

Sources and Notes: *See* Workpaper "IM_Profitability_Exhibits.xlsx." Mr. Turner refers to Mr. Janke's merger-related investments in his VS. *See* Turner VS, Table 14, pp. 56, 70, 79–81, and footnote 145.

[1]: Association of American Railroads, "All-Inclusive Index Less Fuel (All-LF)," available at: https://www.aar.org/wp-content/uploads/2026/09/AII-LF-2026Q4.pdf. I use values from the "All-LF With Forecast Error Adj." series, consistent with Applicants' approach. Mr. Janke uses

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419 As discussed in the main text in Section IV.D, this allocation is conservative because most if not all of the selected investments also support other planned trains or traffic. Assigning their full cost to the Lathrop–Croxton train pair therefore almost certainly overstates, by a significant amount, the investment cost attributable to that pair for purposes of this illustrative analysis.

420 *See e.g.*, paragraph 70.

(average Q1-Q4 2023 AAR index / average Q1-Q4 2025 AAR index) - 1 to convert capex estimates from 2025 USD to 2023 USD. *See* Janke Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment,' cell Q2. *See also*, Janke Workpaper, "AIILF Figures - 2004 thru 2028 - As of 11.6.2025.xlsx," tab 'RCAF AllLF Figures,' cell L95.

[B][2]: Total investments identified in Janke Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment,' cell M65.

[B][3]: [B][2] – [B][9]. Remaining investments identified in Janke Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment' are shown separately and are not included in the illustrative NPV calculation.

[B][4] – [B][8]: Investments from Janke Workpaper "Synergies Transportation - Operating.xlsx" (expressed in 2025 USD) assumed to support the ZLTCX and ZCXLT trains, traffic moving on those services, or major terminals used by those services. Values reflect total forecasted capex.

[B][4]: Sum of investment items [redacted]. Janke Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment,' cells M29 and M59.

[B][5]: Investment item [redacted]. Janke Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment,' cell M58.

[B][6]: Investment item [redacted]. Janke Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment,' cell M46.

[B][7]: Investment item [redacted]. Janke Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment,' cell M63.

[B][8]: Investment item [redacted]. Janke Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment,' cell M64.

[B][9]: Sum of [B][4] through [B][8].

[C]: [B] x (1 + [1]).

279. To estimate the NPV of the investment required to operate the trains ZLTCX and ZCXLT, I develop a cash flow analysis that incorporates the estimated contribution margin from projected incremental traffic assigned to these trains and the assumed capex. I assume that Applicants would make these prospective investments during Year 1, which starts on October 1, 2026. I use the AAR All-Inclusive Less Fuel Index to adjust the contribution margin and capex

estimates, expressed in 2023 and 2025 USD in the underlying data, respectively, to October 1, 2026 dollars.[421] As summarized in Table 18, the relevant capex increases from $[redacted] million in 2025 USD to $[redacted] million in 2026 USD after adjusting for inflation.

280. Table 19 presents the illustrative NPV calculation for the Lathrop–Croxton and Croxton–Lathrop trains. I use the [redacted] annual contribution margin [redacted] in 2026 dollars) from Table 17 and the conservative assumption of $[redacted] million in capex ($[redacted] million in 2026 dollars) from Table 18 as the principal inputs to the analysis.[422] Consistent with Applicants' assumed ramp-up of the predicted diversion, I assume for purposes of this illustrative analysis that the same projected traffic would grow at the same rate under coordinated interline service, reaching 40 percent of projected volume in Year 1, 70 percent in Year 2, and 100 percent beginning in Year 3.[423] For purposes of the NPV and IRR calculations, I include only the first ten years of contribution margins from the projected traffic, a period substantially shorter than the useful lives of the selected investments.[424]

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421 *See* Workpaper "IM_Profitability_Exhibits.xlsx." Association of American Railroads, "All-Inclusive Index Less Fuel (All-LF)," available at: https://www.aar.org/wp-content/uploads/2026/09/AII-LF-2026Q4.pdf. Applicants similarly use the Association of American Railroads' All-Inclusive Less Fuel Index to convert capex estimates from 2025 USD to 2023 USD. *See* Janke Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment,' cell Q2.

422 For the annual contribution margin, I multiply [redacted] in 2023 dollars by the increase in the AAR, "All-Inclusive Index Less Fuel (All-LF)" index from 2023 to Q3 2026, to get to [redacted] dollars. *See* Table 19, row 8. For the capex of $[redacted] million in 2026 dollars, *see* Table 19 row 20, Year 1.

423 *See, e.g.,* Gehringer & Orr VS, p. 9.

424 I include annual replacement capex to maintain the assets, and I conservatively assume a 10-year useful life for the investments, although railroad infrastructure assets have a substantially longer useful life. For example, UP estimates useful lives in December 2025 of roughly 34 to 47 years for roadway assets, including 45 years for rail and other track material. For equipment, UP estimates 17–23 years for locomotives, freight cars, and work equipment, and 12 years for technology and other assets. NS's depreciation rates in December 2025 imply broadly similar long asset lives: approximately 30–40 years for roadway assets, about 27 years for locomotives, 43 years for freight cars, around 21 years for other equipment, and about 10 years for computers and software. These NS figures are approximate lives

281. While Applicants phase the relevant investments across the first three years after the merger, I conservatively assume that the full $[redacted] million in initial capex ($[redacted] million in 2026 dollars) for the selected investments are incurred in the first year. [425] I also include annual replacement capex equal to one tenth of the initial capex (i.e., replacement capex to be consistent with the ten-year useful life used to calculate annual depreciation expense).[426] Beginning in Year 2, I apply a long-run annual rail-specific inflation rate of 3 percent to both the contribution margin and the replacement capex.[427]

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inferred from depreciation rates rather than directly reported useful-life estimates. *See* Union Pacific Corporation Form 10-K for the Fiscal Year Ended December 31, 2025, p. 66; and Norfolk Southern Corporation Form 10-K for the Fiscal Year Ended December 31, 2025, p. K65. *See also*, Workpaper "IM_Profitability_Exhibits.xlsx."

425 $[redacted] million expressed in 2025 USD, as reported in the underlying data. *See* Turner VS, pp. 44–78 & footnote 31 (describing Applicants' merger-related capital improvement plan and identifying expected completion dates for post-merger projects in Years 1, 2, and 3). *See also*, Janke VS, p. 4 (outlining Applicants' planned capital improvements and timing of expenditures). *See also*, Janke VS Workpaper, "Synergies Transportation - Operating.xlsx," tab 'Capital Investment.'

426 *See* Workpaper "IM_Profitability_Exhibits.xlsx." I do not model working capital, which would have a minor effect on this illustrative analysis.

427 *See* Workpaper "IM_Profitability_Exhibits.xlsx." I estimate long-run annual inflation of 3 percent by multiplying the 2.5 percent 20-year breakeven inflation rate by 119 percent, the ratio of the compound annual growth rates ("CAGRs") of the AAR All-Inclusive Less Fuel Index and the Consumer Price Index ("CPI") over the period from Q1 2007 to Q3 2026.

St. Louis FRED, "20-year Breakeven Inflation Rate," Rate for September 2026, last accessed October 28, 2026, https://fred.stlouisfed.org/series/T20YIEM. The breakeven inflation rate represents a measure of expected inflation derived from 20-Year Treasury Constant Maturity Securities (DGS20) and 20-Year Treasury Inflation-Indexed Constant Maturity Securities (DFII20). When estimating the 2025 WACC, the Board similarly assumes 2.4 percent long-run expected inflation from Dr. Rand Ghayad Revised Verified Statement, pp. 46–48. Expected inflation calculated "by subtracting Inflation Indexed 20-Year Treasury Bond rates from Long-Term Government Yields (which are not inflation indexed)." The Revised Verified Statement of Dr. Rand Ghayad is included in: Revised Comments of the Association of American Railroads and Its Member Railroads, *Railroad Cost of Capital – 2025*, STB Docket No. EP 558 (Sub-No. 29), June 17, 2026, available at: https://docketyard.org/document/d824c0e8aa2b9e4c8c98f7fa9865ca95d5af1f84a26b10b6dcfa6304790ff666.pdf.

For the AAR index, *see* Association of American Railroads, "All-Inclusive Index Less Fuel (All-LF)," https://www.aar.org/wp-content/uploads/2026/09/AII-LF-2026Q4.pdf. For CPI, see St. Louis FRED, "Consumer Price Index for All Urban Consumers: All Items in U.S. City Average (CPIAUCSL)," last accessed October 27, 2026, https://fred.stlouisfed.org/series/CPIAUCSL.

282. I also account for taxes at a combined state and federal rate of 25.5 percent.[428] I apply this rate to the contribution margins from the incremental traffic, after deducting depreciation on the capital investments assumed to support the service.[429]

283. I discount the resulting annual cash flows using a discount rate of 11 percent, a conservative estimate of the after-tax WACC.[430] To develop this assumption, I consider the most recent available railroad-industry estimates from two established sources: Prof. Damodaran's January 2026 nominal after-tax WACC of 7.3 percent for the U.S. Transportation (Railroads) industry,[431] and the Board's 2025 composite after-tax WACC of 9.8 percent for the railroad industry.[432] I update the WACC to reflect current conditions, as of October 1, 2026, given the

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428 Average combined federal and state corporate tax imposed in the United States as of July 1, 2026, including the states that impose no corporate income taxes. Garrett Watson, Alex Durante, "Combined State and Federal Corporate Income Tax Rates in 2026," Tax Foundation, October 9, 2026, last accessed October 28, 2026, https://taxfoundation.org/data/all/federal/combined-state-federal-corporate-income-tax-rates-2026/. Underlying source: state statutes, state tax forms and instructions, Tax Foundation calculations. A combined state and federal rate of 25.5 percent is a conservative assumption compared to UP and NS's reported effective tax rates in 2024 and 2025. UP reported that their "effective tax rates for 2025 and 2024 were 22.1 percent and 23.3 percent, respectively." NS reported that their "effective income tax rate was 21.6 percent in 2025, compared with 21.2 percent in 2024 and 21.3 percent in 2023." *See* Union Pacific Corporation Form 10-K for the Fiscal Year Ended December 31, 2025, p. 34; and Norfolk Southern Corporation Form 10-K for the Fiscal Year Ended December 31, 2025, p. K37.

429 I assume a 10-year depreciation schedule. While the actual depreciation schedule for most investments is longer than 10 years, I do not capture the additional benefits beyond the 10 years incorporated in my analysis. The depreciation tax shield is also understated because only $[redacted] million of the $[redacted] million in capex is depreciated over the years included in my analysis. The remaining capex could generate additional depreciation tax shields in future years, resulting in tax benefits that are not captured in the analysis. *See* Workpaper "IM_Profitability_Exhibits.xlsx." This adds a further element of conservatism to my analysis.

430 *See* Workpaper "IM_Profitability_Exhibits.xlsx." I apply mid-year discounting assuming that the cash flow accrues on average halfway through each year.

431 Aswath Damodaran, "Cost of Equity and Capital (US)," for Transportation (Railroads) Industry, using data as of January 5, 2026, last accessed October 13, 2026, https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/wacc.html, downloaded as excel file.

432 Decision, Surface Transportation Board, Docket No. EP 558 (Sub-No. 29), September 10, 2026, last accessed October 13, 2026, https://www.stb.gov/proceedings-actions/decisions/?action=stb_hook_modal_decision_details&id=53167, Railroad Cost of Capital for 2025, p. 1.

recent increase in interest rates that Applicants would face if they were to undertake the investment today.[433] These adjustments yield an after-tax WACC of 8.3 percent based on Prof. Damodaran's estimates and 10.6 percent based on the Board's estimates.[434] The 11 percent rate exceeds both updated estimates and produces a lower NPV than either would.

284. Under these assumptions, the analysis yields an estimated NPV of approximately [redacted].[435] Taking Mr. Hunt's projected traffic opportunity as given, this result indicates that UP and NS would have a meaningful economic incentive to pursue coordinated interline service without the merger. The Lathrop–Croxton service is unlikely to be the only economically attractive interline opportunity: as shown in Appendix B.4.a, applying a 4.2

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433 *See* Workpaper "IM_Profitability_Exhibits.xlsx." I update Prof. Damodaran's estimates using his October 1, 2026 estimates of the risk-free rate and the equity risk premium, which are based on 10-year U.S. Treasury securities. Aswath Damodaran, "Damodaran Online," NYU Stern, accessed via Internet Archive Wayback Machine on November 11, 2026, Captured October 31, 2026, https://web.archive.org/web/20261031032043/https://pages.stern.nyu.edu/~adamodar/, downloadable spreadsheet, "Spreadsheet to compute current ERP for current month." I also update the tax rate from 25 percent, as assumed by Prof. Damodaran in January 2026, to 25.5 percent, reflecting the average combined federal and state corporate tax imposed in the United States as of July 1, 2026, including the states that impose no corporate income taxes. Garrett Watson, Alex Durante, "Combined State and Federal Corporate Income Tax Rates in 2026," Tax Foundation, October 9, 2026, last accessed October 28, 2026, https://taxfoundation.org/data/all/federal/combined-state-federal-corporate-income-tax-rates-2026/. Underlying source: state statutes, state tax forms and instructions, Tax Foundation calculations.

I update the Board's estimates using the yield on 20-year U.S. Treasury securities, consistent with the Board's approach to estimating the risk-free rate. The description of the Board's methodology for estimating the cost of debt and the after-tax WACC does not explicitly indicate a tax adjustment. Decision, Surface Transportation Board, Docket No. EP 558 (Sub-No. 29), September 10, 2026, last accessed October 13, 2026, https://www.stb.gov/proceedings-actions/decisions/?action=stb_hook_modal_decision_details&id=53167, Railroad Cost of Capital for 2025, pp. 4, 6, 11. *See also*, St. Louis FRED, "Market Yield on U.S. Treasury Securities at 20-Year Constant Maturity, Quoted on an Investment Basis (DGS20)," interest rate as of October 1, 2026, https://fred.stlouisfed.org/series/DGS20.

434 *See* Workpaper "IM_Profitability_Exhibits.xlsx."

435 The estimated positive NPV leaves room for higher variable costs, even under the conservative assumptions I have adopted elsewhere in the analysis. Figures expressed in 2026 USD, applying inflation through October 1, 2026. *See* Workpaper "IM_Profitability_Exhibits.xlsx." The NPV reflects an assumed useful life of 10 years, which is a conservative assumption for rail assets. An assumed useful life of 20 years, which more accurately reflects the useful life of the rail assets considered in the analysis, yields an NPV of approximately [redacted]. *See* Workpaper "IM_Profitability_Exhibits.xlsx."

revenue reduction for single-line service derived from Mr. Hunt's modeled [redacted] and, in many cases, [redacted].

TABLE 19: NET PRESENT VALUE FOR THE TRAINS ZLTCX AND ZCXLT

[redacted]

Sources and Notes: NPV of after-tax cash flow, expressed in 2026 USD million, assuming a valuation date of October 1, 2026. *See* Workpaper "IM_Profitability_Exhibits.xlsx."

[1] and [2]: I analyze UP-NS interline revenues from the CRA traffic tapes dataset and variable costs from CCWS, applying a 4.2 percent single-line price reduction and multiplying the resulting per unit revenues and variable costs by estimated net diversions for the trains ZLTCX–ZCXLT.

[3]: [1] - [2].

[4] to [6]: Revenue and variable cost growth assumption applied to [17] to [18]. Consistent with Applicants' assumed traffic growth. Applicants assume 40 percent of traffic gains will be realized in year 1, 70 percent in year 2, and 100 percent by year 3. *See* Gehringer & Orr VS, p. 9.

[7]: Assumed subset of capex in Janke Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment.' Sum of cells M29, M46, M58, M59, M63 and M64. Mr. Turner refers to Mr. Janke's merger-related investments in his VS. *See* Turner VS, Table 14, pp. 56, 70, 79–81, and footnote 145. All capex is assumed to be incurred in Year 1. This is a conservative assumption relative to assuming that capex will be spread over three years. *See* Janke VS, p. 4, for a description of Applicants' planned capex and timing. Because the Applicants do not allocate investments to individual trains, I conservatively attribute the full cost of investments that I assume are relevant to the Lathrop–Croxton trains, although these investments may also support other trains and traffic.

[8], [9]: Association of American Railroads, "All-Inclusive Index Less Fuel (All-LF)," available at: https://www.aar.org/wp-content/uploads/2026/09/AII-LF-2026Q4.pdf. I use values from the "All-LF With Forecast Error Adj." series, consistent with Applicants' approach. Mr. Janke uses (average Q1-Q4 2023 AAR index / average Q1-Q4 2025 AAR index) - 1 to convert capex estimates from 2025 USD to 2023 USD. *See* Janke Workpaper "Synergies Transportation - Operating.xlsx," tab 'Capital Investment,' cell Q2. *See also*, Janke Workpaper, "AIILF Figures - 2004 thru 2028 - As of 11.6.2025.xlsx," tab 'RCAF AllLF Figures,' cell L95.

[10]: St. Louis FRED, "20-year Breakeven Inflation Rate," Rate for September 2026, last accessed October 28, 2026, https://fred.stlouisfed.org/series/T20YIEM. The breakeven inflation rate represents a measure of expected inflation derived from 20-Year Treasury Constant Maturity Securities (DGS20) and 20-Year Treasury Inflation-Indexed Constant Maturity Securities (DFII20). When estimating the 2025 WACC, the Board similarly assumes 2.4 percent long-run expected inflation from Dr. Rand Ghayad Revised Verified Statement, pp. 46–48. Expected inflation calculated "by subtracting Inflation Indexed 20-Year Treasury Bond rates from Long-Term Government Yields (which are not inflation indexed)." The Revised Verified Statement of Dr. Rand Ghayad is included in: Revised Comments of the Association of American Railroads and Its Member Railroads, *Railroad Cost of Capital – 2025*, STB Docket No. EP 558 (Sub-No. 29), June 17, 2026, last accessed November 8, 2026, https://docketyard.org/document/d824c0e8aa2b9e4c8c98f7fa9865ca95d5af1f84a26b10b6dcfa6304790ff666.pdf.

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[11]: Ratio of AAR to CPI CAGR: [(AAR Q3 2026 / AAR Q1 2007) ^ (1 / 19.5) - 1] / [(average CPI Q3 2026 / average CPI Q1 2007) ^ (1 / 19.5) - 1], where 19.5 years represents 78 quarterly intervals between Q1 2007 and Q3 2026, divided by four quarters per year. For CPI, see St. Louis FRED, "Consumer Price Index for All Urban Consumers: All Items in U.S. City Average (CPIAUCSL)," last accessed October 27, 2026, https://fred.stlouisfed.org/series/CPIAUCSL. For AAR index, see notes for [8], [9].

[12]: [10] x [11].

[13]: I conservatively assume a 10-year useful life for the capex, although railroad infrastructure assets have a substantially longer useful life. UP reports estimated useful life in its Form 10-K. The shortest estimated useful life is 12 years, for Technology and other assets. The average estimated useful life across all reported items is roughly 29 years. *See* Union Pacific Corporation Form 10-K for the Fiscal Year Ended December 31, 2025, p. 66. NS reports annual depreciation rates in its Form 10-K. The highest reported depreciation rate (and shortest useful life) corresponds to a useful life of 10 years, for computers and software assets. The average estimated useful life across all reported items is roughly 32 years. *See* Norfolk Southern Corporation Form 10-K for the Fiscal Year Ended December 31, 2025, p. K65.

[14]: Average combined federal and state corporate tax rate imposed in the United States as of July 1, 2026, including the states that impose no corporate income taxes. Garrett Watson, Alex Durante, "Combined State and Federal Corporate Income Tax Rates in 2026," Tax Foundation, October 9, 2026, last accessed October 28, 2026, https://taxfoundation.org/data/all/federal/combined-state-federal-corporate-income-tax-rates-2026/. Underlying source: state statutes, state tax forms and instructions, Tax Foundation calculations. The assumed combined state and federal rate of 25.5 percent is conservative relative to UP and NS's reported effective tax rates in 2024 and 2025. UP reported that their "effective tax rates for 2025 and 2024 were 22.1 percent and 23.3 percent, respectively." NS reported that their "effective income tax rate was 21.6 percent in 2025, compared with 21.2 percent in 2024 and 21.3 percent in 2023." *See* Union Pacific Corporation Form 10-K for the Fiscal Year Ended December 31, 2025, p. 34; and Norfolk Southern Corporation Form 10-K for the Fiscal Year Ended December 31, 2025, p. K37.

[15]: I conservatively apply an 11 percent discount rate, based on nominal after-tax WACC estimates for the rail industry from Prof. Damodaran and the Board, adjusted to reflect risk-free rates as of October 1, 2026.

[16]: Assumed.

[17]: Year 1: [1] x (1 + [8]) x assumed growth in [4]. Year 2 Onward: [1] x (1 + [8]) x (1 + [12]) ^ (Year - 1) x assumed growth in [5] to [6].

[18]: Year 1: - [2] x (1 + [8]) x assumed growth in [4]. Year 2 Onward: - [2] x (1 + [8]) x (1 + [12]) ^ (Year - 1) x assumed growth in [5] to [6].

[20]: - [7] x (1 + [9]). Note: I do not model working capital, which would have a minor effect on this illustrative analysis.

[21]: [20] / [13] x (1 + [12]) ^ (Year - 1).

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[22]: (Sum of [20] and [21] from Year 1 to Previous Year) / [13]. I take the total amount of capex to date and divide by the useful life to come to a depreciation number.

[23]: The depreciation tax shield is understated because only $[redacted] million of the $[redacted] million in capex is depreciated. The remaining capex could generate additional depreciation tax shields in future years, resulting in tax benefits that are not captured in the analysis.

[25]: I assume the cash flow accrues on average halfway through each year.

285. As documented throughout this appendix, several assumptions make the estimated NPV conservative:

- I attribute the full cost of the selected terminal, yard, and mainline investments to the Lathrop–Croxton train pair, although these investments support several other planned trains and associated projected traffic growth.
- I assume the full initial investments are incurred in Year 1 rather than spread over three years and include annual replacement capital expenditures.
- I count only ten years of contribution margins, even though the selected investments are expected to remain useful beyond that period.
- I calculate depreciation and associated tax shield over ten years, during which only $[redacted] million of the $[redacted] million in capital expenditures is depreciated. The remaining $[redacted] million could generate additional tax shields beyond that period, resulting in tax benefits that are not captured in the analysis.
- I use an 11 percent discount rate, above both updated railroad-industry estimates discussed above.

286. The table above also reports an internal rate of return ("IRR")[436] of approximately [redacted], [redacted].[437] Under the conservative assumptions listed above, the projected traffic [redacted]. The estimated NPV and IRR are illustrative, rather than precise forecasts of the returns UP and NS would earn. Based on Mr. Hunt's projected traffic volumes, UP and NS would have a substantial financial incentive to invest in coordinated interline service while remaining separately owned.

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[436] This is the rate of return at which the NPV would be zero. *See* Aswath Damodaran, *Applied Corporate Finance*, Stern School of Business, NYU, available at: https://pages.stern.nyu.edu/~adamodar/pdfiles/acf4E/acf4Ebook.pdf, p. 65.

[437] Analysis based on contribution margin and capex data expressed in 2026 USD, applying inflation up to October 1, 2026. This represents the IRR under a conservative set of assumptions, particularly the useful life of only 10 years. Assuming a useful life of 20 years (which is closer to the average useful life of rail assets), the analysis yields an estimated IRR of approximately [redacted]. *See* Workpaper "IM_Profitability_Exhibits.xlsx."

B.5 Description of Mr. Hunt's Truck-to-Carload Diversion Model

287. This appendix provides a more detailed description of Mr. Hunt's truck-to-carload diversion model described in Figure 26 and Figure 27 in Section V.A.1. The numbered steps below correspond to those in Figure 26.

288. Mr. Hunt first identifies merchandise and bulk Hunt markets in which truck and rail potentially compete (Step 1). Because Transearch reports truck traffic at the county level, he defines merchandise and bulk Hunt markets at the county-to-county level.[438] He then uses Oliver Wyman's Quantanet routing model to select the "best," or lowest-impedance, rail route for each county-to-county pair, defining impedance as the sum of rail mileage and assumed interchange penalties.[439] He performs this exercise separately for the pre- and post-merger networks, reducing UP-NS interchange penalties to zero post-merger and reselecting the lowest-impedance route, which may have fewer interchanges and/or rail miles.[440] He then models price and transit time based on the modeled mileage and number of junctions of the "best" route selected by Quantanet (Step 2).[441] He then identifies diversion-eligible markets in which a combined UP-NS

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438 Hunt VS, pp. 151–153 & Exhibit B-24. In Mr. Hunt's truck-to-rail models, he uses truck traffic data from the Transearch, S&P Global Markets, 2023 freight flow database. *See* Hunt VS, Exhibit 4-4, p. 38.

Mr. Hunt classifies commodities into merchandise, bulk, intermodal, and automotive. He explains that "Transearch provides no visibility into the likely rail service that truck traffic would convert to; it only provides commodities and the truck equipment type. The best way to infer the likely rail service type (intermodal, carload, automotive, bulk) is the commodity. Based on the Public Use Waybill Sample, the frequency each STCC4 commodity travels in rail intermodal containers vs. carload was calculated. Any commodities with over 50 percent of their rail traffic in intermodal containers were treated as an intermodal-favored commodity." *See* Hunt VS, pp. 35, 120 and Hunt Workpaper, "STCC4-CLvsIM.xlsx."

439 Hunt VS, pp. 105–109.

440 Hunt VS, pp. 105–109.

441 Hunt VS, pp. 160–164, 169–172. Mr. Hunt defines single-line Hunt markets based on whether the "best" Quantanet route has no junctions, rather than, as described in his VS, whether "a railroad can serve

would provide what his analysis characterizes as improved rail service, based on a reduction in the number of junctions or mileage (Step 3).[442]

289. For each diversion-eligible market, Mr. Hunt allocates rail tons across truck equipment types , generally in proportion to each truck equipment type's share of the Hunt market's truck tonnage.[443] Based on the assigned truck equipment type, and modeled single-line status, mileage, transit time, and price, he groups existing lookalike markets with similar characteristics into archetypes.[444] He then matches each diversion-eligible market, based on its modeled post-merger characteristics, to the corresponding lookalike markets within the same archetype (Step 4).[445] The weighted-average rail modal share observed in those lookalike

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both the origin and destination county." *See* Hunt VS, p. 154 and Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 38–39.

In his truck-to-carload diversion model, Mr. Hunt estimates rail prices using power curves that specify revenue per ton-mile by distance and single-line status, with an additional commodity adjustment. *See* Hunt VS, Appendix B.6.

442 Mr. Hunt's diversion-eligible markets exclude Hunt markets with modeled improved services where i) rail prices are not at least 10 percent lower than truck prices or ii) junction count does not decrease and rail mileage decreases by less than 163 miles. *See* Hunt VS, Exhibit B-20, pp. 148–149 and Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 23–30.

443 Mr. Hunt's analysis considers five truck equipment types: bulk, dry van, flatbed, reefer, and tank. When a STCC2 commodity moves between an origin and destination county using multiple truck equipment types, he allocates rail tons across truck equipment types based on the share of truck tons transported by each truck equipment type for that commodity and county pair. If there is no truck traffic between two counties for a STCC2 commodity, Mr. Hunt assigns the most common truck equipment type for that STCC2 commodity across all county pairs. *See* Hunt VS, pp. 151–152 and Hunt Workpaper, "MerchBuildAll_2026_vFinal.sql."

444 Hunt VS, Section 3.5. Mr. Hunt selects the lookalike markets from the same set of potentially "competitive" markets from which he identifies diversion-eligible markets (Step 1), subject to a two-carloads-per-week minimum-volume filter (applied to each origin county, STCC2, and truck equipment type). He describes this filter in relation to diversion markets in his VS but does not discuss its application to lookalike markets. *See* Hunt VS, p. 156; Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cell 46.

445 Hunt VS, pp. 30–31, 38–41 & Appendix B.5. Mr. Hunt's principal carload archetypes group markets by truck equipment type and four modeled rail characteristics: mileage bin, transit time bin, price bin, and whether single-line service is available. Mr. Hunt defines the width of the price bins for that dimension of the archetypes based on the average post-merger price decrease by truck equipment type from the Hunt & Schabas VS, Exhibit B-24, instead of the updated analysis in the April 2026 Hunt VS,

markets becomes the benchmark rail modal share for the diversion-eligible market (Step 5).[446] If the benchmark rail modal share exceeds the diversion-eligible market's current rail modal share, Mr. Hunt treats the difference as potential truck-to-carload diversion (Step 6). If current rail modal share already exceeds the benchmark, he does not predict a corresponding reduction in rail traffic.[447] Therefore, Mr. Hunt calculates potential truck-to-carload diversions by multiplying each diversion-eligible market's total rail and truck tonnage by its assigned benchmark rail modal share to obtain predicted rail tons, and subsequently subtracting the rail tons already associated with that diversion-eligible market, counting only positive differences as diversions.[448]

290. Finally, he applies a series of operational filters and post-processing steps to the potential truck-to-carload diversions, processes the resulting diversion traffic for the Operating Plan, and estimates the associated revenues (Step 7).[449]

Exhibit B-25. *See* Hunt & Schabas VS, Exhibit B-24 compared to Hunt VS, Exhibit B-25 and Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 16, 39–44,51–54, 70–71.

446 Hunt VS, p. 41, Appendix B.5.2.C. Mr. Hunt calculates the rail modal share for each archetype as the average rail modal share of the lookalike markets assigned to that archetype, weighted by total rail-plus-truck market tons. He then applies that share to diversion-eligible markets assigned to the archetype after incorporating the modeled post-merger characteristics. *See also*, Hunt VS, Exhibits 4-6 and 4-7 (illustrating the methodology for the Nueces County, Texas–Morgan County, Alabama chemicals market). When a market with predicted service improvements does not have a corresponding lookalike market with the same characteristics, Mr. Hunt uses two fallback methodologies. First, he looks for a match by shifting the price bin down one bin and then up one bin. This step is not described in his VS. If no match is found, he applies the simplified matching approach described in his VS, which matches markets based only on rail mileage and whether the service is single-line or interline. *See* Hunt VS, Appendix B.5.2, p. 154 and Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 69–70.

447 *See* Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 85–87.

448 Hunt VS, Appendix B.5.2.C.

449 In this step, Mr. Hunt applies the filters described in his VS, sometimes differently than described, as well as additional filters not discussed in his VS.

First, Mr. Hunt applies a two-carloads-per-week minimum-volume filter (applied to each origin county, STCC2, and truck equipment type) to diversion-eligible markets. When counting the volume to

B.6 Additional Analysis of Commodity Composition in Mr. Hunt's Carload Archetypes

291. This appendix provides additional detail on the commodity-composition analyses summarized in Section V.A.2.c. I use more granular STCC4 commodity information to examine whether lookalike markets grouped within Mr. Hunt's carload archetypes differ in ways that affect rail participation and the benchmark rail modal shares produced by his methodology. I proceed in three steps. First, I examine whether STCC4 commodity composition explains variation in rail modal share that remains within Mr. Hunt's archetypes. Second, I examine how differences in commodity composition between lookalike and diversion markets can affect the benchmark rail modal share, using both a simplified example and the Nueces County, Texas, to Morgan County, Alabama chemicals market discussed in the main text as a real-world illustration. Third, I evaluate whether the same pattern appears more broadly across Mr. Hunt's carload archetypes.[450]

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compare to the threshold, he states that he includes i) rail tons from "competitive" markets with no change post-merger, ii) rail tons from "rail-only" markets, and iii) predicted rail tons from markets with a change post-merger. However, Mr. Hunt counts rail tons from the lookalike markets instead of counting "rail-only" tons, leading to some double-counting of rail tons. *See* Hunt VS, pp. 38, 156 and Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cell 83. The comment in his code says to "Downselect to rail-only equipment type" but then the line right below selects the entire set of lookalike markets for that truck equipment type.

Next, Mr. Hunt describes in his VS that he "excluded diversion opportunities to and from South Dakota, Montana, and North Dakota" since these states are served by UP only through access with shortlines. However, in his code, Mr. Hunt only excludes opportunities originating, not ending, in these states. *See* Hunt VS, p. 156 and Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cell 89.

Mr. Hunt also applies additional filters not discussed in his VS. He excludes diversions in markets where the post-merger route does not involve UP-NS (although this filter does not remove any diversions). He also applies filters to exclude "impermissible state diversions, routes where rail does not improve 1 interchange or 10 percent on its rail miles, and routes where the rail miles are less than 80 of the truck miles" as described and executed in his workpapers. *See* Hunt VS, Appendix B.5.2 and Hunt Workpaper, "t2merch_lookalike_analysis_2026_vFinal.ipynb," code cells 91–98.

450 Mr. Hunt's carload lookalike methodology applies rail modal shares observed in existing lookalike markets to pre-merger truck and rail traffic in diversion-eligible markets (*see* Section V.A.1 and

292. Mr. Hunt's methodology does not fully capture differences among more granular commodities within a given STCC2 commodity classification. He incorporates STCC2 commodity classifications into his estimation of rail prices and uses those estimated prices in defining the archetypes. [451] He also allocates rail traffic within each county-pair-STCC2 Hunt market across truck equipment types and distinguishes archetypes by truck equipment type.[452] Those features do not capture potentially important differences among more granular commodities within the same STCC2 commodity classification. Hunt markets with the same STCC2 classification may therefore differ materially in shipment characteristics, handling requirements, and other factors affecting the suitability of carload rail, while nevertheless being treated the same in Mr. Hunt's model for purposes of predicting rail modal share.[453]

293. I first extend the regression analysis summarized in Section V.A.2.b to examine whether more granular STCC4 commodity composition helps explain variation in rail modal share that remains within Mr. Hunt's archetypes. I use STCC4 composition as a diagnostic rather than as a proposed replacement for Mr. Hunt's methodology. To avoid introducing additional assumptions into Mr. Hunt's allocation of rail traffic across truck equipment types, I restrict the analysis to county-pair-STCC2 lookalike markets for which he assigns all rail traffic to a single

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Figure 26). In the commodity composition analysis presented in Section V.A.2 & Appendix B.6, I focus on diversion markets, the subset of diversion-eligible markets in which Mr. Hunt predicts diversions, and I compare their commodity composition with that of his identified lookalike markets. I hold Mr. Hunt's sets of diversion and lookalike markets fixed throughout this analysis. *See* footnote 459.

451 *See* Hunt VS, pp. 160–164.

452 *See* Hunt VS, pp. 151–152.

453 *See* Hunt VS, pp. 151–152, 160–164. As I explained in Section V.A.2.c, Mr. Hunt testified that "[t]here are more truck-centric commodities and more rail-centric commodities." Deposition of David T. Hunt, Vol. I, October 7, 2026, 198:22–199:7. *See also*, Deposition of David T. Hunt, Vol. II, October 8, 2026, 559:6–14.

truck equipment type.[454] As shown in column [B] of Table 20 below, within that restricted sample, Mr. Hunt's archetype characteristics explain approximately 34 percent of the variation in rail modal share as measured by the R^2.[455] When I add variables measuring STCC4 commodity composition within each lookalike market, the R^2 nearly doubles from 0.34 to approximately 0.62, as shown in column [C].[456] These results indicate that more granular commodity composition contains substantial explanatory information not captured by Mr. Hunt's archetype definition.

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454 Mr. Hunt allocates rail tons across truck equipment types at the STCC2 level. *See* Hunt Workpaper, "MerchBuildAll_2026_vFinal.sql." Extending that allocation to STCC4 would require additional assumptions about how STCC2-level rail tons should be distributed across more granular commodities and truck equipment types. I therefore restrict the sample to lookalike markets for which all rail traffic in Mr. Hunt's combined truck and rail dataset (Hunt Workpaper, "t2r_2026.enhanced_transearch__T2Merch_output_2026_vFinal") is assigned to a single truck equipment type. This filter reduces the sample from approximately 861,000 to approximately 422,000 lookalike markets but allows the STCC4 analysis to proceed without modifying Mr. Hunt's truck-type allocation. *See* Hunt VS, pp. 151–152; Workpaper "T2R_Carload_Exhibits.xlsx" and Script "07_lookalike_market_regressions.R."

455 *See* footnote 156 for an explanation of the interpretation of the R^2.

456 *See* Column [C] of Table 20. The STCC4 share equals the percentage of total rail plus truck traffic within a county-pair-STCC2 lookalike market accounted for by each STCC4 commodity, and the shares sum to 100 percent within each lookalike market. These variables play a role similar to STCC4 fixed effects, except that lookalike markets containing multiple STCC4 commodities can have their commodity composition distributed across several STCC4-share variables rather than being assigned to a single STCC4 commodity classification. A share equals 100 percent when a single STCC4 commodity accounts for all traffic within a lookalike market.

TABLE 20: COMMODITY COMPOSITION EXPLAINS NEARLY AS MUCH VARIATION IN RAIL MODAL SHARE AS MR. HUNT'S ARCHETYPES

		All Lookalike Markets [A]	Lookalike Markets With Only One Truck Type per OFIPS-DFIPS-STCC2 [B]	[B] Including STCC4 Within STCC2 Share [C]
Number of Markets	[1]	860,678	421,576	421,576
R^2	[2]	0.20	0.34	0.62
Number of Archetype-Truck Equipment Type Fixed Effects	[3]	1,542	1,304	1,304

Sources and Notes: The dependent variable in each regression is observed rail modal share. The regressions assume standard errors are IID, include archetype-truck equipment type fixed effects, and are weighted by total market size (rail plus truck tons). The weighting is consistent with Mr. Hunt's methodology, which calculates archetype rail modal shares using total market size weights. *See* Hunt VS, p. 155. Mr. Hunt likewise calculates the average rail modal shares reported in Exhibits 3-1 using aggregate rail and truck tons rather than assigning equal weight to each Hunt market. *See* Hunt VS, pp. 24–25. *See* Script "07_lookalike_market_regressions.R"; Workpaper "T2R_Carload_Exhibits.xlsx."

[A]: The data in this regression includes all of Mr. Hunt's lookalike markets, defined at the origin county-destination county-STCC2-truck equipment type level, as in Mr. Hunt's dataset. *See* Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx," tabs 'Bulk_Lookalike,' 'DryVan_Lookalike,' 'Flatbed_Lookalike,' 'Reefer_Lookalike,' and 'Tank_Lookalike.'

[B]: The data in this regression includes only the subset of lookalike markets from [A] in which all rail traffic for that origin county-destination county-STCC2 in Mr. Hunt's combined truck and rail dataset (Hunt Workpaper, "t2r_2026.enhanced_transearch__T2Merch_output_2026_vFinal") travels by one truck equipment type.

[C]: The data in this regression is the same data used in the regression in [B] but including additional indicators for the share of STCC4 traffic as a percentage of STCC2 traffic within that county pair-STCC2 lookalike market. An F-test shows that the STCC4 within STCC2 shares in model [C] are jointly significant.[457] *See* segment "C.1. F-test comparing Model 5 and Model 7" of Script "07_lookalike_market_regressions.R."

[457] In econometrics, an F-test assesses whether a set of explanatory variables is jointly statistically significant in explaining variation in the dependent variable. *See* Jeffrey M. Wooldridge, *Introductory Econometrics: A Modern Approach*, 5th ed. (Boston, MA: Cengage Learning, 2013), pp. 143–149.

294. The regression results show that STCC4 commodity composition explains a substantial portion of the variation in rail modal share among lookalike markets Mr. Hunt assigns to the same archetype. The next question is whether the commodity composition of the lookalike markets used to construct an archetype's benchmark resembles the composition of the diversion markets to which that benchmark is applied. If the lookalike markets contain a greater concentration of commodities with relatively high rail modal shares, the benchmark can reflect the stronger rail performance of those commodities even when the diversion markets are composed more heavily of commodities with lower rail participation.

295. Table 21 provides a simplified example. Suppose the lookalike markets assigned to an archetype contain two hypothetical STCC4 commodities: 5501 and 5502. The first STCC4 commodity constitutes 10 percent of total tonnage in the lookalike markets and 20,000 of its 100,000 tons move by rail, yielding a 20 percent rail modal share. The second STCC4 commodity constitutes 90 percent of total tonnage in the lookalike markets and 720,000 of its 900,000 tons move by rail, yielding an 80 percent rail modal share. Pooling the lookalike markets as Mr. Hunt does produces a benchmark of 740,000 rail tons divided by one million total tons, or a 74 percent benchmark rail modal share.[458] The diversion markets assigned to the same archetype have the opposite commodity mix as the associated lookalike markets: 90 percent of their tonnage is in the first STCC4 commodity and 10 percent in the second. Weighting the two observed commodity-specific shares by the diversion-market commodity mix yields a benchmark rail modal share of just 26 percent, or 48 percentage points below the 74 percent benchmark that Mr. Hunt's approach would calculate. The example shows how ignoring the

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458 *See* a description Mr. Hunt's benchmark calculation at Hunt VS, pp. 155–156 and Table 21.

differences in commodity composition can inflate the benchmark rail modal share assigned to diversion markets.

TABLE 21: STCC4 HETEROGENEITY IN A HYPOTHETICAL ARCHETYPE

		Hunt Benchmark Share			STCC4 Reweighted Benchmark Share		
STCC4 [A]		Rail Tons in Lookalike Markets [B]	Total Lookalike Market Size [C]	Hunt's Predicted Rail Modal Share [D]	Observed Rail Modal Share in Lookalike Markets [E]	Share of Diversion Market Size [F]	Alternate Weighted Rail Modal Share [G]
5501	[1]	20,000	100,000		20%	90%	18%
5502	[2]	720,000	900,000		80%	10%	8%
Total	[3]	740,000	1,000,000	**74%**			**26%**

Sources and Notes: All values are hypothetical. *See* Workpaper "T2R_Carload_Exhibits.xlsx."
[A]: Assumed.
[B][1]-[2]: All rail tons for all lookalike markets with this archetype-truck equipment type pre-merger and the STCC4 in [A]. Assumed.
[B][3]: [1]+[2].
[C][1]-[2]: Total lookalike market size (rail plus truck tons) for all lookalike markets with this archetype-truck equipment type pre-merger and the STCC4 in [A]. Assumed.
[C][3]: [1]+[2].
[D]: Following Mr. Hunt's methodology, predicted average rail modal share, weighted by lookalike market size, across all lookalike markets with this archetype-truck equipment type pre-merger, calculated as [B3]/[C3].
[E]: Observed weighted average rail modal share (based on tons) for all lookalike markets with this archetype-truck equipment type pre-merger and the STCC4 in [A]. Calculated as [B]/[C]. Assumed.
[F]: Share of total diversion market size (rail plus truck tons) for the STCC4 in [A] for all diversion markets with this archetype-truck equipment type post-merger. Assumed.
[G][1]-[2]: [E]*[F].
[G][3]: Alternate average rail modal share, weighted by diversion market size, across all lookalike markets with this archetype-truck equipment type, calculated as [G][1]+[G][2].

296. I next test whether the same issue arises in Mr. Hunt's actual data. Using his code that merges the Traffic Tapes dataset and the Transearch trucking dataset as a starting point, I

construct STCC4-level versions of the lookalike and diversion datasets and map the resulting observations back to the county-pair–STCC2–truck-equipment-type markets used in his analysis.[459] This methodology preserves Mr. Hunt's set of lookalike and diversion markets and allows me to identify the more granular commodity composition underlying both the lookalike markets used to construct the benchmark and the diversion markets to which that benchmark is applied.

297. I first compare the rail modal share of STCC4-level Hunt markets that are matched to the same single-line archetype associated with the Nueces County, Texas, to Morgan County, Alabama chemicals market's post-merger characteristics. Mr. Hunt assigns the modeled post-merger Nueces County, Texas, to Morgan County, Alabama chemicals market to a tank-truck archetype with [redacted]. The weighted-average rail modal share of the 2,210 lookalike markets in that archetype is 77 percent, which Mr. Hunt applies as the post-merger benchmark to the diversion markets assigned to the same archetype.[460]

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[459] I construct STCC4-level rail and truck data using the Traffic Tapes and Transearch datasets, following Mr. Hunt's data preparation methodology. *See* Hunt Workpaper, "MerchBuildAll_2026_vFinal.sql." I allocate STCC4 rail tons across truck equipment types using the distribution of STCC2 rail tons across equipment types in Mr. Hunt's combined truck and rail dataset (*See* Hunt Workpaper, "t2r_2026.enhanced_transearch__T2Merch_output_2026_vFinal.") I then map the resulting STCC4 observations to the county-pair–STCC2–truck-type markets in Mr. Hunt's lookalike markets and diversion markets. I hold Mr. Hunt's set of lookalike markets and diversion markets constant throughout this commodity composition analysis, which allows me to examine commodity composition at the STCC4 level while retaining Mr. Hunt's market definitions. For lookalike markets, the expanded data preserve aggregate rail and truck tons. For diversion markets, I apply Mr. Hunt's archetype-level predicted post-merger rail modal share to each STCC4 commodity's market size and calculate STCC4-level diverted tons. The expanded data preserve Mr. Hunt's aggregate predicted diversion market size. *See* Script "00_create_stcc4_dataset_with_stcc2_matching.sql."

[460] Mr. Hunt's accompanying text states that the archetype contains 2,353 lookalike markets (*see* Hunt VS, p. 41), while the workpaper contains 2,210 lookalike markets. *See* Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx," tab 'Tank_Lookalike.' Filter the column Pre_Lane_Chars to the value [redacted] to display the list of 2,210 lookalike markets. Of the

298. Table 22, column [C], shows that rail participation varies substantially across STCC4 commodities within this archetype. For example, STCC [redacted] has an observed rail modal share of approximately [redacted] percent, while several other STCC4 commodities in the same archetype have rail modal shares above [redacted] percent. Similar differences appear across commodities in Column [D] when I expand the analysis to include all single-line lookalike markets included in Mr. Hunt's analysis. The broader comparison shows that this variation is not unique to the Nueces–Morgan archetype: rail modal shares differ materially across STCC4 commodities even among single-line lookalike markets.

TABLE 22: RAIL MODAL SHARE VARIES SUBSTANTIALLY ACROSS STCC4 COMMODITIES EVEN IN SINGLE-LINE HUNT MARKETS

[redacted]

Sources and Notes: *See* Script "10_stcc4_analyses.R."; Workpaper "T2R_Carload_Exhibits.xlsx."

947 diversion markets assigned to the archetype, 945 involve STCC2 28 traffic. *See* Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx," tab 'Tank Post.' Filter the column Post_Lane_Chars to values of [redacted] to see the 947 diversion markets and filter the column STCC2 to values of only 28 (08) to see the 945 (2) diversion markets involving STCC 28 (08).

[A]–[B]: Example STCC4s selected from diversion markets with the following characteristics: [redacted].

[C]: Observed rail modal share of STCC4 in [A]–[B] among lookalike markets within the archetype with the following characteristics: [redacted].

[D]: Average rail modal share (weighted by total market size (rail plus truck tons)) for the STCC4 in [A]–[B] across all single-line lookalike markets in Mr. Hunt's full set of lookalike markets.

299. Table 23 compares the distribution of total truck and rail tonnage across STCC4 commodities between the lookalike markets assigned to the archetype described above, and from which Mr. Hunt computes his 77 percent benchmark, and the diversion markets to which Mr. Hunt applies that benchmark. The difference is substantial. STCC [redacted], which has an observed rail modal share of approximately [redacted] percent among lookalike markets in the archetype, accounts for only about [redacted] percent of the lookalike markets' total rail and truck tonnage, but approximately [redacted] percent of diversion-markets' total rail and truck tonnage. By contrast, several STCC4 commodities with a high observed rail modal share account for a large portion of the lookalike-market tonnage but represent a much smaller portion of the diversion market tonnage (for example, [redacted] and [redacted] with observed rail modal shares above [redacted] percent). Mr. Hunt nevertheless applies the same 77 percent benchmark rail modal share to all of the diversion markets assigned to this archetype.

TABLE 23: STCC4 COMPOSITION DIFFERS SUBSTANTIALLY BETWEEN LOOKALIKE AND DIVERSION MARKETS WITHIN AN ARCHETYPE

[redacted]

Sources and Notes: *See* Script "10_stcc4_analyses.R."; Workpaper "T2R_Carload_Exhibits.xlsx."
[A]–[B]: STCC4s within the archetype for [redacted]. STCC4s sorted by total market size in [G].
[C]: Total market size (rail plus truck tons) for all lookalike markets with this archetype-truck equipment type and the STCC4 in [A]–[B].
[D]: STCC4 share of [C].
[E]: Observed weighted average rail modal share (based on tons) for all lookalike markets with this archetype-truck equipment type and the STCC4 in [A]–[B].
[F]: Mr. Hunt's predicted weighted-average rail modal share across all lookalike markets with this archetype-truck equipment type, calculated as the average of [E] weighted by [C].
[G]: Total market size (rail plus truck tons) for all diversion markets with this archetype-truck equipment type and the STCC4 in [A]–[B].
[H]: STCC4 share of [G].
[I]: Predicted weighted-average rail modal share across all lookalike markets with this archetype-truck equipment type, calculated as the average of [E] weighted by [G].
[9]: Combines all other STCC4 codes within this archetype other than those listed in rows [1]–[8].

300. Holding the STCC4-specific rail modal shares observed in the lookalike markets constant, but weighting them according to each STCC4 commodity's share of total rail and truck

tonnage across the corresponding *diversion* markets, produces a commodity-reweighted rail modal share of approximately 41 percent rather than Mr. Hunt's 77 percent benchmark rail modal share. The calculation is diagnostic: it illustrates the effect of accounting for differences in rail modal share across STCC4 commodities on Mr. Hunt's results.

301. I next perform this analysis on all Mr. Hunt's truck-to-carload archetypes. For each archetype-truck equipment-type combination, I first calculate the observed rail modal share of each STCC4 commodity across its lookalike markets. I then compute a weighted-average rail modal share for each archetype using each commodity's share of total rail and truck tonnage across the corresponding diversion markets.[461] As shown in Figure 29 in Section V.A.2.c, the distribution of the difference between Mr. Hunt's benchmark rail modal shares and those accounting for differences in rail modal share across STCC4 commodities is concentrated above zero, indicating that Mr. Hunt's benchmark generally exceeds the commodity-reweighted benchmark.

302. Taken together, these diagnostics show that more granular commodity composition is associated with substantial differences in observed rail participation and that the commodity composition of the lookalike markets can differ materially from that of the diversion markets to which Mr. Hunt applies the resulting benchmark. The analysis does not establish that the commodity-reweighted benchmarks are the correct post-merger shares. It does show, however, that a characteristic omitted from Mr. Hunt's archetype definition can materially affect the benchmark rail modal shares his methodology produces.

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[461] Within each archetype-truck-type combination, the commodity-reweighted benchmark is calculated as the weighted average of the STCC4-specific rail modal shares observed in the lookalike markets, using total market size in the corresponding diversion markets as the weights. Mr. Hunt's benchmark instead uses as weights the total market size of lookalike markets. *See* Workpaper "T2R_Carload_Exhibits.xlsx," Script "10_stcc4_analyses.R."

B.7 Additional Truck-to-Carload Model Diagnostics

B.7.a *Illustration of the No-Change Diagnostic: Nueces County, Texas to Morgan County, Alabama*

303. In Section V.A.4.a, I describe a test of Mr. Hunt's truck-to-carload model under a "no-change" scenario. In this test, I remove the modeled merger-related changes he claims by holding constant at pre-merger levels all modeled characteristics on which he based his predicted diversions—namely, single-line status, mileage, transit time, and price—while retaining all of the other elements of his modeling framework. This appendix provides further detail on the test, using the Nueces County, Texas, to Morgan County, Alabama chemicals market discussed in Section V.A.4.a as an illustrative example.

304. Under this no-change scenario, Mr. Hunt's framework continues to predict substantial truck-to-carload diversion. Because the modeled merger-related changes have been removed, these predicted diversions cannot be attributed to reductions in modeled single-line status, mileage, transit time, or price, or other merger-related service characteristics. Instead, they arise from the framework's assignment of lookalike-market rail modal shares to diversion-eligible markets that historically exhibited substantially lower rail participation.

305. The Nueces County, Texas, to Morgan County, Alabama chemicals market provides a specific illustration of the no-change analysis using the same market highlighted by Mr. Hunt in his Verified Statement. In his Exhibit 4-6, Mr. Hunt reports the market's modeled pre- and post-merger characteristics.[462] In his Exhibit 4-7, he identifies the ten largest existing single-line lookalike markets whose pre-merger characteristics match the modeled characteristics

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462 *See* Hunt VS, Exhibit 4-6, which summarizes the pre-merger characteristics of Nueces County, Texas, to Morgan County, Alabama chemicals market, which is [redacted]. Mr. Hunt's post-model predictions for the route are [redacted].

of the Nueces–Morgan market (as summarized in the right-hand side of Exhibit 4-6), and reports their rail modal shares, before calculating a weighted-average rail modal share of 77 percent across all 2,210 lookalike markets in that single-line archetype.[463] Table 24 applies the same methodology after removing the modeled merger-related changes. Specifically, I use the pre-merger characteristics shown on the left-hand side of Mr. Hunt's Exhibit 4-6 to identify the corresponding interline archetype: [redacted].[464] Like Mr. Hunt's Exhibit 4-7, Table 24 presents the ten largest lookalike markets in that archetype. Column [E] reports rail modal share, column [F] reports total market size, and row [13] reports the weighted-average rail modal share of approximately 63 percent computed across all interline lookalike markets in the archetype.

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463 *See* Hunt VS, Exhibit 4-7. *See also*, Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx," tab 'Tank_Lookalike.' The corresponding text indicates the archetype includes 2,353 lookalike markets, but Mr. Hunt's workpapers show 2,210 lookalike markets. *See* footnote 460.

464 *See* Hunt VS, p. 41 & Exhibit 4-6.

TABLE 24: THE NUECES COUNTY–MORGAN COUNTY CHEMICALS MARKET UNDERPERFORMS RELATIVE TO OTHER INTERLINE MARKETS THAT MR. HUNT WOULD CALL COMPARABLE

[redacted]

Sources and Notes: *See* Script "08_lookalike_analyses.R."; Workpaper "T2R_Carload_Exhibits.xlsx." This table shows lookalike markets in the archetype for [redacted].

[A]-[D]: Characteristics of the top 10 lookalike markets by total market size that make up the archetype to which the Nueces County, TX to Morgan County, AL, chemicals market belongs to based on pre-merger characteristics.

[E][1]-[E][10]: Rail modal share, based on tonnage.

[E][11]-[E][13]: Average rail modal share weighted by total market size.

[F]: Total market size is rail plus truck tons.

[11]: Represents the top ten largest Hunt lookalike markets in this archetype (shown in rows [1]–[10]) ranked by total market size in tons.

[12]: Represents all remaining Hunt lookalike markets in this archetype not included in [11].

[13]: Represents all Hunt lookalike markets matched to this archetype that are represented in rows [11] and [12].

306. The results are striking. Although the modeled merger-related changes have been removed, the weighted-average rail modal share of the corresponding archetype remains

approximately 63 percent. Thus, even under current service characteristics, Mr. Hunt's framework predicts that nearly two-thirds of the truck traffic in the Nueces–Morgan Hunt market would move by rail.

307. The 63 percent predicted rail modal share reflects the higher rail participation of the interline lookalike markets assigned to the same archetype as the Nueces–Morgan Hunt market. On the dimensions modeled by Mr. Hunt, those lookalike markets "look like" Nueces–Morgan today, and all of them are interline markets. Yet their observed rail modal shares are [redacted] than the rail modal share in the Nueces–Morgan Hunt market, with several [redacted]. Table 24 therefore demonstrates that interline status is compatible with high rail participation and cannot, by itself, explain the absence of rail traffic in the Nueces–Morgan market. Mr. Hunt's framework nevertheless treats the difference between Nueces–Morgan and those lookalike markets as diversion potential, even after the modeled merger-related changes have been removed. Put differently, under the no-change scenario, the model predicts approximately 82 percent as many diversions as under Mr. Hunt's post-merger scenario.[465] At a minimum, that portion of the predicted diversions cannot be attributed to the modeled merger-related changes. This result does not imply that the remaining portion is a reliable estimate of merger-caused diversion. That remainder remains subject to the additional concerns discussed in Sections V.A.2 through V.A.3 and V.A.4.b through V.A.4.d, including the economic plausibility of shippers' predicted response, the comparability of the diversion and lookalike markets, and the support for the modeled service changes.

308. The Nueces–Morgan market is not an isolated example. As shown in Figure 31 in Section V.A.4.a, across all five truck equipment types, Mr. Hunt's framework continues to

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[465] 63 percent divided by 77 percent is approximately 82 percent.

predict rail modal shares of approximately 29 to 44 percent under the no-change scenario, compared with his reported post-merger predictions of 39 to 54 percent. In aggregate, the no-change scenario predicts approximately 117,000 diverted carloads, or approximately 61 percent of the 191,000 Mr. Hunt reports, as shown in Figure 32 in Section V.A.4.a.

309. This 61 percent result should not be interpreted as validating the remaining predicted diversions. The no-change analysis identifies diversions that do not depend on the modeled merger-related changes. Again, the remaining predicted diversions are subject to the additional concerns discussed in Sections V.A.2 through V.A.3 and V.A.4.b through V.A.4.d.

310. The no-change analysis therefore provides a one-sided diagnostic. It demonstrates that at least a majority of Mr. Hunt's reported diversion estimate cannot be tied causally to the modeled merger-related changes. It does not establish an upper bound on the portion of the estimate that may be unreliable or unrelated to the merger.

311. These results confirm the central concern discussed throughout Section V.A. Rather than reliably isolating traffic that would divert because of the merger, Mr. Hunt's framework generates substantial predicted diversion from differences in rail participation that already exist between the diversion markets and the "lookalike" markets to which they are matched. For that and other reasons, Mr. Hunt's reported carload diversion estimates do not provide a reliable measure of merger-caused truck-to-carload diversion.

B.7.b *Mr. Hunt's Asymmetric Treatment of Benchmark Differences*

312. Mr. Hunt and Mr. Schabas's December 2025 Verified Statement acknowledged that the lookalike methodology sometimes assigns a diversion-eligible market a benchmark rail modal share that is below the market's observed pre-merger rail modal share.[466] In those

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466 *See* Hunt & Schabas VS, p. 139, Exhibit B-27.

instances, Mr. Hunt and Mr. Schabas "excluded these diversions"—that is, they did not allow the negative difference between the benchmark and observed rail modal share to reduce the diversion estimate, but instead treated the predicted truck-to-carload diversion for those diversion-eligible markets as zero.[467] Although Mr. Hunt's April 2026 Verified Statement does not discuss these excluded results, the updated analysis produces them on a substantially larger scale. As shown in Table 25, the negative benchmark differences relative to observed rail volumes in the revised analysis are equivalent to a shortfall of approximately 100,000 carloads, or roughly 52 percent of his reported 191,000 positive diversions. The corresponding shortfall in the December 2025 Hunt & Schabas analysis was approximately 17,000 carloads, or roughly 9 percent of the total positive diversions reported in that filing.

TABLE 25: DIVERSION-ELIGIBLE MARKETS EXCLUDED BECAUSE ASSIGNED BENCHMARK RAIL MODAL SHARE FELL BELOW OBSERVED RAIL MODAL SHARE

Truck Equipment Type		Hunt & Schabas (December 2025)			Hunt (April 2026)		
		% of Markets Excluded [A]	Carload Equivalent of Excluded Benchmark Shortfall [B]	Excluded Benchmark Shortfall as % of Reported Diversions [C]	% of Markets Excluded [D]	Carload Equivalent of Excluded Benchmark Shortfall [E]	Excluded Benchmark Shortfall as % of Reported Diversions [F]
Bulk	[1]	0.4%	2,144	8.0%	3.8%	10,395	26.5%
Dry Van	[2]	0.6%	6,904	11.6%	3.9%	35,286	52.8%
Reefer	[3]	0.5%	2,991	17.1%	1.8%	4,870	43.4%
Tank	[4]	0.5%	2,341	3.5%	6.2%	39,764	66.5%
Flatbed	[5]	0.9%	2,398	20.2%	5.1%	9,326	65.1%
Total	[6]	0.6%	16,777	9.2%	4.3%	99,641	52.1%

Sources and Notes: *See* Scripts "02_lookalike_analysis_2026_keep_negatives.ipynb."; "03_lookalike_analysis_HS_keep negatives.ipynb."; Workpaper "T2R_Carload_Exhibits.xlsx."
[A]: Percentage of diversion-eligible markets (i.e. origin county-destination county-STCC2) excluded when dropping markets where assigned benchmark rail modal share fell below observed rail modal share in Mr. Hunt and Mr. Schabas's December 2025 analysis. These percentages differ slightly from those reported in Hunt & Schabas VS, Exhibit B-27 because they were calculated at a different stage of the analysis to align the methodology with Mr. Hunt's April 2026 analysis.

467 *See* Hunt & Schabas VS, p. 139.

[B]: Number of diverted carloads excluded when dropping diversion-eligible markets where assigned benchmark rail modal share fell below observed rail modal share in Mr. Hunt and Mr. Schabas's December 2025 analysis.
[C]: Percentage of diverted carloads excluded when dropping diversion-eligible markets where assigned benchmark rail modal share fell below observed rail modal share in Mr. Hunt and Mr. Schabas's December 2025 analysis.
[D]: Percentage of diversion-eligible markets (i.e. origin county-destination county-STCC2) excluded when dropping markets where assigned benchmark rail modal share fell below observed rail modal share in Mr. Hunt's April 2026 analysis.
[E]: Number of diverted carloads excluded when dropping diversion-eligible markets where assigned benchmark rail modal share fell below observed rail modal share in Mr. Hunt's April 2026 analysis.
[F]: Percentage of diverted carloads excluded when dropping diversion-eligible markets where assigned benchmark rail modal share fell below observed rail modal share in Mr. Hunt's April 2026 analysis.

313. The approximately 100,000 carloads of excluded negative differences show that Mr. Hunt's assigned archetype benchmarks bear an inconsistent relationship with observed Hunt market-level shares. In some diversion-eligible markets, the assigned benchmark exceeds the observed rail modal share; in others, it falls below it. Both outcomes arise from the same matching methodology and illustrate the same underlying problem: the benchmark does not isolate the effect of the merger from other factors that influence rail modal share. I do not interpret the negative differences as predicted rail-to-truck diversions or net them against Mr. Hunt's approximately 191,000 positive diversions to produce an alternative estimate.

314. Mr. Hunt uses the benchmark asymmetrically: where the benchmark exceeds observed rail modal share, he allows the difference to generate predicted diversion, but where the benchmark falls below observed rail modal share, Mr. Hunt sets the difference to zero. At deposition, he explained his zeroing out of negative diversions as simply "an assumption we made in the model" and that "we don't think that improving rail service in that market would

cause the rail share to go even higher than it already is".[468] That response provides no principled basis for counting positive benchmark differences as merger-caused diversion while discarding negative differences from the same methodology. The one-sided rule systematically tilts his reported estimate toward greater diversion.

B.7.c *Additional Comparisons of Modeled Service Changes and Predicted Carload Diversion*

315. Mr. Hunt's truck-to-carload framework predicts that the merger will cause substantial quantities of truck traffic to shift to rail.[469] Mr. Hunt attributes those predictions to modeled changes in single-line status, mileage, transit time, and price. The relevant question, however, is not simply whether the merger could improve rail service characteristics in some Hunt markets. The relevant question is whether the changes modeled by Mr. Hunt are large enough to explain the very large changes in shipping behavior that his model predicts.

316. Across the markets where he predicts truck-to-carload diversions, the modeled changes in rail service appear modest relative to the existing differences between truck and rail. Yet the model predicts that rail captures a substantial share of traffic that previously moved almost entirely by truck. As shown in Table 26, Mr. Hunt predicts that modeled rail transit time would decrease on average by 8 percent post-merger, from 227 to 210 hours. However, even under this predicted reduction, modeled rail transit time remains approximately 5 times that of truck (47 hours on average). In terms of modeled mileage, while the modeled post-merger routes generally convert interline service to single-line service, they often do so by taking a longer path, resulting in an average increase of 31 miles post-merger. Regarding modeled price, Mr. Hunt predicts that rail prices will decline by 20 percent, from approximately 60 percent to 50 percent

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468 Deposition of David T. Hunt, Vol. II, October 8, 2026, 685:6–686:9.

469 *See* Hunt VS, pp. 46–47 & Exhibit 4-12.

of truck prices. But rail was already substantially cheaper than truck pre-merger, when the traffic was moving almost entirely by truck. Considering these predictions together, Mr. Hunt does not demonstrate that the modeled changes in rail service are sufficient to cause the substantial diversions his model predicts.

TABLE 26: MR. HUNT'S MODELED CHANGES IN RAIL SERVICE APPEAR MODEST RELATIVE TO THE EXISTING DIFFERENCES BETWEEN TRUCK AND RAIL IN TRUCK-TO-CARLOAD DIVERSION MARKETS



Sources and Notes: *See* Script "11_market_characteristic_changes.R."; Workpaper "T2R_Carload_Exhibits.xlsx."
[A]: For all truck-to-carload diversion markets, average pre-merger value for each rail characteristic weighted by diverted carloads.
[B]: For all truck-to-carload diversion markets, average post-merger value for each rail characteristic weighted by diverted carloads.
[C]: [B]-[A].
[D]: ([B]-[A])/[A].
[E]: For all truck-to-carload diversion markets, average value for each truck characteristic weighted by diverted carloads.
[F]: [A]/[E].
[G]: [B]/[E].

317. The magnitude of diversions predicted by Mr. Hunt's model requires persuasive evidence that the modeled merger-related changes are sufficient to improve the competitive position of rail in diversion markets. Mr. Hunt does not provide that evidence.

318. Mr. Hunt's reported diversion results illustrate the magnitude of the predicted behavioral change. As shown in his Exhibit 4-5,[470] the diversion markets in which he predicts truck-to-carload diversions generally have, on average, pre-merger rail modal shares of approximately zero to one percent.[471] Following the merger, however, he predicts rail modal shares ranging from roughly 39 percent to 54 percent, depending on the truck equipment type. These are not marginal adjustments in shipper behavior. They imply that rail would capture a substantial share of traffic that previously moved almost entirely by truck.

319. The Nueces County, Texas, to Morgan County, Alabama chemicals market, which Mr. Hunt highlights in his Verified Statement, illustrates this issue. According to Mr. Hunt's own inputs, rail already has a substantial price advantage over truck in this market before the merger, but is also substantially slower.[472] Despite that price advantage, none of the traffic currently moves by rail. This observed shipping pattern shows that rail's modeled price advantage has not been sufficient to attract any rail traffic under existing conditions.

320. Table 27 compares Mr. Hunt's modeled pre-merger and post-merger service characteristics for this market. In Mr. Hunt's model, the merger reduces rail mileage, converts the market from interline to single-line service, shortens rail transit time, and further reduces the rail price. These changes make rail more attractive within Mr. Hunt's framework. However, they appear modest relative to the increase in rail modal share his framework predicts.

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470 *See* Hunt VS, p. 40 & Exhibit 4-5.

471 More than 92 percent of the reported truck-to-carload diversions occur in diversion markets that, as of 2023, have a rail modal share of [redacted]. *See* Figure 17; Workpaper "T2R_Carload_Exhibits.xlsx."

472 *See* Hunt VS, p. 41 & Exhibit 4-6; Table 27.

TABLE 27: MODELED SERVICE CHANGES AND PREDICTED RAIL MODAL SHARE CHANGE IN THE NUECES COUNTY, TX–MORGAN COUNTY, AL CHEMICALS MARKET



Sources and Notes: *See* Script "11_market_characteristic_changes.R."; Workpaper "T2R_Carload_Exhibits.xlsx."

[A]: Rail characteristics for the Nueces County, TX–Morgan County, AL chemicals market, pre-merger. *See* Hunt VS, Exhibit 4-6.

[B] [1]–[4]: Truck characteristics for the Nueces County, TX–Morgan County, AL chemicals market. Mr. Hunt's merged truck and rail dataset (Hunt Workpaper, "t2r_2026.enhanced_transearch__T2Merch_output_2026_vFinal") contains pre-merger and post-merger truck and rail characteristics for all Hunt markets. I re-run Mr. Hunt's diversion model preserving these pre-merger and post-merger characteristics through to the diversion markets (*see* Script, "05_lookalike_analysis_2026_keep_market_characteristics.ipynb" and Workpaper, "lane_level_diversions_with_market_characteristics.xlsx").

[B][5] = 100 percent - [A][5].

[C]: Rail characteristics for the Nueces County, TX–Morgan County, AL chemicals market, post-merger. *See* Hunt VS, Exhibit 4-6.

[D] [1]–[4]: Truck characteristics for the Nueces County, TX–Morgan County, AL chemicals market. *See also,* note under [B] [1]–[4]:

[D][5] = 100 percent - [C][5].

321. According to Mr. Hunt's model, these incremental changes increase rail modal share from zero percent before the merger to approximately 77 percent afterward.[473] Yet rail

[473] *See* Hunt VS, p. 41 & Exhibit 4-6.

already has a substantial modeled price advantage over truck before the merger, at less than half the truck price, and has substantially longer transit times than truck before and after the merger.[474] Mr. Hunt does not explain why shippers who currently choose truck under the pre-merger price and transit-time tradeoff would shift most of their traffic to rail after the comparatively modest additional changes he models.

322. These results also point to a broader question about the lookalike methodology Mr. Hunt uses to predict post-merger rail modal shares. His predictions are based on the weighted-average rail modal shares of lookalike markets grouped into his defined archetypes.[475] If lookalike markets within those archetypes differ materially in other factors affecting rail participation, the lookalike benchmark may not be reliable for a particular diversion market. I discuss the comparability of Mr. Hunt's archetypes in greater detail in Section V.A.2.

323. Additional results from Mr. Hunt's lookalike methodology reinforce that concern. Among otherwise similar archetypes, the model sometimes assigns higher predicted rail modal shares to archetypes with higher rail prices or longer rail transit times. Those results are not consistently ordered in the direction that the modeled service characteristics would predict: lower prices and faster service do not always correspond to higher predicted rail modal shares.

324. Figure 59 shows two sets of archetypes that are identical on all dimensions except rail transit time. In both sets, Mr. Hunt's predicted rail modal shares do not consistently decline as rail transit time increases. For example, in the top panel, the archetype with the longest rail time (185–199 hours) has the highest predicted rail modal share, at [redacted] percent. Similarly, in the bottom panel, the archetype to which Mr. Hunt assigns the [redacted]

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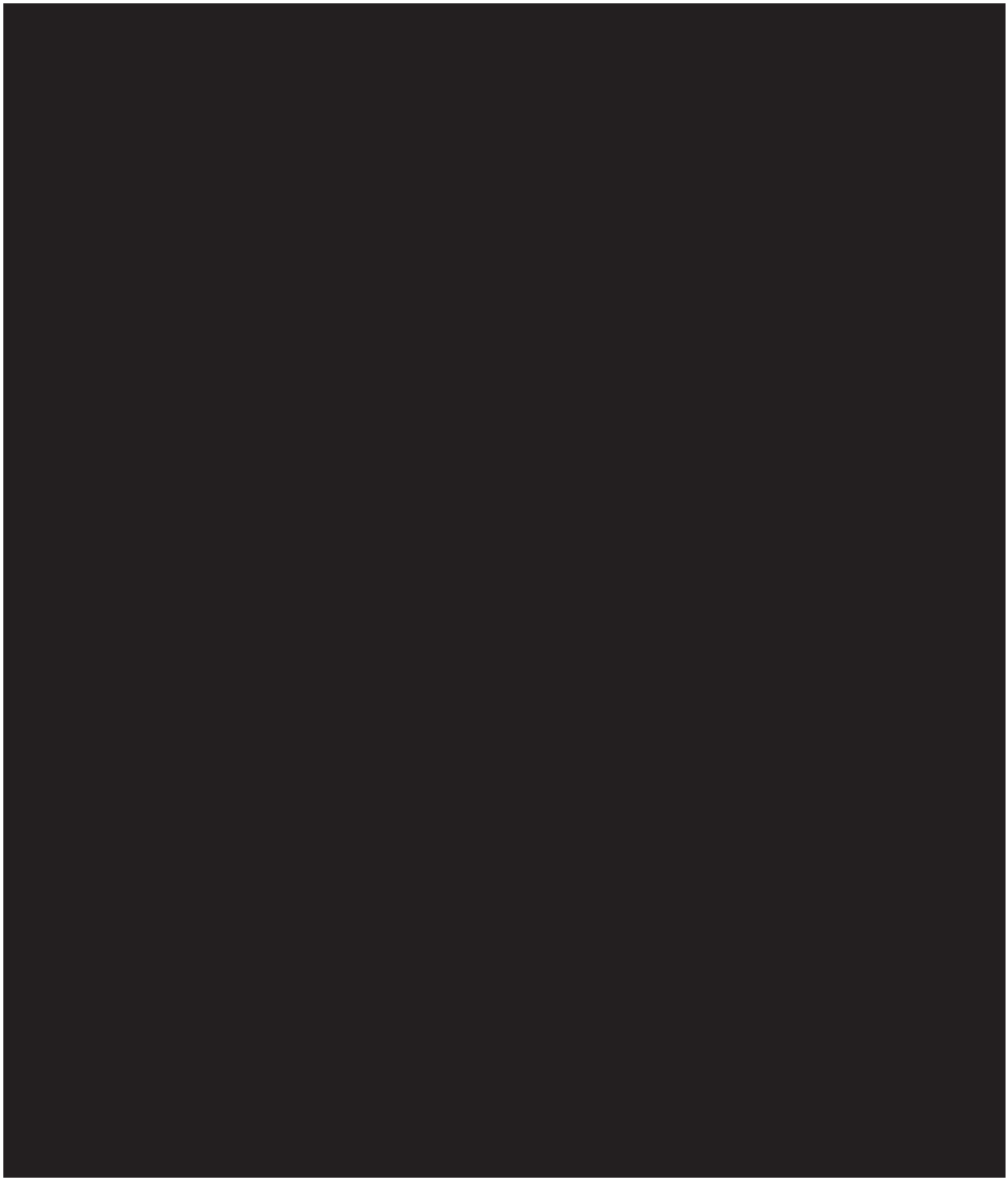
474 These findings are not limited to the Nueces–Morgan example but are also reflected in the average rail and truck characteristics across all markets with predicted diversions. *See* Table 26.

475 *See* Section V.A.1.

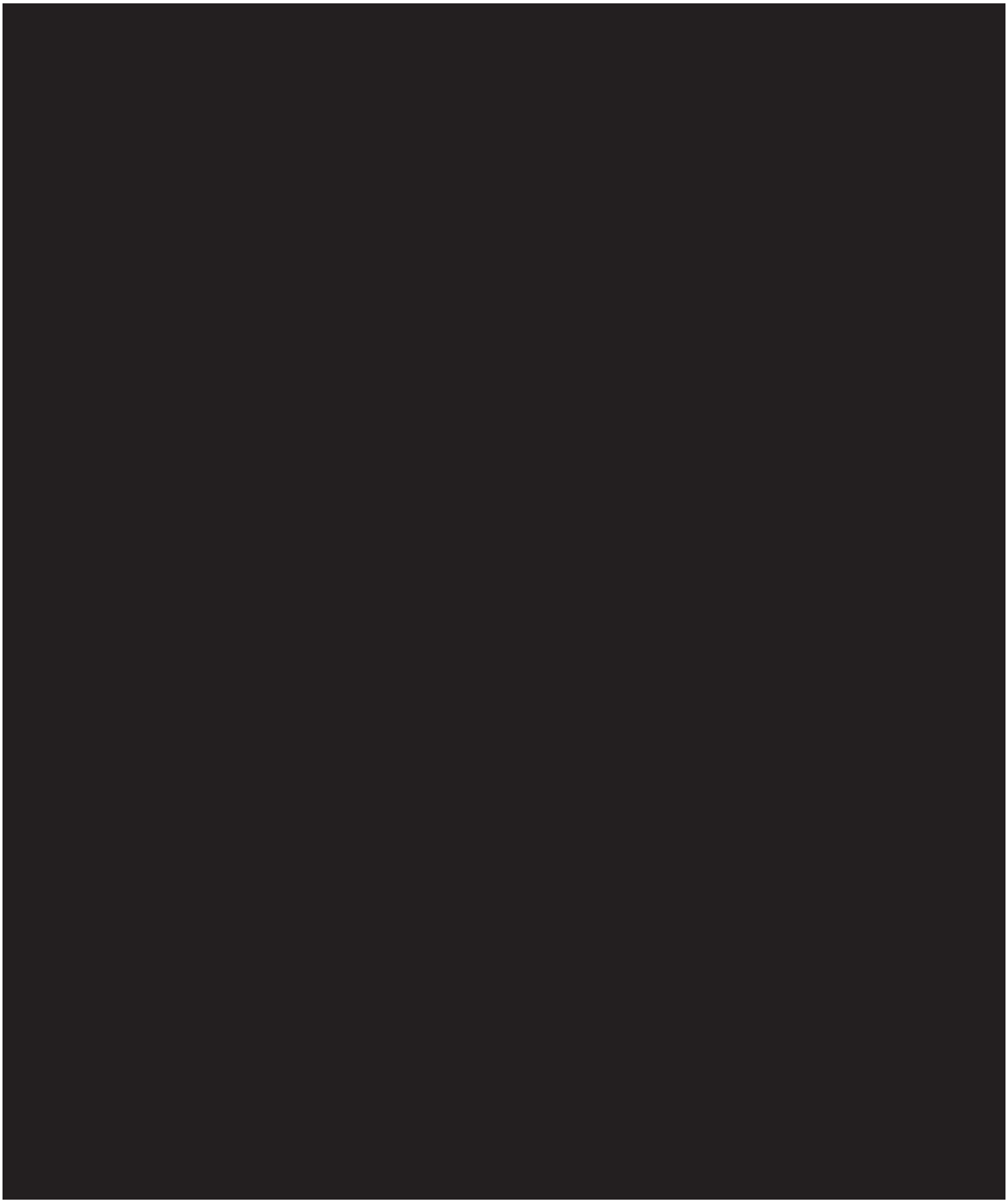
market post-merger, highlighted in orange, has a predicted rail modal share of 77 percent, compared with [redacted] for an otherwise identical archetype whose transit time bin is 30 hours lower. Figure 60 shows a similar pattern for rail prices: within two sets of archetypes that are identical on all dimensions except for rail price, predicted rail modal shares do not consistently decline as rail prices increase. These examples do not imply that higher rail prices or longer rail transit times cause greater rail demand. Rather, they illustrate that the average rail modal shares embedded in Mr. Hunt's archetypes reflect factors beyond the service characteristics he used to define those archetypes.

FIGURE 59: INCREASES IN TRANSIT TIME DO NOT ALWAYS LEAD TO LOWER RAIL MODAL SHARES



Sources and Notes: [redacted]. *See* Script "08_lookalike_analyses.R"; Workpaper "T2R_Carload_Exhibits.xlsx." All rail modal shares and archetype information from Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx."

FIGURE 60: INCREASES IN PRICE DO NOT ALWAYS LEAD TO LOWER RAIL MODAL SHARES



Sources and Notes: *See* Script "08_lookalike_analyses.R"; Workpaper "T2R_Carload_Exhibits.xlsx." All rail modal shares and archetype information from Hunt Workpaper, "HC-Lookalike Market Share vFinal.xlsx."

325. The magnitude of Mr. Hunt's predicted increase in rail modal share also stands out when compared with the differences in rail modal share that Mr. Hunt reports in his Exhibit 3-1. In that exhibit, rail modal shares in Hunt markets where single-line service is available for merchandise and bulk traffic are 15 to 26 percentage points higher than in Hunt markets with only interline service in the same length-of-haul bin.[476] Figure 35 shows the rail modal share increases Mr. Hunt predicts in the diversion markets are substantially larger than those differences. That disparity should prompt careful examination of whether the additional modeled changes are sufficient to explain the much larger predicted shift in shipper behavior.

326. Taken together, these results raise substantial questions about the economic plausibility of the magnitude of Mr. Hunt's predicted truck-to-carload response. His analysis does not establish that the predicted truck-to-carload diversions are commensurate with the modeled changes in single-line status, mileage, transit time, and price.

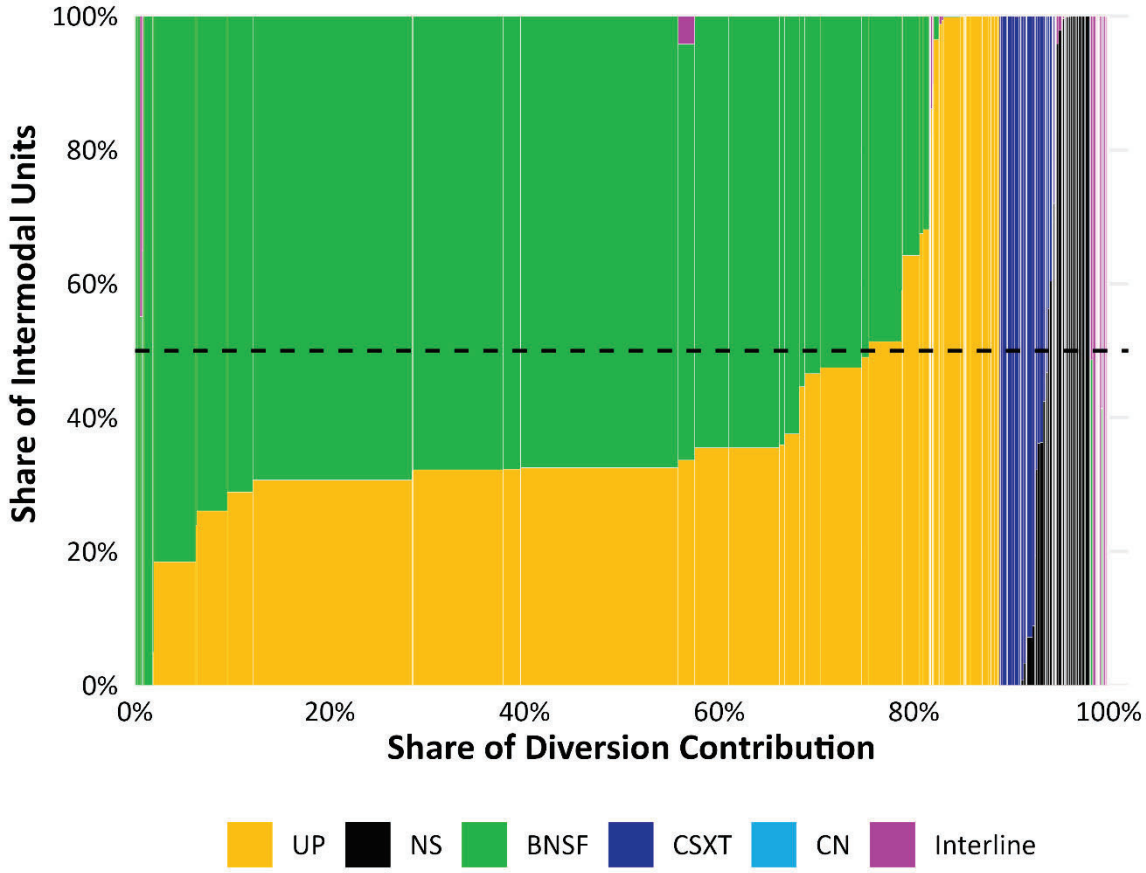
B.8 Railroad Shares in Current Markets Most Influential to Mr. Hunt's Truck-to-Intermodal Diversion Estimates

327. As discussed in Section V.B.2.d, railroads serving the same current markets can attract materially different volumes of intermodal traffic, which indicates that Mr. Hunt's archetype characteristics do not capture all factors affecting intermodal participation. Figure 61 provides the market level detail underlying that comparison. It shows railroad shares for all current markets that contribute to Mr. Hunt's predicted diversions. Each current market's width is proportional to its contribution to total predicted diversions, while the stacked height shows the share of intermodal units carried by each railroad. The figure shows that BNSF carries a majority of the intermodal traffic in many of the current markets that exert the greatest influence

476 *See* Hunt VS, pp. 24–25 & Exhibit 3-1.

on Mr. Hunt's diversion estimates. This pattern indicates that the benchmark shares underlying a substantial portion of predicted diversions reflect BNSF's observed performance rather than UP or NS's.

FIGURE 61: BNSF CARRIES MOST TRAFFIC IN THE CURRENT MARKETS DRIVING MR. HUNT'S DIVERSIONS



Sources and Notes: The figure uses all current markets that enter benchmark shares applied to future markets with positive predicted diversions. Each current market's width is proportional to its relative contribution to Mr. Hunt's predicted diversions. *See* Scripts "03A_map_current_markets_to_segments.R"; "01C_relative_contribution.R"; "02_prepare_markets.R." Within each current market, the vertical shares show each railroad's intermodal units divided by total intermodal units. All interline traffic is grouped together. The dashed horizontal line indicates a 50 percent share of intermodal units, distinguishing current markets where an individual railroad carries a majority of traffic. *See* Script "03B_RR_SL_performance.R."

B.9 Additional Rail-to-Rail Diversion Diagnostics

328. The following analyses provide additional detail on two issues discussed in Section V.C. First, I explain how Mr. Hunt's aggregation of station-level routes can assign observed traffic route characteristics that do not reflect the traffic's actual station pair, affecting the calibration of his rail-to-rail model. Second, I examine his assumed Meridian Speedway service improvements, the absence of an identified operational change supporting them, and the diversions associated with those assumptions.

B.9.a *Mr. Hunt Aggregates Distinct Station-Level Routings into a Single Low-Impedance Route*

329. Mr. Hunt's rail-to-rail model uses "quads" to represent competing rail routes within a market.[477] However, the underlying routing data can contain multiple station-to-station combinations for the same quad. Traffic moving between different origin and destination station-pairs within a quad may follow different physical routings and therefore have different values of Mr. Hunt's impedance measure. To aggregate route-level observations to a quad, Mr. Hunt sums the traffic across the associated station combinations and represents the combined traffic using the routing characteristics of the lowest-impedance combination.[478] As a result, some observed traffic movements between one origin-destination station pair can be attributed to a different station pair and therefore assigned route characteristics that do not reflect the route the traffic actually used.[479] Figure 62 below depicts Mr. Hunt's quad-station aggregation process for a

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477 Mr. Hunt defines a quad as an origin, origin railroad, destination, and destination railroad combination. *See* Hunt VS, Appendix A.4, p. 103.

478 *See* Section V.C.1.

479 For intermodal traffic, Mr. Hunt groups terminals into intermodal markets that are largely aligned with BEAs, so a market may contain multiple underlying origin and destination stations. This aggregation does not create an additional mismatch where a quad contains only one station-pair combination. Where multiple station-pair combinations exist, however, traffic associated with higher-impedance combinations is represented using the impedance of the minimum-impedance combination. This route to quad

specific quad in the rail-to-rail intermodal Hunt market with the largest number of predicted intermodal rail-to-rail diversions.[480]

FIGURE 62: EXAMPLE OF MR. HUNT'S TRAFFIC AGGREGATION METHODOLOGY PRIOR TO ESTIMATING MODEL COEFFICIENTS



Sources and Notes: The [redacted] quad has the most underlying routes in the market with the highest rail-to-rail intermodal diversions. It contains 15 underlying routes carrying [redacted] units of traffic. [redacted] units of traffic travel along the [redacted] route. To estimate the rail-to-rail model, Mr. Hunt aggregates the traffic and represents all [redacted] units with the [redacted] route because it has the lowest post-merger impedance. Geographic locations of stations are approximations and not intended to reflect specific coordinates. *See* Workpapers "R2R_Quad_Aggregation.xlsx" and "R2R_Quad_Aggregation.pptx."

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aggregation of traffic can affect all four service types. *See* Hunt VS pp. 200–202; Hunt Workpaper "Choice_Model.ipynb", code cell starting with the comment "Consolidates records where there are multiple SCAC/FSAC for the same SCAC in a market."

480 The market is [redacted] with [redacted] diverted intermodal units. *See* Hunt Workpaper, "HC-R2R Traffic vFinal.xlsx," tab 'Intermodal.'

330. There are 15 different [redacted] station-to-station routes produced by Quantanet between [redacted] and [redacted]. Of these, 14 routes are from stations in or around [redacted] to stations in or around [redacted].[481] The remaining route originates in [redacted] and terminates in [redacted] and has the lowest impedance value of any route between these BEAs.[482] All [redacted] traffic movements between these two terminal markets are assigned to the route connecting the station in [redacted] and the station in [redacted] as a consequence of Mr. Hunt's route-to-quad aggregation process.[483] Mr. Hunt therefore consolidates 100 percent of traffic within a quad to the lowest-impedance route, regardless of whether that reflects traffic patterns present in the Traffic Tapes and does not account for the additional distance the traffic in this particular example would need to move to reach its assumed origin station in the [redacted]. Overall, approximately [redacted] of quads used to calibrate the coefficients for the intermodal service type in Mr. Hunt's model are impacted by this issue. These quads collectively constitute [redacted] of

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[481] [redacted]. *See* Workpaper "R2R_Quad_Aggregation.xlsx" and Script "R2R_Quad_Aggregation.R."

[482] Quantanet identifies all [redacted] routes between these BEAs as single-interchange routes, interchanging at [redacted]. The route between [redacted] receives the lowest impedance penalty because it is roughly 100 miles closer to the destination station than routes originating in or around [redacted]. *See* Workpaper "R2R_Quad_Aggregation.xlsx" and Script "R2R_Quad_Aggregation.R."

[483] *See* Hunt VS, pp. 200–202; Hunt Workpaper, "HC-R2R Traffic vFinal.xlsx," Workpaper "R2R_Quad_Aggregation.xlsx," and Script "R2R_Quad_Aggregation.R." *See also*, Hunt Workpaper "Choice_Model.ipynb," code cell starting with the comment "Consolidates records where there are multiple SCAC/FSAC for the same SCAC in a market."

observed traffic used to calibrate the model. The markets in which these quads exist account for [redacted] of intermodal rail-to-rail diversions predicted by Mr. Hunt.[484]

331. The quad-station aggregation detailed in this appendix and the junction selection discrepancy described in Section V.C.2.a are consistent with broader limitations in Quantanet's routing framework. Quantanet selects routes using mileage and standardized impedance penalties, but those measures do not directly capture factors such as train schedules, blocking plans, gateway fluidity, capacity, service commitments, run-through arrangements, equipment flows, or established commercial practices.[485] When the model repeatedly selects a different gateway or station from the one used in practice, the discrepancy indicates that the simplified impedance measures do not fully capture the considerations that determine actual routing.

B.9.b *Mr. Hunt Assumes Meridian Speedway Service Improvements Without Identifying a Corresponding Operational Change*

332. The Meridian Speedway provides a particularly salient example of a broader problem with Mr. Hunt's diversion analyses: he assumes merger-related changes in modeled service characteristics without identifying a corresponding operational change that would produce those improvements. UP, CPKC, and NS already provide coordinated intermodal service over the Meridian Speedway through Shreveport and Meridian. The CPKC Operating Experts explain that the existing service already uses coordinated handoffs and identify no merger-related physical or operating change at those locations that would account for the service

484 *See* Workpaper "R2R_Quad_Aggregation.xlsx" and Script "R2R_Quad_Aggregation.R."

485 *See* Sections III.C, IV.D.1, and V.C.2.b.

improvements Mr. Hunt assumes, and the Applicants themselves do not identify merger-related changes to operations on the Meridian Speedway.[486]

333. Mr. Hunt nevertheless assumes substantial service improvements for movements that already use the Meridian Speedway. Before the merger, he assigns the existing Meridian Speedway route an impedance of 180 miles, reflecting two 90-mile-equivalent penalties.[487] Mr. Hunt explains that each 90-mile penalty corresponds to an assumed three-hour crew-change delay.[488] Yet the merger does not eliminate the crew changes at Shreveport and Meridian. Those movements will continue to require the same physical handoffs, and the Meridian segment remains the same short bridge movement before and after the merger. Mr. Hunt nevertheless assumes that the merger reduces the modeled impedance by 90 miles, eliminates an interchange for purposes of his modeling, and, in his truck-to-intermodal model, reduces transit time by approximately 22 hours.[489] Mr. Hunt states that the Meridian Speedway adjustment "was validated with both railroads' operations departments," but Applicants do not explain how the merger produces any of those three modeled improvements.[490] The CPKC Operating Experts likewise identify no corresponding merger-related physical or operating change at Shreveport or Meridian. Without such an operational change, Mr. Hunt does not establish why these service

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[486] *See* CPKC Operating Experts VS, Section VIII.B.2. *See also*, [redacted], Deposition of Eric Gehringer, October 13, 2026, 304:4–24, and Deposition of David T. Hunt, Vol. II, October 8, 2026, 688:12–692:20.

[487] *See* Hunt VS, Appendix A.6.5, pp. 109–110. *See also*, Hunt Workpaper, "impedance_changes.py." Mr. Hunt models the pre-merger Meridian Speedway route with two 90-mile-equivalent impedance penalties but a junction count of one. It is not clear why the route is represented as involving only one junction when the movement involves handoffs at both Shreveport and Meridian.

[488] *See* Hunt VS, p. 71; Appendix A.6.5, p. 109; Appendix B.3.2, p. 126.

[489] *See* Sections V.A.3.b and V.B.3.c. *See also*, Hunt VS, Appendix A.6.5, pp. 109–110, Hunt Workpaper, "impedance_changes.py."

[490] *See* Hunt VS, Appendix A.6.5, pp. 109–110. *See also*, Hunt Workpaper, "impedance_changes.py."

characteristics should improve, and therefore why the resulting predicted diversions should be attributed to the merger.

334. The issue is quantitatively material. As Table 28 shows, movements for which existing UP-NS traffic already uses the Meridian Speedway account for approximately [redacted] percent of Mr. Hunt's predicted truck-to-intermodal diversions and approximately [redacted] percent of his predicted intermodal rail-to-rail diversions.[491]

TABLE 28: A MATERIAL SHARE OF MR. HUNT'S PREDICTED INTERMODAL RAIL-TO-RAIL DIVERSIONS RELIES ON ASSUMED MERIDIAN SPEEDWAY SERVICE IMPROVEMENTS

[redacted]

Sources and Notes: *See* Workpaper "R2R_Meridian_Speedway.xlsx."
To identify existing UP-NS traffic using the Meridian Speedway for column [B], I match modeled quads to Traffic Tape movements with a single recorded interchange whose location can be identified. I exclude movements whose recorded interchange is "STN" or "*STN*" because those

[491] For truck-to-intermodal diversions, I identify markets with at least 100 observed UP-NS intermodal units traveling via the Meridian Speedway, based on routes containing "SHRPT" in the Traffic Tapes. I then calculate the share of Mr. Hunt's predicted truck-to-intermodal diversions associated with those markets. I identify rail-to-rail diversions travelling via the Meridian Speedway as diversions on routes containing an UP-NS interchange at Shreveport. These diversions are then limited to single-interchange routes for the purpose of matching them to existing traffic in the Traffic Tapes. *See* Scripts "01A_MSLLC_markets.R," "02_prepare_markets.R," and "R2R_Meridian_Speedway.R" and Workpapers "T2R_Intermodal_Exhibits.xlsx" and "R2R_Meridian_Speedway.xlsx."

codes do not identify a specific location. The table is therefore limited to Meridian-related routes for which the corresponding observed routing can be identified; it does not include every diversion associated with the Meridian Speedway.

[A]: Direction-agnostic Hunt market pair. Identified via Intermodal terminals, labels are simplified for legibility and do not reflect exact terminal-group names. Hunt market pairs are limited to those that received diversions to Meridian Speedway-dependent routes.

[B]: Percent of Hunt market traffic using paths involving Shreveport in Traffic Tapes.

[C]: Predicted diversions to Meridian Speedway associated with the Hunt market pair in [A].

B.10 Applicants Have Not Established That the Existing Rail Network Has Constrained Broader Economic Growth

335. In addition to the quantified benefits that directly depend on Mr. Hunt's diversion analyses, Applicants also advance a broader claim that the existing division between eastern and western railroads has constrained manufacturing and other economic growth, particularly in the watershed, and that creation of a single transcontinental UP-NS network would unlock additional growth.[492] That claim goes beyond the proposition that particular shipments would divert to rail following the merger. It implies that the existing rail-network structure has materially

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[492] Amended Application, Vol. 1, pp. 14–15, 33–34, 50–51; George VS, ¶ 3 ("[T]he merged railroad will […] support American manufacturing […] It will also unlock the underserved watershed markets, within a few hundred miles of the Mississippi River, where transport via rail isn't practical because of the onerous interchange burden between two railroads. This freight moves almost exclusively on our congested highways today."); Rocker/Elkins VS, ¶¶ 64–65 ("The Watershed markets sit squarely in the nation's heart […] These are the arteries of American manufacturing, agriculture, and energy. When freight flows efficiently here, the entire economy benefits. However, customers in these markets operate in a structural gap. Customers located just east of major gateways like Chicago, Memphis, St. Louis, or New Orleans lack access to efficient single-line service to ship to major U.S. western markets or access western ports. The same is true for customers located to the west of an interchange who seek to sell goods into the major eastern markets like Atlanta, New York, or Virginia, or seek to transport their goods through eastern ports. These customers are uniquely disadvantaged by short-haul economics and the friction created by the need to interchange. As a result, otherwise competitive rail movements end up moving via truck, or not at all. This is the missing middle of America's rail map.").

Even for the watershed markets in which Mr. Hunt identifies only interline rail service, his Exhibit 4-10 reports that rail carries 32 percent of the rail-and-truck tonnage. That result does not support Applicants' sweeping characterization of freight in those markets as moving "almost exclusively" by highway. *See* Hunt VS, p. 45 & Exhibit 4-10.

constrained investment, production, market access, or other economic activity that otherwise would have occurred.

336. Available manufacturing data do not show systematic underperformance in watershed states. Figure 63 compares compound annual growth in manufacturing output from 2000 through 2025 across the 48 contiguous states using data from the U.S. Bureau of Economic Analysis. Watershed states are distributed throughout the range of observed growth rates. Their weighted-average manufacturing growth rate was approximately 2.42 percent, compared with approximately 2.57 percent for non-watershed states, a difference that is not statistically significant.[493] These data reveal no pattern of weaker manufacturing growth in watershed states that would lend support to Applicants' claim that the existing rail-network structure has materially constrained economic activity. It is also worth noting that substantial shares of Applicants' predicted diversions are cross-watershed movements rather than movements serving manufacturers located within the watershed.[494]

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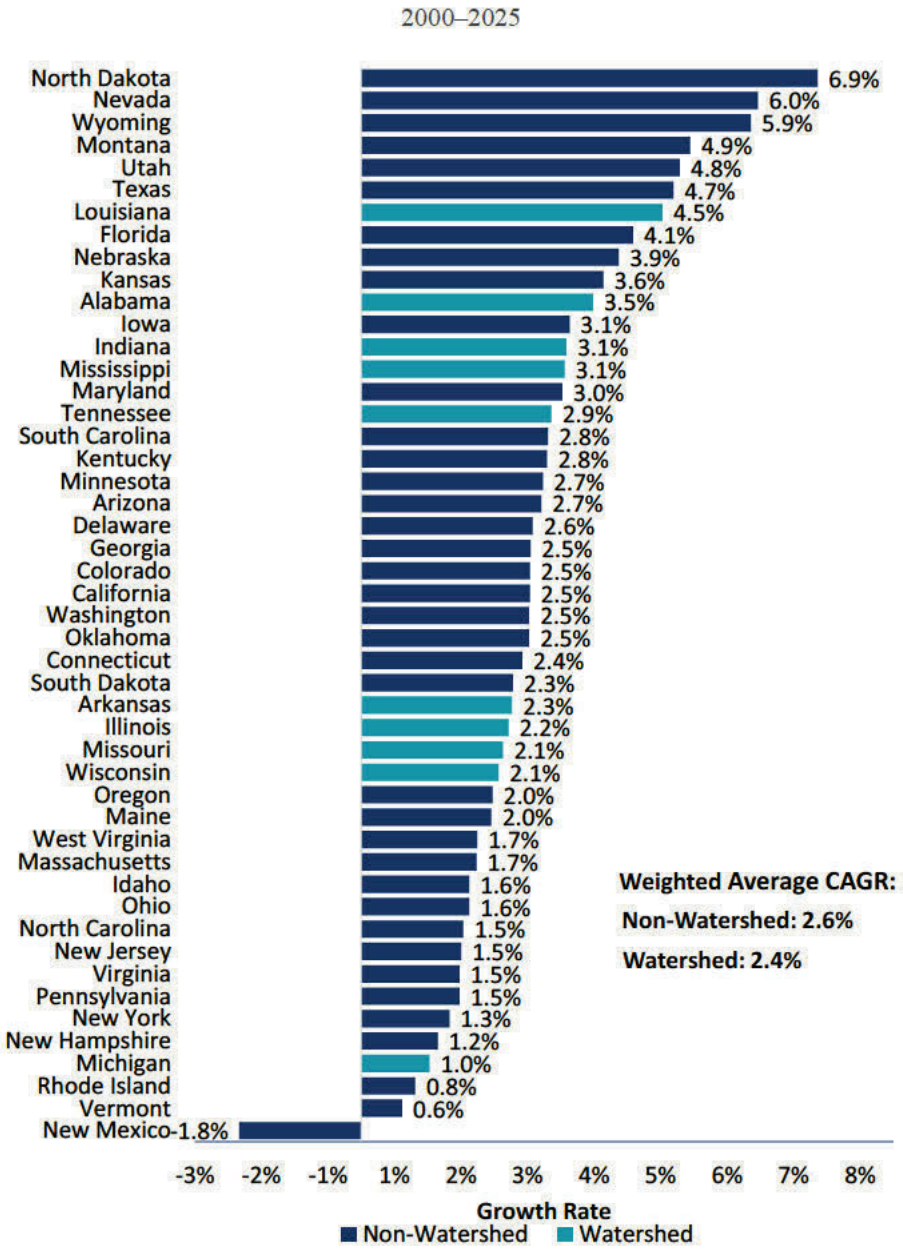
493 I test whether the average state-level manufacturing growth rate differs between watershed and non-watershed states using a two-sample weighted t-test, with states weighted by their manufacturing output. Whether weighting using 2000 or 2025 values for manufacturing output, the estimated difference was not statistically significant at conventional levels, meaning that the observed difference could not be distinguished from sampling variation. *See* Workpaper "Manufacturing_Growth_Watershed_vs_Non-Watershed.xlsx."

494 Specifically, nearly 80,000 carload diversions, or 42 percent of the carload diversions are "cross-watershed." 30,500 + 16,000 + 25,400 + 7,100 + 700 = 79,700, based on the "Cross-watershed" bars in Exhibit 4-12. 79,700 / 191,000 = 0.42 *See* Hunt VS, Exhibit 4-12. For intermodal, 819,787 diversions, or 68 percent of total predicted diversions are "cross-watershed," based on watershed classifications assigned at the terminal market level. *See* Scripts "01_fips_geo_classification.R," "01D_watershed.R," "02_prepare_markets.R," and Workpaper "T2R_Intermodal_Exhibits.xlsx."

FIGURE 63: MANUFACTURING GROWTH IN WATERSHED STATES HAS BEEN SIMILAR TO GROWTH ELSEWHERE



Sources and Notes: SAGDP, U.S. Bureau of Economic Analysis, 2000–2025. *See* Workpaper "Manufacturing_Growth_Watershed_vs_Non-Watershed.xlsx." State level annual manufacturing GDP from BEA, last accessed November 8, 2026, https://apps.bea.gov/itable/?ReqID=70&step=1&utm#eyJhcHBpZCI6NzAsInN0ZXBzIjpbMSwyOSwyNSwzMSwyNl0sImRhdGEiOltbIlRhYmxlSWQiLCI1MjYiXSxbIk1ham9yX0FyZWEiLCIwIl0sWyJTdGF0ZSIsWyIwIl1dXX0=. To download the data, select "All Areas" in the Area field, "All statistics in table" in the Statistic field, and "Levels" in the Unit of Measure field.

337. Applicants also emphasize that the United States is unusual among developed nations in lacking a unified transcontinental railroad, and they characterize the division between eastern and western railroads as an "artificial barrier" to manufacturing and economic growth.[495] But Applicants do not present an analysis linking cross-country differences in rail-network structure to differences in manufacturing or broader economic performance. The fact that other countries have differently structured rail systems therefore does not establish that the United States would have experienced greater manufacturing or broader economic growth if its principal freight rail network had been under transcontinental single ownership, or that approval of this merger would produce such growth in the future. Applicants' anecdotal comparison therefore does not establish that a transcontinental merger causes stronger economic growth. Canada illustrates the limitation: despite having transcontinental railroads, its manufacturing output grew more slowly than U.S. manufacturing output over the period examined.[496]

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[495] Amended Application, Vol. 1, pp. 14–15 (asserting that the United States is "one of the only developed nations without a unified transcontinental railroad," characterizing the division between eastern and western railroads as an "artificial barrier" and a "heavy drag on American competitiveness," and claiming that the merger will strengthen manufacturing and create new sources of economic growth); Amended Application, Vol. 1, pp. 47–49 (claiming that transcontinental single-line service will support industrial development, improve manufacturers' international competitiveness, encourage use of U.S. ports, and expand infrastructure investment).

[496] Canada's CAGR in manufacturing from 2000 to 2024 was 2.0 percent, compared to 2.5 percent for the U.S. calculated from country level annual manufacturing GDP from United Nations Statistics Division, "GDP and its breakdown at current prices in US Dollars," all countries for all years, last accessed November 12, 2026, https://unstats.un.org/unsd/snaama/Downloads. Choose "All countries for all years – sorted alphabetically" under "GDP and its breakdown at current prices in US Dollars." *See* Workpaper "Manufacturing_Growth_Watershed_vs_Non-Watershed.xlsx."

Appendix C: GLOSSARY

Term	Definition
AAR	Association of American Railroads.
Amended Application, Vol. 1	Applicants' Amended Application, as revised by the Second Errata submitted September 4, 2026.
Applicants	Union Pacific (UP) and Norfolk Southern (NS).
Applicants' Prima Facie Response	Applicants' Response Regarding Their Prima Facie Case, *Union Pacific Railroad Company–Control–Norfolk Southern Corporation and Norfolk Southern Railway Company*, Finance Docket No. 36873, UP-94/NS-93, August 26, 2026.
BEA	Bureau of Economic Analysis Economic Area, as adopted by Mr. Hunt in his VS.
BNSF	Burlington Northern and Santa Fe Railway.
The Board	The Surface Transportation Board.
CAGR	Compound Annual Growth Rate.
Capex	Capital expenditures.
Carload	Mr. Hunt's truck-to-carload analysis involving merchandise and bulk traffic, discussed in Hunt VS, Section 4.2, but excluding Mr. Hunt's separate finished-automotive analysis, discussed in Hunt VS, Section 4.3. Mr. Hunt at times uses "carload" more broadly to encompass both categories.
CCWS	Confidential Carload Waybill Sample.
Competitive market, Rail-only market, Truck-only carload market	In Mr. Hunt's truck-to-carload model, he defines a "competitive" market as a market (i.e. origin county-destination county-STCC2-truck equipment type) where "both truck and rail compete," meaning that truck traffic is reported in Transearch and a Quantanet rail route exists. Similarly, he defines a "rail-only" market as one for which a Quantanet rail route exists but no truck traffic is reported in Transearch; and a "truck-only" market as one with truck traffic reported in Transearch but no Quantanet rail route exists.
CN	Canadian National Railway.
Consumer surplus	The difference between a consumer's willingness-to-pay for a product or service and the expenditure incurred to purchase it.
Contribution margin	Revenue minus variable costs.

Term	Definition
CPI	Consumer Price Index.
CPKC	Canadian Pacific Railway Company and its railroad subsidiaries, collectively. CPKC was formed through the combination of Canadian Pacific ("CP") and Kansas City Southern ("KCS") in April 2023. CPKC also includes Kansas City Southern de México ("KCSM").
CPKC Operating Experts VS	Verified Statement of Raymond Elphick and Brian Nelson, November 18, 2026.
CRA	Charles River Associates.
CSX/CSXT	CSX Transportation. This Verified Statement uses CSX and CSXT interchangeably.
CAGR	Compound Annual Growth Rate.
Capex	Capital expenditures.
Carload	Mr. Hunt's truck-to-carload analysis involving merchandise and bulk traffic, discussed in Hunt VS, Section 4.2, but excluding Mr. Hunt's separate finished-automotive analysis, discussed in Hunt VS, Section 4.3. Mr. Hunt at times uses "carload" more broadly to encompass both categories.
CCWS	Confidential Carload Waybill Sample.
Competitive market, Rail-only market, Truck-only carload market	In Mr. Hunt's truck-to-carload model, he defines a "competitive" market as a market (i.e. origin county-destination county-STCC2-truck equipment type) where "both truck and rail compete," meaning that truck traffic is reported in Transearch and a Quantanet rail route exists. Similarly, he defines a "rail-only" market as one for which a Quantanet rail route exists but no truck traffic is reported in Transearch; and a "truck-only" market as one with truck traffic reported in Transearch but no Quantanet rail route exists.
CN	Canadian National Railway.
Consumer surplus	The difference between a consumer's willingness-to-pay for a product or service and the expenditure incurred to purchase it.
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CPI	Consumer Price Index.
CPKC	Canadian Pacific Railway Company and its railroad subsidiaries, collectively. CPKC was formed through the combination of Canadian Pacific ("CP") and Kansas City Southern ("KCS") in April 2023. CPKC also includes Kansas City Southern de México ("KCSM").

Term	Definition
CPKC Operating Experts VS	Verified Statement of Raymond Elphick and Brian Nelson, November 18, 2026.
CRA	Charles River Associates.
CSX/CSXT	CSX Transportation. This Verified Statement uses CSX and CSXT interchangeably.
Decision No. 21	Decision No. 21, Surface Transportation Board, Docket No. FD 36873, May 28, 2026.
Diversion markets	Hunt markets in which Mr. Hunt predicts positive diversion after operational filters and operational considerations are applied.
Eagle Premium / Falcon Premium	Coordinated interline intermodal services: Eagle Premium (involving UP and Ferromex, part of Grupo Mexico, launched in 2013 to connect locations in Mexico and the United States) and Falcon Premium (involving UP, CN, and Grupo Mexico, launched in 2023 to connect Mexico and Canada via the United States).
EMP	Equipment Management Program, a domestic interline container program involving UP and NS.
EP 724	Publicly available dataset published by the Surface Transportation Board with railroad-reported data on service metrics for all Class I railroads.
FIPS, OFIPS, DFIPS	In Mr. Hunt's truck-to-carload model, he uses FIPS codes to identify origin and destination counties for rail and/or truck traffic. FIPS codes, or Federal Information Processing Standard codes, are codes that uniquely identify states, and/or counties across the United States. State-level FIPS codes have two digits, county-level FIPS codes have five digits of which the first two are the FIPS code of the state to which the county belongs. In Mr. Hunt's analysis, OFIPS refers to origin FIPS, DFIPS refers to destination FIPS.
FSAC	Freight Station Accounting Code.
GAAP	Generally Accepted Accounting Principles.
Gehringer & Orr VS	Joint Verified Statement of Eric Gehringer and John F. Orr, April 29, 2026, as revised by Second Errata submitted September 4, 2026.
George VS	Verified Statement of Mark R. George, April 29, 2026, as revised by Second Errata submitted September 4, 2026.
Graham VS	Verified Statement of Matthew Graham, April 29, 2026, as revised by Second Errata submitted on September 4, 2026.
Hunt & Schabas VS	Verified Statement of David T. Hunt and Matthew Schabas, December 18, 2025.
Hunt market	A market as defined by Mr. Hunt in his truck-to-carload, truck-to-intermodal, and rail-to-rail models.

Term	Definition
	In the truck-to-carload model, Mr. Hunt defines a market as a directional origin-destination county pair, a two-digit STCC commodity, and a truck equipment type. In the truck-to-intermodal model, Mr. Hunt defines a market as a directional origin-destination intermodal terminal-market pair, with terminal markets usually corresponding to BEAs, with adjustments to align with the UP-NS terminal network. In the rail-to-rail model, Mr. Hunt's market definitions vary by service type. Generally, markets are defined by origin-destination pairs, and origin-railroad destination-railroad quads define routes within an origin-destination market. By service type, (i) merchandise and bulk markets are defined as directional origin-destination SPLC pairs; (ii) intermodal markets are defined as origin-destination intermodal terminal-market pairs; (iii) automotive markets are defined as origin SPLC-destination BEA pairs. *See* Hunt VS, p. 199, Exhibit E-1 summarizing the traffic segmentation definitions used in the three diversion models.
Hunt Supp. VS	Supplemental Verified Statement of David T. Hunt, July 20, 2026, as revised by Errata submitted September 11, 2026.
Hunt VS	Verified Statement of David T. Hunt, April 29, 2026, as revised by Second Errata submitted September 4, 2026.
I-5 Agreement	The I-5 Proportional Rate Agreement was established in 1997 to allow UP to compete with BNSF for eligible traffic moving between the Pacific Northwest and Canada and the Southwest and Mexico. The agreement allows UP to quote rates for movements involving both railroads without seeking BNSF's concurrence for each rate.
IANA region	Regions developed by the Intermodal Association of North America.
Impedance	In Mr. Hunt's diversion analysis, impedance for a route is defined as the sum of (1) rail mileage and (2) assumed mileage-equivalent penalties associated with interchanges on that route.
Interchange/junction penalty	In Mr. Hunt's diversion analysis, the interchange/junction penalty represents the assumed mileage-equivalent penalty associated with an interline junction.
Interline market	A carload Hunt market in which Mr. Hunt's "best" Quantanet route has junction frequency greater than zero.
IRR	Internal rate of return.
Janke VS	Verified Statement of Grant Janke, April 29, 2026, as revised by Second Errata submitted September 4, 2026.
Lookalike methodology, archetype	Methodology used by Mr. Hunt in his truck-to-rail models to predict post-merger rail and intermodal shares. In his truck-to-carload model, an "archetype" is a category of markets defined by the characteristics Mr. Hunt uses in his lookalike analysis: truck equipment type plus modeled single-line status, rail mileage bin, rail transit time bin, and rail price bin. "Lookalike markets" are the existing county-pair-STCC2-truck equipment type markets characterized by their pre-merger characteristics and assigned to an

Term	Definition
For carload: "**lookalike markets**," "**diversion-eligible markets**." *For intermodal*: "**current markets**," "**future markets**."	archetype whose observed rail modal shares are used to calculate its benchmark rail modal share. Each directional county pair is identified by an origin and destination county, with movements in opposite directions treated as separate markets. "Diversion-eligible markets" are the carload county-pair-STCC2-truck equipment type markets Mr. Hunt subjects to his diversion calculation and assigns to archetypes based on their modeled post-merger characteristics. In his truck-to-intermodal model, an "archetype" is a category of markets defined by the characteristics Mr. Hunt uses in his lookalike analysis: single-line status, intermodal mileage bin, intermodal transit time relative to truck bin, and intermodal price relative to truck bin. "Current markets" are the directional terminal market pairs in Mr. Hunt's current-state dataset, characterized by their pre-merger characteristics. Each directional pair is identified by an origin and destination terminal market, with movements in opposite directions treated as separate markets. Qualifying current markets determine the benchmark share for each archetype. "Future markets" are the directional terminal market pairs in Mr. Hunt's future-state dataset that he subjects to his diversion calculation and assigns to archetypes based on their modeled post-merger characteristics.
Meridian Speedway	Meridian Speedway LLC ("MSLLC") is a joint venture established on May 1, 2006, between Kansas City Southern (now part of CPKC) and NS, involving the approximately 320-mile rail corridor between Shreveport, Louisiana, and Meridian, Mississippi, which provides a direct rail connection between the southeastern and southwestern United States. The Meridian Speedway corridor is also used for intermodal traffic involving UP, CPKC, and NS, with run-through intermodal trains operating under haulage arrangements.
The merger	The proposed acquisition leading to common ownership of UP and NS.
MultiRail	Oliver Wyman's proprietary network modeling software. MultiRail data refers to back-up data supporting Applicants' MultiRail models.
NPV	Net present value.
NS	Norfolk Southern Corporation and Norfolk Southern Railway Company, collectively.
Offsets, Net Diversions	Offsets are negative adjustments to Mr. Hunt's diversions and revenue predictions that account for traffic and associated revenues already captured by UP or NS before the merger. Net diversions reflect Mr. Hunt's diversion predictions after having accounted for these adjustments.
Operating Plan, Base Plan, Growth Plan, and Optimized Plan	Base Plan, Growth Plan, and Optimized Plan are sub-components of Applicants' Operating Plan. Based on MultiRail models sponsored by Applicants' experts Eric Gehringer and John F. Orr. The Operating Plan is a detailed plan for how traffic will move through the combined network, including blocking, train, and scheduling details as well as yard work demands.

Term	Definition
Path	Potential or observed routings between stations in each Hunt market using Freight Station Accounting Codes (FSAC), identified either by Quantanet or present in Traffic Tapes.
Perkes VS	Verified Statement of Joshua Perkes, April 29, 2026.
Profitability index	The ratio of revenue to variable cost.
PSR	Precision Scheduled Railroading.
Quad	In Mr. Hunt's rail-to-rail model, an origin, origin-railroad, destination, destination-railroad combination as described in Hunt VS, Appendix A.4, p. 103 and p. 199, Exhibit E-1.
Quantanet	Oliver Wyman's proprietary rail routing software. Mr. Hunt uses Quantanet to model the "best" rail routes and calculate their rail mileage under pre- and post-merger conditions, at the level of geographic aggregation specific to each of his truck-to-rail and rail-to-rail diversion models. The "best" route is defined as the one with the lowest modeled impedance, where impedance reflects rail mileage and mileage-equivalent penalties associated with interchanges on a given route.
Rail modal share, Intermodal share	"Rail modal share" refers to rail traffic as a share of combined rail and truck traffic in a given Hunt market. This is equivalent to Mr. Hunt's use of the term "rail share" (see, e.g., Hunt VS, p. 23). When discussing specifically intermodal traffic, "intermodal share" refers to intermodal units as a share of combined intermodal and truck traffic in a given Hunt market. Mr. Hunt also uses the terms "intermodal rail market share," "intermodal share," and "rail share," when referring to intermodal traffic (see, e.g., Hunt VS, pp. 24, 120, 142–143).
Rail-to-rail model	Mr. Hunt's multinomial logit model, described in Hunt VS, Section 6, which predicts the rail quad selected by a shipper (either a single railroad or a combination of railroads) based on that quad's routing characteristics relative to all other quads in the market. See Hunt VS, Exhibit 6-3, pp. 68–71.
Rocker/Elkins VS	Joint Verified Statement of Kenny Rocker and Claude E. "Ed" Elkins, April 29, 2026, as revised by Second Errata submitted September 4, 2026.
Route	A modeled rail path in Mr. Hunt's analysis connecting an origin and destination, potentially involving multiple railroads and interchanges.
Rule 11	Rail billing arrangement under which an interline shipment involving multiple railroads is billed separately by each participating railroad, rather than under a single through waybill.
SCAC	Standard Carrier Alpha Code.
Single-line market	A carload Hunt market in which Mr. Hunt's "best" Quantanet route has junction frequency equal to zero.

Term	Definition
SPLC	Standard Point Location Code; six-digit numbers identifying locations throughout North America, nested State–County–City (Point).
Station Master	A geographic location file that contains data about rail and motor carrier points for North America and international areas.
STCC	Standard Transportation Commodity Code, a seven-digit commodity code; the first two ("STCC2"), three ("STCC3"), four ("STCC4"), and five ("STCC5") digits are higher-level aggregations.
Terminal market	In his truck-to-intermodal model, Mr. Hunt groups intermodal terminals into terminal markets that are largely based on BEAs, with adjustments to align with the UP-NS terminal network.
Traffic Tapes	The CRA_2026_processed_2 traffic tapes dataset used to measure observed traffic. Applicants have also produced other versions of the CRA traffic tapes.
Transearch	In Mr. Hunt's truck-to-rail models, he uses truck traffic data from the Transearch, S&P Global Markets, 2023 freight database. *See* data description in Hunt VS, Exhibit 4-4, p. 38.
Transit Time VS (Powers Transit Time VS)	Verified Statement of Nicholas E. Powers, Ph.D., August 6, 2026.
Truck equipment type	In his truck-to-carload model, Mr. Hunt considers five truck equipment types: bulk, dry van, flatbed, reefer, and tank.
Truck-to-carload model	Mr. Hunt's truck-to-carload diversion analysis involving merchandise and bulk traffic, discussed in Hunt VS, Section 4.2, excluding Mr. Hunt's separate finished-automotive diversion analysis, discussed in Hunt VS, Section 4.3.
Truck-to-intermodal model	Hunt's truck-to-intermodal diversion analysis (discussed in Hunt VS, Section 5.4), excluding the relatively small amount of additional diversions associated with long-haul drayage that Mr. Hunt separately estimates in Hunt VS, Section 5.5.
Truck-to-rail models	Collectively, Mr. Hunt's truck-to-carload and truck-to-intermodal models (discussed in Hunt VS, Sections 4.2 and 5.4).
Turner VS	Verified Statement of John W. Turner, April 29, 2026, as revised by Second Errata submitted September 4, 2026.
UMAX	A domestic interline container program involving UP and CSX.
UP	Union Pacific Corporation and Union Pacific Railroad Company, collectively.
UP-NS interline traffic	When referring to existing interline traffic, "UP-NS" refers to traffic receiving interline service involving both UP and NS, including movements transferred from UP to NS or from NS to UP. Such movements may also involve a shortline railroad, but do not involve another Class I railroad. This definition is consistent with Mr. Hunt's treatment of interline service based on the number of Class I railroads participating in the movement. See Hunt VS, p. 16.

Term	Definition
URCS	Uniform Railroad Costing System.
WACC	Weighted-average cost of capital.
Watershed	Mr. Hunt defines the watershed region as comprising counties that fall within a 250-mile radius of one of four key gateways: Chicago, St. Louis, Memphis, and New Orleans, as shown in Hunt VS, Exhibit 4-8.

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

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EXHIBIT 2: F.K. PLOUS JR., *THE FLIGHT … OF THE FALCON*, TRAINS MAGAZINE (FEB. 1979)

EXHIBIT 3: BILL STEPHENS, *RAILROADS DEBATE MERITS OF MERGERS AND ALLIANCES*, TRAINSPRO (NOV. 24, 2025), HTTPS://WWW.TRAINS.COM/PRO/FREIGHT/CLASS-I/RAILROADS-DEBATE-MERITS-OF-MERGERS-AND-ALLIANCES/

EXHIBIT 4: {{[redacted]}}

EXHIBIT 5: {{[redacted]}}

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EXHIBIT 7: {{[redacted]}}

EXHIBIT 8: *RECIPROCAL SWITCHING*, UP'S OPENING COMMENTS AND EVIDENCE, EX PARTE NO. 711 (SUB NO-1) (FILED OCT. 26, 2016) (EXCERPTS)

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EXHIBIT 10: {{[redacted]}}

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EXHIBIT 12: ADRIENE BAILEY (OLIVER WYMAN), *THE NEXT HORIZON* (NOV. 14, 2024)

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EXHIBIT 14: BILL STEPHENS, *NORFOLK SOUTHERN SHORT LINE PROJECT LEADS TO CARLOAD VOLUME GROWTH*, TRAINSPRO (MAY 29, 2024), HTTPS://WWW.TRAINS.COM/PRO/FREIGHT/CLASS-I/NORFOLK-SOUTHERN-SHORT-LINE-PROJECT-LEADS-TO-CARLOAD-VOLUME-GROWTH/

EXHIBIT 15: {{[redacted]}}

EXHIBIT 16: PROGRESSIVE RAILROADING, *NS, 10 NEW YORK STATE SHORT LINES PARTNER TO FORM 'EMPIRE LINK'* (MAY 30, 2008), HTTPS://WWW.PROGRESSIVERAILROADING.COM/RAIL_INDUSTRY_TRENDS/NEWS/NS-10-NEW-YORK-STATE-SHORT-LINES-PARTNER-TO-FORM-EMPIRE-LINK--16811

EXHIBIT 17: {{[redacted]}}

EXHIBIT 18: {{[redacted]}}

EXHIBIT 19: KENNY ROCKER, *I'VE HEARD ENOUGH – THIS MERGER DOESN'T KILL COMPETITION. IT UNLOCKS IT.*, UNION PACIFIC CUSTOMER ANNOUNCEMENT NO. CN2026-12 (JUNE 8, 2026)

EXHIBIT 20: {{[redacted]}}

EXHIBIT 21: THOMAS F. ERICKSON, JR., *CAPITAL INVESTMENT* (2023)

VERIFIED STATEMENT
OF
ANDREW FOX

1. I am Andrew Fox. I am President of Overland Limited Associates, Inc., an independent consultancy. I previously served as President and Managing Director of the Chicago South Shore & South Bend Railroad ("CSS") and Pacific Harbor Line ("PHL"), and as Managing Director of Anacostia Rail Holdings ("ARH"). I am currently retired from railroad employment. Before my 22-year shortline career, I was employed by Southern Pacific Transportation Company for 23 years, starting as a rodman in the engineering department and leaving the company before the *UP/SP* merger as Assistant to the Vice President of Operations.

2. I am submitting this Verified Statement to provide the Board with my perspective, based on my years of railroad experience, on some of the issues raised by the merger application filed by UP and NS in this proceeding. The views expressed in this statement are solely my own and have not been influenced by CPKC or any other participant in this proceeding.

3. My bottom-line view is that further consolidation of Class I railroads in this country is unnecessary and would steer the U.S. railroad industry down a path that would harm the public interest. No merger is needed to ensure the strength of the U.S. rail network, to provide the means necessary to invest in that network, or to allow U.S. railroads to provide transportation services that meet customer needs and support a strong U.S. economy.

4. Today's railroad industry landscape offers plenty of clues showing why a merger is not needed and why a UP-NS merger, or any other Class I merger, would—in the long run, if not in the short run—make it less likely that U.S. railroading serves the needs of rail customers and the broader economy. I begin by explaining why I believe a merger is not needed and close by explaining why I believe further Class I consolidation would be counterproductive at best and, in all likelihood, affirmatively harmful to rail customers and the public interest.

5. Fundamentally, Applicants base their case for a merger on the proposition that interline rail service is a problem that must be overcome, and that it can be overcome only through a merger. I disagree. Whatever one might think about the need to reduce the balkanization of the rail network that once existed, the interline services associated with America's Mid-Continent gateways (Chicago, Kansas City, St. Louis, Memphis, and New Orleans) are not a problem at all but a beneficial feature of American railroading. Applicants' crusade to demonize the concept of interchange is not only unnecessary to the success of the U.S. rail network but would also be affirmatively harmful.

I. HISTORY SHOWS THAT RAILROADS ARE FULLY CAPABLE OF SUPPORTING HIGHLY EFFECTIVE INTERLINE SERVICES

6. In an effort to justify the notion that railroads can grow market share only through single-line service, Applicants downplay the effectiveness of interline service options. They claim that interchanges inherently add 24-48 hours of dwell time.[1] Applicants further claim that interchanges create friction that not only inhibits growth but prevents it.[2] Thus, in Applicants' view, combining two railroads into one eliminates interchanges and enables growth.

7. Applicants' traffic diversion consultant, David Hunt of Oliver Wyman, espouses an "impedance" metric that makes any interchange between carriers appear to be a major drag on the efficiency of the network.[3] "Impedance" is a term usually applied to alternating-current electric circuits. Whenever there is an interchange between carriers, Mr. Hunt's analysis of rail-

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[1] Rev. App. 1-294 (Verified Statement of Rocker & Elkins ¶ 50 ("Rocker & Elkins Second Errata V.S.")).

[2] Rev. App. 1-261 to -62 (Verified Statement of Mark George ¶ 46) ("George Second Errata V.S.")). ("This interchange friction adds disproportionately higher transit times (and cost) to an otherwise short move, that effectively repels traffic to the highway."); *see also* Mark George, *Remarks at Railway Age's Next Generation Freight Conf.* (Mar. 10, 2026) (stating that mid-continent "artificial barrier" limits growth and merger would enable renewed growth).

[3] *See* Rev. App. 2-418 to -19 (Verified Statement of David Hunt) ("Hunt Second Errata V.S.")).

to-rail traffic shifts associated with the proposed merger adds to each movement's length of haul an arbitrary number of imputed trip miles, which varies depending on volume and frequency.[4] A longer route is then assumed to be less competitive.[5] Conversely, removing impedance is assumed to draw business to the merged railroad.[6] This method underpins Mr. Hunt's rail-to-rail diversion analysis.

8. I understand the concept Mr. Hunt is aiming for. In comparing alternative railroad routes, extra miles can matter, just as it can matter whether a route must traverse slow mountain grades or a congested and crowded terminal area. Based on my experience, however, Applicants' and Mr. Hunt's presumption that interchanges impose inherent service and competitive disadvantages and are per se bad for American railroading is absurd.[7]

9. Consider a shortline that serves several industries and delivers its interchange traffic to a Class I serving yard on the same day. Physically, this is exactly the same process as a Class I serving those industries itself with a local train and delivering the cars to the same yard on a similar schedule. In the case of the shortline, however, Mr. Hunt assumes that this process can add the equivalent of up to 650 miles to the trip, a distance penalty that might exceed the total length of the origin-to-destination trip.[8] Yet in the case of the Class I local train, no impedance is attributed.

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4 *See id.* at 2-456 (Hunt Second Errata V.S.); 2-458 (Hunt Second Errata V.S.).

5 *See id.* at 2-418 (Hunt Second Errata V.S.).

6 *See id.* at 2-456 (Hunt Second Errata V.S.).

7 *Id.* at 2-415 (Hunt Second Errata V.S.); 2-418 (Hunt Second Errata V.S.) ("Additional interchanges increase price, reduce reliability, and lengthen transit time, making a route less competitive.").

8 *See id.* at 2-495 (Hunt Second Errata V.S.); 2-456, -458 (Hunt Second Errata V.S.) (setting interchange impedance of 650 miles for historically low-volume interchanges).

10. Mr. Hunt then provides a table that ratchets impedance down as interchange volume increases, to reflect the efficiency of larger volume interchanges.[9] But even for a true run-through interchange train between Class I railroads, Mr. Hunt nonsensically imputes a minimum of 90 additional miles.[10] A run-through interchange need not incur any more time or service penalty (or distance equivalent) than a crew change on a single Class I railroad. Applicants and Mr. Hunt grossly generalize a process that is highly fact- and location-specific.

11. An interchange involves two things: the physical interchange of equipment and the back-office processes to transfer data. The physical element can be as simple or as complicated as the parties choose to make it. Every day, bulk unit trains, intermodal trains, and some manifest trains with run-through locomotives interchange between carriers with a simple step-off and step-on of crews. Granted, this requires coordination, but no more than is required at any crew change internal to a single system. The only difference is that it involves communication between two carriers to establish estimated times of arrival, estimated departure times, and crew availability. With today's electronic means of communication, this is hardly (or need be) a significant impedance. Likewise, the electronic back-office transfer of consist and shipping data is highly automated. This currently happens at Chicago. For the period February 1 through April 15, 2026, UP-NS competitors BNSF and CSX were able to interchange 52% of their interline intermodal business in less than 10 hours, according to industry equipment

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9 *See id.* at 2-458 (Hunt Second Errata V.S.).

10 *See id*.

location data compiler RailState.[11] This performance, of course, is well under the 24-48 hour delay that the Applicants say is inherent in interchange at gateways like Chicago.[12]

12. Where impedance exists, it is designed into the system to serve some other purpose. For example, use of a terminal railroad, like BRC, is impedance in one sense, but it is offset by the efficiency of running larger trains into one yard where multiple connections can be made. It is a conscious tradeoff between running traffic promptly to achieve an efficient train size to the interchange point versus holding traffic back elsewhere to achieve an efficient train size that can bypass the terminal railroad yard. Railroad service design teams make these decisions all the time, whether or not an interchange is involved in a move.

13. In the era when Class I systems did not have the geographic reach that they do now, efficient high-volume interchanges were typical. The UP-SP interchange at Ogden, Utah was a massive run-through operation, the highest volume bilateral interchange in the country of roughly 230,000 carloads in 1979, equivalent to roughly 1,260 loads and empties per day on average.[13] Every day entire trains of perishables, coal, grain, auto parts forwarder and intermodal business passed through Ogden with just a crew step off and step on, and locomotives and cabooses were pooled. It made no economic sense to either railroad to add impedance. Impedance took place upstream where cars were loaded and processed into trains, or downstream where cars were processed for delivery to customers or empty cars gathered for return to

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[11] *See* Dan Devoe, *How Bad Is the Rail Bottleneck in Chicago?* (May 4, 2026), https://www.railstate.com/how-bad-is-the-rail-bottleneck-in-chicago/ (Exhibit 1 hereto).

[12] *See* Rev. App. 1-294 (Rocker & Elkins V.S. ¶ 50) ("Transfers between carriers can add 24 to 48 hours of dwell time.").

[13] *Union Pacific Corp. – Control – Missouri Pacific Corp.*, 366 I.C.C. 462, 480 (1982) ("UP/MP/WP").

California for loading. A few years later, SP also invested in a new direct connection to D&RGW at Ogden to facilitate run-through trains between them, also eliminating impedance.

14. Likewise, throughout the 1980s, SP operated a network of run-through double-stack intermodal trains with BN, Soo Line, Conrail, and CSX via Kansas City or St. Louis. No impedance. Before their merger, UP operated many run-through trains with C&NW at Fremont, Nebraska.[14] Today, UP operates run-through manifest trains with CSX at Salem/St. Elmo, Illinois, amounting to almost {{[redacted]}} carloads per year.[15]

15. The list goes on. For over 40 years, regional railroads N&W, Western Maryland, Reading, and Jersey Central railroads offered highly coordinated manifest service that gathered traffic in Chicago, Detroit, and Toledo and delivered it via expedited manifest service to the New York and Philadelphia markets. This so-called "Alphabet Route" competed, in the regulated era, with single-line service offered by the New York Central, Pennsylvania Railroad (both later Penn Central), and Erie-Lackawanna. The point is that carriers then did what they had to do to compete, until consolidation changed the landscape and dulled competitive instincts. They still do when they choose to.

16. Despite the extended reach of modern Class I networks, there are numerous current examples of low-friction (another word Applicants use as a synonym for impedance) multicarrier arrangements that go beyond run-through trains. The Meridian Speedway, Pan Am Southern ("PAS"), and the CPKC-CSXT joint ventures come to mind. As just one more current example, CPKC-UP potash, grain, and manifest trains run through today over Eastgate, Idaho to

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[14] *See* F.K. Plous Jr., *The Flight … of the Falcon*, Trains Magazine (Feb. 1979) (describing UP-CNW pre-merger expedited manifest run-through service between Chicago and North Platte, Nebraska via the Fremont gateway) (Exhibit 2 hereto).

[15] *See* Rev. App. 2-631 to -32 & Electronic Appendix O, UP Interchange Data (Gehringer & Orr Second Errata V.S. ¶¶ 41-42).

the tune of more than {[redacted]} per year. These routes exemplify carriers working together to eliminate impedance, expand market reach, and enhance competition. They also represent instances in which connecting carriers, including one of the Applicants, have been willing to make substantial investments to increase capacity and reduce friction based on long-term agreements.

17. This is an outcome Applicants argue cannot be justified without unified ownership.[16] Yet it was worthwhile for NS to invest in the KCS Meridian Speedway route to secure permanent rights without merging with KCS. The same is true of PAS, and of CPKC and CSX and their investment in the MNBR Myrtlewood, Alabama route. Likewise, BNSF invested in UP tunnel clearances on Tehachapi. Again, railroads do what they must when they want to compete.

18. Past experience thus demonstrates that railroads will innovate and invest in interline routes and services when they believe that mergers are not an option. Were Applicants told that UP and NS could not merge, I would expect both of them to work harder to improve their interline services, especially if they are even remotely correct about the "size of the prize" if they can make those options better (more reliable, faster, and less expensive).

19. Mike McClellan, NS's SVP and Chief Strategy Officer, in a 2025 RailTrends presentation as recounted in Trains Magazine, points to the joint effort of Conrail and NS in 1995 to launch a run-through double stack service between New Jersey and Atlanta, which Mr. McClellan says failed because of a misalignment of economic incentives as Conrail chose to

[16] *See* Rev. App. 2-188 to -89 (Verified Statement of Mark Israel ¶14 ("Israel Second Errata V.S.")).

allocate available equipment to longer hauls.[17] It does appear the effort got off to a rocky start, but Mr. McClellan's implication that coordinated efforts like this are doomed does not hold up under scrutiny. It is true that Conrail would have viewed a New Jersey-Atlanta intermodal train as offering Conrail a relatively short haul (about 230 miles from New Jersey to Hagerstown, Maryland) as compared to the 900 miles or so to Chicago. In the modern era, however, NS would view the same length of haul as attractive. Despite the 1990s experience of Conrail, NS more recently {{ }}.[18] What is important about this is, first, that the shortness of haul was no obstacle to NS seeing ample profit potential to pursue this opportunity;[19] second, that NS and BNSF contemplated transit times comparable to Applicants' proposed post-merger schedules for comparable service;[20] and, third, that NS and CSX were

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[17] *See* Bill Stephens, *Railroads Debate Merits of Mergers and Alliances*, TRAINSPRO (Nov. 24, 2025), https://www.trains.com/pro/freight/class-i/railroads-debate-merits-of-mergers-and-alliances/ (Exhibit 3 hereto). Mr. McClellan's presentation was produced in discovery, and designated highly confidential. *See* {{ }} (Exhibit 4 hereto).

[18] *See* {{ }} (Exhibit 5 hereto); *see also* {{ }} (attaching PowerPoint and explaining that NS had {{ }} (Exhibit 6 hereto); {{ }} (Exhibit 7 hereto).

[19] *See* {{ }} (Exh. 5).

[20] The schedules set forth in Figure 1 below are comparable to Applicants' post-merger schedules for service between Los Angeles and Toledo. *See* Rev. App. 2-828 (Gehringer & Orr Second Errata V.S., Appendix A – Optimized Plan Trains) (schedule for ZLCCX, between Los Angeles and Croxton, NJ,

competing head-to-head for the Chicago-Ohio leg of this traffic, providing the shippers with meaningful competitive benefits. Figure 1 below shows how NS perceived this head-to-head competition.

FIGURE 1
EXCERPT FROM NS PRESENTATION ON {{ [redacted] }}

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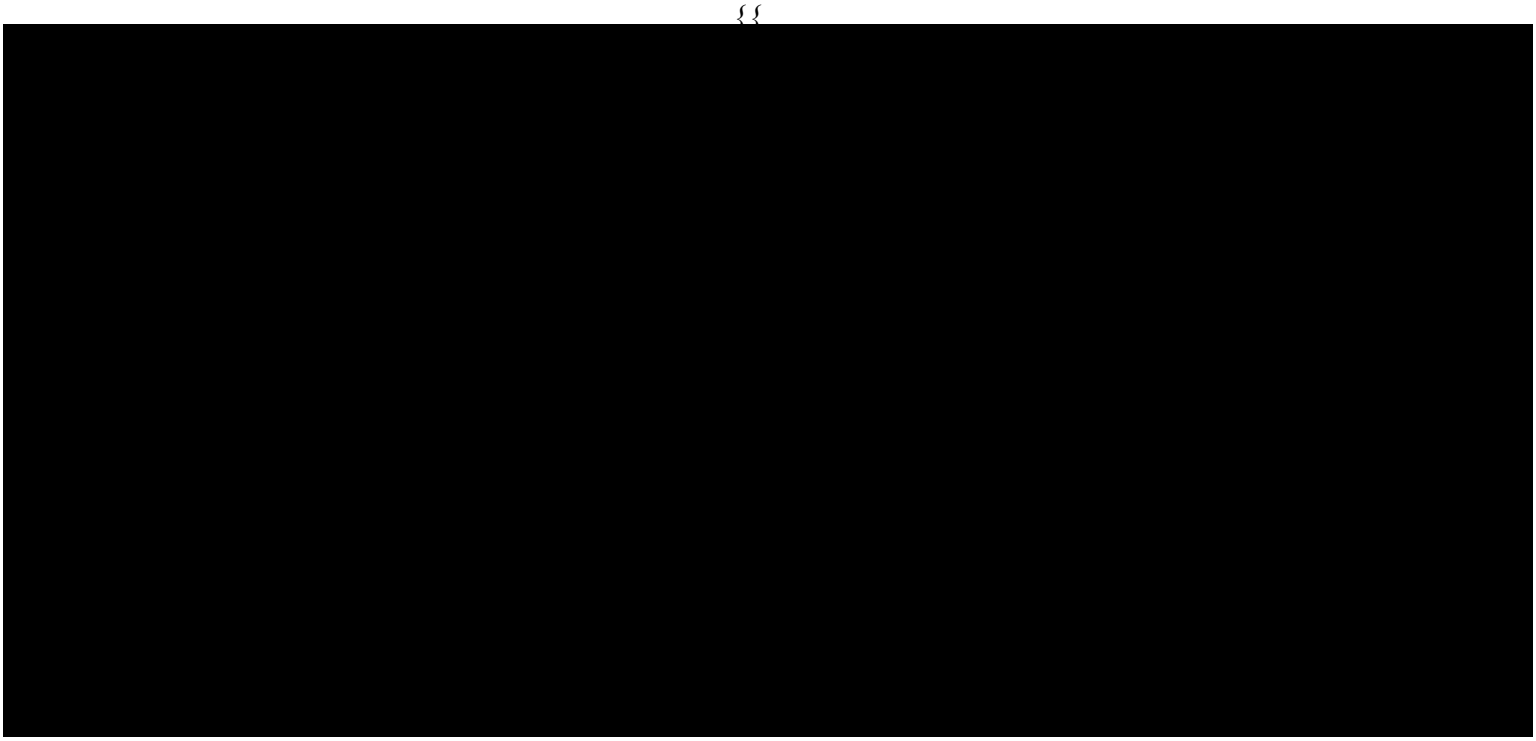

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II. THE LACK OF "PERMANENCE" OF INTERLINE COORDINATIONS IS A FEATURE, NOT A BUG, OF TODAY'S U.S. RAIL NETWORK

A. The Current Structure of Interchange Via the Mid-Continent Gateways Supports Competition and Shipper Optionality

20. Applicants assert that the current industry structure does not support "permanent" tie-ups between East and West railroads. That lack of permanence, they say, is a flaw with any

with work near Toledo in Sandusky); Rev. App. 2-838 (Gehringer & Orr Second Errata V.S. Appendix B – Growth Plan Trains) (schedule for ZLCDT, between Los Angeles and Detroit, MI).

joint venture or other collaboration short of a merger. Far from being a flaw, however, it is sometimes a key benefit. It supports shipper options and it can spur investment and innovation.

21. Applicants repeatedly remind us of their view that the benefits of merged single-line service cannot be duplicated or sustained through voluntary coordination agreements ("VCAs") because those agreements are not permanent and can unravel over time.

22. Applicants err by presuming that permanent arrangements achieved by merger are always superior to the alternative. I see two key respects in which the flexibility of non-merger collaboration can be superior. First, it allows shippers to benefit from "best of both" services, like UP-CSX via St. Elmo/Salem, rather than being forced onto inferior routes using the NS network east of St. Louis. Similarly, some UP-CPKC-NS options via the Meridian Speedway are superior to merged-company routings via Memphis or New Orleans.

23. The ability of shippers to mix and match their choice among the routes of two strong competitors in the East with their choice among the two in the West gives them maximum flexibility to reach markets that both competitors serve in either region. An intermodal customer in Atlanta shipping to Los Angeles has a choice of competitive routes, schedules, and rates between UP and BNSF in the West and CSX and NS in the East that it can weigh when making routing decisions. That customer has four combinations of CSX, NS, BNSF, and UP available today. It loses that optionality with the single-line UP-NS merged routing. (This is not a case to which the Committed Gateway Pricing ("CGP") program proposed by Applicants would apply.) Applicants would have us believe that their merged offering is inherently superior to the choices customers had before, but there is no getting around the fact that creating a single-line UP-NS route leaves only one other practical routing available, regardless of whether BNSF and CSX merge. The customer's options are cut in half.

24. Second, the flexibility of the current industry structure also allows the services railroads offer to adapt over time, rather than locking in one set of options to the practical exclusion of others.

25. For example, with today's structure, an intermodal customer that prefers UP-(CPKC)-NS service between the West Coast and the U.S. Southeast is well served by routes over the Meridian Speedway, but at some point in the future a collaboration among BNSF, CPKC, and NS might provide better service in some material respect. With today's structure, that evolution could occur naturally; with a UP-NS combination, there is no real prospect of such an evolution.

26. Similarly, NS recently gained full double-stack access to the Boston area via CSX trackage rights as a result of the CSX/PanAm acquisition. Those new rights essentially unraveled a component of a prior NS-PanAm (PAS) joint venture. But would permanently relegating NS to less efficient "single-stack" intermodal service via the clearance-restricted Hoosac Tunnel, for the sake of permanence, have been in the public interest?

27. Consider Indianapolis. NS's access to that major Midwestern city to and from the West is circuitous and clearly inferior to CSX's, which has a straight shot between Indianapolis and St. Louis that intersects other high-capacity UP routes along the way. UP and CSX have a longstanding VCA over the Salem, Illinois interchange, with frictionless trains running through between various UP southwestern origins and CSX's Avon Yard. Must shippers in Indianapolis that want to use that traditional route now be relegated to an inferior single-line routing because UP and NS plan to combine?

28. The U.S. rail network keeps evolving, decade by decade, in sometimes unpredictable ways. The recent past shows how railroads can revamp their interline offerings to

provide materially better options to customers. UP's and CN's launch of their three-carrier Falcon service between Mexico and Canada is a good illustration. Responding to competitive pressure from CPKC, they worked together to shave substantial transit time off their joint-line services. The current structure incubates this kind of evolution. A transcontinental railroad merger would freeze it in place.

29. Mike McClellan discussed this evolutionary process in his 2025 RailTrends presentation, {{[redacted]}}.[21] Figure 2 below is an excerpt from Mr. McClellan's presentation:

FIGURE 2
EXCERPT FROM MCCLELLAN RAILTRENDS PRESENTATION[22]

{{

[redacted]

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30. While each of these iterations is presented by Mr. McClellan in the negative as a reason why partnerships do not work, they, in fact, represent repeated efforts by the carriers in the marketplace to improve their service and offer pro-competitive alternatives. Nor is it clear,

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[21] {{[redacted]}} (Exh. 4).

[22] *Id.* at {{[redacted]}} (Exh. 4).

from Mr. McClellan's chronology, that customers suffered from any of these routing iterations and shifting alliances. They all still had the benefit of optionality and vigorous competition. What drove the post-2016 {{ [redacted] }} BNSF/NS relationship apart in 2025? Not length of haul or divergent economic incentives, I would suggest, but the proposed UP-NS merger.

B. History Shows that Replacing Interline Services with Single-Line Services Will Lead to Long-Run and Permanent Disinvestment in the Assets Needed to Support Interline Optionality

31. There was a time when the U.S. railroad network was far too balkanized to serve rail customers well in an increasingly competitive transportation marketplace, though that did not keep them from trying. Traffic was splintered across too many light-density routes; too many railroads meant lots of unnecessary duplication of mainlines and terminal facilities; and railroads lacked the pricing and other tools they needed to encourage traffic onto more efficient routings that built density on key mainline corridors and supported investment to improve service on those routes. The Staggers Act and many of the mergers over the past five decades have changed the rail network for the better in numerous ways.

32. One key lesson of that past, though, is that mergers do not just change industry structure in the short run; they change incentives in ways that have much greater long-run effects. Railroads that merge to create new single-line routes will tend to disinvest in the assets that previously supported interchange between the now-merged carriers and with other carriers. This is a natural evolution. UP described it in great detail in its 2016 and 2017 comments in the Board's Ex Parte No. 711 proceeding, where UP explained why it would be so disruptive for UP if the Board loosened the standard for granting reciprocal switching access to customers solely

served by the UP network.[23] UP's investment choices since 1980 had made it effectively impossible to start interchanging again.

33. Were UP and NS to merge, no matter what the first 5 to 10 years might look like, and with or without stringent Board oversight, the next 50 years would be shaped by the incentives the merger would create for UP to invest in its single-line services and to disinvest in the capabilities and facilities that, absent the merger, might have improved interline services involving the legacy UP or legacy NS networks. That, too, would be a natural evolution. But it would be harmful to the public interest.

III. SHORTLINES AND REGIONAL RAILROADS SHOW THAT ADDING INTERCHANGES CAN FOSTER GROWTH, WHERE PARTIES ARE INTERESTED IN PURSUING IT

34. From my vantage point as a railroader who has worked at a major Class I railroad and has also run shortlines, the clearest evidence that eliminating interchanges through merger is not needed to support carload growth is the success of shortlines. Shortlines are the one segment of rail traffic that consistently grows, and it does so despite the "friction" of interchange. Virtually every carload handled by shortlines is interchanged with another carrier, usually a Class I. These interchanges range from 10 or fewer cars per day to 100 cars per day. Generally, they involve much lower volumes than what is regularly interchanged between Class I railroads at the Mid-Continent gateways.

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[23] *Reciprocal Switching*, Ex Parte No. 711 (Sub No-1), UP's Opening Comments and Evidence (filed Oct. 26, 2016) at 1, 11 n.27 (explaining that expanded reciprocal switching would undermine UP's post-merger network investments) (excerpts are Exhibit 8 hereto); *see also Reciprocal Switching*, UP's Reply Comments and Evidence, Ex Parte No. 711 (Sub-No. 1) (filed Jan. 13, 2017) at 11 (explaining that expanded reciprocal switching would undermine UP's post-merger network investments) (excerpts are Exhibit 9 hereto).

35. Applicants themselves acknowledge that shortlines have grown traffic volumes faster than UP or NS and are[24] a growing source of volume and revenue for Applicants.[25] Applicants' own consultant goes further and treats the interchange markets that shortlines serve as a path to growth. In a 2024 industry presentation, Oliver Wyman, the consulting firm Applicants retained to estimate the growth potential of the merger, identified "shorter haul-*interchange markets*" as an opportunity, not a barrier, to growth.[26] The same presentation identified "Unleash the shortline railroads" as one of three key strategies to unlock growth. Oliver Wyman issued another report in 2024 providing a more detailed recipe for Class I railroads on how to accelerate growth by "Unleash[ing] the Short Lines."[27]

36. NS itself has been the poster child for exploiting the potential of shortlines to grow business, posting double-digit growth for a subset of shortline connections that participated in NS's Short Line Performance Project.[28] The project consisted of essentially nothing more complicated than systematizing the way interchange issues were recorded, measured, identified,

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[24] This is evident in the Application. *See* Rev. App. 1-325 to -26 (Rocker & Elkins Second Errata V.S. ¶ 112) (acknowledging that "short lines' volumes have grown faster than those of UP or NS."*)*; *see also id.* at 1-255 (George V.S. ¶ 33) ("the short line industry grew by leaps and bounds"), as well as in internal UP and NS documents.

[25] *See, e.g.*, {{ }} (Exhibit 10 hereto); {{ }} (Exhibit 11 hereto).

[26] Adriene Bailey (Oliver Wyman), *The Next Horizo*n (Nov. 14, 2024), *available at* https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2024/nov/the-next-horizon.pdf (Exhibit 12 hereto).

[27] Oliver Wyman, *Unleash the Short Lines: Accelerating North American Rail Industry Growth*, *available at* https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2024/aug/north-american-short-line-growth-report-082024.pdf (Exhibit 13 hereto).

[28] Bill Stephens, *Norfolk Southern Short Line Project Leads to Carload Volume Growth*, TRAINSPRO (May 29, 2024), *available at* https://www.trains.com/pro/freight/class-i/norfolk-southern-short-line-project-leads-to-carload-volume-growth/ (Exhibit 14 hereto).

and resolved. The friction proved not to be a law of physics that could not be overcome, but rather the result of a lack of priority attention.

37. NS, uniquely among Class I railroads, has hired a shortline chief commercial officer to serve as its Vice President of "First and Final Mile Markets," with responsibility for nurturing shortline interchange business.[29]

38. Almost all of the growth that shortlines unlock is growth not just for the shortlines but for the Class I railroads with which they connect via interchange. What this tells us is that the barrier to growth is not the fiction of interchange friction, but carriers' behavioral decisions not to make seamless interchange a priority. A merger among Class I railroads is not needed to emulate the behaviors and strategies that support growth, nor is such a merger likely to lead to growth if the only change is the identity of the owning carrier.

39. Based on my experience, the success of shortline-to-Class I traffic flows shows that all of the operational or commercial "problems" that Applicants say they need their merger to solve could be overcome without a merger if Applicants were willing to do so. Large railroads do not need "long hauls" to participate profitably in developing traffic opportunities any more than shortlines do. They might prefer longer hauls, but shorter ones need not be an obstacle to devoting the attention necessary to attract traffic and serve it well. Removing some Mid-Continent interchanges will not magically make traffic appear if Class I railroads are not prepared to do this work, and if they are prepared to do it, a merger will not be needed for them to succeed.

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[29] Norfolk Southern, *An Industry First: First and Final Markets Department* (Sept. 25, 2023), https://www.norfolksouthern.com/en/newsroom/story-yard/an-industry-first--first-and-final-markets-department.

40. I recall one instance, in which a connecting Class I railroad with which we had an interline service raised rates to one of its large steel industry customers by approximately 30% at one time, purportedly because of inadequate car utilization on the lane. The customer was making arrangements to switch to truck. This volume was crucial to us. As a shortline, we assembled within a few days an all-shortline alternative route involving *not one but four* interchanges. The result was truck-competitive through rates, a route half as long, a substantial reduction in transit time, more consistent service, and, ironically, an after-the-fact request from the now-bypassed Class I railroad to my shortline to store its now-unneeded cars. In another instance, for years a connecting Class I chose to interchange unit trains to my shortline for "last mile" service to a receiver rather than perform the work itself, which it had every right to do. In that case, the value-added shortline service was a net benefit of interchange.

41. The key difference between Class I railroads and shortlines is the entrepreneurial element. NS's Mike McClellan puts it well in response to an analyst question:

{{ [redacted] }}[30]

[30] {{ [redacted] }} (Exhibit 15 hereto).

42. While his remarks pertain specifically to intermodal, in my experience they apply equally to carload manifest business and to the approach to traffic generation that shortlines take. Every carload is precious.

43. Ironically, the CGP program, where it applies, shows one approach to removing a source of friction that Applicants claim makes interline moves less competitive: the amount of time it takes to establish an interline rate. Applicants assert that it can take up to seven days for two or more connecting railroads to coordinate on an interline rate.[31] In my experience, this is often true and is a great source of frustration for shortlines. That length of time is not viable in 2026, when trucking competitors can provide pricing almost instantly. With CGP, UP-NS proposes, in a very limited way, to extend instant pricing authority to two of its connections. Applicants also note that UP has been doing this for years with BNSF in the Pacific Northwest. A version of this approach was also proposed by UP and BNSF in the CP-KCS merger proceeding.[32]

44. If railroads were truly interested in resolving this process bottleneck, they could expand the concept voluntarily, without any need to merge. NS experimented with something similar through its Empire Link program in 2008.[33] Empire Link enabled 10 shortlines in the Southern Tier of upstate New York to price business moving shortline to shortline via NS

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[31] Rev. App. 1-278 (Rocker & Elkins Second Errata V.S. ¶ 10).

[32] *See Canadian Pacific Ry. – Control – Kansas City Southern*, BNSF Comments, Finance Docket No. 36500 (filed Feb. 28, 2022) at 44-46 (proposing a proportional-rate arrangement permitting connecting carriers to quote through rates without additional concurrence from CPKC); *id.*, Union Pacific Railroad Company's Comments and Request for Conditions (filed Feb. 28, 2022) at 71-74 (proposing mileage-based proportional gateway rates and citing the UP-BNSF I-5 Agreement as a precedent). *See also id.* Public Hearing Tr. (Sept. 30, 2022) at 1038:3-1039:9 (Chairman Oberman questioning BNSF counsel about why open gateways should not apply throughout the rail system).

[33] *See* Progressive Railroading, *NS, 10 New York State Short Lines Partner to Form 'Empire Link'* (May 30, 2008), https://www.progressiverailroading.com/rail_industry_trends/news/NS-10-New-York-state-short-lines-partner-to-form-Empire-Link--16811 (Exhibit 16 hereto).

without having to obtain rate concurrence from NS. The project ultimately fizzled because it was too narrow in scope and not enough traffic fit its parameters. I even informally proposed the same idea around the same time to UP for shortlines located on UP's underutilized I-5 corridor on the West Coast, but it proved a bridge too far. The bottom line is that there is no structural reason why, in 2026, it should take railroads multiple days to coordinate rates, other than a lack of will to make it happen. The advent of AI can only help make this process even easier. CGP, if not so narrowly scoped by the Applicants, could have been just the game changer that eliminated the need to merge at all.

IV. FURTHER CLASS I CONSOLIDATION WOULD RESULT IN AMERICA HAVING A WEAKER RAIL NETWORK LESS LIKELY TO DELIVER GOOD OUTCOMES

45. Finally, even if the Board were to conclude that a merger of UP and NS might bring some advantages in terms of modal share growth—and, for the reasons expressed above, I am highly skeptical that it would. The Board should consider the other costs that would come with the merger.

46. Applicants assert that only through further consolidation can the rail network achieve its true potential to compete in the transportation marketplace.[34] Applicants go on to suggest that, if their consolidation is a good thing, they would not object to consolidation among their remaining competitors.[35] From my perspective, the reason for this position is obvious: a post-merger UP would prefer a more concentrated, duopolistic rail industry that would be less

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[34] *See, e.g.*, Rev. App. 1-255 to -56; *id.* at 1-266 to -68 (George Second Errata V.S. ¶¶ 33-35, 58, 62); *id.* at 2-188 to -89 (Israel Second Errata V.S. at ¶ 14).

[35] *See* Applicants' Second Response to Decision No. 21 (UP-80/NS-78) (filed July 27, 2026) at 141-44, 149-150.

likely to present aggressive or disruptive competitive challenges to UP, like those CPKC was able to present following its merger, which forced UP to respond.[36]

47. But aside from the prospect of extraordinary duopolistic market power, there are other aspects of consolidation that would not be in the public interest. These include, of course, harms from less rail competition (to which I alluded above); harms from a larger, more complacent, and less easily regulated UP; and harms from service disruption, all of which I expect the Board will hear a great deal about from other witnesses.

48. I would like to highlight two other sources of long-term harm that may not receive as much attention from others: (a) the systemic nature of the risks to the U.S. rail network from the inevitable mistakes that railroad managers make; and (b) the reduction in *commercial innovation* that would result from a reduction in the number of railroads making decisions about how to serve customers, how to invest capital, and all of the other strategies that shape the competitive landscape of American railroading.

A. Fewer Class I Railroads Means a Rail Network More Vulnerable to the Mistakes of One Set of Decision Makers

49. First, all Class I railroads, like all companies, inevitably make business mistakes at one time or another. Examples include retaining an underperforming CEO, not keeping enough locomotives and staff on hand, purchasing equipment that cannot reasonably be justified,

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[36] *See, e.g.*, {{[redacted]}} (Exhibit 17 hereto); {{[redacted]}} (Exhibit 18 hereto); *see also* Kenny Rocker, "*I've Heard Enough – This Merger Doesn't Kill Competition. It Unlocks it.*," Union Pacific Customer Announcement No. CN2026-12 (June 8, 2026) (explaining that competition from CP-KCS merger prompted UP to expand Eagle Pass service and adjust pricing after losing Mexico business to CPKC) (Exhibit 19 hereto).

shutting down and demolishing a hump yard only to find it was necessary, selling routes that eventually have to be bought back, failing to adapt to market shifts, and taking on excessive debt that cannot be supported by cash flow. Recent history shows that these examples are very real and that decision makers at the largest U.S. railroads make such mistakes.

50. Sometimes these kinds of decisions are not mistakes at all, but supportable decisions based on the best information available at the time but lacking in the vision to anticipate that circumstances would change. Sometimes they reflect a different appetite for risk. The consequences of these errors can range from service meltdowns to lower earnings to bankruptcy. At a minimum, customers, shareholders, or both will be affected.

51. In today's environment, with six Class I railroads, the damage done by any individual carrier's miscalculation will typically be contained to that carrier and its stakeholders, although, because of the network nature of the industry, connecting carriers, especially shortlines, will also feel the effects. The other carriers, presumably not having made the same mistake, will either be less affected or will be able to provide relief. Importantly, the entire rail network is not thrown into chaos by a crisis caused by the bad decisions of a single carrier.

52. That would become much less true the fewer carriers there are. The reach and size of each network would magnify the consequences of failure and spread them that much farther. In the case of UP-NS, it is quite literally the entire country. The adage "the bigger they are, the harder they fall" applies. One might say that is a risk the shareholders of UP ought to be allowed to bear, but the rail shipping community should not have to bear it.

53. We get glimpses of how this works, from time to time, in the already relatively concentrated airline sector. The big four domestic airlines are national in scope. When one carrier's operating system crashes, sometimes for multiple days, the disruptions are severe and

nationwide, but contained. The carrier's competitors carry on and take up the slack. This same scenario just recently played out with the CSX data system crash on October 27-28 of this year.

54. The business mistakes I am referring to are not the sort of tactical merger implementation missteps that Applicants' Service Assurance Plan is designed to overcome. Those disruptions may or may not occur. Rather, my concern is the sort of longer-term strategic errors that nearly all companies eventually make.

55. Look no further back than five years, to the post-COVID under-resourcing decisions a number of railroads made. Staffing miscalculations culminated in a service crisis that caused UP to issue over one thousand embargoes, drawing the Board's attention.[37] In 2022, its principal competitor in the West embargoed carload business to all of California. The railroads may still have prospered, but the public interest was seriously harmed. My old employer, Southern Pacific, gambled and lost on an ill-conceived 1983 merger with Santa Fe. The result was a stripping away of its corporate assets to its competitor, through the voting trust structure, such that SP was permanently crippled, to the detriment of its customers.

56. Competitive freight is by its very nature more service-sensitive and more price-sensitive than captive business, and thus its margins are generally lower. I would argue that the elevation and veneration of the operating ratio as the preeminent metric of railroad management competency may prove to be an epic strategic mistake. The resulting focus on only high-margin traffic has done more to stifle growth and erode market share than any Mid-Continent divide between East and West, and it is unsustainable.

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[37] *Oversight Hearing Pertaining to Union Pacific Railroad Company's Embargoes*, Ex Parte No. 772 (STB served Apr. 17, 2024) at 1, 4 (documenting UP's issuance of over one thousand congestion embargoes in 2022).

57. Will UP-NS be smart enough to avoid this trap? I think not. In 2022, {{ }}.

{{ }}[38]

58. {{ }}. I have two takeaways from this exchange. First, this is not growth-oriented thinking. Nowhere does loss of market share concern him. "We can handle it" used to be UP's corporate slogan . . . a long time ago. While logical for the operating head to want to limit his reputational risk to only what he can control, it is not a stretch-goal mindset when it comes to growth. Second, nowhere in {{ }}

[38] {{ }} (emphasis added) (Exhibit 20 hereto).

[redacted]}}

59. What if this way of thinking represents UP's current or future real attitude toward growth as opposed to the pro-growth verbiage in their Application? What if the U.S. rail network becomes a duopoly because of this merger and both surviving railroads think this way?

B. Fewer Class I Railroads Will Mean Less Innovation and Experimentation, with Adverse Long-Term Consequences

60. Innovation and competition are inextricably linked. True competitors are always looking for an edge over their rivals. For a mature industry, railroads have done a commendable job of leveraging innovation and technology to improve safety, productivity, and cost control. Digital tools accessible to customers have made significant advancements. Artificial Intelligence portends even more dramatic productivity and safety enhancements and cost savings. But these are largely operating innovations aimed at reducing costs.

61. Innovation that stimulates growth has lagged. Railroads often highlight their large capital budgets but gloss over the fact that all but a small portion is in reality ordinary maintenance expense and equipment replacement.[39] UP is a good example. In 2025, UP spent $3.791 billion on capital investments, but only 16% ($617 million) went to investment in capacity projects, commercial facilities or other growth initiatives.[40] UP also spent $3.236

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[39] *See* Thomas F. Erickson, "*Capital Investment*" (2023) (Exhibit 21 hereto). This paper was presented at the 2023 annual meeting of the Lexington Group in Transportation History at Hershey, PA (Sept. 27-30, 2023). Mr. Erickson is a railroad consultant and retired Conrail manager.

[40] Union Pacific Corp., Annual Report (Form 10-K) for the Year Ended Dec. 31, 2025 (Feb. 6, 2026), at 38.

billion on dividends and $2.679 billion on share repurchases, and neither category of expenditure supported growth.[41] UP's numbers are typical of the Class I industry.

62. Class I railroads used to have their own equipment design, research, and test departments. Now the development of locomotives and new rolling stock designs is left almost entirely to suppliers, with a few notable exceptions. More significantly, as railroads have consolidated, the motivation to innovate *commercially* has atrophied.

63. Commercial innovation requires taking risks. It means investing in services, infrastructure, equipment, and resources whose purpose is to grow one's business profitably but without the guaranty that it necessarily will. It involves employing strategic and entrepreneurial thinkers who can anticipate what customers of the future will require and how the railroad can best adapt. Innovation starts with leaders who are willing to break out of the pack and instill that ethos in their teams.

64. The industry has always had breakout leaders who transformed their companies or the industry. Rob Krebs, originally from SP, later bet the farm on intermodal by double-tracking the Santa Fe (later BNSF) "Transcon" over investor objections. Mike Haverty gambled KCS on the promise of Mexico by acquiring the first large Mexican rail concession at a price no one else had the vision to pay. The same Mike Haverty, at Santa Fe, forged one of the most successful customer-carrier partnerships in history between Santa Fe and J.B. Hunt. Hunter Harrison at IC and later CN revolutionized the industry by defining Precision Scheduled Railroading ("PSR").

65. Setting individual personalities aside, in the 1980s leaders at Southern Pacific developed the now-ubiquitous double-stack car, which revolutionized the efficiency of

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[41] *Id.* at 48.

intermodal service. Leaders at BN invented the reserved grain shuttle train concept, which revolutionized the efficiency and profitability of grain hauling industry-wide. The list is long.

66. These companies—Santa Fe, BN, SP, KCS, IC, and CN—provided the platforms for these leaders to rise and achieve prominence. My point is that the fewer the platforms, the fewer the pathways there are to be prominent and the smaller the gene pool of talented leaders capable of breaking out and changing the industry for the better.

67. Each railroad's corporate culture is unique, and each recruits, identifies, and incentivizes its talent in different ways. The fewer the companies, the lower the odds that innovators and entrepreneurs will be noticed. Imagine a totally risk-averse adverse duopoly. The important thing is that there needs to be a critical mass of competitors to spur innovation.

68. Railroads have always talked about being more truck-competitive, but in the end, they are usually content to be just a little bit better than their rail competition. If this merger anticipates the so-called "end game" of railroad consolidation into a grand duopoly of operating ratio-focused railroads, then I do not see either of them taking the risks.

69. NS's McClellan, reflecting on the twin concepts of PSR and the cult of the Operating Ratio (or "OR"), offered an explanation for where railroads are today, none of which would be fixed by a merger:

{{ }}.[42]

70. He added: {{ }}.[43] So on the one hand, we have Union Pacific's {{ }}, and, on the other hand, Norfolk Southern's {{ }}. No merger will overcome the drawbacks of the kind of {{ }}.

71. Consider, for example, the impact of autonomous trucking, which eliminates trucking's largest expense category: the driver. Even without autonomy, trucking is a low-margin business that is gaining market share; railroading is a high-margin business that is losing market share. Will UP-NS be willing to innovate in necessary ways and sacrifice margin to attract truckloads from an autonomous trucking industry that will be even more competitive than it is today? Or will it simply be so large that its current book of business will be good enough?

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[42] {{ }} (Exh. 15).

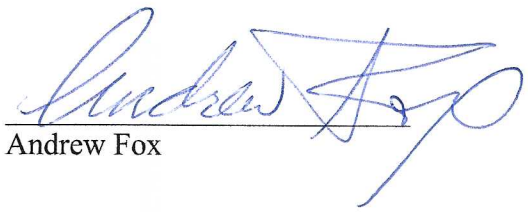
[43] *Id*. at {{ }} (emphasis added) (Exh. 15).

The risk the Board needs to consider is whether approving this merger would enable a world so consolidated that no one is motivated to take risks.

VERIFICATION

I, Andrew Fox, declare under penalty of perjury under the laws of the United States that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed on this 18th day of November, 2026.



Andrew Fox

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

EXHIBIT 1

BNSF, CSX, FREIGHT RAIL, INTERMODAL, LOGISTICS, NORFOLK SOUTHERN, RAILSTATE, TECHNOLOGY

How Bad is the Rail Bottleneck in Chicago?

MAY 4, 2026 DAN DEVOE

RailState network data shows that under existing cooperation agreements, half of CSX-bound containers already cross Chicago in less than 10 hours

The Union Pacific–Norfolk Southern merger application argues that cross-continent freight interchange in the United States is fundamentally broken, and that only end-to-end, single-line ownership can fix it. A transcontinental railroad would bypass the handoffs between western and eastern carriers altogether. Chicago is held up as the most visible symptom. Six Class I railroads transfer cars and containers there, and the filing calls the result a chronic bottleneck that slows every shipment passing through.

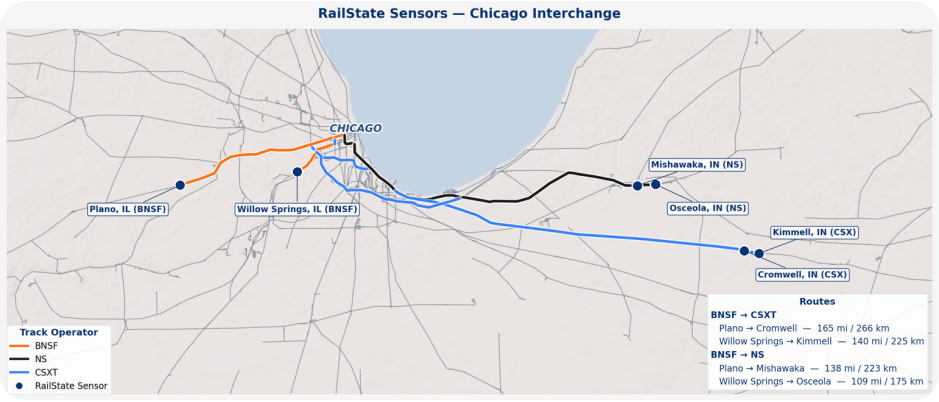
That claim can be tested against direct measurement. Between February 1 and April 15, 2026, RailState recorded the eastbound movement of 40,128 intermodal containers (71% routed onto NS, 29% onto CSX) and 2,809 grain cars (51% to CSX, 49% to NS) from BNSF lines west of Chicago to CSX and Norfolk Southern lines east of the city.

Does the data support what the merger filing describes?

How RailState measures the interchange

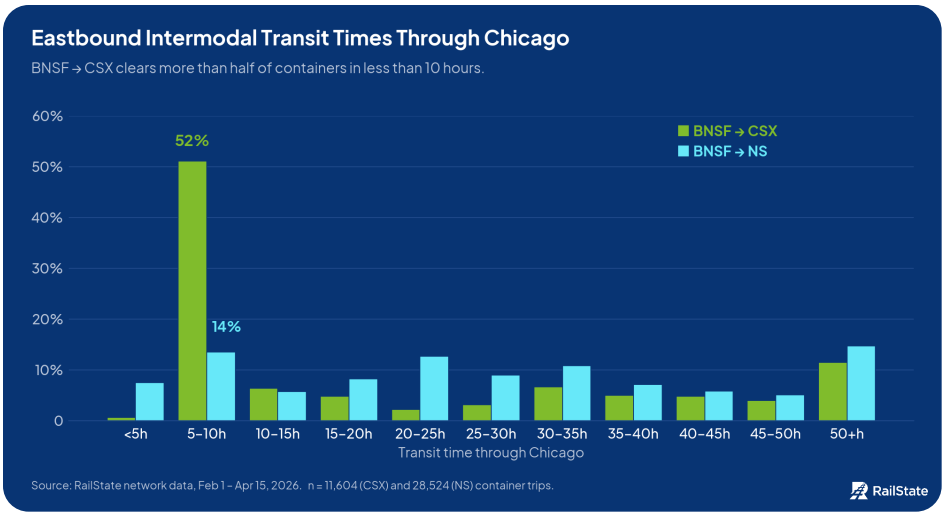
RailState operates a network of trackside sensors across

the U.S. rail system. For this analysis, sensors on BNSF lines west of Chicago, paired with sensors on CSX and NS lines east of Chicago, captured every eastbound train passing through. Matching the same car or container at the western and eastern detections gives us transit time across the interchange. This include both steel wheel interchange and containers crosstown drayed between Chicago-area terminals onto another railroad. Where the same locomotives appear at both detections, we can also see when power is carried through onto the receiving railroad.

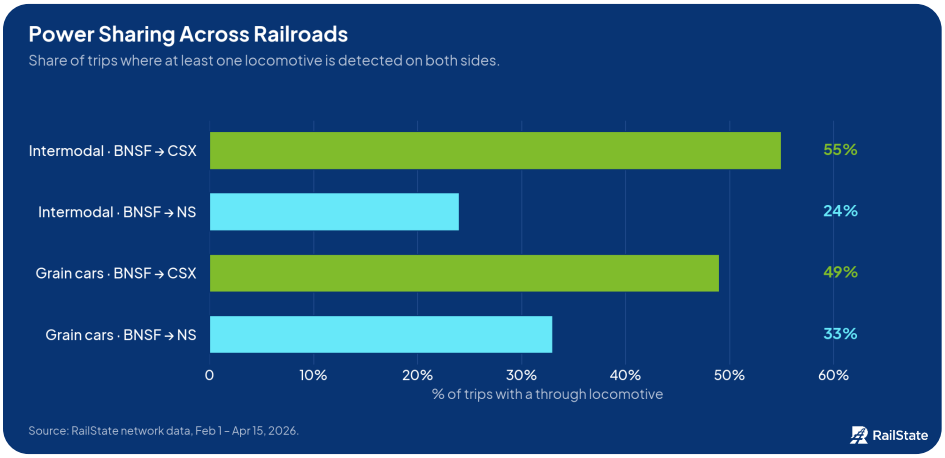


Half of CSX-bound intermodal traffic crosses Chicago in less than 10 hours

BNSF-to-CSX intermodal traffic moves through the interchange faster than BNSF-to-NS traffic, and far faster than the bottleneck framing suggests. Just over half (52%) of containers handed from BNSF to CSX clear the region in **less than 10 hours**. The average is 21.5 hours. CSX-bound grain unit trains are similarly quick. Nearly 38% complete the move in less than 10 hours. Only about a fifth of NS-bound containers and well under 1% of NS-bound grain cars finish the same trip as quickly.



The locomotive data adds context. Over half of BNSF-to-CSX intermodal trips and roughly half of BNSF-to-CSX grain unit trips show at least one locomotive detected at both the western (BNSF) and eastern (CSX) sensors. The same locomotive that pulled the train across the BNSF appears on CSX track east of Chicago, consistent with locomotives continuing onto the receiving railroad rather than being swapped at a yard.

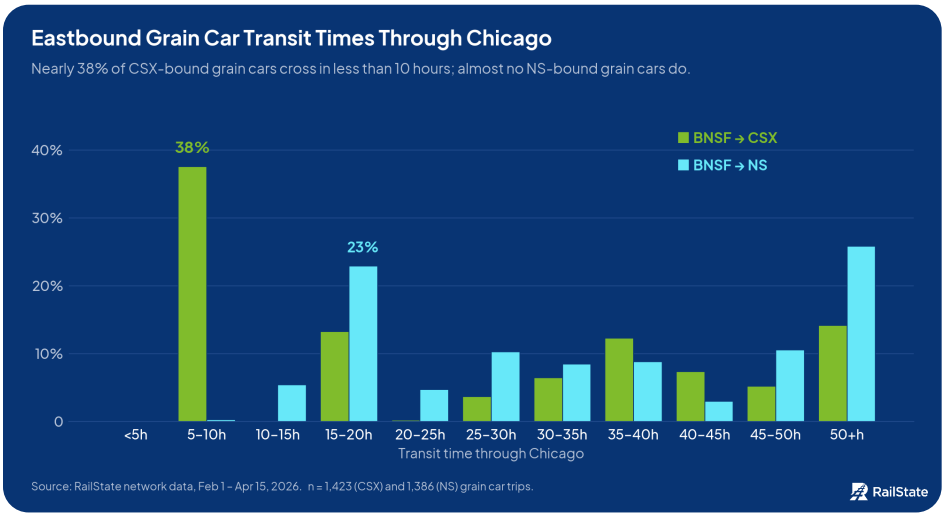


Slower and More Variable Connecting to NS

The BNSF- to-NS corridor is slower on average. Intermodal

grain car trips show a locomotive carrying through to NS.

Distance does not explain the travel time gap. The BNSF-to-CSX route between sensors is the longer of the two. The NS route is shorter, but it threads through the densest part of the Chicago network.



RailState

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A measurable claim

The merger application rests on a premise about operational performance. RailState's network data show that at the country's largest eastbound handoff, more than half of CSX-bound intermodal traffic and roughly half of CSX-bound grain unit trains already cross the city in less than 10 hours, whether by rail-to-rail interchange or by drayage between terminals onto the receiving carrier. For about half of the BNSF-to-CSX trips, the same locomotives are detected at both sensors, indicating power moving directly between carriers. Fast movements through Chicago are possible today, under the current infrastructure and the railroad agreements already in place. The NS route is meaningfully slower. Even there, a significant minority of trips are fast.

Chicago does have real congestion. The question regulators face is whether the gains attributed to a transcontinental, single-line railroad are large relative to what existing cooperation agreements already deliver where the network is used most heavily. The data needed to answer that is being recorded train by train, every day.

The remaining question is whether the merger application will be evaluated against it.

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– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

EXHIBIT 2

PUBLIC REDACTED VERSION

The flight...



...of the Falcon

Making the joint at Fremont



F. K. PLOUS JR.
photos / **BILL FAHRENWALD**

I WHAT do you do with a passenger railroad after the passenger trains are gone?

On the always-surprising Chicago & North Western, the answer is simple: Run freight trains, but run them as if they were passenger trains.

A granger road trying to diet off more than 3000 of its 12,000 Upper Midwest route-miles, the North Western ought to know something about running varnish: At the height of the post-World War II passenger boom, it fielded a dozen diesel-powered lightweights a day from its 16-track elevated trainshed at Canal and Madison streets in Chicago. Eight of them were members of the North Western's own "Amazing '400' Fleet" to Wisconsin, Upper Michigan, Minnesota, and South Dakota; the other four—*City of Los Angeles*, *City of Portland*, *City of San Francisco*, and *City of Denver*—were jointly owned by C&NW, Union Pacific, and Southern Pacific. Whether it was a yellow-and-green *400* to the North woods or a yellow-and-gray Streamliner to the West, these facts were sure: The ride would be fast and the running would be safe, for C&NW had equipped all three of its routes leading from Chicago with Automatic Block Signals and Automatic Train Stop. And one of those lines, North Western's 488-mile segment of the Overland Route from Chicago to Omaha, had double track all the way and Centralized Traffic Control for 75 miles from West Chicago to Nelson, Ill. As much as any railroad, even the New Haven from New York to Boston or the Pennsy from New York to Washington, the North Western was a passenger road.

That's all over now, of course. The last *400* tied up on Amtrak Eve in April 1971, and the last passenger train to regularly traverse the full length of C&NW's Chicago-Missouri River line ran in 1959. The last UP-SP Streamliner over the Illinois (then Galena) and Iowa divisions had made its run four years earlier, in 1955, when C&NW tired of playing host to the Western varnish and the trains were switched to the parallel Milwaukee Road for the Chicago-Omaha segment. Thus, in spirit at least, North Western's part of the Overland Route hasn't been a first-class railroad in almost 20 years. Clearly, the glory days of railroading on this historic pike are over.

Or are they?

Other railroads have seen the demise of passenger service as an opportunity to pull up the second track, rip out the ATC, and slash the maintenance budget, but C&NW—in recent years, at least—has had another idea: Use the passenger track to revive, and improve, that nearly extinct railroad classic, the hotshot merchandise train.

Enter the *Falcon*, the passenger-train-fan's freight train, the Streamliner reincarnated and transfigured for the 1970's. Reenter too, Union Pacific, with a smooth-as-silk run-through agreement. True, SD's and U-boats, not E's, are on the point, and the long cars behind the units carry vans, containers, and auto racks rather than contain bedrooms, roomettes, and drawing rooms. To save time, C&NW turns its trains over to the UP not at Council Bluffs or Omaha as in days of yore but at the cornfield junction called Fremont, Nebr., 60 miles to the northwest.

But the rest of the resemblance is still there, including a passenger-style 90 pounds of air in the train line rather than the 70 used in regular freight trains. There's a speed limit of 70 per—and even that is winked at occasionally. Finally (to convince you skeptics), on pages 28, 32, and 44 in North Western's employee timetable, the four *Falcons*—Nos. 241, 243, and 245 westbound and 242 eastbound—are labeled "First Class." Somebody at North Western is serious.

To find out just how serious, photographer Bill Fahrenwald and I rode 245 all the way from Chicago's Wood Street

PUBLIC REDACTED VERSION



"SMOKE SPEWS, units roar, flanges clang on steel, and—grades and reverse curves notwithstanding—the Falcon *surges again." Pace in Du Page County suburbs hits 60.*

Yard to the edge of UP turf at Fremont. What we found was a railroad in transition, somewhere between the exhaustion and near extinction it faced a decade ago and the glorious future that beckons today, just maddeningly out of reach. Half dream, half reality, the *Falcon* is a microcosm of just about everything that's right—and wrong—in American railroading in 1978.

"WE do some fantastic things at Wood Street, which is the most unconscious piggyback yard you ever saw," says North Western intermodal director Jim Ronayne. "Most piggyback yards have a long track that stretches from sunrise to sunset. Wood Street is stub tracks, but it works. It's a recycled yard too, but it works."

Located 3½ miles southwest of the Loop, Wood Street is a typical old-time inner-city yard that formerly handled reefers of potatoes and onions on short tracks separated by wide concrete aprons from which the produce was sold. North Western, too short on cash to build a "real" piggyback yard on vacant land outside of town, simply converted the obsolete facility into an unorthodox but highly accessible TOFC yard. True, the switch engines have to work a little harder to pull the 14 tracks and make up the *Falcons* on "The Hill" that carries the main line along the north edge of the yard. But the concrete aprons have turned out to be an ideal site for truckers to spot their trailers next to the flat cars, and the stub tracks make it simple for yardmasters to preblock trains for their six UP or SP destinations—Los Angeles, the Bay Area, Portland, Seattle, Salt Lake City, and Denver. A proud C&NW management now marks the yard's entrance on Western Avenue with a billboard reading, "Falcon's Nest," and equally proud switchmen, enginemen, clerks, and carknockers keep it humming.

Just *how* proud becomes obvious when Fahrenwald spots one of the carmen violating the safety rule against running on railroad property. Bill asks the man where he is hurrying and why; the employee, without breaking stride, points to our waiting *Falcon* and puffs, "That's my train." Moments later, Trainmaster Jim Wilkerson explains the reason for the carknocker's haste: As soon as a *Falcon* is made up on the hill, all its air hoses are bound together with heavy duct tape. This means extra work, but it virtually guarantees that a hose will not strike a high switch rail or grade-crossing timber and fly apart, causing an emergency stop.

Trouble is, all that extra work takes time, and by the time head brakeman Rick Doyle backs the four-unit lashup (two C&NW SD40-2's, two UP U30C's) onto the 50-car consist, engineer Wayne Hoppenrath is beside himself with impatience. By the time conductor Don McCracken finally calls for a standing air test, it is hard to tell whether the sudden rush of air into the cab is a brake application or just "Hoppy's" sigh of relief.

"Is that waycar (what North Western, among other roads, calls the caboose) wigglin' yet?" Hoppy barks over the radio as he advances the throttle.

"Yeah. Make it 2:37."

"What's the total on the tonnage?"

"Ain't got the bills yet."

For the first 2½ miles and approximately 15 minutes of its life, a westbound *Falcon* has no formal existence save that conferred upon it by the dispatcher. Its life as a timetabled first-class train begins only after it has run "extra" over the Rockwell Subdivision, a four-track industrial stub connecting Wood Street with the Illinois Division main line that runs almost due west from the North Western Station passenger terminal downtown. TOFC trains are allowed only 20 mph on the Rockwell, and the limit must be observed until the train has completed a 90-degree turn to the left and passed completely over Kedzie Interlocking, a *Falcon*'s formal point of admission to the Geneva Subdivision, the timetable, the Overland Route and, if you will, glory.

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PUBLIC REDACTED VERSION

"Two-forty-five, highball," comes McCracken's voice as the waycar bounces through the turnout.

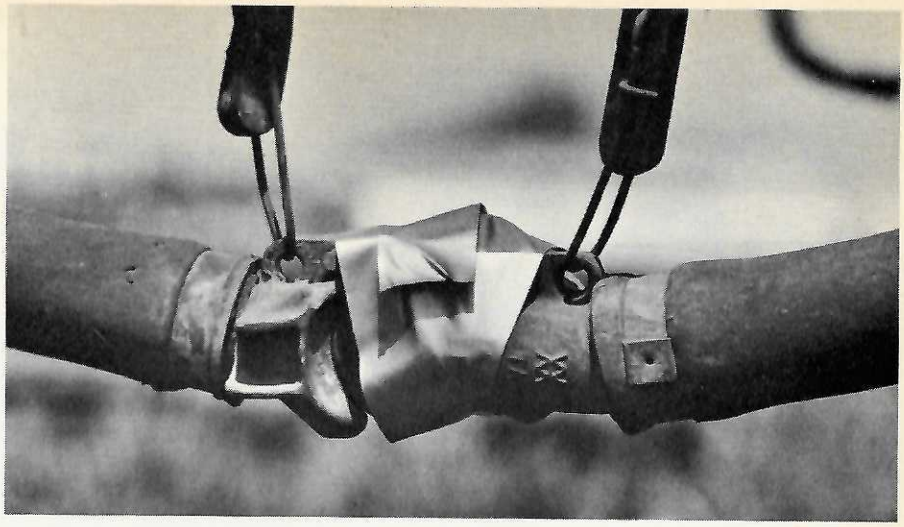
Hoppy's response is instantaneous. Black smoke, in the immemorial fashion of Alco and GE products, erupts from the U-boats, and the main generators of the big SD's scream as if in pain.

But there is no more resistance from the 50 flat cars tied to our tail than 14 or 15 Streamliner cars might have offered three decades earlier. The *Falcon* positively surges forward. In minutes it is racing westward. But it is doing more than racing—it is posing, for the Geneva Subdivision of the Illinois Division may well be the handsomest arena in the whole North Western system in which to watch—or ride—a train. Here, on a totally grade-separated right of way nearly a city block wide, under stark black gantries that until recently have carried perhaps the largest collection of functioning semaphore signals remaining in North America, is a superb main line, still fit for the long-departed Streamliners but admirably kept up for push-pull commuter trains and high-speed merchandise jobs like the *Falcons*. The track is straight, the roadbed full of ballast, the rail even and surfaced.

Staring into nothing but high greens (known on the North Western as "ninety on top," as we will explain), Hoppy gleefully begins doing the job the railroad pays him for. A mile and three-quarters west of Kedzie the *Falcon* dips under the Belt Railway of Chicago bridge doing 42 mph. It crosses Laramie Avenue, three-quarters of a mile west and uphill all the way, doing 49, and the speed continues to build. At how many places in North America does a freight train move at 50 mph within the corporate limits of a big city?

Technically, the *Falcon* is outside of Chicago and racing through the contiguous suburb of Oak Park when, 2 miles west of Laramie Avenue, it slams across the Oak Park Avenue viaduct at an even 60, an event that occasions some modest drama on the rapid-transit platform of the Chicago Transit Authority, which shares space on the North Western's elevated right of way. As the rocking trailers bear down on the hapless citizenry at a mile a minute under their tarry plume of GE smoke, agitation breaks out on the "L" platform. Some people scatter. Others grab a stanchion and stand fast. Small children hug mommy's knee. A brave few simply stand and wave. What a visual aid. Were I a grammar-school teacher under orders to teach my moppets about railroading, I would simply march them up onto the "L" platform, face them east into the *Falcon*'s headlight, and watch the fun.

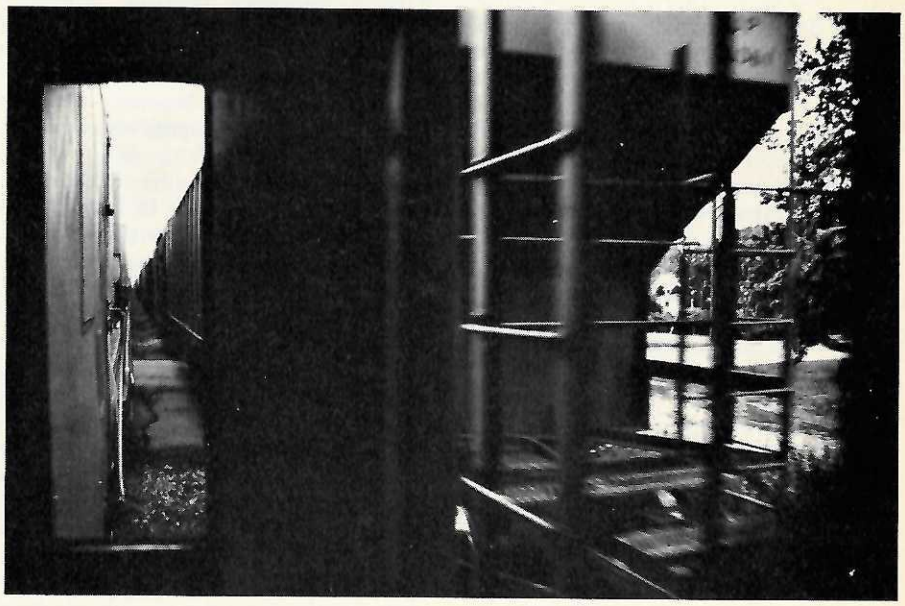
It would be nice to keep doing a



HEAVY TAPE on air-hose connections on Falcons *means extra work at yard but protects against hose striking a high frog or crossing and stopping train.*



WHO ELSE but C&NW puts commuter trains in hole for TOFC but keeps both on time? This "scoot" is moving, but 245 overtook a waiting bilevel at Vale.



COMMON SIGHT from 245's waycar's bay window: a passing freight. Between Chicago and Ames, Ia., 245 met 11 eastbounds and overtook 2 westbounds.

PUBLIC REDACTED VERSION

steady 60 on the welded rail that showed up in Oak Park, but Hoppy makes a light application required for passage through the interlocking at Vale between River Forest and Maywood.

"It's 50 miles an hour from this signal to First Avenue," he says as the *Falcon* leans gracefully into an easy, tree-lined curve to the right where the interlocking reduces three tracks to two. As the interlocking comes into view so does an interesting sight—waiting in the clear on the inside track is a westbound commuter train ("scoot" in North Western parlance), its flagman down on the ballast behind the drawbar in observance of Rule 99. Who else but North Western puts suburban trains in the hole to let merchandise trains go by—and keeps both on time?

NO MORE OBSTACLES now as the *Falcon* charges steadily through the near western suburbs at grade level doing a steady 60, sweeping around the congestion of Proviso Yard to its south. Hoppy slows his train to an obligatory 30 for HM Interlocking, where westbound freights out of Proviso enter the main line and the tracks again grow from two to three. He keeps his train at 30 while negotiating a shoo-fly around the site of an underpass being constructed in downtown Elmhurst.

Then, with the steady, uphill grades of DuPage County waiting ahead, Hoppy widens his throttle in earnest. Smoke spews, units roar, flanges clang on steel, and—grades and reverse curves notwithstanding—the *Falcon* surges again. The clock on the DuPage County courthouse in downtown Wheaton reads 3:28 as 245 clatters through town, uphill and accelerating.

"First time I ran this job I didn't get to light a cigarette from the time we left Kedzie to Milepost 37," Hoppy says. "Man, I was a nervous wreck."

More confident now, Hoppy can smoke and run his train at the same time, with leisure left over to observe some of the amenities of civilized railroading. When he comes upon 259, stopped on the center track because the Glen Ellyn police have reported a hotbox, Hoppy waves at waycar and units and exchanges a bit of comforting banter over the radio. Passing the yard office at West Chicago, he blows "shave-and-a-haircut—two-bits" on the air horn and takes time to point out the new unloading facility for Toyotas coming in from the West Coast. The auto yard is more than a terminal for a growing business on the C&NW—it's a visible warrant of UP's confidence in North Western's abilities, as is the *Falcon* itself.

Just east of the West Chicago depot, at NI Interlocking, North Western's longest stretch of CTC begins. For the first 2.6 miles the pike is triple track. Then, at the west end of West Chicago yard, it narrows to two reverse-signaled tracks and stays that way for another 73 miles and eight more interlockings (crossovers as well as junctions)—an average of one set of crossovers every 7 miles. At Nelson, Ill., where the line to St. Louis diverges, the CTC ends and the pike reverts to simple double track protected by Automatic Block Signals and intermittent Automatic Train Stop, the same system C&NW used for more than four decades to guard and space its Coast-bound passenger expresses.

AT NI, the dispatcher puts us on Track 1, the left-hand main as you head west, but his choice has nothing to do with North Western's traditional left-hand operation. The selection of our route is practical, not sentimental, for Track 1 has been relaid according to the standard which North Western aspires to establish system-wide—with 136-pound continuous welded rail. Track 2 still is made of conventional 39-foot sections of bolted rail weighing 112 pounds per yard. And though *Falcons* are nominally allowed 60 mph on the older main, the figure can be achieved only intermittently, for slow orders sometimes cut the 60 mph in half or worse.

Taking maximum advantage of the plant and the rules, Hoppy builds up the speed as we slide down the hill out of West Chicago and into the Fox River valley, 3 miles away. But when we cross the bridge and head up the hill out of Geneva, the speed never slackens. At Meredith, 12½ miles west of Geneva, an eastbound extra slams past. Right behind him comes 254. We're only 48 miles from Chicago and we already have met three other trains. Chatter on the radio indicates more in the vicinity. The dispatcher will figure out how to thread the *Falcon* through them; all Hoppenrath can do is keep his train rolling, and he does.

"There ya go." Hoppy grins and points to the speedometer, which shows an unmistakable 70 mph. The problem now, Hoppy says, is not achieving 70 but maintaining it without exceeding it. "I get to 73 and I get a brake. I get a high-speed horn."

The horn never sounds. Neither does the Automatic Train Stop. The cab-signal lights show nothing but green as Hoppy makes a service application to observe the 30 mph speed limit over the grade crossings in downtown DeKalb.

Right downtown we meet a third eastbound, evidence of the continuing and increasingly heavy usage C&NW's hunk of the Overland Route gets these days—an indication, too, of the need for money, more money, any kind of money, to pour into rail and ballast and ties and alignment and surfacing. For even as the units surge back up to their steady 70 per, it takes only a glance out the right side of the cab to understand how frail and delicate this train's current *modus operandi* is: On the No. 2 track, the rigors of North Western's growing traffic have taken their toll. The light, jointed rail creeps out of both vertical and horizontal alignment under the relentless punishment of traffic that grows heavier (like the C&NW's burgeoning coal, chemical, and grain movements) or faster (like the *Falcons*). The No. 2 track is particularly vulnerable at the joints, where heavy cars batter the ties through the ballast and down into the substrate. Telltale spots of gray and brown—congealed mud puddles reaching and occasionally overwhelming the tops of the ties—show where the problems have outrun the roadmasters' budgets. Put our train onto that track and—timetable notwithstanding, super power and short consist notwithstanding, special instructions notwithstanding—the *Falcon* would become just an ordinary slob of a train, nominally limited to 60 mph but in reality a far slower operation when the ever-changing list of slow orders is considered.

THAT is Hoppy's nightmare, and as we crest the hill at Malta it turns real: There ahead is a yellow-over-red signal, warning of either a full stop indication or a crossover at HX Interlocking, 3½ miles away.

"Forty-five?"* Hoppy moans in disbelief. "Whaddaya guys doin' to me?" Cold air rushes into the cab as Hoppy sets up his train brakes, then works the independent valve to keep the consist stretched. We drift by the signal, No. 651, at 30 mph; it is infuriatingly yellow on top and red on the bottom. At the foot of the hill its big brother, the home signal guarding HX, leers with a red-over-green-over-red—"ninety in the middle" in Northwesternese. Hoppy, a sickly, Mickey-Mouse grin on his face, shrugs an apology.

"Gotta make a right turn here, boss," he says, working the independent carefully as 245 tiptoes through the crossovers at the specified 40.

"There's Milepost 69, right there. This is a 30-mile-an-hour railroad now." By the time we crawl up the hill to Creston, highest point on the line in Illinois, Hoppy is more than apologetic—he is downright glum. "I can't show ya how to go down the hill now," he pouts.

The reason for the delay remains a mystery until Rochelle, 7 miles down

*North Western signal slang, even more idiosyncratic than "waycars," "scoots," and left-hand running, derives from the carrier's still-abundant collection of semaphores. The green "clear" indication, representing a vertical semaphore at 90 degrees from the horizontal, is known as "ninety;" the yellow "approach" indication, per corollary, is called "forty-five." Curiously, though, the "stop" indication is not "zero," as one would expect, but "red eye."

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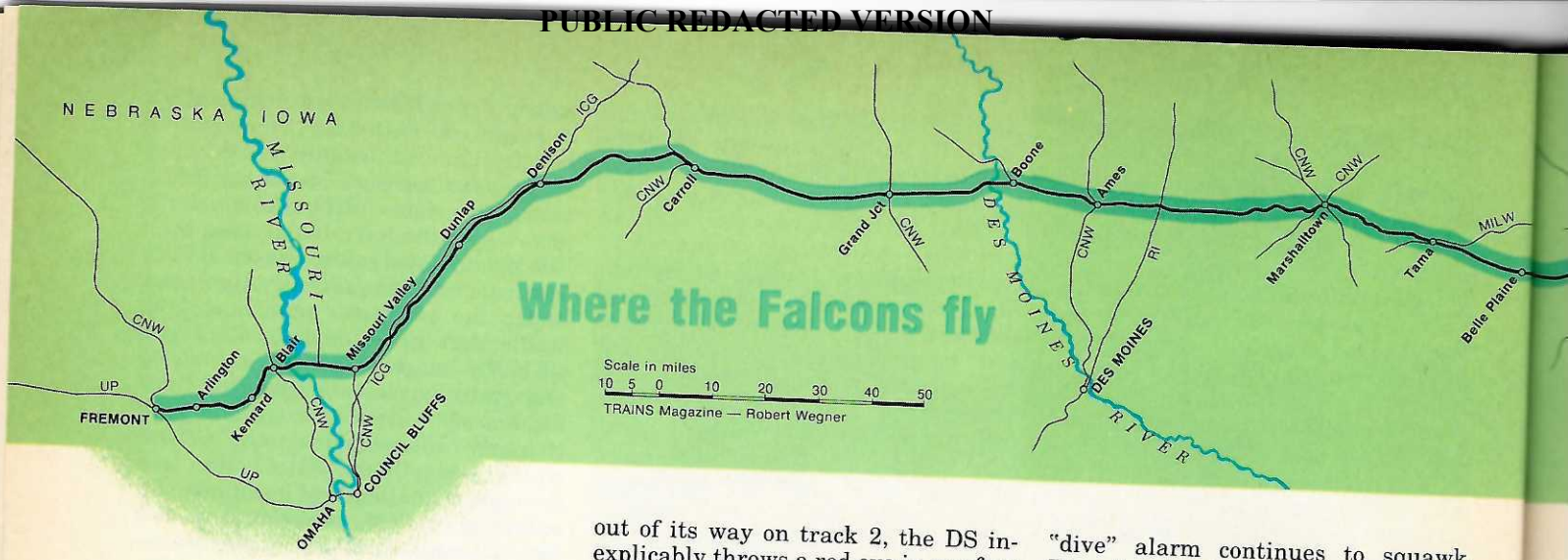
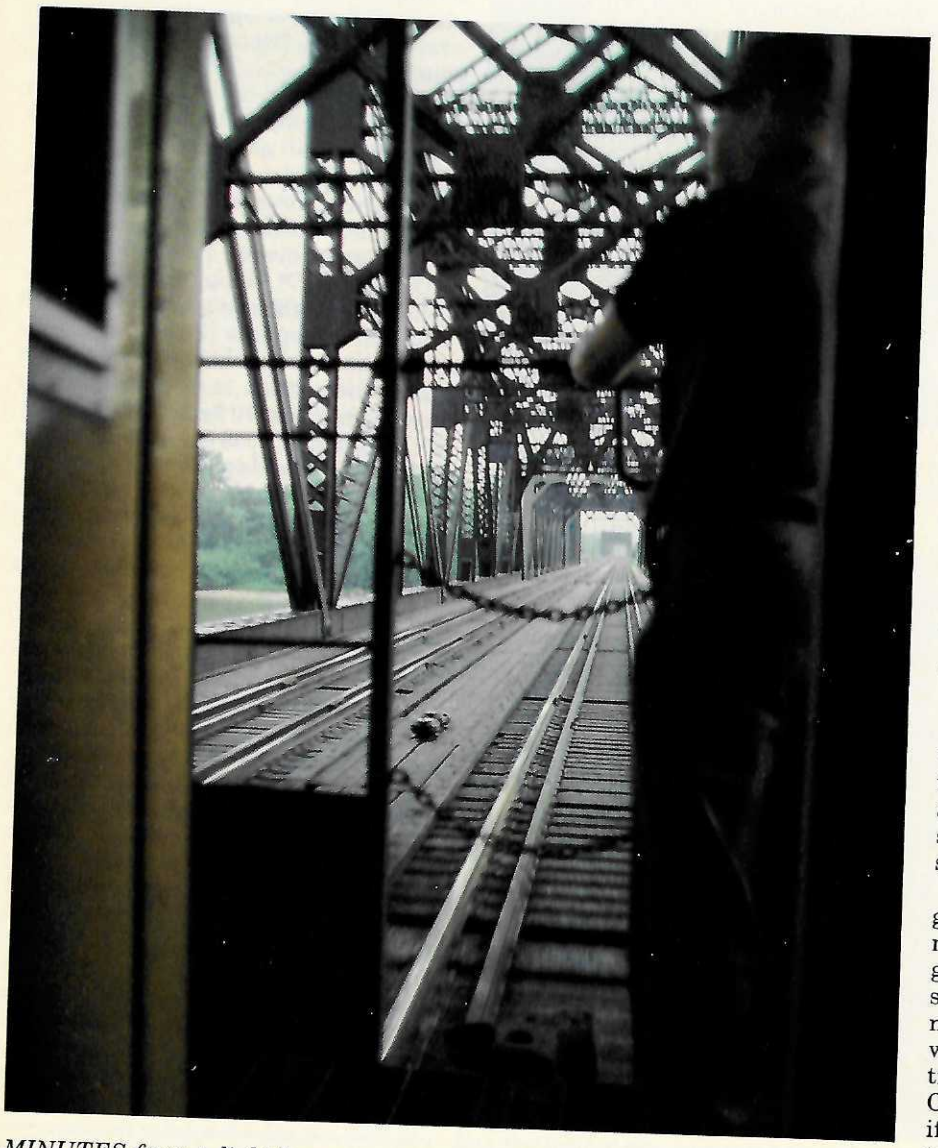


the line. There we find an eastbound unit coal train occupying what should be the *Falcon*'s spot on Track 1 ("They like to keep the coal on the good rail," Hoppy explains). And though we are out of its way on track 2, the DS inexplicably throws a red eye in our face at the home signal guarding the interlocking in Rochelle where Burlington Northern's Chicago-Twin Cities line crosses the North Western. Like a submarine alarm screaming "Dive! Dive!" the ATC control begins honking. Hoppy hits the lever to his right to indicate he has his train under control, but the red signal stays red and the "dive" alarm continues to squawk. Then the signal on the gantry mysteriously clears, and the cab signal reacts with a crisp and cheerful "Dinggg!" We are moving at less than a grown man's walk. Hoppy kicks off the brakes, and we quickly pick up the pace to 30 mph as Hoppy leads his train down 7.2 miles of track to AE Interlocking, where the long-awaited "forty-five in the middle" heralds a move back onto Track 1.

As soon as the deed is done, Hoppy opens her up again, for his chances to run at top speed are vanishing fast. Only 15 miles separate AE from Dixon, where a reverse curve and a .70 per cent downgrade into the Rock River valley dictate a 45-mph limit on all trains in both directions. From Dixon, it's only another 5.1 miles to NQ Interlocking at Nelson, where the speed limit drops to 35.

The exhilaration of 70 mph running ends for good 5 miles west, at Sterling, 109 miles from Canal and Madison. Here the North Western's welded rail ends, and with it ends most of the maintenance. Alignment problems show up as the big SD's rock and lurch, and ballasting problems make themselves felt—literally—every time three-axle trucks slam ties against bare earth. For the first time since Kedzie, weeds grow between the rails on Track 1.

"West of Sterling," Hoppy remarks, "40 miles an hour is as fast as you go."



MINUTES from a light "passenger-train stop" and quick crew change at Clinton yard office, Falcon *245 bridges the Mississippi River, leaving Illinois.*

BUT if the track is poorer than that we've just left, it is a damned sight better than what I remember from the summer of 1969, when I put in a brief spell as a brakeman on this same division.

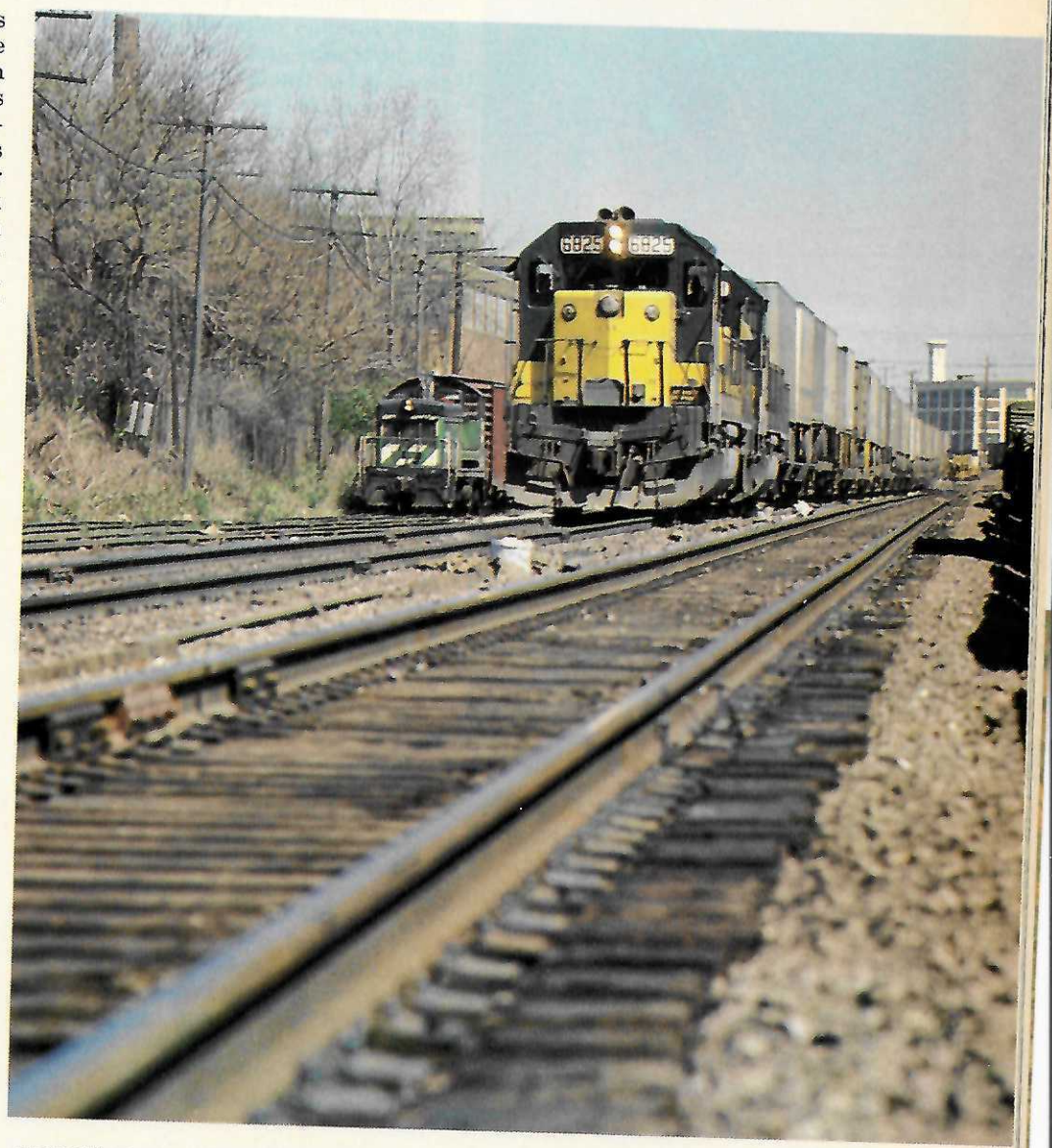
It was not what the vintners call "a good year." The North Western, its merchandise traffic trickling, then gushing, away to neighboring Interstate 80, simply did not have the revenue to plow money into track then, and with four other railroads as well as the trucks competing for traffic in the Chicago-Omaha corridor, nobody knew if there'd be enough traffic in the future to support the onetime double-track speedway. Crews were openly hostile to management; they had read the trade



magazines and deduced the division's probable fate—slimming to single track with long sidings and a reduction in speed limits as longer, slower, less frequent trains tried to carry the remaining dead freight as cheaply as possible. This had happened on other railroads, and it was turning into a nationwide trend. There was no reason to think the same thing couldn't happen on the North Western. Said a conductor as we shared the cupola of a UP caboose one day: "It was a good job once, but railroading's just gone to hell."

North Western Chairman Ben Heineman and the stockholders apparently agreed, for in 1970 they sold the road to 10,000 veteran employees for 3.6 million dollars. As architect of the historic move, North Western's late President Larry S. Provo had taken a gamble: Under the rules that accompanied its approval of employee ownership, the Interstate Commerce Commission ordered that the North Western could pay no dividends in its first 5 years of operation. All proceeds had to be invested in the railroad. Far from resenting the ICC's novel *quid pro quo*, Provo welcomed it. Free at last from the nagging of the stockholders, he could concentrate on building a railroad, and even if he couldn't turn it into a moneymaker in 5 years—something no reasonable observer expected—he could at least buy the time he needed to lay the foundations of a greater railroad to come later.

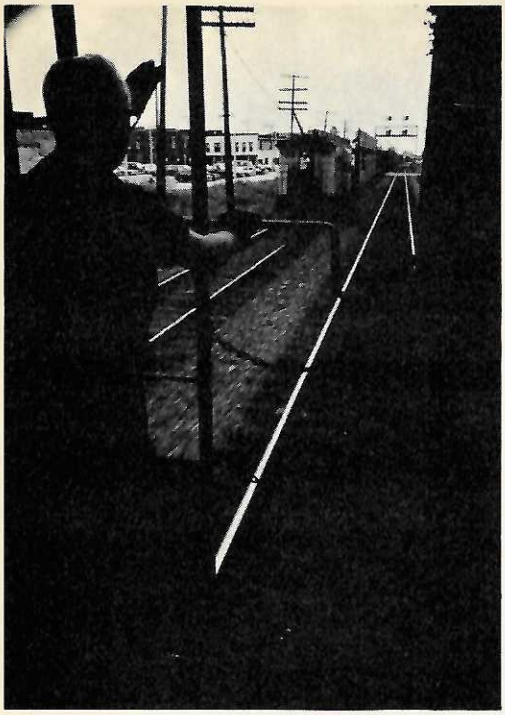
There was a great deal to do. With at least 3000 miles of redundant plant, North Western had to carry out an ambitious (and politically dicey) program of line abandonment in its spiderweb of granger rails across Iowa, South Dakota, Minnesota, and Wisconsin. It had to win regulatory approval to lengthen the interval between its rural stations from the 8 miles established in horse-and-buggy days to a more contemporary 15. Then, using the savings, plus whatever Federal money it could attract, the real job of railroad-building would get under way, using the pinkish, iron-rich ballast from the railroad's Pink Lady Quarry at Rock Springs, Wis., near Baraboo, and



RUNNING on right-hand main, a Falcon *steps through Sterling, Ill., on May 2, 1978, on the busy Illinois Division. East of Nelson, it is busier.*

quarter-mile strands of welded rail weighing 136 pounds per yard, 4 pounds heavier than the standard rail used by North Western's exemplar, Union Pacific.

STERLING is as far as the money has taken the program on the Illinois Division. We lurch and roll—not violently, but boatlike—the rest of the way to Clinton, Iowa. There is plenty of ballast, and horizontal alignment seems acceptable, but the weight, density, and speed of North Western's traffic is turning the tracks into a roller coaster that clearly justifies the roadmaster's top speed of 60 and the garnish of slow orders served with it. Boring steadily but slowly along the Rock River until its southward bend, our *Falcon* climbs



REAR BRAKEMAN Jim Macorkel gives the "all clear" to a passing eastbound.



RADIO in hand, conductor Don McCracken watches from his desk.

the hill at Galt and sinks toward the Mississippi.

"I want to make a passenger-train stop at Clinton, but I doubt if I can," Hoppy says. "I don't get out and run it often enough. You have to know how to brake the train—a mile ahead of anything else. You handle it like a scoot."

The 30 mph speed limit over the low, black-painted Mississippi River drawbridge at Clinton prevents hogger exuberance anyway. Hoppy snakes his *Falcon* deftly over the bridge, past the ruined passenger station (20 trains a day in 1953!), then alongside North Western's Clinton Car Shops to a point directly across from the office at West Yard. It is indeed a passenger-train stop, accurate and light as a feather, and it doesn't last much longer, either.

Engineer Harold Isenhour wastes no time in getting his train onto the Iowa Division and the 196.4 miles separating Clinton from Boone—longest of the three crew territories a *Falcon* traverses. Unfortunately, I am not fated to share much of his expertise; the presence of a third crew member, an engineer trainee, forces me into the cab of the second unit, 6826, where I spend the next 4 hours under a sort of mobile house arrest. With speedometer, radio, and all gauges disconnected, the unit can tell me nothing of our progress or Isenhour's role in it.

But no instruments are needed to demonstrate that the *Falcon* must fight to get out of Clinton. For the first 20 miles, 245 struggles against lightweight, jointed rail; ballast thinned by heavy summer rains and even heavier freight traffic; and a steady ascending grade out of the Mississippi valley. At .71 per cent, the grade presents no real problem for a lightweight train with 12,000 horses on the point, but on this August evening the *Falcon* has another problem—a real, honest-to-goodness Iowa electrical storm. Violent, dazzling, occasionally frightening, it hurls sheets of solid water against the sides of the locomotive, making an insane, arrhythmic drumming on the sheet metal that occasionally overcomes even the growl of the laboring diesels.

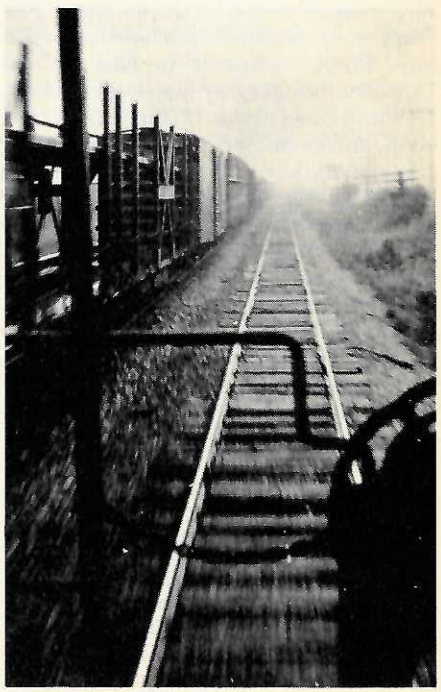
The rail, of course, is thoroughly soaked, but with a panel of dead gauges before me I have no idea whether Isenhour is getting an indication of his wheel-slip light. If slipping is occurring, though, it apparently has not exceeded the response of the sander valve, for I feel no shuddering, and our speed remains steady at what the seat of my pants tells me is about 55 mph. Visibility is terrible, sometimes nonexistent, which is why North Western has installed cab signals and Automatic Train Stop. In moments when the rain lets up, the trackside scene is one of touching loveliness—rolling swales covered clear to the horizon with eight-foot-deep ramparts of American corn. The smells of grass and prairie flowers occasionally break through the diesel-oil vapors and electrical smells aboard the unit, and the vagrant flashes of lightning illuminate the distant barns and farmhouses as if Grant Wood himself were at the easel. Streamliner passengers missed it all, though, for UP scheduled its Coast trains through Iowa in the dark to give the patrons better looks at Weber Canyon and Donner Pass in daylight. The passengers paid a certain price for that indulgence—they missed the frowzier but very satisfying charms of rural Iowa.

Isenhour doesn't pay much attention to the landscape, for he has his hands full—literally. While his right hand works throttle and brake, his left hand methodically and repeatedly peels through a stack of slow orders sufficient to gag a hippopotamus. I know how full his hands are, because I can see them as he raises the slow orders to read them better in the glow of his cab light, winking on and off now with greater and greater frequency. It all leaves me with a wicked thought: Perhaps, in spite of industry protests to the contrary, diesel locomotives do require a second crew member—not to run the unit but simply to read these huge books of slow orders to overwhelmed engineers.

Isenhour is not overwhelmed, but he has a dilemma to contend with, and in his professional, old-hogger way he strikes a compromise: He knows some stretches of his track actually are capable of handling trains at the 70 mph top speed listed in the timetable, but he knows also that those stretches are too short to permit much sustained running at high speed. Short dashes at 70, followed by sudden applications of air for a 30 mph slow order, do not raise the overall speed much, but they do waste fuel and brakeshoes and increase the chance that slack action will break the train or damage the lading.

So Isenhour settles in somewhere between 55 and 60, spares the train a good deal of wear and tear, and keeps virtually the same schedule. It is good railroading under less-than-ideal circumstances—a phrase that could serve as a quick description of most of North Western's performance today—for the overriding reality of the company throughout most of its territory is that the people are doing a great job but the plant still needs work.

Near Belle Plaine, Milepost 115, the *Falcon* bursts gloriously out of the rain just as the units roll left, then right,



RAINSTORM in Iowa, "as if Grant Wood himself were at the easel."

PUBLIC REDACTED VERSION

through a very un-Iowalike little canyon. Emerging onto the open prairie for which the little town is named, the 100 trailers behind us have only a moment to catch the glow of the setting sun and flash it back, from one aluminum side after another, in an almost vulgar display of pink, lavender, and neon-magenta. To me, this is what American railroading is supposed to look like in the 70's.

The *Falcon* has settled into routine. Hour after hour, without incident, the units charge across the corn and bean fields, the way ahead marked by nothing but vertical semaphores (or searchlight signals) showing an undeviating "ninety." As night falls on the prairie, it becomes clear why North Western management has scheduled this part of the railroad to receive the next major allocations of welded rail, ties, and ballast—slow orders continue to keep the cab lights flickering, while a steady parade of eastbounds slam past on the No. 2 track. By the time we reach Ames, only 17 miles short of Boone, the next crew-change point, we have met 11 of them (in addition, we have overtaken two westbounds, one on the triple track at Glen Ellyn, Ill., and a second hiding in a siding outside of Cedar Rapids). Clearly, the Iowa and Illinois divisions make up one hot piece of railroad, and with petroleum shortages and heavy coal demand staring the American economy in the face, C&NW management's eagerness to rebuild its pike for heavier and faster traffic is understandable.

THE PAUSE at Boone is even shorter than the one at Clinton—perhaps 2 minutes overall—but a major event occurs: The engine crew reverts to two men, and I regain my seat in lead unit 6802. The switch couldn't come at a better time, for engineer Bernard Harrison turns out to be another old-timer whose experience dates back to Streamliner days. He runs the *Falcon* as smoothly as if it were the *City of San Francisco,* and he runs it almost as fast. Brakeman Collie Matson is also a veteran, and he has plenty to say about both the old days and the new on the North Western. Even before we clear the Boone city limits, Matson is unloading his lore.

"You ever see our bridge over the Des Moines River?" he asks. "It's supposed to be something like 186 feet over the water—highest double-track bridge in the United States."

My knowledge of Iowa topography is inexact, but I tell Matson I doubt the state boasts a river valley that deep.

"You watch," he says as we leave Boone, "It's comin' right up. See that semaphore down there? That tells us if there's a train comin' on the other track. It's a double-track bridge, but only one train's allowed on it at a time. If that semaphore's red, we got to stop and let the eastbound go first. Speed limit on the bridge is 35 miles an hour."

As we cross the stone trestle, I cannot tell how high we are, but after leaning out the cab window and observing some tiny, tiny ripples at what seem a dangerous distance below, I admit to Matson that the Des Moines River valley is a truly enormous gash in the landscape. Later, back in Chicago, the railroad's engineering department confirms that the railhead on the bridge stands 186 feet above the mean water level.

But Professor Matson is not through lecturing. He knows he has a devoted fan trapped in the cab, and he isn't about to pass up the opportunity to do a little propagandizing for his railroad.

"See those spots in the roadbed? Mud. Comes up through the ballast and slops over the ties. They've been workin' on it, though. They just can't do it all at once. They've done the eastbound first because that's where they run the loaded coal trains."

If Matson's monolog sounds like a mixture of skepticism and enthusiasm, it's only typical of North Western employees as their railroad fitfully turns the corner from past to future and from starvation to relative prosperity. Employe ownership undoubtedly has something to do with it, but North Western's public relations director, Jim Macdonald, says the most important factor in building morale is something much simpler—speed.

"Railroad people want to move," he says. "When they see management committed to a first-class operation, they love it." For the first time in almost two decades, Macdonald adds, the railroad is not only asking its crews to move trains fast but furnishing them the means to do it.

How fast do *Falcons* actually run? The timetable authorizes 70 mph on appropriate track, but one North Western hogger who has handled the train many times tells me off the record: "Unofficially we've been told to do whatever we have to do to get it over the road on time. I've had it up to 80 on the welded rail."

Midnight finds our *Falcon* almost alone on the Iowa prairie. Opposing trains come less frequently now, and radio chatter grows sparse. Near the west end of the division, there is a 38-mile stretch of CTC-controlled single track between West Denison and Missouri Valley, and the pressure to move 245 to the UP intensifies. Even with CTC for lining the switches and arranging the meets, single track is a challenge when other trains are around. And, according to the radio, they are. Their duty, the dispatcher indicates, is clear: Get out of the way of the *Falcon.*

"A lot of these youngsters—they don't know what it was like when we ran passenger trains," says Matson. "They don't know what it means to ascertain whether all first-class trains have arrived or left. They just get out and go.

"But since August first, nineteen seventy-seven," he grins, "we're a first-class train, so I guess they'll learn. You cannot hold up this train. Many times I've come into Fremont, and Chicago was on the phone wanting the engineer to explain the reason for a delay."

North Western crews grumble when they hit the single track at West Denison. Even though it's under CTC control and laid with 136-pound continuous welded rail, the stretch is regarded by division veterans as something of a fall from grace since Streamliner days. Management apparently feels the same stigma over the sacrifice of the second track.

"To tell you the truth, we wish we hadn't ripped it up," Macdonald confirms. "It wasn't any foresight on our part that we stopped, either. It's just that by 1968 we began to see the future of the unit coal train, and we began to see the future of working with the UP. Dammit, I wish we had the track back, and Jim Zito (vice president-operations) says he hopes to get it back."

Yet on this night it is the single track that pleases Matson, if only because the protocol of single track once again forces North Western employes to become sensitive to the distinction between first-class and second-class trains.

"Now that we're coming to the single



"INDISPUTABLY UP territory": Falcon *creeps up for inspection.*

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track, you listen to the radio," Matson lectures. "The dispatcher'll be clearing 'em out of the way."

Sure enough, 258's extra is laying in the clear for us at Dunlap, headlight extinguished in deference to 245's occupation of the main line. We sail past at a mere cruise, for slow orders are in effect almost all the way to Missouri Valley. At Missouri Valley itself, another sort of slow order is in effect: Because no switch engine works the junction on weekends, Matson has to line the switch taking us off the line to Omaha and onto the 37 miles of mostly unsignaled single track leading across the Missouri River to Fremont. The delay amounts to perhaps 12 minutes.

"From Blair to Fremont it's dark railroad," Matson explains. "No block signals. It's run entirely by timetable and train order, and your speed limit is 49 miles an hour by Federal law."

In spite of the stone-age railroading in effect on the westerly 24 C&NW miles, both the North Western and the UP prefer to make the joint at Fremont rather than at their passenger-era interface at Council Bluffs. Shorter in overall mileage, the Fremont connection gives North Western a slightly larger division of revenue while keeping the *Falcon*'s time-sensitive vans off the congested four-railroad bridge between Council Bluffs and Omaha. But the old track to Fremont isn't exactly congestion-free either.

"This is 355's extra," Matson points out, indicating a darkened waycar in the passing track at Kennard, Nebr. "See, now, how he turned his markers? A lot of the younger kids don't understand that."

But even the reappearance of first-class trains on the division, with all the attendant pomp and circumstance occasioned by the Book of Rules, can't top the almost theatrical ritual awaiting 245 in Fremont. Neither UP nor North Western, Matson explains, accepts a train from the other without first giving it a thorough visual inspection as it rolls at 5 mph. At night, this is done under high-intensity floodlights, whose glow on the horizon we first see while rolling through the little town of Arlington, 7.8 miles east of Fremont.

"We go on the bell at Arlington," Matson explains. "Those UP carknockers know we're comin'! They can see our headlight. They'll be out there waitin' for us."

TEN minutes later, as Harrison brings the train smoothly down to a 5 mph creep, they are there. The burly men in Armour-yellow hardhats; the matching yellow pickup parked beside the shanty; and the whole quickening atmosphere of the occasion mark the scene indisputably as Union Pacific territory. So does the tall aluminum flagpole bearing a floodlit Stars-and Stripes in front of UP's Fremont depot downtown. From a half mile away it is unmistakable.

But the best—and least expected—part of the run-through ceremony is yet to come. Indeed, it is carried off in such a low-key fashion that I almost miss it. As Harrison inches his growling units down the main line toward the depot (there's no real yard at Fremont, only a couple of passing tracks and then a turnout onto the UP main), something large and yellow looms in our path directly ahead. It doesn't seem possible, but the *Falcon* is moving steadily down the track into the rear end of a Union Pacific locomotive.

"That'll be 245's point power west of Fremont," Matson explains. "The UP likes to have their own unit on the point because they've got their own type of cab signal that the C&NW units can't pick up. When they come through Fremont eastbound they take their units off and leave ours exposed."

Other railroads have run-through agreements, and other railroads add engines at specified points, but do any do it as UP does at Fremont, with the extra unit waiting right on the main line? Usually, a fresh unit will wait on an adjacent track until the train stops, then pull forward through the crossovers and back down on its train. But that takes three or four minutes—too long, apparently, for a *Falcon*. Talk about "passenger-train stops"—at Fremont, they use SD's for bumping posts!

"Now you watch these UP fellas make the joint," Matson says as Harrison brings the lead engine to a stop no more than 50 feet behind the waiting diesel. Before Harrison can stand up and remove the reverser from the throttle stand, the UP crew has their SD in motion toward the *Falcon*. Harrison leaves the cab, drops to the ground, and is joined by Matson. As my feet hit the asphalt just in front of the UP brakie, I hear the pin drop, and as I walk away to a waiting auto obligingly sent by UP Trainmaster Gary Walling, the crew is mating the hoses and jumpers. When the car pulls away moments later, the UP train crew is conducting its standing air test. We leave before the *Falcon* does, but not by much.

Lest anyone think that a fluke, note this: The next morning, we return to the scene and see the same procedure three more times—twice westbound and once eastbound—and the list of celebrity trains handled includes Falcon No. 243, "the number-one train," as Walling calls it, carrying "Oaklands, Sacramentos, Portlands, Salt Lakes, Denvers, Seattles and, at times, Ogdens." What happens to 243 that drizzly Sunday in the Nebraska cornfields is all the proof anyone should need that the North Western and the Union Pacific have put the Overland Route back in business.

My old South Bend indicates 11:59 a.m. when 243 stops. Walling says noon. No matter. What happens is amazing even if you leave in the extra minute.

"This guy arrived at the lights at 11:48," Walling says. "He halted at the depot at noon. He cleared the depot at 12:14."

As 243's lurching waycar clears the crossover, an admiring North Western conductor who had just observed the operation smiles and remarks, "You drive alongside him west of town and you can legally follow him for only about half a mile."

That's making the joint at Fremont. And that's railroading. I



"AT Fremont, Union Pacific uses SD's for bumping posts." Lead SD40-2 of C&NW is ready to make the joint—right on the Overland Route main line.

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

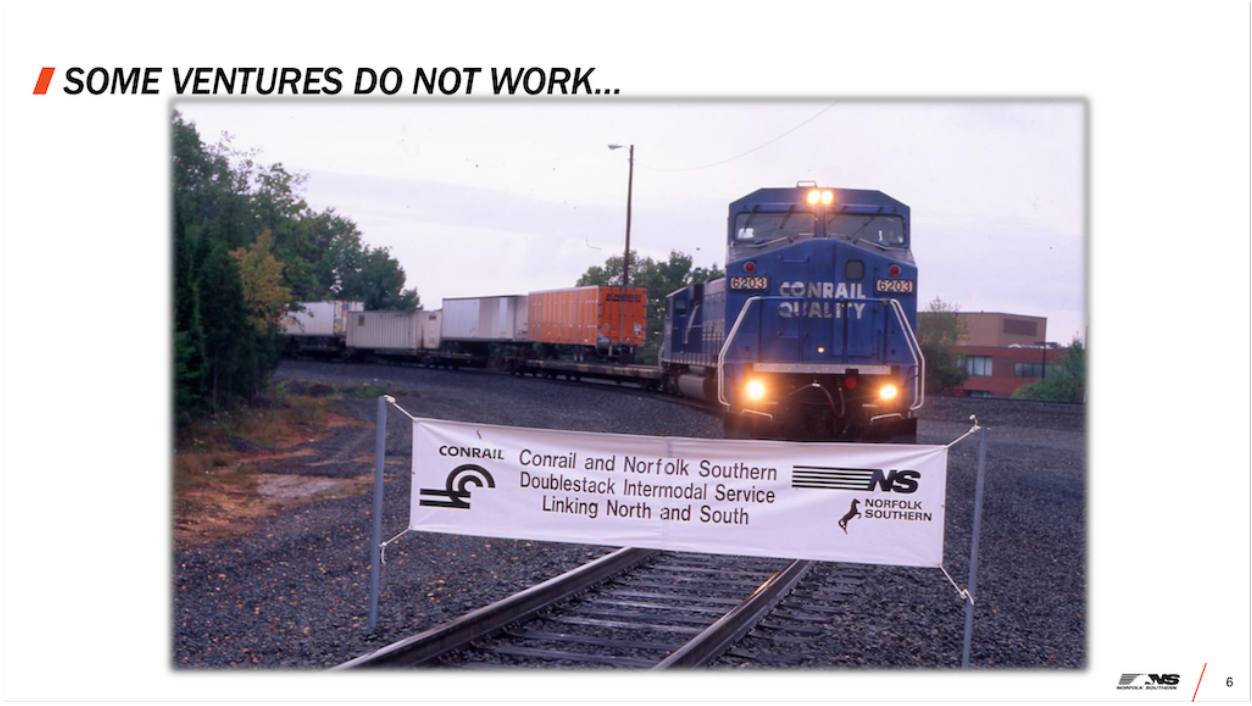
EXHIBIT 3

https://www.trains.com/pro/freight/class-i/railroads-debate-merits-of-mergers-and-alliances/

Railroads debate merits of mergers and alliances

By Bill Stephens | November 24, 2025

UP and NS argue only a unified railroad can deliver reliable growth, while BNSF, CN, and CPKC tout a surge of new interline partnerships



The first train that was part of Conrail-Norfolk Southern interline intermodal service linking New Jersey and Atlanta got off to an inauspicious start in 1995. NS

NEW YORK — BNSF Railway, Canadian National, and Canadian Pacific Kansas City are touting interline partnerships as a way to gain new volume without having the regulatory and service-meltdown risks associated with a merger.

But Union Pacific and Norfolk Southern say alliances are built on a foundation of sand, and can shift with the whims of each railroad in a partnership. “They just don’t hold up like one company that manages everything,” UP CEO Jim Vena told the RailTrends conference on Friday. “And they end. It’s as simple as that.”

Controlling service from end to end is one of the main selling points for UP’s proposed $85 billion acquisition of NS, the railroads have said.

https://www.trains.com/pro/freight/class-i/railroads-debate-merits-of-mergers-and-alliances/


Norfolk Southern's Mike McClellan. NS

Michael R. McClellan, Norfolk Southern's chief strategy officer, drove that point home at the conference by going over the history of interline partnerships that have endured — or fallen apart — since the 1990s.

Since his days at Conrail, McClellan has been involved in 19 interline partnerships, from the creation of the EMP container pool in 1994 to the joint UP-NS intermodal service announced in September that links Louisville, Ky., with points on UP.

Eleven of those alliances are still in place today, including three joint ventures that are essentially permanent partnerships. "They're all kind of operating," McClellan says. "Some of them are doing great, some of them are kind of wobbly."

Under the right circumstances, alliances can and do work, he says. But they are fragile: "These things can be temporary. And they change a lot," he says.

The classic example of a partnership that floundered right out of the gate was the 1995 deal between NS and Conrail for joint double-stack intermodal service linking Atlanta and Northern New Jersey via their interchange at Hagerstown, Md.

McClellan showed a photo of the inaugural run, with two Conrail locomotives on the point of a single-stack intermodal train heading for the traditional first train banner that was stretched across the tracks in Manassas, Va. The banner proclaimed "Conrail and Norfolk Southern Doublestack Intermodal Service Linking North and South."

Look what's missing, McClellan says: "Our inaugural double-stack train had no double stacks on it."

https://www.trains.com/pro/freight/class-i/railroads-debate-merits-of-mergers-and-alliances/

What the photo didn't show, he says, was that the first train was three hours late. Rather than break through the banner, as intended, the train ran over it. Scrawled on the side of one of the locomotives: "Jesus Saves and Clinton Sucks." Those things may be true, one executive quipped, but you don't need to put that on your locomotive.

The final indignity? The anchor customers on the service were J.B. Hunt and APL — but none of their containers were on the train. Instead, the train was hauling boxes from rivals Schneider and EMP.

"That was an inauspicious start," McClellan says.

None of the executives gathered trackside had smiles on their faces. "The Conrail people were embarrassed. The NS people were unimpressed. And the shippers were pissed," McClellan says.

McClellan's father, longtime NS strategic planner Jim McClellan, said it was apparent that if Conrail didn't care enough to get the inaugural run right they wouldn't have a commitment to the service over the long run.

He was right. The interline service never worked. Given the choice of how to best use containers and well cars, Conrail would make the rational decision to prioritize the 900-mile run to Chicago instead of the 250-mile run to Hagerstown for its portion of the New Jersey-Atlanta service. "It was a terrible move for them," McClellan says.

It's a similar dynamic today in the watershed area, the swath of territory within a few hundred miles of the Mississippi River, the de facto dividing line between the Eastern and Western railroads. UP and NS say that by merging and eliminating interchange friction and short hauls for one or both railroads, they can pick up significant growth from the watershed.

What made a difference in the Atlanta-New Jersey lane was the Conrail split between CSX and NS.

"This never took off until we took over Conrail. We got this lane right, and now this is really one of the foundational intermodal lanes in our network," McClellan says. "It would have never happened had we not acquired that part of Conrail."

https://www.trains.com/pro/freight/class-i/railroads-debate-merits-of-mergers-and-alliances/

Each railroad in an interline agreement always works to protect its own interests, McClellan says, and are reluctant to invest when there's no guarantee of an adequate return.

After the Conrail transaction, NS went on to make significant investments in intermodal corridors and terminals across its expanded network, which after a decade had led to 2.2 million additional container and trailer loads per year, McClellan says.



Norfolk Southern made major investments in intermodal terminals and corridors after its acquisition of 58% of Conrail. NS

The UP-NS merger should unleash similar investments and growth and be a turning point for the rail industry, McClellan says. "The UP and the NS are going to spend a lot of money doing what we need to do, which is grow this business," he says.

Earlier in the conference, BNSF Chief Marketing Officer Tom Williams touted the BNSF-CSX haulage rights deal that gives BNSF direct access to the Fairburn terminal outside Atlanta via the railroads' interchange in Birmingham, Ala. The deal was signed in 2006.

https://www.trains.com/pro/freight/class-i/railroads-debate-merits-of-mergers-and-alliances/

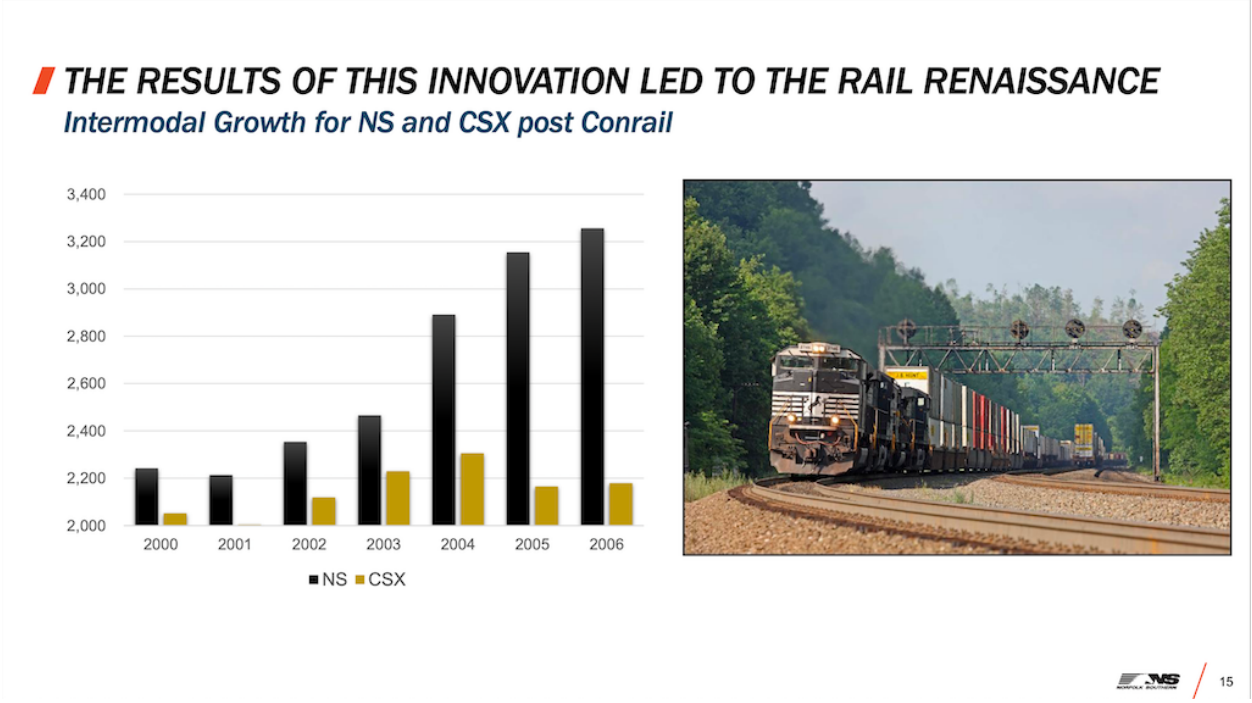
BNSF and CSX built on that agreement in August, when they launched new interline service linking the Southwest and Southeast. This month they expanded the partnership by connecting Los Angeles with points on CSX in the Midwest and Northeast.

Several longtime rail executives say they have never seen so many new partnerships crop up as have been announced in the last couple of years. They include the CN-UP-Ferromex Falcon Premium service, CPKC and CSX service linking Mexico and Texas with the Southeast, and CN and CSX joint international intermodal service from Prince Rupert, British Columbia, to Nashville, Tenn., via their interchange in Memphis.

Surface Transportation Board merger review rules require merging railroads to show that projected merger benefits cannot be achieved in other ways, such as alliances.

RailTrends is sponsored by independent analyst Anthony B. Hatch and trade publication Progressive Railroading.

— To report news or errors, contact trainsnewswire@firecrown.com.



Norfolk Southern's intermodal growth surged after the Conrail acquisition. NS

https://www.trains.com/pro/freight/class-i/railroads-debate-merits-of-mergers-and-alliances/

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

EXHIBIT 4

Exhibit 4

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FINANCE DOCKET NO. 36873

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– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

EXHIBIT 5

Exhibit 5

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VERIFIED STATEMENT OF ANDREW FOX

EXHIBIT 6

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– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

EXHIBIT 7

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– CONTROL –
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VERIFIED STATEMENT OF ANDREW FOX

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241872

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BEFORE THE
SURFACE TRANSPORTATION BOARD

Docket No. EP 711 (Sub-No. 1)

RECIPROCAL SWITCHING

OPENING COMMENTS AND EVIDENCE OF UNION PACIFIC RAILROAD COMPANY

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October 26, 2016

Contains color images

Transportation ("CSXT"), The Kansas City Southern Railway ("KCS"), and Norfolk Southern Railway ("NS") all are likewise products of rail consolidation during that period.

A basic premise of each of the ICC and Board consolidation decisions, including every decision that created today's Union Pacific, was that single-line or single-system service[11] was superior to less efficient service provided by separate carriers using interchanges. Expanding single-line service was a primary public benefit, extolled by the agency, of every transaction. The ICC and the Board emphasized that single-line service eliminates delays at interchanges, expands commercial opportunities for shippers, makes it easier for shippers to interact with carriers, and ensures more reliable service that competes more effectively with other modes of transportation.

Although many may not personally recall the inefficiencies and frustrations of dealing with a Balkanized rail network with multiple interchanges, shippers in the 1980s and 1990s turned out in droves to support single-line service. The ICC cited their support repeatedly as evidence of the public benefits of eliminating interchanges. The ICC's Rail Services Planning Office, in its *Rail Merger Study, Final Report*, found that "shippers chose single over multiple railroad service more than 90 percent of the time."[12]

In two of the earlier consolidation decisions during the 1980-1999 period, the ICC explained in detail why single-line service is superior to interchange service. In *CSX Corp.*–

---

[11] Some transactions led to a consolidation of railroads into a single system but with the participants retaining their separate legal identities. Those systems later consolidated and today provide single-line service.

[12] Rail Services Planning Office, Interstate Commerce Comm'n, *Rail Merger Study, Final Report* 31 (1978).

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

EXHIBIT 9

242439

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January 13, 2017
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BEFORE THE
SURFACE TRANSPORTATION BOARD

Docket No. EP 711 (Sub-No. 1)

RECIPROCAL SWITCHING

REPLY COMMENTS AND EVIDENCE OF UNION PACIFIC RAILROAD COMPANY

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January 13, 2017

The Shipper Coalition also argues that the Board's proposal would be consistent with the policy in § 10101(12) to "avoid undue concentrations of market power."[25] However, as discussed in our opening comments, the rail industry's current structure reflects a series of ICC and Board decisions that restructured the U.S. rail network and delivered (and continues to deliver) enormous benefits to the shipping public, including stronger rail-to-rail competition and stronger competition between railroads and other modes.[26] As part of those decisions, the ICC and Board ensured there would be no "undue concentration of market power." They carefully reviewed each merger and, where necessary, imposed conditions to ensure that no shipper would lose the benefit of rail-to rail competition. *See Major Rail Consolidation Procedures*, 4 S.T.B. 570, 573 n.12 (2000); *Central Power & Light*, 1 S.T.B. at 1071 n.18.

Union Pacific has invested tens of billions of dollars to rationalize and upgrade our network in reliance on the decisions approving the mergers that created today's Union Pacific.[27] The Board cannot now repudiate those decisions by adopting rules that would effectively impose additional, costly, retroactive conditions on past mergers. *See, e.g.*, *Landgraf v. USI Film Prods.*, 511 U.S. 244, 280 (1994) (noting that an agency rule is impermissibly retroactive if it "impose[s] new duties with respect to transactions already completed"); *Arkema Inc. v. EPA*, 618 F.3d 1, 9 (D.C. Cir. 2010) (agency "cannot, without Congress' express authorization, use its new statutory interpretation to undo these completed transactions").[28]

---

[25] *Id*.

[26] *See* Union Pacific Comments at 7-14.

[27] *See* Union Pacific Comments at 14-18; *id*., Haley VS at 2-3.

[28] The Board has long recognized that "absent some failure of a condition that we imposed or some specific reservation of jurisdiction through oversight or otherwise, it would generally not be appropriate for use to impose new conditions on our approval of a transaction that has already been consummated." *Major Rail Consolidation Procedures*, 5 S.T.B. 539, 583 (2001); *accord* (continued…)

BEFORE THE
SURFACE TRANSPORTATION BOARD

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– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

EXHIBIT 10

Exhibit 10

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EXHIBIT 11

Exhibit 11

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NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

EXHIBIT 12

OliverWyman

RAILTRENDS 2024

THE NEXT HORIZON

Adriene Bailey
Partner, North American Rail Practice Lead

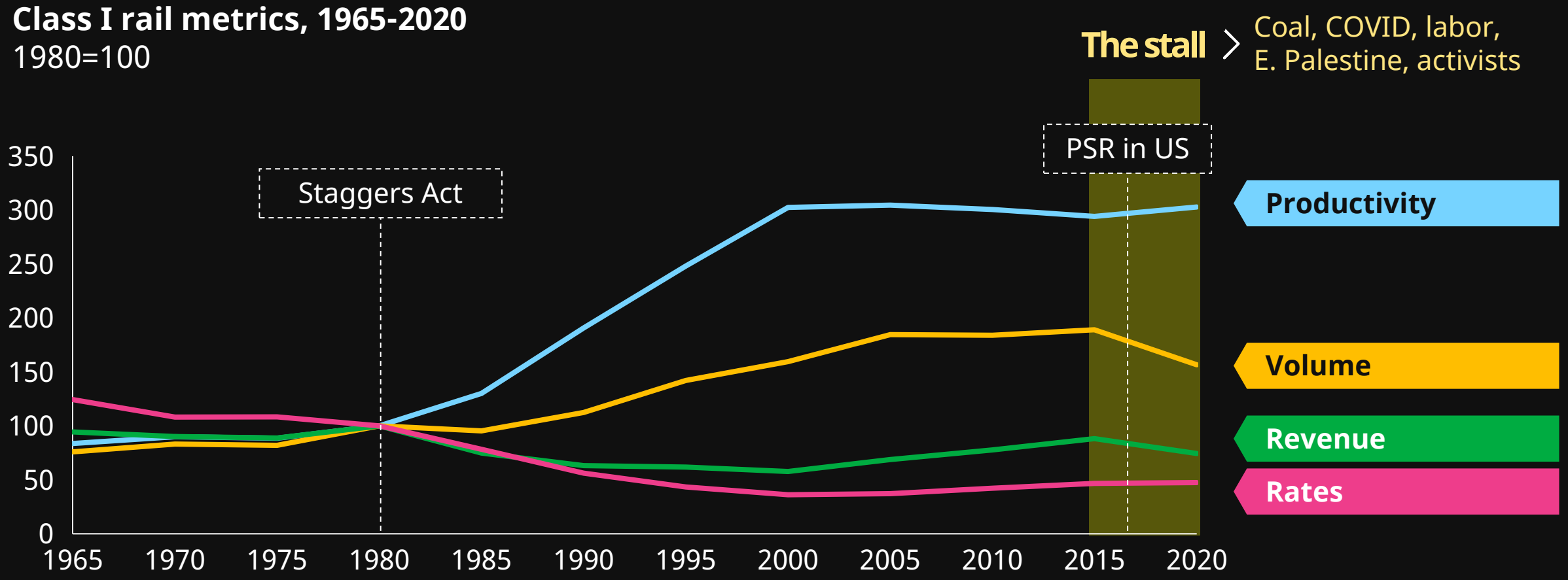
November 14, 2024

A business of Marsh McLennan

PUBLIC REDACTED VERSION

RAIL'S RENAISSANCE HAS ENDED, AND WE HAVE BEEN STUCK IN PURGATORY

Class I rail metrics, 1965-2020
1980=100

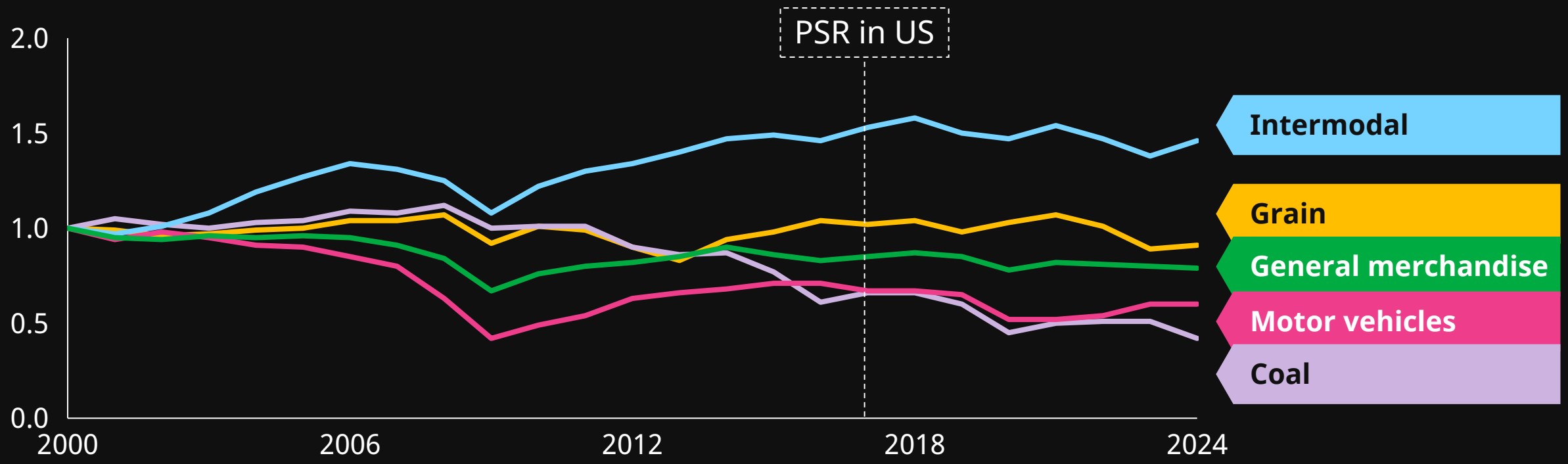


Note: Rates = inflation-adjusted revenue per ton-mile, volume = ton-miles, productivity = revenue ton-miles per constant dollar operating expense, revenue = operating revenue in 2022 dollars
Source: Association of American Railroads

PUBLIC REDACTED VERSION

IT'S NOT JUST ABOUT COAL DECLINE – RAIL IS LOSING MARKET SHARE ACROSS ALL COMMODITY GROUPS

Average annual weekly Class I rail traffic
2000-2024 (2000 = 1.0)



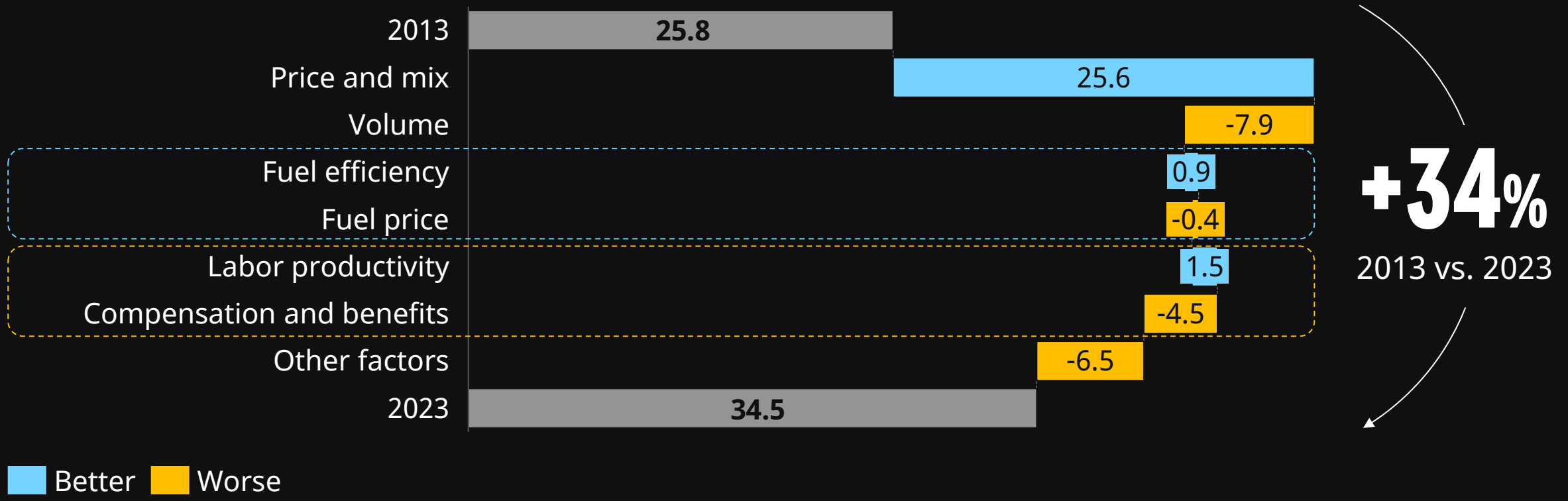
Note: Weekly traffic in carloads, except containers/units for intermodal. General merchandise is all traffic not included in intermodal, coal, grain, or motor vehicles
Source: Association of American Railroads, US Weekly Railroad Traffic, 12/31/99-8/2/2024

PUBLIC REDACTED VERSION

THE PSR ERA DELIVERED IMPROVEMENTS IN RAIL RETURNS

With the lion's share of benefits coming from pricing and mix shifts

North American railroad industry EBIT: estimated impact of key factors
2013 vs. 2023, $ billions



+34%
2013 vs. 2023

Note: No adjustment for extraordinary items
Source: BNSF, CN, CP, CPKC CSX, KCS, NS, UP financial reports, Surface Transportation Board, Oliver Wyman analysis

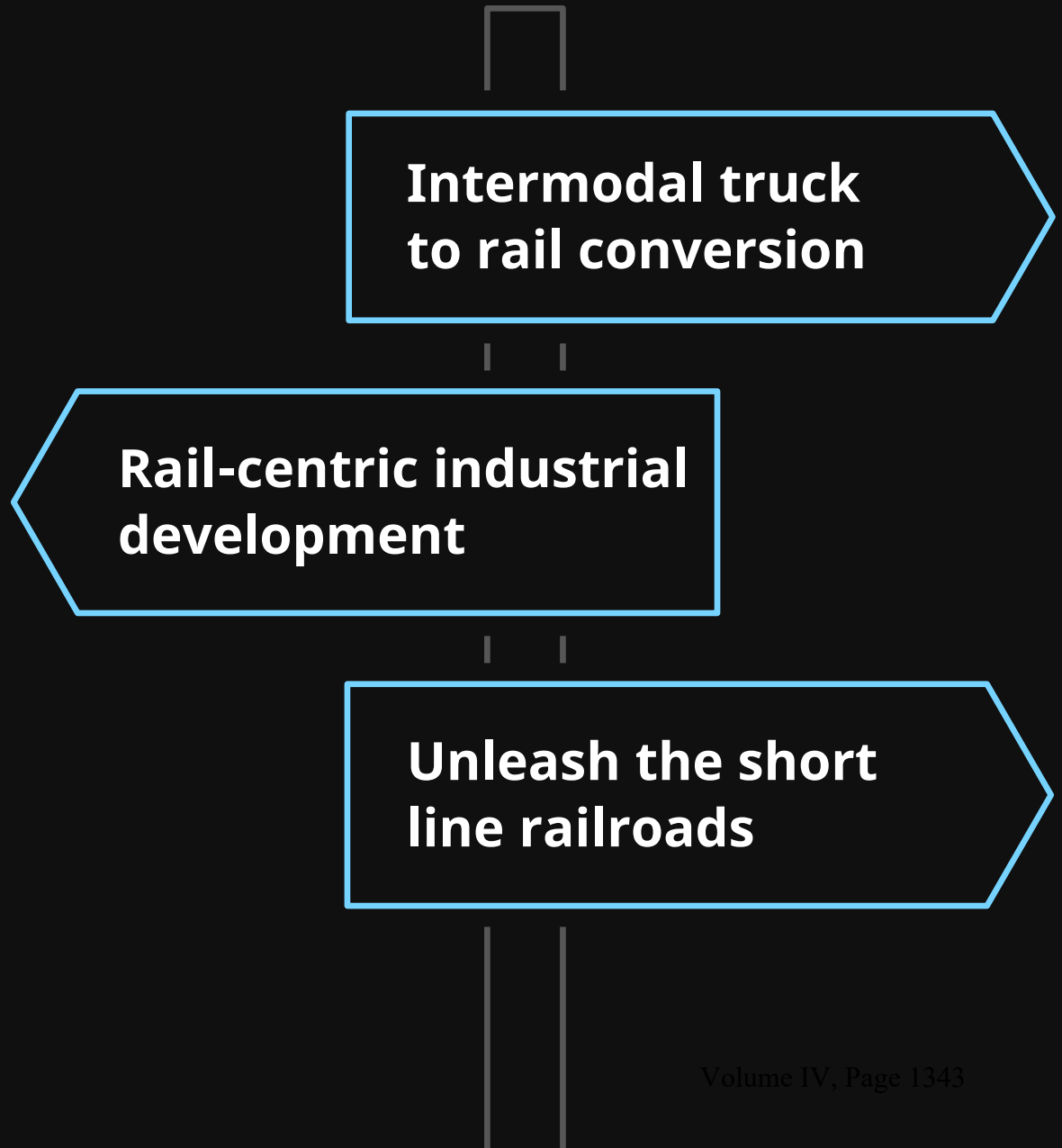
ON ALL DIMENSIONS, HOLDING SHARE OR GAINING SHARE WOULD PROVIDE RAILROADS WITH SUBSTANTIALLY BETTER OUTCOMES

	2022 Actuals	CHANGE BY 2030		
		BAU	Hold Share	Increase Share
Revenue	$95B	+$7B	+$21B	+$29B
EBIT	$36B	+$1B	+$10B	+$13B
OR	61%	3 pts worse	No change	No change
ROIC	12%	No change	3 pts better	4 pts better

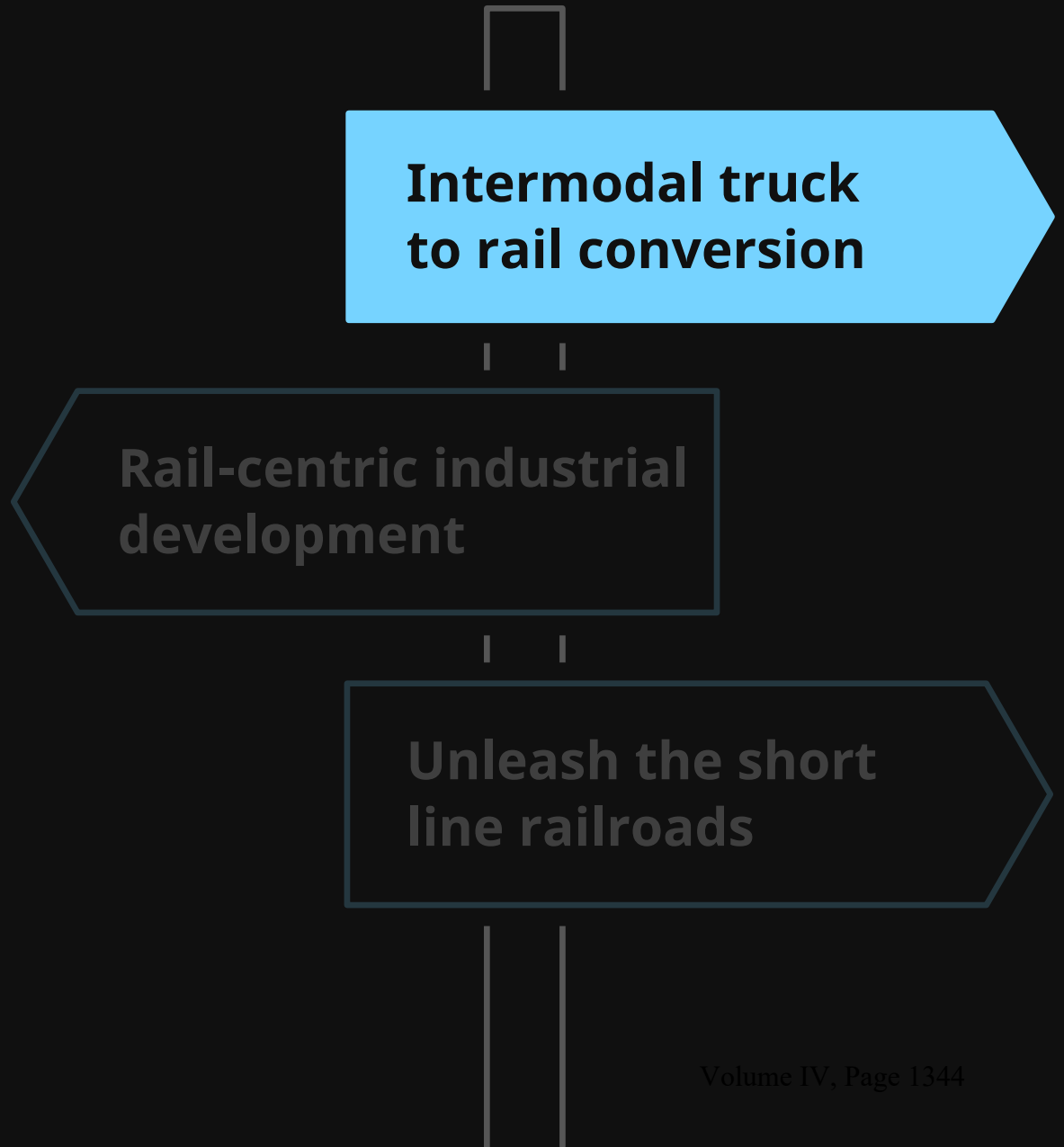
SO WHERE WILL GROWTH COME FROM? AND IS IT EVEN POSSIBLE?

THREE ROUTES TO RAIL GROWTH

Oliver Wyman research highlights three strategies for achieving growth through service improvement



THREE ROUTES TO RAIL GROWTH



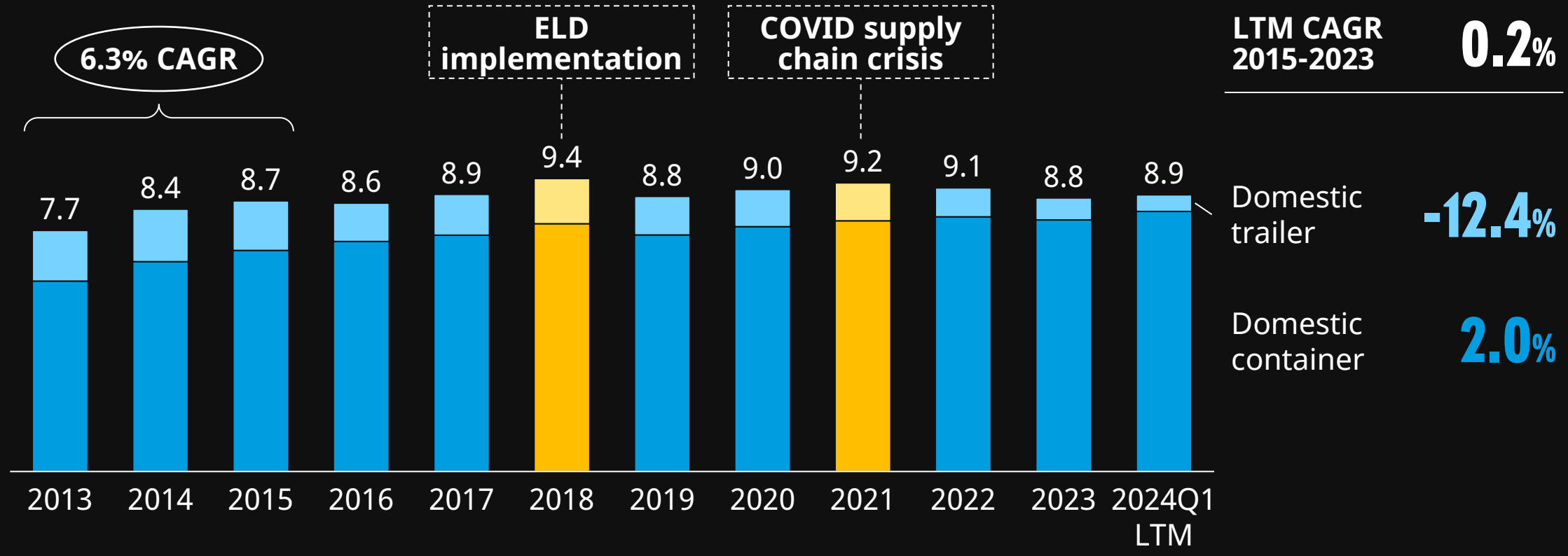
PUBLIC REDACTED VERSION

DOMESTIC INTERMODAL VOLUMES HAVE PLATEAUED SINCE 2015

External factors led to peaks in 2018 and 2021

North American domestic intermodal market, 2013-Q1 2024

Million domestic loads



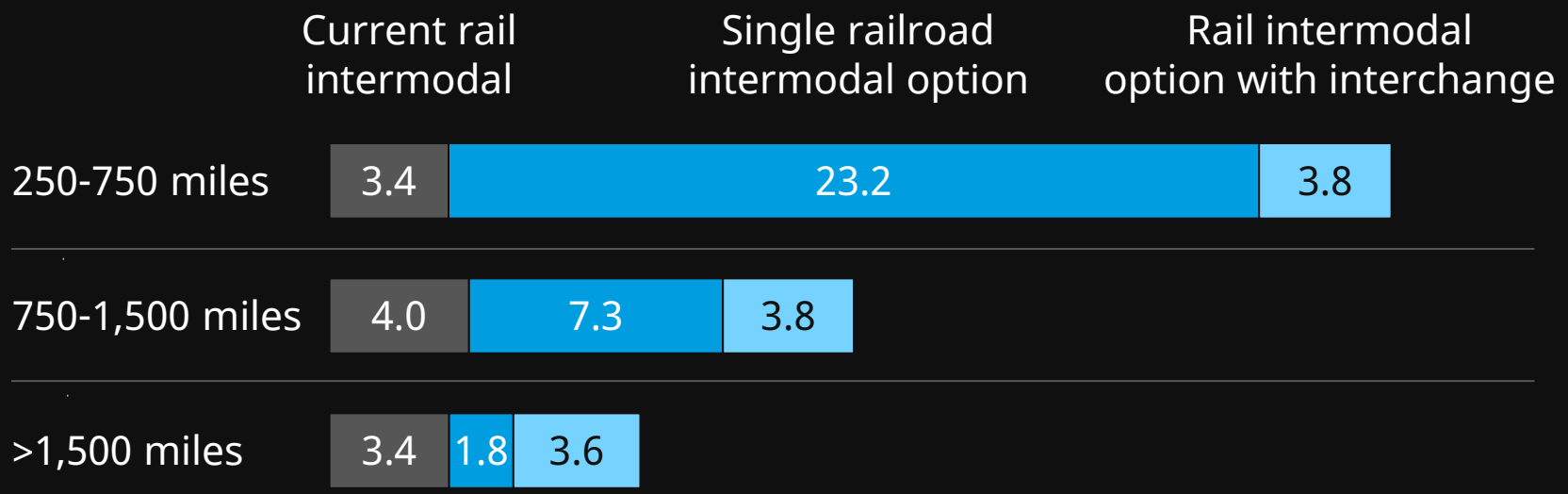
Source: Intermodal In Depth: IANA Market Statistics – 2013-2024; Oliver Wyman analysis

PUBLIC REDACTED VERSION

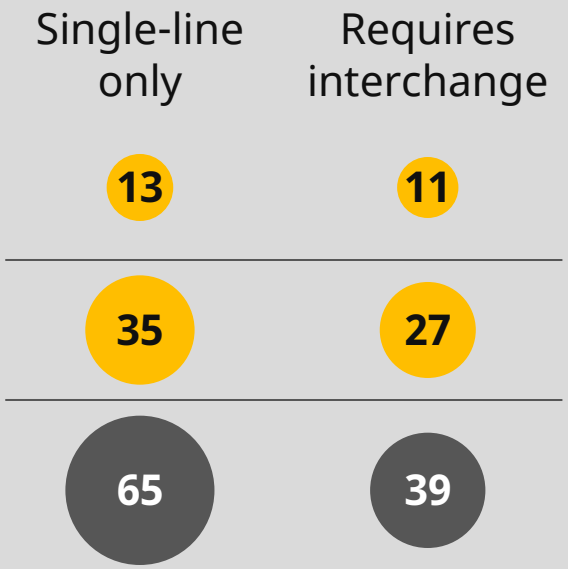
RAILROADS SERVE A LARGE SHARE OF THE >1,500-MILE DOMESTIC INTERMODAL MARKET

Growth opportunities are shorter haul, interchange markets

Est. addressable US domestic intermodal market
>250-mile length of haul, million equivalent loads

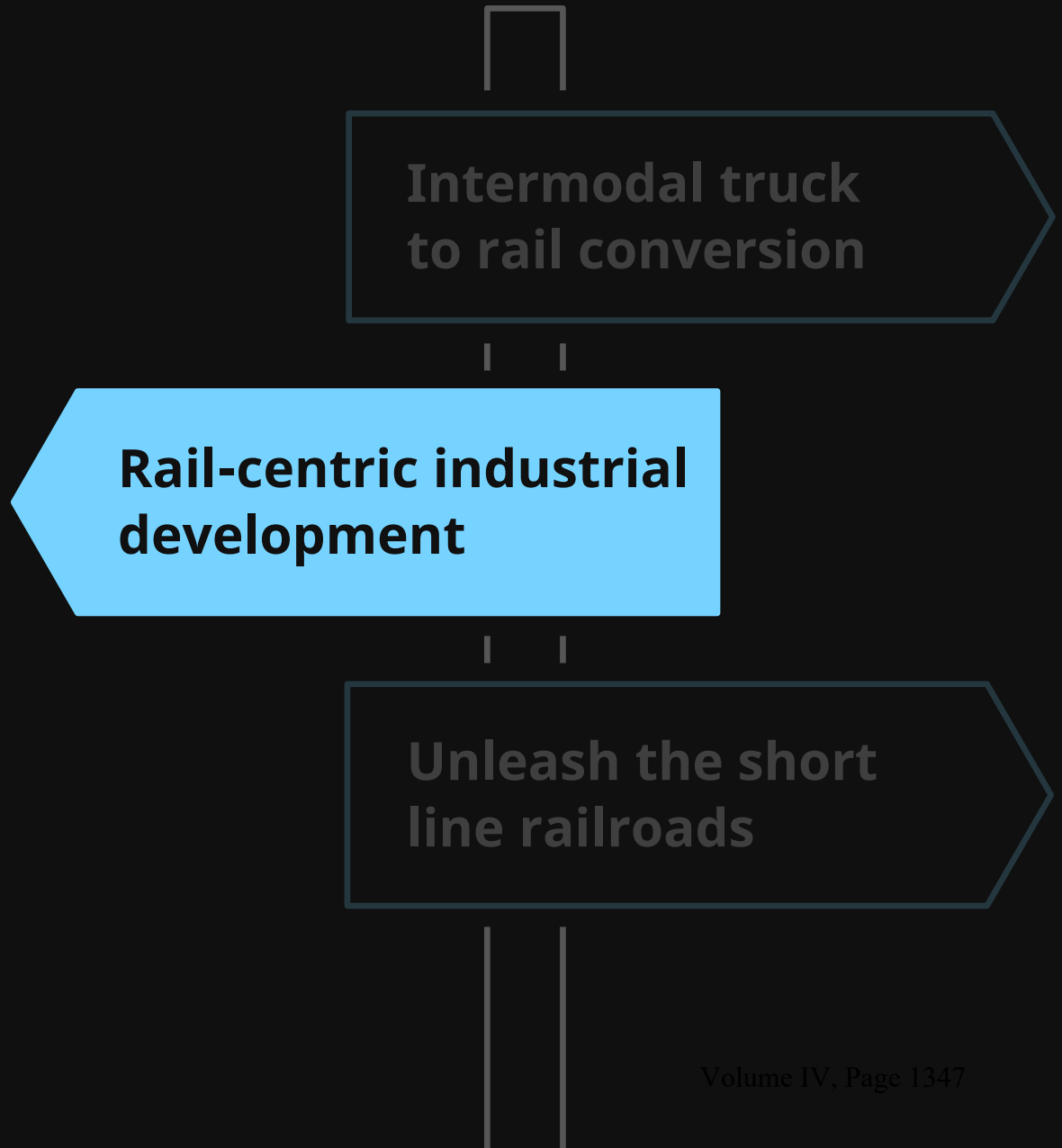


Current rail share
Percent



Note: Intermodal compatible, mode-flexible freight commodities only, excludes revenue empties
Source: US DOT Freight Analysis Framework FAF 5.5.1; Oliver Wyman analysis

THREE ROUTES TO RAIL GROWTH



PUBLIC REDACTED VERSION

RAIL HAS ALWAYS GROWN THROUGH INDUSTRIAL DEVELOPMENT…

Traditional model

Railroads
- Adjacent land
- Market to shippers

Single site
50-1K acres

Shippers
- Buy land
- Build facility

Emerging model

Railroads
- Adjacent land
- Market to shippers
- Rail-ready certification

Public sector
- Provides land, funding
- Takes to site readiness
- Incentives (in exchange for jobs)

Single site
50-1K acres

Shippers
- Buy land
- Build facility

PUBLIC REDACTED VERSION

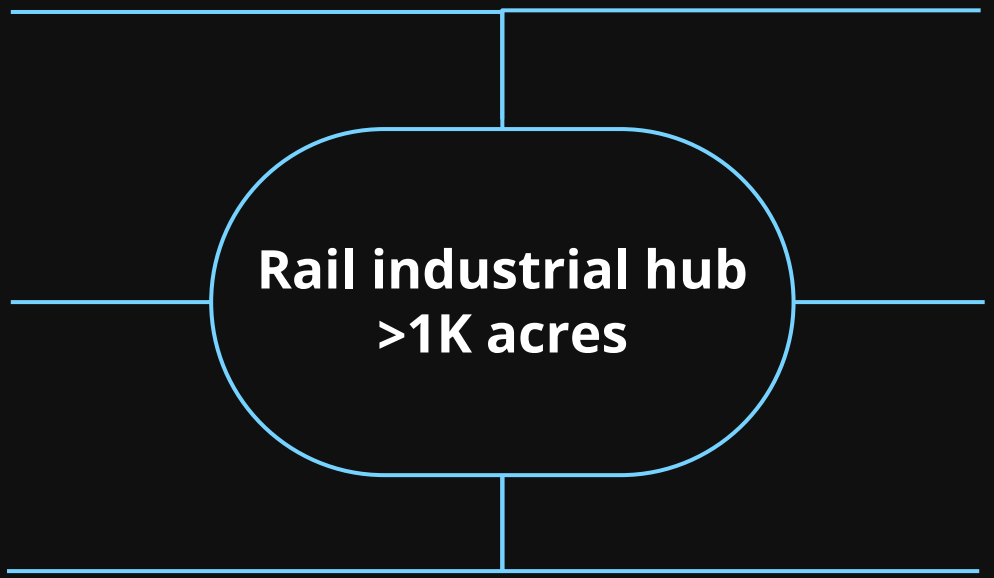
...BUT RAMPING UP SCALE REQUIRES A NEW PLAYBOOK

Future model

Investors
- Capital at scale
- Longer investment horizon appetite

Public sector
- Permitting, funding, land, approvals, roads
- Incentives (to deliver jobs)

Real estate expertise
- Site selection
- Land entitlement
- Site design, marketing, development

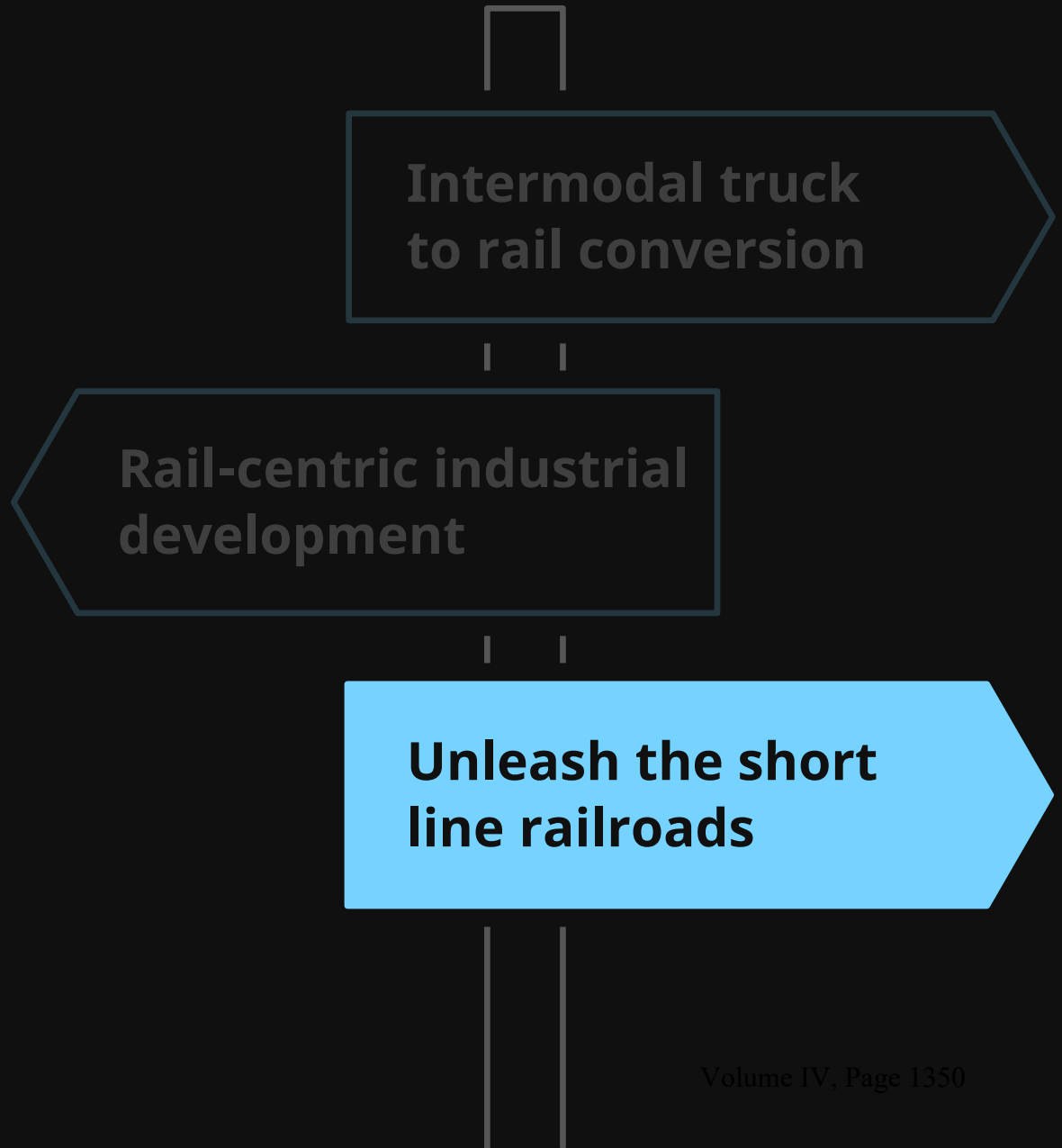


Class I railroads
- Service, rates
- Rail design
- Commitments > certainty

Utilities
- Water, gas, electricity
- Possible on site generation

Shippers
- Future tenants

THREE ROUTES TO RAIL GROWTH

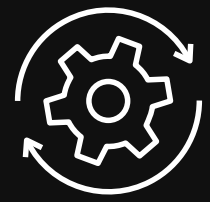


SHORT LINES SEE MORE GROWTH AVAILABLE FROM WORKING WITH CLASS I'S

But only if Class I railroads solve for two things:



Elevating short line strategy



More responsive processes, deeper collaboration

THE GOOD NEWS IS THAT PROGRESS IS BEING MADE IN ALL THREE AREAS

Intermodal truck to rail conversion

Improved service and new offerings, more interline collaboration

Rail-centric industrial development

Seven-fold increase in mentions on US Class I earnings calls, 2024 vs. 2019

Unleash the short line railroads

New and renewed efforts to elevate short line growth strategy

The bad news is...

RAILROADS ARE NOT YET ADDRESSING SHIPPERS' CORE ISSUES

RAILROADS MUST BECOME MORE CUSTOMER-CENTRIC

Service reliability must reach acceptable levels and be maintained

100%

of surveyed executives found **truck superior to rail** on all attributes of customer experience

The rail industry needs step-function improvements:

Transit reliability

- Consistent service
- Proactive problem resolution
- Railroad accountability

Customer experience

Ease of doing business

- Responsiveness at speed
- Simpler transactions
- Deeper shipper relationships



SIGNS OF LIFE

Transparency and rigor around true service performance

Demonstrated improvement in service reliability and commitment to scheduled railroading

Reinvigorating sales

Demos of new customer-facing features and functionality, with testimonials about ease of doing business

But what if this all fails...

OR WORSE, INVESTOR PRESSURE BLOCKS THE INDUSTRY FROM EVEN TRYING

IF GROWTH FAILS ONLY TWO OPTIONS WILL PROVIDE SATISFACTORY RETURNS FOR INVESTORS

1. Two transcontinental mergers
2. Substantially more shared infrastructure

PUBLIC REDACTED VERSION

1 TWO TRANSCONTINENTAL MERGERS

Historically, large mergers = improvement in SG&A as a percentage of revenue

Improves OR for surviving RRs by ~125-250 basis points

Big Four 2023 SG&A expense of $6.2B, of which $1.3B is labor, fringes, material, supplies

Eliminates ~10% of SG&A expense (saves $140M per year)

- Potential reduction in route options, as railroads would favor their own long-haul lanes
- Eliminating East/West interchange friction could increase market share, reduce operating costs
- Customers would deal with only ONE enterprise end-to-end much more often

The ultimate net impact on customers and overall rail volumes is unclear – but there are some tangible benefits

PUBLIC REDACTED VERSION

2 MORE SHARED INFRASTRUCTURE

Railroads share infrastructure today for operating efficiency, cost savings

For example:

Route	Railroads	Distance
Twin Cities, MN to Superior, WI	BNSF CP UP	~150 miles
Denver, CO to Pueblo, CO	BNSF UP	~100 miles
Vancouver, BC to Ashcroft, BC	CN CPKC	~200 miles

- If railroads cannot **GROW** volume, shrinking infrastructure could reduce capex and opex
- Competing railroads might have to share more in commonly served lanes

Would this work at scale?

- Requires sharing of control without impacting transit time reliability
- Benefits for customers: lower costs

CONCLUSION

A **GROWTH** strategy maximizes EBIT, ROIC, and minimizes OR

Plenty of **GROWTH** is available via intermodal, industrial development, and short lines

GROWTH requires a step change in service reliability and customer experience

Failure to grow will require drastic actions and ultimately shrink railroad employment, ton-miles, and infrastructure

Railroads **must get on with the work** of making themselves more customer-centric

OliverWyman

VISIT OUR WEBSITE FOR MORE DETAILS



A business of Marsh McLennan

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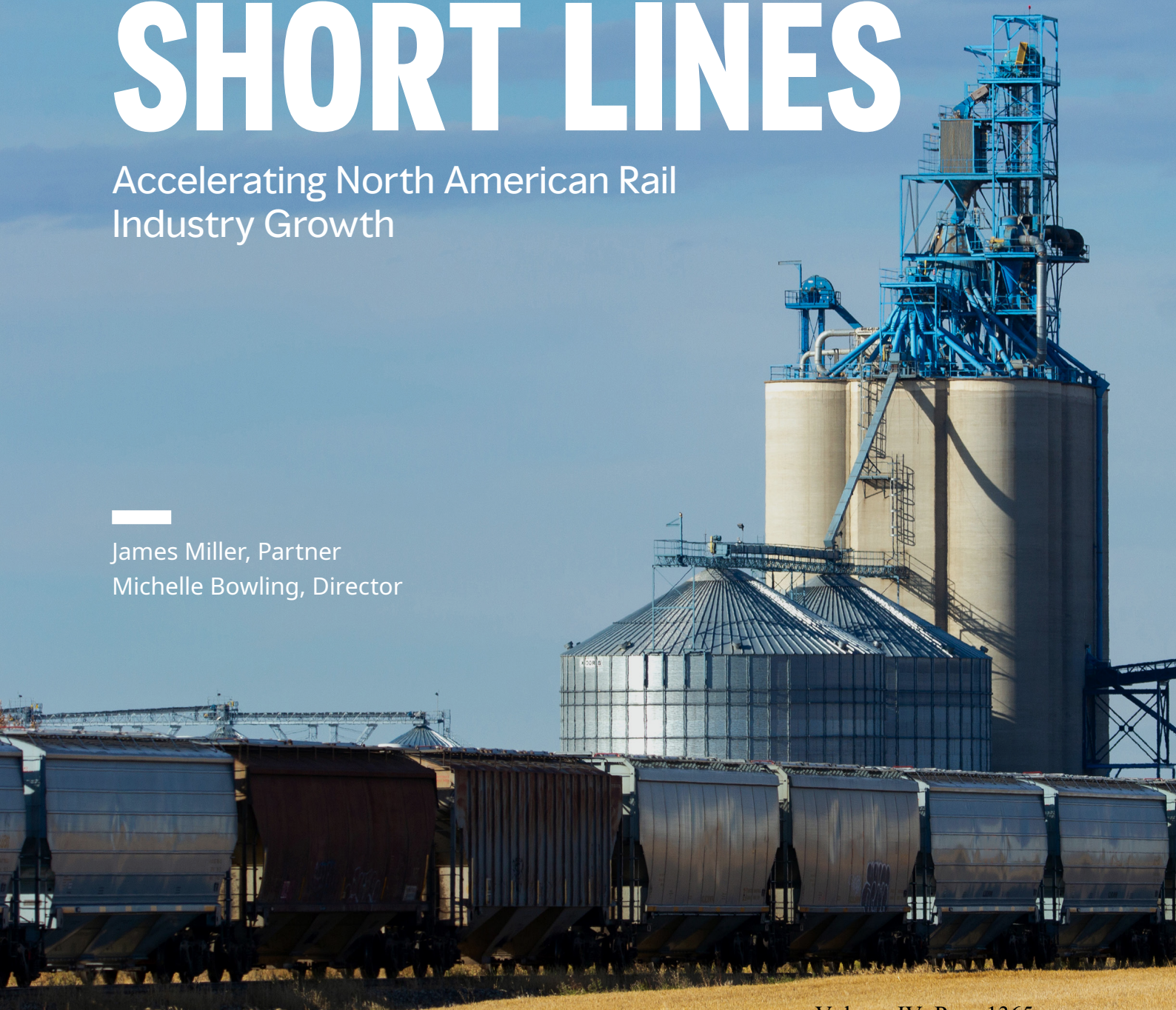
VERIFIED STATEMENT OF ANDREW FOX

EXHIBIT 13

OliverWyman

UNLEASH THE SHORT LINES

Accelerating North American Rail Industry Growth



James Miller, Partner
Michelle Bowling, Director

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PUBLIC REDACTED VERSION

INTRODUCTION

Over the past few decades, the North American Class I railroads have streamlined operations, cut costs, and improved productivity, while delivering strong financial results for investors. Despite this, the industry is experiencing an ongoing erosion of rail market share to truck — with no end in sight. As we discussed in prior articles published this year, the rail industry must develop a radical focus on growth **to ensure long-term shareholder value**, such as by **converting more freight to intermodal** and **doubling down on scheduled railroading**.

Additionally, at the same time that the Class I's have been growing volumes more slowly than gross domestic product (GDP), many short line railroads are growing faster, with some reporting double-digit traffic increases year-over-year. With a strong customer-first culture, many short line railroads have realized impressive volume gains in recent years by leveraging infrastructure, ancillary services, and industrial development.

To better understand these dynamics, we interviewed and surveyed senior executives representing more than 300 North American short line railroads, including all of the top short line holding companies. We also interviewed senior executives at major transload facilities and terminals. In this fourth paper of our 2024 rail growth series, we focus in on what these executives see as the keys to short line success, as well as opportunities to partner with the Class I's to better serve today's shippers and supply chains — thereby reinvigorating rail's role in the freight economy.

"Railroading at its core is about solving problems for customers."

Rail/terminal holding company

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MAKING TRACKS TO SHORT LINE SUCCESS



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Across the board, short line executives highlight their entrepreneurial culture and intentional focus on service reliability as the cornerstones of success in this sector of the rail industry. As they mature, these railroads move on to leveraging existing infrastructure to extend rail service to underserved customers, diversifying into ancillary services, and investing in infrastructure to entice new customers to rail (Exhibit 1).

Exhibit 1: Four steps to a successful short line railroad

1	2	3	4
Create the culture	**Levarage existing infrastructure**	**Reach beyond the asset**	**Invest in new infrastructure**
• Create an entrepreneurial culture, focused on service and growth	• Increase share of wallet with existing customers through service excellence	• Offer an array of ancillary services — solve customer needs beyond simple transit	• Attract new shippers through industrial development
• Collaborate with customers and Class I's to find solutions	• Use transloading and infrastructure to extend customer reach	• Extend sales force reach beyond the Class I's	• Partner with real estate developers to create rail-served industrial parks

Source: Oliver Wyman 2024 Short Line Survey

CREATE THE CULTURE

The first thing most of our interviewees cited as critical for growth was that they had spent time developing a culture of service and a passion for growth. As one top short line holding company executive put it, "Short lines have that entrepreneurial spirit, that desire to help people solve problems." Like a safety culture, this is not built overnight. The ability to be responsive to customers and their needs must be instilled in the organization and consistently supported by leadership.

Short line leaders also expressed their willingness to take calculated risks to drive growth — that there is a need to "look at the bigger picture" — even to the point of making short-term investments to generate longer terms gains in carload growth. Said one short line holding company executive: "if you're going to try something new, you have to be willing to take more risk, because this industry is not fast." And they embrace the notion that small customers can turn into big customers — reporting that many successful customer relationships often start with just a few carloads and then grow over time as the shipper learns to trust rail and is able to grow its own market.

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In addition, these leaders say they are focused on working collaboratively with partners to develop full commercial solutions that can help customers have a more "truck-like" experience. For example, a short line company through its logistics arm was able to help a major pipe manufacturer coordinate interchanges with two Class I's, assist at origin with an unloading schedule, and work with transloaders at destination to prevent demurrage — leading to additional unit-train volumes and market share gains.

LEVERAGE EXISTING INFRASTRUCTURE

With a service culture in place, successful short lines next focus on understanding the businesses of their customers in detail — what they do, what they want from their transportation providers, where they are looking to grow. They build strong customer relationships to drive volume growth and optimize service levels to meet specific customer needs.

Using existing infrastructure, short lines are establishing or collaborating with transload facilities to bring additional freight to their lines. For example, rail holding company Regional Rail **recently announced** a partnership with TLD Ramp to bring mobile transloading to several of it railroads. The transload operators we interviewed told us that they like working with short lines because they offer high service levels and responsiveness.

REACH BEYOND THE ASSET

Successful short lines appear to eventually move beyond the track to develop an array of "ancillary services," such as logistics and door-to-door solutions, railcar-related services, and industrial development, among others (Exhibit 2). Ancillary services are not just additional revenue streams for short lines, but are essential in providing comprehensive solutions to customers, enhancing service reliability, and fostering long-term growth.

Today's shippers are looking for more than just an origin to destination freight move — they want their mode and carriers of choice to provide integrated solutions to their needs. Successful short lines are leaning into this strategy, increasing revenues and enhancing their customers' willingness to grow carload volumes with them — something that ultimately benefits the Class I's through additional traffic.

© Oliver Wyman

Investing in new infrastructure is typically the final step for a short line once it has leveraged its current infrastructure to the extent possible and developed ancillary services that can deliver additional revenue and strengthen customer relationships.

Short lines are capitalizing currently on growing demand for industrial and logistics hubs co-located with multiple transportation options (such as rail and highway) to maximize freight throughput and efficiency. The high cost of real estate and congestion in cities is pushing such freight distribution to the exurbs. Short lines are creating scale and driving growth by working with third-party landowners in these areas to develop rail-served sites for heavy industry, intermodal, transload, and warehousing/distribution customers.

Exhibit 2: Short lines extend their sales reach through ancillary services

Service Type	Examples	Approach
At the customer	Intraplant switching	• Dedicated switching crews for flexibility or demand surges
	Outsourced services at customer site	• Dedicated transload operations
	Trackwork and engineering	• Custom infrastructure solutions
Railcar services	Railcar storage	• Utilizes track not needed for current operation, including "storage in transit" (SIT) for commodities such as plastics
	Railcar/locomotive repair & maintenance	• Utilizes excess shop capacity
Offsite operations	Leasing operations	• Utilizes surplus equipment, such as equipment that is seasonally surplus
	Industrial development	• Makes use of surplus parcels, creates new hubs for rail growth
	Transloading	• Serves customers that do not have a direct siding connection to rail network; adds density to underutilized capacity
	Warehousing, drayage, trucking	• Designed to add to available markets
Solution-based	Fleet and freight management	• Visibility into railcar location, out-of-route alerts, forecasting, waybilling
	Pricing consultation	• Consult on pricing options and third-party negotiations
	Brokerage services	• Provide a door-to-door solution, utilizing truck carriers and intermodal asset providers

Source: Oliver Wyman 2024 Short Line Survey

"The ease of doing business is much greater at short lines."

Logistics operator

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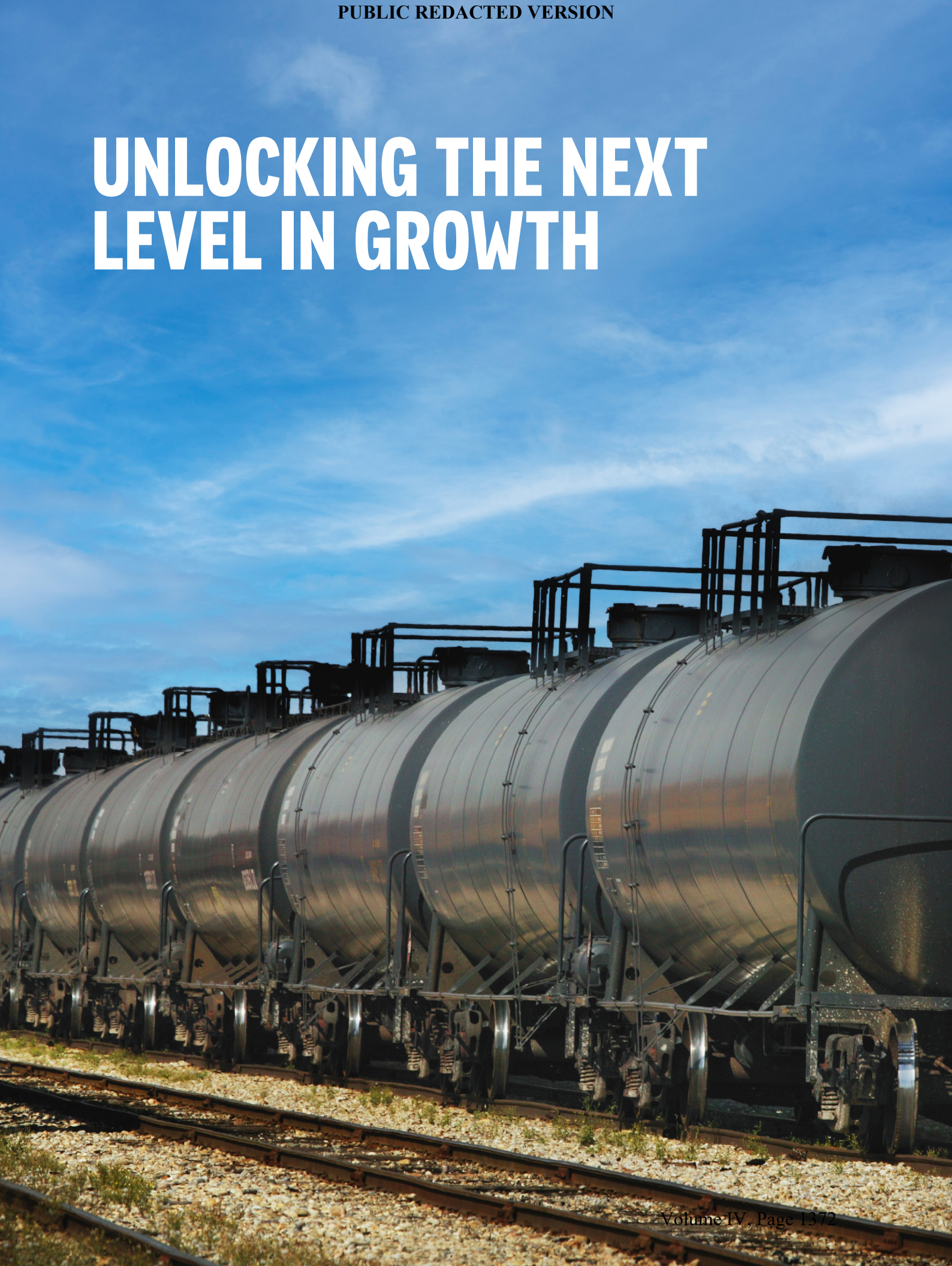
UNLOCKING THE NEXT LEVEL IN GROWTH



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Short line leadership is universally convinced that there is more growth to be had if Class I's and short lines could evolve their ways of working together. There was consensus from our survey participants that greater focus by Class I's in two specific areas could substantially improve the growth potential for the rail carload business with short lines: 1) developing and embracing a more strategic view of short lines, and 2) improving process responsiveness and collaboration.

ELEVATING SHORT LINE STRATEGY

Class I railroads have always had "someone" in charge of dealing with short lines, but traditionally this has been a coordinating position within a department like Joint Facilities or Industrial Development. Today, much of short line coordination is left up to personnel at the local level, so it is no surprise that short line holding companies report experiencing very different results across their rail properties in terms of their working relationship with Class I's. This can be true even across a single railroad — with location A experiencing excellent service and communication with the Class I operations team, while at Location B the two sides are failing to coordinate and their local operations managers aren't speaking to one another.

We believe that Class I's could drive more volume from their short line connections if they developed a more explicit short line strategy as a priority — with accountability from both the CMO and COO to drive the initiative and improve performance. As one rail holding company leader noted, "Overall, 25-35% of Class I volume comes from short line partners. Short lines need to be talking to senior executives at Class I's, because the big deals brought to the table are investor-worthy topics, and the short lines can explain the long-term vs. short-term gains."

Norfolk Southern recently stepped out of the mold when it established a Vice President of First and Final Mile and gave the job to an industry veteran who had been a senior executive at one of the largest short line holding companies. Among other new initiatives, he launched NS's **Short Line Performance Project**, which aims to increase interchange fluidity and build better working relationships between local NS operating teams and some 40 short line partners. The project has led to double-digit traffic increases in some geographies in less than a year, which only goes to prove that there are customers — and volumes — that railroads have yet to reach.

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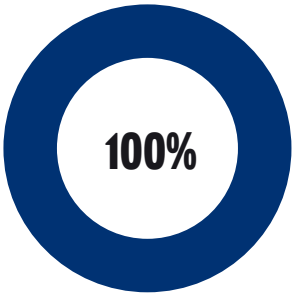
RESPONSIVE PROCESSES, DEEPER COLLABORATION

Greater responsiveness from Class I's — across areas such as pricing, interchange performance, information exchange, shipment visibility, and problem resolution — was cited by all short lines surveyed as a critical factor in growing rail volumes (Exhibit 3).

In particular, short line leadership reports that the time it takes to get pricing decisions on joint traffic from the Class I's is acting as a drag on new market opportunities. As one executive noted, "For a truck, you can get a rate in 30 minutes anywhere," while it can take weeks or months to get a price from a Class I. When a customer is excited about an opportunity to ship on rail, faster turnaround could help close the deal.

Exhibit 3: What do Class I railroads need to do to grow rail volumes?



of surveyed short line executives said Class I's must improve their responsiveness with short lines and shippers

Source: Oliver Wyman 2024 Short Line Survey

Short line executives also said that their customers would welcome more up-front Class I involvement when there are larger opportunities being contemplated. Large infrastructure investments — such as in railcars, facilities, and substantial truck to rail conversion — require either a relationship or contractual assurance to the shipper that the investment will be worthwhile and supported over the long term. Shippers are more responsive and confident in choosing rail as their freight mode of choice when all of the railroads involved in a new business opportunity are clearly working together and in coordination.

Other areas where collaboration could yield results include Class I's identifying backhaul lanes that a short line might then be able to fill, or where there are ancillary services a short line could provide that would help win a joint customer. Short lines can help shape demand and extend railroads' reach, but they need to know where they can provide the most leverage and where Class I's will be able to support initiatives that bring shippers to the table to make big bets.

"The industrial development pipeline is more robust than ever."

Short line holding company

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HONORABLE MENTIONS: TECHNOLOGY AND PRICING

There were two additional findings from our short line survey we wanted to reflect on herein.

Technology initiatives

Short lines do not see technology as a growth driver in itself, but are supportive of and closely following innovations in telematics to improve shipment visibility and tracking and identify areas for service improvements. New and upcoming technologies can be expected to not only improve efficiency but enhance shippers' end-to-end experience, enabling the railroads to collectively deliver a much more truck-like experience.

Pricing initiatives

Short lines believe that a more collaborative and flexible approach to pricing incremental volumes could yield additional profitable carload traffic. It is a complex topic, but perhaps worth exploring by a Class I and a short line with an already close and collaborative relationship, to test whether such an approach could yield positive results for all parties.

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CONCLUSION

Short lines are demonstrating that more volume can be attracted to rail through a focus on service and a passion for growth. The formula developed by successful short lines is one that can be replicated at other small railroads to maximize their standalone potential. Short lines depend heavily on their Class I connections, however, so at another level they are waiting to be unleashed: They need the Class I's help in streamlining and de-bottlenecking rail processes to get more shippers to say "yes" to rail.

Class I's need to take a serious look at where the short line growth agenda sits in their organization, and we recommend considering the following questions:

- Is short line growth a strategic priority? Is that strategy being led by an executive who is experienced in growing the business and building collaborative relationships?
- Does short line growth have the C-suite support and visibility required for success? Does the C-suite have direct visibility into both the commercial and operating performance of the railroad's short line connections?
- Are there goals and action plans in place to drive improvements in short line operating performance, collaboration and responsiveness, and volume growth capture?

If the answer to any of these questions is "no," a Class I is missing out on the chance to extend its reach, capture more market share from truck, and increase bottom-line profit through more volume.

Class I's have an immediate and accessible incremental growth opportunity, if they embrace greater collaboration with short lines and internally elevate their short line strategy. And an intentional short line growth strategy will bolster customer perceptions that rail is a customer-centric mode choice that is here to stay.

"Growth is our friend. Volume is our friend."

Terminal/transload operator

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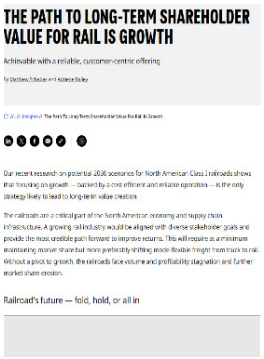

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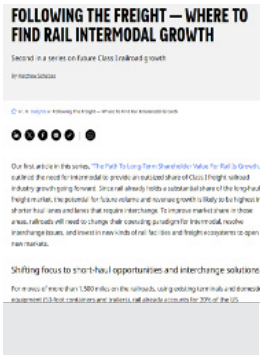

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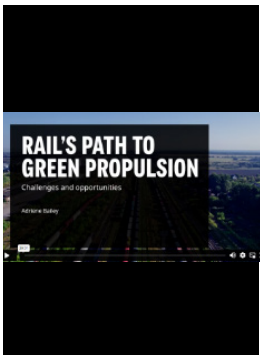

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EXHIBIT 14

Norfolk Southern short line project leads to carload volume growth

By Bill Stephens | May 29, 2024 | Last updated on August 6, 2025

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By closely monitoring interchange performance, the Class I and 40 short line connections have made service more consistent and reliable

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Norfolk Southern local train H76, led by SD40-2 No. 3423, clears the Lehigh Line main in Three Bridges, N.J., with a delivery to the Black River & Western interchange on Aug 6., 2021. Jerry Dziedzic

ATLANTA — Norfolk Southern and 40 of its shortline connections have produced outsized growth in carload traffic this year through a program that aims to improve interchange consistency and reliability.

The Short Line Performance Project, which began as a pilot with a handful of railroads last July, has seen interchange volume grow 9% since March 1. That stands out from Norfolk Southern's overall merchandise volume, which is flat for the year and up 3% in the second quarter to date. And it's well above the 5% volume growth with all shortline connections since March 1.

Volume exchanged with the participating railroads is at its highest level since August 2021.

The program is proof that carload volume can grow when railroads provide good service and communication, says Stefan Loeb, NS vice president of business development and first and final-mile markets.

Short lines are important to NS: Roughly 40% of its carload traffic originates or terminates on a connecting short line railroad. Currently up to 55,000 cars per month are covered under the Short Line Performance Project.

"If you can put visibility and data and communication around interchanges to improve their effectiveness and performance, you're going to grow with your shortline partners," says Loeb, who joined NS last year after serving as chief commercial officer at shortline holding company Watco.

Traditionally, NS and its shortline connections haven't measured interchange performance the same way. Plus, there were data gaps. No one at NS had the responsibility for monitoring short line interchange service. And short line complaints went into the same hopper as everyone else's, which delayed responses.

The NS First and Final Markets team set out to change that by creating a program that aims to put out service fires – and prevent them from happening in the first place.

The first step: Establish a way to provide visibility and feedback on interchanges. NS and participating short lines use a spreadsheet to track interchange performance. On one side, NS gives its view on what service was performed the previous day. On the other, the short line lets NS know how the interchange went. If the views don't match, it gets flagged for attention and resolution.

The second step: Establish real-time communication channels so the railroads can quickly solve service problems. NS and the participating railroads collaborate using Microsoft Teams, which permits chats between short lines and the First and Final Markets group.

"And that goes beyond 'Hey, we need you to deliver cars, we need you to pull cars,'" says Alex McNeil, director of shortline performance and marketing. If a car physically made the interchange but its electronic data did not get exchanged, for example, the short line can use Teams to request that NS resend the information.

"In the past, that was something that went into a queue sent amongst the rest of all the other requests that came into NS, specifically on the customer side, and just in many ways had the potential to die on the vine," McNeil says.

Now NS can quickly address service problems before they stack up, whether it's single carload business or unit train traffic exchanged with short lines. "In the past without anybody really watching service, one missed day could turn into two, two could turn into three," McNeil says.

The same monitoring and communication tools allow NS and its shortline partners to be proactive, such as when volume spikes for a certain commodity or customer. "It's quick communication, it's solving problems, it's being easier to do business with," Loeb says.

The participating short lines are scattered around the NS network, across a range of carload and bulk commodities, and range in their weekly interchange volume. The common thread: They have strong growth prospects.

McNeil says it's important to include short lines that might receive just 10 cars per day. Interchange to a short line that receives 50 cars a day is more likely to take care of itself, he says, simply because the local serving yard can't let that kind of volume stack up. But with smaller interchanges, it's easier for the NS yard to absorb the volume of consecutive missed interchanges.

Top-performing commodity growth includes a 29% increase in scrap metal shipments through the Alabama & Tennessee River Railway interchange at Alabama City, Ala., and a 20% increase in pulpboard and chemical shipments over the Kimbrough, Ala., interchange with G&W short line Alabama & Gulf Coast Railway.

NS delivery performance at the Alabama & Tennessee River interchange improved to 73.4% this year, up from 63.8% in 2023, while the Alabama & Gulf Coast interchange performance improved to 81.3% from 77.7%. Keeping interchange performance above 80% is a key to moving the growth needle, Loeb says.

The railroad aims to bring more short lines into the program. And some may drop out once their interchange performance is running consistently over the longer term.

The First and Final Markets group also may introduce a similar program for local service to high-growth carload customers.

Short line executives praise the program, which they say is unique among the Class I systems.

"G&W commends NS on their development and implementation of the Short Line Performance Program, through which we are currently working with them for about a dozen of our locations," says Dave Geraci, Genesee & Wyoming vice president of interline management. "From our perspective, the program has significantly improved communication, transparency and operational effectiveness, fostering an environment for growth at very little cost."



The Decatur & Eastern Illinois is among the Watco short lines participating in the Norfolk Southern Short Line Performance Project. Steve Smedley

Eight Watco railroads are participating in the program.

"I applaud the NS. We've created an environment where it's OK to be the squeaky wheel. Finding the solution is mutually beneficial," says Zachary Boehme, senior vice president of rail sales at Watco.

Watco short lines have been able to gain more volume as customers have become more comfortable with transit times and interchange reliability, he says.

More reliable interchange also has reduced dwell, improved car cycle times, and enabled Watco to use its crews more efficiently, Boehme says.



Winchester & Western is among the OmniTRAX short lines participating in the Norfolk Southern interchange program. Mason Cooper

"OmniTRAX really likes this because it's ultimately creating a better customer experience," says Ryan Higgins, the short line holding company's chief commercial officer. "And really when you can take that consistent service reliability, you can have a more robust conversation, a more confident conversation around growing the business with the stakeholders, customers, shippers, receivers, whoever it may be."

The reduction of interchange failures has a multiplier effect, Higgins notes, since each interchange involves a number of customers on each of the three short lines participating in the program, including the Alabama & Tennessee River. "We're seeing double-digit volume growth at the ATN as a result of this. And I think it's simply just a function of great service leads to opportunity," Higgins says.

Correction: An earlier version of this story stated the short line program involved 55,000 cars per week. The correct figure is 55,000 cars per month.

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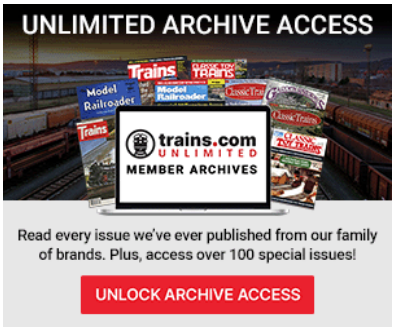

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Exhibit 15

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EXHIBIT 16

Rail News: Rail Industry Trends

5/30/2008

NS, 10 New York state short lines partner to form 'Empire Link'

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Make it two small railroad joint ventures for Norfolk Southern Corp. this month. Yesterday, the Class I announced it's teaming up with 10 New York short lines to launch the "Empire Link."

Aimed at diverting short-haul truck movements to rail in New York, New Jersey and Pennsylvania, Empire Link will allow participating small railroads to market excess capacity on NS lines as single-line moves. The Class I has under-utilized capacity on its Southern Tier mainline between Binghamton and Silver Springs, N.Y., and branch lines between Corning and Geneva, and Waverly and Ludlowville, N.Y., NS said.

"The Empire Link provides our New York short line partners with the tools and resources to design and offer rail transportation services that are truck-competitive in lanes that are less than 500 miles," said NS Vice President of Industrial Products David Lawson in a prepared statement.

The participating short lines include the Bath and Hammondsport Railroad; Central New York Railroad Corp.; Finger Lakes Railway; Livonia, Avon and Lakeville Railroad; New York, Susquehanna & Western Railway Corp.; Ontario Central Railroad; Owego & Harford Railway; Rochester and Southern Railroad; Wellsboro and Corning Railroad; and Western New York & Pennsylvania Railroad.

Any short line can market a move — originating or terminating on their line — that involves one or more other short lines and NS as the bridge carrier. NS initially would provide all the equipment (the short lines would have the option to use their own) and rates would involve a series of per-car charges based on the commodity, such as salt or paper.

NS worked with the American Short Line and Regional Railroad Association (ASLRRA) to develop the Empire Link, which is expected to launch on or about July 1.

"We expect positive results for shippers, communities, and big and small railroads alike," said ASLRRA President Richard Timmons. "If the Empire Link performs as we anticipate, it could serve as a model for future Class I and short-line business arrangements."

Earlier this month, NS teamed up with regional Pan Am Railways to establish the "Patriot Corridor" between Albany, N.Y., and Boston, and form 50-50 joint venture railroad Pan Am Southern.

Contact *Progressive Railroading* editorial staff.

More News from 5/30/2008

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EXHIBIT 19

Customer News June 8, 2026

Share

I've Heard Enough – This Merger Doesn't Kill Competition. It Unlocks It.

Announcement Number: CN2026-12

To Our Customers:

Since we announced our merger with Norfolk Southern, our opponents have been vocal. As expected, they've gotten louder with the acceptance of our application. I've listened to all the rhetoric and I've had enough.

The critics have a convenient story: The Union Pacific-Norfolk Southern merger will stifle competition and leave you with fewer choices and higher rates. They tell it with great confidence. There's just one problem — it's wrong. And we don't have to argue about it in the abstract, because we just lived through it.

When the Surface Transportation Board (STB) approved the Canadian Pacific – Kansas City Southern (CPKC) deal, cross-border rail choices changed overnight. A single-line network suddenly tied Canada, the United States and Mexico – a real, formidable new competitor in lanes many of you depend on every single day.

The CPKC merger didn't just make CPKC better; Union Pacific stepped up to compete and delivered real benefits for our customers.

Union Pacific responded immediately to the new competition. Within about a week of the STB approval, Union Pacific and Grupo México increased our service at Eagle Pass, and we've never let up. In 2025, we launched international crews with Grupo México, further improving capacity and fluidity at the gateway. Since 2023, Union Pacific's gateway volume is up over 5% with Mexico.

Customers won in other ways as well. CPKC immediately became a strong competitor and we had to fight hard to compete. In full transparency, we lost business. For example, we had just secured Schneider National, a very strategic account, but with the CPKC merger, they shifted their Mexico business away from us. We responded by adjusting our pricing to compete with CPKC's single line service, delivering more competitive value to customers.

Competition pushed us, and you, the customer, came out ahead. That's not a theory. That's history...very recent history.

Now we find ourselves at another inflection point. Our proposed merger with Norfolk Southern will create the first transcontinental railroad in U.S. history: a single-line network from the Pacific to the Atlantic, under one operating plan, eliminating interchanges that today add 24 to 48 hours and real cost to your supply chain. At the heart of our application are seven new

premium intermodal trains running seven days a week, connecting western origins to eastern markets and six new manifest trains that will create faster, more reliable, lower-cost options for traffic that moving to, from, and across the watershed region.

And here's the part the critics don't want to talk about. The moment we announced the merger, others in the industry responded — fast and exactly as we expected. The instant a stronger Union Pacific-Norfolk Southern combination was proposed, we saw new lanes and new services from our competitors. Our competitors can see plainly that the only way to answer seamless, single-line service and streamlined customer experience is to get faster, get cheaper or both. That costs them money and dents their bottom line – so of course they're going to fight a railroad that is harder for them to match. Their opposition isn't evidence our merger will harm competition. **It's the clearest proof that competition is alive and accelerating. We welcome this increased competition; in fact, we intend to keep leading it.**

Here is my commitment to you. As we move through the regulatory review and integration planning, Union Pacific will keep investing – in the network, in the service products and in the people who earned your business in the first place. We look forward to the day we provide you a single-line transcontinental product. Until then, we will continue to deliver a strong service product and customer experience. Thank you for the business.

Sincerely,



Kenny Rocker
Executive Vice President, Marketing & Sales

Connect With Us

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

EXHIBIT 20

Exhibit 20

REDACTED FOR CONFIDENTIALITY

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 36873

UNION PACIFIC CORPORATION AND UNION PACIFIC RAILROAD COMPANY
– CONTROL –
NORFOLK SOUTHERN CORPORATION AND NORFOLK SOUTHERN RAILWAY COMPANY

VERIFIED STATEMENT OF ANDREW FOX

EXHIBIT 21

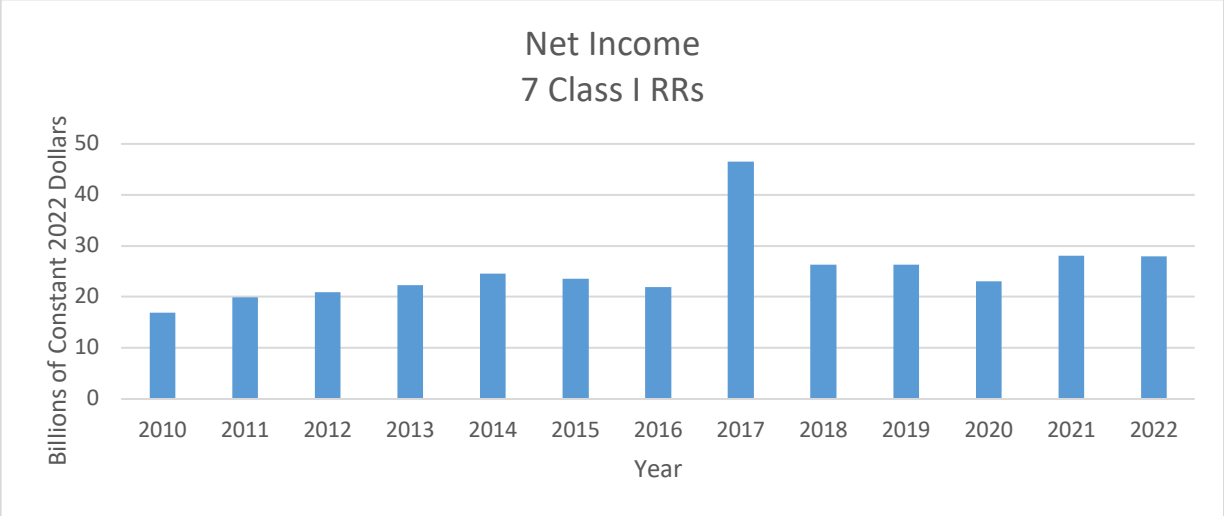
Capital Investment

> Thus it is the alert business man, as has just been said,[1] "pushes the investment of capital in his business in each several direction [sic] until what appears in his judgment to be the outer limit, or margin, of profitableness is reached; that is, until there seems to him no good reason for thinking that the gains resulting from any further investment in that particular direction would compensate him for his outlay." (Alfred Marshall, 1890)

Alfred Marshall, luminary of classical economics, repeats himself verbatim one time in his magnum opus, *Principles of Economics*, and the above quotation is it. Here Marshall emphasizes a basic principle of classical economics—that in market economies there are decision-makers who will make capital investments in an attempt to increase profits. It is taken for granted in Marshall's business world that an "alert business man" (or alert business woman, we should add) will find and invest in projects that are presumed to more-than-compensate for outlays of capital.

You may suspect an error of judgment in Marshall's presumption about market behavior. Given what you have experienced with decision-makers in the workplace, you might question that "alert" people are making the decisions. Moreover, decision-makers are usually not the owners of the business, or capitalists, or however you define the people who are investors in an enterprise. In everyday decision-making, the shots are called by management, and more precisely, by the departmental leadership. Operating departments at big railroads tend to call the shots, and they are not focused on finding new business or profitable investments.

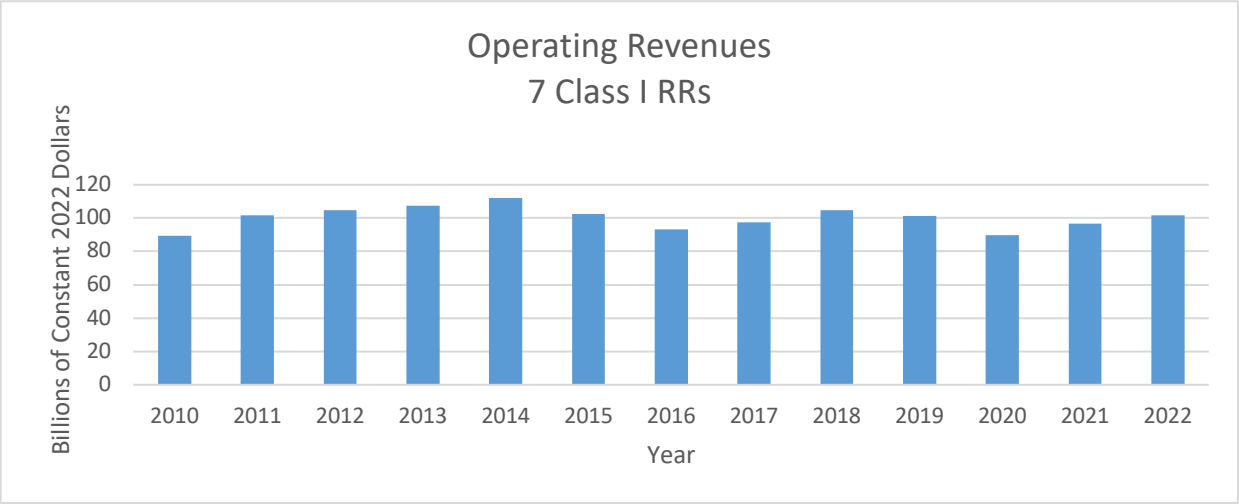
This accusation begs substantiation. First, let's look at results. Have the Class I railroads been successful in finding profitable investments, or as a preliminary indication of that, in increasing their profits? The below chart shows profits as reported since 2010 by the seven Class I US and Canadian railroads and as measured in US dollars adjusted for inflation.[2]



[1] Alfred Marshall, *Principles of Economics*, first edition of 1890, as reprinted for the eighth edition of 1920 by Porcupine Press, Philadelphia, 1994, pp. 298-299 (Book V, Chapter IV, Section 4), where the quote after the footnote superscript repeats text from p.296 (Book V, Chapter IV, Section 3)

[2] See Appendix A for a spreadsheet itemizing net incomes for the seven Class I's since 2010 in constant 2022 dollars.

The spike in 2017 was due to a change in accounting rules triggered by the Tax Cuts and Jobs Act of 2017, which functions as a warning that the standard measures of profitability result from subjective rules for taxation and accounting. Let the investor beware. The chart does seem to show a trend of increasing profitability followed by roughly flat profitability except for the spike. Yet the next chart below hints that any increase in profitability must have been due to cost-cutting, not revenue growth, because there was no revenue growth.



The Class I's revenue stagnancy is more damning when compared to other modes' revenue growth:

Mode	Revenues in 2012 (in constant 2021$)	Revenues in 2021	10-yr. Change
7 Class I railroads[3]	$96.9 billion	$89.6 billion	-7.5%
US trucking[4]	$763.6 billion	$965.0 billion	+26.8%
US air freight[5]	$38.9 billion	$52.7 billion	+35.5%

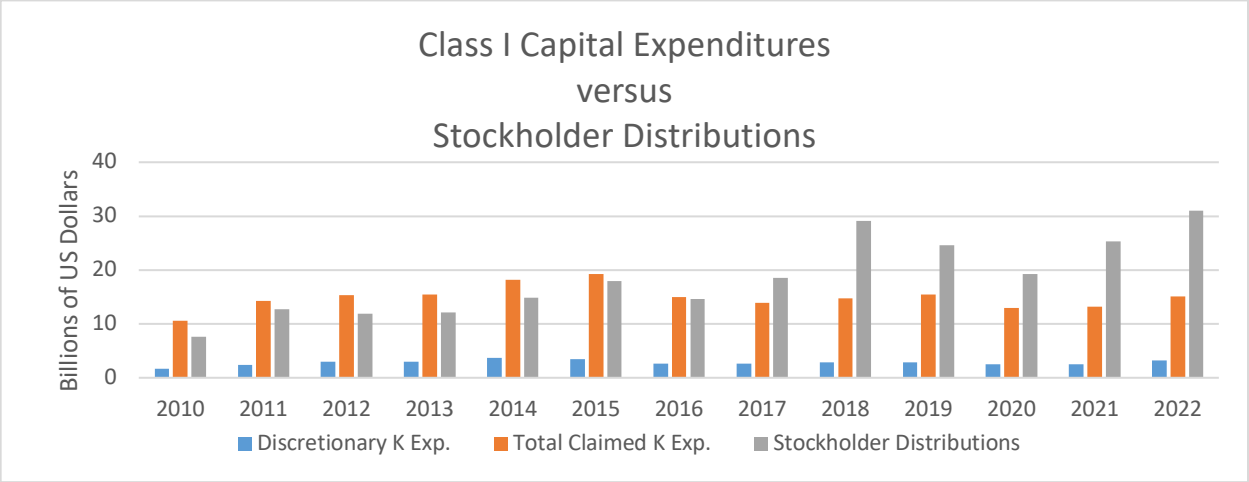
Class I annual reports try to put a different spin on the situation, acting as though there is growth:



[3] See Appendix B for a chart itemizing the 2010-to-2022 revenues of the seven Class I's in constant 2022 dollars.
[4] Per the Council of Supply Chain Management Professional's (CSCMP's) *State of Logistics Report*, 2013 and 2022.
[5] Ibid., which includes import and export cargo for air freight

Talking about investment and revenue growth are only that—talk. The failure to grow revenue in real terms also belies the rhetoric about improving operating ratio, which measures both costs (in the numerator) and revenues (in the denominator). You can lower the operating ratio for a few years by cutting costs, but these are one-time gains, as are capital investments into more cost-effective assets. Alternatively, the most effective capital investments would do more than just improve asset productivity, they would grow revenue, which is an open-ended road to prosperity.

Now look at the Class I's record on capital investment as compared to distributions to stockholders (which include both dividends and the buyback of common shares).[6]



- The Class I's distributions to stockholders are larger than capital investments as reported (for the years 2010-to-2022: $239.7 billion in distributions, $193.2 billion in claimed capital expenditures, and $36.4 billion in discretionary capital expenditures).
- Distributions to stockholders have risen sharply.
- Discretionary capital investments, that is, those investments that are made in the hope of increasing profitability, are actually a small percentage of the capital investments that are claimed in the Class I's financial reports.

The first two bullet points above are self-evident. The third requires some explanation.

The long-lasting nature of railroad assets is at odds with the dynamics of most assets in our throw-away economy. How long do you expect to keep your refrigerator? your car? your electronic device? A main line crosstie should last 25-to-40 years; a railcar 40-to-50 years; rails 50-to-100 years if properly maintained and cycled.[7] Isambard Kingdom Brunel built large suspension bridges in the 1850's that British railroads still use at this writing. Real estate lasts forever, almost.

[6] See Appendix C for a spreadsheet itemizing capital expenditures and Appendix D for a spreadsheet itemizing distributions to stockholders for the seven Class I's from 2010 to 2022.

[7] "Using a model calibrated against test data, I might predict on average that [RR] wheels are expected to be defect-free for 15 years. Given the expected variability, however, some wheels might experience a fatigue failure after seven years or fewer. It can also go the other way. Some wheels might survive defect-free for 30 years or

Therefore, capital investment in a railroad asset commits resources for an unusually long time. Accounting rules for such long-lived assets have always been problematic, because no one really knows how quickly most rail assets will be used up, whether they will become obsolete, or how much the book value of an asset will understate its replacement cost due to inflation over that uncertain duration of use. Until 1983, there was an uneasy compromise in the U.S. concerning accounting rules for different kinds of railroad assets.

- The replacement of track used "betterment accounting," where replacements in kind were "expensed" and only track improvements were "capitalized," meaning that replacing line-of-road in kind (installing a replacement tie or rail or bridge with the same functionality) was booked by deducting the expense from revenue in the income statement, but improving functionality was booked by adding value to the balance sheet. For example, replacing 112-lb. rail with 132-lb. rail would be booked by expensing the cost of 112-lb. rail and only counting the incremental cost of 132-lb. rail as a capital expenditure that raises book value.
- The replacement of any other asset (cars, locomotives, signals, communication systems, terminals, buildings, etc.) used "depreciation accounting," where the entire expenditure was listed as an increase in book value to be depreciated over time, meaning that a percentage of the original expenditure would be charged against revenue in the calculation of each subsequent year's profit for the number of years guessed to be that asset's life span.

Then in 1983, the ICC succumbed to pressure and betterment accounting was abolished.[8] Now under depreciation accounting, replacing any rail asset in kind counts as capital investment, as do expenditures on assets to comply with federal mandates, such as the $10 billion spent by the Class I's between 2009 and 2021 on Positive Train Control (which is costly to maintain and has no effect on revenue). However, replacements in kind and investments due to governmental mandates are very different from the investments that Alfred Marshall contemplated as the foundation of a market economy. Marshall was referring to investments meant to improve

more. … I cannot point to a wheel on a train and say exactly how long it will last …. The same is true for rails." Gary T. Fry, Ph.D., P.E., in *Railway Age*, June 2023, p. 31, "Rail and Wheel Fatigue Crack Defects, Inspection Imperative"

[8] In the late 1970's, two big bankrupt railroads—the Rock Island and the Milwaukee Road—desperate to avoid liquidation, tried to plead their needs for federal loans and rate increases by using depreciation accounting for track structures in reports to the Securities and Exchange Commission. They had very little cash for current expenditures on track repairs, so depreciating past expenditures better indicated their losses and financial needs. Even more influential was lobbying by Conrail—itself the distillation of six bankrupt railroads—to change to depreciation accounting for track repairs. Between its start-up in April 1976 and the end of its $3.28 billion draw-down in federal funding in June 1981, Conrail had spent $1.66 billion on track repairs (per a chart on page 7 of its 1981 Annual Report). Conrail wanted to be able to reduce future taxes by charging depreciation in future years for this huge federal investment. There was also pressure on the ICC from other quarters to abolish betterment accounting. The Federal Accounting Standards Board (FASB) did not like one industry using a different accounting method from the rest, so the FASB was quick to rubber stamp the ICC"s ruling of January 26, 1983 that eliminated betterment accounting in its Finance Docket No. 36988. The FASB issued its "Statement of Financial Accounting Standards No 73" in August of 1983, requiring all railroads to use depreciation accounting exclusively. Other railroads acquiesced because depreciation accounting requires less bookkeeping, and more importantly for public image and in the ICC's own words, "a switch to DA [depreciation accounting] … will tend to make the railroads report higher earnings" (365 ICC 175) because "historical depreciation accounting fails to reflect the impact of inflation." (365 ICC 158) Looking more profitable was apparently deemed preferable to paying less tax.

profitability. Expenditures that only replace the functionality of a failing asset do nothing to improve profitability; they just maintain it. Here depreciation accounting fails Marshall's concept.

Furthermore, under depreciation accounting, the longer the life of an asset, the less its fixed depreciation charge represents the real cost of replacing its used-up value. The cumulative effect of inflation widens the gap between a depreciation charge and an up-to-date cost to replace an asset, more so for the long-lived assets of railroads and more so for periods of high inflation.

Back to the Capital Expenditures vs. Stockholder Distributions chart two pages preceding:

- The orange bars represent capital expenditures as reported by the seven Class I's.
- The blue bars represent capital expenditures as re-calculated by the author, as if betterment accounting were used for all long-lived assets instead of depreciation accounting and as if governmentally mandated assets were not capital expenditures but costs of doing business.

That is, the blue bars represent an attempt to remove from claimed capital expenditures things like the replacement of existing track structures, the replacement of existing car fleets,[9] the replacement of existing locomotive fleets,[10] and expenditures on Positive Train Control and pollution controls. The upshot of this exercise is that between 2010 and 2022, it is estimated that the seven Class I's sent 6.6 times as much money to shareholders as they spent on those capital investments meant to increase profits. The question is why? Higher profit levels are an open-ended and repetitive way to increase share value. If a railroad shareholder wants increased value and not just a fixed annuity, she must reinvest distributions somewhere else, somewhere with the prospect of profit growth.

As to why the rail industry has such huge distributions to stockholders, consider another basic principle of neoclassical economics—the division of labor. Adam Smith, the acclaimed "Father of Economics," gets right to the point about the division of labor in the first sentence of his iconic *Wealth of Nations*:

[9] Worse still, the Class I's have not been replacing car fleets, but instead outsourcing car ownership expenses to customers by increasingly requiring shippers to lease their own equipment. The total North American freight car fleet has been about the same for the last quarter century, but the incidence of private car ownership has steadily climbed. In 1971, only 18% of the U.S. freight car fleet was not owned by railroads (312,433 out of 1,762,135 total cars, per the Association of American Railroad's *Yearbook of Railroad Facts, 1976 Edition*, p.51), but half a century later in 2022, 77% of the North American freight car fleet was not owned by railroads (1,256,491 out of 1,641,055 total cars, per *Progressive Railroading Magazine*, August 2023, p. 21). Worse, private fleets tend to lock in 100% empty returns, because it is difficult for competing shippers to share fleets or triangulate loaded movements.

[10] The Class I's roster of serviceable locomotives plateaued in 2006 (23,732 units in 2006 versus 23,184 units in 2022, again per *Progressive Railroading*, August 2023, p. 22). Worse again, in 2015, when stringent new pollution rules took effect for newly built locomotives under Title 40 Part 1033 of the Code of Federal Regulations, thus adding to their cost, the Class I's greatly curtailed locomotive purchases and relied on rebuilding older units with lower pollution standards. (Built-new units installed in 2014: 1073, in 2015: 855, in 2016: 584, in 2017: 236, in 2018: 128, in 2019: 228, in 2020: 105, in 2021: 0; in 2022: 0, in 2023: 0 so far .) This curtailment caused the closing of Electro-Motive Diesel's factory in LaGrange, IL may cause the closing of Wabtec's factory in Erie, PA.

> The greatest improvements in the productive powers of labour, and the greater part of skill, dexterity, and judgment with which it is anywhere directed, or applied, seem to have been the effects of the division of labour.[11]

The first thought that Smith wanted to introduce in his book is that the foundation of economic productivity, or efficiency, is the division of labor. Specialization of labor allows individuals to hone customized skills; it reduces the skills and training required; it enables the very existence of complex organizations; it begets efficiency.

The classic example of specialization to increase efficiency is Henry Ford's assembly line. Instead of employing a highly-skilled artisan to create a complete and customized car, Ford employed a chain of semi-skilled specialists on an assembly line—each specialist only required to master one small piece of a process to install uniform parts. This is very efficient.

Yet at the end of the day, railroads are not an efficiency industry; they are a service industry. If the way that specialization is executed in railroading does not provide service that shippers want, then no efficiency can save them. If the division of labor motivates employees only to improve their separate efficiencies, then they only participate in a race to the bottom of service quality, because railroad departments can cut their own costs by increasing the costs of other departments. Stated another way, there is a high degree of substitutability among different pots of cost in railroading. For example:

- Fuel cost can be cut by going slower, which at some point requires more crews.
- Going slower lowers track wear & tear, which increases cycle time and the number of cars and locomotives needed to do the same work, and decreases transport value to the shipper.
- Reducing the prudent reserve of locomotives cuts engine ownership costs, but increases the incidence of trains held for power, increasing cycle time and the number of cars needed.
- The incidence and severity of accidents can be cut with shorter trains, but shorter trains increase crew costs.
- Reducing the number of sidetracks reduces track maintenance, but it also reduces the number of sidetrack customers.

The point is that if the motivation of a railroad decision-maker does not include an incentive to communicate and collaborate with other decision-makers, then the result is not net efficiency; it is net inefficiency. If specialists fail to appreciate the problems of their fellow specialists in other parts of the chain, or if there is no generalist in charge of the overall process in order to address those problems and to make periodic improvements, then we get poor service quality; we get an inability to perceive external threats and opportunities. Take note of a subtly crucial part of the automobile assembly line—the annual model change. Periodic changes in final output unlock an assembly line from the narrow pursuits of isolated specialists and the human tendency to justify and perpetuate the status quo.[12]

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[11] Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, as reproduced from the first edition of March 9, 1776, in The Modern Library by Random House, New York, 1937, p. 3

[12] In the 1880's, the great American logician and philosopher Charles Peirce attempted to articulate a three-stage model of how all things develop, wherein his third stage was habit-taking, which relates to the human tendency to justify and perpetuate the status quo. In his essay *A Guess at the Riddle*, Peirce summarizes succinctly that "three elements are active in the world, first, chance; second, law; and third, habit-taking." (*The Essential Peirce, Volume 1*, edited by Nathan Houser and Christian Kloesel, Indiana University Press, Bloomington, 1992, p. 277)

What motivates people at the departmental level? Not helpful in answering this question are simple pronouncements of what managers ought to do, such as Milton Friedman's dictum that a firm's managers should try "to increase its profits,"[13] or Ed Deming's dictum that they should try "to bring a process into statistical control."[14] A little more helpful in explaining, it seems to me, would be the objectives of a game we played as children called *Careers*, whose winner had to amass sixty points in a mix of three categories of motivation: 1) money, 2) happiness, and 3) fame. Yet with the hindsight of forty-five years in the rail industry, I do not see these three objectives as satisfactory stand-alone explanations. Regarding money in particular, the noted behaviorist and psychologist B. F. Skinner had this to say: "It is now generally recognized that the employee seldom works 'just for the money.' … Extra-economic factors in industry usually have a more direct effect upon the behavior of the worker either in coming to work or in staying on one job."[15]

Alternatively, we could shift focus regarding the question of departmental objectives by looking at top-down commands instead of bottom-up motivations. Most pragmatically, we could look at cost minimization. Cost-cutting has been the hue and cry for a very long time in the rail industry, with the catch phrase of becoming the "low cost carrier"[16] being particularly popular in the 1970's and 1980's. Budget attainment and cost-cutting are items over which departmental heads are able to exercise control. However, a directive to cut costs just takes us back to the need to consider collateral effects. It takes time, relationship skills, and concerted effort for departments to consider the collateral effects of their cost-cutting on other departments, or more importantly, on customers.

So we are back at a consideration of motivators for the people in power in rail departments, where many of us would see power itself as the great motivator—the need to maintain and enhance status and control. Economist John Kenneth Galbraith speculated about where power resides when he wrote that "Power goes to the factor which is hardest to obtain or hardest to replace."[17] It is not the stockholder or owner who is hardest to replace in a large company, but the departmental head. Again in Galbraith's words, this makes the pursuit of power "the great black hole of economics,"[18] a personal motivator that undermines the orderly assumptions of neoclassical economists about capital investment.

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[13] See Milton Friedman with the assistance of Rose D. Friedman, *Capitalism and Freedom* (University of Chicago Press, Chicago, 1962), 40th Anniversary Edition, 2002, p. 133, as repeated in a *Wall Street Journal* commentary on September 13, 1970. "The view has been gaining widespread acceptance that corporate officials and labor leaders have a 'social responsibility' that goes beyond serving the interest of their stockholders or their members. This view shows a fundamental misconception of the character and nature of a free economy. In such an economy, there is one and only one social responsibility of business—to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition, without deception or fraud."

[14] See W. Edwards Deming, *Out of the Crisis* (Massachusetts Institute of Technology, Cambridge, MA, 1982), p. 404

[15] B. F. Skinner, *Science and Human Behavior* (The Free Press division of Simon & Schuster, New York, 1953), p.390

[16] Consider the words of Earl J. Currie in *Burlington Northern, A Great Adventure* (Capital A Publications, 2019, p. 155) where he says "We used this effectively in focusing on cost reduction, always repeating, 'Low Cost Carrier, Low Cost Carrier.'" Currie's rail career included being Burlington Northern's SVP of Maintenance & Transportation, Soo Line's EVP of Operations, CSX's VP Engineering, and CSX's VP & Chief Transportation Officer.

[17] John Kenneth Galbraith, *The New Industrial State* (Houghton Mifflin Company, Boston, 4th edition of 1985), p. 58

[18] Ibid., p. xviii

Therefore, a departmental head and underlying team leaders are often on the lookout for perceived threats to their power and authority, which is to say *not often* on the lookout for ways to invest capital, ways to maximize shareholder wealth, ways to bring processes into stabilized control, or even ways to minimize budgets.[19] Bill Wilson, co-founder of the Twelve Step programs, had this to say about the quest for power: "we AAs look with deep apprehension upon the vast power struggle about us, a struggle in myriad forms that invades every level, tearing society apart."[20]

Now we have reached a working hypothesis for why a railroad organization of specialized, centralized, isolated, and powerful operating departments might have difficulty in identifying, much less prosecuting, lucrative capital investments. In railroading, new carload opportunities are usually complex, meaning that they need the coordinated facilitation of infrastructure, rolling stock, switching service, linehaul service, rates, solicitation, billing, and customer service. Projects necessarily require communication and collaboration among departments, but if those departments hoard information and lack a forum, then **it is not Wall Street that is demanding the distribution of free cash flow to shareholders, rather it is the Class I's that are dispensing cash for which they can find no alternative use**. There are no generalists in a rail organization below the level of president. There are no effective cross-functional forums for departments to coordinate their activities. There are no incentives for increasing budgets—a prerequisite for increasing service quality and traffic.

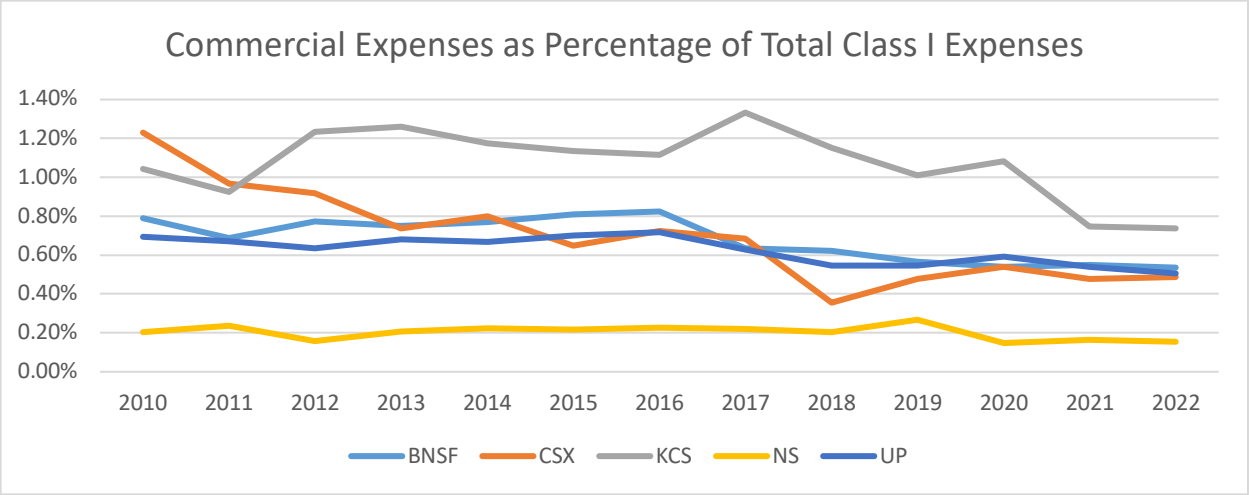
Perhaps we have overlooked the solicitation part of the process to prosecute carload opportunities and its ability to pull everything together—to identify and shepherd capital investments that will grow profit. There are commercial departments at the railroad that would seem to be tasked with profit growth. They are listed in reports to the Surface Transportation Board as marketing, sales, and industrial development.[21] The chart below shows their importance relative to other departments, as measured by their expenditures compared to other departments.[22]

[19]When the author was in charge of a motor pool in the U.S. Army, the accepted practice was to spend every dollar in that year's budget, or else it might get reduced by the unspent amount in the next year's budget.

[20] Bill Wilson, *The Language of the Heart* (AA Grapevine Inc., New York, 1988), p.207, as there reprinted from a Wilson letter dated February 2, 1954, to the Secretary of Yale University, Reuben A. Holden (who happened to be a lifelong friend of the author's father)

[21] In annual R-1 Reports to the STB, the expenses of these three departments are itemized in Schedule 410 in Line 604 (marketing), Line 605 (sales), and Line 606 (industrial development).

[22] See Appendix E for a spreadsheet itemizing commercial expenses and total expenses for the five US Class I's.



As shown in the previous chart, Class 1's now average spending a minuscule one-half of one percent of their annual budgets on commercial effort. They outsource most of the solicitation of intermodal traffic to third parties, which do not divulge beneficial shippers and which whipsaw rates downward in pricing contracts that preempt differential pricing to individual shippers. The Class 1's disallow external commissions on carload traffic but at the same time have no internal geographic sales[23] and have largely replaced the confidential shipper contracts allowed under the Staggers Act of 1980 with uniform pricing circulars. The tallest railroad in this commercial midget parade, the Kansas City Southern, whose commercial budget was already in steep decline, was just merged into the Canadian Pacific, an event that does not bode well for future commercial effort. The prestige and clout, or rather the lack thereof, that the commercial departments have with the operating departments are well represented in the previous chart by the 48% drop in commercial expenditures at CSX in 2018 after the arrival of Hunter Harrison as CEO in 2017.

Unlike safety, sales and marketing are not generally considered to be part of everyone's job, and they are expendable. When Norfolk Southern and CSX divvied up Conrail in 1999 and kept joint ownership of the three little pieces that they could not agree on dividing, they tasked Conrail Shared Assets only with eliminating as much cost as possible, and tellingly, disallowed it from employing any commercial representatives or performing any commercial functions.[24]

What could be done to get departmental leaders to communicate and collaborate with each other about the attractiveness of service and about capital expenditures? Circle back to the ideas of Milton Freidman, who touted profit growth as the only legitimate strategy for business in a market economy, and of Edwards Deming, who touted the importance of getting processes under statistical control as the tactical gateway to profit growth. We should not dismiss their ideas so

[23] with the exception of nineteen field sales managers attached to Norfolk Southern's operating divisions

[24] On January 24, 2003 at a meeting of the National Industrial Transportation League in Houston, the author and two other Conrail expatriates, Baxter Wellmon (who had been Conrail's AVP-CQI) and Ron Bowes (who had been Superintendent of Conrail's New England Division), launched into give a presentation about Conrail Shared Assets. They tried to elucidate why CSA's lack of commercial functions was a problem for shippers, but members of the NIT League's Railroad Transportation Committee who were in attendance apparently became worried that Norfolk Southern and CSX would somehow retaliate for allowing such a discussion, so they had the three former Conrail officers escorted out of the building and their presentation expunged from the minutes.

quickly. Deming, after a career of stunning success in helping to transform the image of Japanese industry into one of high quality production, and then in transforming Henry Ford's old company into having much higher quality and much higher profits, in 1982 co-founded the W. Edwards Deming Institute for the Improvement of Productivity and Quality. This organization created a process known as Total Quality Management. TQM in turn led to several spin-offs, such as Continuous Quality Improvement. TQM and CQI require effective cross-functional forums.

A CQI program was instituted at Conrail by Jim Hagen in 1990, soon after he became Conrail's CEO in 1989. Key parts of this CQI program were quality training programs attended by 5,000 Conrail employees in 1991 and another 12,000 in 1992 (or 70% of Conrail's employees over two years). There was also a concerted effort to establish personal rapport among different departments. There were off-campus meetings among 60 departmental leaders (11 of whom were from the commercial departments—marketing, sales, and industrial development) known as the Strategy Management Team. In Jim Hagen's message in Conrail's 1992 Annual Report, he characterized the Strategy Management Team as having "broken through traditional functional barriers which previously prevented the sharing of information, stymied creativity and slowed decision-making."[25] This was a farsighted and valiant effort on Hagen's part.

Did it work? Not really. Quality measurement is a key component of TQM/CQI, but the Strategy Management Team never measured key service parameters like door-to-door transit time schedules or schedule adherence. The author's study of service among Conrail's largest 44 terminal areas showed that scheduled service deteriorated in every way between 1989 and 1993. On average for 1,892 service lanes among 44 terminal areas, scheduled transit time in 1993 was 12% longer than in 1989, fastest scheduled transit time was 15% longer, and weekly scheduled service frequency was 13% less.[26] In constant dollars, from 1989 to 1993, revenue dropped 6.1%. When Dave LeVan succeeded Jim Hagen in 1995, he disbanded the Strategy Management Team.

What could work? Surely there are departmental leaders who understand that motivations and objectives must be in common across departments. These things are universal. They have been around as long as human language—that greatest of all our survival skills—the ability to communicate and coordinate activities. Academia talks about this. In reflecting back on his years as President of Yale University, Rick Levin makes the point that "I learned that good decisions can be reached by thoughtful and conscientious people who put the interests of the institution first."[27] The military talks about this. *The Armed Forces Officer*, *Edition of 1950*, the version that was given to all new US military officers for decades, advises in italics: *"The absence of a common purpose is the chief source of unhappiness in any collection of individuals."*[28]

In conclusion, consider what Harvard Professor Daryl Wyckoff suggested in his 1976 book *Railroad Management* concerning one way to foster communication and collaboration among railroad departments and to break down the interdepartmental barriers that he labeled the "Chinese

[25] Consolidated Rail Corporation, *1992 Annual Report*, from Jim Hagen comments on page 5
[26] See the author's book *A Railroad Manifesto* (Rail Cents Enterprises, Wallingford PA, Second Edition 2016), with summarized operating statistics on p. 38 and detailed tables of operating statistics in Appendix D, pp. 111 to 156.
[27] Richard C. Levin, President of Yale 1993 to 2013, as quoted in the *Yale Alumni Magazine*, May/June 2023, p. 46
[28] *The Armed Forces Officer*, as issued by the Department of the Army as its Army Pamphlet 600-2 (United States Government Printing Office, Washington, 1950), p. 106

Walls of Management."[29] Wyckoff suggested that railroads reorganize into geographically-centered decision-making units instead of functionally-centered decision-making units. He envisioned working-team-sized profit centers led by a generalist in charge of a group of specialists. This actually sounds similar to another of Jim Hagen's initiatives: Local Area Management.

Without geographic profit centers, Wyckoff envisioned the scenario which the Class I's have now adopted: being "wholesalers of intercity transportation, abdicating local operations to other institutions."[30] They have also growth-proofed themselves with an organizational structure that fails to communicate and collaborate internally and with the majority of potential customers. This structure therefore also fails to identify profitable capital investments.

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[29] D. Daryl Wyckoff, *Railroad Management* (Lexington Books, Lexington MA, 1976), p. 3
[30] Ibid, p. 8