

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

STB Ex Parte No. 711

**PETITION FOR RULEMAKING TO ADOPT REVISED
COMPETITIVE SWITCHING RULES**

**OPENING COMMENTS OF THE
ASSOCIATION OF AMERICAN RAILROADS 233881**

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Of Counsel:
David L. Coleman
Paul A. Guthrie
Paul Hitchcock
James A. Hixon
Theodore K. Kalick
Jill K. Mulligan
Roger P. Nober
John P. Patelli
David C. Reeves
Louise A. Rinn
John M. Scheib
Peter J. Shultz
Gayla L. Thal
Richard E. Weicher
W. James Wochner

Louis P. Warchot
Association of American Railroads
425 Third Street, S.W.
Suite 1000
Washington, D.C. 20024
(202) 639-2502

Samuel M. Sipe, Jr.
Anthony J. LaRocca
Frederick J. Horne
Steptoe & Johnson, LLP
1330 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 429-6446

*Counsel for the Association of
American Railroads*

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In a Notice issued by the Board on July 25, 2012 and modified on October 25, 2012, the Board invited interested parties to submit comments and empirical evidence on a proposal by the National Industrial Transportation League (“NITL”) to modify the Board’s competitive access regulations relating to reciprocal switching. *Petition for Rulemaking to Adopt Revised Competitive Switching Rules*, STB Ex Parte No. 711 (served July 25, 2012) (“EP 711 Notice”). Set forth below and in the attached verified statements are the Opening Comments and Evidence of the Association of American Railroads.

AAR and its witnesses explain in these Opening Comments that the NITL proposal is a short-sighted attempt to obtain lower rates for a group of favored shippers at the expense of the broader shipping community. If the NITL proposal were adopted, all users of the rail network would be threatened by a potentially serious reduction in the quality of rail service. The Board should not be picking winners and losers among rail shippers through a restructuring of commercial relationships in the railroad industry. The NITL proposal is seriously flawed as a matter of public policy and is inconsistent with the existing statutory scheme as construed by the courts.

I. Introduction and Executive Summary

The NITL proposal contemplates a fundamental change in the Board's regulation of Class I railroads' operating and commercial practices. The NITL proposal purports to give shippers served by a single Class I railroad the right to force their serving railroad to switch the shipper's freight to another railroad if (1) there is no effective inter- or intramodal competition for the movement to be switched, (2) switching can be performed within a "reasonable distance" of the shipper's facilities, and (3) the switching is not infeasible or unsafe or would not unduly hamper the incumbent railroad from serving its other shippers. NITL would implement this mandatory switching regime through the use of conclusive presumptions that would establish when there supposedly is a lack of effective inter- or intramodal competition and when switching can take place within a "reasonable distance" of the shipper's facilities. *See Petition for Rulemaking to Adopt Revised Competitive Switching Rules*, Ex Parte 711, at 8 (filed July 7, 2011) ("NITL Petition").

The Board noted in the July 25, 2012 Notice that it is not able to "fully gauge [the] potential impact" of the NITL proposal and concluded that "additional information is needed before we can determine how to proceed." EP 711 Notice at 2. The Board's initiation of this proceeding to develop information on the impact of the NITL proposal reflects the fact that there is no empirical basis at the present time for presuming that the NITL proposal is in the public interest. It would not be appropriate to give serious consideration to the kind of fundamental change in the Board's competition regulations reflected in the NITL proposal without first understanding its potential impact on railroads and shippers and on the adequacy and efficiency of rail transportation.

AAR's Evidence

AAR and its witnesses have undertaken an analysis of the potential impact of the NITL proposal on railroads, shippers and the Nation's rail network using the carload waybill sample data made available by the Board and other generally available sources of information. As AAR and its witnesses explain, this information does not permit an assessment of potential impact at the level of precision or certainty that the Board seeks. Moreover, a meaningful assessment of potential impact is severely hampered by the fact that the NITL proposal is little more than a general concept with critical details left to be developed at some future time. The many ambiguities and unanswered questions raised by the NITL proposal necessarily make quantifying its impact an exercise in speculation. Despite these serious limitations, AAR and its witnesses present the following preliminary analyses and conclusions, which are described in more detail below and in the accompanying verified statements.

First, NITL tries to portray its proposal as moderate and limited, but the proposal has the potential to affect a large amount of railroad traffic. AAR's witnesses Messrs. Baranowski and Brown of FTI Consulting Inc. explain that it is not possible using the carload waybill sample and other generally available industry data to carry out a shipper-specific or terminal-specific impact analysis, as requested by the Board. However, their analysis of the available data shows that, under the NITL proposal, over one-third of the rail industry's non-intermodal carloads could become subject to mandatory switching orders.¹ Moreover, the number of carloads potentially affected understates the impact of the NITL proposal because the carloads that would be subject to mandatory switching would tend to be high-margin traffic. Messrs. Baranowski/Brown also

¹ Intermodal carloads were excluded from the analysis of Messrs. Baranowski/Brown since the NITL proposal does not purport to cover traffic that originates or terminates at railroad-owned intermodal facilities.

show that the NITL proposal could affect movements that originate or terminate at approximately 40 percent of the Nation's rail-served stations. They explain that due to limitations in the available data this estimate is likely understated.

Second, the NITL proposal would have a negative impact on rail service across the rail network, with especially serious potential effects in areas where yard or line capacity is presently constrained. AAR's witness Mr. Rennie of Oliver Wyman, Inc. explains that, even under ideal circumstances, adding an interchange to a movement that is currently handled in single-line service adds time and complexity to the movement. Mr. Rennie explains that the tremendous improvements in productivity, reliability of service and capacity utilization that the railroad industry has achieved since the Staggers Act were accomplished in large part by rationalizing the routing of traffic and streamlining carload switching activity. The NITL proposal would turn back the clock on these improvements that have benefitted all users of the rail network. As Mr. Rennie explains, the additional switching activity that would be required, the increased possibility of service failures caused by that new switching activity, and the complex operations that would often be required to bring about the new interchanges would disrupt traffic patterns, produce congestion in yards, and undermine efficient scheduling of train service. Even where traffic disruptions resulting from the NITL proposal might be localized, recent experience shows that such disruptions have the potential to spread across the interconnected rail network with large-scale effects. Mr. Rennie provides numerous examples to illustrate the adverse impact of mandatory switching on service. He also explains that longer transit times would increase car costs for shippers and railroads and increase car and locomotive fleet requirements. Safety could be compromised. Substantial new infrastructure would be needed to support the new mandatory

switching regime, but railroads would not have the incentive to make the necessary capital investments and their ability to fund the needed investments would be reduced.

Third, AAR's witnesses Messrs. Eakin and Meitzen of Christensen Associates explain that the NITL proposal favors a defined group of shippers – those served by a single Class I carrier who happen to be located in the vicinity of an interchange between two railroads. Those shippers would likely see a decline in their rail service as the rail network became less efficient, but they might obtain lower rates to offset in part the decline in service quality. However, the majority of shippers would be ineligible for mandated switching and would suffer a reduction in service quality without any offsetting rate reduction as a result of the service disruptions caused by the mandatory switching orders. Moreover, in addition to a decline in rail service, the excluded shippers could suffer from a competitive disadvantage in markets where they compete with the shippers able to invoke mandatory switching. By restructuring the railroad industry to provide multi-carrier service for a group of favored shippers, the NITL proposal would pick winners and losers among shippers and override market forces in many areas of the U.S. economy.

The NITL Proposal Is Not in the Public Interest

As the Eakin/Meitzen testimony suggests, the NITL proposal presents a textbook example of the law of unintended consequences. The express objective of the NITL proposal is to produce lower rates for a group of favored shippers. While it is impossible to predict the precise impact on rates, the stated objective of the NITL proposal is to produce lower rates for the favored shippers, with the consequent reduction in contribution (revenues in excess of variable cost) that railroads could invest in rail infrastructure. But in the process of giving artificial rate reductions to a group of shippers – despite the absence of any demonstration that

there is a legitimate reason for them to obtain lower rates – the NITL proposal would create rail service complications that would seriously compromise the efficiency and reliability of the U.S. railroad network that has been an engine of economic growth in this country and is the envy of the world. NITL asks the Board and the entire rail community, including shippers who would be put at a competitive disadvantage as a result of the NITL proposal, to accept the risks of serious rail service failures so that a certain group of shippers can get artificial rate reductions. It would not be in the public interest for the Board to embark on such a fundamental change in regulatory policy, with potentially adverse implications for all users of the rail network, simply to satisfy the desire of a group of shippers to pay lower rail rates.

The NITL Proposal Is Inconsistent with Governing Law

Nor would it be consistent with governing law for the Board to engage in the restructuring contemplated in the NITL proposal. Recognizing that this proceeding is primarily about the development of empirical evidence, AAR nonetheless believes that it is critically important that the Board not lose sight of the broader legal context of this proceeding in evaluating the evidence presented by participating parties. NITL's proposal seeks to restructure the railroad industry to provide multi-carrier service through regulatory mandates for a large group of shippers who have no claim for such regulatory intervention apart from the fact that they are directly served by only one railroad. AAR explains below that the ICC and the courts have already concluded that Congress did not give the Board such broad authority. Moreover, the express objective of the NITL proposal is to obtain rate relief for a group of favored shippers without having to meet the statutory maximum reasonable rate standards that the Board has implemented to determine whether rate relief is warranted. The ICC and the courts have concluded that use of the competitive access provisions of the statute to achieve back-door rate

relief is impermissible. AAR further explains below that the presumptions that NITL proposes to implement its mandatory switching regime are ill-conceived, inappropriate and unworkable.

Therefore, the basic thrust of the NITL proposal and its proposed mechanics are fundamentally at odds with the regulatory framework established by Congress. The Board's competitive access authority, including its authority to order reciprocal switching, is intended to address specific problems with a railroad's conduct, not as a tool for restructuring the rail industry. But the NITL proposal requires no showing of a problem with service provided to a particular shipper, no evidence that the shipper is entitled to a rate reduction, and no explanation by the shipper as to why access to another carrier would be appropriate. The sole predicate for relief, once the geographic conditions are met, is that the incumbent rail carrier supposedly has market power over the movement at issue. The Board does not have authority to order relief based solely on the existence of market power; some further individualized showing that the relief is justified is required.

* * * *

AAR's Comments and Evidence are organized as follows. AAR first summarizes the evidence submitted by AAR's witnesses in response to the five specific questions posed by the Board and explains why the NITL proposal is not in the public interest. Following a discussion of the evidence, AAR explains why the NITL proposal is contrary to the law and precedent governing the Board's use of its competitive access authority. Finally, AAR discusses the flawed conclusive presumptions that are at the heart of the NITL proposal.

II. AAR's Evidence Concerning the Board's Five Impact Questions

This proceeding is an outgrowth of the Board's wide-ranging inquiry into competition in the railroad industry in Ex Parte No. 705, *Competition in the Railroad Industry* (STB served Jan. 11, 2011) ("Jan. 11, 2011 Notice"). After comments were filed by a large number of parties but

before the Board issued a decision, NITL filed the Petition for Rulemaking that is the subject of this proceeding. In response to NITL's Petition, the Board concluded that it could not assess the impact of the NITL proposal on the railroad industry and its shippers and requested that interested parties submit evidence on that issue. The Board specifically asked the parties to address five sets of questions:

1. Identify the existing terminals and shippers located within the boundaries of those terminals. Explain whether the shippers can currently obtain competitive switching and any restrictions or limitations on the shippers' competitive switching rights.
2. Identify how many additional shippers and what amount of revenues earned by the incumbent Class I rail carrier from those shippers would be subject to competitive switching under NITL's proposal.
3. Based on the commenter's assumed access pricing methodology, by how much would NITL's proposal lower rates for the shippers identified in the study that would qualify for competitive access? How much revenue would the incumbent Class I rail carrier lose as a result of NITL's proposal? How much of this revenue loss could be offset through traffic increases or other gains?
4. What would be the economic and regulatory impacts of NITL's proposal on the captive shippers served by the incumbent Class I rail carrier or carriers included in the study that would not be covered by NITL's proposal and, therefore, would continue to be served only by the incumbent carrier? Would their rates increase, and, if so, by how much, to offset the reduced rates to others?
5. How would rail network efficiency be affected by NITL's proposal?

EP 711 Notice at 9.

AAR's evidence on the questions posed by the Board is set out in the verified statements of Michael Baranowski and Richard Brown of FTI Consulting, William Rennie of Oliver Wyman, and Kelly Eakin and Mark Meitzen of Christensen Associates. Each statement addresses different aspects of the five questions posed by the Board. Messrs. Baranowski and

Brown provide an estimate of the number of stations at which switching might be required under the NITL proposal and the aggregate number of revenue carloads, based on the 2010 Carload Waybill Sample (CWS), that could be subjected to mandatory switching under the NITL proposal. (Board Questions 1 and 2). Messrs. Eakin and Meitzen address the potential impact of the NITL proposal on shippers other than those who could take advantage of mandated switching. They also address whether railroads could expect to replace revenues lost due to mandated switching through additional traffic. (Board Questions 3 and 4). Mr. Rennie addresses the numerous ways in which the NITL proposal would likely have an adverse impact on service and degrade existing rail network efficiency. (Board Question 5).

AAR's witnesses explain that while it is clear that the NITL proposal would have broad, adverse effects on railroads and the rail network, the precise impacts of NITL's proposal are impossible to determine for multiple reasons. First, the CWS data made available by the Board permit only a rough estimate of the movements that would be subject to mandated switching under NITL's proposal. Second, the NITL proposal is vague and unclear in many respects, with many of the critical details about scope and implementation to be developed. Finally, even if the immediate impact of the proposal on shippers that could take advantage of mandated switching could be determined, the NITL proposal would have wide collateral effects throughout the rail network and the U.S. economy, including both competitive effects and effects on rail service. Under some circumstances, those collateral effects could be severely adverse to efficient rail operations. The potential for serious adverse effects argues strongly against further pursuit of the NITL proposal.

A. Scope of the NITL Proposal – Board Questions 1 and 2

The first two questions posed by the Board seek information on how many shippers would be able to obtain mandated switching under the NITL proposal. In its first question, the Board asks parties to identify rail terminals and shippers located within terminal boundaries. In its second question, the Board seeks information on how many additional shippers would be able to obtain switching under the NITL proposal through a Board order and the amount of Class I carrier revenues that are associated with movements that would be subject to mandated switching. As explained by Messrs. Baranowski and Brown, limitations in the CWS data made available by the Board and ambiguities regarding the NITL proposal permit only rough estimates of the scope of the NITL proposal and the traffic that would be directly affected.

First, the Board's CWS data do not contain information on individual shippers. Thus, rail traffic can be examined only on a movement-specific rather than shipper-specific basis. While an estimate can be made of the movements that would be subject to mandatory switching, individual shippers that would be able to invoke the mandatory switching provisions of the NITL proposal cannot be identified. Similarly, the CWS data do not permit identification of the switching options available to individual shippers.

Second, as to terminals, the NITL proposal does not attempt to define "terminal" or identify terminal locations, and the CWS itself does not identify terminals. Even if an accepted general definition of terminal were available, it would not be feasible to identify and classify all of the locations where railroads interconnect to determine whether or not they fit the definition of "terminal." Instead, a fact-specific inquiry by the Board would be required with respect to each potential terminal location. Under ICC and Board precedent, the Board would need to examine and weigh the facts and circumstances relating to the transportation at issue at each location to

make this determination.² Absent these individual inquiries, it is not possible to say which shippers or movements potentially subject to NITL's proposal might be located in terminal areas.

Third, the NITL proposal appears to contemplate that switching could be mandated for shippers whose facilities are located within 30 air-miles of a working interchange with another rail carrier. It is possible to identify individual rail stations and to draw a circle with a 30-mile radius around those stations. However, the available data do not indicate where a shipper's facility is located relative to the rail station, and therefore do not indicate whether the shipper's facility itself is within 30 miles of the working interchange. A shipper's facility may be located several miles from a rail station.

Fourth, the NITL proposal would mandate switching where there "is or can be a working interchange." NITL Proposal at 7. The available data permit identification of junction points between railroads, but the data do not show whether the junction is or can be a working interchange. Moreover, the NITL's proposal is vague as to what might be considered a "working" interchange.

² See, e.g., *Midtec Paper Corp. v. Chicago & N.W. Transp. Co.*, 3 I.C.C. 2d 171, 179 ("The questions of what is a terminal and what is switching are factual ones requiring consideration of all the circumstances surrounding a particular case."), *aff'd sub nom. Midtec Paper Corp. v. United States*, 857 F.2d 1487 (D.C. Cir. 1988). Factors relevant to this individualized determination include how the track at issue is used, whether operations take place within railroad yard limits and whether service is performed within a cohesive commercial area. See *Rio Grande Indus., Inc. – Purchase and Related Trackage Rights, Soo Line R.R. Co. Line Between Kansas City, MO and Chicago, IL*, Docket No. 31505, 1989 WL 246814 at 9 (ICC served Nov. 15, 1989) ("The presence of team tracks, freight houses or assembly facilities has also been given significant weight.") (citing *Chicago, M., St. P. & P.R.R. Co., Debtor (Richard B. Ogilvie, Trustee) v. Iowa Northern Railway Company* (not printed), Docket No. 30509 (ICC served November 21, 1984); see also *Delaware & Hudson Ry. and N.Y. D.O.T.—Exemption for Use of Terminal Facilities*, FD No. 29908, at 3 (I.C.C. served Nov. 10, 1982) ("the determination of whether the involved track is indeed a terminal facility turns upon our examination of both the physical description of the property and the operations to be performed, and the use to be made of the track.")).

Fifth, the NITL proposal would deem a shipper to be eligible for mandated switching if the incumbent rail carrier “handled 75 percent or more of the freight volume transported of the movement(s) for which such switching is sought for the twelve month period prior to the petition seeking such switching.” NITL Proposal at 67. The numerous problems with the NITL’s 75 percent presumption are discussed later in these comments. What is important here is that the CWS do not provide data that would support an analysis of how the 75 percent presumption would apply because the CWS includes only rail movements. Without knowing how much traffic moves by a mode other than rail, it is impossible to determine whether 75 percent of the total traffic moves on the incumbent railroad.

Sixth, there are several ambiguities in the NITL proposal that make the scope of its application uncertain. For example, the temporal scope of a mandated switching order is not addressed in the NITL proposal. Would a mandated switching order apply to only a single shipment or to shipments over a prescribed period of time, such as a year? Further, would a switching order apply to the portion of traffic that the incumbent did not handle before the switching order or to new traffic to or from different points? Similarly, the NITL proposal would appear to apply to contract and exempt traffic even though the Board does not have jurisdiction over those movements.

Notwithstanding these data limitations and ambiguities in the NITL proposal, Messrs. Baranowski and Brown have developed an order of magnitude estimate of the broad impact that the NITL proposal would have. As described in their verified statement, Messrs. Baranowski and Brown reviewed the 2010 CWS to identify those stations, by standard point location code (“SPLC”), that were served only by a single Class I carrier and therefore would, if the shipper “facilities” were located at the stations, satisfy the first prong of the NITL proposal. For the

reasons noted above, Messrs. Baranowski and Brown were not able to determine which of the identified stations were within “terminals,” but they were able to identify those stations served by a single Class I carrier that were also within 30 air miles of a junction with another railroad. Out of a total of 6,749 stations in the 2010 Waybill Sample data served by a single Class I carrier, 3,419, or 50.7% were within 30 miles of a junction with another railroad. In other words, by this measure the NITL proposal has the potential for introducing mandatory switching at approximately half of the stations now served only by a single Class I carrier.

This estimate understates the number of stations that could be affected by the NITL proposal. Messrs. Baranowski and Brown included on their list of affected stations only those stations where the CWS data showed traffic originated or terminated by a single Class I carrier. Many stations that were excluded because the CWS data show service by more than one carrier would nonetheless have shippers that would be covered by the NITL proposal because, while the *station* is served by more than one carrier, shipper and receiver facilities served through that station are served by only a single Class I carrier.

As a second step in their analysis, Messrs. Baranowski and Brown analyzed the CWS data to develop an order of magnitude estimate of the number of revenue carloads associated with the stations they identified that could potentially qualify for mandated switching under the NITL proposal. As explained in their statement, Messrs. Baranowski and Brown excluded intermodal traffic from their car count because intermodal traffic generally does not originate or terminate on the rail network at shipper facilities. They included contract and exempt traffic because the NITL proposal does not appear to exclude such traffic. Messrs. Baranowski and Brown identified 7.5 million carloads based on the 2010 Waybill Sample. Based on this measure, the NITL proposal could potentially mandate switching for more than 1/3 of the non-

intermodal carloads transported by Class I railroads each year. Messrs. Baranowski and Brown further explain that focusing on the percentage of carloads potentially affected understates the overall impact of the NITL proposal because the affected carloads would tend to produce higher than average contribution.

In short, while the data limitations and ambiguities in the NITL proposal make it impossible to generate a precise impact estimate, Messrs. Baranowski and Brown's analysis demonstrates that the NITL proposal would potentially affect a huge volume of traffic both in absolute terms and as a percentage of the total rail traffic carried by the Class I railroads.

B. How Much of a Rate Reduction and Corresponding Loss of Revenue Could Be Expected – Board Question 3

The Board's third question is in three parts: how much would rates decrease based on the commenter's assumed access pricing methodology (since NITL offered no proposal); how much revenue would the Class I carriers lose; and would increased traffic offset revenue losses. The Board's question on likely rate reductions recognizes that the impact of mandated switching depends to a large extent on the compensation that would be paid to the incumbent railroad for providing the mandated switch. However, the statute leaves determination of compensation for reciprocal switching to the involved railroads in the first instance. 49 U.S.C. § 11102(c)(1). Only if the carriers are unable to reach an agreement may the Board prescribe compensation for a reciprocal switch. AAR takes no position on the outcome of private negotiations among railroads regarding compensation for access and therefore is not in a position to provide estimates of rate reductions that would result from the NITL proposal.

Since AAR is not able to estimate rate reductions or identify with any certainty the traffic that would receive rate reductions, AAR is not in a position to estimate the revenue or

contribution losses that railroads would experience as a result of the NITL proposal.³ However, it is clear that the main objective of the NITL proposal is to obtain rate reductions for a potentially large group of shippers. Reduced rates on the affected movements would reduce railroad revenues, and lower revenues would reduce the amount of capital that railroads are able to reinvest in the rail infrastructure. While it is not possible to predict the level of rail rates or the precise amount of lost revenues, the magnitude of traffic at issue suggests that the effect on total revenue and contribution could be substantial.

In addition, railroad financial performance would be adversely affected because the NITL proposal would substantially increase the cost to provide transportation service. As explained below, Mr. Rennie shows that many of the rail service and efficiency improvements achieved over the past three decades would be reversed by the introduction of mandated switching, resulting in higher cost to produce the same amount and quality of service that rail carriers provide today. Operating costs would increase with the decline in efficiency and additional infrastructure would be needed simply to avoid congestion caused by the introduction of new interchanges and switching requirements. Since rates would be driven down and costs would be increased, the rail revenues and contribution available to make infrastructure improvements would be substantially reduced.

The Board's third question suggests the possibility that the reduced rail revenues produced by mandated switching might be offset by additional revenues generated by new traffic attracted to the railroads by lower rail rates. Messrs. Eakin and Meitzen explain why there is no

³ As explained by Messrs. Eakin and Meitzen, contribution (revenues above variable cost) is the more appropriate measure of how the NITL proposal would affect railroads. It is impossible to estimate the extent of contribution losses that would result from the NITL proposal for the same reasons it is impossible to quantify the impact on revenues.

reason to believe that increases in traffic would offset losses from the reduced rates and higher cost of service that would result from the NITL proposal.

First, Messrs. Eakin and Meitzen explain that contribution loss rather than revenue loss is the appropriate measure for the impact of the NITL proposal. If rates were, in fact, driven down substantially, as NITL hopes, any new traffic might generate little or no additional contribution. Messrs. Eakin and Meitzen demonstrate that the NITL proposal, if implemented, would reduce contribution available to railroads under any circumstances. Moreover, whatever additional gross revenue the new traffic might generate could be offset by the costs for new infrastructure investments or losses due to underutilized infrastructure.

Second, Messrs. Eakin and Meitzen explain that the decline in service levels that would result from the introduction of new switching and interchange activity could neutralize any benefit that potential new shippers might see in lower rates. Indeed, the decline in rail service could actually drive existing traffic away from the rail network, particularly the traffic of shippers not covered by the NITL mandated switching proposal who could be driven out of markets they currently reach.

C. How Would the Proposal Affect Shippers Who Could Not Obtain Mandated Switching – Board Question 4

The Board's fourth question asks how shippers and receivers who would not have access to mandatory switching under the NITL proposal would be affected. Messrs. Eakin and Meitzen explain that the adoption of the NITL proposal would be a market intervention by the STB that creates winners and losers among rail shippers and would also have broad potential effects in non-transportation markets. As they explain, the proposal would create two basic classes of shippers – shippers able to invoke mandated switching and those who could not. The NITL proposal would effect a reallocation of wealth between the two shipper groups.

The most obvious potential impact is on the rates paid by shippers who could not invoke mandatory switching. As discussed above, AAR is not in a position to predict the precise rate-related impact of the NITL proposal. But as discussed by Messrs. Eakin and Meitzen, some shippers could experience rate increases if market conditions permit. Moreover, the adverse impact on the non-favored shippers would go beyond the possibility of rate increases. Shippers who could not invoke mandatory switching would be harmed in at least two other important ways.

First, such shippers would suffer from the declines in service quality resulting from the NITL proposal without receiving any offsetting benefits in the form of reduced rates. Second, these shippers could be harmed in competing with the favored shippers in the shippers' downstream markets. The favored shippers may be able to attract business away from the excluded shippers because the favored shippers' rates would be artificially reduced through mandated switching. The shippers that could not invoke mandatory switching would potentially be forced to reduce their margins, to the extent they are able to do so, or look for business in other markets, potentially incurring even higher transportation costs. These collateral impacts create the likelihood that the NITL proposal would distort not only the market for rail transportation but the markets in which shippers compete as well.

D. How Would the Proposal Affect Network Efficiency – Board Question 5

The Board's fifth question is the most important one from the standpoint of the broad public interest. The Board's fifth question recognizes the unintended consequences that could flow from adoption of the NITL proposal and the likelihood that those unintended consequences would substantially dwarf any short-term benefit for the group of shippers obtaining artificially reduced rates. It would make little sense for the Board to adopt new rules that favor a discrete group of shippers without advancing any identifiable public interest if the effect of those rules is

to harm other shippers and other users of the rail network and to increase overall transportation costs. The U.S. rail network is the envy of the world precisely because it is so efficient and responsive to the needs of shippers. The Board should be very reluctant to take measures intended to benefit a select group of shippers that would put at risk the efficiency gains of the past three decades that provide benefits today for all users of the rail network.

Several of AAR's member railroads submitted detailed evidence in Ex Parte No. 705 on the potential impact of mandated switching on their networks and are submitting additional evidence in their opening comments in this proceeding.⁴ AAR's evidence on this important issue is contained in the verified statement of Mr. Rennie. Mr. Rennie's Verified Statement provides the Board with the basis for assessing the potential impact of the NITL proposal on rail operations and service quality. As Mr. Rennie explains, the NITL proposal would reverse years of progress since the Staggers Act in rationalizing facilities and streamlining rail operations.

Mr. Rennie explains that much of the improvement in railroad service and financial performance over the last several decades can be traced directly to the railroads' ability to streamline and rationalize their networks. Rennie Exh. III-1 sets out the numerous factors that have allowed railroads to provide more efficient, safer and more reliable transportation service. Rail productivity has increased dramatically as railroads have been able to move more traffic over a network of high-density lines with fewer inputs and work events per shipment, as shown in Rennie Exh. III-5. A key feature of that rationalization process was the elimination of unnecessary interchanges with other railroads and the accompanying reduction in switching and car handling activity. *See* Rennie Exh. III-3.

⁴ *See, e.g.,* Comments of Union Pac. R.R. Co., EP No. 705 (filed April 12, 2011); Comments of Norfolk S. Ry. Co., EP No. 705 (filed April 12, 2011).

As Mr. Rennie discusses, the NITL proposal would reverse that progress by reintroducing unnecessary interchanges and car handling activities. In Section V of his verified statement, Mr. Rennie describes in detail what must occur to implement new switching activity and the broad range of circumstances under which a new interchange might be required as a result of the NITL proposal. As Mr. Rennie explains, a simple and straightforward hand-off of traffic between two railroads in or near urban areas, where most reciprocal switching takes place, is rare. Each new interchange scenario would raise challenges and complications unique to the specific circumstances at issue.

The NITL proposal is based on a flawed premise that interchanging traffic through reciprocal switching can be easily accomplished so long as the interchange occurs within a “reasonable distance” of a shipper’s facility. Under the NITL proposal, the shipper seeking a mandatory switching order need only satisfy the market dominance and reasonable distance presumptions, and the railroad has the burden of showing the infeasibility of the interchange. Given the wide variety and complexity of individual circumstances, such an approach is inappropriate and could well become unmanageable.

The adverse consequences of mandated switching would be widespread. Rennie Exh. VI-1 shows that the NITL proposal would undermine all of the factors that allowed railroads to achieve improvements in rail transportation service over the past three decades. Even if the new interchanges could be carried out without unanticipated failures or problems, use of the new interchanges would require added time, effort, and other resources. The additional time would create delays that can lead to congestion in areas where traffic density is high. The new switches would consume capacity in yards, creating further risk of congestion. In Section VI.A of his verified statement, Mr. Rennie provides several examples demonstrating how mandated

switching would degrade yard efficiency. Streamlining yard operations and rationalizing yard capacity have been key factors that have enabled railroads to provide more efficient and reliable service, and the NITL proposal would severely impact railroads' ability to manage their yard operations efficiently.

Moreover, each new activity that is required in order to carry out the mandated interchange would give rise to the risk of a failure. By introducing new activity that entails a risk of failure, rail transportation would become less reliable. Rennie Exh. VI-15 shows how the unnecessary addition of car-handling activities increases dramatically the chance that a railroad will be unable to meet its planned service for a particular carload. Shipper surveys have repeatedly shown that reliability of transportation service is critical. But if shippers could order railroads to switch traffic to other railroads at the shipper's will, railroads would lose some control over their ability to plan traffic flows, establish scheduled service, efficiently block cars to reduce subsequent yard activity, plan yard capacity utilization, and other operating activities that affect service quality and reliability. Mr. Rennie presents an example in Exh. VI-18 that illustrates how mandatory switching orders would interfere with railroads' ability to build bypass blocks, which has enabled railroads to reduce car handling and provide more reliable service. In addition, Mr. Rennie explains in Section VI-H of his verified statement that improvements in the safety of rail operations for railroad employees achieved through years of effort could be compromised.

Mr. Rennie explains that many of the improvements in rail operations and efficiency gains that have been achieved over the past three decades resulted from consolidation of facilities where switching and interchanges occur and rationalization of traffic routes. This consolidation allowed railroads to eliminate yards and yard tracks and to streamline interchanges. As Mr.

Rennicke explains in Section VI-E of his verified statement, the NITL proposal would undermine those efforts. Railroads would have significantly less ability to forecast their use of yard capacity. Railroads would have less certainty as to when switching for particular shippers would need to be performed and therefore less ability to plan for the utilization of capacity. Yard tracks and sidings that were eliminated in the move toward streamlined operations might be needed again to accommodate the less predictable traffic flows. But an important incentive to make the necessary capacity investments would be lacking since the capacity would be used to facilitate movement on another railroad. Moreover, shifts in traffic patterns as a result of the NITL proposal could lead to the underutilization of existing facilities. Railroads could be reluctant to eliminate these underutilized facilities, however, because of uncertainty about whether any reduction in traffic would be permanent.

The inevitable result of the added complexity and reduced predictability of traffic flows would be to make rail service less reliable and to increase the risk of congestion. It is difficult to predict precisely where congestion would result or how serious the congestion problems would be in particular areas. But Mr. Rennicke explains that recent experience shows how quickly service problems in discrete geographic areas can escalate into a decline in rail service across the rail network.

To illustrate the potential impact of the NITL proposal, Mr. Rennicke estimated the impact on a variety of operating measures currently used to evaluate railroad performance of a hypothetical 25% diversion of the estimated 7.5 million carloads to which mandatory switching may apply. He determined that, if the NITL proposal produced that quantity of diverted traffic, operations on the national rail network would look much more like they did in the late 1990s than they do today. The desire by some shippers to obtain artificial rate reductions does not

justify the substantial risks to all users of the rail network that would be created by the NITL proposal, nor can it justify turning back the clock on years of progress in creating a highly efficient and shipper-responsive rail network.

III. Legal and Policy Framework for Considering NITL's Proposed Change to the Board's Competitive Access Regulation

While AAR recognizes that the Board's primary objective at this time is to develop empirical data on the possible impact of the NITL proposal, AAR believes that any review of the available data must be carried out with an understanding of the limits that Congress established on the authority of the Board to make structural changes in the railroad industry through its regulation of competition. When Congress enacted the Staggers Act, it knew from experience that the prior open-routing regime – under which railroads were required to maintain multiple possible routings between a given origin and destination – had created an inefficient and financially unstable railroad network. Congress did not intend for the agency to promote a new regime of open-routing through aggressive switching regulation. Nor did Congress intend for the agency to use its limited control over routing and switching decisions as a backdoor way of regulating rail rates or putting artificial caps on differential pricing.

When the ICC adopted competitive access rules after Staggers, it properly concluded, with support from the courts, that Congress intended for the agency to use its authority to regulate competitive access to address specific instances of railroad misconduct, and not to restructure the rail industry to provide multi-carrier access on demand. This limited view of the extent to which regulators should intervene is flatly at odds with NITL's proposal to use sweeping presumptions, unrelated to competitive misconduct, to make mandatory switching widely available. The existing regulations are still in place because there has been no change in law or policy that would suggest that Congress' original intent has changed. Even if regulatory

change were appropriate – and AAR does not believe that any valid reasons have been presented for modifying the existing regulations – the change would have to focus on specific instances of railroad conduct or specific problems in the operation of the market to comply with Congress’ expectations. The Board’s exercise of authority under its competitive access rules would have to be based on something more than the mere existence of market power by a railroad. The Board should not consider regulatory changes that would produce broad, presumption-based competitive access regulations that are simply designed to drive rail rates down through a restructuring of the industry.

A. Congress Did Not Intend for the Board to Use Reciprocal Switching as a Tool to Restructure the Railroad Industry.

With the Staggers Rail Act of 1980⁵ and the ICC Termination Act of 1995,⁶ Congress established a carefully designed regulatory regime in which market forces were to be the driving force and regulation was to be limited as much as possible. The Board was required to “allow, to the maximum extent possible, competition and the demand for services to establish reasonable rates for transportation by rail.” 49 U.S.C. § 10101(1). A major goal of the regulatory framework established was to “minimize the need for Federal regulatory control over the rail transportation system.” *Id.* 10101(2). The new regulatory framework was designed to preserve a careful balance between reliance on market forces to establish reasonable rates and limited reliance on regulation to protect shippers from the abuse of market power.⁷

⁵ Pub. L. No. 96-448, 94 Stat. 1895 (1980) (“Staggers Act”).

⁶ Pub. L. No. 104-88, 109 Stat. 803 (1995) (“ICCTA”).

⁷ See, e.g., *MidAmerican Energy Co. v. STB*, 169 F.3d 1099, 1105 (8th Cir. 1999) (“*MidAmerican*”) (“Congress believed that free competition for rail services would ensure that consumer demand dictated the optimal rate level, while facilitating enough long-term capital investment to maintain adequate service. Congress was also mindful, however, that the free market would protect consumers only if there was ‘effective’ competition. Therefore, the new

Elimination of Open Routing. The partial deregulation of the railroad industry was a response to an unworkable industry structure that had been created through decades of overly intrusive regulation. Under pre-Staggers regulations, railroads were largely prevented from making rate decisions that were responsive to market forces and were not permitted to rationalize their routes to handle traffic in the most efficient manner. As the D.C. Circuit recognized in the *Baltimore Gas & Electric* decision, “[b]y the mid-1970s, the railroad industry had evolved into a system characterized by ‘open routing’ and ‘rate equalization’” under which “through routes were created on practically all possible combinations of railroad tracks between two points” and “all routes between the same two points – including single line routes – were offered to shippers at the exact same rates, without regard to the actual cost of providing the service.”⁸ The inability of railroads to choose which routes to use, which interchanges to make, when to offer through rates, and when to use more efficient single line service were key features of the pre-Staggers industry structure.

Congress repudiated the pre-Staggers regulatory approach. Under the new regulatory scheme, the agency would not impose its view as to the proper structure of the railroad industry but would address unreasonable rates resulting from railroad market power and competitive abuses resulting from railroad misconduct. In the years following the Staggers Act, the ICC, and subsequently the Board, repeatedly interpreted their authority to order competitive access not as a tool to restructure the industry but as a means to address specific instances of market failure resulting from anticompetitive railroad conduct. The appellate courts repeatedly upheld these agency interpretations.

enactments included provisions allowing regulatory intervention where competition would not control prices”).

⁸ *Baltimore Gas & Electric Co. v. United States*, 817 F.2d 108, 110 (D.C. Cir. 1987).

The first major agency action implementing the new statutory regime governing rail competition was the elimination of the so-called DT&I conditions that required merging railroads to keep open existing junctions and gateways and to allow shippers to route traffic over routes and gateways of their choice. In *Traffic Protective Conditions*, 366 I.C.C. 112, 119 (1982) (“Conditions”), *aff’d in relevant part sub nom. Detroit, T. & I. R.R. Co. v. United States*, 725 F.2d 47 (6th Cir. 1984) (reversing portion of the decision making revocation of the conditions retroactive)), the ICC found that the DT&I conditions were incompatible with Congress’ intent that markets, not regulation, should govern railroads’ commercial decisions: “[The Staggers Act] has emphasized the need for rail carriers to have flexibility to make individual ratemaking and routing choices.” The ICC concluded that the DT&I conditions “prevent market forces from efficiently allocating railroad resources.” *Id.* at 130.

Adoption of Competitive Access Rules. Shortly after eliminating the DT&I conditions, the ICC adopted *Intramodal Rail Competition*,⁹ the current competitive access rules. Under those rules, the ICC and now the Board will order reciprocal switching or prescribe a through route only to address situations where a carrier abuses its market power by extracting unreasonable terms or by rendering inadequate service.¹⁰ The ICC concluded that access remedies should be addressed to a narrow set of circumstances – specific instances of competitive abuse by carriers – and the courts agreed. In *Baltimore Gas & Electric*, the D.C. Circuit rejected shipper arguments on an appeal from the ICC’s new competitive access rules that the ICC should treat the statute as requiring open access to rail facilities in a manner similar

⁹ 1 I.C.C. 2d 822 (1985), *aff’d sub nom. Baltimore Gas & Electric*.

¹⁰ See *Midtec Paper Corp. v. Chicago & North Western Transp. Co.*, 3 I.C.C. 2d 171, 181 (1986), *aff’d sub nom. Midtec Paper Corp. v. United States*, 857 F.2d 1487 (D.C. Cir. 1988) (“Midtec”); *Review of Rail Access and Competition Issues*, 3 S.T.B. 92, 98 (1998). See also 49 C.F.R. § 1144.2.

to the telecommunications industry where “local Bell telephone companies are required to permit all long distance telephone companies equal access to the lines and switching facilities necessary to reach local customers.” 817 F.2d at 115. The shippers contended that “competition” as used in the statute “would most efficiently influence rates . . . if all railroads could, by way of through routes, benefit from all of each other’s tracks and facilities.” *Id.* at 114-15.¹¹ The shippers, according to the court, “would have us direct the ICC to return essentially to its old regulatory regime.” The court emphatically rejected this construction of the statute, noting that there was “not the slightest indication that Congress intended to mandate a radical restructuring of the railroad regulatory scheme so as to parallel telecommunications regulation.” *Id.* at 115.

In the subsequent *Midtec* case, the ICC rejected shipper requests for reciprocal switching and terminal access. The ICC concluded that granting access simply to satisfy “a desire for the service of a second carrier” was not consistent with the statute. 3 I.C.C. 2d at 174. Access remedies, the ICC determined, should be limited to specific instances where a competitive failure had been identified rather than applied broadly based on general criteria such as the presence of only a single railroad. As the ICC explained:

[W]e think it correct to view the Staggers changes as directed to situations where some competitive failure occurs. There is a vast difference between using the Commission’s regulatory power to correct abuses that result from insufficient intramodal competition and using that power to initiate an open-ended restructuring of service to and within terminal areas solely to introduce additional carrier service.

Id.

¹¹ Although the *Baltimore Gas & Electric* court described the shippers’ arguments solely in terms of providing access via through routes, the court’s analysis applies equally to providing access by mandated reciprocal switching as the *Midtec* court subsequently held. The ICC itself recognized that reciprocal switching “is one of several ways in which two or more rail carriers can cooperate to provide a through service.” 3 I.C.C. 2d at 176.

On appeal, the shippers asserted that terminal access and reciprocal switching “were intended by the Congress to increase interrail competition in order ‘to offset the very substantial rate advantages given the railroads’ under other provisions of the Staggers Act.” 857 F.2d at 1505. The court again emphatically rejected this reading of the statute:

If the Commission were authorized . . . to prescribe reciprocal switching or terminal trackage whenever such an order could enhance competition between rail carriers, it could radically restructure the railroad industry. We have not found even the slightest indication that Congress intended the Commission in this way to conform the industry more closely to a model of perfect competition.

Id. at 1507. The statute would not permit the ICC to order open access to shippers simply because they were solely served and would prefer access to an additional rail carrier: “[T]here is no warrant for the view that Congress intended such a radical restructuring of the railroad industry.” *Id.* at 1514. As the court observed, “competition policy is not a matter of regulators handicapping would-be competitors in order to create an evenly matched contest.” *Id.* at 1503.

Bottleneck Decisions Affirm Carrier Routing Prerogatives. The Board confirmed the ICC’s reading of Congress’ intent in the *Bottleneck* decisions.¹² Under the bottleneck rule established in those decisions, a carrier is not required to publish a separate rate for a bottleneck segment of a through route if the carrier already provides single line service from origin to destination or participates in an interline through movement. *Bottleneck I*, 1 S.T.B. at 1066, *Bottleneck II*, 2 S.T.B. at 237. A bottleneck carrier that does not provide single line service can be required to publish a separate rate for its portion of an interline movement only if there is a

¹² *Central Power & Light Co. v. Southern Pacific Transp. Co.*, 1 S.T.B. 1059 (1996) (“*Bottleneck I*”), clarified, *Central Power & Light Co. v. Southern Pacific Transp. Co.*, 2 S.T.B. 235 (1997) (“*Bottleneck II*”), *aff’d sub nom. MidAmerican Energy Co. v. STB*, 169 F.3d 1099 (8th Cir. 1999).

contract covering the non-bottleneck portion of the through movement. *Bottleneck II*, 2 S.T.B. 244-45.

In establishing the bottleneck rule, the Board clearly recognized that granting shippers the ability to force open bottlenecks would be a species of open access. *See, e.g., Bottleneck I* at 1065, 1067. Indeed, it was largely on that basis that the Board denied shippers the ability to do so. The Board noted that the 4R and Staggers Acts had ended the “open-routing” system and that, “as an integral part of Congress’ goal of revitalizing the rail industry, these statutes largely freed carriers to ‘rationalize their route structures making maximum use of efficient routings and eliminating others.’” *Bottleneck I* at 1065 (*quoting Interchange Provisions at Jacksonville, FL, SCL and SRS*, 365 I.C.C. 905, 916 (1982)). The Board determined that “[g]iving the shippers the routing control they seek here would defeat the statutory provisions protecting each railroad’s right to determine, at the outset, which reasonable through routes it will use to respond to requests for service.” *Id.* This, in turn, would deprive carriers of the ability to protect their existing single line and through routes, including their long-hauls. The Board expressly rejected the notion that these statutory factors could be ignored in the interest of manufacturing competition between railroads. As the Board stated, “Congress chose not to provide for the open routing that shippers seek here. To the contrary . . . Congress retained and strengthened the specific statutory provisions allowing carriers to select their routes and to protect their long-hauls.” *Id.* at 1067. The Board also rejected the argument that “the prescription of local rates and requirement for competitive routings would minimize” the need for regulation. To the contrary, “what the utilities propose, in the name of regulatory forbearance, is full regulatory intervention; they seek through regulation to deprive carriers of their statutorily-recognized long-haul and their traditional routing discretion.” *Id.*

The Eighth Circuit affirmed the Board's interpretation of the statutory framework and the bottleneck rules in *MidAmerican*. The court noted the deregulatory focus of the statutory reforms that had done away with "open-routing" and Congress's intention that "market forces would operate in the rail industry as they do in other spheres." 169 F.3d at 1105. Regulation of a railroad's routing decisions should not be used to manufacture competition.

In short, the cases make it abundantly clear that the statutory access provisions cannot be used to restructure competition in the rail industry. Access relief is available to address specific problems that arise in specific circumstances. The Board's current competitive access rules provide that relief is available to remedy specific instances of competitive abuse. If there were a valid alternative to the Board's current competitive access rules, and AAR does not believe that there is, such an alternative would have to be focused on specific problems that justify relief. An approach that seeks merely to create multi-carrier service, like the NITL proposal, would not be permissible under the governing statute.

B. Reciprocal Switching Should Not Be Used as an Alternative Means of Obtaining Rate Relief.

The Board's Notice acknowledges that a primary objective of the NITL proposal is to produce lower rates through the artificial competition that would be introduced by a mandatory switching order. According to the Board, the proposal:

has the potential to promote more rail-to-rail competition and reduce the agency's role in regulating the reasonableness of transportation rates. It could permit the agency to rely on competitive market forces to discipline railroad pricing from origin to destination, and regulate only the access price for the first (or last) 30 miles.

Notice at 2.

Adoption of mandated switching as a backdoor mechanism for providing rate relief would constitute unnecessary, improper, and unwieldy regulatory intrusion into rail carrier

operating decisions. The Board already has a fully developed set of standards and methodologies that have been specifically designed to determine whether a challenged rate exceeds a maximum reasonable level. It would not make sense for the Board to adopt access regulations for the purpose of giving some shippers rate relief that would not be warranted under the Board's existing rate reasonableness procedures. Congress did not intend for the Board to use competitive access regulations to develop a redundant mechanism for lowering rates that shares nothing in common with existing standards or mechanisms for evaluating rates and that is inconsistent with those existing standards.

Indeed, the courts have already concluded that access remedies were not intended by Congress to be used as a mechanism for reducing rates. In *Midtec*, the D.C. Circuit expressly rejected the argument that reciprocal switching and terminal access were "intended to be an alternative means of obtaining rate relief, requiring the Commission affirmatively to move the national rail system toward a regime more like perfect competition, with the attendant benefits of marginal cost ratemaking." 857 F.2d at 1505.

Moreover, the use of competitive access regulation to provide an indirect form of rate relief would be fundamentally inconsistent with the principles established by Congress to assess the reasonableness of rates. Under the statute, the existence of market dominance is a threshold to assessing the reasonableness of a rate but not a guarantee that rate relief is warranted. Rates charged by rail carriers with market dominance are not necessarily unlawful. The Board must determine whether a rail carrier has market dominance before carrying out a rate reasonableness analysis, but the Board may still find that the rate does not exceed a reasonable maximum rate. By contrast, under the scheme proposed by NITL, a carrier is conclusively presumed to face no effective competition if it has successfully competed for the business or if it receives a certain

margin over variable costs regardless of the value of the service rendered. The carrier's rates are then subject to being reduced through the artificial introduction of another carrier without any additional finding that the rates are unreasonable. As a result, many rates would be forced down that would never be subject to a rate reduction under the Board's rate reasonableness standards.

The availability of mandated switching for shippers who supposedly lack effective competitive alternatives, as proposed by NITL, would also be a repudiation of differential pricing, which is the foundation for the Board's regulation of rail rates. The Board recognizes that railroads must be able to engage in differential pricing if they are to recover the high fixed and common costs of railroad infrastructure. Allowing railroads to engage in differential pricing, with limits provided by the principles of Constrained Market Pricing ("CMP"), is at the heart of the Board's regulation of railroad rates. While many factors determine a shipper's demand for rail service, access to one or more transportation alternatives is often an important factor. Giving shippers served by a single Class I railroad access to another carrier simply because the shipper lacks an effective competitive alternative to the incumbent carrier would limit differential pricing without any regard for CMP principles.

In the *Bottleneck* cases, the Board recognized that forcing railroads to provide service on routes other than those of their choosing would be an indirect and inappropriate way of limiting differential pricing. A carrier that is permitted to provide transportation in single-line service is entitled to charge up to the SAC rate for the entire route. A carrier that is forced to interchange with another carrier, however, is limited to the reasonable rate (or switch charge) it can establish for only the shorter portion of the move. Therefore, as the Eighth Circuit recognized in upholding the Board's *Bottleneck* decisions, opening bottlenecks through regulation "would prevent [railroads] from exploiting bottlenecks and charging rates up to SAC for complete

origin-to-destination service,” thereby undermining their ability to engage in differential pricing. *MidAmerican*, 169 F.3d at 1109.

The Board’s suggestion that an expanded use of reciprocal switching for shippers that are now served only by one railroad could “promote more rail-to-rail competition and reduce the agency’s role in regulating the reasonableness of transportation rates” is misplaced.

“Competition” as envisioned in the NITL proposal has nothing to do with sound economic principles or “competition” as the concept is used in the statute. No one would suggest, for example, that “competition” would be promoted if a retail firm like WalMart were forced by government mandate to turn over a portion of the space in each of its stores to a competitor, like Target, so that WalMart and Target would “compete” more “effectively.” Similarly, “competition” would not be enhanced if a government mandate required that two grocery stores must be built at each grocery location to ensure that consumers have more than one option. Competition functions by allowing private individuals and firms to respond to market signals in ways they deem to be appropriate. These examples of government intervention in the competitive process would be recognized as distortions of the marketplace that would lead to inefficient market outcomes.

Nor would the NITL proposal reduce the Board’s role in regulating rail rates. When shippers made a similar argument in the context of new bottleneck regulations, the Board had no difficulty recognizing that shippers were not calling for “regulatory forbearance” but instead for “full regulatory intervention.” *Bottleneck I*, at 1067. Likewise, the ICC had no difficulty recognizing the “vast difference” between using access remedies like mandated switching in a targeted fashion to address specific instances of competitive abuse and “using the Commission’s

regulatory power . . . to initiate an open-ended restructuring of the service to and within terminal areas solely to introduce additional carrier service.” *MidTec*, 3 I.C.C. 2d at 174.

C. The Public Interest Is Best Served by a Competitive Access Regime Reliant on Actual Competition Based on Private Investment by Competitors Willing to Put Their Private Capital at Risk.

The Board should not accept NITL’s invitation to engage in economic restructuring of the rail industry. The NITL proposal is based on the false premise that shippers directly served by a single Class I carrier do not benefit from competition. In fact, railroads are often subject to competition from other transportation modes as well as strong product and geographic competition that effectively constrains any exercise of market power, even as to shippers directly served by a single Class I carrier. Increasingly, railroads use transloading to expand their reach into areas they do not serve directly and to win business from other railroads as well as trucks. In a recent petition by AAR to modify the Board’s market dominance rules, AAR described how competition in wholesale power markets provides effective constraints on rail rates for coal in many cases, particularly in light of recent developments in natural gas markets. Rail rates for other transportation that is traditionally subject to regulation is similarly subject to strong product and geographic competition. The Board did not eliminate consideration of product and geographic competition from market dominance proceedings because those competitive forces are not effective constraints on rail rates but because of the perceived difficulty in assessing evidence of product and geographic competition.

Competition based on market forces has led and will lead to economically rational switching arrangements. The Board has recognized that railroads behave in an economically rational manner, and therefore railroads will enter into voluntary switching arrangements when it

makes economic sense to do so.¹³ If a carrier other than the incumbent railroad can provide more efficient service at a lower cost, the incumbent railroad has a clear incentive to allow that alternative service to occur through a voluntary switching arrangement or through joint routes. These voluntary arrangements promote efficient railroad pricing and efficient railroad operating practices. The Board's competitive access regulations should be reserved for cases where the market is not properly inducing the voluntary switching arrangements that would be expected in a competitive market.

The public interest is best served by allowing the market to determine when switching should occur. Reliance on actual competition by service providers that have put their private capital at risk produces the most efficient allocation of resources and results in the most efficient service. Congress understood that the regulator should avoid interfering with market signals that private investors rely on to make investment decisions. Indeed, inappropriate access regulation could seriously undermine incentives that railroads have to put their capital at risk. If investors know that the infrastructure they create by putting their capital at risk might be made available to a competitor, the incentive to make that investment could be reduced or eliminated. Similarly, if a railroad cannot make reasonable estimates of traffic flows on its network because the regulator might establish artificial conditions that promote a diversion of traffic, the railroad might not seek to expand capacity.

Congress wisely recognized that markets, not regulators, make the most efficient choices regarding prices, investments and the allocation of resources and that the public is best served by

¹³ See, e.g., *Western Resources Inc. v. STB*, 109 F.3d 782, 787 (D.C. Cir. 1997) (affirming that carriers can be expected to behave in an economically rational manner: "if an independent origin carrier could transport coal at a lower incremental cost, then the bottleneck railway would have an incentive to choose that carrier over its own, affiliated carrier, just as firms in the rest of the economy make 'make or buy' decisions for all elements of their production.").

allowing the markets to function without regulatory interference unless there is a problem in the market that warrants intervention.

IV. Defects in the NITL Proposal

The goal of the NITL proposal is to produce lower rates for a group of shippers served today by only one rail carrier by artificially expanding those shippers' access to multiple rail carriers. The NITL proposal is not addressed to specific instances of competitive abuse. Under the NITL proposal, the precondition to relief is the supposed existence of market power, not any abuse of market power. A shipper seeking access to another rail carrier would not be required to demonstrate any other justification for access, such as inadequate service. The NITL proposal seeks broad structural changes in the railroad industry, an objective that is not consistent with the limited role that Congress provided for regulation of the railroad industry.

In addition to this fundamental flaw, the design of the NITL proposal is also defective. NITL proposes to implement its overhaul of the Board's access regulations through conclusive presumptions that would be used to determine whether there is effective inter- or intramodal competition for movements at issue and whether switching could occur within a "reasonable distance" between the shipper's facilities and a switching location. Even if it were permissible to mandate switching merely upon a showing of the lack of effective competition, which it is not, the market power presumptions proposed by NITL do not say anything meaningful about the existence of effective competition. As to the "reasonable distance" presumptions, NITL's proposed 30-mile presumption would as a practical matter become the default presumption and thereby allow mandated switching outside of terminal areas, contrary to Congress' intent. These issues are discussed more fully below.

A. NITL's Market Power Presumptions Are Misplaced and Unworkable.

The basic premise of the NITL proposal is that mandatory switching should be available to shippers served by a single Class I carrier and located within a “reasonable distance” of an interchange upon a showing of market dominance – that is, upon a showing that there is “an absence of effective competition from other rail carriers or modes of transportation.” 49 U.S.C. § 10704(a).¹⁴ Nothing in the governing statute suggests that the mere existence of market dominance entitles a shipper to regulatory intervention. Indeed, the statute is clear that the market dominance requirement is only a threshold for allowing the Board to consider whether the rates charged by a rail carrier exceed reasonable maximum rates.¹⁵ Congress did not give the Board authority to reduce a railroad’s rates, directly or indirectly, simply because the railroad has market dominance over the transportation at issue.

Moreover, the Board’s rate reasonableness standards acknowledge that railroads must be allowed to engage in differential pricing, which by definition means that they are entitled, within limits, to charge shippers with greater demand for service higher rates. Shippers that lack a transportation alternative to the incumbent railroad may have a higher demand for the incumbent’s service, and the Board’s regulatory regime recognizes that a railroad may set prices based on that higher demand for service so long as the railroad does not seek to have the shipper subsidize other transportation or pay for inefficiencies. By imposing reciprocal switching for purposes of obtaining lower rates based solely on the existence of market dominance, the NITL proposal directly repudiates the principle of differential pricing that is the foundation of the Board’s rate regulation standards.

¹⁴ See, e.g., NITL Petition at 8.

¹⁵ In the rate context, market dominance is the beginning of the inquiry rather than the end. The Board does not have jurisdiction to regulate rates absent market dominance. 49 U.S.C. § 10701(d).

NITL's assertion that its proposal to limit switching to situations where the railroad has market dominance is an "attempt to accommodate the interests of carriers," NITL Petition at 42, is particularly disingenuous. If a shipper already has access to multiple carriers, it has no reason to seek any regulatory intervention because it already has the benefit of direct competition. The supposed limitation of the proposal to shippers served by a single Class I carrier is not a meaningful limitation on the scope of the proposal. Moreover, the NITL proposal relies on flawed presumptions of market power. Neither the proposed R/VC threshold nor the proposed market share percentage is a valid basis for determining whether the incumbent railroad faces effective competition from other transportation providers.

1. Use of an R/VC Threshold Would Be Arbitrary.

NITL proposes that market dominance would be conclusively presumed if the incumbent's rate for the shipment for which switching is sought exceeds an R/VC ratio of 240%.¹⁶ NITL defends the use of a 240% R/VC threshold on grounds that the average R/VC ratio on movements by Class I railroads for shippers with R/VC ratios above 180% is close to 240%. NITL Petition at 48. But NITL does not even attempt to explain why it would be reasonable to assume that a shipper lacks an effective competitive alternative simply because the rate paid by the shipper exceeds the average R/VC paid by shippers whose rates are potentially subject to rate regulation by the Board. A particular shipper may well have an effective transportation alternative whose costs permit the incumbent railroad to charge rates that generate R/VC ratios above the average R/VC ratio for other shippers. There is no meaningful connection between the proposed R/VC threshold and the existence or lack of effective competition.¹⁷

¹⁶ NITL Petition at 8.

¹⁷ NITL refers to the result of the rate reasonableness case in *W. Fuels Inc. & Basin Elec. Power. Coop. v. BNSF Ry. Co.*, No. 42088 (STB served June 5, 2009) to support its view that a

Moreover, the economists retained by the Board to study competition in the railroad industry recognized that presumptions of market dominance based on R/VC ratios are not valid. The authors of the Christensen Study were highly critical of using R/VC ratios as a measure of market power or a proxy for the exercise of market power.¹⁸ They concluded that the R/VC ratio “is weakly correlated with market structure factors that affect shipper ‘captivity,’ and is not a reliable indicator of market dominance.” *Id.* at ES-5. As they explained, “[t]he R/VC ratio is problematic as an indicator of market-dominant behavior as it inextricably combines local market structure factors with various other cost and demand-related factors.” *Id.* at 11-25. As they noted, “much of the R/VC variation is related to factors other than market structure features that determine shipper captivity.” *Id.* at 11-26. These factors make R/VC ratios an unreliable indicator of market power and led the Christensen Study to conclude that “regulatory reforms that would establish R/VC tests as the sole quantitative indicator of a railroad’s market dominance are not appropriate.” *Id.* at ES-14.

The unreliability of R/VC ratios as a measure of market power is magnified by the use of unadjusted variable costs regardless of the nature of the traffic. For example, TIH commodities generally have higher R/VC ratios than other traffic, in part due to the extra costs associated with handling those commodities safely and compliance with more stringent safety regulation, and in part due to the high risks associated with transporting such commodities, none of which is

shipper must lack transportation alternatives if the shipper pays rates that generate more than 240% of the rail carrier’s variable costs. According to NITL, if a rate near 240% of one railroad’s variable costs was found to be the maximum reasonable rate for one shipper, then other shippers paying a rate above 240% of a rail carrier’s variable cost must be without effective transportation alternatives that limit rates to reasonable levels. The logical flaw in this reasoning is obvious. The maximum reasonable rate in the case of a particular shipper turns on circumstances unique to the shipper and says nothing about the circumstances of other shippers.

¹⁸ Laurits R. Christensen Associates, Inc., *A Study of Competition in the U.S. Freight Railroad Industry and Analysis of Proposals that Might Enhance Competition: Revised Final Report* (2009).

reflected in the variable cost calculation using system average URCS. Other types of commodities also have specific characteristics that affect variable costs but are not recognized by system-average URCS.

Using an R/VC ratio to conclusively establish the lack of effective competition would also be inconsistent with the statute. In the rate regulation context, the statute precludes the Board from finding that market dominance exists if a challenged rate produces an R/VC ratio of less than 180%. 49 U.S.C. § 10707(d)(1)(a). The statute also directs that an R/VC ratio equal to or greater than 180% “does not establish a presumption that” a rail carrier “has or does not have market dominance.” 49 U.S.C. §10707(d)(2). For movements with R/VC ratios above 180%, the existence of market dominance must be assessed based on a review of the circumstances relating to the particular movement. Indeed, shortly after Congress enacted the Staggers Act, the ICC concluded that market dominance determinations should not be based on presumptions using R/VC ratios. *See Market Dominance Determinations*, 365 I.C.C. 118, 120 (1981).

The Board indicated in its July 25, 2012 Notice that an alternative to the use of a 240% R/VC threshold would be to use a railroad’s 4-year average RSAM benchmark as the threshold for mandatory switching. After the Board issued its July 25, 2012 Notice, the Board used the RSAM in a pending rate reasonableness case to determine the existence of effective competition. *See M&G Polymers USA, LLC v. CSX Transp., Inc.*, STB Docket No. 42123 (served Sept. 27, 2012) (“*M&G Polymers*”).¹⁹ AAR filed comments as amicus in the M&G case and explained why AAR does not believe that an RSAM-based approach to market dominance is permissible or

¹⁹ To determine whether the carrier had market dominance, the Board compared a “limit price” for feasible alternative transportation, expressed as an R/VC ratio, to the RSAM for the carrier. If the limit price exceeded RSAM, the Board concluded that alternative transportation options did not effectively constrain rail prices and found the carrier market dominant.

appropriate.²⁰ But whether or not RSAM is used to determine market dominance in rate reasonableness cases, there is a fundamental difference between using RSAM in a rate reasonableness case to determine market dominance and using RSAM in the context of competitive access regulation to establish eligibility for a mandatory switch. In the context of rate reasonableness, the RSAM is used only as the threshold for determining whether the Board has authority to consider the reasonableness of the rate at issue. It is not the basis for providing rate relief. However, if the RSAM were used in connection with the NITL proposal, RSAM would become the primary constraint on rates, since switching could be mandated for any movement generating rates that exceed RSAM.

There would be no basis for using RSAM as an effective constraint on rates and it would be inappropriate to do so. RSAM is by definition an average R/VC ratio that must be charged to achieve revenue adequacy. But since it is an average, and it is clear that there are movements that generate revenues that are less than the RSAM, a railroad must be able to charge some movements rates that exceed the RSAM to have any chance of achieving revenue adequacy. If RSAM (or some other arbitrary R/VC ratio) were used as an effective cap on rates, railroads would not be able to generate the revenues they need to achieve and sustain long-term revenue adequacy.

2. NITL's Presumption of a Lack of Effective Transportation Alternatives Based on 75% of Freight Volume Makes No Sense and Would Be Subject to Manipulation.

NITL also proposes that market dominance would be conclusively presumed if the Class I carrier that serves a shipper handles "75% or more of the freight volume transported for a movement for which competitive switching is sought in the twelve months prior to the petition

²⁰ Comments of the Association of American Railroads, *M&G Polymers* (filed Nov. 28, 2012).

seeking switching.” NITL Petition at 8. The Board construed this proposal as relating to volumes for individual origin-destination pairs. EP 711 Notice at 6. But a shipper may use a single transportation provider to move traffic to a specific destination for many reasons that are unrelated to the existence of railroad market power or the availability of transportation alternatives. If a shipper is satisfied with the service it receives from a single transportation provider, the shipper would have no reason to divide its business among several providers. Indeed, dividing business among multiple transportation providers could present logistical problems and add unnecessary costs.

Therefore, a railroad’s share of transportation for a given O-D movement does not, on its own, say anything about a railroad’s possible market power over the transportation at issue. Any number of circumstances that arise naturally in competitive markets could result in a railroad having greater than a 75% share of transportation and holding on to that market share over time. For example, the railroad may have won most or all of a shipper’s business by competing on price or through superior service. A railroad may have won a shipper’s business through all-or-nothing competitive bidding that resulted in a contract covering the shipper’s movements between specific origins and destinations.

A railroad’s market share may also simply reflect the comparative advantage of the railroad for the type of transportation in question. Rail transportation may be the only feasible option for transportation between a given O-D pair due to distance or lack of barge access at both origin and destination. Even if rail is the only feasible option, it is nonetheless possible that the price charged by the railroad is effectively constrained by other market forces, *i.e.*, the ability of the shipper to ship to other destinations from the same origin or the ability of the receiver to

obtain product from other origins. The NITL proposal would preclude the Board from considering product and geographic competition.

Aside from the fact that a 75% share of transportation has little bearing on whether a railroad has or is exercising market power, there are other obvious problems with this proposed criterion. For example, under NITL's proposal, the presumption of a lack of effective competition would apply regardless of the rate being charged for transportation. To the extent NITL's 240% R/VC presumption had any logical basis, it was that the existence of effective competition can be inferred from the level of the rates charged. NITL's 75% market share presumption implicitly assumes that rate levels do not matter. Indeed, under NITL's proposal, a 75% market share would indicate the lack of effective competition even if the rates were below the Board's jurisdiction threshold. But the jurisdictional threshold is based on a presumption that there is effective competition if rates are below 180% of the rail carrier's variable costs. NITL's proposal would appear to allow shippers to obtain mandated switching on movements for which the Board would have no authority to prescribe rates.

Indeed, it is likely that the 75% transportation share presumption would swallow the 240% R/VC threshold and result in mandated switching regardless of the R/VC level of the rates charged. There are likely to be many situations where a shipper whose facility is served only by a single railroad will use that railroad to provide 100% of the transportation between that facility and various destinations. Under the NITL proposal, that shipper would be entitled to mandated switching regardless of how high or low a rate it is paying.

Finally, because the shipper controls the mode of transportation used, shippers could easily manipulate their shipment patterns to satisfy the 75% requirement. A shipper could establish the conditions necessary to support a mandatory switching order simply by providing

the rail carrier with more than 75% of its business for a year or by entering into a requirements contract for movements between specific origins and destinations.

B. NITL’s “Reasonable Distance” Presumptions Are Improper

NITL also proposes to use two conclusive presumptions to determine when switching can occur within a “reasonable distance” of the shipper’s facilities. The first presumption is that the mandated switch would be within a “reasonable distance” of the shipper’s facilities if the shipper’s facilities are within the boundaries of a “terminal” where switching regularly occurs between the two rail carriers. The second presumption is that switching could occur within a “reasonable distance” if the interchange would occur within a 30-mile radius of the shipper’s facilities. NITL Petition at 8.

The NITL proposal acknowledges that there is no established definition of a “terminal” for purposes of applying its first “reasonable distance” presumption. In fact, as noted previously, the case law is clear that the existence of a terminal is based on a fact-specific inquiry, in which the Board must examine and weigh the facts and circumstances relating to the transportation at issue. As a result of the uncertainty regarding the existence of a terminal and the need to address a range of factual issues to determine whether a shipper’s facilities are within the boundaries of a terminal, it is likely that the 30-mile presumption would become the default means of establishing whether an interchange can occur within a “reasonable distance” of a shipper’s facilities under the NITL proposal. But using a 30-mile radius to determine whether the Board will order switching is inconsistent with the statute.

First, pre-Staggers precedent addressing reciprocal switching and the context in which Congress provided authority to order reciprocal switching in the Staggers Act demonstrate that Congress intended that reciprocal switching would be limited to terminal areas. NITL’s 30-mile radius is unrelated to service provided within a terminal.

Before the Staggers Act, the extent of the agency's authority was uncertain with regard to reciprocal switching.²¹ The Staggers Act expressly authorized the agency to order reciprocal switching under appropriate circumstances, but it placed this authority within the more general provision covering "Use of Terminal Facilities." 49 U.S.C. § 11102.

A number of pre-Staggers Act cases addressed reciprocal switching in the context of disputes over switching tariffs, where it was alleged that a carrier was providing its reciprocal switching service in a discriminatory manner.²² It is clear from those cases that reciprocal switching was understood to be an activity that takes place within terminal areas. The ICC described reciprocal switching as "connection-*terminal* switching" and stated that such service is "performed at origin and destination *terminals* by carriers."²³ For purposes of those pre-Staggers cases, the AAR defined reciprocal switching as "terminal switching service."²⁴ The case law frequently described reciprocal switching as involving "opening terminals" for service,

²¹ See S. Rep. No. 96-470, at 42 (1979); H.R. Rep. 96-1035, at 67 (1980).

²² See, e.g., *Chicago Lake Shore & S. Bend Ry. Co., v. Dir. Gen., Lake Erie & W. R.R. Co.*, 58 I.C.C. 647 (1920) (declaring defendant's refusal to perform reciprocal switching for complainant unjust discrimination in light of defendant providing reciprocal switching service to another railroad at the same location); *Reciprocal Switching at Kansas City, MO, and Kansas City, KS*, 68 I.C.C. 591 (1922) (suspending increased reciprocal switching rates); *Railroad & Warehouse Comm'n of the State of MN v. Chicago Great W. Ry. Co.*, 262 I.C.C. 437 (1945) (denial by defendants of reciprocal switching to certain industries found not unreasonable or unduly prejudicial); *Switching Charges and Absorption Thereof at Shreveport, LA*, 339 I.C.C. 65 (1971) (suspending increased switching charges and instituting an investigation into their lawfulness).

²³ *Sioux City Term. Ry. Switching*, 241 I.C.C. 53, 90 (1940) (emphasis added); see also *Switching Charges and Absorption Thereof at Shreveport, LA*, 339 I.C.C. 65, 70 (1971) ("It has long been a common practice among the railroads to participate at commonly served *terminal areas* in what is called reciprocal switching.") (emphasis added).

²⁴ See *Federal Barge Lines, Inc. v. Alton & S. R.R.*, 303 I.C.C. 669, 678 (1958).

suggesting that reciprocal switching takes place in terminal areas.²⁵ Carriers' tariffs often defined reciprocal switching by reference to terminals.²⁶

When Congress enacted a statutory provision that expressly referred to reciprocal switching, Congress did not intend to define reciprocal switching in a way that was contrary to established industry usage and agency precedent. Indeed, as noted above, Congress included the new reciprocal switching provision in a section of the statute titled "Use of Terminal Facilities." Moreover, the legislative history of the Staggers Act confirms that reciprocal switching was intended to be limited to terminal areas. Specifically, Congress rejected an earlier formulation of the reciprocal switching provision that would have required reciprocal switching service throughout all standard metropolitan areas.²⁷ In rejecting that legislative proposal, Congress intended that reciprocal switching have a more limited geographic scope.

Since the passage of the Staggers Act, the agency has required reciprocal switching only once – in *Delaware & Hudson Ry. v. Consol. Rail Corp.*, 367 I.C.C. 718 (1983). There, the ICC required reciprocal switching for movements from various yards outside Philadelphia to a terminal in Philadelphia, suggesting that the scope of the reciprocal switching provision extended outside of a terminal. However, the ICC's subsequent decision in *Midtec* dismissed the *Delaware & Hudson* decision as an improper application of the statutory provision, calling into

²⁵ See, e.g., *Switching at Galesburg, Ill.*, 31 I.C.C. 294, 298 (1914) (Burlington Northern argued that it was unnecessary "to open its terminals [to reciprocal switching]"); *U.S. War Dept. v. Abilene & S. Ry. Co.*, 77 I.C.C. 317, 349 (1923) ("while one carrier may in this way open its terminals at one point to another carrier for a nominal charge, the situation may be reversed at another point"); *North Shore Material Co. v. Chicago & N.W. Ry. Co.*, 173 I.C.C. 543, 547(1931) (discussing the propriety of "opening defendant's terminals" for reciprocal switching service).

²⁶ See, e.g., *Switching at Kansas City, MO. & Related Points*, 96 I.C.C. 538, 541 (1925) (listing carrier's separate charges for reciprocal switching and intraterminal movements).

²⁷ See Senate Report, 96-470, 96th Cong., 1st Sess., at 41-42 (1979).

question its continued applicability.²⁸ Other cases after *Delaware & Hudson* have suggested that the reciprocal switching provision is intended to apply only in terminal areas.²⁹

Not only would NITL's arbitrary 30-mile presumption improperly allow reciprocal switching to be ordered outside of terminals, it also fails to provide a valid basis for distinguishing between the prescription of a reciprocal switch and the prescription of a through route. The statute recognizes a distinction between the Board's power to order reciprocal switching, which is found in 49 U.S.C. § 11102(c), and the Board's authority to prescribe through routes, which is found in 49 U.S.C. § 10705. The NITL proposal invokes the Board's authority under 49 U.S.C. § 11102(c). The apparent premise of the NITL proposal is that reciprocal switches and prescribed through routes can be distinguished based on the length of haul of the movement at issue – movements under 30 miles are automatically considered part of a reciprocal switch under the NITL proposal as opposed to part of a through route. There is no basis in law or industry practice for such an assumption. The Board does not have authority to order a carrier to participate in a through movement under the guise of ordering "reciprocal switching." Any relief available under 49 U.S.C. § 11102(c) must be limited to "reciprocal switching," but NITL's 30-mile presumption fails to limit relief to reciprocal switching arrangements.

²⁸ *Midtec Paper Corp. v. Chicago & N.W. Transp. Co.*, 1 I.C.C.2d 362, 366-67 (1985).

²⁹ *Cent. States Enter., Inc. v. Seaboard Coast Line R.R. Co.*, Docket No. 38891, 1984 ICC LEXIS 499 at *6 (ICC served May 15, 1984) (declining to classify activity as "reciprocal switching" where shipper was not located in a terminal area), *aff'd* 780 F.2d 664 (7th Cir. 1985); *Vista Chem. Co. v. The Atchison, Topeka & Santa Fe Ry. Co.*, 5 I.C.C.2d 331, 340 (1989) (citing *Midtec*); c.f. *Midtec Paper Corp. v. Chicago & N.W. Transp. Co.*, 3 I.C.C. 2d 171, 178 fn 17 (1986) ("It is not clear whether reciprocal switching can be required outside a terminal facility.").

V. Conclusion

The Board should not give further consideration to the NITL proposal. While the precise impact of the proposed mandatory switching regime is not possible to assess, the NITL proposal would clearly have serious unintended consequences. A restructuring of the rail industry to create multi-carrier service to a large number of shippers through mandatory switching orders would create service and operating issues that would compromise the efficiency and reliability of rail transportation and could lead to network-wide service problems. All users of the rail network, including shippers that would not be covered by the NITL proposal, would suffer the adverse consequences. The public interest would not be advanced by using mandatory switching orders to give rate relief to a favored group of shippers, particularly when the adverse consequences could be widespread and severe. Moreover, it would be inconsistent with governing law to engage in the restructuring of the rail industry contemplated by the NITL proposal.

Of Counsel:

David L. Coleman
Paul A. Guthrie
Paul Hitchcock
James A. Hixon
Theodore K. Kalick
Jill K. Mulligan
Roger P. Nober
John P. Patelli
David C. Reeves
Louise A. Rinn
John M. Scheib
Peter J. Shudtz
Gayla L. Thal
Richard E. Weicher
W. James Wochner

Respectfully submitted,



Louis P. Warchot
Association of American Railroads
425 Third Street, S.W.
Suite 1000
Washington, D.C. 20024
(202) 639-2502

Samuel M. Sipe, Jr.
Anthony J. LaRocca
Frederick J. Horne
Steptoe & Johnson, LLP
1330 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 429-6446

*Counsel for the Association of
American Railroads*

Baranowski / Brown

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Petition for Rulemaking to Adopt	)	
Revised Competitive Switching	)	Docket No. EP 711
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I. INTRODUCTION

We are Michael R. Baranowski and Richard W. Brown of FTI Consulting, Inc. Mr. Baranowski is a Senior Managing Director and head of FTI Consulting's Network Industries Strategies (NIS) practice. Mr. Brown is a Director in the NIS practice and is responsible for conducting detailed railroad market studies for a variety of railroad clients. Details of our backgrounds and qualifications are set forth in Exhibits 1 and 2 to this verified statement. We have been asked by the Association of American Railroads (AAR) to review the Surface Transportation Board's ("Board") July 25, 2012 decision in Ex Parte 711 – Petition for Rulemaking to Adopt Revised Competitive Switching Rules and to develop responses to certain of the inquiries posed by the Board using the Board's 2010 confidential Carload Waybill Sample ("CWS") made available to parties for this proceeding and other publicly available data. In Section III of our statement we provide an overview of the analyses, a description of the data sources relied upon and the assumptions we made. In Section IV we summarize our results.

II. PROPOSED CHANGE TO RECIPROCAL SWITCHING REGULATION

The Board's Ex Parte 711 Petition seeks quantitative information for a proposal to modify the Board's standards for mandatory switching made by the National Industrial Transportation League (NITL). Under NITL's proposal, the Board would move away from a competitive-abuse standard toward a supposed market-power standard for mandatory access by promulgating a new Part 1145 to Title 49 of the Code of Federal Regulations, captioned "Competitive Switching Under 49 U.S.C. § 11102(c)." Under the proposal as characterized by NITL, mandatory switching by a Class I rail carrier would be imposed if four conditions were met: (1) the shipper (or group of shippers) is served by a single Class I rail carrier; (2) there is no effective intermodal or intramodal competition for the movements for which mandatory switching is sought; (3) there

is or can be “a working interchange” within a “reasonable distance” of the shipper’s facility; and (4) switching is safe and feasible, and does not “unduly hamper” existing service.

Central to NITL’s proposed rules is the establishment of conclusive presumptions with respect to whether a shipper lacks effective intermodal or intramodal competition for the movements at issue, and whether there is a working interchange within a reasonable distance of the shipper’s facilities. NITL proposes that the Board conclusively presume that a shipper lacks effective intermodal or intramodal competition where either (1) the rate for the movement for which switching is sought has a revenue-to-variable cost ratio of 240% or more ($R/VC \geq 240$); or (2) where the Class I carrier serving the shipper’s facilities for which switching is sought has handled 75% or more of the transported volumes of the movements at issue for the prior twelve-month period. NITL also proposes, among other things, that the “reasonable distance” criterion would be conclusively satisfied if the shipper facility is “within a 30 mile radius of an interchange ... at which interchange cars are regularly switched.”

III. OVERVIEW OF ANALYSIS

The Board has asked participants to provide empirical evidence on the possible impact of the NITL proposal on railroads, shippers and other users of the railroad network. To assist in the preparation of such evidence, the Board has made available the 2010 CWS data. The CWS is a stratified sample of carload waybills compiled by the Board for all U.S. rail traffic submitted by those rail carriers terminating 4,500 or more revenue carloads annually. The file contains details of each railroad shipment including the origin, destination, commodity, revenue, identification of railroads participating in each shipment, the junction points between railroads for interline moves, miles, railroad car type and a host of other shipment related data. It is not possible, due to data limitations, to carry out a shipper-specific or terminal-specific analysis of the potential

impact of the NITL proposal using the 2010 CWS made available by the Board for use in this proceeding. Specifically, the CWS does not associate movement data with specific shippers or otherwise disclose the identity of specific shippers. Therefore, while the Board has asked for information on a shipper-specific basis, the analysis using the CWS must be carried out on a movement-specific basis. In addition, since the CWS data focus on movements without identifying specific shippers, and does not include non-rail movements, the CWS cannot be used to determine whether a carrier handles 75% or more of the transported volumes from a particular shipper's facilities. Given these limitations, we adopted a default assumption that at stations served by a single rail carrier, the serving rail carrier is handling 75% or more of total shipper volumes.

In addition, although the CWS identifies stations or junctions at which traffic was interchanged during 2010, it does not provide a complete list of working interchanges or pinpoint their geographic locations. Because the CWS did not contain this data, we relied on location information in the Centralized Station Master ("CSM") and Junction Interchange File ("JI") to identify junctions within 30 miles of stations.

The CSM is a geographic location file which contains data about rail and motor carrier points for North America and international areas. This file is primarily used by railroads to help plan freight movements from origin to destination in an efficient and timely manner. CSM rail station records are uniquely identified by combination of the Standard Carrier Alpha Code (SCAC) field and Freight Station Accounting Code (FSAC) field. They can also be identified uniquely by their respective Standard Point Location Code (SPLC). The CSM contains geographic latitude and longitude coordinates for corresponding locations identified in the CWS.

The JI is the basis for identification of inter-carrier activities. This file contains records for each junction abbreviation and pairs of reporting marks that interchange at that junction. It also describes physical locations and defines the types of activities which occur at that location including boundary crossings, per diem relief points, rail to rubber interchange, shop interchange, water interchange and traditional rail to rail interchange.

The Board asks also for information on the estimated effects of implementation of the NITL proposal in existing terminals and for shippers located within the boundaries of those terminals. The term terminal is undefined and the CWS does not identify terminals. Because the NITL proposal would cover any movements where an interchange can take place within 30 miles of a shipper's facility whether or not the interchange is within or associated with a terminal our analysis does not screen out locations that might be determined not to be terminals and instead identifies all stations within 30 miles of railroad junctions as potentially subject to the NITL proposal.

Further, because the CWS does not identify individual shippers, it is not possible to use it to identify particular shippers located at multi-served stations that might be closed to reciprocal switching today. As a result, our analysis understates the potential effects of the NITL proposal for shippers that are open only to one rail carrier at stations that are served by more than one railroad. Because of the lack of detailed relevant data, we conducted our analysis using the station and standard point location code (SPLC) information from the CWS and will address the Board's questions at that level.

For the analysis, the confidential, unmasked, version of the 2010 CWS provided by the Board was used to identify SPLCs served in 2010 by single rail carriers. Intermodal shipments were excluded from the analysis since intermodal rail traffic originates and terminates at

facilities owned by railroads rather than at shipper facilities. Other exempt traffic was included in the analysis given the ambiguity in the NITL proposal as to the scope of the proposed rule change.

In addition to the CWS, we relied on the CSM and JI files to identify active railroad junctions and publicly-available information from railroad websites regarding the location and types of various rail-related facilities, such as automotive terminals, coal wharves, and iron ore wharves.

IV. IMPLEMENTATION OF METHODOLOGY AND RESULTS

Of the five specific questions, we focused on the first two. The Board's third, fourth and fifth questions are addressed by AAR's witnesses at Oliver Wyman and Christensen Associates. As to the first two questions, the available data did not allow us to provide the precise information requested. However, we were able to provide approximate results using assumptions that are described in more detail below.

A. QUESTION 1:

Identify the existing terminals and shippers located within the boundaries of those terminals. Explain whether the shippers can currently obtain competitive switching and any restrictions or limitations on the shippers' competitive switching rights.

As noted previously, terminals are not identified in the waybill data or in any other public source. In addition, the waybill data do not identify individual shippers and shipper-specific circumstances like the existence of restrictions on switching rights. As a result, the specific issues raised in Question 1 could not be evaluated. We instead used the waybill sample to construct a list of closed stations.

The first step in the analysis was to identify stations that appear to be served by only a single Class I rail carrier. Because they represent the most disaggregated level of geographic detail, each individual SPLC was considered to be a unique station. Although the details of each

shipper located within a particular station are not available from the CWS, for purposes of this analysis stations that appear from the CWS to have been served in 2010 by a single Class I rail carrier and all shippers within that station were assumed to be closed. As an initial cut, closed stations were identified as those where only a single carrier or one Class I and one non-Class I carrier reported originating or terminating carloads.¹ Of the 8,594 unique SPLCs in the CWS, 7,339 met this definition of being closed. A second pass looked for SPLCs that were served by single non-Class I carriers that interchanged with multiple Class I carriers. 590 SPLCs met these criteria and were removed from the list of closed SPLCs. SPLCs served by one Class I and one non-Class I where the non-Class I interchanges only with that same Class I were assumed to be closed. The final result was a list of 6,749 closed stations.

Table 1: Closed Station Count

	Initial	Adjust: Non-Class I with Multiple Class I Connections	Final
Stations	7,339	-590	6,749

The last step in identifying stations potentially subject to the NITL proposal is to identify stations for railroad-owned, special facilities such as coal and ore wharves and automotive terminals.

Based on an a review of public sources such as Class 1 websites, in addition to knowledge of the industry, these facilities were assumed to be solely served by rail and not subject to being opened under the proposed rule, although this is just an assumption. Because the CWS does not contain

¹ The following three reporting marks were consolidated, respectively: KCS and KCSM, CPRS and CPUS, and CN and CNUS. For example, if a SPLC only had KCS and KCSM handling traffic, it was considered closed rather than open.

facility-level detail, traffic to these facilities was determined based on a combination of the station, the commodity, and the carrier originating or terminating traffic to the station.

Table 2: Number of Railroad-Owned Facilities

	Count
Automotive Terminals	64
Coal Wharves	7
Iron Ore Wharves	3
Total	74

In sum, 6,675 stations were identified as potentially affected by the NITL proposal. Again, this number only reflects SPLCs. The actual number of facilities and customers is likely many times the number of SPLCs because multiple shipper facilities are located at many SPLCs. Moreover, as noted earlier, there are many rail customers at “open” stations that do not have access to two rail carriers. Details of the railroad owned facilities removed from the analysis are set forth in our work papers.

B. QUESTION 2:

Identify how many additional shippers and what amount of revenues earned by the incumbent Class I rail carrier from those shippers would be subject to competitive switching under NITL’s proposal.

As noted above, the waybill sample data do not identify shippers so a shipper-specific analysis is not possible based on that data. Instead, we made a rough estimation of the number of carloads that would potentially be subject to the forced switching regime in NITL’s proposal by creating a subset of the closed stations identified above that are candidates for being forced open under the NITL proposal because they are located within 30 miles of a junction point between

railroads. The revenue carload traffic associated with this subset of stations can then be estimated from the carload waybill data. It is important to note that the resulting number of carloads does not include carloads that would be covered by the NITL proposal that originate or terminate at a sole-served shipper facility located at a station served by multiple railroads. The carload count also does not reflect the movements of empty cars that would necessarily be associated with each affected revenue carload movement.

To carry out the analysis, we determined which of the closed stations had a junction within 30 miles and would therefore be a candidate for opening under the proposed rule. To do so, we utilized the CSM and JI files to identify 19 million potential combinations of carrier, station, and junction. The data was limited to stations that were active according to the reported expiration date, and junctions reported as normal, operating, or indirect haulage. Next, we applied the GEODIST function in SAS² using the latitudes and longitudes reported in the CSM to calculate the distance between each station and junction for these 19 million pairs. The last step was to eliminate non-US station-junction pairs, non-Class I carriers, and station-junction pairs with a distance greater than 30 miles or where, according to the JI file, there was not an interchange between two railroads at the junction. The final result was 140 thousand carrier-station-junction combinations less than or equal to 30 miles. This final list of combinations was used to identify those closed stations from the 2010 CWS where a junction for the single-serving carrier existed within 30 miles and would therefore be candidates for opening.

² The SAS GEODIST function calculates the distance between two locations on the earth's surface using latitude and longitude coordinates. Input values can be expressed in degrees or in radians. The calculations take into account the fact that the earth's shape is ellipsoidal and not spherical.

The distances calculated from the CSM and JI files represent air, or “as the crow flies,” miles because the NITL specifies a “30-mile radius.” Based on this analysis, 3,419 of the 6,749 closed stations would be candidates for opening. For purposes of this analysis, these stations are referred to as new access carrier (NAC) stations.

For each of the 3,419 NAC stations the expanded CWS reported number of carloads was tallied.³ These NAC stations served approximately 7.5 million carloads in 2010. Results of the CWS analysis are summarized in Table 3 below.

Table 3: Summary of CWS Records and Those Potentially Subject to NITL Proposal (millions)

	Carloads & Units
Total Number of Carloads and Containers in 2010 CWS	33.3
Intermodal Containers Served by Railroad Owned Facilities	13.3
Total Carloads Excluding Intermodal	20.0
Carloads Potentially Subject to NITL Proposal	7.5

As Table 3 indicates, our analysis showed that more than a third (37.5%) of non-intermodal carload traffic reflected in the waybill sample would potentially be covered by the NITL proposal. While this represents a substantial share of the number of non-intermodal carloads, it does not reflect the full impact of the NITL proposal since the traffic at closed facilities would tend to make a higher than average contribution to railroads’ joint and common costs. Therefore, the amount of contribution that would potentially be affected by the NITL proposal would be even greater than 37.5%. Moreover, as indicated above, additional carload

³ The CWS is a stratified sample. Reported carloads are expanded by the Board in the file to represent total annual carloads using expansion factors relative to the specific sampling rates for each move type in the sample.

traffic (at stations served by multiple railroads) that it was not possible to identify from the waybill sample would also be covered.

Table 4 below provides commodity details, including the number of lanes,⁴ of the traffic potentially subject to the NITL proposal. The thirteen commodity groups listed in Table 4 constituted 99% of the 7.5M carloads, and demonstrate how broad the impact of the NITL proposal would be on a commodity basis.

Table 4: NAC-Originating or NAC Terminating Traffic, by Commodity

STCC	Commodity	Lanes	Carloads
Total		21,366	7,531,274
11	Coal	1,027	2,858,399
28	Chemicals	5,667	841,105
01	Farm Prod	2,491	658,329
14	Nonmetals	798	605,982
10	Metals	134	503,126
37	Transportation	1,371	448,077
20	Food Prod	2,621	445,067
32	Stone & Clay	903	217,541
29	Pet & Coal	1,141	216,404
33	Primary Metals	1,055	196,232
26	Pulp & Paper	1,417	189,464
40	Waste & Scrap	986	168,470
24	Lumber, Wood	1,410	132,464
	Other	345	50,614

V. CONCLUSION

Although the data issues and ambiguities in the NITL proposal make it impossible to carry out the shipper-specific or terminal-specific analyses called for by the Board's questions, the analysis above demonstrates the broad potential impact of the NITL proposal. The NITL proposal covers a substantial share of both stations and carloads transported.

⁴ A lane is defined as a unique combination of two-digit STCC and origin-destination pair, where the origin and destination is interchangeable.

I declare under penalty of perjury that the foregoing is true and correct. I further certify that I am qualified and authorized to sponsor and file this testimony.

Executed on March 1, 2013


Michael R. Baranowski

I declare under penalty of perjury that the foregoing is true and correct. I further certify that I am qualified and authorized to sponsor and file this testimony.

Executed on March 1, 2013

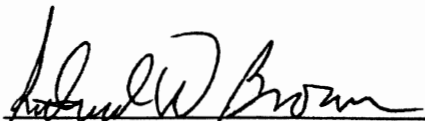

Richard W. Brown

EXHIBIT 1



Michael R. Baranowski

Senior Managing Director – Economic Consulting

mike.baranowski@fticonsulting.com

FTI Consulting

1101 K Street, NW

Suite B100

Washington, DC 20005

Tel: (202) 312-9100

Fax: (202) 312-9101

Education

B.S. in Accounting,
Fairfield University

Supplemental Finance
Studies, Kean College

Mike Baranowski heads FTI's Network Industries Strategies practice and provides strategic, financial and economic consulting services to the telecommunications and railroad and pipeline transportation industries. He has special expertise in analyzing and developing complex costing and cash flow models, conducting detailed operations analysis, and transportation engineering. Much of his work involves providing oral and written expert testimony before courts, arbitration panels and regulatory bodies.

He is a recognized expert in railroad regulatory economics and has assisted FTI's railroad clients in a broad range of litigation and regulatory engagements involving pricing of services, contract disputes, damage calculations and analyses of the specific effects of pending or proposed changes in policy or regulation.

Some of Mr. Baranowski's representative experience includes:

- Development of strategic litigation approach for large railroad rate proceedings based on the theory of Constrained Market Pricing and the Stand-Alone cost test. Theory assumes the existence of a hypothetical, efficient competitor and involves detailed analysis of railroad operations, expenses, capital expenditures and revenues.
- Development of a suite of modeling tools to assess the regulatory risk of railroad rates for a mix of commodities based on key cost drivers and forecasts.
- Design and development of modeling tools designed to simulate the cost of competitive entry into local telecommunications markets and directing the efforts of a nationwide team of testifying experts presenting the cost model results in multiple proceedings across the country.
- Detailed analysis, critique and restatement of complex cost models developed for the railroad, telecommunications, pipeline and trucking industries.
- Designing modeling tools for use in calculating the costs of competitive entry into railroad, telecommunications and pipeline markets.
- Conducting detailed analyses of railroad operations and developing the associated capital requirements and operating expenses attributable to specific movements and the incremental capital and operating expense requirements attributable to major changes in anticipated traffic levels.

Mr. Baranowski holds a B.S. in Accounting from Fairfield University in Fairfield, Connecticut and has pursued supplemental finance studies at Kean College in Union, New Jersey.



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Michael R. Baranowski

TELECOMMUNICATIONS TESTIMONY*Federal Communications Commission*

February 1998 File No. E-98-05. AT&T Corp. v. Bell Atlantic Corp. Affidavit of Michael R. Baranowski.

March 13, 1998 File No. E-98-05. AT&T Corp. v. Bell Atlantic Corp. Supplemental Affidavit of Michael R. Baranowski.

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Public Service Commission of Delaware

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Public Service Commission of the District of Columbia

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- September 30, 2002 STB Docket No. 42069. Duke Energy Corporation v. Norfolk Southern Railway Company, Reply Evidence and Argument of Norfolk Southern Railway Company.
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Michael R. Baranowski

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Michael R. Baranowski

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Michael R. Baranowski

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January 7, 2013 Docket No. 42130 SunBelt Chlor Alkali Partnership v. Norfolk Southern Railway Company, Reply Evidence of Norfolk Southern Railway Company

US District Court for Northern District of Oklahoma

January 2, 2007 Case No. 06-CV-33 TCK-SAJ, Grand River Dam Authority v. BNSF Railway Company; Report of Michael R. Baranowski

February 2, 2007 Case No. 06-CV-33 TCK-SAJ, Grand River Dam Authority v. BNSF Railway Company; Reply Report of Michael R. Baranowski

Circuit Court of Pulaski County, Arkansas

- August 17, 2007 Case No. CV 2006-2711, Union Pacific Railroad v. Entergy Arkansas, Inc. and Entergy Services, Inc., Expert Witness Report of Michael R. Baranowski
- December 14, 2007 Case No. CV 2006-2711, Union Pacific Railroad v. Entergy Arkansas, Inc. and Entergy Services, Inc., Reply Expert Witness Report of Michael R. Baranowski

U.S. District Court for the Eastern District of Wisconsin

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- April 12, 2005 Arbitration Case #181 Y 00490 04 BNSF Railway Company and J.B. Hunt Transport, Inc., Supplemental Expert Report on behalf of BNSF Railway Company
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- March 19, 2007 In the Matter of the Arbitration between the Detroit Edison Company, et al, and BNSF Railway Company, Supplemental Expert Report of Michael R. Baranowski
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- October 16, 2009 In the Matter of Arbitration Between Norfolk Southern Railway Company and Drummond Coal Sales, Inc., Expert Report of Michael R. Baranowski
- July 25, 2011 American Arbitration Association Case No. 58 147 Y 0031809, BNSF Railway Company and Kansas City Southern Railway Company, Expert Report of Michael R. Baranowski

EXHIBIT 2

Richard Brown

Director – Economic Consulting

rick.brown@fticonsulting.com

FTI Consulting

1101 K Street, NW

Suite B100

Washington, DC 20005

Tel: (202) 312-9100

Fax: (202) 312-9101

Education

MBA from Northwestern
University Graduate
School of Management

BS in Economics from
Syracuse University

Richard Brown is a Director in FTI's Economic Consulting practice. With 28 years of experience in the railroad industry, Mr. Brown specializes in providing financial, economic and analytical consulting services to North America's largest railroads. Mr. Brown has provided expert testimony in merger proceedings before the Interstate Commerce Commission and The Surface Transportation Board. Mr. Brown is assigned to the DC office, however works from his home office at 100 Windwood Circle; Breckenridge, Colorado 80424.

Mr. Brown joined FTI Consulting in 1999. Much of the NIS group's work focuses on the economic and financial analysis of network industries, in particular different aspects of transportation. While at FTI, he has been involved in the analysis of rates, costs, and service in the railroad industry. Mr. Brown has worked extensively to develop expert testimony before the Surface Transportation Board ("STB") examining the reasonableness of railroad rates, railroads' applications for mergers and acquisitions. He also supported railroad internal strategic planning needs with respect to mergers and acquisitions and the impact of potential regulatory changes.

Prior to joining FTI, Mr. Brown spent 28 years with The Burlington Northern & Santa Fe Railway (BNSF), and its predecessor The Atchison, Topeka and Santa Fe Railway (ATSF). While at BNSF, he focused on strategic issues including the negotiation and implementation of the agreements between UP and BNSF that were effected to facilitate the UP-SP merger. Additionally, he took a lead role in the analysis of the potential impact of regulatory changes on railroad marketing strategy.

Mr. Brown held numerous positions in Strategic Planning and Marketing at ATSF. He was involved in merger analysis and planning and played a key role in the attempted merger between ATSF and Southern Pacific. He headed ATSF's Bulk Commodity Marketing which included Chemicals and Coal. In this role, Mr. Brown re-engineered a field sales organization with regional directors responsible for coaching and mentoring account managers; started a subsidiary company to handle tank containers as a retail intermodal options; and expanded on that with a joint venture with Bulkmatic, a major dry bulk truck line, to initiate a retail intermodal option for bulk containers.

Mr. Brown holds a Bachelors Degree in Economics from Syracuse University and an MBA degree from Northwestern University Graduate School of Management.

TESTIMONY

Surface Transportation Board

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Richard Brown

October 11, 2002	Docket No. 42072. Carolina Power & Light v. Norfolk Southern Railway Company, Written Reply Evidence and Argument of Norfolk Southern Railway Company.
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November 30, 2012	Docket No. 42125 E.I. DuPont De Nemours & Company v. Norfolk Southern Railway Company, Reply Evidence of Norfolk Southern Railway Company
January 7, 2013	Docket No. 42130 SunBelt Chlor Alkali Partnership v. Norfolk Southern Railway Company, Reply Evidence of Norfolk Southern Railway Company



Eakin / Meitzen

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

**STB EX PARTE NO. 711
PETITION FOR RULEMAKING TO ADOPT REVISED
COMPETITIVE SWITCHING RULES**

**JOINT VERIFIED STATEMENT
OF
B. KELLY EAKIN
AND
MARK E. MEITZEN
CHRISTENSEN ASSOCIATES**

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INTRODUCTION

We are B. Kelly Eakin and Mark E. Meitzen of Christensen Associates and are two of the principal authors of the Christensen Associates' railroad competition studies.¹ We also provided a Joint Verified Reply Statement in support of the comments of the Association of American Railroads (AAR) in Ex Parte No. 705, *Competition in the Railroad Industry*. The AAR has asked us to comment on two questions raised by the Board in its July 25 Notice in this docket: (1) what would be the impact of NITL's proposal to modify the Board's standards for ordering mandatory switching² on those sole-served shippers not covered by the NITL proposal; and (2) how much of the railroads' revenue losses caused by the NITL proposal could be offset through traffic increases?³

We note that there is generally a lack of information to perform quantitative analyses to fully address the questions raised by the Board. However, it is clear that the NITL proposal would create "winners" and "losers" and that unintended consequences would result if the proposal were implemented. We provide an analysis of the winners and losers and the unintended consequences that would result if the NITL proposal

¹ With our colleagues, A. Thomas Bozzo, Douglas W. Caves, Laurits R. Christensen, Philip E. Schoech and Joseph A. Swanson, we produced *A Study of Competition in the U.S. Freight Railroad Industry and Analysis of Proposals that Might Enhance Competition* in November 2008 (revised November 2009) for the Surface Transportation Board. We produced two other studies for the STB, the *Supplemental Report on Capacity and Infrastructure* in March 2009, and *An Update to the Study of Competition in the U.S. Freight Railroad Industry* in January 2010.

² The Board uses the term "competitive switching," which it states is more applicable here than "reciprocal switching" because the arrangement would not be reciprocal between carriers. EP No. 711 Notice, July 25, 2012, p. 3. However, we note that there is a significant difference between switching that is compelled by Board order—"mandatory switching"—and switching arrangements that are voluntary. Voluntary arrangements represent market outcomes between optimizing railroads while mandatory arrangements represent constraints on the behavior of these railroads that would alter market outcomes.

³ Although the Board asked specifically about the impact of the NITL proposal on sole-served shippers who would not be able to obtain mandatory switching, the proposal would likely produce negative consequences with no offsetting benefit for all shippers, not just sole-served shippers, who cannot take advantage of the proposal. We discuss these negative consequences in detail below.

were implemented. We also provide qualitative conclusions and outline factors to be considered to adequately provide a quantitative response to the Board's questions.⁴

We have previously addressed potential changes to the Board's access regulation in studies that we performed for the Board and in testimony to the Board. In Chapter 22 of our November 2008 report,⁵ we examined various forms of "open access" regulation, including changes to the Board's approach to bottleneck rates, reciprocal switching, terminal agreements and trackage rights. We concluded that relative to other open access policies (e.g., trackage rights, bottleneck rates), changes in policies such as reciprocal switching would be the least costly in terms of loss of economic efficiency and have a lower potential of adverse changes to the industry.⁶

However, as we explained in our Verified Reply Statement in EP 705, our conclusion was not a recommendation that a change in policy be adopted, and it did not preclude the possibility that, in absolute terms, the economic costs that would result from such a policy change could exceed the benefits of the change in policy.⁷ The economic costs of imposing the NITL proposal could be significant and, as we discuss below, would be borne in large part by those who do not benefit from the NITL proposal.

⁴ It is uncertain whether all of the required information exists or can be readily developed to adequately produce a quantitative response to the Board's questions.

⁵ Joint Verified Reply Statement of B. Kelly Eakin and Mark E. Meitzen, STB Ex Parte No. 705, May 27, 2011.

⁶ *A Study of Competition in the U.S. Freight Railroad Industry and Analysis of Proposals that Might Enhance Competition*, November 2008 (Christensen 2008), p. 22-14.

⁷ Our comparison of various types of open access (including Table 22-1) was performed under the assumption, consistent with current policy, that the terms of access, including compensation, reflected voluntary negotiations between railroads subject to STB maximum rate oversight. Christensen 2008, p. 22-12. We do not consider here the impact of the level of compensation for mandatory access on the possible economic costs of the NITL proposal.

Also, as we noted in our Verified Reply Statement in EP 705, consideration of operational issues was not in the scope of our STB studies. In preparing a response to the Board's July 25 Notice in this docket, the AAR has developed evidence relating to the impact of mandatory switching on rail service. As we discuss, the impact of potential service declines is an important part of any evaluation of the economic costs of the NITL proposal.

IMPACT OF THE NITL SWITCHING PROPOSAL ON EXCLUDED SHIPPERS

The NITL mandatory switching proposal would be an asymmetric change in regulation that creates winners and losers. That is, the proposal would have redistribution impacts. In this section we discuss how the NITL switching proposal creates winners and losers, the likely impacts of the proposal on service quality, and how these impacts may alter the competitive balance in shipper product markets.⁸

Creation of Winners and Losers

The NITL proposal targets a select set of shippers in a select set of markets to be the beneficiaries of their proposed mandatory switching rules. The proposal would create two classes of shippers: "covered shippers" are sole-served shippers who could invoke mandatory switching under the proposal and benefit from lower rates; and "excluded shippers" are shippers who would not benefit from the NITL proposal. A

⁸ While the Board's question is directed at the impact of the NITL proposal on those shippers not covered by the proposal, the NITL proposal would also have a negative impact on railroad profits. The negative effects of the NITL proposal on railroad revenues would include lower revenues collected from covered shippers for a given level of traffic and likely lower traffic levels—and lower revenues—from excluded shippers. Railroad cost increases resulting from the NITL proposal would include the costs of increased switching activity and car handling and a likely overall decline in railroad operating efficiency.

subclass of excluded shippers is “rate-disadvantaged shippers” whose rates would ultimately increase as a result of the NITL proposal.

The impact of the NITL proposal on the group of rate-disadvantaged shippers is the most obvious example of the creation of winners and losers. To the extent rate-disadvantaged shippers pay more for transportation service because the covered shippers pay less, the NITL proposal clearly redistributes wealth between the two groups. We have noted in our STB studies the potential for redistribution impacts from providing rate relief to a specific set of shippers. In particular, we noted that:

Because the railroad industry has remained approximately revenue sufficient in recent years, we reemphasize one of our original conclusions: providing significant rate relief to some shippers will likely result in rate increases for other shippers or threaten railroad financial viability.⁹

This is simply recognition of an adding up condition. To the extent their costs are increased or they suffer revenue losses, railroads might face reduced regulatory constraints on their pricing, resulting in the ability to increase rates in those instances where pricing is constrained by regulation rather than by competition. The ability of railroads to raise rates of the rate-disadvantaged shippers beyond existing levels is unclear, therefore the extent of this redistribution impact is difficult to evaluate.

The NITL proposal would create winners and losers among shippers in at least two other important ways. First, not all costs of the proposal would be borne by the

⁹ *An Update to the Study of Competition in the U.S. Freight Railroad Industry*, January 2010, p. ii.

beneficiaries, particularly costs created by declines in service quality.¹⁰ Covered shippers would bear some of these costs, but they would not be the only parties to bear costs. To the extent that the extra costs to the railroad system (not just the increased costs of the individual movement) introduced by the proposal are not borne by the covered shippers, excluded shippers are harmed. Beyond bearing some of these extra costs, excluded shippers would also need to cover a larger proportion of railroad overhead costs.¹¹ Thus, the proposal would end up conveying benefits to a select group of shippers, while broadly adding to and reallocating cost burdens across other shipper groups and rail service providers.

Second, excluded shippers would suffer a disadvantage in product market competition with other shippers including covered shippers. While both sets of shippers would be adversely affected by service declines, covered shippers would at least have the benefit of lower rates created by the mandatory switching proposal that would allow them to compete more effectively against excluded shippers. The change in competitive conditions between covered and excluded shippers could lead to an unintended reallocation of resources and markets, with excluded shippers being competitively disadvantaged in the product markets in which they participate.

We discuss these two impacts separately below.

¹⁰ We understand that the railroads and the AAR will be providing evidence on the impacts of the NITL proposal on railroad costs and service quality. Many of these impacts were discussed in EP 705 and include extra car handlings, extra interchanges, inefficient routings, coordination issues between railroads, cars or blocks of cars sitting at interchange points for a period of time before the connecting railroad is able to pick it up, and an increase in labor and capital needs to handle the interchanged traffic. See Verified Statement of Mark D. Manion on Behalf of Norfolk Southern Railway Company, STB Ex Parte No. 705, April 6, 2011.

¹¹ To the extent contribution to railroad overhead costs lost from covered shippers is not made up by excluded shippers (rate-disadvantaged shippers), the financial situation of the railroad would decline.

Impacts on Service Quality and Consequences

The NITL proposal is likely to affect railroad service quality (e.g., speed and reliability of freight rail service) and thereby negatively impact a wide array of users of freight rail networks. Adding an interchange to what is now a single-line movement would impose additional costs and create additional steps in the movement. AAR's witness Mr. Rennie explains in more detail that the potential impact on service quality could arise from increased congestion in yards and at switching points covered by the NITL proposal as the efficient flow of rail services is interrupted by increased switching activity at those facilities covered by the proposal. Moreover, this localized deterioration in service quality may spread throughout the network. In the case of either localized or more widespread service issues shippers other than those who benefit from the NITL proposal would be affected by diminished service quality caused by mandatory switching activity. Thus, covered shippers would not bear the full costs of the switching services they request as some of the costs would be borne by others.¹² This is what economists call a negative externality, which in this case results from the interference with the market process caused by the mandatory switching.

¹² As we discussed in our capacity study for the STB, a phenomenon of network industries (e.g., railroad, data and communications, and electricity) is what is known as network effects or network externalities, where what happens on one segment of the network may have spillover effects on other parts of the network. For example, congestion or constraints that cause a decline in throughput at particular network nodes or segments often proliferates or cascades throughout the network. See *Supplemental Report on Capacity and Infrastructure*, in March 2009, Chapter 2. Also see Verified Statement of Mark D. Manion on Behalf of Norfolk Southern Railway Company, STB Ex Parte No. 705, April 6, 2011. An acute example of cascading failures occurred in 1997 when "UP and SP lines in and around Houston became severely congested, leading to a lengthy and damaging service breakdown dramatically affecting rail transport throughout the West," *Union Pacific Corp. – Control and Merger – Southern Pacific Rail Corp.*, 3 S.T.B. 1030, 1036 (1998).

Indeed, any rate reductions that covered shippers could expect under the NITL proposal would be at least partially offset by the added costs of the service declines that result. But the NITL proposal would not provide excluded shippers with any rate reductions that might offset, even in part, the additional costs resulting from declining service quality created by the proposal.

Long-term service issues for all users of freight rail networks would be created by the likely effect of the NITL proposal on railroad investment. Railroads' required levels of investment, their ability to fund such investments, and their investment incentives are all likely to be affected by the proposal. To the extent service quality deteriorates as a result of the NITL proposal, additional investment would be needed to address the declining service, such as additional investment in yard capacity to accommodate a higher level of switching activity and higher volumes of interlined traffic. Thus, additional investment would be required just to maintain current service levels for all customers. However, to the extent that the NITL proposal would have a negative impact on railroad profitability, railroads would find it difficult to maintain current investment levels, let alone increase investment. Moreover, the railroads' incentive to increase their levels of investment would be reduced due to lower expected returns and the uncertainty created by the NITL proposal over network traffic patterns and the amount of traffic that would be available to pay for those investments.

Impacts in Shipper Product Markets

The NITL switching proposal would also redistribute benefits within a covered shipper's industry, change market structure in that industry, and alter product market

outcomes. Under the proposal, two otherwise identical firms in an industry would now be arbitrarily differentiated by distance to an alternative railroad. The shipper within the mandatory switching facility defined by the NITL proposal would become a covered shipper and the shipper outside this defined facility would be an excluded shipper and, potentially, a disadvantaged shipper. The proposed mandatory switching rule would give the covered shipper a competitive advantage over the otherwise identical excluded firm. The result would be the redistribution of profits from the excluded shipper to the advantaged shipper. Thus, the proposal would have economic consequences filtering beyond the railroad industry: the NITL proposal would interfere with the market process in the covered shipper's industry, making winners and losers out of otherwise identical firms.

Other product market consequences of the NITL proposal for excluded shippers might include reduced operations, shifting production into other markets, or even exiting the industry altogether. Resources reallocated into other markets and industries represent changes in market outcomes that would not occur but for the adoption of the NITL switching proposal that benefits a discrete set of shippers.

Finally, in addition to being disadvantaged relative to covered shippers in their particular industries, excluded shippers might also be competitively disadvantaged by the NITL proposal relative to: other firms in their industry that were not affected to the same extent or at all by the negative externalities caused by the proposal; and/or producers of other substitutable goods. This competitive disadvantage might have consequences for export markets as the locations of these other firms in the same industry or in substitute goods industries may be in other countries.

Summary

The NITL mandatory switching proposal would have adverse consequences for excluded shippers and rail service providers. Quantifying the impacts requires more detail on the proposal. Furthermore, the amount of information that would be required on shipper behavior, shipper product market structure, and rail operations in specific locations would be extensive, and it is questionable whether this information could be readily developed to provide quantitative answers to the Board's questions. But broadly speaking, the proposal would be redistributive by conveying benefits to a discrete set of shippers while adding and reallocating costs across other shippers and railroads. The proposal would change market outcomes among groups of shippers and for railroads as well. The proposal represents interference with market mechanisms for an end that would not be universally beneficial and that would increase costs.

HOW MUCH OF REVENUE LOSSES COULD BE OFFSET BY TRAFFIC INCREASES?

The Board has asked how much of the revenue losses incumbent Class I railroads would incur as a result of the NITL proposal could be offset through traffic increases.¹³ Available information does not permit this question to be answered with a quantitative prediction. As we discuss in this section, information on a number of factors would need to be known to provide a quantitative answer to this question. In addition to enumerating these factors, we provide a qualitative assessment of this question.

In this section, we discuss the factors and information that would need to be considered to determine, first, whether traffic would increase as a result of the NITL

¹³ EP No. 711 Notice, July 25, 2012, p. 9.

proposal and, second, whether the revenue losses caused by the proposal would be offset if traffic increases. We provide an analytical framework to assess whether revenue losses caused by the proposal would be offset if traffic increases. In establishing this framework, we observe that the more relevant economic question would consider the impact of the NITL proposal on railroad contribution, not revenue.

What is the Likelihood that Traffic Would Increase?

Covered shippers' response to rate reductions caused by the NITL mandatory switching proposal would depend on the magnitude of the rate reductions and shippers' elasticities of demand for rail transportation: for a given rate reduction, a higher elasticity of demand results in a greater increase in the quantity of covered shipper demand for rail services and, conversely, a lower elasticity of demand results in a smaller increase in the quantity of covered shipper demand for rail services.¹⁴

Shipper elasticity of demand for rail transportation may vary by commodity and/or geography and, thus, changes in traffic in response to rate reductions induced by the NITL proposal would vary accordingly. For example, some commodities will have relatively inelastic demand for rail transportation because the demand for the commodity, itself, is inelastic and input substitution possibilities are limited.

As we discuss below, the quantity of excluded shipper demand for rail services would, at best, be the same but would likely decline. Thus, the source of any increase in traffic resulting from the NITL proposal would be confined to the class of covered

¹⁴ Elastic demand means a price decrease results in a more than proportional increase in quantity demanded. Inelastic demand means a price decrease results in a less than proportional increase in quantity demanded.

shippers. Therefore, at a minimum, information would be needed on the magnitude of any rate reductions caused by the NITL proposal and covered shippers' elasticities of demand for rail transportation.

However, there are a number of largely interrelated factors that would be affected by the NITL proposal that would mitigate any increases in quantity demanded by covered shippers resulting from the proposal and railroads' ability to provide increased quantities of services. The likelihood that the traffic of covered shippers would increase depends on the magnitude of the effects produced by these factors and, thus, would need to be evaluated to determine the impact of the NITL proposal on covered shipper traffic. The mitigating factors include the impact of the NITL proposal on: service quality; railroad revenues, costs and profits; the amount of investment required to maintain or increase traffic levels; and the ability and incentives of railroads to undertake investments.

As discussed above, the potential negative impact of the NITL proposal on service quality could arise from increased congestion at yards and switching points (particularly those covered by the proposal), increased terminal dwell times and diminished railroad operational efficiency. Moreover, there is a likelihood that localized service quality impacts would proliferate through the network. The impact on covered shippers would include an increase in shippers' transportation costs and a decline in the reliability of rail service,¹⁵ both of which would dampen any increase in demand for rail services created by the NITL proposal.

¹⁵ As we have discussed, the negative externalities created by the NITL proposal would also result in higher costs and less reliable service for excluded shippers as well.

To the extent railroads' ability to invest is impeded by the impact of the NITL proposal on railroad profits, railroad capacity to handle existing traffic levels (let alone greater levels) is affected. It is likely the case that to maintain previous levels of efficiency and ability to handle traffic, railroads would need to incur greater levels of investment after implementation of the NITL proposal.¹⁶ For example, yard capacity would need to be increased to accommodate increased switching activity, car handlings and terminal dwell. The impact of lower railroad profits and investment activity would largely be felt through diminished levels of service, exacerbating the service quality impacts discussed above.

In addition to affecting railroads' ability to invest, the proposal would also likely have a negative impact on railroads' investment incentives. Among the reasons for the negative impact on investment incentives is the likelihood that the NITL proposal would make traffic flows and patterns less predictable, adding uncertainty to investment decisions, and would potentially discourage railroads from investing because their return on that investment could be significantly impaired by a requirement that they provide mandatory switching for their competitors.

Finally, excluded shipper traffic would likely decline under the NITL proposal. For rate-disadvantaged shippers, rate increases would reduce their demand for rail transportation because of its higher price and also because of product market competitive disadvantage created by the proposal. Also, as discussed above, service

¹⁶ See Verified Statement of Mark D. Manion on Behalf of Norfolk Southern Railway Company, STB Ex Parte No. 705, April 6, 2011; and Verified Statement of Lance M. Fritz, STB Ex Parte No. 705, April 11, 2011.

quality problems and other network inefficiencies caused by the NITL proposal would likely affect shippers other than the covered shippers who benefit from the NITL proposal, thus increasing excluded shippers' rail transportation costs. These negative impacts on excluded shippers are likely to translate into a decrease in their demand for rail transportation.

From a broader perspective, to the extent the NITL proposal results in reduced freight rail traffic, other modes could experience an increase in demand for their transportation services. For example, declining rail service could lead shippers to move their traffic from rail to truck, creating the possibility of greater highway congestion.

Can Traffic Increases Offset Railroad Revenue Losses Caused by the NITL Proposal?

The Board asks whether traffic increases can offset the revenue losses created by the NITL proposal. It is questionable whether overall traffic would, in fact, increase under the NITL proposal: it is likely that excluded shipper traffic would decrease (and, thus, revenue generated from excluded shippers would decrease), and whether any increase in covered shipper traffic would be enough to offset the decrease in excluded shipper revenues is an empirical matter.

The extent of revenue generated by any increase in covered shipper traffic to offset revenue losses caused by the proposal would depend on shippers' respective elasticities of demand for rail transportation, and the effects of the mitigating factors on shipper demand for rail transportation and on railroads' ability to provide service

(discussed above).¹⁷ To determine whether railroad revenue would increase overall as a result of the NITL proposal, an extensive amount of information would be needed. This information would include:

- Amount of traffic for both covered and excluded shippers;
- Elasticities of demand for both covered and excluded shippers (these may vary by commodity and/or geography);
- The impacts of other non-price factors affecting shippers' demand for rail transportation;
- The factors affecting railroads' ability to provide service and maintain service quality;
- Rate reductions caused by the NITL proposal for covered shippers;
- Rate impacts on excluded shippers.

As some of this information is unknown or cannot be fully developed, a meaningful quantitative response to the Board's question cannot be provided.

Although the Board asked whether there would be offsets to railroad revenue losses, the more relevant question for evaluating the economic impact of NITL's proposal on the railroad industry is what happens to the amount of contribution to overhead generated? The answer to this question is unambiguous: the NITL proposal would reduce the contribution generated from the covered shippers. Furthermore, the more covered traffic increases as a result of the proposal, the worse the contribution situation would become.

Contribution is generally defined as the difference between revenue and variable cost, and represents a firm's ability to cover its non-variable costs and generate profit.

¹⁷ In response to rate declines caused by the NITL proposal, if demand is elastic revenue would increase, but if demand is inelastic revenue would decrease. As noted above shipper elasticity of demand for rail transportation may vary by factors such as commodity and/or geography.

As opposed to revenue, the contribution impact of the NITL proposal measures the true economic impact of the NITL proposal on railroads because there would be both revenue and cost impacts created by the proposal. As with revenue offsets, the question of contribution offsets is focused on covered shippers.¹⁸

Regarding potential contribution offsets generated by covered shippers, the NITL proposal would result in lower railroad contribution. That is, the cost increase more than offsets the revenue increase (if any). As we show in the Appendix, if the railroad is maximizing profit, then any price change resulting from a change in regulation decreases contribution generated from the regulated market. In particular, if a lower price results, then the quantity sold would increase and, as a result, revenue would increase, cost would increase, but cost would increase by more than revenue, so contribution would decrease. If the firm is already subject to regulation that results in a price less than the unconstrained profit-maximizing price, then regulation that further lowers price results in further loss of contribution.

A policy, such as mandatory switching, that lowers the price of rail services in a market would result in a decrease in total contribution received by the railroad. This conclusion is intuitive—if it were otherwise the railroad would have lowered price on its own. We establish the result mathematically in our Appendix to this statement. Thus, the relevant question in considering such a policy is not whether the policy would

¹⁸ The potential for increased traffic derives from a lower rate, and a lower rate under the NITL proposal would only be available to covered shippers. Excluded traffic and revenues, at best, would remain the same and would more likely decline. Combined with the cost increases that would be associated with serving excluded traffic, contribution generated from excluded shippers would decline as a result of the NITL proposal.

decrease contribution, but instead the relevant question is how severe would the contribution decrease be?

In the Appendix, we present a theoretical analysis of the factors that determine the severity of contribution loss. We reach five important findings:

1. The marginal loss of contribution increases as price is further reduced below the contribution-maximizing level.
2. The cumulative loss in contribution from an additional price decrease becomes increasingly larger as price is further below its contribution-maximizing level.
3. The cumulative loss of contribution from a policy that reduces price by a specific amount is greater the more constrained the market is originally.
4. The more elastic demand is, the smaller the marginal loss of contribution at any output level, but the greater the cumulative loss of contribution from a policy that further reduces price below the contribution-maximizing level.
5. The steeper the marginal cost curve, the greater the marginal loss of contribution at any output level and the greater the cumulative loss of contribution loss from a policy that further reduces price below the contribution-maximizing level.

Findings 1, 2, and 3 indicate that the contribution loss increases exponentially as price is reduced below its contribution-maximizing level. Finding 4 says the contribution loss is larger the more responsive the covered shippers are to a change in price. Finding 5 says the contribution loss is larger the more difficult it is for the railroad to provide the additional services demanded as a result of the lower price.

This analysis is an illustration of the economic principle that if an economic agent is behaving to optimize its objectives (e.g., railroads maximizing efficiency and profits) adding constraints or conditions to this optimization (e.g., requiring switching where it is not voluntarily provided) cannot make the agent better off and likely makes the agent worse off. Assuming that railroads are optimizing economic agents, if they could have

made themselves better off by pursuing actions consistent with the NITL proposal, they would have. The fact that they haven't voluntarily implemented the NITL proposal is an economic indication that railroads could not be better off under the proposal: that contribution losses caused by the proposal would not be offset by traffic increases of any magnitude. Mandatory switching would introduce additional costs that may exceed the benefits of the proposal and would interfere with railroads' differential pricing that is acknowledged as necessary for railroads to achieve financial viability.

Summary

A number of factors call into question whether the NITL proposal would cause an overall increase in traffic. At best, excluded shipper traffic would remain the same but would more likely decline. The extent to which covered shipper traffic would increase depends on how the interrelated factors discussed in this section impact covered shippers' demand for freight rail services and railroads' ability to serve this demand. The magnitudes of these factors are unknown and would need to be determined to predict the impact of the NITL proposal on covered shipper traffic. Regarding the question of revenue offsets, the more informative economic question is not whether any traffic increases offset revenue losses, but whether any traffic increases offset railroad contribution losses that would be caused by the proposal. Assuming that railroads were optimizing economic agents prior to implementation of the NITL proposal, contribution levels would not be offset by any traffic increases.

CONCLUSION

The NITL mandatory switching proposal represents a change in railroad regulation that, by its very design, creates winners and losers (and possible unintended consequences even for the “winners”). In addition to direct costs imposed on shippers and railroads, one of the important potential side effects of the NITL proposal would be degradation in service quality that would affect not only the switching areas defined by the NITL proposal but could spread throughout the network.

These service quality problems—whether localized or more widespread—create negative externalities in that those who create the service quality problems (covered shippers who obtain mandatory switching) would not bear the full costs of their actions. Such externalities represent market failures that reduce welfare. Excluded shippers would likely suffer service quality declines and cost increases, but receive no offsetting rate reductions to compensate for these negative impacts. Freight railroads are also likely to be losers to the extent their operations become less efficient, costs increase and contribution declines. Longer-term impacts on service quality could result if these impacts result in a diminished ability of railroads to invest in their networks and/or a disincentive to undertake investments.

The conclusions of our STB studies did not preclude the possibility that, in absolute terms, open access policies such as the NITL proposal would generate economic costs that must be weighed against the benefits of these policies. At this point, the exact magnitudes of the impacts of the NITL proposal are not known. What is known is that the proposal would generate costs of the types described here and these costs should be considered in the evaluation of the NITL proposal.

Current freight rail transportation policy defers to market-based solutions. The NITL mandatory switching proposal moves away from that policy. Rather than protecting sole-served shippers overall, the proposal would reconfigure the regulatory backstop in a manner designed to benefit a select set of shippers, but harming the group of excluded shippers. The result of this asymmetric market interference would be to: create winners and losers, both among shippers and railroads; reallocate resources across markets; and introduce a market failure by adding costs that fall on other than the beneficiaries of the policy.

APPENDIX: THE IMPACT OF A PRICE DECREASE ON REVENUE, COST AND CONTRIBUTION

If a firm is maximizing profit, then any change in price imposed by regulation (i.e., demand and cost conditions have not changed) decreases contribution (i.e., profit) generated in that market. If a higher price were imposed, the quantity sold would decrease and, as a result, revenue would decrease, cost would decrease, but revenue would decrease by more than cost so contribution would decrease. If a lower price were imposed, then the quantity sold would increase and, as a result, revenue would increase, cost would increase, but cost would increase by more than revenue, so contribution would decrease.

If the firm is already subject to regulation that results in a price less than the unconstrained profit-maximizing price, then regulation that further lowers price results in further loss of contribution. The loss in contribution from an additional price decrease becomes increasingly larger as price is further below its contribution-maximizing level.

We now mathematically derive these conclusions and illustrate them graphically.

The Impact on Revenue

Revenue (R) is the price of a good (P) times the quantity sold (Q). That is,

$$(1) R = P Q$$

Thus, the change in revenue is

$$(2) \Delta R = P \Delta Q + Q \Delta P$$

The price elasticity of demand (E_D) is a measure of price responsiveness. Specifically, E_D indicates the percentage change in quantity demanded resulting from a one percent change in price. That is,

$$(3) E_D = (\Delta Q/Q) / (\Delta P/P) \quad (\text{note: } E_D \text{ is a negative number})$$

Substituting $\Delta Q = E_D Q \Delta P/P$ into the expression for ΔR gives

$$(4) \Delta R = (E_D + 1) Q \Delta P$$

So,

$$(5) \Delta R/\Delta P = (E_D + 1) Q$$

That is, if demand is elastic ($E_D < -1$), a decrease in price ($\Delta P < 0$) results in an increase in revenue ($\Delta R > 0$). But, if demand is inelastic ($E_D > -1$), then a decrease in price results in a decrease in revenue.

The Impact on Cost

A firm's cost consists of variable cost and fixed cost. That is,

$$(6) \text{Cost} = \text{Variable Cost} + \text{Fixed Cost} = VC + FC$$

Variable cost increase as output produced and sold increases. Fixed cost does not change with output. The change in cost is

$$(7) \Delta \text{Cost} = \Delta \text{Variable Cost} + \Delta \text{Fixed Cost} = \Delta \text{Variable Cost}$$

$$= (\partial VC / \partial Q) \Delta Q$$

$$= MC \Delta Q$$

$$(MC \equiv \text{Marginal Cost} = \partial VC / \partial Q)$$

Substituting $\Delta Q = E_D Q \Delta P/P$ into (7) and dividing both sides by ΔP gives

$$(8) \quad \Delta VC/\Delta P = E_D Q MC/P < 0 \quad (\text{because } E_D < 0)$$

That is, a decrease in price ($\Delta P < 0$) results in an increase in cost ($\Delta VC > 0$).

The Impact on Contribution

Contribution from a market is the amount by which revenue from that market exceeds variable cost. That is,

$$(9) \quad \text{Contribution} = R - VC$$

The marginal impact on contribution from an increase in quantity produced and sold is

$$\begin{aligned} (10) \quad \partial \text{Contribution} / \partial Q &= \partial R / \partial Q - \partial VC / \partial Q \\ &= MR - MC \quad (MR \equiv \text{Marginal Revenue} = \partial R / \partial Q) \end{aligned}$$

The negative of $\partial \text{Contribution} / \partial Q$ indicates the *marginal loss of contribution*.

The cumulative impact on contribution from a discrete change in price, using (5) and (8), is

$$\begin{aligned} (11) \quad \Delta \text{Contribution} / \Delta P &= \Delta R / \Delta P - \Delta VC / \Delta P \\ &= Q [(E_D + 1) - E_D MC/P] \\ &= Q \{E_D [(P - MC)/P] + 1\}. \end{aligned}$$

The negative of $\Delta \text{Contribution} / \Delta P$ indicates the *cumulative loss of contribution*.

A profit-maximizing firm that does not have price constrained by regulation sets a price (or quantity) such that $(P - MC)/P = -1/E_D$.¹⁹ This implies that $E_D < -1$. That is, the unregulated profit-maximizing firm perceives elastic demand. When profits are at a maximum, $\Delta \text{Contribution}/\Delta P = 0$ for an infinitesimal ΔP .

Consider the case when price is constrained below the profit-maximizing price. If price were constrained such that demand is inelastic ($E_D > -1$), then further reduction in price would decrease revenue and increase cost, both effects eroding contribution. If price is constrained, but demand remains elastic ($E_D < -1$), then $0 < (P - MC)/P < -1/E_D$. Consequently, $\Delta \text{Contribution}/\Delta P > 0$ if price is less than profit-maximizing price. That is, even in the case where demand remains elastic, a further reduction in price ($\Delta P < 0$) increases cost by more than the increase in revenue, resulting in additional contribution loss.

Examination of the impact on contribution from a price decrease reveals five important results:

1. The marginal loss of contribution increases as price is further reduced below the contribution-maximizing level.
2. The cumulative loss in contribution from an additional price decrease becomes increasingly larger as price is further below its contribution-maximizing level.
3. The cumulative loss of contribution from a policy that reduces price by a specific amount is greater the more constrained the market is originally.
4. The more elastic demand is, the smaller the marginal loss of contribution at any output level, but the greater the cumulative loss of contribution from a policy that further reduces price below the contribution-maximizing level.

¹⁹ $(P - MC)/P = -1/E_D$ is commonly known as the Lerner Index of Market Power. This equation is a rearrangement of the familiar profit-maximization condition that $MR = MC$.

5. The steeper the marginal cost curve, the greater the marginal loss of contribution at any output level and the greater the cumulative loss of contribution loss from a policy that further reduces price below the contribution-maximizing level.

To establish Result 1 we note that:

- i. the law of demand implies that marginal revenue slope downward (i.e., $\partial MR/\partial Q < 0$) ;
- ii. the first- and second-order conditions for a profit maximum are $MR = MC$ and $\partial MR/\partial Q < \partial MC/\partial Q$.

As price is constrained below the profit-maximizing price and quantity increases beyond the profit-maximizing level of output, contribution declines because marginal revenue is less than marginal cost. The marginal loss of contribution is $MC - MR$. If $\partial MC/\partial Q \geq 0$, then the gap between marginal cost and marginal revenue widens as Q increases.²⁰ Thus, the more price is constrained below the profit-maximizing price, the greater the marginal loss of contribution.

Results 2 and 3 follow directly from Result 1. $MC - MR$ is the marginal loss of contribution. The more that price is constrained, the greater the initial $MC - MR$ gap. And the gap gets wider as price further declines.

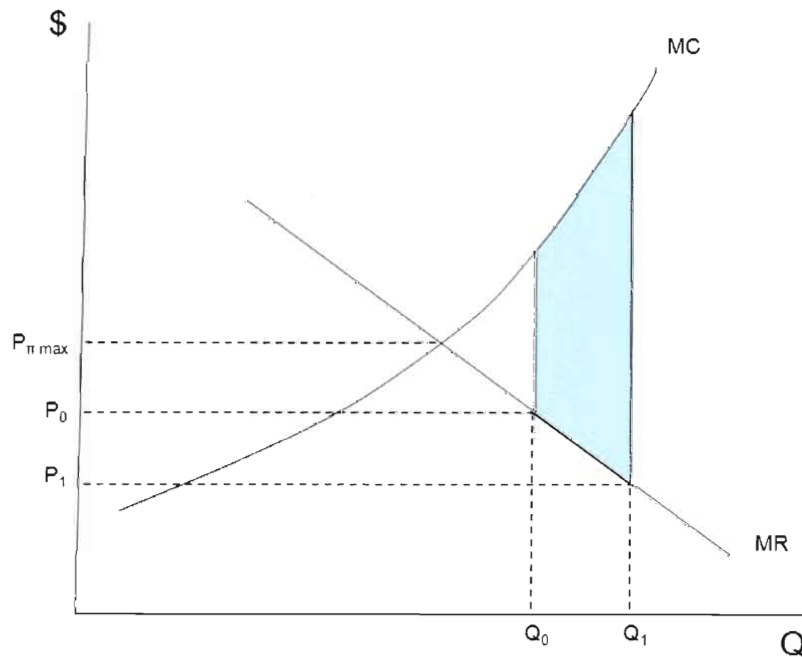
Result 2 indicates that the second dollar of a price decrease causes more contribution loss than did the first dollar, that the third dollar of a price decrease causes more contribution loss than the second dollar, and so forth. That is, contribution loss is increasing exponentially as the price decreases.

Result 3 states that the more price is already constrained, the greater the cumulative effect of any further price reduction of a given size.

²⁰ The gap between marginal cost and marginal revenue widens even if $\partial MC/\partial Q < 0$ so long as $\partial MC/\partial Q > \partial MR/\partial Q$.

Results 1, 2, and 3 are summarized in the Figure 1. The marginal loss of contribution is the vertical distance between the marginal cost curve and the marginal revenue curve. The cumulative loss of contribution as price is decreased by a discrete amount, $\Delta P = P_1 - P_0$, is indicated by the shaded area between the MC and MR curves from Q_0 to Q_1 .

Figure 1: The Impact on Contribution of a Price Decrease



Result 4 has two parts concerning the influence of the elasticity of demand. First, how does the marginal loss of contribution depend on the elasticity of demand? To answer this we examine the partial derivative of the marginal loss expression with respect to E_D . That is,

$$(12) \quad \partial[MC - MR]/\partial E_D = -\partial[P(1 + 1/E_D)]/\partial E_D$$

$$= P/E_D^2 > 0$$

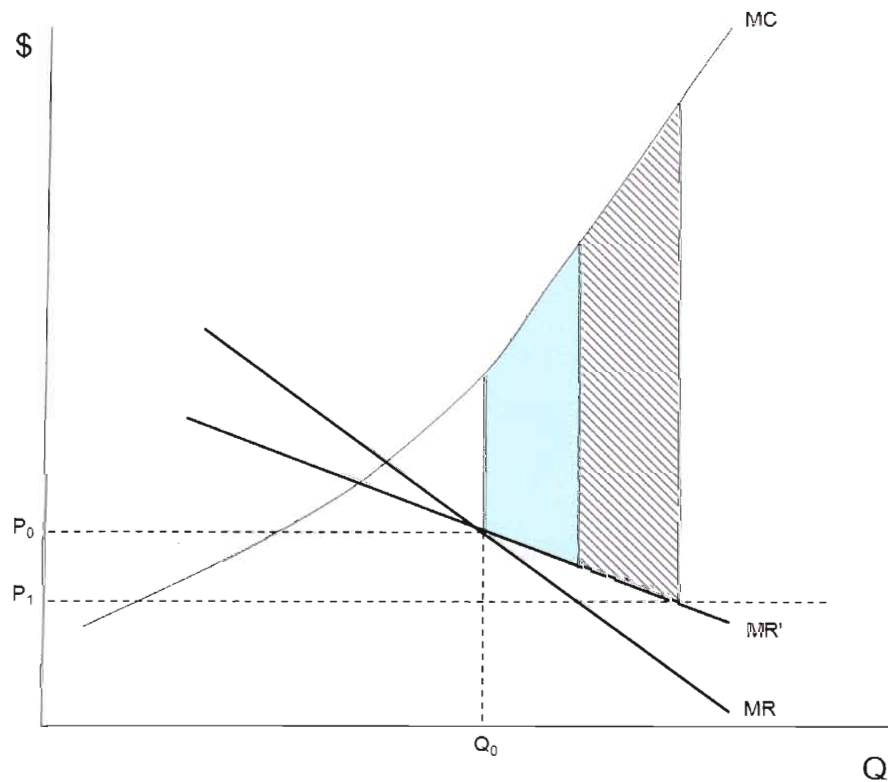
Thus, as demand is more elastic, the marginal loss of contribution is smaller. Second, how is the cumulative loss of contribution affected by the elasticity of demand? To answer this we examine the partial derivative of $-\Delta\text{Contribution}/\Delta P$ with respect to E_D . That is, from (11),

$$(13) \quad \partial[-\Delta\text{Contribution}/\Delta P]/\partial E_D = -[Q(P - MC)/P] < 0.$$

Recall E_D is a negative number. That means a mathematical increase in E_D represents less elastic demand. Thus, (13) says less elastic demand makes the cumulative loss in contribution smaller and more elastic demand makes the cumulative loss larger.

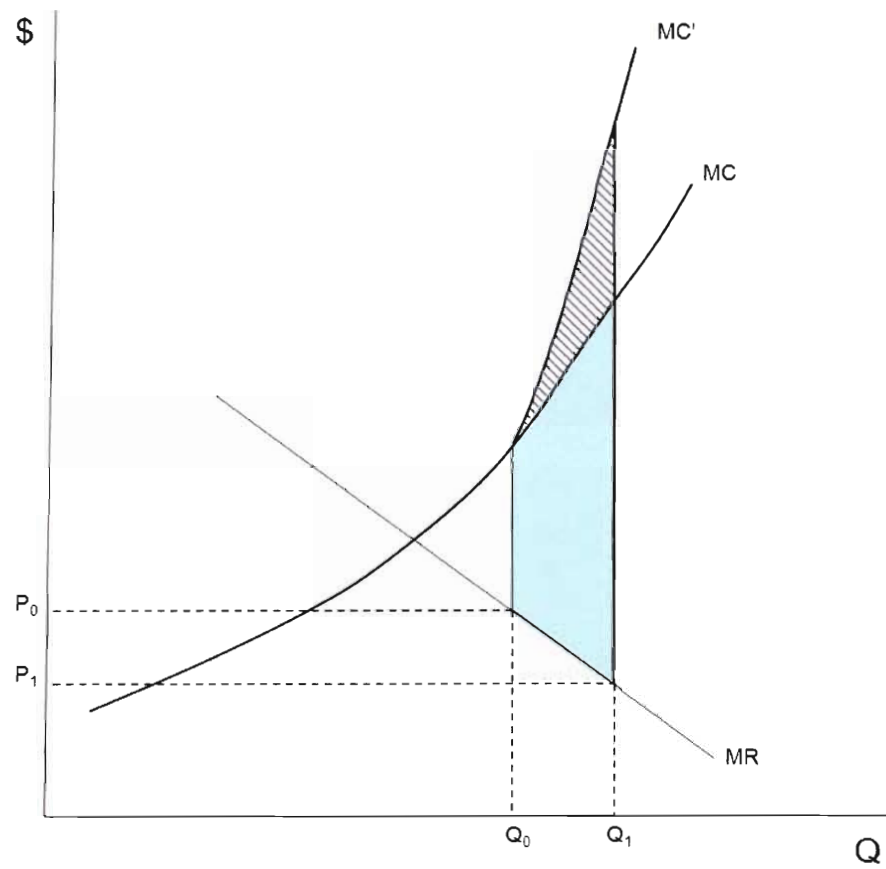
Result 4 is illustrated in Figure 2. More elastic demand is represented by the marginal revenue curve MR' . At any quantity greater than Q_0 the marginal loss of contribution is less (the $MC - MR$ gap is smaller) when demand is more elastic. However, with more elastic demand there is a greater increase in quantity demanded for a given price decrease. As quantity sold increases, so does the loss of contribution because of the ever-widening gap between marginal cost and marginal revenue. The result is that the firm loses more and more contribution with each additional sale.

Figure 2: Contribution Loss is Greater for More Elastic Demand



Result 5 is established graphically in Figure 3. Increasing marginal cost is reflective of diminishing marginal returns. The more rapidly marginal cost increases as output is expanded, the greater the contribution loss from further price reductions below the contribution-maximizing level. MC' indicates the case where marginal cost increases more rapidly. A change in regulation that further decreases price has the same revenue impact (as depicted in Figure 1), but a greater cost impact. That is, with steeper marginal cost the marginal loss of contribution is greater (the $MC - MR$ gap is wider) for any output level and this gap increases by even more as output increases. Consequently, the cumulative loss of contribution is greater when marginal cost is steeper.

Figure 3: Contribution Loss is Greater when the Marginal Cost is Steeper



VERIFICATION

I, B. Kelly Eakin, verify under penalty of perjury under the laws of the United States that the foregoing is true and correct and that I am qualified and authorized to file this statement.

Executed on February 28, 2013.

A handwritten signature in black ink, appearing to read "B. Kelly Eakin" followed by a stylized flourish.

B. Kelly Eakin

VERIFICATION

I, Mark E. Meitzen, verify under penalty of perjury under the laws of the United States that the foregoing is true and correct and that I am qualified and authorized to file this statement.

Executed on February 28, 2013.



Mark E. Meitzen

Rennicke

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

Ex Parte No. 711

**PETITION FOR RULEMAKING TO
ADOPT REVISED COMPETITIVE SWITCHING RULES**

**Verified Statement
of
William J. Rennie
Partner
Oliver Wyman, Inc.**

March 1, 2013

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Statement of William J. Rennie, Partner, Oliver Wyman

I. Introduction and Qualifications

I am William J. Rennie, a Partner with Oliver Wyman, Inc. Oliver Wyman is a leading general management consulting firm. It maintains one of the largest practices in the world dedicated to serving the transportation and logistics sectors. That practice provides a comprehensive set of services and capabilities to transportation carriers across all modes, and to the users and regulators of transportation services. Oliver Wyman's transportation clients include national and regional governments on six continents, as well as many of the world's largest users of rail services, railroads, motor carriers, leasing companies, and industrial and consumer manufacturing firms.

I have been a railroad executive and a consultant to railroads for more than 40 years. I have worked extensively with the railroad industry in the United States and Canada, and also have worked with railways in Europe, Asia, South America, Australia, and Africa. I specialize in railroad strategic planning, cost analysis, revenue management, and operations. I have particular expertise in transportation pricing, restructuring, organizational design, and transactions (including mergers and acquisitions) to improve the performance of rail operators, major rail equipment suppliers, and users of transportation services. I have worked with senior executives at all of the major North American railroads, as well as with senior officials at many government-owned railroads worldwide. I have testified before the United States Congress and the Canadian Parliament, as well as federal transportation agencies, concerning railroad regulation, rate policy, access issues, and rail mergers. I have spoken and published widely on issues affecting the railroad industry.

Before joining Oliver Wyman, I was a vice president of the Boston & Maine Railroad. During my tenure, I managed rail industry service performance project case studies as part of the industry-wide Freight Car Utilization Program. I have also held operating positions with the Southern Pacific (now Union Pacific) and New Haven (now CSX) railroads and was a transportation consultant with Deloitte Haskins & Sells (the predecessor of Deloitte & Touche). I have a B.S.B.A. in accounting from the School of Business Administration at Georgetown University and an M.B.A. with a concentration in transportation and logistics from the University of Minnesota. I am also a member of the Council of Supply Chain Management Professionals.

I was asked by the Association of American Railroads (AAR) to provide an analysis of the critical factors underlying railroad service improvements over the past several decades and to analyze how those factors would be affected by the revised switching rules proposed by the National Industrial Traffic League (NITL). My Verified Statement responds to the request of the Surface Transportation Board (STB) for information concerning how the proposal would affect rail network efficiency.¹

My key findings are:

- The economic recovery of the railroad industry and rail service improvements over the past several decades have been based in large part on rationalization of the railroad network and simplification of railroad operations. A critical element of simplifying operations has been a reduction in inefficient or unnecessary routings and car handlings and the substitution of single-line service for interline service. Implementation of the NITL proposal would threaten

¹ Surface Transportation Board, Notice, Docket Number EP 711, “Petition for Rulemaking to Adopt Revised Competitive Switching Rules,” Served July 25, 2012, p. 9.

to increase significantly the percentage of cars interchanged and the complexity of railroad operations.

- The railroad network has evolved over the past several decades to move repetitive shipments over long distances with minimal switching en route. The current network is composed of high-density main lines that connect large classification yards. Between 1987 and 2010, there was a net reduction of approximately 11,000 miles of yard track, or 30 percent of the total,² and the network today may not have the yard capacity to handle a forced increase in the interchange of carload and unit train traffic. Attempting to impose increased interchanging on this network will lead to thousands of localized problems and conflicts that railroads, shippers, and regulators would need to resolve. The STB may be called upon to address many of these issues, and the backlog of issues awaiting resolution would add to uncertainty and delay decisions concerning actions to address congestion and the disruption of railroad operations.
- One of the most critical problems with the NITL proposal is that it would introduce instability into a railroad network designed to handle repetitive flows efficiently. While the railroad industry has demonstrated its ability to adjust to changes in traffic patterns due to mergers, economic changes, and inclement weather, these adjustments have not always gone smoothly. Moreover, increasing the amount of switching between railroads will consume reserve capacity that buffers the impact of disruptions and surges and allows quick recovery from weather events and incidents.

While it is not possible to know exactly what would happen, adopting the NITL proposal would create conditions that in the past have caused significant service disruptions. Unlike

² Class I Railroad Annual Report R-1 Schedule 700, Column H. Adjusted in 2003 to account for CSX track reclassification.

mergers, however, in which the railroads can control traffic flows and plan to accommodate changes, the railroads in most cases will have little or no advance notice of changes in traffic flows as a result of implementation of the NITL proposal, and so will have no ability to plan to accommodate these altered flows. Moreover, these conditions likely will persist, as individual shippers would be given the ability to force railroads to perform additional switching at locations throughout the rail network and deprive railroads of the ability to control their operations.

The increase in interchange events that would occur under the NITL proposal would reverse gains in railroad productivity made during the past decade, while adding billions of dollars in operating and capital expenses. I estimate that the net effect if, for example, just 25 percent of the cars that could be forced to interchange under the proposed rule actually do so, would be to create the same number of interchange events per car per trip as existed in 1996-1998 – but without the infrastructure that existed at that time to accommodate these events. Interchange events per car per trip are highly correlated with railroad productivity, measured as revenue ton-miles per dollar of operating expense. Railroad productivity was 7.1 percent worse in 1996-1998 than it was in 2010. Key measures of railroad efficiency would deteriorate as well. Car-miles per car per car-day, which is a measure of system fluidity, improved from 57.2 in 1987 to 74.4 in 2010, but would likely roll back to 68.8. Car trips per year, which is a measure of equipment utilization that is important to both railroads and shippers with car fleets, improved from 16.8 in 1987 to 21.8 in 2010, but could roll back to 19.6.

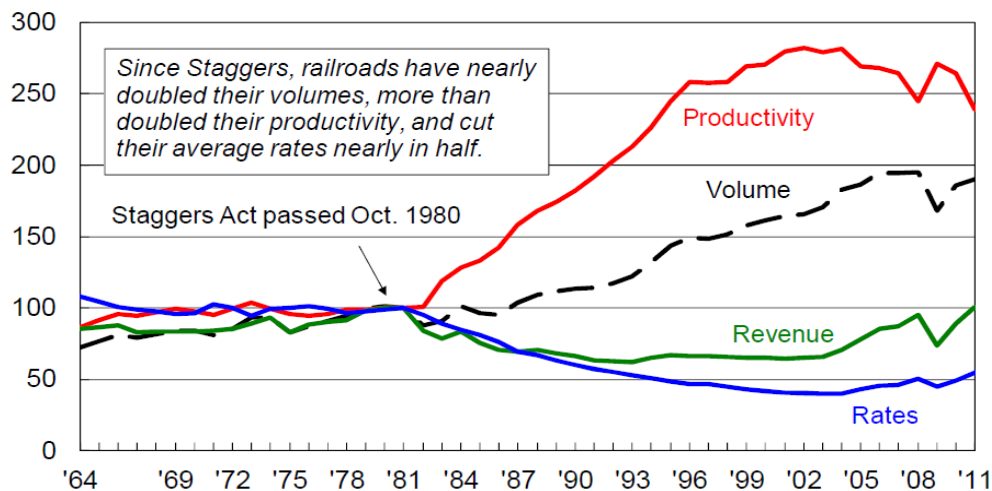
II. Overview

This proceeding represents an important moment in the history and evolution of the railroad industry in the United States. The Surface Transportation Board (STB) can choose either to leave in place a system of regulations that has facilitated vast improvements in railroad efficiency and service, creating cost savings over the past 30 years (with most of the cost savings passed through to shippers), or it can introduce a fundamentally different regulatory structure that would likely degrade the reliability and efficiency of the system for all shippers.

As the Commissioners and professional staff of the STB know, at the beginning of the 1960's the railroad industry in the United States was in shambles. Most of the railroads in the Northeast and Midwest were well along the path that would lead to their bankruptcy a decade later, and railroads in the balance of the country were far from being able to earn their cost of capital. Passage of the Staggers Rail Act of 1980, and its implementation by the Interstate Commerce Commission (ICC) and later the STB, created an inflection point for the railroad industry. For the first time in nearly 100 years, railroads were allowed to manage the full range of their commercial and operating activities, in most respects on the same basis as other industries in the United States, including the railroads' own customers. As demonstrated in Exhibit II-1, the results of this reform have been dramatic: Since passage of the Staggers Act, freight railroads in the United States have more than doubled their productivity while cutting their average rates nearly in half. The industry, its customers, and the public interest all are beneficiaries of this performance.

Exhibit II-1: Indexed US Freight Railroad Performance Since the Staggers Act³

1980 = 100



The National Industrial Transportation League (NITL) proposal that is being considered in this proceeding would, if adopted, threaten these gains. The NITL proposal would likely lead to significant losses in efficiency and service reliability and increase network complexity, all of which would make the railroad industry less efficient and less competitive. The outcome would be detrimental to the public interest and shippers, including those shippers that would purportedly benefit from this proposed new regulatory structure.

The tremendous increase in productivity shown in Exhibit II-1 is the result, in large part, of the regulatory reforms enacted by the Congress and implemented by the ICC and STB. It is not accidental that a surge in productivity began in 1980 with the passage and enlightened implementation of the Staggers Act. Under the regulatory regime in place over the past three decades, the railroad industry has been permitted to rationalize its physical plant and simplify its operations. The railroads have consolidated traffic onto fewer, high-density main lines and significantly reduced the percentage of railcars interchanged between railroads. These initiatives

³ Note: “Rates” is inflation-adjusted revenue per ton-mile. “Volume” is ton-miles. “Productivity” is revenue ton-miles per constant dollar of operating expense. The decline in productivity in recent years is mainly due to the effect of higher fuel prices in the productivity calculation. Source: “An Overview of America’s Freight Railroads,” Association of American Railroads (“AAR”), July 2012, p. 5.

have reduced the number of times, on average, that a railcar is handled during a trip. This has been accomplished both through the building of “blocks” of cars on high-density routes that skip handling at intermediate classification yards and by reducing car handling related to interchange. Reducing the number of times cars are handled decreases the time that cars sit in yards waiting to be processed, increases reliability, reduces operating expenses, and improves safety. All of these efficiency improvements have benefited shippers.

The NITL proposal, by implementing a form of forced access, would fundamentally reverse this pattern and introduce operational and network complexity. It would increase car handlings and disrupt and fragment traffic flows that the railroads have optimized their networks to accommodate. The inevitable result would be slower and less reliable service, provided at a higher cost. While it is not possible to know exactly how the network would respond,⁴ implementation of the NITL proposal would create conditions of operational and network change similar to those that occurred during major rail mergers, but *without* the affected railroads having the ability to plan to accommodate the changes and *with* the prospect of having to cope with ongoing changes caused by the sum of individual shipper decisions over time. Experience teaches that such conditions can lead to significant congestion at urban railroad facilities, which can in turn spread and adversely affect service on large parts of the rail network.

Under the NITL proposal, some railroad lines and terminals that have been sized and configured over many years to handle relatively stable and predictable traffic flows consistent with single-line service would require new investment to accommodate additional work events generated by forced access, while other lines and yards would end up as surplus facilities and wasted investments. In some cases, it will not be possible to restore closed or smaller yards. In

⁴ The Comments of the Association of American Railroads identify the unknowns in the NITL proposal and the limitations in data that limit the ability to identify all of the impacts of forced access as suggested by the proposal.

all cases, such projects require prospective returns to justify the investment and lead time for design and permitting. Implementation of the NITL proposal would increase the cost of moving each ton of freight for all shippers, while degrading service on what has become the world's most efficient freight rail network.⁵

⁵ STB Ex Parte No. 705, Competition in the Railroad Industry, Statement of William J. Rennie, Partner, Oliver Wyman, Inc., April 8, 2011, p. 5, Exhibit II-2.

III. Foundations of Improved Railroad Service

Over the past several decades, the operating and financial performance of the railroad industry in the United States has improved dramatically. Railroads are complex entities, and their performance improvement has been the result of many interrelated factors (Exhibit III-1). The primary driver, however, has been the ability of the railroads to rationalize their networks and simplify their operations:

“[Post 1980] the railroads focused on making their operations more efficient by shedding non-profitable lines to regional and short-line railroads, removing antiquated track and facilities, and fostering labor productivity gains. These efficiency gains resulted in reduced prices....For the first 15 years of this period, the railroad industry reduced costs by over \$17 billion. Railroads have passed on to shippers approximately 80 percent of that cost savings.”⁶

“The best profits [come] from running big trains and keeping them moving, and using track efficiently matching traffic to infrastructure with some wiggle room (but not too much), and, most importantly, minimize switching. Simplify, simplify, simplify. A simpler network runs better, and is more profitable.”⁷

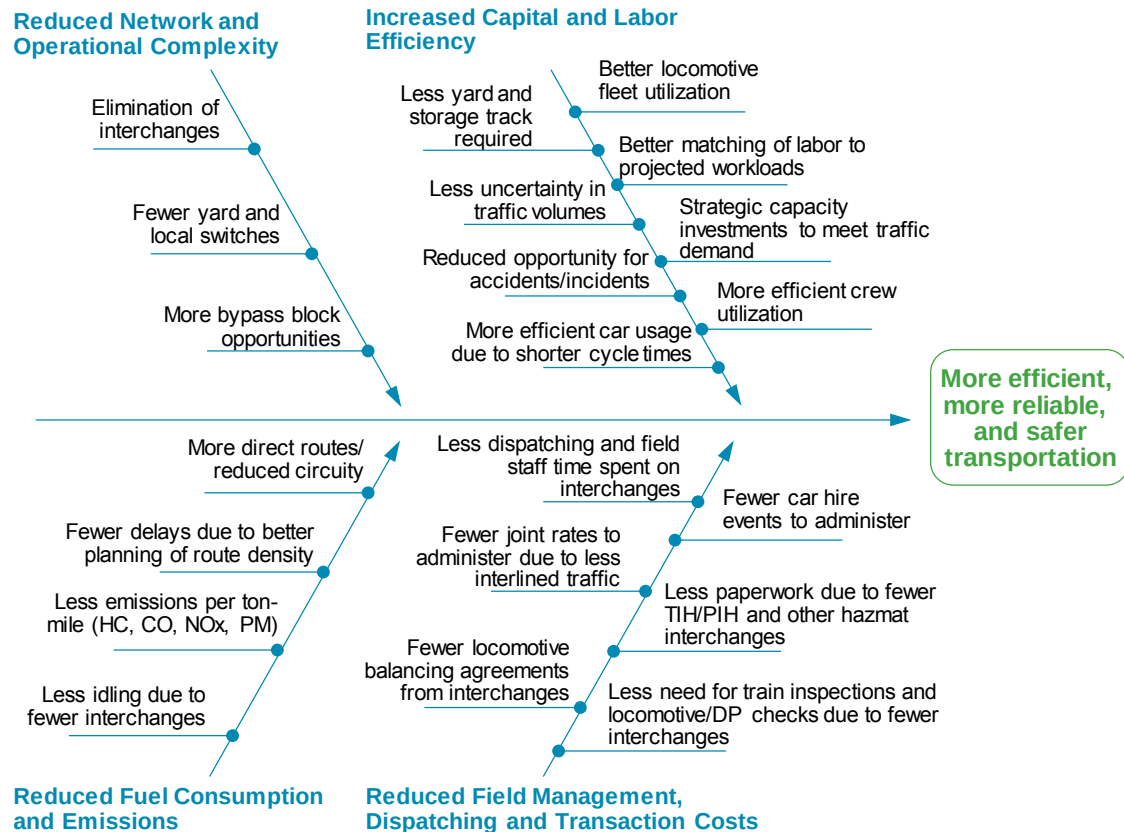
This rationalization process was facilitated first by the reorganization of the bankrupt railroads in the Northeast and Midwest by the United States Railway Association (USRA) and then by the regulatory reforms created by the Staggers Rail Act of 1980. Taken together, USRA and the

⁶ “National Rail Plan,” US Federal Railroad Administration, September 2010, p. 15.

⁷ “State of the Industry Past, Present and Future,” James W. McClellan, Atlanta Rail Planning Conference, October, 2012.

Staggers Act enabled the railroad industry to sharply reduce the number of Class I railroads, eliminate redundant routes and routings, and reduce the number of interchanges.

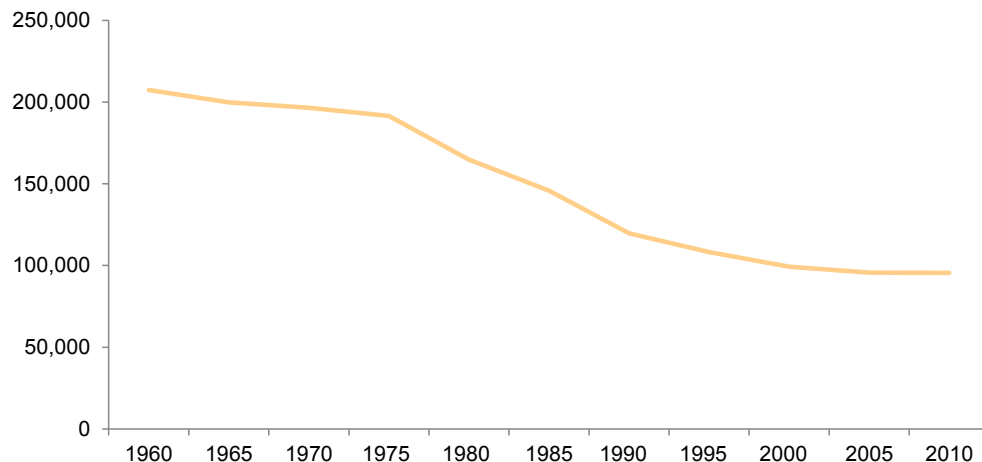
Exhibit III-1: Sources of Railroad Performance Improvement



Rationalization of the railroad network: Between 1960 and the 2010, the number of Class I railroads declined as smaller regional lines combined to extend their length of haul and eliminate duplicative facilities. As Exhibit III-2 shows, during the same period, route miles of Class I railroads declined from 207,000 to 95,600, as some railroads were liquidated, merging railroads eliminated inefficient or duplicative routes, and Class I railroads sold or leased lighter-density routes to specialist regional or shortline railroad companies. Between 1987 and 2010, the number of interchange locations appearing in the STB Carload Waybill Sample declined by more than

half, from 842 to 395.⁸ The collective impact of these changes greatly streamlined the US rail network and provided the productivity improvements that formed the foundation for reversing decades of market share loss.

Exhibit III-2: Change in Class I Railroad Route Miles, 1960-2010⁹



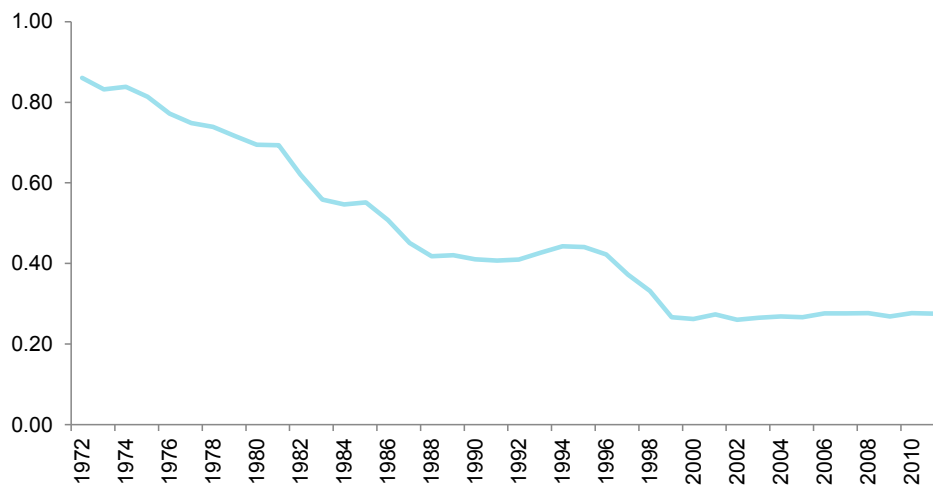
Simplification of operations: The reduction in the number of Class I railroads, combined with the reduction of inefficient/unnecessary routes and efforts to close redundant and little-used interchange locations, reduced the amount of traffic interchanged between railroad operators. This is illustrated in Exhibit III-3, which shows a steady decline in the average number of interchange events per railcar through the late 1990's and the maintenance of these historically low interchange event levels thereafter.¹⁰ Between 1972 and 2011, the average number of interchange events per railcar declined from 0.86 to 0.28. This reduction greatly simplified railroad operations, making them more reliable.

⁸ Based on unique Rule 260 junction locations appearing in the STB Carload Waybill Sample 1987-2010. The Waybill Sample does not include very low volume interchanges, since railroads with less than 4,500 annual carloads are not included in the STB sampling plan. Also, due to the nature of sampling, some low volume interchanges may be excluded in a given year.

⁹ US Department of Transportation, Bureau of Transportation Statistics, "National Transportation Statistics," Tables 1-1 and 1-2, and "Transportation Statistics Annual Report," Table 2-5.

¹⁰ Interlined is defined as moving on more than one railroad. A railcar moving from origin to destination over three different railroads is counted as one interline move and two interchanges.

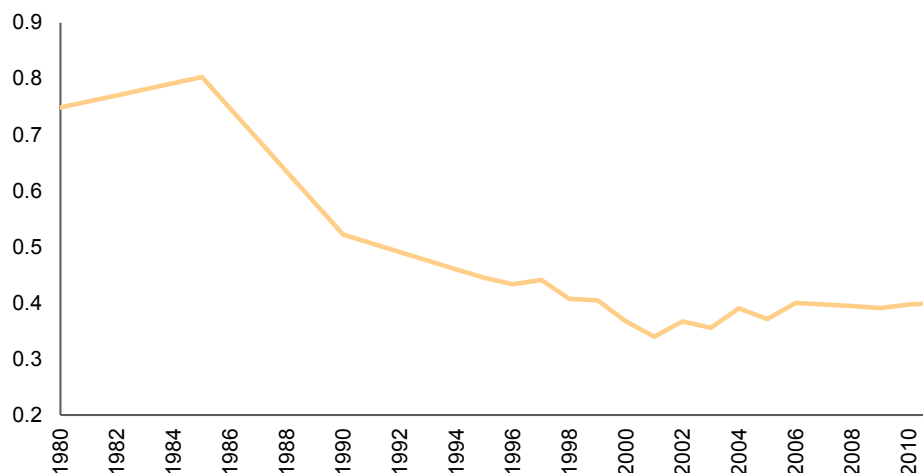
Exhibit III-3: Average Interchange Events per Car, 1972-2010¹¹



During the same period, railroads also were able to reduce car handling due to switching. As shown in Exhibit III-4, the total number of car handlings per 100 car-miles declined by 47 percent, from 0.75 in 1980 to 0.40 in 2011.

Exhibit III-4: Reduction in the Number of Car Handlings per 100 Car-Miles, 1980-2011¹²

US Class I Railroads, years 1981-1984, 1986-1989, and 1991-1994 were estimated from available data



Improved network efficiency: The result of rationalizing the railroad's physical plant and simplifying its operations has been a much more efficient railroad network. Exhibit III-5 shows

¹¹ Freight Commodity Statistics, 1972- 2011, US carload movements excluding intermodal traffic (STCCs 42, 43, 44, and 46), AAR; Oliver Wyman analysis.

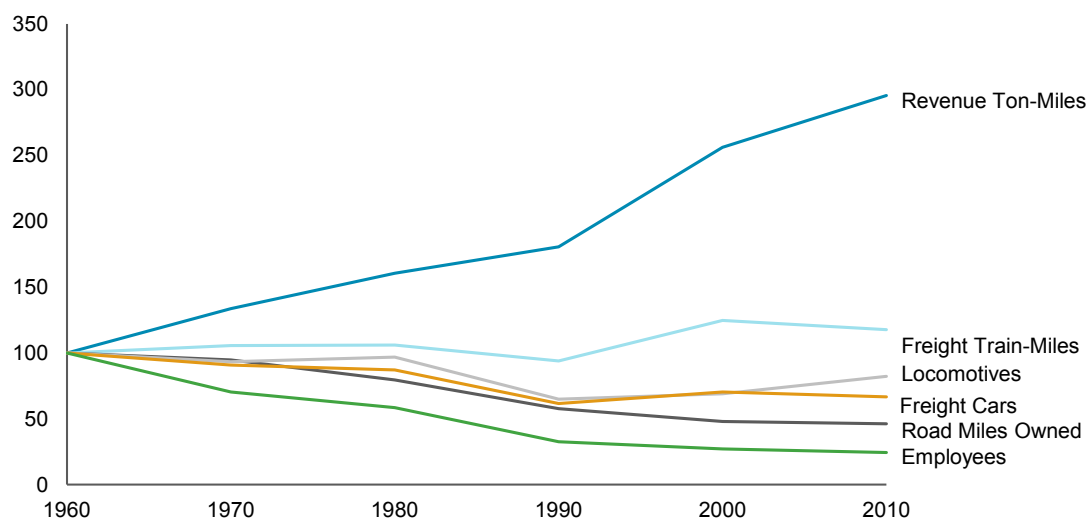
¹² Analysis of Class I Railroads and Freight Commodity Statistics, AAR; Oliver Wyman analysis.

that despite a sharp reduction in inputs, the railroads experienced a dramatic increase in output over the past 50 years. In 2010, Class I railroads produced 295 percent of the revenue ton-miles¹³ they produced in 1960, while using just: ¹⁴

- 118 percent of the freight train miles
- 78 percent of the road miles
- 84 percent of the locomotives in service
- 67 percent of the freight cars
- 19 percent of the employees

Exhibit III-5: Indexed Increase in Railroad Productivity, 1960-2010¹⁵

1960 = 100



Much of the improvement in railroad efficiency is attributable to the rationalization of the railroad network, which has permitted railroads to move increasing amounts of traffic over a network of efficient, high-density main lines with fewer work events per shipment. As shown in Exhibit III-6, there is an almost perfect negative correlation between the average number of

¹³ A revenue ton-mile is the basic unit of output for a railroad. A revenue ton-mile equals one ton of freight moved one mile.

¹⁴ Source for bulleted statistics: Rail Fact Book, 2012 edition, AAR.

¹⁵ Ibid.

interchange events per railcar trip and railroad productivity, defined as revenue ton-miles per dollar of operating expense (inflation adjusted).¹⁶ In addition, Exhibit III-7 shows the dramatic increase in productivity in terms of density (revenue ton-miles per mile of road operated) that the railroads have experienced.

Exhibit III-6: Indexed Average Interchange Events per Railcar vs. Productivity, 1975-2010¹⁷

Productivity = revenue ton-miles/\$ of inflation-adjusted operating expense, Pearson correlation coefficient: -0.95

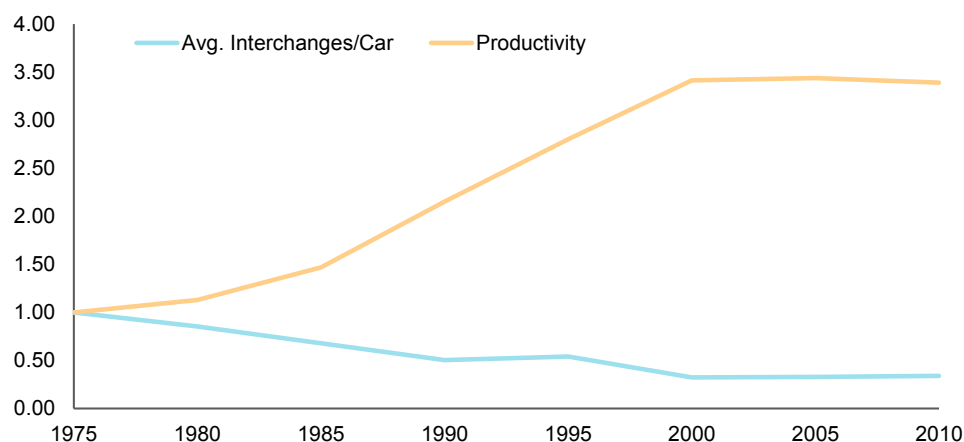
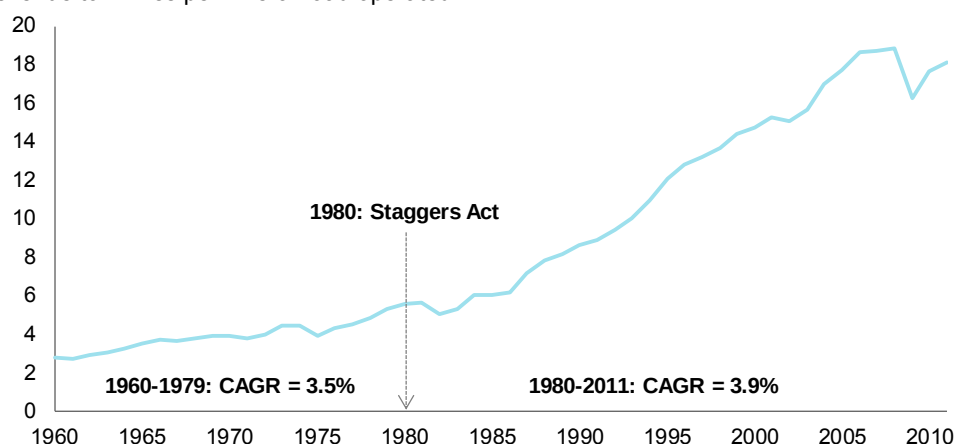


Exhibit III-7: Growth in Railroad Route Density, 1960-2010¹⁸

Millions of revenue ton-miles per mile of road operated



¹⁶ The -0.95 correlation coefficient means that historically as the railroads reduced the average number of interchanges, productivity increased. Although it is not possible to prove that a reduction in interchanges caused productivity to rise, there is strong evidence that reducing interchanges and the switching required to process these interchanges was an important part of simplifying the network and thus was a significant contributing factor.

¹⁷ Rail Fact Book, 2012 edition, op. cit., pp. 14 and 27 (opex and RTM); AAR email (avg. interchanges); <ftp://ftp.bls.gov/pub/special.requests/cpi/cpi.txt> (CPI); Oliver Wyman analysis. The correlation coefficient was generated from actual values, not indexed values.

¹⁸ AAR data for Class I railroads. Miles equals route miles owned. CAGR is compound annual growth rate.

Improved reliability: Single-line service grew as merged railroads closed less efficient parallel routes and interchange locations. These changes not only permitted the railroads to concentrate traffic on efficient high-density routes, it also allowed them to reduce the number of times a car is handled. This reduction was achieved in two ways: First, each avoided interchange event eliminated at least one car handling. Second, concentrating traffic on fewer, high-density routes permitted railroads to build more blocks that bypass intermediate classification yards. Each intermediate switch that can be avoided through bypass blocks eliminates one car handling.

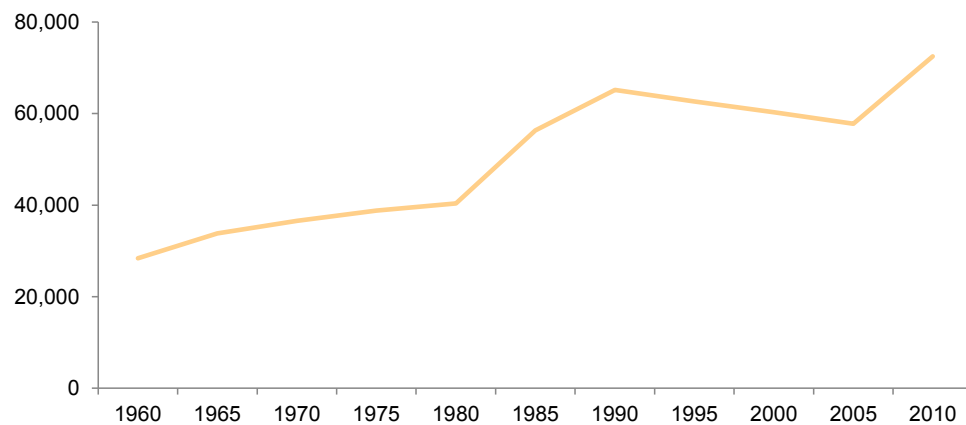
Eliminating car handlings is critical, because each time a car is handled at an interchange location or in an intermediate classification yard there is the possibility of a delay that would cause the car to misconnect, delaying its planned arrival time. In some cases, the arrival time is contractually guaranteed to the shipper but, even when it is not, the reliability of the car's arrival is the factor of greatest concern to shippers. Even when a railroad's reliability at each car handling event is very high – more than 90 percent – introducing additional events materially degrades the railroad's probability of meeting the service plan and delivering a car on time.

One measure of improved efficiency due to the reduction in car handlings at interchange locations and intermediate switching yards made possible by network rationalization and simplification of railroad operations is improvement in net ton-miles¹⁹ per train hour, which explicitly includes terminal delays.²⁰ As Exhibit III-8 shows, since 1960, Class I railroads have increased net ton-miles per train hour by 155 percent.

¹⁹ A net ton-mile equals “the movement of a ton of revenue and/or non-revenue freight a distance of one mile. Includes a reasonable portion of the weight of exclusive work equipment and motorcar trains.” Railroad Ten Year Trends, 2001-2010 edition, AAR, p. 182.

²⁰ Data is from 1980, since prior to that time the STB (then the ICC) definition did not include terminal delays.

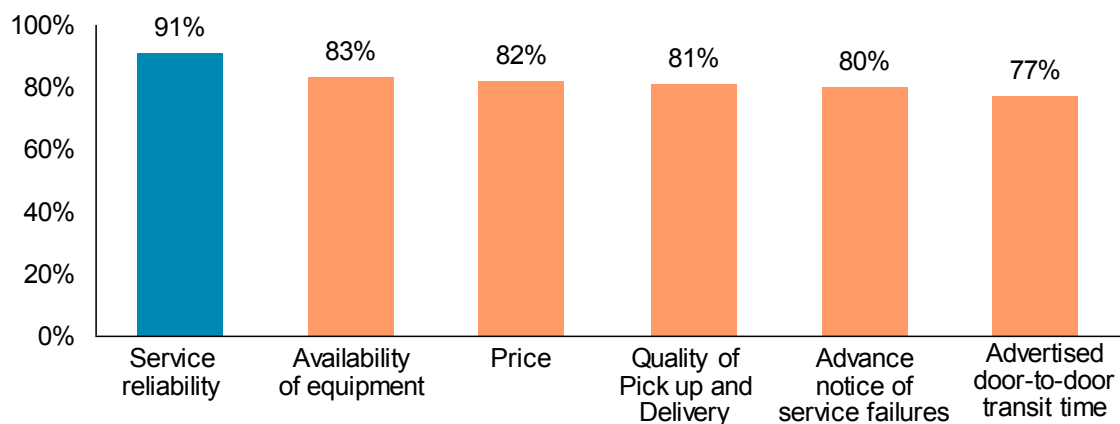
Exhibit III-8: Railroad Net Ton-Miles per Train-Hour, 1960-2010²¹



Reliability matters, because transportation research consistently finds that service reliability is the most important consideration when shippers select a mode and transportation carrier. For example, as shown in Exhibit III-9, a survey by Oliver Wyman found that 91 percent of shippers rated service reliability as important or very important. The next most important consideration, equipment availability (which is heavily dependent on service reliability), was rated important or very important by 83 percent of shippers.

Exhibit III-9: Shipper Considerations in Selecting a Mode and Carrier²²

Percentage of respondents rating consideration important or very important

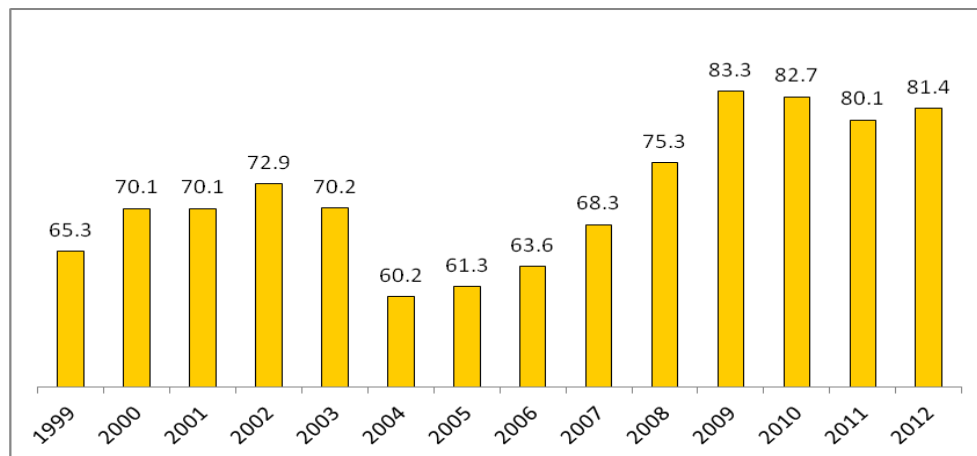


²¹ Rail Fact Book, 2012 edition, op. cit., p. 38.

²² Mercer Management Consulting (predecessor to Oliver Wyman), Presentation to the AAR Treasury/Finance Annual Meeting, "Railroad Service Measurement," January 27, 2004.

While there are no industry-wide measures of reliability, individual railroads do report railroad-specific measures. For example, Union Pacific tracks a Service Delivery Index that measures whether shipments arrive at their destinations on time. As shown in Exhibit III-10, the index shows that Union Pacific has improved this measure of service reliability significantly, by 28 percent between 1999 and 2010.

Exhibit III-10: Union Pacific Service Delivery Index, 1999-2010²³



In summary, for the past five decades, the railroad industry has endeavored to rationalize the railroad network in the United States and to simplify the operation of the freight rail system. Since passage of the Staggers Act in 1980, regulatory policy has been aligned with this effort. The result has been the creation of a highly efficient railroad industry based on moving traffic over a network of high-density main lines, minimizing intermediate handling at interchange locations and intermediate yards where possible, and optimizing the efficiency of those handlings when they are needed. Eliminating car handlings has allowed the railroads to increase the reliability of their service significantly, delivering to shippers the attribute they most desire in selecting a mode and carrier.

²³ Verified Statement of Lance M. Fritz, STB Ex Parte No. 705, Competition in the Railroad Industry, April 12, 2011, p. 10.

IV. Improved Service is the Result of Regulations Giving the Railroads More Control Over Routing and Interchange Decisions

Congress, the ICC, and the STB have understood that the key to achieving efficient rail transportation is to give railroads control over the routing of traffic. When railroads can determine how to route traffic, they can eliminate inefficient routes, reduce handoffs, and consolidate traffic on higher-density lines, thereby lowering their costs and improving their service. Regulatory actions following the Staggers Act that gave railroads more control over the handling and routing of traffic was a major factor driving the dramatic improvement in rail productivity that I discussed in the prior section of this statement.

Before the Staggers Act, railroads had limited power to concentrate traffic over the most efficient routings. Since the 1920s, the ICC had imposed protective conditions (known as DT&I conditions) when approving mergers, so as to keep open existing junctions and gateways and preserve the “right” of shippers to route traffic as they liked “over any or all existing routes and gateways.”²⁴ But this policy made it impossible for railroads to provide efficient service, which would have both expanded their traffic base and enabled them to pass through lower rates to shippers. Regulatory preservation of inefficient interchange locations and routes kept railroads’ costs high and prevented railroads from effectively and fully implementing the mergers of the 1960s and aggressively competing with other transportation modes, leading to the financial deterioration of the rail industry in the 1960s and 1970s.

Two years after the Staggers Act, in 1982, the ICC eliminated protective merger conditions, deciding that they were anticompetitive and contrary to public interest, and ordered that they

²⁴ See *Detroit, T. & I. R.R. Co. – Control*, 275 ICC 455, 492-93 (1950).

were not to be imposed in any future merger proceedings.²⁵ The ICC recognized that protective conditions were incompatible with the new market-focused framework established by the Staggers Act, which “emphasized the need for rail carriers to have flexibility to make individual ratemaking and routing choices.”²⁶

The ICC recognized that protective conditions placed arbitrary restrictions on railroads’ routing and interchange decisions that ultimately harmed all users of the rail network, by “prevent[ing] market forces from efficiently allocating railroad resources.”²⁷ Further, the ICC noted that railroads must be permitted to “winnow out inefficient routes” and that conditions relating to “operational arrangements” (such as service frequency) were economically inefficient.²⁸ In the case of mergers, the ICC saw that DT&I type protective conditions would “hamper a newly consolidated carrier from realizing potential cost savings from consolidation. Thus, if a consolidated carrier were required to dissipate traffic among many lines, it may be unable to realize the economies of fuller use of certain lines or yard facilities.”²⁹

After Staggers, merger decisions celebrated the benefits of single-line service for both shippers and railroads; protective conditions focused instead on preserving access to two railroads only for two-to-one shippers. The STB has continued the ICC’s policies of not imposing standard DT&I conditions and of refusing to mandate maintenance of all existing routes and interchanges. For example, the STB has described such protective conditions as having “anticompetitive consequences, by precluding carriers from making route changes that

²⁵ See Traffic Protective Conditions, 366 I.C.C. 112 (1982).

²⁶ Traffic Protective Conditions, 366 I.C.C. 112 (1982) (“Conditions”), p. 119.

²⁷ Ibid., p. 130.

²⁸ Ibid., p. 122, 124.

²⁹ Ibid., p. 124.

improved efficiency and service.”³⁰ And the STB has stated that “We continue to believe that carriers . . . should be allowed the flexibility to determine what gateways and routings are most efficient . . . Although not all connecting carriers benefit from this shifting of traffic, shippers do benefit from this process.”³¹

In addition to acknowledging the importance of giving routing discretion to the railroads, the ICC and the STB have repeatedly recognized the superiority of single-line traffic over joint line routes:

“Single-line service has many advantages over joint-line service for both shippers and carriers. Interchange operations can be eliminated, reducing both operating and overhead costs and transit time; transaction costs are reduced; and incentives to provide less than efficient service (arising from per diem charges for railcars, rate divisions, or production externalities) are reduced. Thus, speed, reliability, and handling are enhanced. For these reasons, shippers tend to prefer single-line service over joint-line service.”³²

There are many advantages to using single-line routes, including greater system efficiency, improved use of equipment, and faster turnaround times:

“A single-line route can make more efficient use of equipment. By improving the use of both system-owned equipment and foreign cars, a single-line system can have a more efficient fleet exhibiting faster turnaround time and improved loading ratios. These efficiencies are achieved by the elimination of interchanges, a common equipment placement program, more accurate and responsive

³⁰ Can. Nat’l Ry. Co. – Control, FD No. 34000 at 9 (STB served Sept. 7, 2001).

³¹ CSX Corp. – Control, 3 STB 196 at 36 (STB served July 23, 1998).

³² CSX Corp. – Control – Chessie Sys. Inc., 363 ICC 521 at 553 (Sept. 23, 1980).

monitoring of the fleet, and the pre-blocking of cars, as well as a quicker response to equipment supply problems that may develop.”³³

That an integrated carrier would be able to offer more single-line service has been a key factor in the STB’s and ICC’s decisions approving railroad mergers. For example, when discussing the benefits of the proposed UP/SP merger, the STB found that “Some of the more significant benefits include substantially shorter and more efficient, single-line routes between many city pairs for major traffic flows.”³⁴

The STB and ICC have also acknowledged that shippers themselves prefer single-line service to multi-carrier transportation:

“Single-line service is important to shipper logistics strategies. Interchange between railroads can be costly. A single-line railroad route is becoming more important for carriers wanting to compete for service-sensitive freight. As a result of the new single-line service capability . . . shippers will likely see decreases in working capital requirements as base inventories shrink due to improved transit times, and as safety stocks of inventory are reduced because the combined system can eliminate the uncertainty of interchange. The transaction costs shippers incur in initial rate negotiations, in arranging equipment supply, in tracking shipments, and in billing and payment procedures, will likely be reduced.”³⁵

The ICC and the STB also have recognized that giving railroads more routing control and allowing railroads to consolidate traffic onto single-line routes has the benefit of producing more efficient capacity utilization, by consolidating traffic into a smaller number of well utilized

³³ Rio Grande Industries, Inc. – Control – S. Pac. Trans. Co., 4 ICC 2d 834, 895 (ICC Served Aug. 25, 1988).

³⁴ Union Pac. Corp. – Control – S. Pac. Rail Corp., 1 STB 233 at 88 (STB served Aug. 12, 1996).

³⁵ Burlington N., Inc. – Control – Santa Fe Pac. Corp., 10 ICC 2d 661 at 55 (ICC served Aug. 23, 1995).

facilities. For example, in one merger case the ICC noted that “Public benefits will be achieved through reduced transportation costs for applicants and improved service for shippers. This will be accomplished through facility consolidations at common points.”³⁶

Congress and the regulatory agencies have promoted a wide range of benefits for railroads and shippers over the past 30 years through regulation that gave the railroads more control over the handling and routing of traffic. As discussed in the remainder of my statement, the NITL proposal would only serve to reverse many of these benefits.

³⁶ Union Pac. Corp. – Control – Missouri, Kansas, Texas R.R. Co., 4, 5 ICC 2d 409, (May 13, 1988).

V. Characteristics and Operations of Interchanges

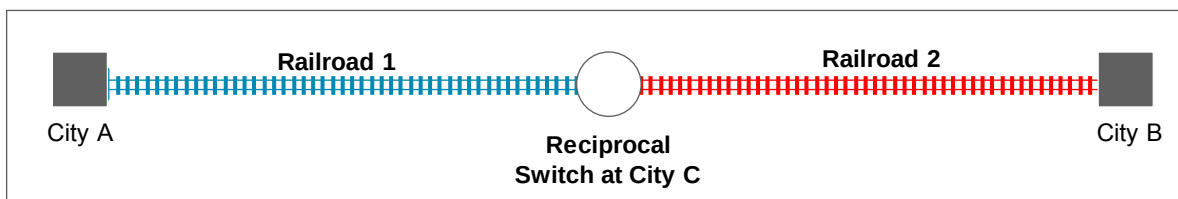
A car or a unit train that both originates and terminates on the same railroad is classified as “local” or “single-line” traffic. As shown in Exhibit III-3 above, 78 percent of non-intermodal carloads transported by Class I railroads moved in single-line service in 2011.

When a car or unit train originating on one railroad is physically moved onto the tracks of another railroad, and responsibility for the further movement of that car passes to that railroad, the car or unit train is said to be “interchanged.” Interchange can occur in two circumstances:

- **Interline traffic** occurs when two line haul railroads are partners in providing a service. This most often occurs when neither railroad can provide single-line service from origin to destination, because neither railroad serves both the consignor and the consignee. The railroads divide the revenue. The railroad originating the car or unit train classifies the traffic as “interline – forwarded,” while the railroad receiving the car or train classifies it as “interline – received.”³⁷
- **Reciprocal switching traffic** occurs when one railroad – the switching carrier – voluntarily moves traffic to an interchange with a line haul carrier (and vice versa). The switching carrier receives a switch fee paid by the line haul carrier. As illustrated in Exhibit V-1, voluntary reciprocal switching is a mutually beneficial arrangement that allows each of the railroads that are party to it to expand their commercial reach in markets in which they do not compete.

³⁷ Traffic that neither originates nor terminates on a railroad, but rather is received from one railroad and delivered to another, is classified as “bridge” or “overhead” traffic. Today, a Class I railroad most frequently bridges traffic between another Class I railroad and a short line railroad or between two short lines. It is unusual for a Class I railroad to bridge traffic between two other Class I carriers, a practice that was common 30 or more years ago.

Exhibit V-1: Reciprocal Switching Example



In this illustration, Railroad 1 serves a line connecting City A with City C and Railroad 2 serves a line connecting City B with City C. These railroads do not compete at City A or City B. Both railroads have constructed track networks at City C, but neither reaches all the shippers in the city. It is to the mutual benefit of both railroads to enter into a reciprocal switching agreement in which Railroad 1 delivers cars originating on its lines in City C and bound to City B to Railroad 2, and Railroad 2 delivers cars originating on its lines in City C bound to City A to Railroad 1.

It is essential to understand that reciprocal switching is fundamentally different from the forced access advocated in the NITL proposal, in that reciprocal switching is a voluntary, mutually beneficial and commercially based agreement that allows both carriers to expand their commercial reach.

In urban areas, railroads normally exchange interchange traffic (both interline and reciprocal switching) at yards. A railroad originating the traffic will run a way train³⁸ from its yard to the yard of the railroad receiving the traffic, leaving the cars on a receiving track in that yard. The railroad receiving the cars will classify (or “switch”) the interchanged cars by sorting them onto tracks within the yard depending on their destinations. Cars that are destined for other points on the railroad will be placed onto outbound road trains, while cars destined for local shippers will

³⁸ A “way train” originates in a yard and serves customers and interchanges located on one or more nearby lines. Way trains may also move cars between yards. A “road” train originates in a yard and moves an entire train to another yard on the same railroad, usually without serving customers or interchanges en route.

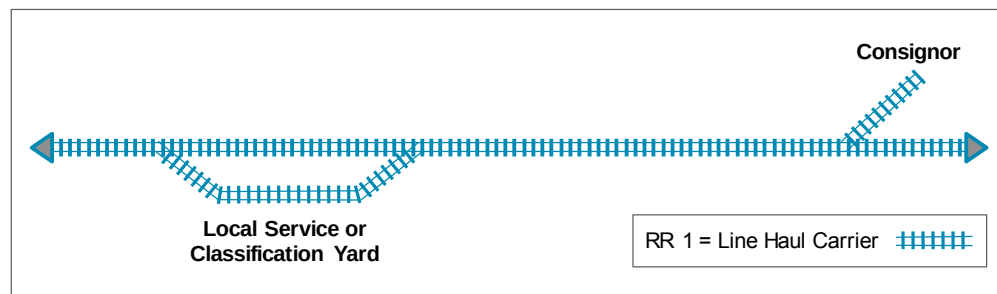
be delivered by way trains. Unit trains also can be interchanged in yards if there is sufficient space available.

In smaller towns and rural areas, cars and unit trains usually are exchanged at interchange tracks located at a point where the railroads cross or run near each other.³⁹ Interchange tracks can be located in one or more quadrants of the point at which the tracks cross and vary in length and capacity.

Let us consider the following six examples, which illustrate both single line and interchange operations.⁴⁰

Example 1 – Simple Single-Line Service: Let us first examine the steps required to originate a carload or unit train when no interchange is involved, because the railroad serves both the consignor and the consignee and the traffic moves in “single-line” service. This case is illustrated in Exhibit V-2. In this case, there are two way train moves, two industry switch events, and two yard switch events.

Exhibit V-2: Simple Single-Line Service Example



³⁹ At some points, designated as “revenue interchanges,” no physical interchange facilities may exist. In these cases, railroads divide revenue as if the traffic has been interchanged at that point, but by mutual agreement actually exchange the cars elsewhere for operating convenience.

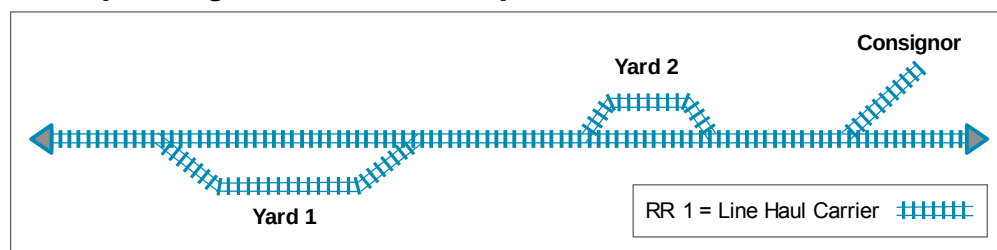
⁴⁰ These six examples are illustrative of the variety of ways that reciprocal switch operations may occur, but given the range of actual operations and the potential shifts of traffic cannot be comprehensive. The Comments of individual railroads in this proceeding also discuss specific examples.

Step	Description	Responsible Railroad
1	Yard switch to move empty car to way train	RR1
2	Way train moves empty car to Consignor	RR1
3	Industry switch to spot empty car at Consignor for loading	RR1
4	Industry switch to retrieve loaded car from Consignor	RR1
5	Way train moves loaded car to yard	RR1
6	Yard switch of loaded car to outbound road train	RR1

In this case, the line haul carrier serves the consignor directly and the traffic moves in single-line service. This is the least complex situation. It occurs in both urban and rural areas. As detailed in the table above, Railroad 1 switches an empty car into a way train that is being made up in its yard. The way train moves the empty car from the yard to the Consignor and spots the car on the Consignor's track for loading. Once the car is loaded, another way train retrieves the loaded car and moves it to the yard. Railroad 1 then switches the car into a road train being made up in that yard. A critical factor in the reliability of the operation is that all elements are planned and controlled by Railroad 1.

Example 2 – Complex Single-Line Service: Next, let us examine a somewhat more complex situation involving single-line service, which is illustrated in Exhibit V-3. This example involves four way train moves, two industry switch events, and four yard switch events.

Exhibit V-3: Complex Single-Line Service Example

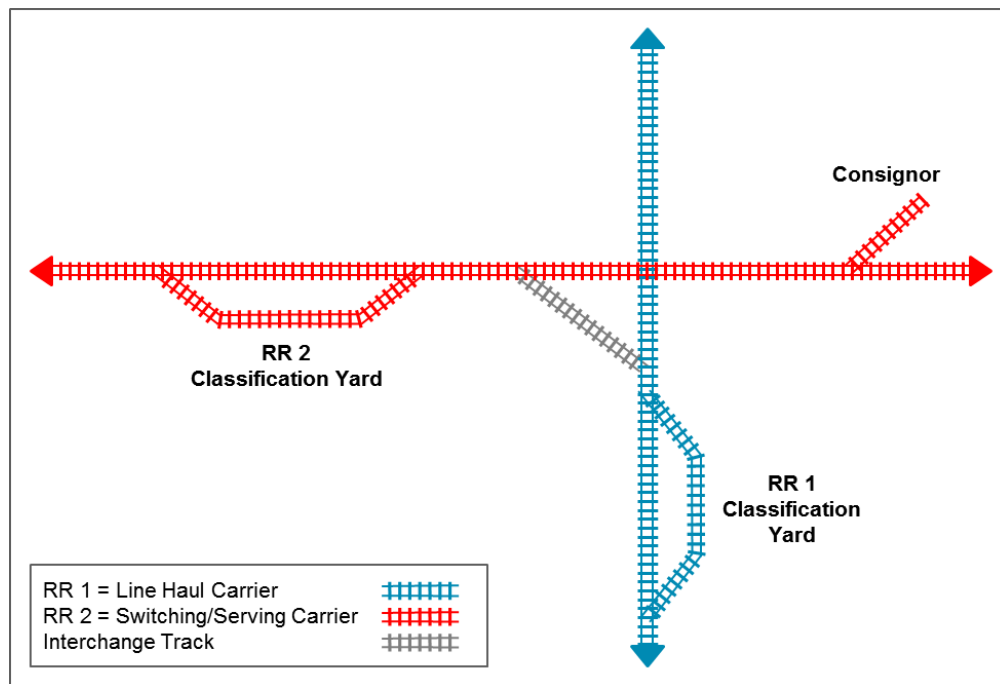


Step	Description	Responsible Railroad
1	Yard switch in Yard 1 to move empty car to way train	RR1
2	Way train moves empty car to from Yard 1 to Yard 2	RR1
3	Yard switch in Yard 2 to move empty car to a local service way train	RR1
4	Local service way train moves empty car to Consignor	RR1
5	Industry switch to spot empty car at Consignor for loading	RR1
6	Industry switch to retrieve loaded car from Consignor	RR1
7	Local service way train moves loaded car to Yard 2	RR1
8	Yard switch in Yard 2 to move loaded car to way train bound for Yard 1	RR1
9	Way train moves loaded car from Yard 2 to Yard 1	RR1
10	Yard switch in Yard 1 to move loaded car to outbound road train	RR1

In this situation, the way train serving the Consignor operates from Yard 2 but Railroad 1 does not have a suitable empty car available in Yard 2 to fill the Consignor's order. Therefore, it must bring an empty car from a nearby local service yard or a classification yard (Yard 1). This requires four movements in addition to those described in the less complex case illustrated in Example V-2 above. At the beginning of the move, Railroad 1 must switch the empty car into a way train at Yard 1 and the way train must move the empty car from Yard 1 to Yard 2. At the end of the move, Railroad 1 must switch the loaded car into a way train at Yard 2 and the way train must move it from Yard 2 to Yard 1, where it can be switched into an outbound road train. Except in the most unusual circumstances, this is as complex as a single-line service gets. Again, it is critical that the entire operation is planned and controlled by Railroad 1.

Example 3 – Simple Interchange in an Urban Area: Now let us examine the least complex form of operation involving interchange between railroads, which is illustrated in Example V-4. This simple interchange involves two interchange train moves (both on RR1), two way train moves (both on RR2), two industry switch events (both on RR2), and four yard switch events (two on each railroad).

Exhibit V-4: Simple Urban Interchange Example



Step	Description	Responsible Railroad
1	Yard switch in RR1 Yard to move empty car to interchange train	RR1
2	Interchange train moves empty car to from RR1 Yard to RR2 Yard	RR1
3	Yard switch in RR2 Yard to move empty car to way train	RR2
4	Way train moves empty car to Consignor	RR2
5	Industry switch to spot empty car at Consignor for loading	RR2
6	Industry switch to retrieve loaded car from Consignor	RR2
7	Local service way train moves loaded car to RR2 Yard	RR2
8	Yard switch in RR2 Yard to move loaded car to interchange block	RR2
9	Interchange train moves loaded car from RR 2Yard to RR1 Yard	RR1
10	Yard switch in RR1 Yard to move loaded car to outbound road train	RR1

In this relatively simple case involving interchange, RR1 is the line haul carrier that will move the car over the road to its destination. RR2 is the switching carrier, which will move only a short distance from its yard to the Consignor and back. It is important that this case takes place in an urban area where the railroads' yards are relatively close together and so interchange can take place in RR2's yard rather than at the interchange track.

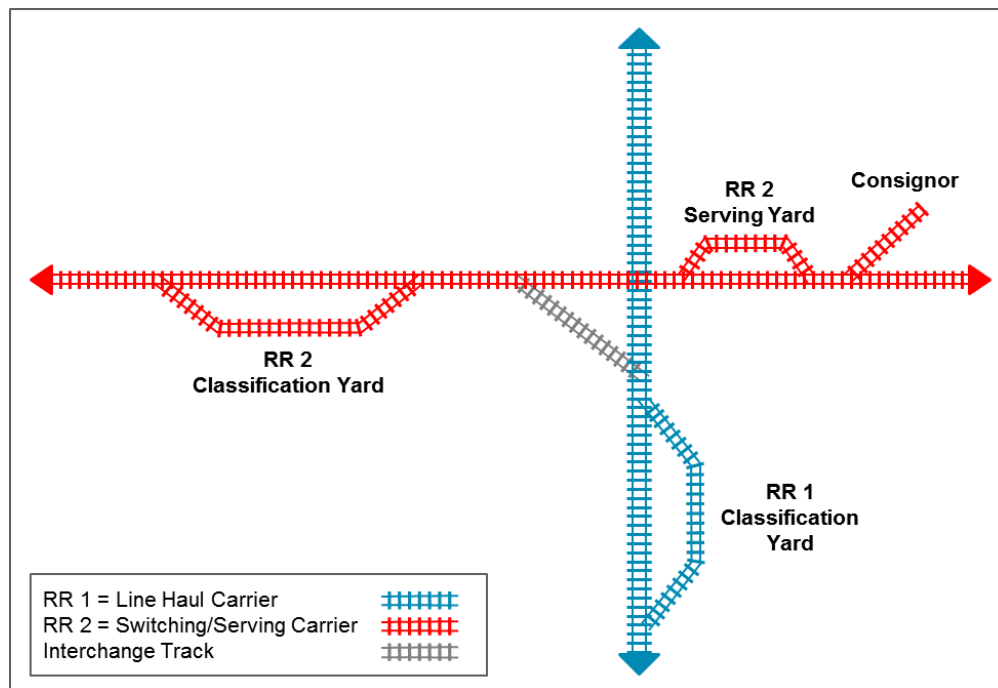
As the line haul carrier, RR1 will supply the empty car. RR1 will switch the empty car into an interchange train originating at its yard, and the interchange train will take the empty car directly to RR2's yard. RR2 will then switch the empty car into a way train originating in its yard. The way train will move the car to the Consignor and spot it on the Consignor's track for loading. Once the car is loaded, a way train will retrieve the car and move it to RR2's yard. The loaded car will then be switched into an interchange block that will be picked up by an interchange train operated by RR1. The interchange train will move the loaded car to RR1's yard, where it will be switched into an outbound road train.

A critical factor in the reliability of this move is that two railroads are involved and therefore no one railroad is responsible for planning and executing the entire operation. As we will discuss later, in most cases, RR2 will not receive notice of the inbound interchange train until shortly before it arrives. The schedules of the interchange trains operated by RR1 and the way trains operated by RR2 are unlikely to be coordinated, so it is common that the shipment would be delayed for at least one day when it is interchanged to RR2 and for another day when it is interchanged back to RR1.

Example 4 – Complex Interchange in an Urban Area: Now, let us examine a more complex and more common interchange move in an urban area, which is illustrated in Exhibit V-5. This case involves two interchange train moves (on RR1), four way train moves (on RR2), two industry switch events (on RR2), and six yard switch events (two on RR1, four on RR2).

Allowing shippers to sporadically alter complex interchange events in urban areas would be among the most problematic effects of the NITL proposal. Scarce line and yard capacity in urban areas would make it especially difficult to accommodate the shipper-controlled changes in traffic volumes and operating patterns that would be brought about by the NITL proposal.

Exhibit V-5: Complex Urban Interchange Example



Step	Description	Responsible Railroad
1	Yard switch in RR1 Yard to move empty car to interchange train	RR1
2	Interchange train moves empty car to from RR1 Yard to RR2 Classification Yard	RR1
3	Yard switch in RR2 Classification Yard to move empty car to way train	RR2
4	Way train moves empty car from RR2 Classification Yard to RR2 Serving Yard	RR2
5	Yard switch to move empty car to way train serving Consignor	RR2
6	Way train moves empty car to Consignor	RR2
7	Industry switch to spot empty car at Consignor for loading	RR2
8	Industry switch to retrieve loaded car from Consignor	RR2
9	Way train moves loaded car to RR2 Serving Yard	RR2
10	Yard switch in RR2 serving yard to move loaded car to way train going to RR2 Classification Yard	RR2
11	Way train moves loaded car from RR2 Serving Yard to RR2 Classification Yard	RR2
12	Yard switch in RR2 Classification Yard to move loaded car to interchange block	RR2
13	Interchange train moves loaded car from RR 2 Classification Yard to RR1 Yard	RR1
14	Yard switch in RR1 Yard to move loaded car to outbound road train	RR1

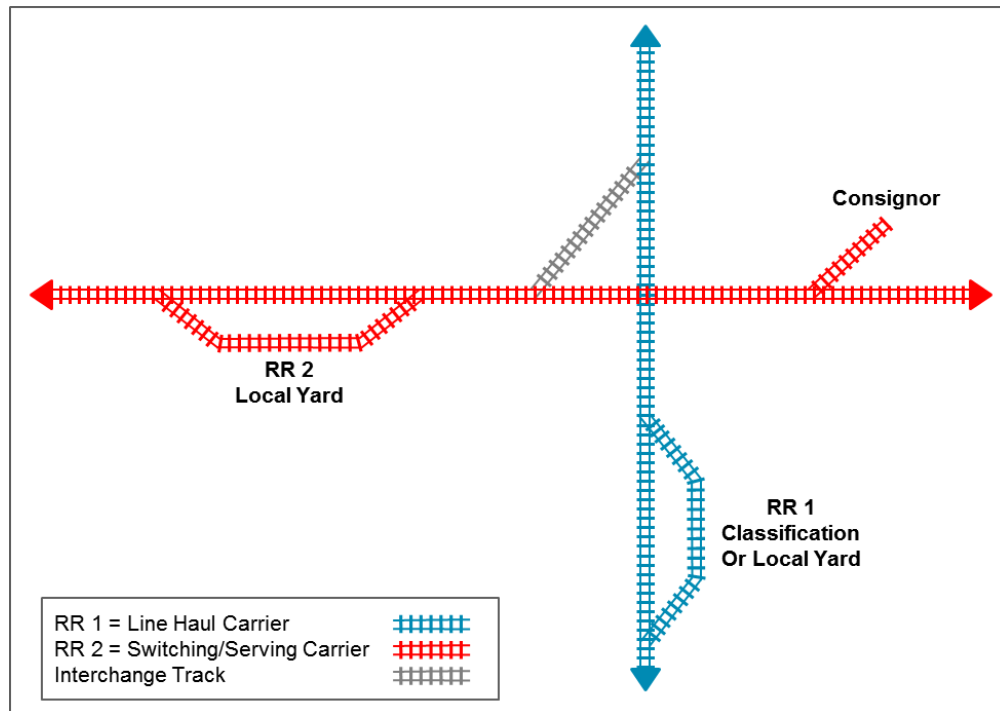
In this case, the Consignor is served from a serving yard to RR2 that is a satellite to the RR2 Classification Yard where interchange takes place. This requires four movements in addition to those described in the less complex case illustrated in example illustrated in Exhibit V-4 above.

Upon arrival of the empty car at its classification yard, RR2 must switch the empty car into a way train bound for the serving yard, and the way train must then move the empty car from the classification yard to the serving yard. Similarly, upon arrival of the loaded car at the serving yard, RR2 must switch the car into a way train bound for the classification yard and the way train must move the loaded car from the serving yard to the classification yard.

In urban areas, it is not uncommon for a railroad to receive interchange at a major yard and then distribute interchanged cars to smaller serving yards. Way trains that serve the railroad's customers originate in these smaller serving yards. As with the example illustrated in Exhibit V-4, it is unlikely that RR1 and RR2 will coordinate the schedules of their interchange and way trains and so it is likely that each shipment will be delayed for at least one day in each direction.

Example 5 – Simple Interchange Outside of an Urban Area: Let us now consider a case involving an interchange in a rural area, small city, or town, which is illustrated in Exhibit V-6. This example involves four interchange train moves (2 on each railroad), six way train moves (2 on RR1, 4 on RR2), 2 industry switch events (on RR2), and four yard switch events (2 on RR1, 2 on RR2).

Exhibit V-6: Simple Interchange Outside of an Urban Area



Step	Description	Responsible Railroad
1	Yard switch in RR1 Yard to move empty car to way train	RR1
2	Way train moves empty car to from RR1 Yard to interchange	RR1
3	Interchange switch to drop empty car	RR1
4	Interchange switch to pick up empty car	RR2
5	Way train moves empty car from interchange to RR2 Local Yard	RR2
6	Yard switch to move empty car from inbound way train to way train serving Consignor	RR2
7	Way train moves empty car to Consignor	RR2
8	Industry switch to spot empty car at Consignor for loading	RR2
9	Industry switch to retrieve loaded car from Consignor	RR2
10	Way train moves loaded car to RR2 Local Yard	RR2
11	Yard switch in RR2 local yard to move loaded car from inbound way train to interchange way train	RR2
12	Way train moves loaded car from RR2 Local Yard to interchange point	RR2
13	Interchange switch to drop loaded car	RR2
14	Interchange switch to pick up loaded car	RR1
15	Way train moves loaded car from interchange to RR1 Yard	RR1
16	Yard switch in RR1 Yard to move loaded car to outbound road train	RR1

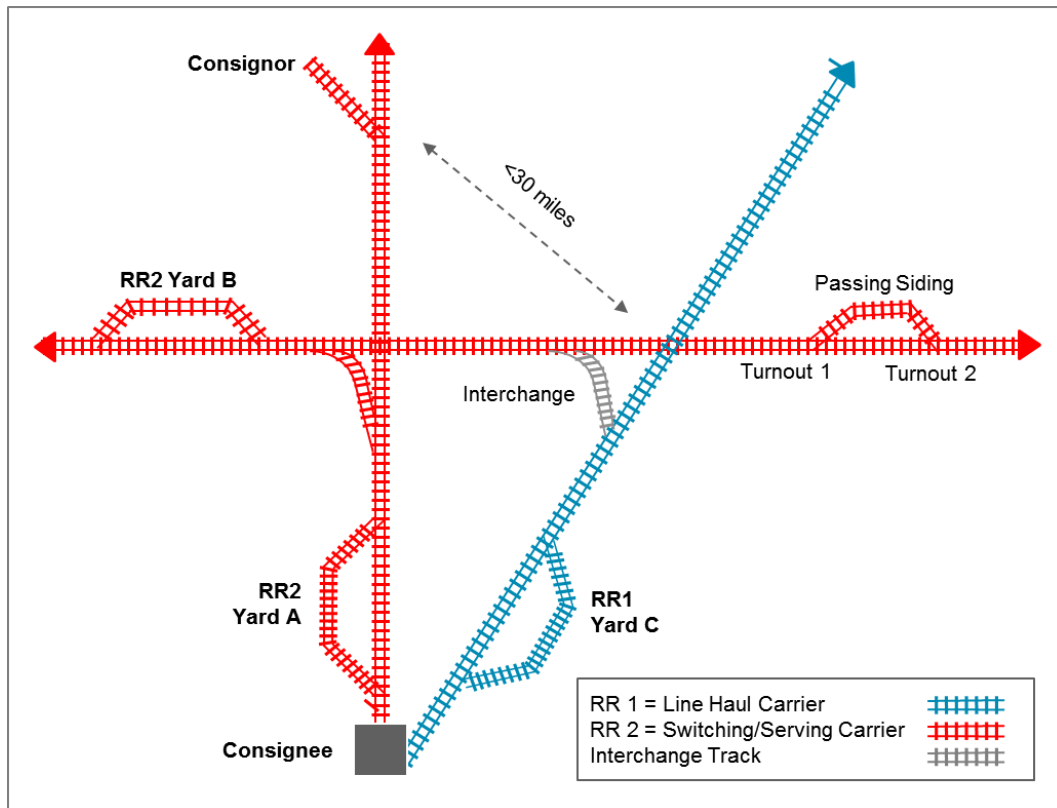
In smaller communities and rural areas, there is often insufficient volume to warrant running trains directly between yards to handle interchange traffic. In these situations, cars are taken to and from interchange by way trains.

In this case, RR1 is the line haul carrier and provides the empty car. RR1 switches the empty car at its yard into a way train serving the interchange. The RR1 way train drops the empty car on the interchange track, and it is retrieved by a RR2 way train. The RR2 way train serving the interchange takes the empty car to RR2's local yard. There, the empty car is switched into a RR2 way train that serves the Consignor. That way train moves the empty car to the Consignor and spots it on the Consignor's track for loading. Once the car is loaded, another RR2 way train picks up the loaded car and moves it to RR2's local yard. At that yard, the loaded car is switched onto a way train serving the interchange. That way train moves the loaded car to the interchange and spots it on the interchange track. At a later time, a RR1 way train picks up the loaded car and moves it to RR's yard, where it is switched onto an outbound road train.

As with urban interchange operations, it is highly unlikely that RR1 and RR2 will coordinate the schedules of their way trains serving the interchange. Therefore, the shipment will be delayed for at least a day in each direction. If the way trains on one or both railroads do not operate daily, the delay would be longer.

Example 6 – Complex Interchange Outside of an Urban Area: Finally, let us consider a more complex interchange in a rural area, small city, or town, which is illustrated in Exhibit V-7. This example involves four interchange train moves (two on each railroad), 12 way train moves (two on RR1, 10 on RR2), two industry switch events (on RR2), and six yard switch events (two on RR1, four on RR2).

Exhibit V-7: Complex Interchange Outside of an Urban Area



Step	Description	Responsible Railroad
1	Yard switch to move empty car to way train at Yard C	RR 1
2	Way train moves empty car to interchange track	RR 1
3	Interchange switch to spot empty car on interchange track	RR 1
4	Interchange switch to retrieve empty car from interchange track	RR 2
5	Way train moves empty car to Yard B	RR 2
6	Yard switch to move empty car to way train serving Yard A	RR 2
7	Way train moves empty car via Connection to Yard A	RR 2
8	Yard switch to move empty car to way train serving Consignor	RR 2
9	Way train moves empty car to Consignor	RR 2
10	Industry switch to place empty car into Consignor's siding	RR 2
11	Industry switch to retrieve loaded car from Consignor's siding	RR 2
12	Way train moves loaded car to Yard A	RR 2
13	Yard switch to move loaded car to way train serving Yard B	RR 2
14	Way train moves loaded car to Yard B	RR 2
15	Yard switch to move loaded car to way train serving interchange	RR 2

Step	Description	Responsible Railroad
16	Way train moves loaded car to passing siding	RR 2
17	Way train locomotive runs around train and couples to the end of the train	RR 2
18	Way train moves to clearance point beyond Interchange	RR 2
19	Interchange switch to spot loaded car on interchange track	RR 2
20	Way train backs to passing siding	RR 2
21	Way train locomotive runs around way train, couples to front and proceeds East	RR 2
22	Interchange switch to retrieve loaded car from interchange track	RR 1
23	Way train moves loaded car to Yard C	RR 1
24	Yard switch to move loaded car into outbound road train	RR 1

In this example, the Consignor is located outside of an urban area and within 30 miles of an open interchange. However, the Consignor's facility is not located on the same line as the interchange and the interchange track is not located in the quadrant that would allow the most efficient movement. This example illustrates the inefficiencies that are likely to arise if the NITL proposal is accepted, because traffic will move over routes that have not been used in the past and facilities that are likely to be non-existent or located in the wrong place. Railroads, such as RR 2 in this example, that have long haul single-line movements converted to short switching movements will have little incentive to make the investments necessary to address these inefficiencies. These same problems arise in urban areas.

In this example, RR1 is the line haul carrier and supplies the empty car. The empty car is located in Yard C. RR1 switches the empty car into a way train at Yard C. The way train proceeds to the interchange, where it spots the empty car on the interchange track. A way train operated by RR2 retrieves the empty car from the interchange and moves it to Yard B. At Yard B, RR2 switches the empty car into a way train serving Yard A. The way train moves the empty car from Yard B to Yard A via the connecting track. At Yard A, the empty car is switched into a

way train serving the Consignor. The way train moves the empty car to the Consignor and spots the car on the Consignor's track for loading.

Once the car is loaded, a way train operated by RR2 retrieves the loaded car and moves it to Yard A. At Yard A, the loaded car is switched into a way train serving Yard B. The way train moves the loaded car from Yard A to Yard B via the connecting track. At Yard B, the loaded car is switched into a way train serving the interchange. The way train moves the loaded car from Yard B to the interchange. However, to place the loaded car into the interchange track the way train must first execute the following maneuver:

- The train pulls into the passing siding through turnout 1
- The locomotive uncouples from the train, pulls forward onto the main line using turnout 2 and backs up until it is clear of turnout 1
- The locomotive pulls forward into the passing siding using turnout 1 and couples to the rear of the train
- The locomotive pulls the train back out of the passing siding onto the main line using turnout 1 and pulls the train west until it is clear of the interchange track
- The locomotive pushes the train into the interchange track and spots the loaded car on the interchange track
- The locomotive pulls the train back onto the main track and pushes it east on the main line and through turnout 1 onto the passing siding
- The locomotive uncouples from the train, backs up through turnout 1 onto the main line, pulls forward on the main line until it is clear of turnout 2, backs into the passing siding, couples to the train, pulls the train out of the passing siding onto the main line and proceeds east on the main line.

A way train operated by RR1 retrieves the loaded car from the interchange track and moves it to Yard C. At Yard C, the loaded car is switched into an outbound road train.

As in the example illustrated in Exhibit V-6, it is highly unlikely that RR1 and RR2 will coordinate the schedules of their way trains serving the interchange. Therefore, the shipment will be delayed for at least a day in each direction. If the way trains on one or both railroads do not operate daily, the delay would be longer. Moreover, the shipment is likely to be delayed for at least a day at each yard. Finally, it is possible that RR2 will not currently operate a train between Yard A and Yard B. In this example, it will be forced to establish a train to serve the interchange traffic. If the volume of interchange traffic is low, it is likely that the train connecting Yard A and Yard B will run infrequently, further degrading service in both the empty and loaded directions.

A summary of the escalating number of moves required when one goes from single-line service to simple interchange, and then complex interchange, is shown in Exhibit V-8.

Exhibit V-8: Summary of Moves Required in Examples 1-6

	Way train moves	Industry switch events	Yard switch events	Interchange train moves	Total
Example 1: Simple Single-Line Service	2	2	2	0	6
Example 2: Complex Single-Line Service	4	2	4	0	10
Example 3: Simple Urban Interchange	2	2	4	2	10
Example 4: Complex Urban Interchange	4	2	6	2	14
Example 5: Simple Non-Urban Interchange	6	2	4	4	16
Example 6: Complex Non-Urban Interchange	12	2	6	4	24

It is critically important to understand that in every example involving interchange traffic, neither railroad is in a position to plan, manage, and perform the entire movement between origin and destination. This introduces complexity into both interline and reciprocal switching operations. Even with well designed, densely used interchanges, the communication and

coordination between carriers will be less than what can be achieved when a single railroad plans and executes the entire movement. The STB (and ICC) have acknowledged the adverse effects when one party does not control all aspects of a movement.⁴¹

Given the complexity of a typical interchange operation compared to a single-line operation – and the benefits of one railroad being able to plan, manage, and execute the entire movement of a shipment from origin to destination – railroads have sought to reduce interline traffic in favor of single-line traffic. As shown in Exhibit III-3 above, the portion of total railroad traffic in the United States that is interchanged has been steadily declining for at least the past 40 years, as railroads have worked to simplify their networks and operations to increase efficiency and service reliability. Interchanges have been reduced primarily through:

- Mergers between railroads, each of which eliminates interchanges between the railroads involved in the merger
- Rationalization of the Class I railroad network, which by removing lightly used lines and duplicate main lines eliminated many interchanges
- Internal efforts by railroads to close interchanges that were either unused or very lightly used and to consolidate interchange operations at a smaller number of high density interchanges.

⁴¹ CSX Corp. – Control – Chessie Sys. Inc., 363 ICC 521 at 553 (Sept. 23, 1980), ⁴¹ Rio Grande Industries, Inc. – Control – S. Pac. Trans. Co., 4 ICC 2d 834, 895 (ICC Served Aug. 25, 1988).

VI. Potential Consequences of the NITL Proposal

While the terms of the new regulation proposed by the NITL are not carefully defined in its petition, the regulation's fundamental effect would be to allow shippers located within 30 miles of an interchange point to force railroads now providing them with single-line, line haul service to instead interchange the traffic to a competing line haul railroad.

No matter how the specific terms ultimately are defined, it is inescapable that the NITL proposal would increase car handlings and add to network complexity, undermining the foundations that have supported improvements in rail network efficiency and service reliability over the past 30 years. This loss of network efficiency and reliability would, in turn, generate a host of negative knock-on effects (Exhibit VI-1).

Exhibit VI-1: Potential Impacts of the NITL proposal

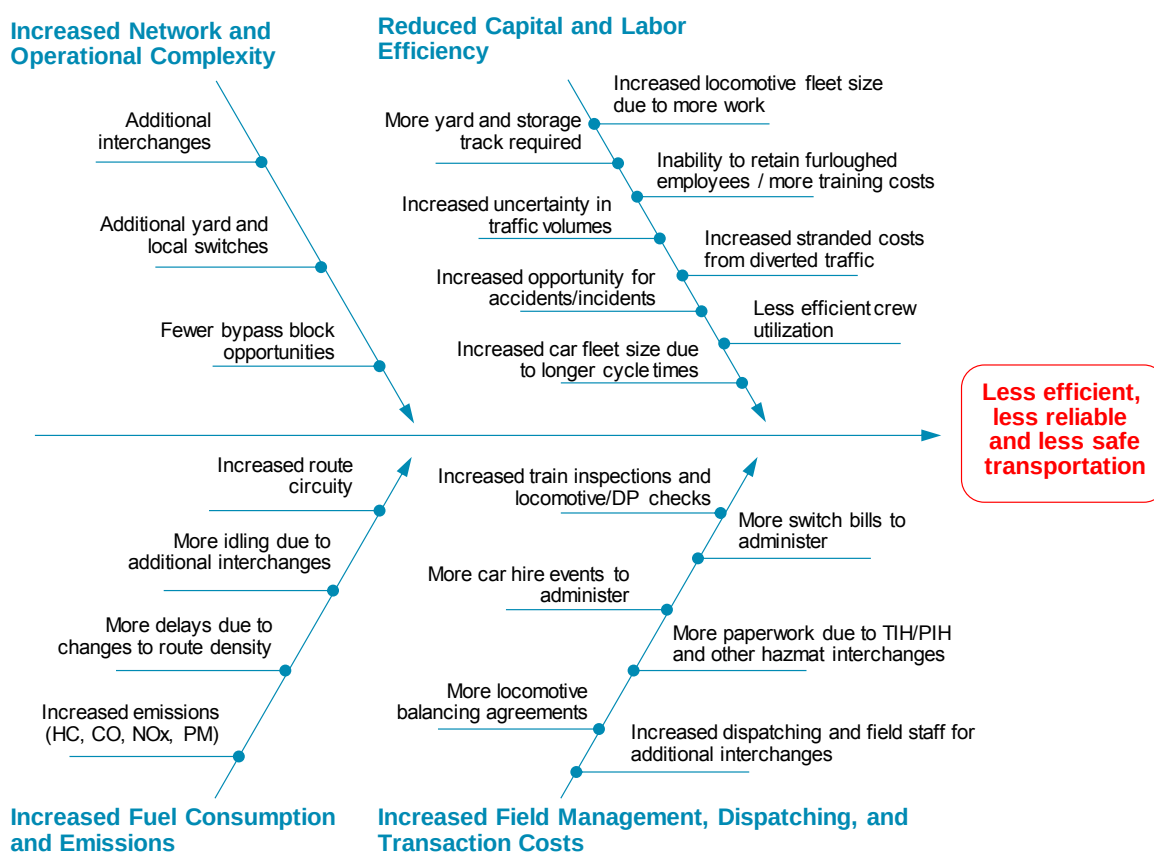


Exhibit VI-1 is in essence a mirror image of Exhibit III-1 above, demonstrating the reversal of those factors that have allowed the railroads to achieve efficiency gains over the past three decades. For example, where the railroads have eliminated interchanges, reduced switching, and created more bypass block opportunities, the NITL proposal would add interchanges and switching and reduce bypass blocks. Where the railroads have achieved better fleet utilization, the NITL proposal would require larger fleets. Where the railroads have rationalized their lines and yards, the NITL proposal would require additional investment simply to carry the same amount of traffic, while making inefficient use of infrastructure investments the railroads already have made.

In this section of my report, I will examine changes to railroad operations that would arise should the NITL proposal be adopted and how those changes would affect the complex operations of the current rail network and the efficiency gains of the past few decades. I will present examples to illustrate the kind of problems that could arise under the NITL proposal, without taking any position with respect to particular examples as to how or whether the NITL proposal would apply under the circumstances described, and my examples should not be construed as acknowledging the applicability of the NITL proposal to the circumstances described.

A. The NITL Proposal Would Degrade Yard Efficiency

Except for unit trains, which generally move directly from origin to destination without intermediate switching, railroad traffic moves through a network of interconnected hubs and spokes. A large “classification yard” is located at each hub. Each classification yard is connected by main lines to other classification yards and to a group of smaller satellite “serving yards.” An example of a railroad’s hub and spoke network is shown in Exhibit VI-2.

Exhibit VI-2: Norfolk Southern Classification Yard Network⁴²



Classification yards process trains to and from serving yards and other classification yards, breaking apart inbound trains and reconsolidating them for outbound movement. Trains arrive at the receiving yard and are sorted in the class tracks. Outbound main line trains are assembled from the class tracks onto the departure or forwarding tracks. Some classification yards utilize a “hump” over which rail cars are pushed and fed into sorting tracks. Others sort cars by having a locomotive move them through flat switching.

Many other functions also are handled at classification yards, including fueling, locomotive and car repair, and inspections. A serving yard is usually incorporated in a classification yard, and an intermodal or automotive terminal is often co-located with the classification yard. A typical classification yard is shown in Exhibit VI-3.

⁴² Norfolk Southern.

Exhibit VI-3: Example Classification Yard⁴³

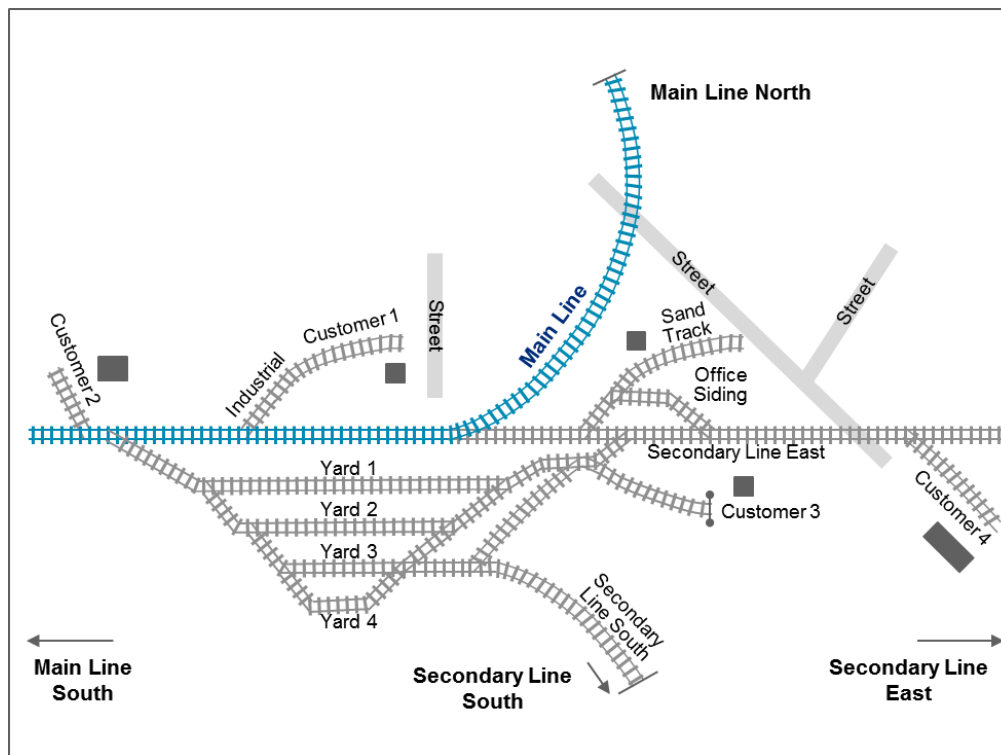


In total, there are approximately 100 major classification yards in North America. The largest classification yard, Union Pacific's Bailey Yard in North Platte, Nebraska, handles about 15,000 cars every day, of which between 2,000 and 2,500 are pushed over the yard's two humps and reclassified. Typical classification yards classify between 1,000 and 2,500 cars per day. The yard shown in Exhibit VI-3 is more than 4 miles long, covers 275 acres, and contains 65 miles of track. It has a hump and 46 classification tracks (bowl) allowing for cars to be sorted to many destinations. A locomotive shop, fueling facilities, and car repair facilities are adjacent to the yard.

Serving yards function primarily to deliver cars to and from industry. They are used to assemble way trains. There are hundreds of such yards. They are usually modest facilities with a dozen tracks or less that utilize flat switching. Most locations where local freight crews go on or off duty on a regular basis have a yard. A diagram of a typical serving yard is shown in Exhibit VI-4.

⁴³ Ibid.

Exhibit VI-4: Typical Serving Yard



The usual pattern of operations for a serving yard is to handle carloads from one or two trains inbound from one or more classification yards, sort those cars for delivery, and dispatch way trains and yard jobs to serve industry. The local trains return with cars picked up at industry; these are then assembled for pickup by the one or two trains returning to the classification yard(s). Generally, outbound cars are not sorted at the serving yard, as the classification yard is much more efficient at that task.

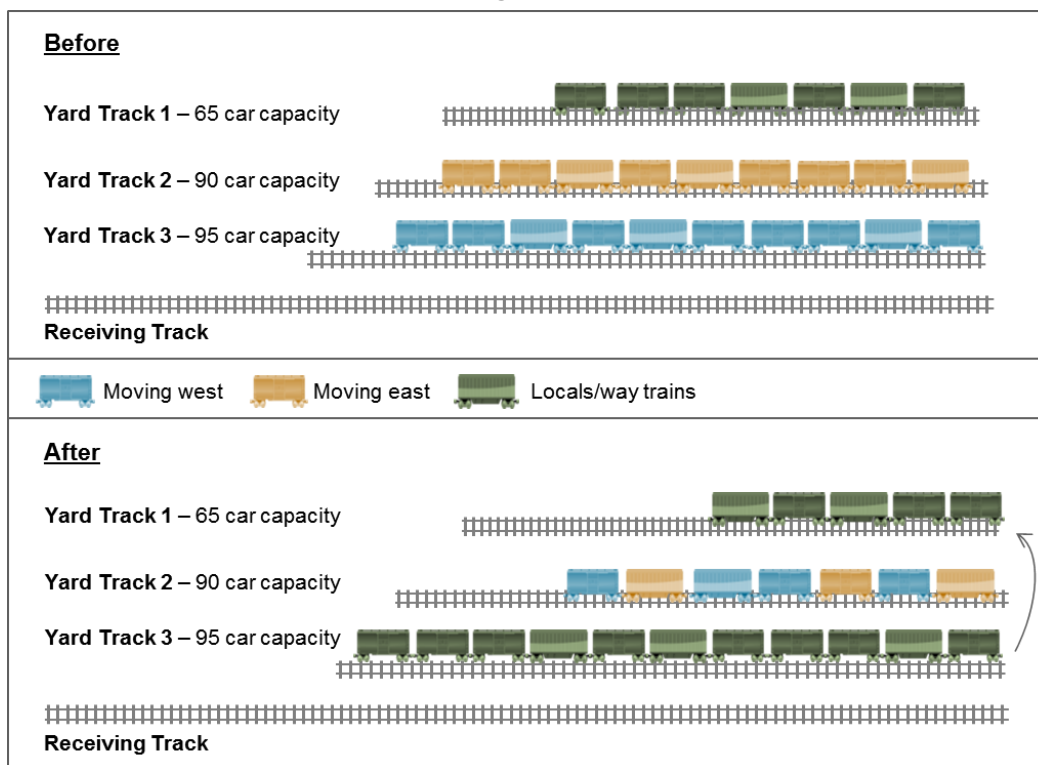
Serving yards are also used to carry out support tasks, such as weighing cars on request, inspection and minor running repairs on cars, and temporary holding and storage of cars. The serving yards are generally constrained by surrounding development, with limited expansion potential. Often, current serving yards were originally designed for industry patterns that no longer exist.

The example of a serving yard shown in Exhibit VI-4 is a simplified version of an actual yard that makes up two or three way trains per working day to serve customers located on the Main Line North, the Secondary Line East and the Secondary Line South. One additional yard job helps make up way trains and serves the four customers located close to the yard. The way trains are typically 20 to 50 cars long, consisting of both loaded and empty cars. The longest yard track (Yard 1) is about 4,000 feet in length and is used by the one main line train per day to deliver and receive cars to and from local trains. Yard tracks 2 through 4 are about 3,000 ft. long, and are used for sorting the cars that make up the way trains. The entire yard has a footprint of less than 5,000 feet long and 200 feet wide.

The following examples illustrate some of the ways in which the NITL proposal would disrupt the operation of yards throughout the railroad network.

Example 1: If the NITL proposal were adopted, the increase in the number of cars interchanged might cause congestion and, as a result, inefficient operations in serving yards. Consider the situation shown in Exhibit VI-5, of a typical service yard, “before” and “after” implementation of the NITL proposal.

Exhibit VI-5: Example Service Yard Track Originated Traffic Impact



In our example, way trains currently bring an average of 200 cars per day into the yard. The tracks within the yard are used as follows:

- An average of 85 cars per day that are destined to a classification yard located west of the service yard are sorted onto track 3, which has a 95 car capacity.
- An average of 75 cars per day that are destined to a classification yard located east of the service yard are sorted onto track 2, which has a 90 car capacity.
- An average of 40 cars to be delivered by way trains operating out of the service yard and empties to be reused locally are sorted onto track 1, which has a 65 car capacity.

The yard, while being utilized near its capacity, is fluid and operates well. Now consider what would happen if the NITL proposal were adopted. Way trains continue to bring 200 cars per day

into the serving yard, but 50 westbound cars and 40 eastbound cars are diverted from single-line to interchange service.⁴⁴ The tracks within the yard are now used as follows:

- An average of 130 cars (including the 90 diverted from single-line service that now will become switching traffic delivered by local trains to interchange locations) to be delivered by way trains operating out of the service yard and empties to be reused locally now will not fit on any track in the yard. They will consume all of track 3 and overflow onto track 1.
- The yard will continue to receive an average of 35 cars per day destined for a classification yard west of the service yard and 35 cars per day destined for a classification yard east of the service yard. However, the yard no longer has two tracks capable of building these blocks. Therefore, the railroad now will intermingle the cars on track 2.
- As a result of congestion in the service yard caused by the increase in switching traffic, eastbound and westbound cars will now be combined and sent either to the classification yard to the east or the classification yard to the west. The result will be an additional switch move at the service yard, an inefficient route for half of the eastbound and westbound cars, and an additional switching requirement at the classification yard receiving the intermingled cars. As multiple serving yards are forced to route traffic to classification yards for additional sorting, the classification yards themselves may become congested.

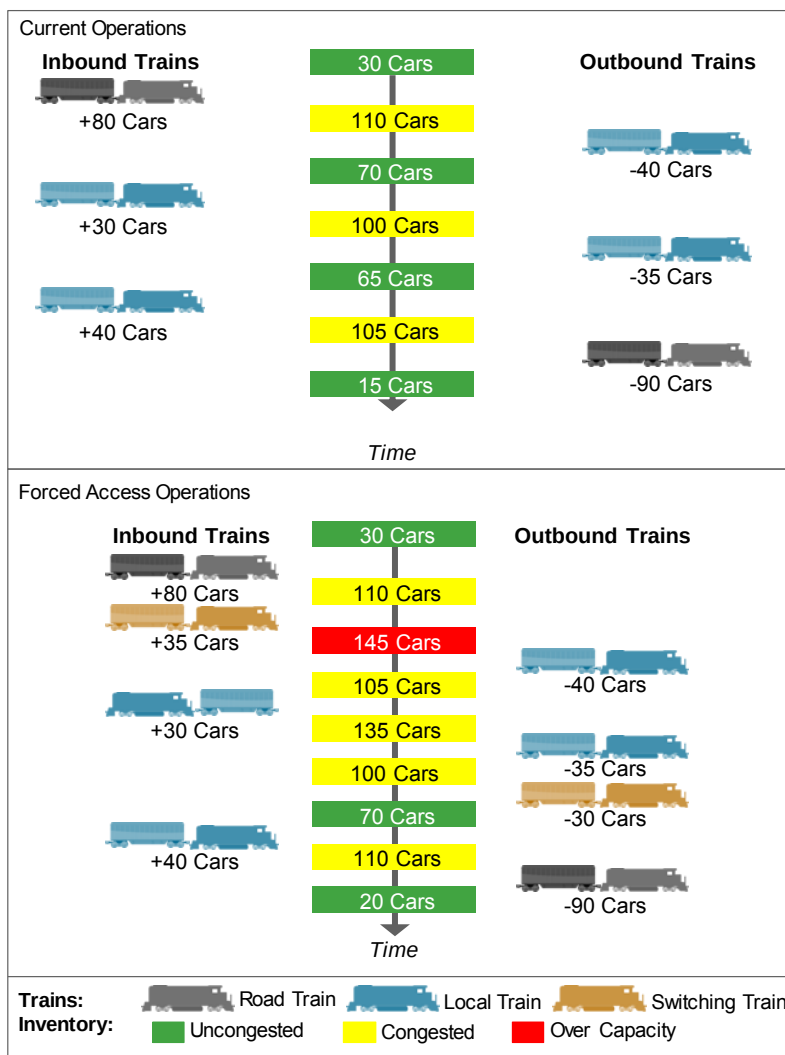
Example 2: In addition to capacity problems caused at service yards by changes in originated traffic, if the NITL proposal is adopted, railroads also might face problems caused by a growth in inbound switching traffic. For interline traffic, railroads included in the route receive periodic

⁴⁴ In this Verified Statement, I have assumed, for purposes of illustration that across the entire railroad industry 25 percent of cars that might be subject to the proposed NITL rule would actually move under forced access. However, the effect of the rule will vary significantly from yard to yard depending on the decision of shippers at each yard. In some yards, the effect is likely to exceed 25 percent significantly. For purposes of illustration, I have assumed that 45 percent of cars using the yard in this example that are subject to the proposed NITL rule actually move under forced access.

electronic car location messages and EDI 417 Rail Carrier Waybill Interchange messages tracking the location of cars that will be arriving on their properties. For switching traffic, however, railroads receive only an EDI 418 Rail Advance Interchange Consist notice, which typically arrives an hour or so in advance of the arrival of reciprocal switching traffic in their yards. This “pop-up” switching traffic can lead to yard congestion, which in turn leads to mainline congestion when inbound trains must hold outside of the yard waiting for tracks to become available.

Consider the situation in Exhibit VI-6, which describes a typical service yard that is not currently located in an area where reciprocal switching occurs, and which has a 140-car capacity and a 30-car inventory at the start of the day. Currently, road and local trains arrive and depart throughout the day, and these trains are staged to manage the workflow and the car inventory against the capacity of the yard. As a result, while the inventory of cars in the yard approaches 80 percent at one point during the day, the yard never reaches a congested condition and operations run smoothly.

Exhibit VI-6: Example of Inbound Switching Traffic Impact



Should the NITL proposal be adopted, however, the service yard would begin to receive and dispatch switching trains carrying forced access traffic. As is common practice with reciprocal switch traffic today, the inbound trains would arrive with relatively little advance notice at random times during the day. As illustrated in Exhibit VI-6, an influx of “pop-up” switching traffic can cause a service yard to approach or exceed its capacity. The example shows that at one point in time, the yard is required to accommodate 145 cars, even though it can only accommodate a maximum of 140 cars. This dramatically slows the switching required to assemble outbound trains, because it limits space to sort cars and delays the arrival of inbound

trains, which must hold on passing sidings outside of the yard, spreading the congestion to the main line.

Example 3: The NITL proposal would adversely affect yard operations in many of the nation's largest urban areas (see Exhibit VII-3), where even simple interchange events can be difficult due to the complexity and congestion of the track network. If the NITL proposal is adopted, growth in interchange traffic might increase congestion in large urban areas, including major east-west gateways such as St. Louis.

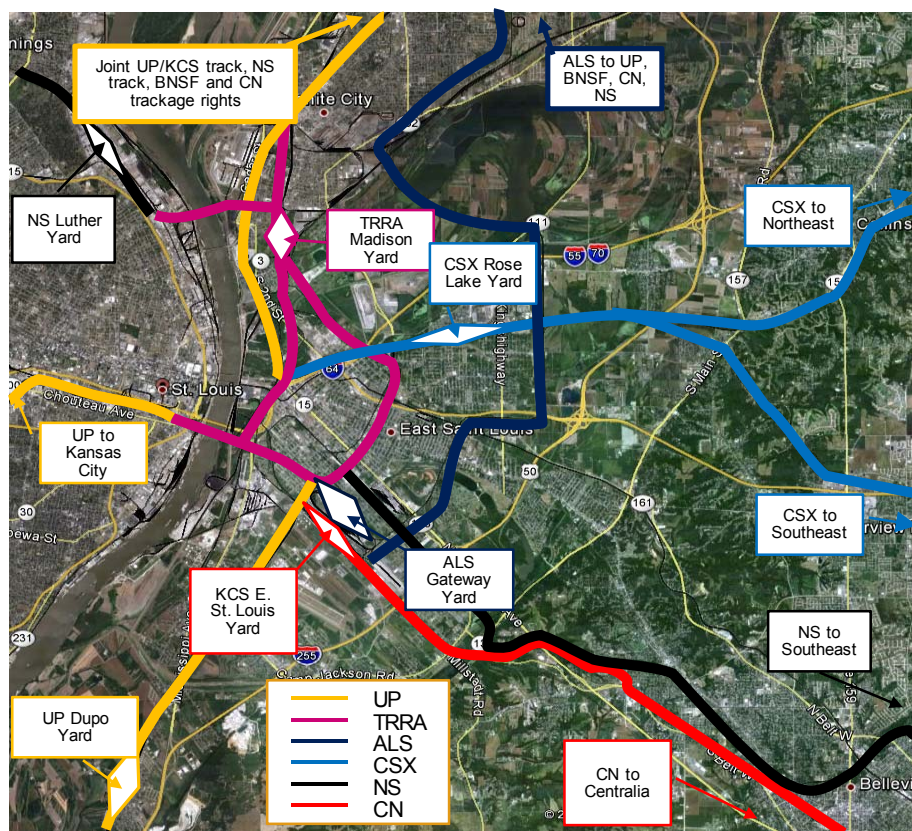
Consider all of the steps and potential delays involved in undertaking a simple urban interchange procedure, similar to that illustrated in Exhibit VI-7, if it occurs in the St. Louis metropolitan area. In most cases, even the simplest car interchange will involve operating over several railroads. These include six of the seven Class I railroads and two major switching railroads, the Alton & Southern (A&S) and the Terminal Railroad Association of St. Louis (TRRA). Both the A&S and TRRA are heavily utilized. The A&S Gateway Yard originates and terminates 48 trains per day and classifies 3,500 cars per day.⁴⁵ The TRRA Madison Yard consists of 80 tracks with a capacity of 2,200 cars and classifies 30,000 cars per month.⁴⁶

In most cases, when a loaded or empty car moves from one railroad onto another railroad within the St. Louis area, it will be classified into a train bound for the next railroad on its route. In each case, this will delay the car for an average of one day. Under the forced access advocated by the NITL, the full cycle to move an empty car from the line haul carrier via one or more intermediate carriers to the switching carrier and back could consume six to eight days. During each of these days, the car will be consuming yard and line capacity.

⁴⁵ Alton & Southern website, <http://www.altonsouthern.com/about/history/index.shtml>.

⁴⁶ TRRA website, <http://www.terminalrailroad.com/About/TRRAHistory.aspx>.

Exhibit VI-7: St. Louis Area Railroad Network⁴⁷



Example 4: Interchange operations often are more complex than they would appear on a map. For example, CSX’s Tilford Yard, the principal CSX serving yard in Atlanta, is physically adjacent to NS’s Inman Yard, as shown in Exhibit VI-8. It would appear that a reciprocal switch move from CSX to NS would involve simply moving cars to be interchanged a short distance from Tilford Yard to Inman Yard or vice versa.

However, the reality is more complex. Inman Yard is an intermodal facility and does not handle general merchandise freight service. Since Inman cannot handle the interchanged traffic NS receives from Tilford Yard, [[]],⁴⁸ where NS has an efficient classification yard. [[]]

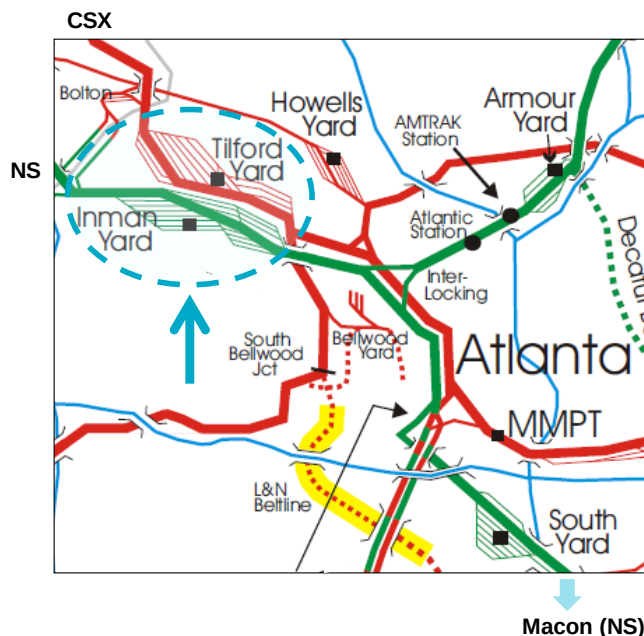
⁴⁷ Map source: Google Earth, with additional Oliver Wyman annotation.

⁴⁸ Confidential materials are designated with double brackets: [[]].

]]

So, due to the realities of railroad operations, two geographically adjacent points are, in fact, separated [[]].

Exhibit VI-8: Downtown Atlanta CSX and NS Yards⁴⁹

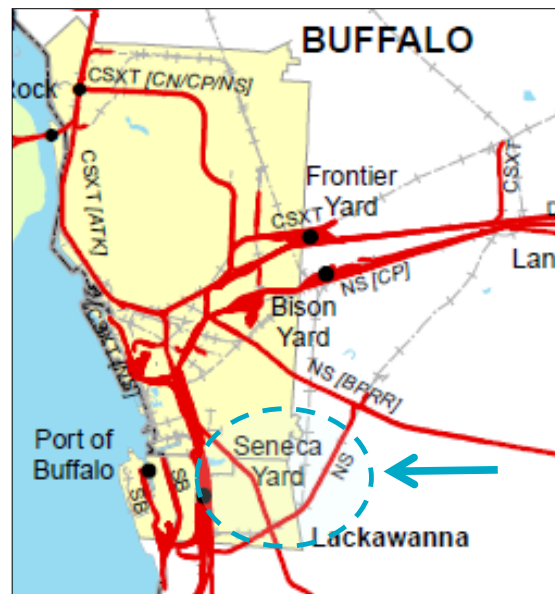


Example 5: Railroad infrastructure and operations in urban areas are sized to fit the traffic that historically has been available. A situation created by the Conrail transaction is illustrative of what could result from the NITL proposal. Following the transfer of Conrail lines to Norfolk Southern and CSX, both railroads acquired operations in Buffalo, NY (Exhibit VI-9). CSX, which had the larger operation at Buffalo, gathered cars to be interchanged with NS on an interchange track at its Seneca Yard. However, the volume of traffic was insufficient to support an NS train in Buffalo to pick up the cars, and so NS picked up and delivered interchange traffic at Seneca Yard using a road train that originated at Pittsburgh, PA. Due to low volume, the train

⁴⁹ Georgia Department of Transportation.

from Pittsburgh was often late or annulled, with the result that cars to be interchanged to NS built up in Seneca Yard to the point that the yard became congested, harming CSX's service to shippers both in Buffalo and elsewhere on its lines in and out of Buffalo. Ultimately, NS established a train to move the interchange traffic. However, the difference is that NS had some control over volume and could choose to pursue the business and plan accordingly. Variability under the NITL proposal may never make it worthwhile for the railroad to establish a train, and as a result congestion affecting other customers would continue indefinitely.

Exhibit VI-9: CSX and NS Operations in Buffalo, NY⁵⁰



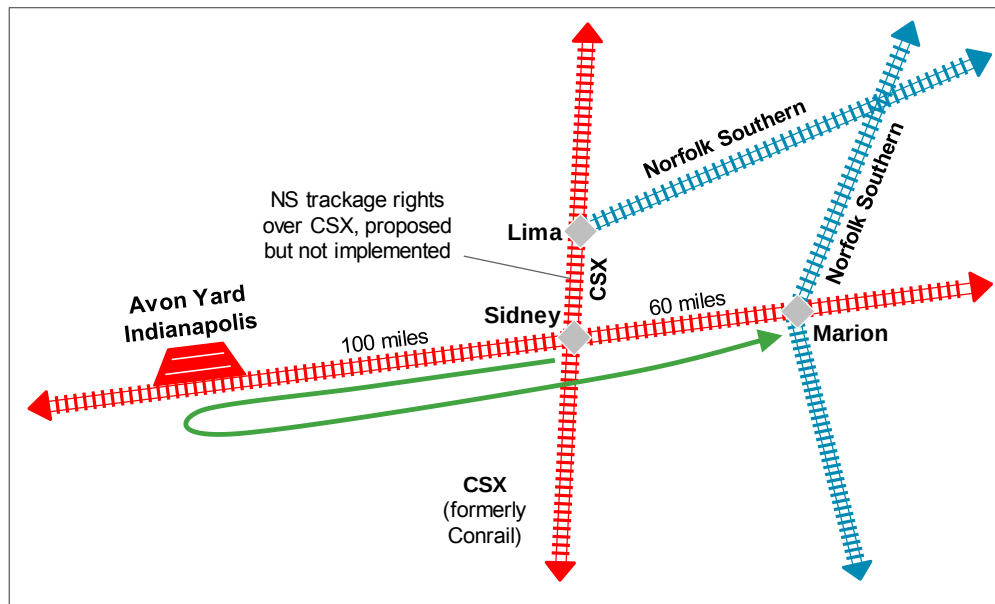
Example 6: In some cases, traffic will move significantly out of route to reach an efficient interchange location. For example, as shown in Exhibit VI-10, a Cargill facility located at Sidney, OH was served by Conrail and CSX. After the transfer of Conrail lines to CSX and NS, CSX was the sole railroad serving Cargill's facility. To replace Conrail, NS was granted trackage rights over CSX from Lima, OH to Sidney. However, according to documents filed by Cargill,⁵¹

⁵⁰ New York State Department of Transportation.

⁵¹ Status Report and Comments of Cargill, Incorporated, STB Finance Docket 33388 (Sub-No. 91), September 25, 2003.

CSX and NS found that interchange at Lima was not practical and moved it to Marion, OH. CSX also found that the most efficient routing for Cargill traffic was to move it 100 miles west from Sidney to Avon Yard at Indianapolis, where it is classified with other traffic bound for points on NS into a block destined for Marion. From there, the traffic is routed 160 miles east to the interchange with NS at Marion.

Exhibit VI-10: NS and CSX at Cargill (Sidney, OH)



According to Cargill documents, this movement increased CSX's costs by more than \$600 per car.⁵² CSX sought to pass this cost through to NS, which in turn raised the rate to the shipper.⁵³ The net result of creating an interchange in this situation was to increase the cost and degrade the service available to the customer. While this particular situation would not be affected by the NITL proposal, it is illustrative of the cost and difficulty of establishing the interchange of traffic in situations in which there is little or no prior interchange experience.

⁵² Ibid.

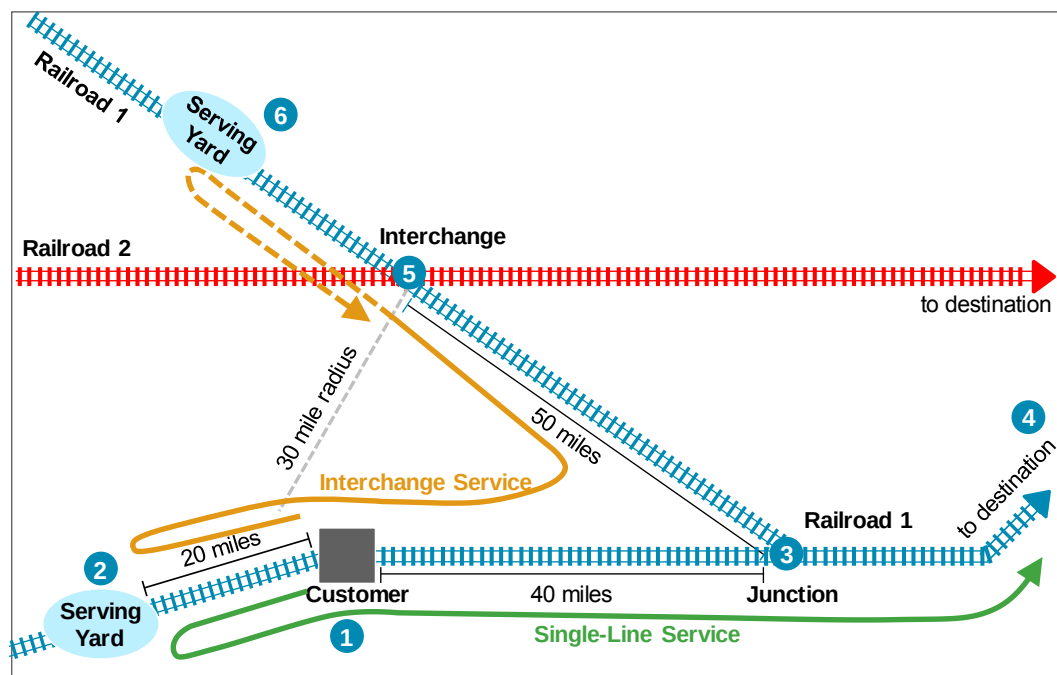
⁵³ Ibid., p. 2.

B. The NITL Proposal Would Degrade Main Line Efficiency

In addition to degrading the performance of yards, the NITL proposal would, in many instances, impose new interline movements on a network in which lines, yards, and interchange locations are not configured to serve them. This would result in cars moving significantly out of route and interfere with efficient main line operating practices.

Example 1: As has been demonstrated previously, although the NITL proposal would limit the applicability of forced access to shippers located within 30 miles of an interchange location, the reality is that providing the service often will entail many additional operations and delays, each of which degrades service reliability. Exhibit VI-11 provides an illustration of an interchange location which is 30 miles in a straight line from an origin shipper. In this case, however, the actual distance via rail is a minimum of 90 miles, and it is likely that the interchanged car will travel at least 130 miles.

Exhibit VI-11: Illustrative Thirty-Mile Straight Line Interchange Impact



Presently, a customer located at Point 1 receives single-line service from Railroad 1. A way train operated by Railroad 1 picks up a car loaded by the customer at Point 1 and moves it to the serving yard at Point 2. At the serving yard, the car is switched into a road train operated by Railroad 1 and moved east via Point 1 and Point 3 toward the car's destination (Point 4). The single-line service route is shown in green.

If the NITL proposal is adopted, the customer would have the option of compelling Railroad 1 to interchange the car to Railroad 2 at an interchange located at Point 5. The interchange location is 30 miles “as the crow flies” from the customer. However, to actually move the car from the customer to the interchange location would require trains operating much more than 30 miles:

- Railroad 1 would pick up the car from the customer at Point 1 and move it to the serving yard at Point 2.
- At the serving yard, Railroad 1 would switch the car into a way train. The way train would run from the serving yard at Point 2 east to the junction at Point 3 and then north to the interchange location at Point 5. At the interchange location, the way train would spot the car on an interchange track.
- At the interchange location, a way train operated by Railroad 2 would retrieve the car from the interchange track.

While the interchange location is 30 miles from the customer in a straight line, the customer's car would need to travel 130 miles to reach the interchange location:

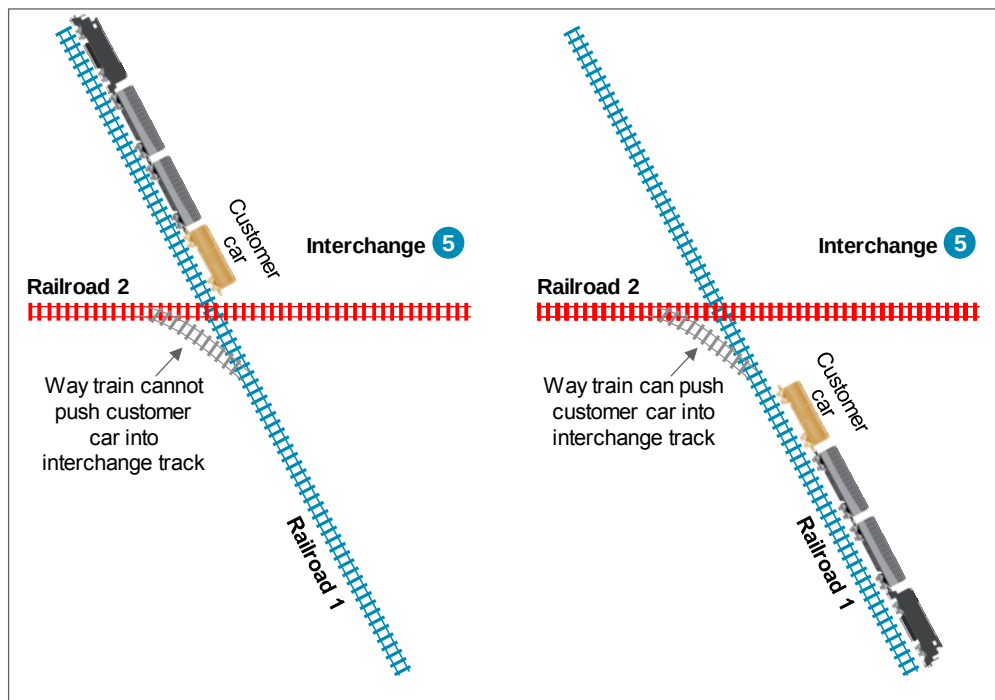
Origin to serving yard	20 miles
Serving yard to junction	60 miles
Junction to interchange location	50 miles
Total	130 miles

At a minimum, the loaded car will move 50 miles out of route⁵⁴ (the distance between the junction and the interchange location). But this would be the best case, because:

- It assumes that there is sufficient traffic to operate a way train from the serving yard at Point 2 directly to the interchange location at Point 5. If there is insufficient traffic, then Railroad 1 would need to move the customer's car from the serving yard at Point 2 to another serving yard or classification yard that does operate a way train to the interchange location, adding further mileage to the route.
- It assumes that the interchange track is located to the north of Railroad 2's main line, so that the way train arriving from the junction at Point 3 can spot cars into the interchange track (see Exhibit VI-12). If the interchange tracks are located south of Railroad 2's main line, then Railroad 1 would take the customer's car to the serving yard at Point 6, where it would switch the car into a southbound way freight. Again, this would add mileage to the route. (The interchange route is shown in orange in Exhibit VI-11, with the optional movement from the interchange location to the serving yard at Point 6 shown as a dotted line.)

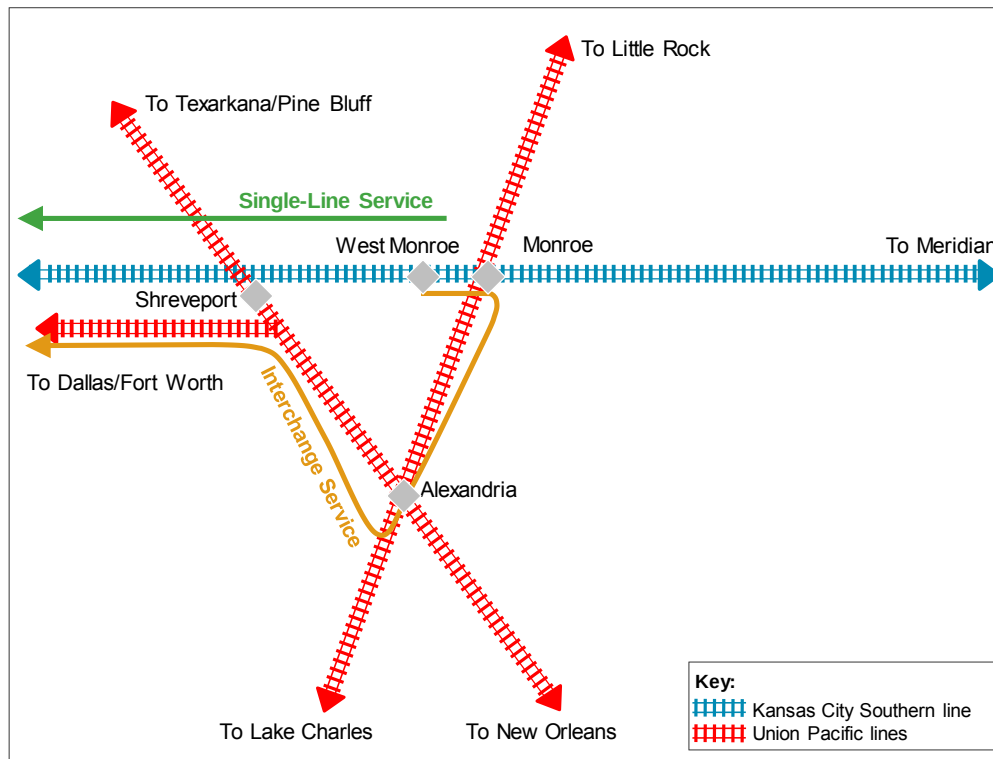
⁵⁴ In addition, of course, this mileage will be at least doubled, because Railroad 2 must supply an empty car to Railroad 1 at Point 2 for the process to begin.

Exhibit VI-12: Illustration of Interchange Track in the Wrong Quadrant



To understand how the hypothetical situation discussed above might actually arise, let us look at the situation for a shipper in West Monroe, LA. Currently, the shipper is served by KCS and the traffic moves in single-line service over the KCS “Meridian Speedway” main line to direct connections with UP and BNSF near Dallas (Exhibit VI-13). The single-line service KCS route is shown in green.

Exhibit VI-13: West Monroe, LA to Dallas, TX 30-Mile Interchange Impact Example



The only Class I interchange located within 30 miles of the customer is an interchange with the UP at Monroe. If the customer were to elect, under the NITL proposal, to force KCS to interchange its traffic to UP at Monroe for shipment to Dallas, the most direct route would involve:

- UP transporting the cars from Monroe to Alexandria
- UP then transporting the cars from Alexandria to Shreveport
- UP then transporting the cars to Dallas

The interchange route via the UP is shown in orange. The cars would move over a route 25 percent more circuitous than the single line KCS route, and they would be handled three additional times – at Monroe, Alexandria, and Fort Worth. Each additional handling would add cost and time to the movement, and would decrease the reliability of the service.

Example 2: One of the primary constraints on railroad capacity is the need to route trains moving in opposite directions over the same track. To accomplish this task, railroads build passing sidings at intervals along their routes. When trains moving in opposite directions meet, dispatchers route one train into the siding while the other train passes on the main line. While sophisticated software linked with controls on locomotives increasingly is able to schedule meets so that stop time is minimized, meets often cause delays on the network.

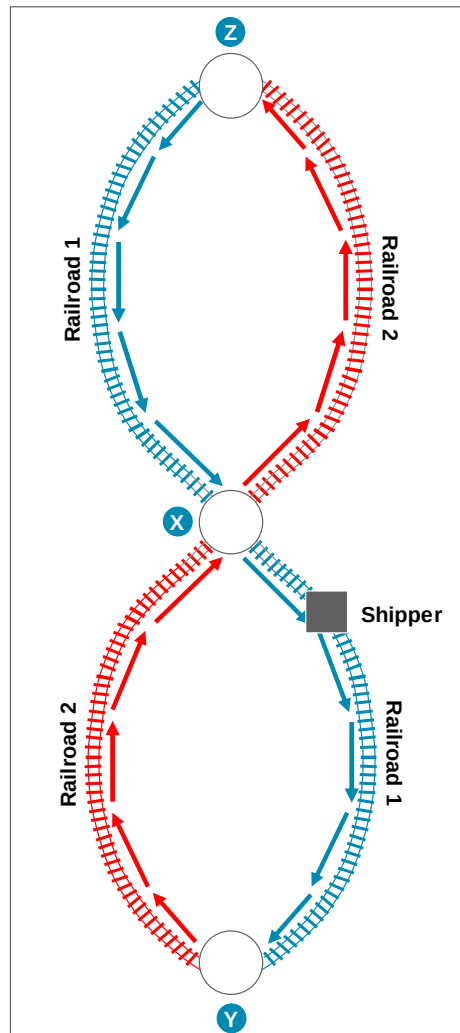
To improve their efficiency, railroads operating parallel lines sometimes enter into voluntary directional running agreements in which both railroads route trains moving in one direction over one of the lines and trains moving in the opposite direction over the other. This mutually beneficial agreement improves the operation of both lines.

In the situation illustrated in Exhibit VI-14, Railroad 1 and Railroad 2 have entered into a joint use, directional running agreement between Points Y and Z. Both lines are heavily utilized. An interchange track exists at Point X, but is used only a few times per year when one line between Point X and Point Z or Point X and Point Y is blocked due, for example, to maintenance or a derailment.

In our example, a shipper that currently ships traffic via single-line service on Railroad 1 from its facility to Point Y, is located “downstream” from the interchange location at Point X. Under the NITL proposal, the shipper could force Railroad 1 to interchange traffic with Railroad 2 at Point X. Because of the density of traffic and directional running on the line, it would be inefficient to run a train “upstream” from the shipper’s facility to X. However, if Railroad 1 were forced to do so, it would deliver the shipment to Railroad 2 at Point X. Railroad 2 would then take the shipment with the flow of traffic to Point Z and then would switch to the opposite line and run with the flow of traffic to Point Y. Situations like this one, based on local operating

conditions, are likely to lead to numerous and ongoing problems that the STB is likely to be called upon to resolve.

Exhibit VI-14: Directional Running Example



C. The NITL Proposal Would Degrade Service Reliability

As shown in Exhibit III-9, shippers place the highest value on service reliability when ranking service attributes. Therefore, it is surprising that the NITL would advance a proposal that would virtually guarantee severe degradation of service reliability for all shippers, including the minority of shippers that it is alleged to benefit.

As described in Section V, the process of interchanging cars between railroads unavoidably involves numerous car handlings that exceed – in some instances by multiples – the car handlings required to provide single-line service. Each car handling involves expense and delay and, most important, degrades service reliability. Exhibit VI-15 shows the hypothetical degradation in the probability that a car will meet its trip plan for each of the examples discussed in Section V, even given a 98 percent⁵⁵ probability of each switch event going according to plan:

Exhibit VI-15: Hypothetical Impact on Railroad Service of Adding Car Handlings

Example	Exhibit	Description	Total Number of Events ⁵⁶	Number of Switching Events ⁵⁷	Probability of Performing Each Switching Event According to Plan	Probability of Meeting Service Plan ⁵⁸
1	V-2	Simple Single Line Service	6	2	98%	88.6%
2	V-3	Complex Single Line Service	10	4	98%	81.7%
3	V-4	Simple Interchange – Urban	10	6	98%	81.7%
4	V-5	Complex Interchange – Urban	14	8	98%	75.4%
5	V-6	Simple Interchange – Rural	16	8	98%	72.4%
6	V-7	Complex Interchange - Rural	24	10	98%	61.6%

We have already demonstrated, in Exhibit III-6, that adding interchange events is highly inversely correlated with railroad efficiency. Exhibit VI-15 illustrates two further important facts: First, the number of switching events normally increases when interchange service is substituted for single-line service. As typical yard dwell time is 23 to 25 hours, each switching event, which includes switching cars in yards and spotting and retrieving cars from interchange tracks, can add a day to total transit time. Thus, in simple situations (Examples 1, 3, and 5), moving from single-line to interchange service adds from 4 to 6 days to trip time. In complex

⁵⁵ A 98 percent probability of performing each individual switching event according to plan is above levels normally experienced by the Class I railroads.

⁵⁶ Includes industry switches, yard switches, interchange switches, and way trains.

⁵⁷ Includes yard switches and interchange switches.

⁵⁸ The probability of meeting a trip plan is equal to the probability of performing each individual switching event according to plan, raised to the power of the number of switching events.

situations (Examples 2, 4, and 6), interchange service also adds 4 to 6 days. When you consider that 2.2 million additional cars per year⁵⁹ would be interchanged if just 25 percent of the cars now moving in single-line service that are eligible for forced access under the NITL proposal are actually interchanged, the number of added car days might approach 10 million. These added car days consume yard capacity and harm the efficiency of both railroad- and shipper-owned railcars.

Second, as demonstrated in Exhibit III-9, shippers value reliability above all other service attributes. Reliability is generally measured as executing the trip plan within a margin of error (for example, the planned date plus or minus one day). Yet, as Exhibit VI-15 clearly demonstrates, the probability of successfully meeting a trip plan declines when interchange service is substituted for single-line service. Whereas 886 of every 1,000 cars moving in simple single-line service might be expected to meet their trip plan, just 616 of every 1,000 can be expected to do so in complex interchange situations in rural areas and small communities.

Besides the direct effect of decreased reliability for those shippers who choose forced access, cars for other customers who choose to continue to use single-line service would face a risk of reduced reliability from congestion associated with increased terminal dwell. Every car that misses its trip plan is at high risk of missing its planned delivery date, degrading reliability.

We have seen that substituting interchange service for single-line service increases the number of switching events. There is clear evidence that increased switching events are negatively correlated with network velocity,⁶⁰ and that network velocity is correlated with service

⁵⁹ See Section VII.

⁶⁰ Measured as car miles per car day, so that as the number of switching events increase, the number of car miles per car day decrease.

reliability.⁶¹ Exhibit VI-16 shows the negative correlation between switching events and network velocity, and Exhibit VI-17 shows the correlation between network velocity and service reliability.

Exhibit VI-16: Correlation between Switching Events and Network Velocity⁶²

Correlation coefficient: -0.87

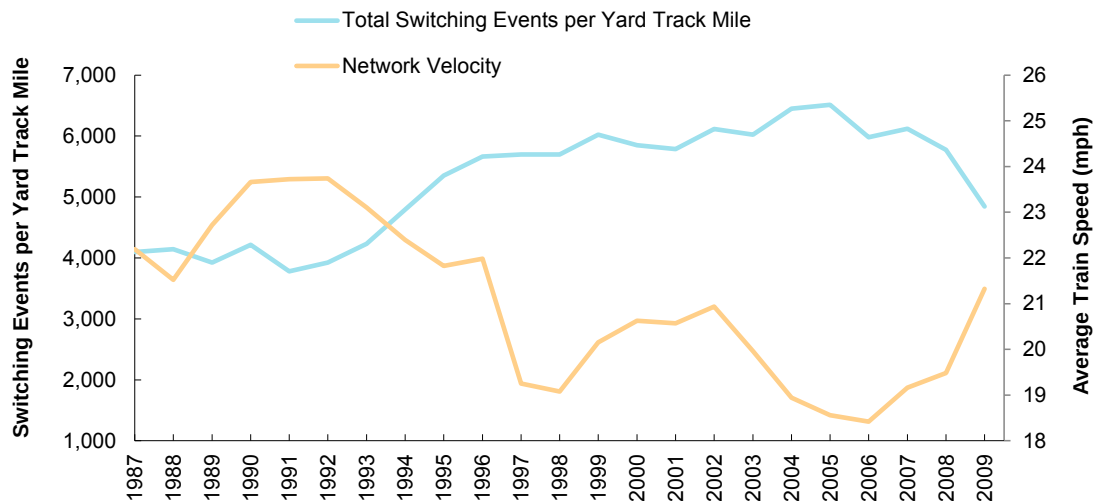
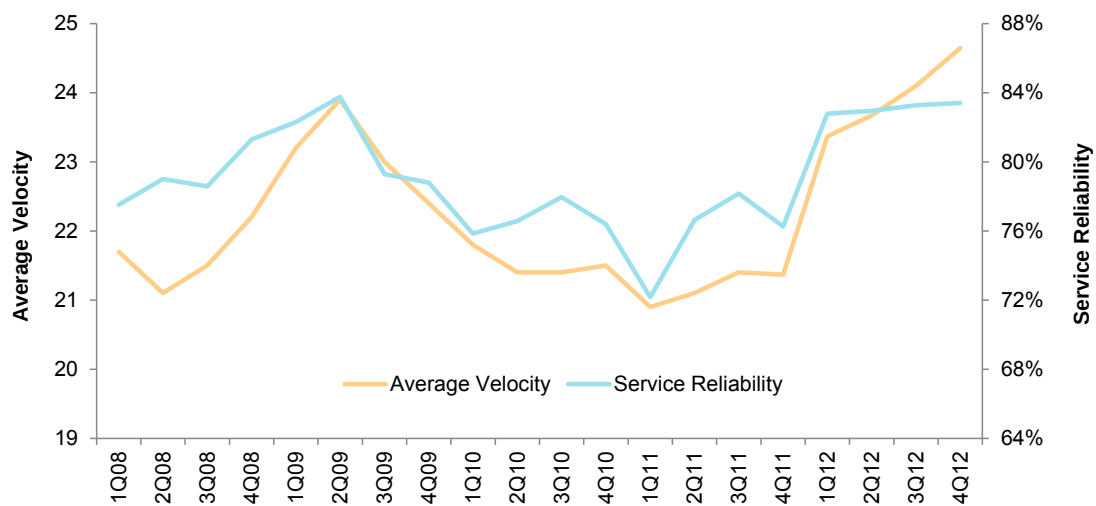


Exhibit VI-17: Correlation between Network Velocity and Service Reliability⁶³

Correlation coefficient: 0.879



⁶¹ So that as car miles per car day decrease, service reliability also decreases.

⁶² R-1 Schedules, AAR. Network velocity = train miles per train hour.

⁶³ NS Monthly Performance Reports, 2008-2012.

The exhibits above clearly show that substituting interchange service for single-line service could have a significant negative effect on service reliability. This effect also can be understood intuitively by analogy to the passenger airline system. Airline passengers understand that a non-stop flight both takes less time and is more reliable than a connecting flight. Changing planes increases the length of the trip by introducing “dwell time” at the connecting airport, as well as introducing the risk of a missed connection, which would further extend dwell time at the connecting airport and sharply reduce the probability of an on-time arrival at destination. When passengers must change both planes *and* airlines at a connecting airport, the amount of dwell time includes the time consumed in changing terminals (similar to the time consumed in moving to a railroad interchange location) and the consequences of a missed connection become more difficult to manage. This is the reason that virtually every airline booking program lists non-stop flights first, flights with one connection second, flights with multiple connections third, and flights involving multiple carriers last.

It is important to consider one difference between airline passengers and railroad customers: While airline passengers who choose to take connecting flights do impose some burden on airlines and airports by consuming space in airline terminals, in general the passengers are responsible for moving from one flight to the next. Thus, while a passenger’s decision to take a connecting flight might impose delays on that passenger, it will not affect other passengers. Railroad cars, however, cannot move from one railroad to another unassisted. Cars being switched consume yard capacity as well as capacity on lines connecting yards, and delay not only their own shipments but also the shipments of other customers. The analogous situation for air travelers would be if all customers making connections were required to wait at their arrival gates and then be transported by the airline as a group to their departure gates. Not only might

this lead to congestion in both arrival and departure gates, but it also might lead to delays caused by lack of capacity to move groups of customers from gate to gate.

Airlines understand that non-stop flights offer their customers faster and more reliable service and also reduce the costs and chance of missed connections involved in “interchanging” passengers at connecting terminals (which is equivalent to railcar switching at intermediate yards). When an airline has sufficient volume to make a non-stop route profitable, it will offer that service. Similarly, when a railroad can generate sufficient volume between two points on its system, it will build traffic blocks that skip switching at intermediate terminals along the way. Airlines also understand that passenger itineraries that involve multiple carriers are difficult to manage, because the airlines involved do not coordinate schedules. Likewise, competing freight railroads do not tend to coordinate schedules.

For airlines, the cost of dealing with passengers who misconnect is higher due to the added complexity of dealing with an outside carrier; the process of dividing and accounting for revenues and exchanging information between reservations systems is costly and time-consuming and introduces the chance for errors. That is why airlines do not price to encourage the use of multi-airline itineraries on routes they can serve directly and why, when they cannot serve an entire route directly, they join alliances. These alliances coordinate schedules, reduce the cost of “interchange” by sharing terminals, and reduce the cost of interline paperwork by setting up virtual flight numbers on connecting flights (“this flight is being operated in cooperation with our partners X and Y”) that simplify accounting. It is important to recall that these alliances are formed voluntarily between carriers, not forced upon them.

D. The NITL Proposal Would Degrade Network Efficiency

Increasingly sophisticated network planning designed to reduce work events has been an important driver of increased railroad network efficiency and reliability. Network planning has allowed the industry to evolve from basically shunting cars from one yard to the next at the dawn of the 1960's, with all the problems caused by repeated car handling, to increasingly running scheduled railroads in which each shipment has a specific trip plan. Oliver Wyman partners have been deeply involved in that evolution. MultiRail, which was developed by Oliver Wyman partners, was among the first software packages for rail operational planning. MultiRail and software tools like it allow railroads to build their operating plans based on infrastructure and demand.

Oliver Wyman recently conducted a survey of the service design groups at five North American Class I railroads.⁶⁴ Service design is the department within the railroad responsible for developing and adjusting the operating plan to define how cars are assigned to blocks, how blocks are assigned to trains, which trains should run, and the schedule for each train. The survey results yielded insights into how operating plans are developed and maintained. It was clear from the responses that stable and predictable traffic demand is an essential component to building an efficient operating plan.

- **Operating plans are built primarily using historical traffic:** Most railroads use historical traffic patterns to develop operating plans; forecasts are only used for long-range resource planning. If railroads are uncertain that assuming historic traffic patterns will remain valid going forward, as would be the case under the NITL proposal, then planning an efficient operation becomes much more difficult.

⁶⁴ "Service Design: Current Practices and Future Directions," Carl Van Dyke, presentation at the Rail Planning Conference, Atlanta, GA, October 2012.

- **Changing the operating plan is a complex process:** Changing an operating plan, even with the advanced software tools available today, is an extremely complex process. Adding and deleting blocks can leave railcars stranded or introduce expensive inefficiencies into the system. Railroads, therefore, allow only a small group of four or five highly experienced staff to make changes to the operating plan. Most of the changes made are exceptions that expire after the current trip, which limits the damage from possible errors. Permanent changes to the plan occur less frequently and are developed through an intensely rigorous and interactive process. If traffic patterns deviate from historic patterns, as would be the case under the NITL proposal, it would increase the workload of the service design staff, since more and more frequent permanent changes would be required. These changes would increase the potential for introducing errors into the blocking tables and train schedules that are the basis for running the railroad.
- **Operating plans are changed infrequently:** Changes to the operating plan require a formal process, generally involving discussions with operations, commercial, and field offices to make sure that the plan can be executed and errors leading to service disruption for shippers are avoided. Therefore, changes to the operating plan based on fragmenting traffic flows and deviations from historic traffic patterns could disrupt operations as changes are made more frequently to the operating plan.

The NITL proposal would reduce the stability, simplicity, and predictability that is at the heart of the railroads' success in increasing the efficiency and reliability of the railroad network.

Today, both the physical plants and the operating plans of the railroads are configured to assemble blocks of traffic that can move long distances without intermediate handling and to

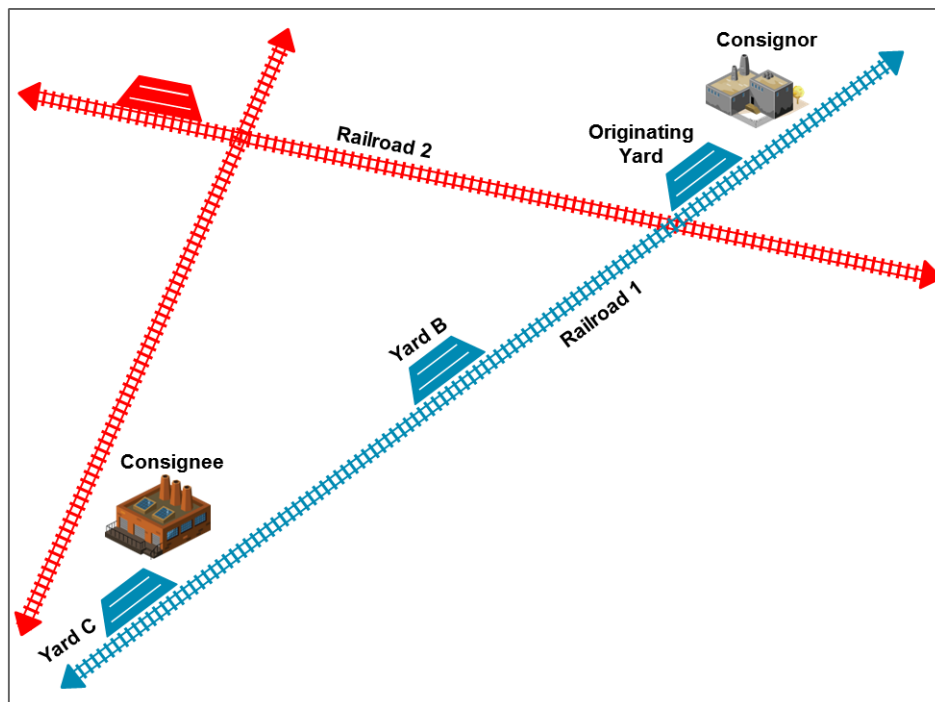
move those blocks in long trains over densely utilized rail lines. The blocking strategy and train schedules work best in moving predictable, repetitive shipments.

The NITL proposal would give shippers the ability to force railroads to break up efficient and reliable single line movements – and the attendant blocking and operating plans – and to substitute less efficient and reliable interline movements. Traffic volumes using specific yards and lines could vary. The result will be suboptimal blocking strategies and train scheduling. Congestion would develop on some lines and yards not built to handle periodically increased volumes, while other lines and yards that periodically would serve lower volumes would be utilized inefficiently.

Bypass blocking: The efficiency of railroad operating plans is built not just on reducing switching at interchange locations and in service yards, but in reducing switching while a car is en route across a railroad's network. One of the most important factors in reducing car handlings is concentrating traffic in high-density yards and lines where a railroad has sufficient volume to build "bypass" blocks that move long distances without requiring intermediate switching. This is equivalent to substituting a non-stop airline flight for a connection, and it has the similar effect of reducing end-to-end travel time and improving reliability.

Exhibit VI-18 illustrates the benefits of the current operating situation, and one way in which the NITL proposal would undermine the railroads' ability to build efficient bypass blocks.

Exhibit VI-18: Bypass Block Example



In this example, the consignor is located on Railroad 1 within 30 straight-line miles of the interchange location with Railroad 2 and is served by a local train operating from the originating yard. A way train from the originating yard spots an empty car at the consignor's facility and once the car is loaded, retrieves it and moves it to the originating yard. At the originating yard, shipments from the consignor are combined with traffic from other shippers located on Railroad 1, some of which are located within 30 miles of the interchange location with Railroad 2. At present, there is sufficient volume of traffic generated by shippers served by the originating yard that is destined for points served by Yard C and beyond to make up a bypass block that runs directly from the originating yard non-stop to Yard C.

One of the most critical shortcomings of the NITL proposal is that it would fragment the traffic volumes needed to assemble bypass blocks. Shippers within 30 miles of the interchange location will have the option of diverting their traffic from the single-line routing via Railroad 1

to an interline routing via Railroad 2. If sufficient traffic is diverted, Railroad 1 will no longer have the volume required to build a bypass block going to Yard C and instead will add the traffic to the block going to Yard B, where it will need to be switched again and combined with other traffic in a block going to Yard C. If this happens, it would delay all shipments destined for Yard C and beyond, and reduce the reliability of Railroad 1 in serving those customers. It also will add traffic and intermediate switching at Yard B, which may not have the capacity to handle the added load. These problems – which are in addition to all of the problems the NITL proposal would cause in the interchange process itself – would degrade service to all customers using Railroad 1.

It is important to understand that gains and losses in traffic are not a zero sum game. It is more likely that railroads will randomly lose traffic on some lines and gain traffic on others than that they will have the good fortune of offsetting gains and losses on a single line. The result could be the loss of critical density on some lines, such as the case illustrated in Exhibit VI-15, and gains on lines and yards that are already at or near capacity.

Scheduled railroads: Much of the success of the railroad industry over the past 30 years has been achieved through streamlining and simplifying the network and network operations. Simplifying the railroad network has made it more stable, which has enabled the Class I railroads to implement “scheduled railroad” planning processes that provides shippers with individual trip plans for every shipment and optimizes the use of scarce capacity in yards and main lines.

The “scheduled railroad” concept utilizes sophisticated software to build and run trains according to a defined schedule (rather than simply waiting for a train to be full before it is moved). Scheduling improves on-time delivery to shippers, thus saving shippers money from reduced safety stock and inventory carrying costs. Scheduling is particularly critical to meet the

“just-in-time” requirements that many shippers have instituted as part of their finely honed supply chains, enabling railroads to better compete with motor carriers.

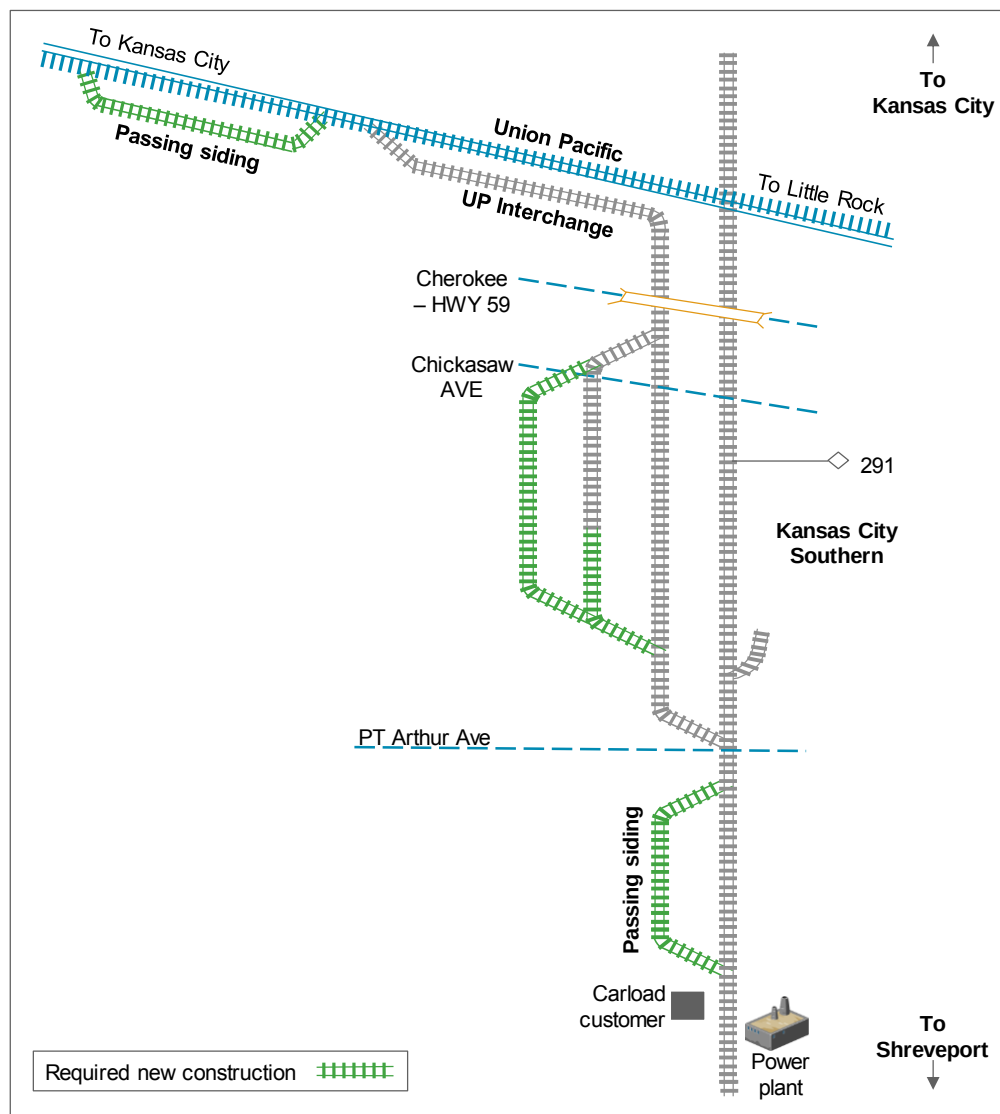
The key to the “scheduled railroad” network planning process is single-line, or highly coordinated end-to-end interchange service, and large repetitive traffic flows of both single cars and groups of cars that can be forecasted and modeled. While railroads can, and do, cope with fluctuations in particular traffic groups from year to year, the magnitude of these fluctuations becomes predictable over time. The NITL proposal would disrupt historic traffic flows and reduce the validity of assumptions based on historic patterns. It would be more difficult for railroads to design and execute reliable trip plans under these circumstances. This, in turn, could make it materially more difficult to operate “scheduled railroads.” The loss of reliability due to a reduced ability to create trip plans based on valid historical assumptions could well compound the loss of reliability that would result from increased car handlings caused by the substitution of interchange service for single-line service.

E. The NITL Proposal Would Cause Inefficient Use of Infrastructure and Human Capital

Line and Yard Capacity

As discussed earlier, the NITL proposal could lead to reduced volume on some lines and yards, which would cause inefficient use of those facilities, and increased traffic on lines and at facilities that do not have the capacity to handle it. Exhibit VI-19 provides an example of a facility that is adequate for its current use, but could require significant investment to handle an increase in traffic.

Exhibit VI-19: Example Investment to Accommodate Increased Traffic



Sallisaw, OK is a station on the Kansas City Southern (KCS) mainline between Kansas City, MO and Shreveport, LA. The KCS main line crosses the Union Pacific's (UP) main line between Kansas City and Little Rock at grade just west of the town. At one time, Sallisaw was an active interchange point between the UP and KCS, and KCS maintained a small yard there. Over the years, local traffic and interchange traffic dwindled and there was no need for the yard. Materials from yard tracks were salvaged and redeployed elsewhere on the KCS system. Today, there is a single interchange track and a 1,700 foot side track that is used primarily to set out bad order cars and to store maintenance of way equipment. Both are remnants of the yard. Instead, KCS and UP have invested significant capital to develop an efficient interchange location at Kansas City, where traffic bound to and from points near to Sallisaw is interchanged.

Two KCS customers are located south of Sallisaw within 30 straight-line miles of the interchange location. One customer receives unit coal trains and the other receives small numbers of individual cars. In both cases, the traffic originates on a western railroad and is interchanged to KCS at Kansas City. The traffic is then delivered directly by KCS over its main line. The operation is efficient and sufficient line and yard facilities are in place in Kansas City to support it without further investment.

However, should the two shippers located within 30 miles decide to force access at Sallisaw under the terms of the NITL proposal, both UP and KCS might be required to spend considerable funds: While the present facilities at Sallisaw would support interchange service, they would be inadequate to support an efficient operation. To reliably interchange traffic:

- The UP and KCS each would need to build an 8,000 to 10,000 foot siding to hold unit trains off the main line until an interchange event could be accomplished. Trains would need to hold because:

- Both the UP and KCS main lines are densely used and cannot be blocked by trains waiting to interchange.
- The interchange track is too short to hold a unit train. The closest siding where UP could stage a unit train for KCS would be 16 miles north of Sallisaw at Upson.
- Neither KCS nor UP have crew based at Sallisaw, and as the unit train will change crews as it moves from one railroad to the other, crews will need to be transported by taxi from the nearest crew base. If a crew is late it would delay the unit train and block one main line or the other.
- The coal receiver might not be ready to receive the train when it arrives.
- The KCS would be required to restore two yard tracks in addition to the interchange track to accommodate the carload shipper. The additional yard tracks would be required because:
 - Carload interchange traffic cannot block the interchange track because it is used for unit train interchanges.
 - One yard track will be required to spot interchange cars.
 - A second yard track will be required to accommodate maintenance of way equipment and occasional bad order cars that are stored at Sallisaw today.

KCS will discuss the operating difficulties that would be caused if forced access was required at Sallisaw and other issues in greater detail in its testimony in this proceeding.

The situation at Sallisaw, where KCS and UP have invested in an efficient interchange location at Kansas City but could be required to invest millions to restore a less efficient interchange point, is not likely to be an isolated example. To avoid creating congestion at interchange points throughout the country that would degrade network efficiency and reliability, railroads could need to construct additional sidings near these points, for the following reasons:

- **Local trains that work the interchange location would need more space.** Local trains that have to make several switching moves need “headroom” to occupy the main line track. If a through train needs to use the main line during the switching operation, the local train would clear the main line to permit the through train to pass.
- **Local trains would need to make two moves instead of one.** Local trains consume two “slots” on the main line: one when arriving, and one when departing.
- **Slow speed unit train operations entering and leaving.** Local and interchange-bound unit trains consume more mainline capacity than through trains at the interchange point, since they enter or exit a slower-speed secondary track or siding.
- **Locomotive changes for unit trains.** In some cases, unit trains may be required to change locomotives at the interchange point, or to attach a pilot locomotive to accommodate incompatibilities with the signaling system. Such locomotive changes are likely to consume main line capacity as the road locomotives maneuver to or from the train, even if the train itself is clear of the mainline.
- **Trains waiting for interchange tracks.** With increased use, interchange tracks may be occupied when local or unit trains arrive. Unless a railroad constructs additional sidings in the vicinity of the interchange location, trains waiting to enter an interchange point would occupy main line track.

In addition to building additional passing sidings in the vicinity of interchange locations, investments could be required in the interchange facilities themselves to handle increased volume. These investments might include:

- More storage tracks for carload traffic: Interchange locations are designed to fit the traffic; additional track likely would be needed at many locations to handle an increased volume of cars.
- More storage tracks for unit train traffic: Additional siding tracks may need to be constructed on both sides of the interchange location to ensure sufficient landing or storage slots for unit trains. These train-length storage tracks enable trains to stay off of the mainline while waiting for access to the interchange point.
- Lengthening of interchange tracks: In many cases, interchange tracks were built in a previous period and are not long enough to accommodate modern unit trains. To avoid blocking the main lines of the connecting railroads, these interchange tracks will need to be lengthened. This will require design, permitting, and construction and may well encounter opposition where the new tracks cross highways or otherwise infringe upon adjacent neighborhoods.
- Layout of storage tracks: With an increase in volume, some interchange locations may become more difficult to serve with the existing track layout. For example, the “leads” to the storage tracks may need improvements in layout to permit efficient switching without blocking main lines.
- Substantial or complete rebuilding: Way and passing tracks at many lightly used interchange points have been downgraded or removed, and some interchange locations that remain “open” have no connecting tracks at all.

The building of such new capacity would be difficult, expensive, and time consuming.

Potential environmental, legal, and land acquisition hurdles would have to be overcome. Capital would need to be reallocated from other critical maintenance or upgrading projects. Additionally, in the urban areas where many busy interchange points are located, such additional rail

infrastructure may be impossible to construct due to neighboring structures, neighborhood opposition, and other pre-existing conditions.

Yards also are expensive to construct and maintain, and in urban areas, are often physically constrained by surrounding development. Since most serving yards are sized to handle a stable flow of traffic and to perform only limited switching, in many cases they might not have sufficient track space to accommodate increased interchange traffic or to carry out the additional switching that could be created by implementation of the NITL proposal efficiently (see Exhibits VI-5 and VI-6). Other yards could be left with excess capacity due to decreased traffic. Given that traffic flows could be less stable than historic traffic flows, it could be difficult for the railroad to justify investments in additional capacity. As demonstrated earlier, this could lead to yard congestion, inefficient blocking, and the possibility that congestion will spill out of the yards onto adjacent main lines, potentially triggering a service disruption for all shippers.

If the railroad industry is unable to deploy its limited capital in an optimal way, it could find it more difficult to provide the 46 percent increase in capacity that the US Department of Transportation has forecast will be required to meet our nation's transportation needs by 2040.⁶⁵ This is especially true if railroads are compelled under the terms of the NITL proposal to invest in facilities, such as Sallisaw, where a more efficient facility already exists or to invest in new line and yard capacity to accommodate changes in traffic flows while other existing facilities that are well utilized today become underutilized.

Human Capital

The current railroad workforce has been developed and deployed to maximize operating efficiency and network reliability. The ability of the railroad industry to optimize the efficient

⁶⁵ Freight Facts and Figures 2012, US DOT.

use of its people and capital assets is based largely on rationalizing the network and simplifying railroad operations. The railroad industry today is designed to transport repetitive shipments in efficient trains over long distances, and to do so with as little handling of each shipment en route as possible.

The NITL proposal would weaken the foundation of the railroad network by introducing uncertainty into the process of designing operations and deploying railroad labor as efficiently as possible. Railroads might be less willing to add employees because they may be less certain that historic traffic flows will remain stable, and the process of reducing employment is disruptive and cumbersome.

When traffic in a particular area temporarily declines, employment levels must be cut back. Under agreements with their employees, to reduce head count in crew bases, rail carriers must abolish board positions. In many cases, workers must be given prior notice of job abolishment, so positions cannot be immediately eliminated and railroads are obligated to pay the crews assigned to these positions, whether there is work for them or not, until the notice period expires. When the notice period ends, the jobs can be abolished.

Once their job is abolished, displaced employees can place themselves on a bump board that allows them to be paid for a limited time while looking for another work assignment. Typically, when moving to another assignment, a crewman will bump another employee to the bump board. The bumping process will continue on until all moves have been accomplished. Those employees who do not have a job to bump to would be furloughed.

Employees who find new positions may need to change reporting points and make other changes in their personal lives. Those who are furloughed can be expected to look for other work

and may not be available should the railroad need to begin hiring again. In this case, the railroads would need to train and qualify new employees.

The net effect of the NITL proposal would be no change in total employment, but a great deal of disruption – both to the railroads and to individual employees – as railroads adjust their work forces to accommodate shifts in traffic volumes and flows.

Forced access also will needlessly increase railroad labor costs. For example, railroads try to schedule road trains to operate for a full shift (or for a given number of miles). However, if a shipper can compel a railroad to interchange traffic to another railroad, then crew costs may rise due to:

- **Terminating a run prior to the destination terminal:** The crew of a unit train that used to operate across crew districts might now be required to terminate its run at an interchange point away from its destination terminal; in which case, the railroad would have to provide a crew van to move the crew from the interchange point to its destination terminal.
- **“Short crews”:** Under the proposed interchange regulations, unit trains might be interchanged at a point within 30 miles of the origin or destination. To move the unit train the short distance to or from the interchange location, the railroad would need to call a road crew that would run only a short distance (known as a short crew). These short crews are potentially expensive, because after the crew has completed its work, it often has available hours that cannot be otherwise utilized.

In all of these cases, extra crews would be required solely to accommodate the shipper’s demand for interchange. No additional traffic would move. Therefore, the crew cost per railcar would increase and the railroad network would operate less efficiently.

Equipment

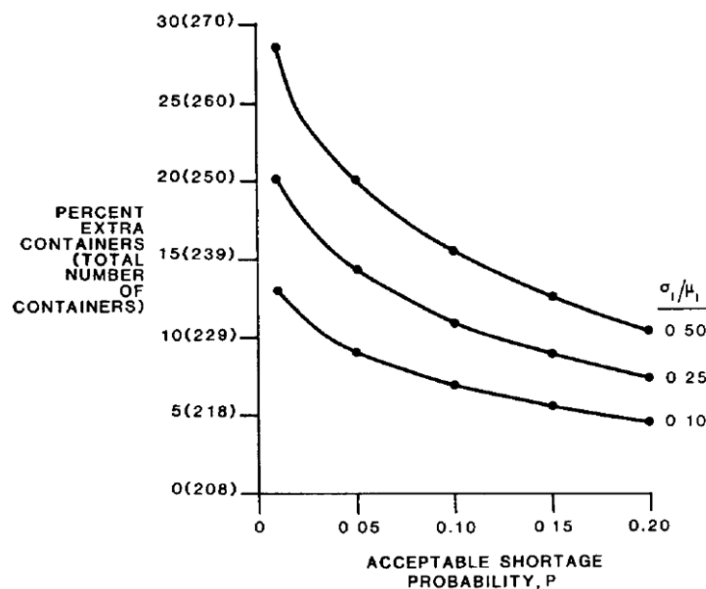
A further consequence of the reduced network efficiency and reliability brought about by the NITL proposal would be the need for additional freight equipment. Railroads and their customers size their equipment fleets according to the stability and reliability of the network, providing a margin (similar to safety stock) to cover unexpected events. The more stable and reliable the network, the smaller the margin can be. The more uncertainty as to traffic volumes and flows that is introduced into the system, the more equipment will be needed to cover the needs of railroads and their customers. For example, in documents related to its operations at Sidney, OH, described in Section VI. A of this statement, Cargill discussed that travel from its facility to the interchange point and back required movements totaling 400 miles. “This 400 mile detour to the west unnecessarily increases the cycle times for Cargill’s private car fleet of railcars. As a consequence, Cargill incurs higher product inventory costs and must maintain a larger fleet of railcars.”⁶⁶

Exhibit VI-20 below, from a seminal paper on fleet sizing, demonstrates the percentage of additional equipment required (y-axis) for different acceptable levels of running out of equipment (x-axis).⁶⁷ The three lines represent different levels of uncertainty in travel times, such as delays caused by main line and yard congestion, with the topmost indicating the most uncertainty. Clearly, as travel time uncertainty rises, as we have seen that it might under the NITL proposal, the fleet size needed to ensure sufficient equipment availability increases as well, leading to the need for greater investment in equipment, which would impact shippers as much as railroads (as shippers own a significant percentage of the railcar fleet).

⁶⁶ Finance Docket 33388 (Sub-No. 91) Status Report and Request to Establish a Deadline of Cargill, Incorporated, April 28, 2003.

⁶⁷ Although the paper focused on container (intermodal) fleets, this equation will hold true for any railcar fleet.

Exhibit VI-20: Fleet Size Trade-Off for Different Levels of Travel Time Uncertainty⁶⁸



Thus, if the NITL proposal is adopted, both shippers with private fleets and railroads could be required to maintain larger car fleets to accommodate the inefficiency of interline routings and the degradation of reliability and network velocity. The addition of cars to the fleet would require construction of additional yard and storage tracks. As demonstrated in Exhibits VI-5 and VI-6, railroads would need to provide additional track space at serving yards to accommodate changes in traffic patterns, including periodic surges caused by “pop up” switching traffic. Shippers would be required to construct additional storage tracks at their facilities. In some cases, there may not be sufficient land to add capacity at serving yards and shipper facilities. Moreover, as demonstrated in Exhibit VI-19, railroads also would be required to construct additional capacity at classification yards to accommodate additional intermediate switching due to the reduction in bypass blocks.

⁶⁸ Turnquist, Mark A., William C. Jordan, “Fleet Sizing under Production Cycles and Uncertain Travel Times,” *Transportation Science*, Vol. 20, No. 4, November 1986, p. 235.

The NITL proposal also would increase the need for railroads to provide locomotives.

Locomotives are one of the most expensive assets owned by railroads and therefore have been the subject of ongoing productivity improvement efforts. This includes reductions in “light” (repositioning) movements, increases in the tons moved per locomotive, and increases in the time spent doing productive work. All of these improvements are directly aimed at operating a safe and reliable system that moves as much freight as possible with as few locomotive assets as possible. By streamlining operations through network simplification, running longer, heavier trains, and improving rail infrastructure and capacity, railroads have been able to increase the time locomotives spend doing productive work.

Interchanging traffic with a competitor requires a change in locomotives or the negotiation of a run-through agreement. Every interchange to another rail carrier increases a unit train’s transit time, thus increasing locomotive hours, due to the delays associated with the handoff between the two railroads.

The locomotive consist on a run-through unit train would typically be subject to one of three scenarios at the interchange location:

- Consist travels through the interchange point, with no locomotive change from origin to destination
- Consist is completely “changed out” at or near the interchange location
- New lead “pilot” locomotive is added to the locomotive consist at or near the interchange location

Similar to unit trains, locomotive demand for local train services at interchange points would also increase if shippers are permitted to insert interchanges into single-line routes. The increase in locomotive demand would be primarily driven by volume and time-related factors.

F. The NITL Proposal Would Increase the Exposure of Employees and the Public to Hazardous Material Shipments

If shippers exercise the proposed right to compel railroads to interchange traffic, then some hazardous materials shipments now moving in single-line service would have to move through at least one interchange point. This would create additional handlings and in-transit dwell, introducing greater risk and exposure for railroad employees and the general population. Due to the fact that many railroad interchange points and classification facilities lie within or near urban areas, the additional time that some interchanged hazardous materials shipments would incur while traveling between origin and destination would occur near population centers. Thus, the additional time that hazardous materials spend near densely populated areas means increased exposure for a large number of urban residents.

For example, CSX currently transports 50 to 90 car shipments of ethanol that it receives from an end-to-end western connection at Chicago to a facility in Baltimore. Ethanol is classified as a hazardous material. CSX's single-line route from Chicago to the facility avoids the center of Baltimore and the Howard Street Tunnel. However, the facility in Baltimore is located within 30 miles of a CSX interchange with Norfolk Southern at Bayview. If mandatory switching was ordered, the shipper could route the traffic from Chicago to Baltimore via Norfolk Southern, with final delivery from Bayview to the facility to be performed by CSX.

The CSX route from Bayview to the facility passes through the Howard Street Tunnel and the heart of downtown Baltimore. It passes both M&T Bank Stadium, which is used by the Baltimore Ravens, and Camden Yards, which is used by the Baltimore Orioles. It also passes near a Maryland DOT commuter rail line and terminal, a light rail route to BWI Airport and the tourist center at the Inner Harbor. Thus, the NITL proposal could create a situation in which a shipper could force CSX to transport large shipments of a hazardous material (which under its

current single-line route bypasses the dense center of Baltimore) directly through the center of the city in close proximity to facilities that attract large numbers of people daily.

Additional complications arise in handling the subset of hazardous materials classified as rail security-sensitive materials (RSSM). These materials require additional handling precautions, referred to as positive handoffs. In executing positive handoffs, a rail carrier's employees are required to hand over RSSM shipments personally to a representative from another carrier or a consignee. In other words, the rail carrier's employee must remain with the shipment until relieved by an agent for the receiving carrier or customer. In cases where the receiving agent is late, the rail carrier's employee, and the crew he or she is part of, are required to wait until relieved of responsibility. In the case of a positive handoff requirement at an interchange location, should the second carrier not be able to respond in a timely fashion, the original crew would have no choice but to return to its home terminal with the RSSM shipment. Consequently, the shipment would be subjected to yet more handlings and more delay, with all of the attendant risk of accident for as long as the shipment remains in transit.

While the risk of an accident is small, the consequences of any incident involving such hazardous materials can be grave. As an example, in 2005 a car carrying chlorine, an RSSM shipment, ruptured during the course of an accident in a small town in South Carolina that is not densely populated, releasing 60 tons of chlorine gas. Nine persons died as a result of the accident and everyone within one mile was evacuated for one week. A similar accident during handling at an interchange point in a densely populated urban area would result in serious consequences on a far wider scale.

G. The NITL Proposal Would Impact Commuter and Passenger Rail Service

The railroad network in the United States is shared among freight railroads and passenger railroads. Passenger trains often have priority and so the effects of increased congestion would be felt first by freight users. However, the frequency of passenger operation means that shared lines often are already congested, and thus any increase in congestion caused by forced access could easily reach beyond freight users to impact service for users of commuter rail and intercity passenger rail.

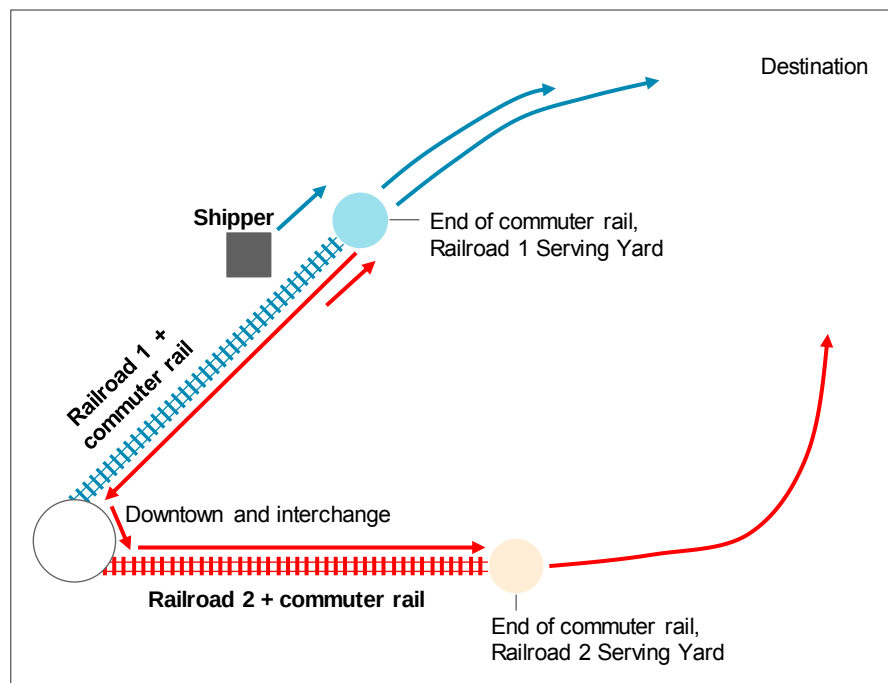
Many of the urban areas most likely to be affected by the NITL proposal have commuter rail operations (see Exhibit VII-3 below). More than a dozen commuter railroads operate in eight of the regions likely to be highly impacted, and Amtrak operates intercity passenger service across all of the regions.⁶⁹ Changing well established traffic patterns where freight and passenger operators have made capacity adjustments to minimize conflict might create the risk of disruption to passenger operations as well as freight – particularly where existing capacity is already limited or congested.

Exhibit VI-21 describes a hypothetical case that is typical of commuter rail districts today. Freight rail users generally have shifted away from the center of cities to the outer ends of commuter rail districts and the volume of rail freight near downtown has declined significantly since the middle of the 20th century. Both because their customers have moved and to free up property occupied by yards for higher-value uses, the serving yards for freight traffic have also in many cases moved to the ends of the commuter district or beyond that district.

⁶⁹ Regions with commuter operations: Portland, OR, (West Side Express), San Francisco, CA (Caltrain, Altamont Commuter Express), Los Angeles, CA (SCRRA), Minneapolis, MN (North Star), Dallas / Fort Worth, TX (TRE, Denton), Chicago (Metra, NICTD), Philadelphia / Baltimore / Washington (SEPTA, MARC, VRE), NY/NJ (NJ, METRA).

In our example, a shipment from a customer at a closed station within the commuter district where freight service is provided by Railroad 1 will move from that customer to the serving yard and then on to trackage outside of the commuter district to its destination. However, the NITL proposal could force Railroad 1 to interchange the car with Railroad 2. In that case, the car would move from the shipper to Railroad 1's serving yard, then over Railroad 1's track in the commuter district to an interchange with Railroad 2 at a yard close to downtown, and then over Railroad 2's track in the commuter district to Railroad 2's serving yard. The downtown interchange location may be physically constrained, and the movement could well require the operation of local trains within the congested commuter district that are not required today. Alternatives involving interchange points outside of the commuter district likely would involve more circuitous routings and intermediate handlings, which would further delay the shipment.

Exhibit VI-21: Example Impact on Commuter Rail District of the NITL Proposal



The importance of minimizing conflicts between freight and commuter railroad operations is evident in the investments recently made to minimize such conflicts. For example, when the

Commonwealth of Massachusetts wanted to expand commuter railroad service between Boston and Worcester, the parties reached an agreement with CSX that not only included purchase of rail lines by the Commonwealth, but also relocated freight service yards in the commuter district to an area where they would create less interference with passenger operations. The agreement included raising clearances west of Worcester so that the new container terminal at Worcester would operate at lower cost. This agreement clearly shows that network linkages between commuter operations and freight operations go well beyond commuter territory.

H. The NITL Proposal Could Increase the Risk of Accidents and Injuries

The improvement in railroad safety since passage of the Staggers Act in 1980 has been one of the great success stories of the railroad industry. The industry has made significant strides in both employee and public safety: Between 1980 and 2011, the train accident rate fell by 76 percent and the rail employee injury rate fell by 84 percent⁷⁰ Further, from 1990 through 2009, employee fatalities declined by 60 percent.⁷¹

In terms of employee injuries and illnesses, 2011 was the safest year ever for the US railroad industry. The rate of injuries and illnesses declined by 10 percent from 2.0 to 1.8 per 100 full-time equivalent railroad employees. The rate of train accidents per million train miles was the second lowest since 1980.⁷²

As I have demonstrated, the NITL proposal would significantly increase the number of switching operations required to move the same amount of freight. Switching is the most dangerous activity for railroad employees. A report by a joint labor-management railroad industry group formed by the US Federal Government to analyze railroad employee fatalities

⁷⁰ Railroad Fact Book, 2012 edition, op. cit., pp. 64-65.

⁷¹“Switching Operations Fatality Analysis,” International Railway Safety Conference 2010, Michael J. Martino, AAR, p. 1.

⁷² Railroad Fact Book, 2012 edition, op. cit., pp. 64-65.

during switching operations concluded in 2010 that “The majority of fatal injuries incurred by on-duty railroad personnel occur during switching operations.”⁷³

Moreover, as Exhibit VI-22 demonstrates, train accidents occur 17 times more often in yards than on the road.

Exhibit VI-22: Accidents per Million Train Miles vs. Accidents per Million Yard Switching Miles⁷⁴

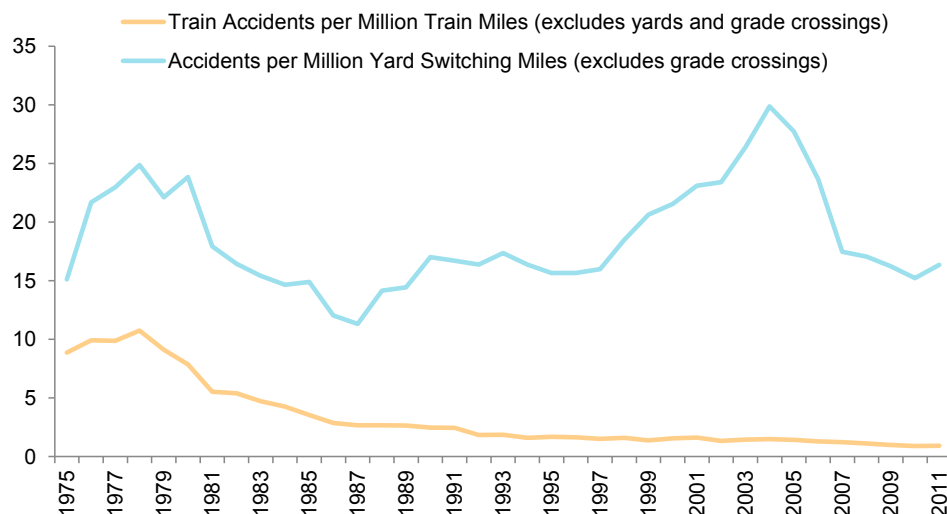


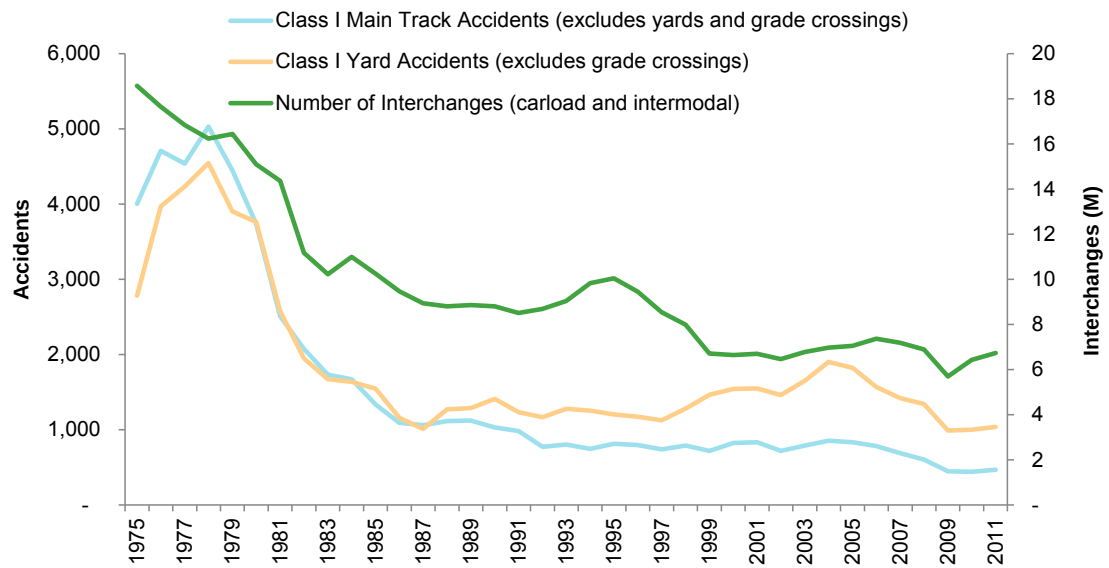
Exhibit VI-23 shows that the number of cars interchanged is closely correlated to the number of injuries to Class I employees in yards.⁷⁵ If the number of cars interchanged increases, then the number of injuries to railroad employees working in yards also would also likely increase. The exhibit also demonstrates that the number of employee injuries occurring in yards, where the majority of interchange events take place, is twice the number of injuries to employees occurring on the line of road.

⁷³ “Switching Operations Fatality Analysis,” op. cit.

⁷⁴ FRA accident data, compiled by the AAR.

⁷⁵ Pearson’s Correlation of 0.855.

Exhibit VI-23: Track and Yard Accidents vs. Number of Interchange Events, 1975-2011⁷⁶



⁷⁶ FRA accident data, prepared by the AAR.

VII. The Potential for Wide-Ranging Disruption Under the NITL Proposal

The NITL proposal would create an environment with the potential for wide-ranging impacts on rail network fluidity and adverse effects on rail efficiency, by requiring the railroads to provide additional resources to move the same amount of freight. The NITL proposal would also create the potential for widespread breakdown of rail service to all shippers. In this section of my report, I begin with a description of the scope and locations where forced access would occur. I then discuss various rail service and performance measures that would be affected by the NITL proposal, and show how the rail industry will be set back at least 15 years with respect to those measures. Finally, I explain how service for rail shippers generally, and not just those for those who choose to use forced access, could be materially degraded.

A. The Scope and Locations of NITL Proposal Impacts

The NITL proposal would potentially impact 3,353 rail network locations (Standard Point Location Codes or SPLCs) and over 15 million loaded and empty railcar trips each year, representing 26 percent of total US rail traffic.⁷⁷ Nearly every state contains locations where additional interchange activity would occur, as shown in Exhibit VII-1. Exhibit VII-2 further illustrates that the impacts would be significant in virtually every region of the country: the top 12 states affected, sorted by the potential number of loaded cars interchanged, span from Minnesota, to Texas, from California to Virginia. Every region of the country would be at risk of losing rail network fluidity, reduced rail efficiency, and disrupted supply chain patterns.

⁷⁷ The percentage is based on 7.53 million loaded originations at forced access locations, divided by 29.31 million total loaded cars originated (from 2010 Freight Commodity Statistics, AAR).

Exhibit VII-1: Distribution of Rail Network Locations (SPLCs) Potentially Impacted by the NITL Proposal⁷⁸

Map Redacted From Public Version

⁷⁸ FTI analysis of the 2010 STB Carload Waybill Sample to establish locations of potential forced access under the NITL proposal; Oliver Wyman mapping of locations.

Exhibit VII-2: Number of Forced Access Locations and Potentially Impacted Loaded Cars by State⁷⁹

Loaded cars originated and terminated in year 2010 at potentially impacted freight stations

State	Number of Forced Access Locations	Cars Originated at Forced Access Locations	Cars Terminated at Forced Access Locations	Potential Additional Interchange Events
MN	133	536,877	256,525	793,402
TX	278	268,000	503,716	771,716
IL	256	345,948	375,627	721,575
WV	69	506,230	54,794	561,024
AL	102	197,669	227,870	425,539
OH	155	200,921	205,835	406,756
MO	81	31,812	363,513	395,325
IN	98	175,606	159,734	335,340
LA	90	137,464	183,925	321,389
PA	179	70,915	231,864	302,779
CA	201	90,965	204,647	295,612
VA	102	145,932	109,845	255,777
MI	80	150,409	102,917	253,326
GA	122	85,435	167,517	252,952
IA	92	105,414	141,434	246,848
NC	155	35,438	210,778	246,216
SC	93	58,284	159,412	217,696
KY	45	91,947	95,517	187,464
OK	46	33,393	134,604	167,997
AR	53	75,102	77,618	152,720
TN	55	64,093	88,185	152,278
ND	82	103,183	32,756	135,939
WI	60	35,579	80,443	116,022
NE	71	77,949	31,354	109,303
NY	55	36,638	63,971	100,609
MS	57	35,916	62,388	98,304
OR	81	32,116	46,389	78,505
CO	59	11,143	66,987	78,130

⁷⁹ Loaded cars from the 2010 STB Carload Waybill Sample. Locations from analysis conducted by FTI. The number of cars in practice would double these totals, since empty cars will need to be repositioned.

State	Number of Forced Access Locations	Cars Originated at Forced Access Locations	Cars Terminated at Forced Access Locations	Potential Additional Interchange Events
KS	65	36,862	40,766	77,628
MD	51	7,280	57,197	64,477
FL	21	12,084	51,045	63,129
WA	64	29,130	28,939	58,069
SD	24	46,409	3,339	49,748
AZ	21	3,980	39,474	43,454
UT	38	22,433	9,764	32,197
NV	19	1,720	21,705	23,425
NJ	58	3,880	19,239	23,119
DE	11	5,156	9,180	14,336
All Other	27	10,016	4,988	15,004
Totals	3,349	3,919,328	4,725,801	8,645,129

Though widespread, the distribution of affected traffic would not be uniform, but heavily concentrated in the upper and lower Midwest, the Gulf Coast, and the Southeast/East, particularly around areas with high volumes of rail traffic and high line density.

- **Midwest:** Illinois would have over 250 forced access points, potentially adding interchanges for 350,000 originating cars and 375,000 terminating cars annually. The region that includes Illinois, Iowa, Ohio, Minnesota, Missouri, and Indiana would have over 800 forced access points under the NITL proposal, for a combined total of nearly 2.9 million potential additional loaded car interchanges, and another 2.9 million potential additional empty car interchanges.
- **Gulf Coast:** This region is already coping with dramatic increases since 2010 of rail shipments of crude oil, as well as frac sand, pipe, and other drilling materials for the growing natural gas drilling industry. Texas would have approximately 275 newly opened or expanded access points, which could potentially add interchanges for at least 265,000 originating cars and more than 500,000 terminating cars (as data is 2010, the total for today's

cars would likely be higher). Louisiana would have 90 impacted access points, adding nearly 138,000 originating car interchanges and 184,000 terminating car interchanges.

- **Southeast/East:** Alabama, Georgia, North Carolina, Pennsylvania, South Carolina, West Virginia, and Virginia would have more than 800 newly opened or expanded access points, which could result in approximately 2.2 million potential additional loaded car interchanges, and a corresponding 2.2 million potential additional empty car interchanges.

Compounding the potential for service disruption and additional network complexity, these concentrations of impacted switching locations are found on some of the highest-density rail lines in the country. As an analogy, consider an interstate highway that is near capacity, but flowing smoothly. Around on- and off-ramps, the flow tends to slow as cars weave between lanes to exit or merge. Now imagine a number of dormant ramps in the same compressed territory suddenly open to traffic. Such a change, by introducing more options for vehicle maneuvering, would slow down traffic even further.

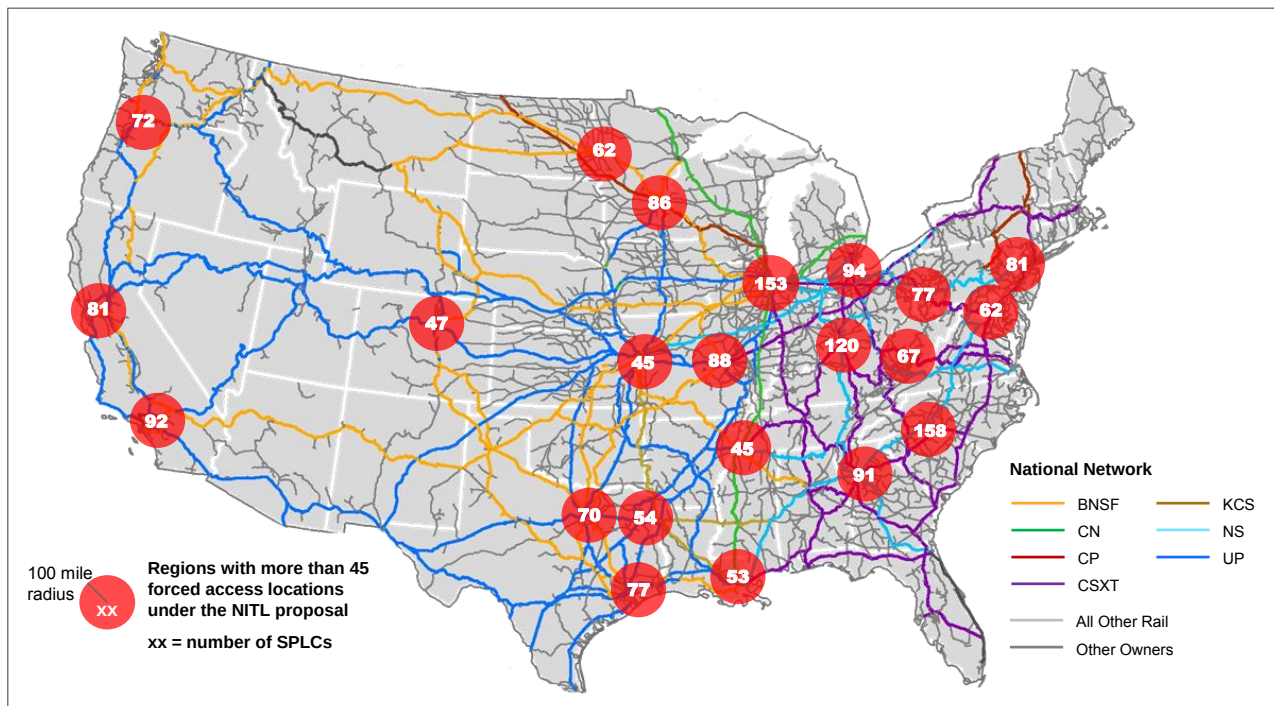
High-density segments of a highway network can still operate under normal conditions, but as the ratio of traffic volume to available network capacity increases, the network becomes more vulnerable to, and has less ability to recover from, disruptions. Even small perturbations can cause gridlock. Similarly, for the rail network, adding more interchanges to a system that already involves frequent trains of different types moving between multiple points (customers, serving and classification yards, interchanges, main lines) will have ripple-through impacts on efficiency and traffic flows. When those potential changes are concentrated in areas originating and terminating large volumes of traffic, the potential for cascading effects from relatively small shifts can be greatly magnified.

As shown in Exhibit VII-3, I identified 22 regions in the United States that include 45 or more cities and towns with potential forced access locations.⁸⁰ These 22 regions account for half of potentially directly impacted traffic (approximately 7.5 million of 15 million loaded and empty cars annually).⁸¹ All of the major east-west rail gateways are included in the 22 regions, as are most major US cities. Rail lines in these regions also support critical energy producing regions (e.g., oil shale areas in North Dakota, Gulf Coast oil refineries). Maintaining fluidity in these 22 regions and across the remaining rail network is not only important in the case of handlings of cars directly impacted by the NITL proposal, but in the handling of all cars moving throughout the rail system. As directly impacted cars wait in yards, or on sidings, or on storage tracks for handling between railroads, they consume system capacity and indirectly impact all remaining cars as they move through the network. Finally, it is important to understand that by exposing multiple points on the rail network to potential disruption at the same time, the chances that local congestion will reach the tipping point and spread to other terminals and regions increases. Furthermore, such congestion can and will affect connecting carriers and their shippers.

⁸⁰ The “locations” are based on 6-digit SPLCs, which identify cities and towns. Within each city or town, there can be one or multiple freight stations (FSACs) where rail traffic is originated and/or terminated. See the statement by Michael Baranowski of FTI in this proceeding for more details.

⁸¹ FTI data, Oliver Wyman analysis.

Exhibit VII-3: Regions Most Susceptible to Service Breakdowns under the NITL Proposal⁸²



B. The NITL Proposal Would Reverse Progress in Railroad Efficiency and Reliability

The 7.5 million loaded, and the corresponding 7.5 million empty, annual railcar trips that potentially would be directly impacted by the NITL proposal amounts to over 41,000 car originations every day. It is likely that not all shippers would choose to invoke forced access if it were available, but even if only 25 percent of cars were diverted to another railroad, this would impact 3.8 million annual car trips, or more than 10,000 originating cars every day of the year.⁸³

A conservative 25 percent diversion rate (3.8 million loaded and empty annual car trips), is used as an illustrative example throughout this section to demonstrate the potential impacts of forced access on the railroad industry, in particular that the NITL proposal will undo many of the efficiency gains the rail industry has achieved over the past several decades.

⁸² “National Rail Freight Infrastructure Capacity and Investment Study,” Cambridge Systematics, September 2007, Figure 4.1 for base railroad map; FTI analysis of 2010 STB Carload Waybill Sample to establish locations of potential forced access under the NITL proposal; Oliver Wyman mapping of locations.

⁸³ Oliver Wyman analysis.

As described in Exhibit III-1 above, eliminating interline movements and reducing average interchanges per car trip have been important drivers of railroad efficiency and reliability. In 1972 (pre-Staggers Act), 52.1 percent of loaded rail trips moved in interline service. Through streamlining of operations, this percentage had been reduced to 22.6 percent by 2010. Similarly, in 1972, a loaded car moving from an origin to a destination was interchanged to another railroad 0.86 times on average. By 2010, this had dropped to 0.28 times.⁸⁴

Under the NITL proposal, given a 25 percent diversion scenario, an additional 1.6 million loaded cars that had moved in local service would now be interlined (0.3 million of the total 1.9 million diverted loaded cars were already moving in interline service). This would increase the amount of interline traffic to 30.6 percent, nearly equal to the level of interline traffic in 1990.⁸⁵ The average number of interchange events per car would rise to 0.39 per trip, equal to the level some 15 years ago (Exhibit VII-4).⁸⁶ The NITL proposal would essentially reverse nearly two decades of investment and network operating and reliability improvement, by returning the rail industry to levels of interchange last seen in the 1990's. This is shown graphically in Exhibit VII-5, where "Under Forced Access" is defined as the estimated impact on the railroads of a 25 percent diversion of cars to alternative railroads, as would occur under the NITL proposal.

⁸⁴ Values are from the AAR analysis (EP711-Interchanges-1972-2011.xlsx) for non-intermodal cars. Source: Freight Commodity Statistics.

⁸⁵ Oliver Wyman analysis.

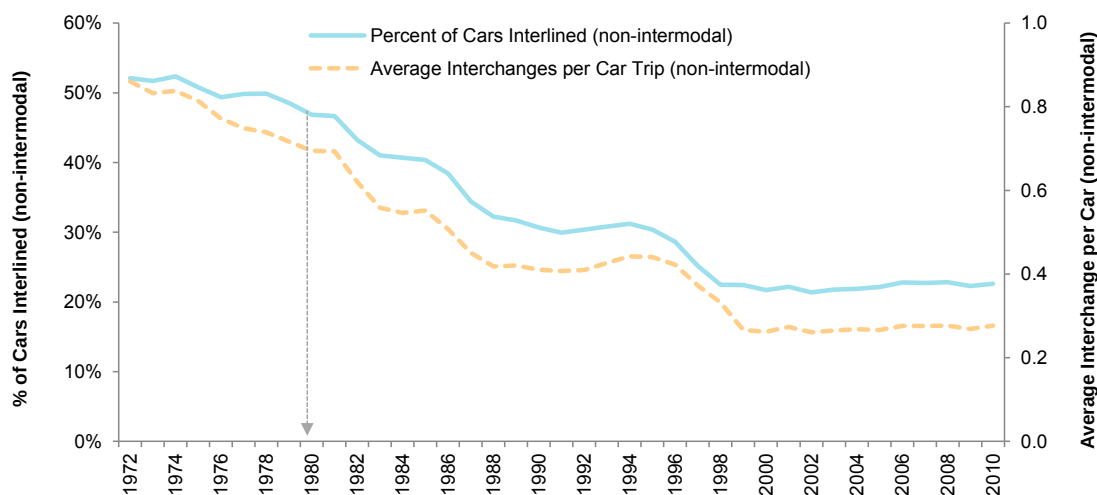
⁸⁶ Oliver Wyman analysis.

Exhibit VII-4: Historical Interchange Levels and Impact of Forced Access⁸⁷

Year	Cars Originated (millions)	Number of Interchange Events (millions)	Average Interchanges per Car
1996	18.31	<u>7.74</u>	0.42
1997	18.10	6.74	<u>0.37</u>
1998	18.53	6.15	0.33
2010	19.40	5.37	0.28
2010 under forced access	19.40	7.53	0.39

Exhibit VII-5: Percent of Carload Traffic Interlined and Avg. Number of Interchanges per Car⁸⁸

“Under Forced Access” is an estimate of the value in year 2010 if the NITL proposal had been implemented



Exhibits VII-4 and VII-5 both illustrate the continual efforts made by the rail industry to simplify operations by reducing both interline traffic and the number of interchange events. These two exhibits, and subsequent exhibits in this section, display two alternative sets of values for the year 2010: the first set are actual historical values; the second set are estimated values for 2010 if the NITL proposal had been in effect and the railroads had experienced a 25 percent diversion of cars due to forced access.

⁸⁷ “2010 under forced access” assumes 25 percent traffic diversion rate for impacted areas. Oliver Wyman analysis. Numbers are rounded.

⁸⁸ Oliver Wyman analysis.

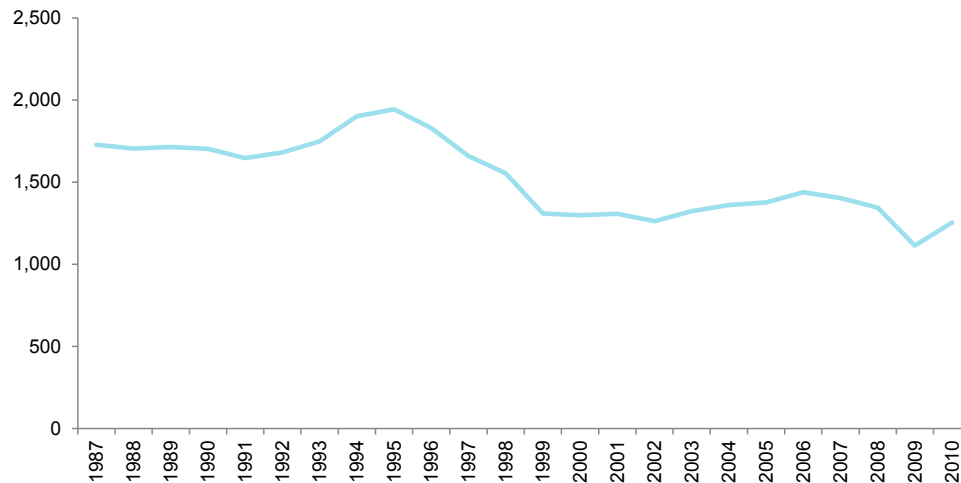
Inserting new interchanges through forced access will slow transit time in at least two ways. First, additional hand-offs will increase planned transit time by one day per interchange event, and as shown in Exhibit V-8, an interline move can have two to four additional interchange events per loaded car trip. The second way that transit time will slow is that service failures, and therefore service delays, will also increase. Exhibit VII-6 summarizes the change in the estimated number of service failures due strictly to an increase in the number of interchanges. In 2010, when there was an average of 0.277 interchanges per railcar trip, there was a 0.973 probability of making the connection, versus 0.956 in 1987. This is a significant reliability improvement, especially when considering there were over 29 million carloads originated in 2010.⁸⁹ Under the NITL proposal, the likelihood of a service failure due to a missed interchange increases from 2.15 percent to 2.84 percent, a 33 percent increase. This translates into an additional 416,000 loaded and empty cars missing their connections.⁹⁰ Besides adding one or more days to the transit time for the car, missed connections mean the car will sit in a yard longer, consuming yard capacity and increasing average terminal dwell, which in turn will affect other cars in the yard. An increase in terminal dwell is considered throughout the industry to be a leading indicator of congestion.

⁸⁹ Railroad Fact Book, 2012 edition, op. cit., p. 25.

⁹⁰ Oliver Wyman analysis.

Exhibit VII-6: Service Failures Due to the Probability of a Car Missing an Interchange, 1987-2010⁹¹

000, loaded and empty cars



Additional handlings and service failures not only have a negative impact on the railroads, but also negatively impact shippers, both those who choose to invoke forced access and those who do not. Shipper impacts include additional inventory carrying costs, the need for additional levels of safety stock, and the need to increase fleet size if they privately own railcars:

- As noted above, an interline movement might add two to four additional interchanges, each taking an additional day of transit time. Those additional days represent days that products are not on store shelves or input materials are not available for use in a plant, increasing the inventory carrying costs of those goods.
- An increase in service failures adds additional uncertainty to the supply chain, which means that a shipper must store additional safety stock to maintain the same probability of not running out of supply before the next shipment arrives.

⁹¹ Freight Commodity Statistics, 1987-2010, AAR, Oliver Wyman analysis. Note: 2010 under NITL proposal assumes 25 percent traffic diversion rate for impacted areas.

- Finally, for private railcar owners, the additional delay from both extra interchanges and increased service failures will reduce the number of loaded trips a car can make in a year, thus requiring an increase in fleet size.

C. The NITL Proposal Would Reverse Progress in Railroad Productivity

Besides reducing the quality of service and increasing the number of service failures, forced access will reverse railroad productivity gains. In this section, I explore the impacts of changes in productivity using two methods:

1. Examine the overall productivity of the rail industry, and the impact of a change in total productivity due to the NITL proposal
2. Examine selected individual components of productivity, and the impacts of reductions in each productivity measure due to the NITL proposal

Both methods assume a 25 percent shift of traffic to a new carrier under forced access, which will set the rail industry back to 1996 to 1998 levels with respect to the number of interchanges, as was illustrated in Exhibit VII-4.

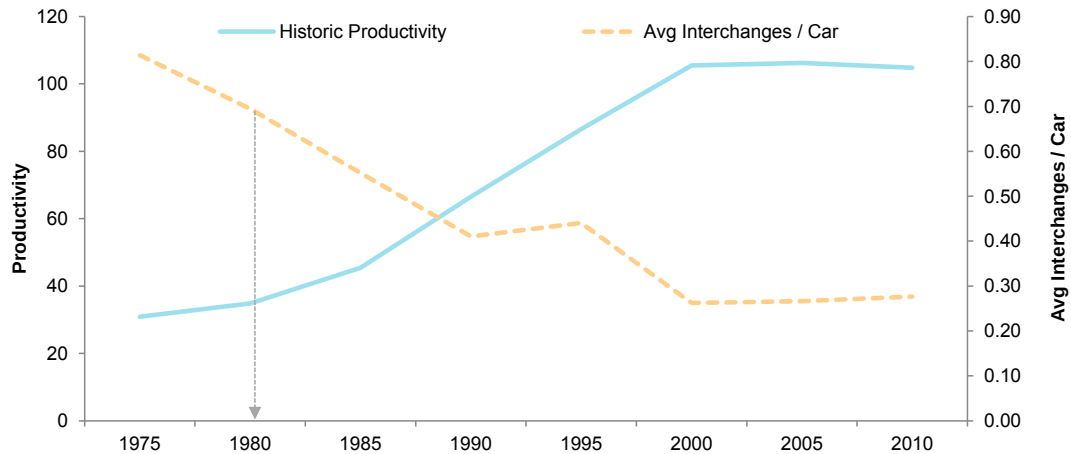
Exhibit VII-7 shows the impacts on overall railroad productivity if railroads had to operate under similar interchange percentages as in 1996 through 1998. It is important to note that the introduction of 4.3 million additional loaded and empty car interchanges into the system (based on a 25 percent diversion scenario) would not just impact the cars and shippers involved, but the productivity of the entire network, as has been discussed throughout this statement. In Exhibit VII-7, productivity is defined as revenue ton-miles divided by operating expense. For 2010, the railroads had a productivity level of 105. Rolling this back to 1996-1998 levels, when operating

expenses had to cover additional interchanges and interline traffic, yields an estimated productivity value of 97 for year 2010 under forced access, a decline of 7.1 percent.⁹²

Exhibit VII-7: Average Interchanges per Railcar vs. Productivity, 1975-2010⁹³

Productivity = revenue ton-miles/\$ of inflation-adjusted operating expense

Correlation coefficient between productivity and average number of interchanges = -0.95



The second method for examining the impacts of declines in productivity is to break productivity down into several different key components. For the purposes of my analysis, key productivity measures were selected based on the following:

- Coverage of areas where the railroads have made productivity improvements⁹⁴
- The productivity measure was impacted by the average number of interchanges per car, and would therefore be impacted by forced access.
- The productivity measure has a direct impact on the resources required by the railroads to run their operations.

⁹² Revenue ton-miles and operating expenses are from the Rail Fact Book for each year, AAR, pp. 29 and 14, respectively. The operating expenses were adjusted based on the CPI index obtained from the U.S. Bureau of Labor Statistics at <ftp://ftp.bls.gov/pub/special.requests/cpi/cpiiai.txt>.

⁹³ Rail Fact Book, 2012 edition, op. cit., pp. 14 and 27 (opex and RTM); AAR email (avg. interchanges); CPI, ibid.; Oliver Wyman analysis.

⁹⁴ 1987 is used as a starting year throughout this section, driven by data availability. Electronic versions of R-1 operating data were available from the AAR starting in 1987.

Each of the productivity measures was compared to the total number of cars interchanged over a 24 year period, and a correlation coefficient was calculated. The correlation coefficient provides an indication of the influence that the number of interchanges has on the productivity measure. For example, the number of cars originated per mile of yard track has a -0.77 correlation with the number of cars interchanged. Although there are several factors that influence how many cars can be originated per mile of yard track, the number of interchanges would appear to have a strong negative impact. This intuitively makes sense; more interchanges require more yard work, which in turn requires more use of yard track.

The productivity measures are then rolled back to an average value for 1996 through 1998, which is the time frame when the railroads saw a similar number of interchanges per car as would occur under the NITL proposal, as illustrated in Exhibit VII-4.

The first productivity measure I analyzed was the total number of carloads originated per mile of yard switch track. As railroads have simplified operations by closing yards and reducing handlings over time, the amount of yard track necessary to process cars has declined, and subsequently the number of carloads originated per mile of yard track has steadily increased (except during the recession of 2009), from 557 carloads in 1987 to 1,304 in 2010.⁹⁵ The two lines shown in Exhibit VII-8 below, the number of loaded interchanges and cars originated per mile of yard track, are negatively correlated (-0.77), indicating that as the number of interchanges increases per car originated, more yard track will be necessary, which would reverse some of the yard productivity gains made by the railroads.

⁹⁵ The reduction in yard track also makes it more likely that congestion and missed connections will increase if traffic is diverted through forced access.

Exhibit VII-8: Originated Carloads per Mile of Yard Track versus Interchanges per Railcar, 1987-2010⁹⁶

Carloads = Class I, loaded, non-intermodal

Correlation coefficient for carloads originated / mile yard switching track and loaded interchanges = -0.77

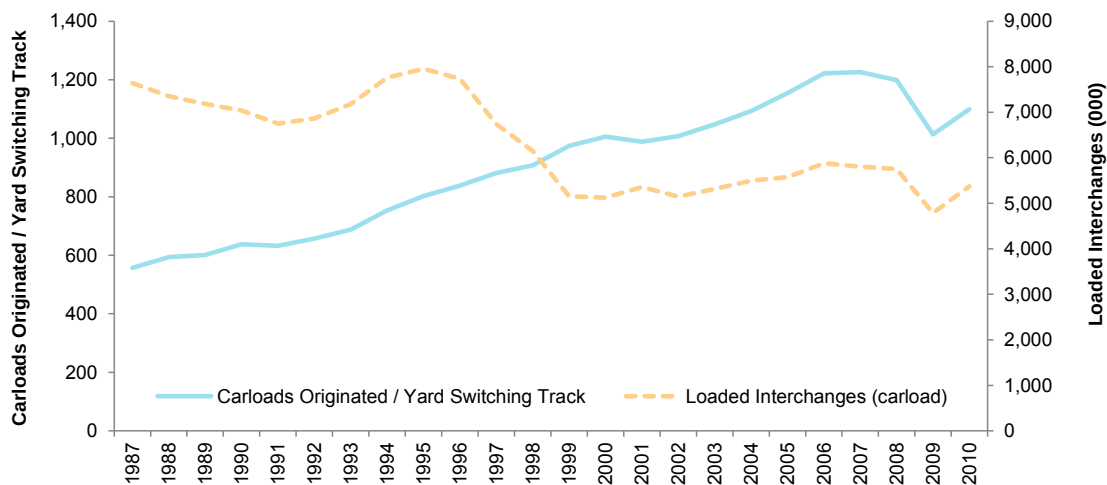


Exhibit VII-9 provides an indication of network efficiency by examining the number of trips an average railcar makes in one year. This measure incorporates components of train velocity and yard dwell time. In 1987, a railcar averaged 16.8 trips per year; by 1997, this had climbed to 19.7 trips per year. The number of trips per car per year has been trending upward (except for the recession of 2009), reaching an average value of 21.8 trips per year in 2010 – an increase of 30 percent over 1987. In a forced access environment, the average trips a car would travel in a year would decline by 2.2, to 19.6 trips per year – the same performance realized some 15 years ago.⁹⁷ The two lines shown in Exhibit VII-9, the number of loaded interchanges and the trips per car per year, are negatively correlated (-0.64), indicating that as the number of interchanges increases for a given traffic volume, car utilization declines. This also impacts locomotive utilization, since more locomotives will be required to switch these additional cars, and in some cases, more locomotives may also be required for the line haul movement of these cars.

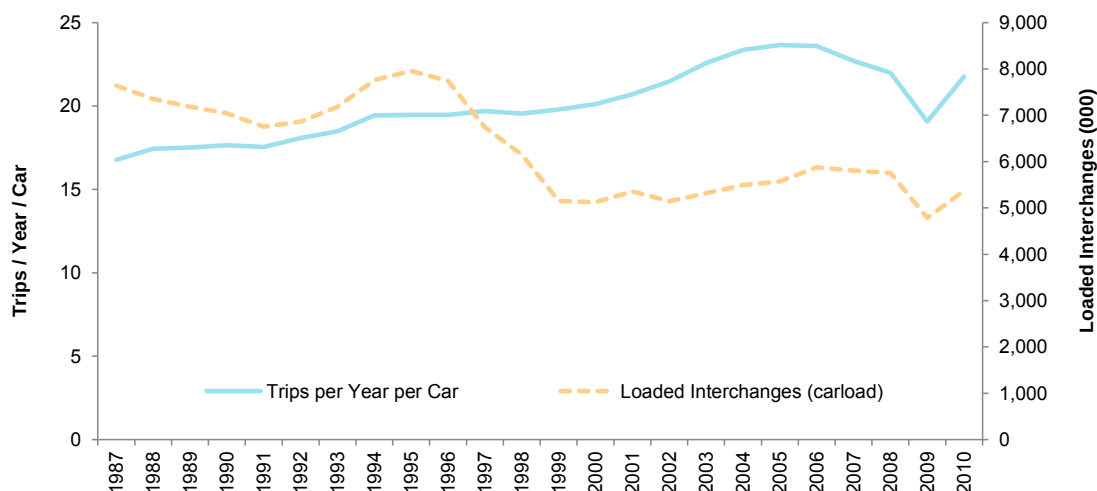
⁹⁶ Freight Commodity Statistics, 1987-2010, op. cit.; R-1's for Class I railroads, all years, Schedule 700, Column H (data compiled by the AAR); Oliver Wyman analysis.

⁹⁷ The 2010 under forced access estimate is based on the average trips per year from 1996 through 1998, a time period with a similar number of interchanges per railcar, thus requiring railcars to spend more time in yards.

Exhibit VII-9: Trips per Year per Car vs. Interchanges per Railcar, 1987-2010⁹⁸

Miles per day = Class I and other railroads, loaded, all traffic

Correlation coefficient for trips per year per car and loaded interchanges = -0.64



Miles of yard track per yard staff, Exhibit VII-10, is a measurement of the productivity of yard staff. Through simplified yard operations, consolidation of rail yards, and improved communications and computer systems, fewer yard staff are required to manage yards of similar size. In 1987, there was 1.1 mile of yard track for every yard employee, versus 1.7 miles by 2010. Under the 25 percent diversion scenario, additional car handlings and interchanges would reduce the number of miles of yard track per yard employee to an estimated 1.3, the same level as nearly 15 years ago.⁹⁹ The two lines in Exhibit VII-10, the number of loaded interchanges and the miles of yard track per yard employee, are negatively correlated (-0.72), indicating that the number of interchanges is likely a component of yard employee productivity.

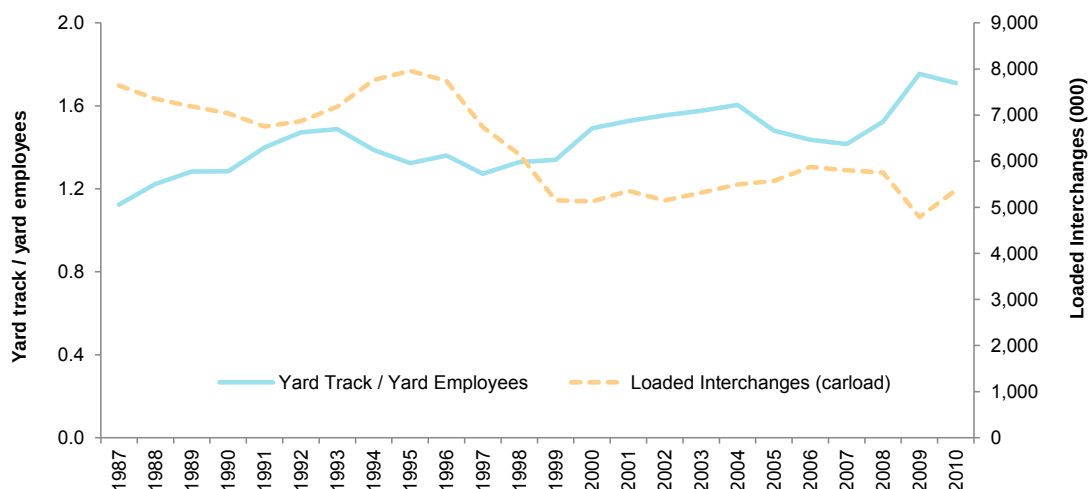
⁹⁸ Freight Commodity Statistics, 1987-2010, op. cit.; Rail Fact Book, 1989, 2004, and 2012 editions, AAR, p. 51; Analysis of US Class I Railroads, 1987-2010, op. cit., lines 41, 75, and 85. Carload Waybill Sample, 1987-2010, Surface Transportation Board, selected totals as provided by the AAR; Oliver Wyman analysis. Note: 2010 under NITL proposal assumes 25 percent traffic diversion rate for impacted areas.

⁹⁹ The 2010 forced access estimate of 1.3 was obtained from averaging 1996 through 1998 values.

Exhibit VII-10: Switch miles per Yard Staff vs. Interchanges per Railcar, 1987-2010¹⁰⁰

Switch miles = Class I, loads plus empties, all traffic

Correlation coefficient for trips per year per car and loaded interchanges = -0.72



Productivity of train and engine (T&E) employees also has been steadily increasing over the years. In Exhibit VII-11, the number of loaded cars originated divided by the number of T&E employees has increased by over 60 percent from 1987 to 2010 – from 297 loaded cars/employee in 1987 to 477 in 2010. Due to the additional work required by a forced access environment, the number of cars that would be processed per T&E employee would decline to 414 loaded cars, the same level as 15 years ago.¹⁰¹ The two lines in this graph, the number of loaded interchanges and the cars originated by T&E employee, are negatively correlated (-0.78), indicating that the number of interchanges is a likely component of T&E employee productivity.

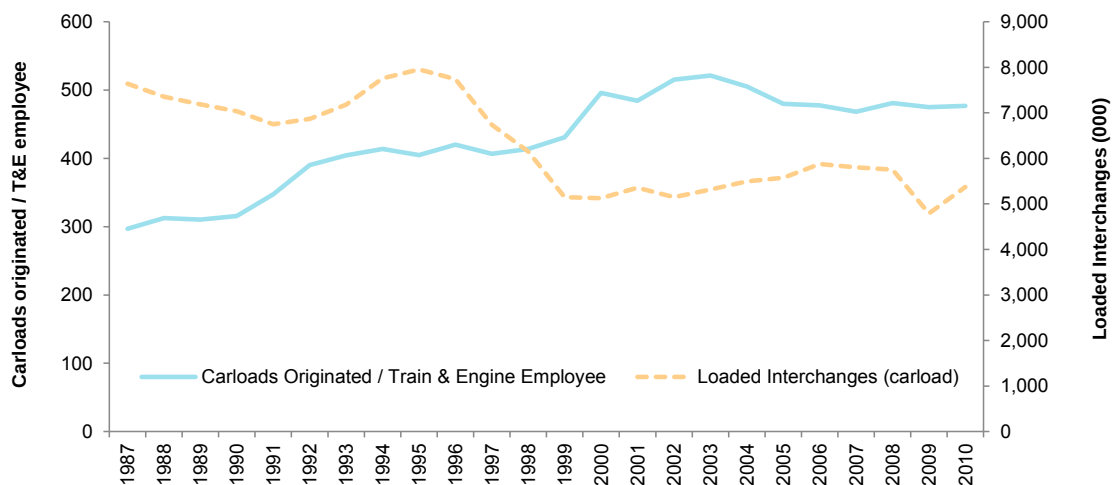
¹⁰⁰ Freight Commodity Statistics, 1987-2010, op. cit.; Analysis of US Class I Railroads, 1987-2010, op. cit., lines 207 and 333; FRA Safety Data website (<http://safetydata.fra.dot.gov/officeofsafety/publicsite/Query/rstab.aspx>, accessed February 6, 2013); Oliver Wyman analysis. Note: 2010 under NITL proposal assumes 25 percent traffic diversion rate for impacted areas.

¹⁰¹ Estimate for 2010 under forced access is based on averaged 1996 through 1998 values for loaded cars originated per T&E employee.

Exhibit VII-11: Carloads per T&E Employee vs. Interchanges per Railcar, 1987-2010¹⁰²

Carloads = Class I, loaded, all traffic

Correlation coefficient for trips per year per car and loaded interchanges = -0.78



As the exhibits above indicate, the railroads have improved their productivity across yards, rolling stock, and employees. The NITL proposal would roll back the clock on these improvements, returning the industry to a level of productivity last seen in the mid-1990's. Given the 28 percent more traffic the railroads haul today versus 15 years ago, a reduction in productivity to this level will not only impact railroad costs but undoubtedly affect service and reliability for many shippers.¹⁰³

While I have not estimated the cost of providing the additional resources that would be required to accommodate forced access as proposed by the NITL, it clearly would be measured in billions of dollars of additional operating expense. Since there would be no additional revenue produced by forced access, all of the additional operating expenses would fall to the bottom line, reducing the net income available to the railroads to invest in plant and equipment. Moreover,

¹⁰² Freight Commodity Statistics, 1987-2010 and Analysis of US Class I Railroads, 1987-2010, lines 299 and 333, op. cit.; Oliver Wyman analysis. Note: 2010 under NITL proposal assumes 25 percent traffic diversion rate for impacted areas.

¹⁰³ Percent change in Class I railroad revenue ton-miles from 1997 to 2011. Source: Rail Fact Book, 2007 and 2012 editions, AAR.

additions to physical plant and equipment required to accommodate forced access would add to the railroads' capital investment requirements.

D. The NITL Proposal Would Impair Operations, Which In Turn Could Lead to Widespread Service Problems

As I have discussed, implementation of the NITL proposal would lead to changes in historic traffic flows and service patterns, impose inefficiencies in operations, and degrade service. Such consequences would be serious even if limited in scope and location. Railroads, however, are a network industry and history provides several examples of local service disruptions spreading to other locations on the railroad network, including connecting railroads. Examples of this phenomenon include service problems that occurred in the Western United States in 1997 (which began as congestion in Southern Pacific's Houston yards), the problems associated with the integration of Conrail into Norfolk Southern and CSX in 1999, and the impact of the traffic boom during the middle of the last decade.

Southern Pacific Service Problems

Beginning in 1997, during the merger of UP and SP, a congruence of events caused congestion in SP's Houston terminal to spread to the UP and their connecting railroads, leading to widespread service problems in the Western United States. Customers began shifting traffic away from SP's weakened infrastructure to UP, before UP began implementing the merger in that territory, particularly as there had been a surge in chemical traffic. Compounding that challenge was a combination of weather events, a series of accidents, and maintenance curfews imposed by another railroad on the line to New Orleans, which trapped eastbound trains in Houston's Englewood Yard.

Implementing a merger requires negotiating labor agreements, cutting over to complex computer systems, and consolidating operating rules and training employees before merger benefits, such as directional running, can be realized. Before UP could implement the merger and restore normal service, the Houston congestion had increased car inventories to unacceptable levels, consuming locomotives, crews, and terminal capacity throughout the UP network and causing backups and delays on connecting railroads.¹⁰⁴

Examples of how the Houston terminal congestion eventually led to a service breakdown degrading service to shippers in the West¹⁰⁵ include:

- At the height of the crisis, more than 500 trains sat on sidings, some for as long as a week, while freight car movements were delayed up to 50 days. At the Port of Long Beach near Los Angeles, UP had a backlog of more than 5,000 containers waiting to be loaded onto outbound trains.¹⁰⁶
- In the garment manufacturing and retail industry, “The UP meltdown affected freight shipments up and down the apparel pipeline, from chemical and fiber makers who couldn't move raw materials to spinning plants, to garment manufacturers and retailers who sweated out holiday delivery windows waiting for container trains to wend their way through gridlock of unprecedented proportions.”¹⁰⁷

¹⁰⁴ FD 32760 (Sub-No. 26) UP-Control-SP [Houston/Gulf Coast Oversight] Decision No. 10 slip op. at 21-22 (Dec. served 12/21/1998).

¹⁰⁵ Ibid., at 6. (“During the summer and fall of 1997, prior to UP’s implementation of the merger in Texas, UP and SP lines in and around Houston became severely congested, leading to a lengthy and damaging service breakdown dramatically affecting rail transport throughout the West.”)

¹⁰⁶ “Shippers Face Rough Ride on Rails,” *Women's Wear Daily*, Feb. 24, 1998.

¹⁰⁷ Ibid.

- General Motors noted that the UP/SP transaction “caused an unprecedented degree of disruption, uncertainty and cost for GM, in both inbound and outbound transportation.”¹⁰⁸ As an example of a particular case, it noted that it was unable to secure sufficient US-Mexico cross-border rail service for finished vehicles, and had to resort to ocean-going vessels to move vehicles through East Coast ports, at a premium cost of \$20 million.

Forced access as proposed by NITL poses a threat that local congestion could spread to other locations and other carriers. A key difference, however, is that UP was able to restore fluid operations because it was able to implement an operating plan that it developed and controlled. In contrast, the NITL proposal would grant to hundreds of shippers the perpetual ability to disrupt operations without familiarity or understanding of the impact on network fluidity.

Conrail Integration Service Issues

Despite years of advance planning that involved the railroads, the Federal Railroad Administration, and the STB, service disruptions were widespread following the integration of Conrail into NS and CSX. Chemical manufacturers reported that “problems on CSX were focused in the Pittsburgh, Albany, NY, and Atlanta areas, as well as shipments through Kansas City and from Texas to Pittsburgh. Problem areas on NS spanned 20 locations, including six in Ohio and two each in Indiana and New York State. Problems also were reported in Alabama, Tennessee, Maryland, Pennsylvania and Michigan.”¹⁰⁹ Grain transportation was adversely impacted by the Conrail integration, with reports of “grain piling up in outdoor heaps at elevators across Ohio and Michigan.”¹¹⁰ A grain manager for Blanchard Valley, an elevator operator in Ohio, noted for example that five months after the merger, trains were running two to three

¹⁰⁸ STB Ex Parte No. 582, Public Views on Major Rail Consolidations, General Motors Corporation Statement on Rail Consolidation (Attachment to the Prepared Statement of Richard K. Davidson, Chairman and CEO, Union Pacific Corporation, Before Senate Hearing 106-1098, March 23, 2000.

¹⁰⁹ “Chemical Group Slams NS, CSX,” JoC Week, July 9, 1999.

¹¹⁰ “Delays Cause Pileup of Grain at Midwest Elevators,” JoC Week, November 12, 1999.

weeks late, requiring the company to cover the cost of extra handling for 1 million bushels of grain stored outdoors.¹¹¹ UPS noted that it was “forced at times to divert up to 50% of the traffic, previously handled on the rails by Conrail, to trucks.” In addition to shifting trailers from rail to road, UPS had to hire subcontractors to drive trucks and extend its sorting operations hours; as a result, “the cost to UPS of providing service during a rail merger soared dramatically.”¹¹²

While planners can project how the adoption of the NITL proposal *might* affect specific locations on the railroad network, and the network as a whole, no one knows what will happen for certain. That is the critical point: adoption of the NITL proposal could create conditions similar to those in the past that have led to widespread service disruptions.

Even when railroads have had advance knowledge of changes in traffic and service patterns, as in the case of previous mergers, they at times have been unable to avoid serious service problems. In the case of the NITL proposal, changes in traffic patterns, and the resulting changes in service patterns, cannot be known in advance and will be triggered by shippers who have no way of knowing how their individual decisions will affect the railroad network. Moreover, y in the case of prior service breakdowns, the railroads retained the ability to adjust their operating plans to reduce car inventory and restore system velocity and thus end the service problems. Under the NITL proposal, however, the railroads’ ability to control their operating plans and to eliminate avoidable work events would be materially diminished; instead, the power to disrupt carefully designed network plans would be assigned to shippers at hundreds of locations who could exercise this power whenever they chose. This would make it both more likely for congestion to spread and make it more difficult for the railroads to regain control.

¹¹¹ Ibid.

¹¹² STB Ex Parte No. 582, Public Views on Major Rail Consolidations, Summary of Statement on Behalf of United Parcel Service, Inc. (Attachment to the Prepared Statement of Richard K. Davidson, Chairman and CEO, Union Pacific Corporation, Before Senate Hearing 106-1098, March 23, 2000.

VERIFICATION

I, William J. Rennie, declare under penalty of perjury, that the foregoing statement is true and correct and that I am qualified and authorized to file this statement.

Executed: March 1, 2013



William J. Rennie