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BY E-FILING

Ms. Cynthia T. Brown, Chief
Section of Administration
Office of Proceedings
Surface Transportation Board
395 E Street, S.W.
Washington, DC 20423-0001

Re: ***Application of the National Railroad Passenger Corporation under 49 U.S.C. § 24308(a) — Canadian National Railway Company (Docket No. FD 35743)***

Dear Ms. Brown:

Attached for filing in the above-referenced docket are the Highly Confidential, Confidential, and Public versions of the Responses of Illinois Central Railroad Company and Grand Trunk Western Railroad Company to April 8, 2025 Requests Due July 22, 2025, including supporting verified statements.

The Highly Confidential and Confidential versions of these Responses are designated as such under the Protective Order entered in this proceeding on December 16, 2013 and are therefore being filed under seal. The Public version, which is being submitted for placement on the public docket, and the Confidential version have been redacted in accordance with the Protective Order.

Two of the verified statements accompanying these Responses are supported by workpapers, which are being submitted simultaneously. Because of the size of these materials, the workpapers are being submitted to the Board and served on Amtrak via Kiteworks (Dentons' secure FTP site).

Sincerely,

/s/ David A. Hirsh

David A. Hirsh

Counsel for Illinois Central Railroad Company and Grand Trunk Western Railroad

Attachments

cc: All Parties of Record

PUBLIC VERSION – REDACTED

BEFORE THE
SURFACE TRANSPORTATION BOARD

Docket No. FD 35743

APPLICATION OF THE NATIONAL RAILROAD PASSENGER CORPORATION UNDER
49 U.S.C. § 24308(a) – CANADIAN NATIONAL RAILWAY COMPANY

**RESPONSES OF ILLINOIS CENTRAL RAILROAD COMPANY
AND GRAND TRUNK WESTERN RAILROAD COMPANY
TO APRIL 8, 2025 REQUESTS DUE JULY 22, 2025**

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July 22, 2025

PUBLIC VERSION – REDACTED

BEFORE THE
SURFACE TRANSPORTATION BOARD

Docket No. FD 35743

APPLICATION OF THE NATIONAL RAILROAD PASSENGER CORPORATION UNDER 49 U.S.C. § 24308(a) – CANADIAN NATIONAL RAILWAY COMPANY

RESPONSES OF ILLINOIS CENTRAL RAILROAD COMPANY AND GRAND TRUNK WESTERN RAILROAD COMPANY TO APRIL 8, 2025 REQUESTS DUE JULY 22, 2025

Illinois Central Railroad Company ("IC") and Grand Trunk Western Railroad Company ("GTW") (together, "CN") hereby submit additional information requested by the Board in its decision served April 8, 2025 (the "Decision").[1] In addition, this submission addresses the concerns raised by Board Member Hedlund in her concurring opinion to the Decision.

The verified statements listed below are attached to provide evidence in support of certain of these responses, as indicated:

TAB A: Joint Verified Statement of Scott Kuxmann, Sylvain Grenier, and Rachel Klumpp, explaining the methodology for determining incentives and penalties and the amount of incentives and penalties determined by applying that methodology (supporting response to Board Request 3) ("VS Kuxmann/Grenier/Klumpp");

TAB B: Joint Verified Statement of M. Rapik Saat, Ph.D. and Sylvain Grenier, explaining the methodology for determining CN's incremental cost of fuel, locomotive charges, car-hire charges, and labor resulting from delays caused by hosting Amtrak, in response to the Board's Request 11, together with calculation of such

[1] As required by the Decision, this submission provides responses to Requests 2, 3, 11, and 12 as set forth in that Decision.

In its submission filed May 8, 2025, CN submitted responses to Requests 1, 4 through 10, 13, and 14, as required by the Decision.

costs incurred in calendar year 2024 (supporting responses to Board Requests 11 and 12) ("VS Saat/Grenier");

TAB C: Verified Statement of Simon Lizotte, explaining use of Wi-Tronix technology to measure fuel consumption, and use by CN's Fuel Optimization Group of data from Wi-Tronix to develop locomotive-model-specific fuel burn rates, to be used as inputs into the calculation of incremental fuel delay costs reported in the Joint Verified Statement of M. Rapik Saat, Ph.D. and Sylvain Grenier (supporting response to Board Request 11) ("VS Lizotte").

On-Time Performance and Schedules

2. Schedule status: The parties should seek to reach agreement on any uncertified schedules and provide the Board with the agreed-upon schedules by the time they file the second part of their responses to these information requests on July 22, 2025. If the parties cannot reach agreement by that date, they are each ordered to submit a response on July 22, 2025, explaining the remaining points of dispute and providing any additional information the party believes is relevant to its position. Based on this information, the Board will determine how to proceed. This may include making the schedules for the parties and adopting those schedules as part of the new OA. If the parties want to engage in alternative dispute resolution (ADR) prior to July 22, 2025, to assist in the process of resolving the remaining schedule disputes, they are free to do so. If ADR does not result in an agreement, either party may provide to the Board any written decision produced by the ADR process. See 49 C.F.R. § 273.3.

In response to Request 2 in the Board's Decision, the parties have been working together to reach agreement on their uncertified schedules to provide the Board with agreed-upon schedules to include in a revised Operating Agreement. The parties have exchanged proposals and agreed in principle to redistribute recovery time for the City of New Orleans trains (Train #58 & #59). They are also engaged in broader confidential settlement discussions, implicating other matters, that may result in an agreement encompassing other schedule changes. Based on their progress, the parties have agreed, subject to the Board's further direction, to update the Board on their further progress on or before the due date for Replies pursuant to the Decision (i.e., September 22, 2025). The parties are committed to providing the Board within that time either a full agreement covering all uncertified schedules or, at a minimum, a focused explanation of what they expect to be narrow remaining differences.

Incentives and Penalties

3. Payment and penalty data: CN and Amtrak are each ordered to provide the calculations and underlying data for incentive and penalty payments for calendar year 2024 based on their proposed methodologies. The information should be broken down by month and by Amtrak route.[2]

> [2] For purposes of calculating the percentage of arrivals on time, CN's proposed methodology would weight checkpoints by the average number of riders of a train that disembarked at a checkpoint during the prior fiscal year. (See CN Opening Ex. 2 at App. V-8, Nov. 30, 2022.) During the technical conference, CN stated that it now has the ridership data for 2024 and can use that data to weight checkpoints for the 2024 calculation rather than using data from the prior year. However, because the Board seeks to understand what the incentive and penalty payments would have been under CN's proposed methodology in 2024, the Board directs CN to use the ridership data it would have used if its proposed methodology had been in effect in 2024 (i.e., the fiscal year 2023 data).

In accordance with the Board's order, CN has calculated incentive and penalty payments for calendar year 2024 using its proposed methodology (the "CN Methodology"). Applying that methodology, CN determined that it would have earned ${ [redacted] } in incentives and incurred ${ [redacted] } in penalties, for a net performance payment of ${ [redacted] }. In implementing the CN Methodology for 2024, the "lookback" provision of the Operating Agreement did not come into play (i.e., there was never an occasion when positive incentive payments were insufficient for penalties to offset against them).[2]

The table below further breaks down the performance payments by month and by Amtrak route:

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[2] This consistent with CN's experience for more than a decade under the current Operating Agreement. *See* Responses of Illinois Central Railroad Company and Grand Trunk Western Railroad Company to April 8, 2025 Requests Due May 8, 2025 at 22 (filed May 8, 2022).

Table 1
Summary of 2024 Performance Payments Due to CN
(CN Methodology) {

[redacted]

}

The calculations and underlying data utilized by CN to develop this table are presented in the joint verified statement of Scott Kuxmann, Manager of Passenger Operations at CN, Sylvain Grenier, Business Intelligence Expert – Enterprise Technology Operations at CN, and Rachel Klumpp, Assistant Manager, Contract Compliance – Passenger at CN, along with their supporting workpapers.

As explained in their verified statement, as with the calculation of performance payments under the existing Operating Agreement, the underlying data used in the CN Methodology are the train performance and delay data that Amtrak collects and transmits to CN on a daily basis (the "Delay Data"). VS Kuxmann/Grenier/Klumpp, Part I. Under the CN Methodology, the Delay Data are analyzed monthly, by individual Amtrak train, to determine: (i) the train's weighted on-time arrival percentage for all checkpoints along the CN segment of its route (including all stations and endpoints), based on arrival time adjusted by any applicable relief minutes ("Monthly Weighted OTP Percentage"); (ii) the total number of miles that Amtrak train operated over the CN segment of its route ("Monthly Mileage"); and (iii) the average number of minutes above or below tolerance that the Amtrak train arrived at checkpoints on time (i.e., within adjusted arrival time) along the CN segment of its route ("Monthly Weighted Average Minutes Above/Below Tolerance"). *Id.* Together, these three data elements – Monthly Weighted OTP Percentage, Monthly Mileage, and Monthly Weighted Average Minutes Above/Below Tolerance (together, the "Train Performance Data") – comprise the key inputs necessary to calculate performance payments for each train. *Id.*

In order to develop and present the steps necessary to calculate Train Performance Data as clearly and transparently as possible, Mr. Kuxmann and Ms. Klumpp developed an Excel spreadsheet that explains each step for calculating Weighted OTP Percentage and Weighted Average Minutes Above/Below Tolerance values in plain English (i.e., narrative form) and also expresses each step as an Excel formula. *Id.*, Part II. They tested the Excel formulas by incorporating into their Excel model Delay Data and certain information contained in the Schedules (i.e., checkpoint weights, recovery time basis ("RTB") minutes, tolerances) and applying the Excel formulas to calculate one month of performance payments for five randomly-selected trains. *Id.* That spreadsheet was then used by Mr. Grenier to develop SQL code necessary to automate the process for calculating Train Performance Data across the large volume of Delay Data. *Id.*, Part III. He recreated, in SQL code, the formulas set forth in the Excel spreadsheet and was able to accurately produce the same Weighted OTP Percentage and Weighted Average Minutes Above/Below Tolerance values for every CN segment across a random sampling of five different train months.[3] *Id.* He then programmed into the SQL code averaging functions that calculate the Monthly Weighted OTP Percentage and Monthly

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[3] For a small number of outputs, there is an immaterial difference between the SQL and Excel results (beyond the twelfth decimal place) likely relating to rounding differences.

Weighted Average Minutes Above/Below Tolerance values that are utilized to calculate performance payments. *Id.* Whether using the formulas set forth in the Excel spreadsheet or the SQL code, the CN Methodology produces the same Weighted OTP Percentage and Weighted Average Minutes Above/Below Tolerance values.[4] *Id*. By presenting the implementation of its methodology in this way, CN has provided maximum transparency since the process can be followed through plain language, Excel formulas, and SQL programming.

It was necessary to develop the SQL code to process the large volume of Delay Data for all trains for full calendar year 2024. Further, that effort will be invaluable for the future processing of Delay Data because it provides an efficient, automated process.

While the process of calculating Train Performance Data can be and has now been largely automated by CN, there are a small number of relatively rare adjustments that must be made manually. This includes relief items related to special circumstances such as wayside detector delays, delays due to picking up or dropping off a locomotive CN had to supply to Amtrak, delays due to mandatory efficiency testing, and delays due to commuter train interference on CN's Joliet Subdivision when Amtrak arrives 10 or more minutes late. *See* CN Proposed Operating Agreement, App. V, Part A.1.e.(2)-(4), (6).[5] For that reason, the SQL code

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[4] Multiple tests for various trains were used to assure and demonstrate that the Excel formulas and SQL coding produce the same results. These tests are presented in the Excel file titled "Train Performance Excel File," a copy of which is included with our workpapers.

[5] Manual adjustment is also necessary for CN to claim relief if Amtrak arrives at an entry point to a CN line more than 15 minutes late without providing notice. Proposed Operating Agreement, App. V, Part A.1.e.(5). Because Amtrak had no contractual obligation to provide this advance notice during calendar year 2024, this relief provision could not be properly applied. Accordingly, CN did not claim relief under this provision.

provides a means for end users to enter delay-related adjustments manually without recoding or altering the rules embedded in the SQL code. VS Kuxmann/Grenier/Klumpp, Part III.

Under the CN Methodology, monthly performance payments are calculated for each Amtrak train using the Train Performance Data by multiplying (i) the train's applicable "Performance Rate" in Appendix V, Table 1, (ii) by the Monthly Mileage, and (iii) depending on the train's Monthly Weighted Average Minutes Above/Below Tolerance, multiplying that product by a "Multiplier" under Appendix V, Part B or Part C, as applicable. *Id.*, Parts I & II(3). To automate that process, Mr. Grenier developed SQL code incorporating Monthly Mileage and the Multiplier and Performance Rate tables with its calculation of Monthly Weighted OTP Percentage, in order to generate performance payments for each train and to produce reports summarizing the results. *Id.*, Part III.

Applying the CN Methodology to calendar year 2024, we have determined that CN would have earned a net performance payment of ${ [redacted] } for that year—{ [redacted] }. *Id.*, Part IV. { [redacted] } Further, an all-stations performance measure is particularly mismatched with the current City of New Orleans train schedules (responsible for the largest share performance payments) because they have backloaded recovery time making them ill-suited for an all-stations measure of performance. As discussed in response to Request 2, above, the parties have agreed in principle to address this schedule issue.

Incremental Costs

11. Cost estimates for incremental freight delay costs: CN is ordered to provide estimates of the incremental freight train delay costs that it claims are incurred by CN and chargeable to Amtrak according to CN's proposal. (See CN Opening 82-94, Nov. 30, 2022.) The estimates should be broken down by incremental freight delay cost category and subcategory, by quarter or partial quarter, and by Amtrak route. CN should provide estimates for each quarter of actual operations for calendar year 2024. CN is also ordered to document its methodology in plain language, including all assumptions, formulas, and calculations underlying the above estimates, including freight and passenger rail traffic projections on which future delays are based.

As required by the Board's order, CN has determined in accordance with its proposal the incremental freight delay costs incurred due to Amtrak delays for calendar year 2024, which total $1,449,092. The results of our analysis are presented in the following table:

Table 2
Summary of Incremental Freight Delay Costs Due to Amtrak
Calendar 2024, By Quarter, Cost Category, and Amtrak Service[6] {

[redacted]

}

The details and documentation regarding the development of these costs, including further breakdowns into subcategories, are presented in the joint verified statement of Dr. M.R. Saat, Senior Manager – Regulatory Costing at CN, and Mr. Sylvain Grenier, Business

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[6] Source: Tab "Summary by Amtrak Route" in Workpaper "Amtrak_Caused_Delay_Incremental_Cost_2024_MASTER_SUMMARY.xlsx".

Intelligence Expert – Technology Operations at CN, along with their supporting workpapers. As they discuss, they implemented the methodology CN proposed in 2022 with two substantive refinements (both of which make their analysis more conservative).

Dr. Saat and Mr. Grenier's first substantive refinement affects the quantification of minutes of freight delay for delays for which the methodology uses dispatching playbacks to determine delay. For those delays (which represent less than 5% of total delay events), they included only Idle Time (the period when the freight train was stopped), not V-Time (the additional delay incurred by the train as it decelerated to a halt and then accelerated back to track speed). *See* VS Saat/Grenier, Part II.B. Their other substantive refinement improves the calculation of fuel costs by leveraging advances CN has made in the measurement of locomotive fuel burn using Wi-Tronix data. *See id.*, Part III.C. That refinement is elaborated in the verified statement of Mr. Simon Lizotte, CN's Senior Manager Locomotive Engineering Technology in its Fuel Optimization Group. Dr. Saat and Mr. Grenier analyze fuel burn and provide results under both CN's 2022 methodology and their refined methodology. Using the refined methodology results in a small overall reduction in fuel costs (a reduction of ${ [redacted] }, from ${ [redacted] } to ${ [redacted] }, or 2.9%). The lower fuel cost number generated by the improved methodology is used to generate CN's quantification of total costs, in Table 2, above.[7]

The detailed explanation and documentation provided by Dr. Saat and Mr. Grenier confirm that CN is able to quantify, specifically and reliably, the actual incremental costs incurred by CN due to freight delays resulting from Amtrak's use of CN's lines. As explained

[7] A quarterly breakdown, by category and service with fuel costs based on the original fuel burn methodology, which utilized a TPC-based approach, is included in the Saat/Grenier workpapers. Tab "Summary by Amtrak Route - TPC" in Workpaper "Amtrak_Caused_Delay_Incremental_Cost_MASTER_SUMMARY.xlsx".

previously, CN's proposed methodology is highly conservative. The identification of delays begins with an FA code in SRS identifying a delay due to Amtrak, but SRS includes only delays that meet minimum thresholds. *See* VS (PID) Baranowski at 3; VS (PID) Summerfield, *et al.* at 12-13.[8] Many short delays are therefore excluded. Further, FA codes are assigned only to delays that are caused directly by Amtrak, not cascading delays that may occur due to an Amtrak delay to other freight trains down the line. VS (PID) Baranowski at 3. In addition, the analysis excludes FA-coded delays in which a CN train slowed and paced because of an Amtrak train but the CN train did not stop. *See* VS Saat/Grenier, Part I. On that basis alone, over 2,000 FA delays were excluded from the calendar year 2024 analysis. *Id.*

The proposed methodology is also limited to the incremental costs most clearly and directly attributed to freight delays due to Amtrak. Crew costs, for example, were limited to direct overtime (*id.,* Part III.C.), despite other losses of worker productivity and incremental costs due to Amtrak, such as additional costs of recrewing. Similarly, the cost of additional fuel burn due to train stops and starts was included only when the related delay event was solely attributable to Amtrak (i.e., stops/starts attributable to multiple causes were excluded), and then only where Wi-Tronix data was available for the train. *Id.*, Part III.A. The actual incremental costs of freight delay due to Amtrak are thus considerably higher than those quantified using CN's very conservative methodology.

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[8] The Post-Initial Decision Verified Statement of Michael R. Baranowski ("VS (PID) Baranowski") and the Post-Initial Decision Joint Verified Statement of John Summerfield, My-Thanh Nguyen-Hunt, and Craig Zarembka ("VS (PID) Summerfield *et al.*") were attached to and submitted in support of the Post-Interim Decision Opening Submission of Illinois Central Railroad Company and Grand Trunk Western Railroad (May 27, 2022; corrected and refiled Nov. 30, 2022).

Dr. Saat and Mr. Grenier were also able to advance significantly the automation of processes necessary to identify and quantify delays and apply costs in accordance with the proposed methodology. Given Mr. Grenier's access and expertise, he was able to draw most of the data and information required for the analyses directly from CN's Data Warehouse (its centralized enterprise information repository) and to automate that process for repeated use. *See* VS Saat/Grenier, Introduction. He and Dr. Saat were also able to develop a time-saving algorithm to match delay locations between CN's SRS system data and Wi-Tronix data.[9] *Id.*, Part II.A. As part of CN's conservative approach, where a match was not identified, the delay was dropped. *Id.*

Not all of this effort could be automated. For example, where necessary to confirm delays (i.e., when Wi-Tronix data are not available), dispatching playbacks were manually pulled from CN's records and manually reviewed.[10] The burden of doing so, however, is manageable when done on a daily or weekly basis (rather than for an entire year), as it would be in the future.

CN is now confident that it can, without undue burden, quantify the incremental costs of freight delays due to Amtrak specifically and verifiably. For this reason, as discussed in response to Request 12, below, while CN would welcome discussions with Amtrak toward agreeing on a simplified basis for incremental freight delay compensation, as it could have the advantages noted by the Board, CN does not believe a simplified methodology is necessary, and it is not seeking its imposition by the Board.

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[9] The coding and algorithm that they developed and used are presented in the joint workpapers to VS Saat/Grenier. Workpapers "1 - Amtrak Delays - Final Code Clean – AMTRAK DELAY TO STOP ASSOCIATION.pdf" and "2 - Amtrak Delays - Final Code Clean - AMTRAK DELAY COST DETERMINATION.pdf".

[10] The full set of those playbacks are in the workpapers to VS Saat/Grenier. *See* "Playback_Files _FA_2024.zip" (containing 2024 Screenshots and Recordings).

12. Per-mile charge for incremental costs: CN and Amtrak are each ordered to submit a per-Amtrak-train-mile charge to account for incremental freight delay costs that could be applied in lieu of requiring the calculation of actual incremental freight delay costs if the Board includes incremental freight delay costs in the OA. The Board is requesting this information because a per-mile charge may help avoid potential future disputes and administrative burden associated with determining and verifying actual incremental freight delay costs, and hence be easier and fairer to apply. Each party should document its methodology in plain language, including all assumptions, formulas, and calculations underlying their proposed per-mile charge.[3] Parties may include proposals for adjustments that could be applied to the per-mile charge to account for changes, such as changes in costs or volume. If Amtrak believes it does not have sufficient information to calculate a specific per-mile charge, it may limit its response to a description of its preferred methodology.

> [3] The parties may propose an alternative, simplified methodology, such as a "per-hour charge" as suggested by CN at the technical conference. The party proposing an alternative must explain clearly both the methodology and why it is superior to a per-mile charge.

In her concurring statement, Board Member Hedlund raised concerns that a simplified methodology, as contemplated by Request 12, would be inconsistent with the Board's 2019 Interim Decision[11] insofar as that decision required Amtrak to reimburse CN only for its "specific, verifiable, and quantifiable" costs. Decision at 6. Since Board Member Hedlund's concurrence addresses the same topic as Request 12, CN responds to them together.

First, CN respectfully suggests that the Board need not address the issue of whether to order that a simplified incremental cost methodology be incorporated into a revised Operating Agreement (in which case Board Member Hedlund's concern need not arise). CN appreciates the Board's concern regarding the potential difficulties of determining and verifying actual incremental freight delay costs, which proved onerous when CN first undertook the task in 2021 and 2022. However, as outlined in the Response to Request 11, above, and as detailed in the Verified Statement of Dr. Saat and Mr. Grenier, CN has now streamlined the process to analyze

[11] Decision served Aug. 9, 2019 ("Interim Decision").

the data directly from its Data Warehouse, refined its methodology, using improved data and data integration, such that specifically identifying and verifying delay minutes and their specific costs is achievable without undue burden, using a methodology that is consistent with CN's prior methodology and the Board's guidance. Accordingly, there is no need for the Board to order the parties to adopt a simplified methodology.

Second, CN nevertheless appreciates the benefits of a simplified methodology for determining incremental freight delay costs due to Amtrak. It would not object to use of such a methodology that reasonably compensates it for those costs and provides for at least some cost internalization by Amtrak so it has reasonable incentives to minimize those costs. Notwithstanding the improvements to CN's detailed methodology, adoption of a simplified incremental cost methodology could, as the Board suggests, reduce the potential for future disputes and the administrative burden on the parties and the Board.

To that end, CN is open to working with Amtrak to establish an agreed-upon simplified methodology. Establishing a simplified methodology by agreement appears preferable to doing so by Board order. Doing so would avoid the potential concerns raised by Board Member Hedlund, as nothing in the Rail Passenger Service Act ("RPSA"), Board or Interstate Commerce Commission ("ICC") precedent, or the Board's Interim Decision restricts the freedom of the parties to agree voluntary on reasonable terms. *See* 49 U.S.C. § 24308(a)(1). In addition, a methodology established by agreement might be less susceptible to disputes in its implementation than one imposed by Board order.

That said, estimation may play a role in a Board order compelling Amtrak to compensate CN for its incremental costs. In prescribing reasonable compensation, the Board is authorized by 49 U.S.C. § 24308(a)(2)(B) to "determin[e] whether, and the extent to which, the amount of compensation shall be greater than the incremental costs of using the facilities and providing the services." As the Board has recognized, *see, e.g.*, Interim Decision at 18-23, that language has long been read, consistent with takings law and fundamental economic principles, to set a compensation ***floor*** such that the host will not incur a net loss due to being compelled to host Amtrak. The statute does not ***cap*** host compensation at incremental cost. Moreover, insofar as Congress has charged the Board with quantifying incremental costs and it is neither feasible nor efficient for the Board to conduct a mini-trial about every dollar, the Board has discretion to approve the use of reasonable estimation techniques. Thus, for over half a century, the Board, and the ICC before it, has provided for certain aspects of incremental cost compensation (including operating and maintenance expenses) to be based on Amtrak train-miles.[12]

Further, in establishing host compensation under Amtrak operating agreements, Amtrak and its hosts have themselves recognized the propriety of using estimation. In fact, consistent with the ICC- and Board-approved industry standard for Amtrak-host operating agreements, the CN-Amtrak Operating Agreement bases most of CN's base compensation on train miles travelled on CN's lines by Amtrak trains. Operating Agreement, App. IV, § 3, Item 15.

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[12] *See, e.g., Application of Nat'l R.R. Passenger Corp. under 49 U.S.C. 24308(a) – Springfield Term. Ry.*, 3 S.T.B. 157, 164-65 (1998) (imposing interim per-gross-ton-mile compensation for maintenance-of-way ("MOW") costs, based on per-gross-ton-mile calculation of MOW costs in earlier case involving different railroad); *Nat'l R.R. Passenger Corp. & Consol. Rail Corp.*, Finance Docket No. 32467, slip op. at 10-11 (ICC served July 25, 1995) (prescribing per-train-mile interim compensation for MOW costs); *Nat'l R.R. Passenger Corp. & Union Pac R.R., Use of Tracks & Facilities & Establishment of Just Comp.*, 348 I.C.C. 926, 949 (1977) ("*UP Compensation*") (prescribing per-train-mile charge for maintenance of right-of-way expenses, based on apportionment to Amtrak's of host's MOW costs during 1975); *see also Amtrak & Tex. & Pac. Ry., Use of Tracks & Facilities & Establishment of Just Comp.*, 348 I.C.C. 645, 661 (1976) (prescribing per-month charge for track and roadbed maintenance, based on calculation of host's cost per gross ton-mile and number of gross ton-miles attributed to Amtrak trains scheduled during month), *aff'd in relevant part and remanded in part sub nom. Nat'l R.R. Passenger Corp. v. ICC*, 610 F.2d 865 (D.C. Cir. 1979).

Nothing in the Board's 2019 Interim Decision reverses that longstanding understanding and practice by prohibiting the use of estimation. Faced with an unfamiliar category of incremental costs—freight delay costs—the Board clarified that they must be specific, verifiable, and quantifiable and CN, as the claimant of compensation for those costs, has the burden of proving them. CN acknowledges, and its incremental cost methodology reflects, that this entails a conservative approach: costs that are real but cannot be proven or estimated with a reasonable degree of reliability are not compensated. But there is no law precluding all use of reasonable and non-biased or conservative estimation techniques, and banning all use of estimates would result in a failure to discharge the Board's statutory responsibility of ensuring that CN is compensated for its incremental costs.

Third, as invited by footnote 3 of the Board's Decision, CN addresses what would be the best simplified methodology to use if a simplified methodology were to be used (by agreement or by order). Although incremental freight delay costs could potentially be compensated based on average costs per Amtrak train-mile (as discussed below), CN believes that a per-freight-delay-hour methodology is preferable. Some Amtrak train-miles cause far more delays than others, so a per-Amtrak-train-mile methodology could result in an inaccurate estimate, and it would fail to provide a clear indication to Amtrak of where and how changes in its operations and service requirements could significantly affect the costs it imposes on its host.

Instead, a per-freight-delay-hour methodology would entail a two-step process. The first step would be the same full, detailed identification, verification, and quantification of individual delays as CN's 2024 analysis outlined in its Response to Request 11 above (and detailed in the Verified Statement of Dr. Saat and Mr. Grenier)—thus ensuring accuracy with respect to delay quantification and providing a clear indication of where and how costs are being imposed. The second step would be a simplified attribution of costs to each delay. While the relation between Amtrak train-miles and freight delays is highly variable, the relation between freight delays and the costs caused by those freight delays is much less variable, so it is reasonable to assume that incremental costs per hour of freight delay will average out. Accordingly, if a simplified methodology is to be used, CN advocates multiplying actual, individually identified, verified, and quantified hours of incremental freight delay by their average net cost. In 2024 that cost was $376 per incremental freight delay hour, as measured by CN's conservative methodology. *See* VS Saat/Grenier, Part IV. An appropriate inflation multiplier could then be derived from the Rail Cost Adjustment Factor ("RCAF")[13] to adjust the hourly rate from the 2024 baseline to other years.[14]

Finally, as suggested by the Board, incremental freight delay costs due to Amtrak can also be expressed in terms of a per-Amtrak-train-mile charge. As summarized in CN's Response to Request 11 and detailed in the Verified Statement of Messrs. Saat and Grenier, a very conservative estimate of CN's incremental freight delay costs for 2024 is $1,449,092. *See* VS Saat/Grenier, Part IV. Those costs were imposed on CN by Amtrak operations of CN's lines totaling 1,391,302.5 Amtrak train-miles. *See id.* As a matter of simple division, that amounts to an average freight delay cost in 2024 of $1.04 per Amtrak train-mile. If the Board were to prescribe a per Amtrak train-mile charge (which, as explained above, CN does not view as the

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[13] The RCAF is calculated and issued quarterly by the Board, on the basis of data provided by the Association of American Railroads ("AAR"). *See* 49 U.S.C. § 10708; 49 C.F.R. § 1135.1.

[14] Similarly, in setting compensation under the predecessor to 49 U.S.C. § 24308(a) for Amtrak's use of Union Pacific Railroad Company lines, the ICC prescribed payment of a per-train-mile compensation for MOW expenses, adjusted for future periods on the basis of the AAR Quarterly Indexes of Railroad Material Prices and Wage Rates, a cost index used before creation of RCAF. *UP Compensation*, 348 I.C.C. at 949.

best way to resolve the incremental cost quantification issue), CN would propose $1.04 for 2024, and adjustments from that baseline based on inflation (using RCAF) for other years.

Amtrak Train Cancellation Expenses (Raised by Board Member Hedlund)

While noting that "today's decision requires neither CN nor Amtrak to affirmatively confront this issue," Board Member Hedlund invited the parties to address whether "reimbursement [should] be provided to passenger customers for expenses necessitated" by Amtrak train cancellations that "are legitimately characterized as the responsibility of the line owner" and, if so, what mechanism might be adopted "for reimbursing Amtrak specifically for passenger-related costs necessitated by train cancellations resulting from circumstances or activities outside of Amtrak's control (e.g., freight derailments, other track closures, etc.)." Decision at 5.

As Board Member Hedlund acknowledges, there is no requirement that this issue be addressed presently. Indeed, CN respectfully submits that there is no proper basis for addressing it as part of a decision in this proceeding. The question has not been raised was not identified by either party Amtrak as an a disputed issue in at the outset of this proceeding, as required by the Board, and Amtrak has not requested or proffered evidence in support of such reimbursement.[15] Moreover, Amtrak has no legal obligation to, and does not presently, reimburse its passengers for their expenses caused by train cancellations. Therefore, at present, there are no relevant costs to reimburse. Rather, the reimbursement obligation Board Member Hedlund's concurrence contemplates raises a question of national transportation policy and would require Congress to

[15] *See* Decision served Aug. 21, 2013; Statement by National Railroad Passenger Corporation Identifying Disputed Issues (filed Oct. 24, 2013).

enact new legislation that would fundamentally change Amtrak's relationships with both its passengers and its hosts.

There are compelling reasons why such an obligation should not be imposed on Amtrak's hosts. ***First,*** Amtrak does not reimburse passengers for expenses necessitated by cancellations beyond refunding ticket prices.[16] That is a sensible and important liability limitation for Amtrak.[17] It is also one that is followed by others in the transportation industry.[18]

Given the prevailing norm across the passenger transportation service industry, including Amtrak, that a passenger's sole remedy for a cancellation is a refund, it would be even more anomalous and unreasonable to require Amtrak's hosts, who have no control over Amtrak ticketing pricing or policies, and lack even a direct contractual relationship with Amtrak passengers, to fund reimbursement of their consequential costs. Moreover, the CN-Amtrak Operating Agreement already contains detailed, bargained-for provisions that ensure that CN

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[16] *See* Amtrak, Terms and Conditions, https://www.amtrak.com/api/terms-and-conditions.html (last visited July 21, 2025). Even that is a matter of agreement between Amtrak and its passengers. A pending bill before Congress would require Amtrak to refund passenger's fares—but not compensate for consequential losses—if, but only if, the cancellation were attributable to Amtrak, subject to the promulgation of implementing regulations that would determine what cancellations are attributable to Amtrak. All-Aboard Act, H.R. 769, 119th Cong. (introduced Jan. 28, 2025), https://www.congress.gov/bill/119th-congress/house-bill/769/text.

[17] Passengers who may be gravely impacted by a cancellation are free to take precautions (such as traveling a day earlier) or invest in travel insurance. Transportation service providers are not typically in the travel insurance business, and the added cost of guaranteeing reimbursement beyond refunds to passengers would result in increased ticket prices, including for passengers for whom such a guarantee would not be worth the additional fare.

[18] A detailed, industry-wide federal regulatory scheme requires airlines to provide full refunds—but again, only refunds, without compensation for consequential loss—to their ticketed passengers in the event of cancellations. 14 C.F.R. pt. 260. Department of Transportation regulations impose obligations on airlines extending beyond refunds in just one circumstance: involuntary bumping of passengers due to airline over-booking. 14 C.F.R. pt. 250. Compensation extending beyond refunds may be appropriate in that unique circumstance to counteract airlines' incentive to profit at passengers' expense by over-booking.

accrues no revenue from cancelled Amtrak trains. The current Operating Agreement bases most of CN's base compensation on train miles actually travelled on CN's lines by Amtrak trains, Operating Agreement, App. IV, § 3, Item 15; it denies CN base compensation to the extent that it does not host Amtrak trains, Operating Agreement § 5.1.D.2, and it denies CN performance payments for cancelled trains (while also imposing penalties on CN for some cancellations), Operating Agreement, App. V.

Second, the financial obligation Board Member Hedlund's question contemplates imposing on hosts is contrary to the foundational statutory basis for the Amtrak-host relationship. Under the RPSA, freight railroads are compelled to host Amtrak, subject to Amtrak's obligation to reimburse hosts for at least their incremental costs. *See* 49 U.S.C. § 24308(a)(1)-(3). Amtrak, not the host, sets ticket prices and terms, contracts with passengers, and benefits from ticket revenue, so Amtrak, not the host, is responsible for the costs of Amtrak's service, including the host's incremental costs, 49 U.S.C. § 24308(a)(2)(B), and any costs associated with "personal injury risk" during an emergency, 49 U.S.C. § 24308(b). The host is entitled to be made whole by Amtrak for its incremental costs.[19] Having been compelled to host Amtrak, the host is not obliged to make payments to Amtrak.[20] Indeed, any arrangement whereby the host is

[19] *See Nat'l R.R. Passenger Corp. v. ICC*, 610 F.2d 865, 880 (D.C. Cir. 1979) ("There is no legislative intent that would justify forcing a railroad to accommodate Amtrak operations without the recovery of at least its incremental costs."); *see also* H.R. Rep. No. 93-587, at 16 (1973) (Conf. Rep.) ("The term 'incremental costs', as used by the conferees, is intended to provide a basic level of compensation to be paid a railroad for services provided. . . . The term 'incremental costs' . . . is intended to provide a basis for payment to the railroad of all costs which would not be incurred if passenger service were not performed for Amtrak.").

[20] *See, e.g.,* Interim Decision at 16 ("the Board is concerned that any agreement without a lookback provision might place CN in a situation where it might be required to, effectively, pay Amtrak . . .").

compelled to suffer a verifiable financial loss (whether in the form of a payment to Amtrak or otherwise) would raise constitutional concerns under the takings and due process clauses.[21]

Third, nothing in RPSA authorizes the Board to order Amtrak hosts to compensate Amtrak for its costs. RPSA provides for "a penalty for untimely performance," 49 U.S.C. § 24308(a)(1), but not for other purposes, such as cancellations. Further, it is well established that any such penalty must be subject to a lookback provision that ensures that penalties function only to offset Amtrak obligations to pay incentives to a host, not to require hosts to pay Amtrak.[22]

Finally, CN already has ample contractual incentives to minimize cancellations of Amtrak trains, and even more business incentives to minimize the kinds of events, such as derailments and other track closures, Board Member Hedlund mentions. Further, any mechanism for reimbursing Amtrak passengers from host funds would be beset by practical problems. For example, determining responsibility for each cancellation and then validating passenger claims and determining whether alleged losses were reasonable and reasonably mitigated would inevitably entail substantial administrative expense and disputes.

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[21] *Cf. id.* at 23 (concluding that there is no takings clause violation ***if*** full incremental cost compensation is provided) (citing *Metro. Transp. Auth. v.* ICC, 792 F.2d 287, 296 (2d Cir. 1986); *Application of the Nat'l R.R. Passenger Corp. Under 49 U.S.C. 24308(a)—Union Pac. R.R.*, 3 S.T.B. 134, 156 (1998)).

[22] *See, e.g., Interim Decision* at 16; *Nat'l Rail Passenger Corp. Application Under Section 402(a) of the Rail Passenger Service Act*, FD No. 30426, 1985 ICC LEXIS 318, *31 (July 5, 1985) (approving penalties, along with incentives, subject to a lookback provision). The Board has been given statutory authority to order host payments to Amtrak in one circumstance – if it determines, after an investigative proceeding under 49 U.S.C. § 24308(f)(1), that "failures to achieve minimum standards investigated under paragraph (1) are attributable to a rail carrier's failure to provide preference to Amtrak." 49 U.S.C. § 24308(f)(2). If Congress had intended to authorize the STB to impose liability on hosts for cancellations (which the host may be unable to prevent), as opposed to violations of a statutory obligation to accord Amtrak trains preference, it would have said so.

For all the foregoing reasons, CN opposes the adoption of any passenger compensation provision along the lines suggested by Board Member Hedlund's concurrence.

CONCLUSION

CN appreciates the opportunity to provide additional information that it hopes will assist the Board in resolving the issues in this proceeding.

Respectfully submitted,

/s/ David A. Hirsh

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July 22, 2025

TAB A

PUBLIC VERSION – REDACTED

BEFORE THE
SURFACE TRANSPORTATION BOARD

DOCKET NO. FD 35743

APPLICATION OF THE NATIONAL RAILROAD PASSENGER CORPORATION UNDER 49 U.S.C. § 24308(A) – CANADIAN NATIONAL RAILWAY COMPANY

JOINT VERIFIED STATEMENT OF
SCOTT KUXMANN, SYLVAIN GRENIER & RACHEL KLUMPP

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My name is Scott Kuxmann. I am Manager of Passenger Operations, working in the Interline Services department of CN's Southern Region, which includes the United States. I am also the designated NRPC Officer for CN. I have held this position since August 2012. My previous positions at CN include Senior Manager Operations, Regional Manager Crew Management, Chief Dispatcher, and Train Dispatcher. I have 26 years of experience working in the railroad industry. I began my career with Union Pacific Railroad Company ("UP") in August 1998, before joining Wisconsin Central Ltd. ("WCL") in September of 1999. I joined CN in 2001, with the acquisition of WCL by Canadian National Railway Company. I graduated from the University of Wisconsin-Green Bay in 1992 with a bachelor's degree in business.

In my current position, I am responsible for handling all passenger-related issues on CN's United States lines, which involves overseeing CN's relationship with various Amtrak departments such as the Host Railroad Group, Operations, Accounting, Information Technology, Consolidated National Operations Center, Engineering, Mechanical, Charter and Special Moves. I am familiar with all of Amtrak's services on CN and oversee the administration of the current Operating Agreement (for US Operations). Moreover, through my previous experience as a Train Dispatcher and Chief Dispatcher, I have first-hand knowledge of the relationship between passenger and freight needs in a given corridor, and my background in the intermodal industry provides insight into the customer perspective on rail traffic and transportation of time-sensitive materials.

My name is Sylvain Grenier. I am Business Intelligence Expert – Enterprise Technology Operations at CN. With 29 years of experience at CN, I bring deep expertise in Business Intelligence and performance measurements. Since joining the company in 1996, I have contributed to a wide range of projects across various business areas, supporting strategic initiatives with data-driven insights. I specialize in transforming complex data into actionable intelligence. My long-standing tenure at CN has given me a strong understanding of the company's operations, particularly in train operations, allowing me to align technology solutions closely with business needs.

My name is Rachel Klumpp. I am Assistant Manager, Contract Compliance - Passenger at CN. I have held this position since September 2019. I have been with CN since April 2017. From April 2017 to October 2018, I was PTC Operations Support; from October 2018 to September 2019, I was Project Lead – Interoperability; both of these roles supported CN's implementation of positive train control (PTC). I have over 5 years of experience facilitating Amtrak's operations on CN, reviewing Amtrak's delays and delay coding, and calculating Amtrak's monthly on-time performance.

In response to Request 3 in the Board's April 8, 2025 decision ("Decision"), we developed an automated process for calculating incentive and penalty payments based upon the proposed methodology set forth in CN's proposed Operating Agreement at Appendix V (the "CN Methodology"). In this joint verified statement, we discuss our process for implementing the CN Methodology and describe its application to the underlying data required to calculate incentive and penalty payments. Parts I and II are jointly sponsored by Mr. Kuxmann and Ms. Klumpp, who summarize the CN Methodology and underlying data, and discuss the Excel file they developed to quantify train performance. Part III is sponsored by Mr. Grenier, who discusses the SQL code he developed to automate the calculation of incentive and penalty payments. We (Messrs. Kuxmann and Grenier and Ms. Klumpp) jointly sponsor Part IV, which summarizes the incentive and penalty payments on a monthly basis and by Amtrak route.

The approach we have used for the development and presentation of the CN Methodology is intended to provide maximum transparency by presenting that methodology at three levels – plain language, in Excel formulas, and in SQL programming.

Applying the CN Methodology, we determined that for calendar year 2024, CN would have earned { [redacted] } in incentives and incurred { [redacted] } in penalties, for a net performance payment of { [redacted] } – { [redacted] }.

I. CN METHODOLOGY AND UNDERLYING DATA

Like the calculation of performance payments under the existing Operating Agreement, the underlying data used in the CN Methodology is the train performance and delay data that Amtrak collects and transmits to CN on a daily basis. The primary elements of that data are:

- Amtrak train departure dates and times;
- Amtrak train arrival dates and times; and
- delay codes, associated minutes, and notes supplied by Amtrak conductors relating to Amtrak train movement

(the "Delay Data"). Upon receipt, CN loads the Delay Data into its Passenger Services Reporting System where it is used for operational and reporting purposes, including for the calculation of incentive and penalty payments under the existing Operating Agreement.

Under the CN Methodology, the Delay Data is analyzed monthly, by individual Amtrak train, to determine: (i) the total number of miles that Amtrak train operated over the CN segment of its route ("Monthly Mileage"); (ii) the train's weighted percentage of on-time arrivals at checkpoints along the CN segment (including all stations and endpoints), based on actual arrival time minus scheduled arrival time adjusted by any applicable relief minutes ("Monthly Weighted OTP Percentage"); and (iii) the weighted average number of minutes above or below tolerance that the Amtrak train arrived at checkpoints on time (i.e., within adjusted arrival time) along the CN segment of its route ("Monthly Weighted Average Minutes Above/Below Tolerance"). Together, these three data elements – Monthly Mileage, Monthly Weighted OTP Percentage, and Monthly Weighted Average Minutes Above/Below Tolerance (together, the "Train Performance Data") – comprise the key inputs necessary to calculate performance payments for each train. The essential calculation is as follows:

Performance Rate
(determined by Monthly Weighted OTP Percentage)

{*times*}

Monthly Mileage

{*times*}

Multiplier
(determined by Monthly Weighted Average Minutes Above/Below Tolerance)

See CN Proposed Operating Agreement, App. V, Parts B & C.

As explained below, we worked with Mr. Grenier to develop an automated process for implementing the CN Methodology.

II. CALCULATION OF WEIGHTED OTP PERCENTAGE AND WEIGHTED AVERAGE MINUTES ABOVE/BELOW TOLERANCE USING EXCEL FILE

To calculate Weighted OTP Percentage and Weighted Average Minutes Above/Below Tolerance, we developed an Excel file that explains each step in plain English (i.e., narrative form) and also expresses each step as an Excel formula. To refine and test our Excel formulas, we incorporated into the Excel file Delay Data and the necessary information from schedule skeletons[1] in Appendix II of the CN Proposed Operating Agreement (i.e., checkpoint locations, recovery time base minutes ("RTB"), tolerances) for the following randomly-selected sample test trains and periods: (i) Train 22, July 2024; (ii) Train 58, April 2024; (iii) Train 59, February 2024; (iv) Train 350, December 2024; and (v) Train 355, September 2024. We worked iteratively with Mr. Grenier to refine our process for implementing the CN Methodology and, as a final step, we were able to validate through testing that the results produced by the Excel file and the SQL code[2] are the same. We refer to the resulting document (which is included in our workpapers and incorporates all test trains) as the "Train Performance Excel File."

A. Weighted OTP Percentage

The Monthly Weighted OTP Percentage is necessary to identify the applicable performance rate from the Performance Rate table at CN Proposed Operating Agreement, Appendix V, Table 1:

{

[1] Since creating the schedule skeletons in Appendix II, two train numbers have changed: (i) former Train 303 was in 2024 and is now Train 319; and (ii) former Train 304 was in 2024 and is now Train 318. Aside from the number, the schedule skeletons (and information contained therein) are identical. As per the Board's instruction, we also updated the checkpoint weights in the schedule skeletons based on Amtrak fiscal year 2023 ridership data. Decision at 2 n.2. See Workpaper, Train Information – UPDATED RK.

[2] *See* Part III, Calculation of Performance Payment Using SQL Code, below.

[redacted]

}

As detailed in the Train Performance Excel File, and described below, we analyze arrival and departure data to calculate Arrival Time Variance, then we subtract from that number the minutes associated with relief items to determine whether a train is considered on time at a checkpoint for purposes of performance payments. After determining the on-time performance at individual checkpoints, we apply checkpoint-specific weighting. The resulting value is the Weighted OTP Percentage. As a final step (in the SQL code), that number is averaged across the month for all trains in the same service to calculate a "Monthly Weighted OTP Percentage."

Using examples from the sample test trains in the Train Performance Excel File, we illustrate next each of the key steps in applying the CN Methodology up to the point of the straightforward final calculation of performance payments using SQL code, which is described in Part III, below.

1) <u>Arrival and Departure Variances</u>

We first analyze the Delay Data to quantify the number of minutes by which each train was early or late relative to the scheduled arrival and departure times on each CN segment.

To determine whether a train arrived on time to a particular checkpoint, we subtract the scheduled arrival time from the actual arrival time. If the resulting "Arrival Time Variance" is positive, that means the train arrived after its scheduled arrival time (but possibly still within tolerance); if it is negative, then the train was early. We translated that summary into this Excel formula:[3]

=IF(ISNUMBER)(*x*),((*x*+*y*)-*z*)*1440,"")

x = actual arrival time
y = notation to indicate overnight train, if necessary
z = scheduled arrival time

Here is an example[4] of how the arrival formula is applied to an overnight train:

[3] The number 1440 in this formula represents the number of minutes in 24 hours, which converts the time-formatted number of minutes (00:00:00) in the Excel spreadsheet to a stand-alone number (#), which is necessary for calculations.

[4] This table is excerpted from the Train Performance Excel File, at Worksheet "59 Feb 2024," a copy of which is included with our workpapers.

Train	Origin Date	Scheduled Arrival Time	Station	Actual Arrival Time	Arrival Time Variance (minutes)
59	2/1/2024	8:22 PM	XCS - Clark St	8:16 PM	
59	2/1/2024	8:51 PM	Homewood, IL	8:40 PM	-11
59	2/1/2024	9:21 PM	**F** Kankakee, IL	9:20 PM	-1
59	2/1/2024	10:29 PM	Champaign-Urbana, IL	10:19 PM	-10
59	2/1/2024	11:11 PM	**F** Mattoon, IL	11:11 PM	0
59	2/1/2024	11:36 PM	**F** Effingham, IL	11:35 PM	-1
59	2/1/2024	12:23 AM	**F** Centralia, IL	12:27 AM	4
59	2/1/2024	1:21 AM	Carbondale, IL	1:17 AM	-4
59	2/1/2024	3:12 AM	**F** Fulton, KY	3:16 AM	4
59	2/1/2024	3:54 AM	**F** Newbern-Dyersburg, TN	3:55 AM	1
59	2/1/2024	6:27 AM	Memphis, TN	5:40 AM	-47
59	2/1/2024	7:59 AM	**F** Marks, MS	8:04 AM	5
59	2/1/2024	8:55 AM	Greenwood, MS	8:58 AM	3
59	2/1/2024	9:49 AM	**F** Yazoo City, MS	9:52 AM	3
59	2/1/2024	11:12 AM	Jackson, MS	10:49 AM	-23
59	2/1/2024	11:53 AM	**F** Hazlehurst, MS	11:49 AM	-4
59	2/1/2024	12:14 PM	**F** Brookhaven, MS	12:12 PM	-2
59	2/1/2024	12:38 PM	**F** McComb, MS	12:38 PM	0
59	2/1/2024	1:25 PM	Hammond, LA	1:22 PM	-3
59	2/1/2024	3:28 PM	XSU - Southport Jct	2:36 PM	-52

To determine whether a train departed on time from a particular checkpoint, we subtract the scheduled departure time from the actual departure time. If the resulting "Departure Time Variance" is positive, that means the train was late in departing the checkpoint; if it is negative, then the train departed early. We translated that summary into this Excel formula:[5]

=IF(ISNUMBER)(*x*),((*x*+*y*)-*z*)*1440,"")

x = actual departure time
y = notation to indicate overnight train, if necessary
z = scheduled departure time

However, for points of entry onto CN segments, we make one further adjustment to the departure formula. If CN was responsible for delaying a train from entering its territory (e.g., a delay coded as DCS), an adjustment is necessary to account for those delay minutes. We deduct those minutes from the Departure Time Variance so that CN would be held accountable. For

5 *See* footnote 3, *infra*, discussing the 1440 number utilized in the Excel formula**.**

points of entry onto CN segments, here is the adjusted Excel formula we use to determine whether a train departed on time from a particular checkpoint:

=IF(ISNUMBER)(*x*),((*x*+*y*)-*z*)*1440,"")

{*minus*}

CN Delay Minutes at Origin

Here is an example[6] of how the departure formulas are applied to a train with the manual adjustment for delays attributable to CN at origin:

Train	Origin Date	Scheduled Departure Time	Station	Actual Departure Time	CN Delay Minutes at Origin	Adjusted Departure Time Variance
58	4/7/2024	1:55 PM	XSU - Southport Jct, LA	2:03 PM	3	5
58	4/7/2024	2:45 PM	HMD - Hammond, LA	3:09 PM		24
58	4/7/2024	3:32 PM	MCB - McComb, MS	4:06 PM		34
58	4/7/2024	3:56 PM	BRH - Brookhaven, MS	4:30 PM		34
58	4/7/2024	4:17 PM	HAZ - Hazlehurst, MS	4:47 PM		30
58	4/7/2024	5:44 PM	JAN - Jackson, MS	5:44 PM		0
58	4/7/2024	6:42 PM	YAZ - Yazoo City, MS	6:42 PM		0
58	4/7/2024	7:37 PM	GWD - Greenwood, MS	7:40 PM		3
58	4/7/2024	8:31 PM	MKS - Marks, MS	8:37 PM		6
58	4/7/2024	10:40 PM	MEM - Memphis, TN	10:40 PM		0
58	4/7/2024	12:22 AM	NBN - Newbern, TN	12:26 AM		4
58	4/7/2024	1:04 AM	FTN - Fulton, KY	1:04 AM		0
58	4/7/2024	3:16 AM	CDL - Carbondale, IL	3:16 AM		0
58	4/7/2024	4:10 AM	CEN - Centralia, IL	4:10 AM		0
58	4/7/2024	4:57 AM	EFG - Effingham, IL	5:09 AM		12
58	4/7/2024	5:23 AM	MAT - Mattoon, IL	5:32 AM		9
58	4/7/2024	6:10 AM	CHM - Champaign-Urbana, IL	6:16 AM		6
58	4/7/2024	7:13 AM	KKI - Kankakee, IL	7:17 AM		4
58	4/7/2024	7:44 AM	HMW - Homewood, IL	7:56 AM		12
58	4/7/2024	9:08 AM	XCS - Clark St, IL			

[6] This table is excerpted from the Train Performance Excel File, at Worksheet "58 Apr 2024," a copy of which is included with our workpapers.

2) Relief items Subtracted from Arrival Time Variance

In the next stage of our process, we analyze Delay Data to identify appropriate relief items and associated minutes to be subtracted from Arrival Time Variances. We then take the resulting Adjusted Arrival Time Variances and subtract any carry-forward relief minutes in order to determine the final number of delay minutes for which CN is responsible.

As our first step, we rely on Amtrak's coding of delays to identify and determine the total number of the minutes of delay associated with the following relief items: Passenger Related (ADA); Hold for Connection (CON); Initial Terminal Delay ("ITI"); Servicing (SVS); and Injury Delay (INJ) that occurred at a station.[7] We also add minutes of delay associated with: (i) relief-claimed minutes for delays that are not subject to the RTB ("RCM"), including delay minutes that Amtrak conductors attributed to CN as a host, but to which CN is entitled to and has claimed relief under the Operating Agreement; and (ii) delays to Amtrak occurring on CN's lines due to a non-CN host (generally Amtrak train delays departing CN's lines or arriving at checkpoints on CN's lines, attributed by Amtrak to a non-CN host. We refer to the relief items described in this paragraph as "Non-RTB Relief Items" and the minutes associated with same as "Non-RTB Relief Minutes."

Separately, we add the minutes of delay associated with other categories of relief items: Car Failure (CAR); Cab Car Failure (CCR); Locomotive Failure (ENG); Passenger Related (HLD); Injury Delay (INJ) that did not occur at a station[8]; Miscellaneous Delays (OTH); Crew & System (SYS); Customs (CUI); Debris (DBS); Drawbridge Openings (MBO); Police-Related

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[7] To identify delays that occurred at a station, we look for delays that meet two criteria: (i) delay is coded INJ; and (ii) the delay begins and ends at the same station.

[8] To identify delays that did not occur at a station, we look for delays that meet two criteria: (i) delay is coded INJ; and (ii) the delay begins and ends at different checkpoints.

(POL); Trespassers (TRS); and Weather-Related (WTR) (collectively, the "RTB Relief Items"). Next, we assess whether and to what extent CN can take relief for the RTB Relief Items. To do that, we compare the total minutes associated with the RTB Relief Items for each checkpoint-to-checkpoint segment against the RTB minutes for that same checkpoint-to-checkpoint segment (as noted in the schedule skeletons in CN's Proposed Operating Agreement), and take relief only for the number of minutes (if any) in excess of the RTB minutes (the "RTB Relief Minutes").

We also have to calculate carry-forward minutes which reduces subsequent segments' Arrival Time Variance value by the lesser of: (i) the Departure Time Variance minutes from the previous segment; or (ii) the cumulative sum across all prior segments of Departure Time Variance minutes, Non-RTB Relief Minutes, and RTB Relief Minutes (the "Carry-Forward Relief Minutes"). We translated that summary into the following Excel formula:

=IF(a<=0,0,IF(a<=b+c+d),a, b+c+d))

a = Adjusted Departure Time Variance from previous segment
b = Non-RTB Relief Minutes from previous segment
c = RTB Relief Minutes from previous segment
d = carry-forward from previous segment

After the above formula is applied, here is an example[9] of the resulting Carry-Forward Relief Minutes:

Train	Origin Date	Scheduled Departure Time	Station	Adjusted Departure Time Variance (minutes)	Carry-Forward Relief Minutes
350	12/31/2024	*10:37 AM*	*XGO - Gord, MI*	2	
350	12/31/2024	10:56 AM	BTL - Battle Creek, MI	3	
350	12/31/2024	10:59 AM	XB0 - Baron, MI	4	2
350	12/31/2024	1:09 PM	X1W - West Detroit, MI	6	
350	12/31/2024	1:25 PM	DET - Detroit, MI	6	
350	12/31/2024	1:49 PM	ROY - Royal Oak, MI	9	6
350	12/31/2024	1:57 PM	TRM - Troy, MI	10	9
350	12/31/2024		PNT - Pontiac, MI		9

9 This table is excerpted from Train Performance Excel File, at Worksheet "350 Dec 2024," a copy of which is included with our workpapers.

The next step is to ascertain the amount of minutes of CN-responsible arrival time variance. To do so, we take the Arrival Time Variance minutes and subtract from it the minutes associated with Non-RTB Relief Items, RTB Relief Minutes, and Carry-Forward Relief Minutes. The resulting value is the arrival time variance for which CN is responsible ("CN-Responsible Arrival Time Variance").

3) Train performance based on tolerance and CN-Responsible Arrival Time Variance

For each train run, we next compare CN-Responsible Arrival Time Variance against applicable tolerances[10] to determine whether that train achieved on time status at each checkpoint. Under the CN Methodology, a train is considered on time if CN-Responsible Arrival Time Variance is less than or equal to the applicable tolerance. We add the checkpoint weights[11] for the on time arrivals to determine the overall weighted on-time percentage. The resulting value is the Weighted OTP Percentage for the train run.[12]

10 *See* CN Proposed Operating Agreement, App. II, Schedule Skeletons.

11 *See* CN Proposed Operating Agreement, App. II, Schedule Skeletons.

12 With our guidance, Mr. Grenier wrote SQL code to take the final step of calculating the Monthly Weighted OTP Percentage, described in Part III below.

B. Weighted Average Minutes Above/Below Tolerance

We calculate the Weighted Average Minutes Above/Below Tolerance (defined below) in order to identify and apply the appropriate multiplier from the following tables[13]:

{

[redacted]

}

We subtract contractually-defined tolerances[14] from the CN-Responsible Arrival Time Variance to ascertain the number of minutes above or below tolerance at each checkpoint. For "LT" and "OT" checkpoints, we multiply the applicable checkpoint weight[15] against the number of minutes below or above tolerance to calculate the weighted average minutes below or above tolerance at each checkpoint. For each train run, we then add the resulting values to calculate what we call the "Weighted Average Minutes Above/Below Tolerance."[16] Finally, we take the average of each train run's weighted average minutes for the month, to get the monthly weighted average minutes above or below tolerance ("Monthly Weighted Average Minutes Above/Below

13 *See* CN Proposed Operating Agreement, App. V, Part B.

14 *See* CN Proposed Operating Agreement, App. II, Schedule Skeletons.

15 *See id*.

16 With our guidance, Grenier wrote SQL code to take the final step of calculating the Monthly Weighted Average Minutes Above/Below Tolerance, described in Part III below.

Tolerance"). Based on the Monthly Weighted Average Minutes Above/Below Tolerance, we apply the appropriate multiplier from the tables above and use it to calculate incentive and penalty payments.

III. CALCULATION OF PERFORMANCE PAYMENTS USING SQL CODE[17]

Mr. Kuxmann and Ms. Klumpp sent me a copy of the Train Performance Excel File, which contains a narrative description of the steps in accordance with the CN Methodology required to calculate Weighted OTP Percentages and Weighted Average Minutes Above/Below Tolerance for every train segment. I used that document to develop SQL code to automate the quantification of Weighted OTP Percentage and Weighted Average Minutes Above/Below Tolerance values, and further developed and incorporated code to quantify their monthly averages and calculate Monthly Weighted OTP Percentages and Monthly Weighted Average Minutes Above/Below Tolerance. I also developed SQL code to automate the calculation of Monthly Mileage values and the calculation of incentive and penalty payments.

Mr. Kuxmann and Ms. Klumpp provided me with the following datasets[18] that I incorporated into the SQL code:

- 2024 Delay Data;
- train schedule data (from schedule skeletons, including RTB, and tolerances);
- checkpoint weights (updated to Amtrak fiscal year 2023);
- performance rate table; and
- multiplier tables.

---

17 A copy of the SQL code titled "SQL Code - Incentives and Penalties" is included in my workpapers.

18 The datasets are included in my workpapers.

For purposes of developing the SQL code, I loaded the data onto a local server that serves as the test environment where I developed and refined the SQL coding. If the Board orders the parties to adopt the SQL code, CN can integrate it into its central operations to automate the process of calculating incentives and penalties on a monthly basis using Amtrak's Delay Data. To the extent there are future revisions to data inputs (e.g., RTB, checkpoint weights, performance rates, etc.), such updates can be programmed into the system by updating the SQL code.

The SQL code mirrors the steps set forth in the Train Performance Excel File, and then builds upon that information to automatically calculate and generate reports summarizing the incentives and penalties earned by CN in 2024. Mr. Kuxmann and Ms. Klumpp provided instruction regarding the relatively simple steps required to calculate performance payment amounts using the data generated as described above. I used those instructions to develop the portion of the SQL code that generates summaries of incentive and penalty amounts. Per their guidance, I also included code that allows end users to enter delay-related adjustments manually without writing new code or altering the rules embedded in the code to accommodate any occasions when it may need to be adjusted manually.

The SQL code has 23 tables that I summarize here:

- <u>Tables 1-6</u>: Load the performance rate table, checkpoint data, train skeleton data, train performance data, and delay codes. *See* SQL Code – Incentives and Penalties, at CN_Grenier_01-15.

- <u>Table 7</u>: This table contains manual adjustments to delay coding. *See id.*, at CN_Grenier_15-16.

- <u>Tables 8-9</u>: Organize delay codes and related data. *See id.*, at CN_Grenier_16-19.

- <u>Tables 10-11</u>: Create final tables containing Amtrak delay codes and checkpoint-specific performance data. *See id.*, at CN_Grenier_19-21.

- Tables 12-16: Calculate carry-forward minutes. *See id.*, at CN_Grenier_21-30.

- Table 17: Organize PSRS performance data that will be used to produce the train file containing performance payment summaries and underlying data. *See id.*, at CN_Grenier_31-38.

- Table 18: Prepare data for monthly detail report. *See id.*, at CN_Grenier_38-39.

- Table 19: Prepare data for monthly summary report. *See id.*, at CN_Grenier_39-40.

- Table 20: Process all data and generate Excel-formatted report summarizing incentives and penalties earned by CN. *See id.*, at CN_Grenier_40-41.

- Table 21: Within Excel-formatted report, generate sheet called "Payment by Month by Category" which summarizes monthly incentive and penalty payments broken down by train. *See id.*, at CN_Grenier_41-42.

- Table 22: Within Excel-formatted report, generate sheet called "Summary" which summarizes certain train performance values utilized to calculate performance payment amounts. *See id.*, at CN_Grenier_42.

- Table 23: Within Excel-formatted report, generate sheet called "Detail" which summarizes certain train performance values utilized to calculate performance payment amounts. *See id.*, at CN_Grenier_42-43.

Using this data I then generated the following performance payment reports:[19]

- Train File Report – All Trains: This report contains a single worksheet quantifying train performance by calculating Monthly Weighted OTP Percentage and Monthly Weighted Average Minutes Above/Below Tolerance.

- Month-to-Date OTP Incentive Report – All Trains: This report contains three worksheets. The first is called "Payment by Month by Category," and it provides a high-level overview of performance payments broken down by month and by train. The second and third worksheets—"Summary" and "Detail",

[19] After generating the reports, I manually cleaned up the formatting and added back into the file narrative descriptions that I used to write the SQL code and that had been provided to me by Mr. Kuxmann and Ms. Klumpp. I did this to make the final reports more user-friendly and easier to read. In doing so, I did not alter any of the calculated outputs.

respectively—show how the SQL code used the Monthly Weighted OTP Percentage and Monthly Weighted Average Minutes Above/Below Tolerance to identify and apply the appropriate performance rates and multipliers to the Monthly Mileage for each train.

I sent a copy of these reports to Mr. Kuxmann and Ms. Klumpp, who reviewed and engaged in a joint validation process with me to refine the processes that I had translated into SQL code. As our last step, I generated a report which they reviewed and compared against the outputs of the Train Performance Excel File. We confirmed that the Train Performance Excel File and SQL code produce the same Weighted OTP Percentage and Weighted Average Minutes Above/Below Tolerance values.[20] We also reviewed and confirmed that the portion of SQL code I developed to calculate the Monthly OTP Percentage and Monthly Weighted Average Minutes Above/Below Tolerance values, and to calculate incentive and penalty payments, corresponds to the CN Methodology.

IV. CALENDAR YEAR 2024 INCENTIVES AND PENALTIES

Applying the CN Methodology, we determined that for calendar year 2024, CN would have earned { [redacted] } in incentives and { [redacted] } in penalties, which would have resulted in a net performance payment to CN of { [redacted] }. The table below further breaks down the performance payments by month and by Amtrak route:

{

[20] For a small number of outputs, there is an immaterial difference between the SQL and Excel results (beyond the twelfth decimal place) likely relating to rounding differences.

[redacted]

}

VERIFICATION

I, Scott Kuxmann, declare under penalty of perjury that I have read the foregoing Joint Verified Statement, that I know the facts asserted therein, and that the same are true as stated. Further, I certify that I am qualified and authorized to submit this Joint Verified Statement on behalf of Canadian National Railway Company and its subsidiaries, including Illinois Central Railroad Company and Grand Trunk Western Railroad Company.

Executed on July 22, 2025

Scott Kuxmann

VERIFICATION

I, Sylvain Grenier, declare under penalty of perjury under the laws of the United States that I have read the foregoing Joint Verified Statement, that I know the facts asserted therein, and that the same are true as stated. Further, I certify that I am qualified and authorized to submit this Joint Verified Statement on behalf of Canadian National Railway Company and its subsidiaries, including Illinois Central Railroad Company and Grand Trunk Western Railroad Company.

Executed on July 22, 2025

Sylvain Grenier

VERIFICATION

I, Rachel Klumpp, declare under penalty of perjury that I have read the foregoing Joint Verified Statement, that I know the facts asserted therein, and that the same are true as stated. Further, I certify that I am qualified and authorized to submit this Joint Verified Statement on behalf of Canadian National Railway Company and its subsidiaries, including Illinois Central Railroad Company and Grand Trunk Western Railroad Company.

Executed on July 22, 2025

Rachel E. Klumpp

Rachel Klumpp

TAB B

PUBLIC VERSION - REDACTED

BEFORE THE
SURFACE TRANSPORTATION BOARD

Docket No. FD 35743

APPLICATION OF THE NATIONAL RAILROAD PASSENGER CORPORATION UNDER 49 U.S.C. § 24308(a) – CANADIAN NATIONAL RAILWAY COMPANY

JOINT VERIFIED STATEMENT OF
M. RAPIK SAAT, PH.D. & SYLVAIN GRENIER

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Introduction

My name is M. Rapik Saat. I am Senior Manager – Regulatory Costing at CN. I have held this position since September 2024. From April 2016 to September 2024, I was Director – Operations Analysis at the Association of American Railroads (“AAR"). At AAR, I worked on the development of a freight train delay model and its deployment for use supporting federal grant applications. From January 2010 to March 2016, I was Research Assistant Professor at the Rail Transportation and Engineering Center (“RailTEC”) at the University of Illinois at Urbana-Champaign (“UIUC”). At UIUC, I quantified freight train delay costs in various rail transportation safety and risk studies using methods developed at RailTEC. I have BS, MS and Ph.D. degrees in Civil Engineering, all from UIUC, with concentrations in rail transportation and operations research. I also have an MS degree in Applied Economics from Johns Hopkins University.

My name is Sylvain Grenier. I am Business Intelligence Expert – Enterprise Technology Operations at CN. With 29 years of experience at CN, I bring deep expertise in Business Intelligence and performance measurements. Since joining the company in 1996, I have contributed to a wide range of projects across various business areas, supporting strategic initiatives with data-driven insights. I specialize in transforming complex data into actionable intelligence. My long-standing tenure at CN has given me a strong understanding of the company's operations, particularly in train operations, allowing me to align technology solutions closely with business needs.

For purposes of CN’s response to the decision of the Surface Transportation Board (“Board”) served on April 8, 2025, we were tasked with leveraging CN’s existing data infrastructure to streamline and automate the calculation of the incremental costs of Amtrak-caused CN freight train delay events in calendar year 2024 ("Analysis Period") based on CN's proposed methodology.[1] Incremental freight train delay costs were previously determined only for the month of December 2019 ("Dec. 2019 Analysis").

For the current Analysis Period, direct access to CN data warehouses enabled us to seamlessly match records from different databases and perform the calculations automatically after we completed the programming scripts that implement CN's proposed methodology as filed in 2022. Also, by conducting the 2024 analysis internally, we negate the need to transfer data and preliminary results back and forth with any outside consultant, as in the case for the Dec. 2019 Analysis. Actual incremental freight train delay costs can now therefore be quantified by CN without undue complexity and burden.

Using CN's proposed methodology, for the Analysis Period, we (1) identified and quantified the hours of delay to CN's freight trains that are attributable to Amtrak, and then (2) calculated the incremental costs to CN associated with each of those delay events – costs that would not be incurred but for the presence of Amtrak. In identifying and quantifying delays, we relied primarily on data from three CN operational systems used in the normal course of business: (i) Service Reliability System ("SRS") data, (ii) Wi-Tronix data, and (iii) dispatching playback recordings. For purposes of calculating the incremental costs associated with the delays, we relied on the same data sources as the 2019 Analysis, but updated for 2024, including the locomotive idle burn rates, CN's monthly average cost of fuel in the U.S., locomotive cost per horsepower-hour rates, freight car hourly hire rates, and CN payroll records. The systems and data sources we relied upon were described in detail in CN's PID

[1] *See* CN Post-Interim Decision ("PID") Opening Submission at 82-94 (May 27. 2022, corrected and refiled Nov. 30, 2022).

Decision Opening Submission[2] and sources cited therein. We are submitting extensive workpapers documenting our data sources and calculations.

As discussed below, we made two conservative substantive refinements to the methodology used for the Dec. 2019 Analysis. First, we opted to be more conservative regarding the quantification of "V-Time" delays (essentially time consumed stopping and starting) by excluding from our analysis V-Time for single-attribution delays when Wi-Tronix data was not available. See Part II.B. Second, based on advances we have made in utilizing Wi-Tronix data, we refined the methodology used for the assessment of fuel burn rates, which, as applied to 2024, yielded a marginally lower incremental fuel consumption, and thus, a marginally lower incremental cost. See Part III.A.

Executive Summary

For the Analysis Period (calendar year 2024), we identified and verified 6,896 Amtrak-caused CN's freight train delay events, and quantified 231,387 delay minutes (3,856 hours). We used the same methodologies as those in the Dec. 2019 Analysis to identify the Amtrak-caused delay events and quantify the delay time, except in one respect we were more conservative – we excluded delay time for added stopping and starting for delay events without Wi-Tronix data. In accordance with the Board's directive to document the methodology in plain language in the current filing, Parts I and II in this document describe the methodologies we used to identify the Amtrak-caused-specific delay events and quantify the delay time, respectively.

We also used the same methodologies as those in the Dec. 2019 Analysis to quantify the incremental costs, except for one refinement in the calculation of incremental fuel burn costs. That refinement is the use of a Wi-Tronix-based approach, not available to CN in 2022, to

[2] CN (PID) Opening Submission at 82-94, and sources cited therein.

quantify locomotive fuel consumption due to added stopping and starting. Instead of relying on stop or idle times and train performance calculator ("TPC") simulations to quantify the fuel consumption, the refined approach uses actual locomotive duty cycle information that includes the amount of time spent in different throttle settings. We include both alternative fuel burn analyses (using the 2022 TPC-based approach, and the 2024 Wi-Tronix-based approach) in our presentation of cost methodologies in Part III, below, but we have used the Wi-Tronix-based approach in the total incremental cost summary as shown in Table ES1 below. The Wi-Tronix-based approach appears to be more precise, and using it is conservative insofar as its use generates a calculation of fuel consumption cost for 2024 that is lower – even if only marginally, $6,211 for the entire year – than the TPC-based approach.

Table ES1: Incremental Costs of Delays to CN's Freight Trains Due to Amtrak in 2024

Cost Component	2024 Cost
Fuel[3]	${[redacted]}
Locomotive	${[redacted]}
Freight Car	${[redacted]}
Crew Overtime	${[redacted]}
Total	**$1,449,092**

[3] Using the TPC-based approach, which was the fuel burn methodology used in the Dec. 2019 Analysis, gives a total fuel consumption cost for 2024 of ${[redacted]}.

2024 Analysis

I. Identifying Freight Train Delays Due to Amtrak

The first step of our analysis involved identifying the universe of freight train delays caused by Amtrak in the Analysis Period based on records from SRS, CN's primary tool for generating data regarding train events and performance. SRS records the number of minutes a train takes to travel across a block (i.e., between two "Delay Reporting Stations") and compares that duration of time to the unimpeded segment runtime programmed into the system (the "Segment Runtime"). If the time to travel between Delay Reporting Stations is longer than the associated Segment Runtime, then SRS automatically generates a "Delay Prompt," which prompts the CN dispatcher for the delayed train to input delay codes and delay comments to identify and quantify delay events affecting that train on that route segment/at that location.

Through that process, the dispatcher creates a "Delay Record" (or multiple Delay Records if multiple causes contributed to the train's being delayed on the segment as indicated by a specific Delay Prompt). Dispatchers use the "FA" code to identify freight train delay events caused by Amtrak. CN implemented the uniform use of the "FA" code in July 2017, and it has proven to be a reliable means of internally tracking specific freight train delay events caused by Amtrak.

Table 1 below shows an example of SRS Delay Records.[4] The DELAY_ID column is a uniquely assigned number for each distinct combination of Delay Prompt timestamp (DELAY_TMSP_UTC) and columns representing a unique train identification (TRN_TYPE, TRN_SYM, TRN_SCTN and TRN_DATE). Delay Records with an "FA" delay code in the DELAY_CD column are the specific Amtrak-caused freight train delays identified in the

[4] Source: Tab "SRS Delays" in Workpaper "SRS_FA_2024.xlsx".

Analysis Period. In Table 1, Delay #25 was solely attributed to Amtrak (“FA”) while Delay #73 was attributed to both Amtrak (“FA”) and the Rail Traffic Controller (“TR”).

Table 1: Example SRS Delay Records{

[redacted]} When multiple causes contribute to a delay event between two Delay Reporting Stations, dispatchers use real-time data, including dispatching system Playbacks as appropriate, to separate out each cause contributing to the delay and to assign the number of delay minutes attributable to each cause. Where such a delay event involves an Amtrak-caused delay, dispatchers first assign the appropriate number of delay minutes caused by Amtrak to the “FA” code. After assigning those delay minutes to the “FA” code, dispatchers then allocate the balance of remaining delay minutes to non-FA codes. Delay coding and comments are then subject to further review and verification by higher-level dispatch personnel responsible for track operations. This quality control process ensures that Delay Records with allocated multi-event delay minutes are highly reliable.

Tab “SRS Delays” on Workpaper “SRS_FA_2024.xlsx” contains a specific list of 6,896 freight train delay records identified in the Analysis Period that involve an Amtrak-caused delay. Besides the columns described in the example in Table 1 above, other key columns in the file are the concatenated train identification information to identify {[redacted]}. Delay ID numbering is non-consecutive, reflecting the fact that many FA delays (due to Amtrak) were dropped from our analysis, consistent with the highly conservative approach of the 2022 analysis. One of the largest categories of dropped delays were FA delays that occurred when a CN train slowed and paced because of an Amtrak train but the CN train did not stop. On that basis alone, we excluded over 2,000 FA delays from our analysis.

II. Quantifying Freight Train Delay Time Caused by Amtrak

After relevant freight-train-delay events were identified for the Analysis Period, the second step to determining the incremental costs of freight train delays due to Amtrak involved quantifying the delay time attributable to Amtrak for each individual delay event. The methodology we use to quantify delay time due to Amtrak depends on whether Wi-Tronix data was available for a delay event and whether the delay event was attributed solely to Amtrak (i.e., “Single-Attribution”) or was a “Multi-Attribution” delay event, where at least one cause was coded “FA.” Table 2 shows the total number of delay events associated with Amtrak-caused delays, broken down by calculation method and delay type.[5]

Table 2: Summary of Identified Amtrak-Caused Freight Train Delays in 2024

Calculation Method	Delay Type	Delays	Pct of Total
Wi-Tronix	Amtrak Only	3,090	44.8%
Wi-Tronix	Multi-Attribution	3,153	45.7%
Playback Reviews	Amtrak Only	290	4.2%
SRS Captured Time	Multi-Attribution	363	5.3%
	Total	6,896	100%

Our general approach was to determine the amount of time a freight train was fully stopped at zero mph (“Idle Time”) due to the operation of an Amtrak train on CN’s lines, and then calculate the additional time attributable to the freight train slowing to a stop and then accelerating back after the stop as compared to the time that would have elapsed if the train had continued at a constant speed (the “V-Time”). This process yields, for each identified delay event, a “Delay Time.” For Amtrak Single-Attribution delays, the Delay Time is the sum of Idle Time and any V-Time. For Multi-Attribution delays, however, in order to be conservative, Delay Time included only Idle Time (i.e., no V-Time was included).

A. Delay Time Quantification with Wi-Tronix Data

CN relies on the Wi-Tronix system to monitor and capture locomotive metrics relevant to its operations. Whereas SRS focuses on train events, the automated, widely used Wi-Tronix system captures a “snapshot” of locomotive-specific performance metrics every five minutes as well as when certain predefined events (including stopping and starting) occur or when a train

[5] This table and Tables 4, 5, 8, 9, 11, 13, 14, and 15, are excerpted from Tab “Summary Analysis” in Workpaper “Amtrak_Caused_Delay_Incremental_Cost_2024_MASTER_SUMMARY.xlsx”.

reaches certain locations. Wi-Tronix couples advanced telemetry with detailed data gathered instantaneously from locomotive subsystems, enabling CN to monitor and record in detail train location, speed, and locomotive braking operations. Because Wi-Tronix accurately records exact stop/start times and captures key metrics relating to locomotive performance, including mile marker post, speed, throttle position, and engine status, Wi-Tronix data can be used to calculate both Idle Time and V-Time.

Table 3 shows a snapshot of the Wi-Tronix data analyzed for the same Delay #25 previously shown in Table 1. The DELAY_ID, TRAIN_ID and DELAY_TMSP_UTC columns were copied from SRS. The SNAP_TS_UTC is the timestamp of a Wi-Tronix data reading at a specific milepost (MPNT) and named location (LOC_TXT). The THRL_POS_DESC column indicates the throttle level of the locomotive, and the OPER_VLTY_MPH is the speed of the locomotive at the time of the reading. The DELAY_BLOCK_ID and DELAY_BLOCK_DESC columns are the output of our algorithm to identify key delay points as described below.[6]

[6] Source: Tab "Sample Calculation" in Workpaper "WiTronix_Delay_Time_Sample Calculation.xlsx".

Table 3: Snapshot of Analyzed Wi-Tronix Data for Delay #25{

[redacted]}

In order to automate and improve the matching of the delay location reported in SRS with the mainline stop location identified in the Wi-Tronix data, we developed and used a new algorithm for the 2024 analysis. The algorithm first identifies all potential mainline stops (i.e., when a train was completely stopped at zero mph) that were initiated prior to the Delay Prompt timestamp between the Delay Reporting Stations listed in the SRS Delay Record. It then selects the appropriate mainline stop location by matching the Wi-Tronix location as indicated in column LOC_TXT with the location identified in the DELAY_COMMENT column in SRS. In order to be conservative, we excluded from the analysis SRS delay records whenever the delay location was not specified in the DELAY_COMMENT column.} The one exception to this exclusion was for delays that had the same start and end delay stations, because in such cases the delay location is the same as the delay station. Going forward, CN is enhancing its data entry process so that, in response to Delay Prompts, dispatchers will be required to specify the delay location and Amtrak train ID whenever the “FA” code is selected.

The “Deceleration Start” point in Table 3 was the time and location when the freight train started to slow to a stop. Programmatically, Deceleration Start is identified by finding the closest Wi-Tronix record prior to an identified mainline stop with the maximum speed just before the speed started to decrease towards zero. The “Acceleration End” point in Table 3 is the time and location when the freight train completed its acceleration back to track speed after the stop. Programmatically, Acceleration End is identified by finding the closest Wi-Tronix record after an identified mainline stop with the maximum speed just before acceleration stopped.

Idle Time is calculated as the difference between the timestamps at Stop Start and Stop End. Using the Wi-Tronix data for Delay #25 in Table 3 as an example, subtracting the Stop

End time of 5:45 PM from the Stop Start time of 5:25 PM yields an Idle Time delay of 20 minutes.

The V-Time Algorithm uses the Wi-Tronix Data to calculate V-Time as follows:

Total Slowing Time:	Time at Acceleration End {*minus*} Time at Deceleration Start
Total Distance Traveled:	Milepost at Acceleration End {*minus*} Milepost at Deceleration Start
Unencumbered Time:	Total Distance Traveled {*divided by*} Speed at Deceleration Start
V-Time:	Total Slowing Time {*minus*} Idle Time {*minus*} Unencumbered Time
Delay Time:	Idle Time {*plus*} V-Time

Taking the same example of Delay #25 above using its Wi-Tronix data as shown in Table 3, here are the discrete steps comprising the V-Time Algorithm:

Total Slowing Time:	[6:00 PM]	[43] minutes
	{*minus*}	
	[5:17 PM]	
Total Distance Traveled:	[166.21]	[8.78] miles
	{*minus*}	
	[174.99]	
Unencumbered Time:	[8.78] miles	[15] minutes
	{*divided by*}	
	[34.8] mph	
V-Time:	[43] minutes	[8] minutes
	{*minus*}	
	[20] minutes	
	{*minus*}	
	[15] minutes	
Delay Time:	[20] minutes	[28] minutes
	{plus}	
	[8] minutes	

For Single-Attribution delay events that were solely caused by Amtrak, Delay Time includes both Idle Time and V-Time. However, for Multi-Attribution delay events, Delay Time was limited to Idle Time (i.e., the time the freight train was stopped on the mainline to allow Amtrak train(s) to pass). In order to be conservative, we excluded V-Time for Multi-Attribution delays because contributions of non-FA delay events to V-Time could not be disaggregated conclusively. Further, in the rare instances when there were Wi-Tronix data quality issues (e.g., missing values to calculate Idle Time or V-Time), we set Delay Time (Idle Time and/or V-Time) to zero.

As with the Dec. 2019 Analysis, for Multi-Attribution delays we erred on the conservative side by selecting the smaller of the quantified Delay Time as calculated using Wi-Tronix data or reported in SRS.

The Amtrak-caused freight train Delay Time for delay events with Wi-Tronix data is summarized in Table 4. Note, as shown in Table 2, the delays for which delay minutes were quantified using the Wi-Tronix-based delay time calculation method account for 90% of all delay events in the Analysis Period (6,243 delays out of a total of 6,896).

Table 4: Summary of Delay Minutes Quantified Using the Wi-Tronix Data{

[redacted]

} Workpaper " 1 - AMTRAK Delays - Final Code Clean - AMTRAK DELAY TO STOP ASSOCIATION" contains the SQL programming script used to identify the delay events and match them with Wi-Tronix data. Workpaper "WiTronix_Detail_Data _FA_2024.xlsx" contains the Wi-Tronix data for the 6,243 delay events. Workpaper "WiTronix_Delay_Time_Sample_Calculation.xlsx" illustrates how the Wi-Tronix delay time calculation can be done in a spreadsheet while Workpaper "2 - AMTRAK Delays - Final Code Clean - AMTRAK DELAY COST DETERMINATION.pdf" contains the SQL script implementing the algorithm used to analyze the Wi-Tronix data automatically. Tab "WiTronix" in Workpaper "Quantified_Delay_Minutes _FA_2024.xlsx" lists the calculated delay time for all delay events with Wi-Tronix data.

B. Delay Time Quantification without Wi-Tronix Data

There were only 290 “FA”-coded Single-Attribution delay events for which CN did not have Wi-Tronix Data. The best source for determining Idle Time attributable to Amtrak in those cases is Playbacks because, although their use is somewhat labor-intensive, they provide detailed and reliable data regarding the movement of the freight train at issue and surrounding trains, including the Amtrak train causing the delay. In particular, Playbacks contain detailed data from which we can determine the Mainline Stop time (which we measured from when the freight train cleared from the mainline completely, having moved into the siding) and the Mainline Start time (which we measured from when the Amtrak train on a mainline cleared the exit to the siding, so it no longer blocked the delayed freight train).

We subtracted the former from the latter to quantify Idle Time. In order to again be conservative, as a further refinement to the Dec. 2019 Analysis, we excluded from our analysis of 2024 delays the V-Time for Single-Attribution delays without Wi-Tronix data given the challenges of verifying train speeds from Playbacks.

Workpaper “Playback_Files _FA_2024.zip” contains the video recordings and screenshots used to identify the start and end of Idle Time for all the relevant delay events (the first set of numbers in the subfolder names corresponds to DELAY_ID). Tab “Playback” in Workpaper “Quantified_Delay_Minutes_FA_2024.xlsx” lists the calculated delay time for all the Single-Attribution delay events without Wi-Tronix data.

There were 363 “FA”-coded Multi-Attribution delays for which CN did not have Wi-Tronix Data. In those cases, we used the SRS-captured delay time as Idle Time, and no V-Time was recorded. Tab “SRS” in Workpaper “Quantified_Delay_Minutes_FA_2024.xlsx” lists the calculated delay time for all the Multi-Attribution delay events without Wi-Tronix data.

C. Delay Time Summary

For the Analysis Period (calendar year 2024), we identified and verified 6,896 delay events, and as part of those events we quantified 231,387 minutes of delay (3,856 hours)[7] to CN's freight trains, due to Amtrak. Table 5 below summarizes these results, and also presents the average delay time for each type of record.

Table 5: Summary of Delay Time for All Amtrak-Caused Freight Train Delays in 2024{

[redacted]

}

III. Quantifying Incremental Freight Train Delay Costs Caused by Amtrak

When CN's freight trains are delayed by Amtrak, CN incurs incremental costs as its locomotives consume more fuel, and as locomotives, railcars, and train crew are delayed. We quantified the aforementioned categories and sub-categories of incremental costs associated with each of the specific Amtrak-caused freight train delay events that we identified as described in Parts I and II above. Workpaper "2 - AMTRAK Delays - Final Code Clean - AMTRAK DELAY COST DETERMINATION.pdf" contains the SQL script used to perform the incremental cost calculations automatically. Other workpapers for each cost component are described below.

[7] *See* Tabs "Summary Analysis" and "One-Page Summary" in Workpaper "Amtrak_Caused_Delay_Incremental_Cost_2024_MASTER_SUMMARY.xlsx".

A. Incremental Fuel Costs

When a CN train is delayed by an Amtrak train, it consumes additional fuel, both because its locomotives are running in idle mode while it is stationary ("Idle Fuel Burn") and because in the process of stopping and starting to allow Amtrak trains to pass, locomotives consume more fuel than when they are moving non-stop on the track ("Stop-Start Fuel Burn").

Consistent with the conservative methodology of the Dec. 2019 Analysis, we attributed Idle Fuel Burn to both Single- and Multi-attribution delay events. However, as noted in Part II.A., in a departure from that methodology we more conservatively attributed Stop-Start Fuel Burn only to single-attribution delay events for which Wi-Tronix data were available.

To quantify Idle Fuel Burn, we identified for each delay event the specific locomotives on the train that were consuming fuel while stopped due to Amtrak. Based on the specific locomotive model's idle burn rate, and the number of minutes the train spent in idle mode because of Amtrak, we calculated the number of gallons burned in idle mode due to Amtrak.

For Stop-Start Fuel Burn quantification, we identified the Stop-Start fuel consumption based on the same train categories (Table 6) that were developed as part of a CN study involving computer-based TPC simulations as explained in the PID Verified Statement of Timothy Robinson (filed as Tab F to CN's Post-Interim Decision Opening Submission).[8]

[8] *See* Tab "TPC V-Time Fuel Burn" in Workpaper "Locomotives_per_Delay_Fuel_Burn_alculations.xlsx".

Table 6: Stop-Start Fuel Consumption used in Dec. 2019 Analysis
(51 original TPC runs plus 8 additional categories based on other assumptions){

[redacted]

}

In addition to the TPC-simulation approach previously used to quantify Stop-Start Fuel Burn, as an alternative new enhanced approach, we also used a Wi-Tronix-based automated fuel usage calculation called the "Duty-Cycle Derived Locomotive Fuel Burn" method or "DCD Locomotive Fuel Burn." This method calculates fuel burn consumption by using locomotive duty cycle information, that is, the pattern of locomotive operations, specifically engine run state of active or shutdown, and the amount of time spent in different throttle settings (or "notch positions") as shown in the Wi-Tronix system. Each row of Wi-Tronix data represents a locomotive run within a time interval, typically around 5 minutes. The actual time interval for each row is determined by calculating the time difference between its timestamp and the timestamp of the subsequent row. For each row, the time spent in each throttle setting is summarized in the Vehicle Operational Monitoring ("VOM") table in Wi-Tronix. The total time for each throttle setting is then multiplied by the locomotive-model-specific burn rate for the throttle to get the total fuel burn for each row. The Verified Statement of Simon Lizotte provides more information about this enhanced approach.

Key advantages of using the Wi-Tronix-based DCD Locomotive Fuel Burn method as compared to the TPC-simulation-based approach include:

1. Using the Wi-Tronix data for all locomotives involved in a delay more precisely matches the specific train configurations, V-Time, and fuel consumption characteristics, rather than relating the delayed train characteristics to one of the 59 train categories used in the Dec. 2019 Analysis.
2. It is easier to verify the total fuel consumption using the DCD Locomotive Fuel Burn and associated Wi-Tronix data, as illustrated in a sample calculation below, than using the method used for the Dec. 2019 Analysis, which requires the use of a TPC.

3. The DCD Locomotive Fuel Burn method tracks fuel usage more precisely than a computer-simulation based on a TPC.
4. The DCD Locomotive Fuel Burn method is simpler to implement and can be better automated making it scalable for the calculation of fuel usage for specific delays over greater periods of time.

As explained earlier, we quantified Stop-Start Fuel Burn only for single-attribution delays with Wi-Tronix data. Using the Wi-Tronix based DCD Locomotive Fuel Burn method, Stop-Start Fuel Burn represents the incremental fuel usage during the deceleration before stopping and acceleration after stopping (V-Time) for each delayed train, as compared to the calculated fuel usage if the train maintained the constant speed before V-Time begins to cover the distance until V-Time ends. Table 7 shows an example of a VOM table for a delay and the calculated fuel burn (refer to Tab “Example” in Workpaper “WiTronix_Based_Fuel_Burn_Sample_Calculation.xlsx” to look at how specific Wi-Tronix data fields are used to quantify the fuel burn).

Table 7: Example Vehicle Operation Meter Table in Wi-Tronix and Calculated Fuel Burn{

[redacted]

}Workpaper “Locomotives_per_Delay_Fuel_Burn_Calculations.xlsx” contains detailed incremental fuel cost calculations using both the TPC-simulation-based and Wi-Tronix-based methodologies. Tab “Idle Fuel Burn Calculation” contains a list of each locomotive in each delay event, including its model, idle burn rates, a quantified Idle Time using the methodology described in Part II above, and its Idle Fuel Burn gallonage, which is the model-specific idle burn rate multiplied by the Idle Time. The TPC-simulation-based and Wi-Tronix-based methodologies have the same Idle Fuel Burn gallonage, as both used the same Idle Time and the latest burn rates. Tab “Fuel Burn per Delay Summary” in the workpaper shows the Stop-Start Fuel Burn gallonage based on the identified train group and estimated incremental V-Time fuel burn for the TPC-simulation-based methodology; for the Wi-Tronix-based DCD Locomotive Fuel Burn methodology, the actual Stop-Start Fuel Burn gallonage is shown.

Using the Wi-Tronix-based methodology, CN’s total incremental fuel burn attributable to Amtrak in the Analysis Period is 65,089 gallons (Idle Fuel Burn of 23,720 plus Stop-Start Fuel Burn of 41,369), as summarized in Table 8.

Table 8: Incremental Fuel Burn Attributable to Amtrak in 2024
(using the Wi-Tronix methodology){

[redacted]

}

As summarized in Table 9, when CN's total incremental fuel burn attributable to Amtrak in the current Analysis Period is calculated using the TPC-simulation based methodology used in the Dec. 2019 Analysis, the result is slightly greater – {[redacted]}.

Table 9: Incremental Fuel Burn Attributable to Amtrak in 2024
(using the TPC-simulation-based methodology){

[redacted]}

The total incremental fuel burn for each delay event was multiplied by CN's average cost of fuel in the U.S. in the specific month of the delay in 2024 (Table 10) to get the total incremental fuel cost attributable to Amtrak. The multiplication yielded an incremental fuel cost of $209,542 using the Wi-Tronix-based methodology and $215,753 using the TPC-simulation-based methodology (Table 11). We have used the lower incremental fuel cost generated by the Wi-Tronix-based approach in our calculations of total incremental costs below.

Table 10: CN Monthly Average Cost of Fuel in 2024{{

[redacted]

}}

Table 11: Incremental Fuel Cost Attributable to Amtrak in 2024{{

[redacted]}}

B. Incremental Equipment Costs

Freight train delays due to Amtrak impose incremental equipment costs on CN. With respect to locomotives and cars that are traveling on CN's freight trains but are owned by other railroads (known as "foreign" equipment), delay events due to Amtrak cause CN to incur additional obligations to those equipment owners that are directly related to the additional time the equipment is on CN's lines. (Any cost associated with delay events to privately-owned railcars was not included in this analysis.)

With respect to CN's own locomotives and cars, freight train delays due to Amtrak impose costs on CN by preventing it from repaying in kind foreign railroads that have loaned CN their equipment, or by preventing CN from providing its equipment to foreign railroads for compensation, or by depriving CN of the productive use of its own equipment for CN customers.

Our methodology for assessing incremental equipment costs was the same as that used for the Dec. 2019 Analysis.

Locomotives

We identified every CN and foreign locomotive, including the locomotive initial and number, horsepower, service class, and model, associated with each delay, and we calculated the specific delay time attributable to Amtrak for each locomotive using the methodology described in Part II, above. Tab " Loco Cost Calculation" in Workpaper "Locomotives_per_Delay_Equipment_Cost_Calculations.xlsx" lists all the locomotives, their matched delay record, and the quantified total delay time. To calculate the incremental locomotive costs, the total delay time for each locomotive was multiplied by its horsepower and the locomotive cost per horsepower hour (HPH) rate, based on its owner, as shown in Table 12. For non-Class I railroad owners the "Others" rate was applied.

Table 12: HPH Rates Based on Class I Railroad Locomotive Run-Through Agreements{{

[redacted]}}

Class I railroads in the U.S. typically enter into run-through agreements that govern the operations and costs associated with using another carrier's locomotives. These agreements specify that when a carrier uses foreign locomotives on its own lines, the obligation that the borrowing carrier incurs can be re-paid to the locomotive owner by providing the borrower's own locomotives, with the balances tracked in terms of HPHs. In addition to encouraging the exchange of locomotives back and forth to offset the obligations that accrue, known as Horsepower Equalization, the run-through agreements provide a formula that sets a financial cost per HPH, which a railroad must pay to the extent that it does not completely re-pay the obligation in kind. The agreements identify the specific R-1 expense items that are used to calculate the HPH cost, which include locomotive operating, lease rental, and depreciation expenses (see the R-1 input and HPH rate calculation in Workpaper "R1_Loco_Costs_2024.xlsx").

Using the locomotive-specific run-though agreement-based methodology described above, we quantified the incremental costs of delays to locomotives on CN's lines caused by Amtrak in 2024, as shown in Table 13.

Table 13: Summary of Locomotive Costs{{

[redacted]

}}

Freight Cars

Following the methodology we used for our Dec. 2019 Analysis, and similarly to our approach to locomotive costs, in our analysis of freight car costs we identified every CN and foreign railroad freight car associated with each delay and the specific delay time identified in Part II above. Tab " Car Cost Calculation" in Workpaper "Rail_Car_per_Delay_Equipment_Cost_Calculations.xlsx" contains the list of all the affected freight cars, their matched delay records, and the previously quantified total delay time.

Class I railroads regularly hire their cars to each other pursuant to reciprocal agreements, similar to the locomotive run-through agreements, that set per-hour rates applicable to particular classes of car (known as "car hire"). We used the contractual per-hour car-hire rate applicable to each car (also listed in tab " Car Cost Calculation") to quantify the hourly cost to CN by multiplying the rate to the quantified total delay time. On that basis, we quantified CN's incremental costs of cars delayed due to Amtrak in 2024 as shown in Table 14.

Table 14: Summary of Freight Car Costs{{

[redacted]}}

C. Incremental Crew Overtime Costs

Consistent with the Dec. 2019 Analysis, we confined our analysis of incremental crew costs for 2024 to CN's overtime costs caused by delays to CN trains due to Amtrak. CN's payroll records identify crew members by unique employee PIN numbers, and they record, for each day the train on which the crew member was assigned to work, where the employee began and ended his or her work, and what wages the employee earned on that day's shift, including specifically how much if any overtime pay the employee earned and the total overtime minutes incurred. From CN payroll records, we identified the specific crew members who were assigned to the specific CN trains that were subject to the Amtrak delay events identified as described in Part I above.

Next we calculated the overtime rate for each crew member associated with each delay and multiplied the overtime rate by the lesser of (i) the minutes of delay attributable to Amtrak, calculated as described in Part II above, or (ii) the minutes of overtime recorded in the payroll records. For example, if the crewmember was delayed for 60 minutes due to Amtrak, and thereafter earned 30 minutes of overtime pay, we attributed to Amtrak the full 30 minutes of overtime. If, however, the crewmember was delayed for 30 minutes due to Amtrak and thereafter earned 60 minutes of overtime pay, we attributed only 30 minutes of overtime pay to Amtrak. Tab "Crew OT Calculations" in Workpaper

"Crew_per_Delay_OT_Calculations.xlsx" contains the list of all the identified crews, their affected payroll records, and the quantified overtime rate and overtime cost.

Applying that methodology to each specific pairing of train delay caused by Amtrak and overtime earned by each crewmember that we identified, we quantified the overtime costs due to delays caused by Amtrak in 2024, as summarized in Table 15.

Table 15: Summary of Crew Overtime Costs {{

[redacted]

}}

D. Summary of Total Incremental Costs

We concluded that CN incurred a total of no less than $1,449,092 in incremental costs due to delays caused by Amtrak in 2024. Those costs are summarized in Table 16 by category, on an annual basis and a monthly average basis. For comparison, Table 16 also sets forth by category the incremental costs CN's 2022 analysis identified and quantified for December 2019 (which have not been adjusted for inflation).

Table 16: Summary of Total Incremental Costs {

[redacted]

}

We identified 6,896 freight train delay events caused by Amtrak in 2024, an average of 575 delay events per month. This is lower than the 973 similar delay events identified in December 2019. That difference is likely due in part to lower levels of freight and passenger traffic in 2024. Also, for the 2024 analysis, we implemented more stringent criteria to match the stop location in Wi-Tronix data, including removing delay records where the specific delay location could not be verified (e.g., where the location was not specified in the comment section in Delay Record in SRS). See Section II.A., above.

In accordance with the Board's order, Table 17 lists the 2024 incremental costs broken down by incremental freight train delay cost category and subcategory, by quarter, and by Amtrak route.

Table 17: Quarterly Summary of Total Incremental Costs by Amtrak Route in 2024[9]{{

[redacted]

}}

[9] The incremental fuel costs shown in Table 17 is from the calculation using the Wi-Tronix based approach. *See* Tab "Summary by Amtrak Route" in Workpaper "Amtrak_Caused_Delay_Incremental_Cost_2024_MASTER_SUMMARY". Tab "Summary by Amtrak Route - TPC" in the same workpaper contains a similar table with the incremental fuel costs using the TPC-based approach.

IV. Per Unit Charge of Incremental Costs

The Board ordered CN to submit a per unit charge (e.g., per Amtrak-train-mile or per delay hour) to account for incremental freight train delay costs that could potentially be applied in lieu of requiring the calculation of actual incremental freight train delay costs. As the Board notes, a per-unit charge may help avoid potential future disputes and administrative burden associated with determining and verifying actual incremental freight train delay costs. That said, given the improvements in available data and methodological refinements described above, identification, quantification, and verification of actual incremental freight train delay costs can now be achieved by CN without undue complexity and burden.

If a per unit cost approach were to be adopted, we suggest that cost be based on average cost per incremental freight train delay hour rather than per Amtrak train mile. It is not Amtrak train-miles per se that delay CN's freight trains, but particular operations (including particular routes, schedules, and out-of-slot arrivals) of Amtrak trains. Insofar as one underlying policy goal is for Amtrak to internalize the costs to CN from Amtrak's operations, it appears important to recognize that those costs depend on when and how Amtrak operates its trains, not just how many miles they travel. With our improved methodology, CN can reliably, efficiently, and transparently identify, quantify, and verify the hours of incremental freight train delay attributable to Amtrak on an ongoing basis. Therefore, there appears to be no need to use Amtrak train-miles as a proxy for those incremental freight delay hours. We have, however, performed the alternative calculation called for by the Board's order: the $1,449,092 in incremental freight delay costs we quantified for 2024 were caused by Amtrak operations on CN's lines totaling 1,391,302.5 Amtrak train-miles, yielding an average freight delay cost per Amtrak train-mile of $1.04.[10]

If a different simplified approach is desired, we recommend one based on average cost per freight train delay hour. Under this approach CN would continue to identify the specific freight train delays caused by Amtrak, and quantify and verify the associated delay time on an ongoing basis. Amtrak could be provided with the opportunity to review the identified delays and delay time in a period (e.g., weekly or monthly) before the total delay time is multiplied by the pre-determined incremental cost per freight delay hour to determine the total incremental delay cost for the period.

As detailed above, CN incurred $1,449,092 in incremental freight delay costs in 2024 due to 231,387 minutes of incremental freight delay. That amounts to an average incremental cost of $376 per freight delay hour. See Table ES1. (Note that this hourly rate is quite close to the equivalent rate in December 2019 ($316) adjusted for inflation,[11] which is $373). That hourly rate could be adjusted for inflation every year without specifically recalculating the incremental costs of each category. The Board publishes the RCAF, an index formulated to represent changes in railroad costs over time, on a quarterly basis. The parties could use the percentage average annual increase of the quarterly RCAF to adjust the previously determined incremental cost per delay hour.

[10] Workpaper 2024 Train Miles, IC, GTW.xlsx details the Amtrak train-miles on CN's lines for 2024 by month and by CN line, reflecting data provided to CN by Amtrak.

[11] The rail cost adjustment factor ("RCAF") All Inclusive Index on a 4Q/2017=100 base increased from the annual average in 2019 of 107.4 to the annual average in 2024 of 126.7. This reflects a cumulative price increase of 17.9% in the period. Therefore, $316 in 2019 would be roughly equal to $373 in 2024.

VERIFICATION

I, M. Rapik Saat, declare under penalty of perjury under the laws of the United States that I have read the foregoing Joint Verified Statement, that I know the facts asserted therein, and that the same are true as stated. Further, I certify that I am qualified to and authorized to submit this Verified Statement on behalf of Canadian National Railway Company and its subsidiaries, including Illinois Central Railroad Company and Grand Trunk Western Railroad Company.

Executed on July 22, 2025.

M. Rapik Saat

VERIFICATION

I, Sylvain Grenier, declare under penalty of perjury under the laws of the United States that I have read the foregoing Joint Verified Statement, that I know the facts asserted therein, and that the same are true as stated. Further, I certify that I am qualified and authorized to submit this Joint Verified Statement on behalf of Canadian National Railway Company and its subsidiaries, including Illinois Central Railroad Company and Grand Trunk Western Railroad Company.

Executed on July 22, 2025

Sylvain Grenier

TAB C

BEFORE THE
SURFACE TRANSPORTATION BOARD

Docket No. FD 35743

APPLICATION OF THE NATIONAL RAILROAD PASSENGER CORPORATION UNDER 49 U.S.C. § 24308(a) – CANADIAN NATIONAL RAILWAY COMPANY

VERIFIED STATEMENT OF SIMON LIZOTTE

My name is Simon Lizotte. I am Senior Manager Locomotive Engineering and Technology for CN in the Fuel Optimization Group.[1] I have held this position since 2019. I am the author of a verified statement previously submitted to the Board in support of CN's Post-Initial Decision Opening Statement (filed May 27, 2022; corrected and refiled Nov. 30, 2022). Since 2014, I have been working in the Fuel Optimization Group to find, implement, and measure new ways to save fuel, using a power optimization system developed within CN based on horsepower per ton ("HPT") ratio as well as third-party energy management systems. My group uses the Wi-Tronix data system to monitor the efficacy of our fuel optimization efforts and to monitor other metrics.

Over the past decade, CN has relied on the Duty-Cycle Derived Locomotive Fuel Burn method, which leverages Wi-Tronix VOM (Vehicle Operational Monitoring) data, including the amount of time spent by locomotives at different throttle settings (or "notch positions"), to analyze train fuel burns.

Notably, we have found the duty cycle method of measuring fuel consumption to be more consistent and accurate than measures that rely on fuel sensors that calculate fuel consumption based on the differential in fuel tank levels. Fuel sensor data is susceptible to the variabilities and

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[1] In this Verified Statement, "CN" refers to Canadian National Railway Company and its subsidiaries, including Illinois Central Railroad Company ("IC") and Grand Trunk Western Railroad Company ("GTW"), or to IC and GTW alone, depending on the context.

inaccuracies inherent in fuel sensor readings, such as the sloshing of fuel in tanks and differences in the location, quality, condition, and technology of specific fuel sensors installed on various locomotives. By contrast, CN's duty-cycle method utilizes accurate, specific event recorder data streamed directly to Wi-Tronix and collected into VOM.

In the past two years, we have further refined and extended our use of VOM and the Duty-Cycle Derived Locomotive Fuel Burn methodology by determining fuel burn rates for different throttle notch settings on specific models of locomotives used by CN. This enhancement allows us to provide more accurate fuel burn estimates for specific operating scenarios. The data underpinning these rates is drawn from various sources, including manufacturer specifications, testing by the Association of American Railroads, CN's in-use experience, and other independent sources. The locomotive-model-specific fuel burn rates at different throttle levels are now part of a larger set of internal business records CN developed, maintains, and uses to support CN operations, financial management, and legal compliance.

Prior to the development of the locomotive-model-specific fuel burn rates, our fuel optimization analyses relied on an average blended fuel burn rate at each throttle notch applied uniformly across all locomotive models. This generalized approach risked under or over-reporting fuel consumption in scenarios where we were using a mix of low and high horsepower locomotives on the same train.

The notch-specific fuel burn rates for various locomotive models were not available at the time of CN's 2022 analysis of incremental fuel costs incurred during December 2019 as a result of freight train delays due to Amtrak. I understand that, for purposes of that study, CN's Tim Robinson modeled incremental fuel burn for 59 different train categories using a computer-based train performance calculator or TPC. I understand further that for the current 2024 analysis, CN witnesses Saat and Grenier have used that prior methodology but have also, separately, as a refinement, used the Duty-Cycle Derived Locomotive Fuel Burn method and VOM data to quantify the amount of incremental fuel burn for freight delays due to Amtrak.

It is important to note that, as with any model, the output of the duty-cycle method, while reliable, is ultimately just a close approximation. Actual fuel burn can vary slightly due to factors such as ambient temperature, weather conditions, the mechanical state of the locomotive, air leaks, and other operational variables. However, we are confident that the duty-cycle method, supported by VOM event data and refined by model-specific rates, provides the most consistent and accurate fleet-wide fuel burn estimates available given current technology installed on our locomotives today.

VERIFICATION

I, Simon Lizotte, declare under penalty of perjury under the laws of the United States that I have read the foregoing Verified Statement, that I know the facts asserted therein, and that the same are true as stated. Further, I certify that I am qualified to and authorized to submit this Verified Statement on behalf of Canadian National Railway Company and its subsidiaries.

Executed on July 22, 2025.

Simon Lizotte

CERTIFICATE OF SERVICE

I, James M. Guinivan, hereby certify that I have, this 22d day of July, 2025, caused the Highly Confidential, Confidential, and Public versions of foregoing Responses of Illinois Central Railroad Company and Grand Trunk Western Railroad Company to April 8, 2025 Requests Due July 22, 2025 to be served by email upon counsel for National Railroad Passenger Corporation and the Public version to be served on counsel for all other parties of record.

/s/ James M. Guinivan
James M. Guinivan