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**APPLICATION OF THE NATIONAL RAILROAD PASSENGER
CORPORATION UNDER 49 U.S.C. § 24308(e) – CSX
TRANSPORTATION, INC. AND NORFOLK SOUTHERN
CORPORATION**

**CSX TRANSPORTATION, INC.'S AND NORFOLK SOUTHERN RAILWAY
COMPANY'S REPLY TO AMTRAK'S SUPPLEMENTAL EVIDENCE**

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In their opening evidence, rebuttal evidence, hearing testimony, and supplemental evidence, CSXT and NSR have presented overwhelming evidence that Amtrak’s proposal to institute Gulf Coast passenger service with no supporting infrastructure investments would unreasonably impair freight service to customers.¹ This Reply will not reiterate that evidence or cover issues that have already been addressed in the record. Rather, this Supplemental Reply Evidence will only address the new evidence that Amtrak submitted in its supplemental evidence, which primarily consisted of two new analyses from its consultants.

In the year-and-a-half since Amtrak began this litigation, it consistently refused to present any Rail Traffic Controller analysis supporting its claims that adding two daily roundtrip passenger trains with no supporting infrastructure would not unreasonably impair freight service on the line. Amtrak maintained this position in spite of the Board’s explicit instruction that the parties present “evidence on the service’s potential effects on freight transportation, such as an RTC study or other study or studies”² and despite requests from dozens of critical stakeholders that Amtrak perform RTC modeling.³ After multiple rounds of written evidence and

¹ All acronyms and short forms have the same meaning they had in CSXT’s and NSR’s Opening Evidence and Rebuttal Evidence.

² Decision at 7, *Application of Nat’l Passenger R.R. Corp. Under 49 U.S.C. § 24308(e)—CSX Transp., Inc. & Norfolk S. Ry. Co.*, S.T.B. Docket No. FD 36496 (served Aug. 6, 2021).

³ See, e.g., Letter from Governor Kay Ivey (AL) (filed Apr. 1, 2021), at 1 (“An operational modeling study is needed to adequately understand the impact of new Gulf Coast passenger service on freight rail traffic.”); Letter from Senator Richard

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an eleven-day evidentiary hearing, Amtrak apparently rethought its tactics and submitted a last-ditch RTC analysis that it claims supports its position. But that RTC study is transparently flawed. Indeed, the obvious and pervasive flaws in Amtrak's supplemental evidence suggest that the real reason Amtrak failed to present RTC evidence before now is that it is impossible to create an RTC model to support Amtrak's extreme no-infrastructure position without hopelessly jury-rigging the model.

In the first place, Amtrak's RTC witnesses based their entire analysis on **one single operational run (a "seed")** out of the thirty seeds used to produce the 2021 Gulf Coast RTC Model. Rather than following standard modeling practice of using the average of multiple RTC runs to eliminate outliers and represent typical operations, Amtrak's witnesses cherry-picked the one seed with "the least amount of

Shelby (AL) (filed Mar. 31, 2021), at 2 ("I believe it is essential that a comprehensive analysis be completed that definitively determines the impact such service would have on existing freight rail service and the Port of Mobile."); Letter from Senator John Kennedy (LA) (Apr. 26, 2021), at 1 ("I believe that the study determining the impacts of the proposed new service on existing freight rail service, as well as its impacts on the ports currently served by this existing freight rail service and the relevant communities, should be completed before approving new passenger rail service."); Letter from Mobile Councilman Joel Daves (filed Apr. 5, 2021), at 2 ("Without a completed impact study, I will continue to oppose the restoration of passenger rail service and any funding which may be sought from the City of Mobile in support of this service."); Letter from the Port of New Orleans and the New Orleans Public Belt Railroad Commission (filed Apr. 23, 2021), at 2 ("[W]e respectfully ask that the STB require Amtrak to complete its Rail Traffic Control Study with supplemental engineering and cost report. This comprehensive study is needed to adequately understand the impact the Passenger Rail Service will have on current and future freight service through the region.").

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aggregate train delay.”⁴ Indeed, using the seed with the second least amount of delay would have cut the benefits of Amtrak’s proposed “operational” changes by one third. This drastic departure from typical RTC modeling practice appears designed to select the seed with the most available fluidity.⁵

But even using that single cherry-picked seed, Amtrak’s experts must make a series of ludicrous assumptions in order to support their client’s contention that not a dollar of infrastructure is necessary to support Gulf Coast passenger service. Using the omniscient 20/20 hindsight afforded by RTC, they adjust freight train departures on a daily basis so that the trains are perfectly timed to avoid congesting events in the selected seed—even though no real-world railroad could possibly operate in this manner. Amtrak moves most maintenance on the corridor to the dead of night—ignoring the safety issues and workforce stresses that would be created by such a drastic change. And Amtrak would have freight trains block grade crossings for up to two hours at a time, thus imposing burdens on the general public even in Amtrak’s assumed optimal conditions.

⁴ Amtrak Supplemental Evidence at 9.

⁵ Indeed, Amtrak’s witness Mr. Crowley recently submitted RTC evidence in the CP-KCS proceeding that followed standard modeling practice of using multiple seeds for the analysis. *See* Comments and Request for Conditions of the Commuter Rail Division of the Regional Transportation Authority d/b/a/ METRA (METR-7), Exhibit C – Verified Statement of T. Crowley and R. Mulholland, *Canadian Pacific Ry., et al.—Control—Kansas City S., et al.*, S.T.B. Docket No. FD 36500 (filed Mar. 15, 2022), at 60–61, 68, 71 (tables indicating that multiple RTC seeds were used for analysis) (provided to the Board as Exhibit CSXNS 306).

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The new analysis by Amtrak's consultants from DB Engineering is similarly flawed. Messrs. Johanson and Mussanov present an analysis of varying freight lines hosting Amtrak service that purportedly shows that the addition or subtraction of Amtrak trains to a line has no impact on freight service. One might expect that such an illogical proposition was supported by compelling evidence. It is not. The crux of Messrs. Johanson's and Mussanov's argument is that freight speeds did not increase on lines where Amtrak decreased service during the COVID-19 pandemic. But as the Board well knows, the freight speed of individual classes of freight service may or may not increase just because an Amtrak train is hosted on a route,⁶ and further, freight service in the pandemic era was affected by many factors that have nothing to do with Amtrak, from supply chain breakdowns to COVID-19 disruptions to crew shortages. Amtrak's simplistic analysis does not control for any of those factors. Moreover, their analysis is plagued by basic calculation errors and methodological problems.

In short, Amtrak's Supplemental Evidence has confirmed what CSXT and NSR showed in their prior written evidence and at the evidentiary hearing: granting Amtrak's demand to immediately run four daily passenger trains over the Gulf Coast Corridor with no supporting infrastructure would unreasonably impair

⁶ As discussed in Section II.A, the freight rail speed is impacted by the type of train involved, the overall train type mix, the track speed, the track configuration, and other operational and infrastructure elements.

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freight service and impose burdens on the general public. Amtrak's demand for immediate, unconditioned institution of its new service should be denied.

This Reply is supported by two verified statements. The first, by CSXT and NSR witness Mark Dingler, presents a joint report from CSXT's and NSR's RTC Modelers that responds to the RTC report that Amtrak submitted in its supplemental evidence and shows the systematic and fatal flaws that permeate that report.⁷ Mr. Dingler also presents a report in which he details the flaws in the analysis presented by Amtrak's witnesses from DB Engineering.⁸ The second verified statement, by CSXT Senior Vice President of Operations Ricky Johnson, explains why the "operational" changes proposed in Amtrak's RTC model are impossible. As Mr. Johnson explains, rescheduling freight trains on a daily basis with the benefit of perfect hindsight is impossible to do in the real-world; moving most maintenance-of-way windows to the middle of the night is unsafe and impractical; and Amtrak's assumption that CSXT's freight trains could routinely block grade crossings for hours at a time would unacceptably burden the communities on the Gulf Coast Corridor.

⁷ This report, attached as Appendix A to Mr. Dingler's Supplemental Reply Verified Statement, is cited throughout this filing as the "RTC Supplemental Reply Report."

⁸ This report, attached as Appendix B to Mr. Dingler's Supplemental Reply Verified Statement, is cited throughout this filing as the "Supplemental Reply Report to DB's Corridor Analysis."

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I. AMTRAK'S LAST-DITCH RTC MODEL IS FUNDAMENTALLY FLAWED FOR THREE PRIMARY REASONS.

Almost a year after the Board asked the parties to submit evidence about the impacts of Amtrak's proposal on freight transportation,⁹ Amtrak's RTC experts have finally submitted an RTC model that purports to measure degradation caused by the introduction of passenger trains and evaluate potential solutions to that degradation. That RTC analysis is based entirely on data that was produced in discovery last fall or made available in CSXT and NSR's Opening Evidence workpapers on November 3, 2021. Messrs. Crowley and Fapp's RTC submission thus belies all of Amtrak's excuses about allegedly deficient data and false claims about being unable to develop its own RTC analysis under the tight procedural schedule that it advocated for at the start of the case. Moreover, Amtrak's RTC model is so riddled with modeling errors and dishonest methodology that the Board simply cannot rely on its results.

Messrs. Crowley and Fapp used the 2021 Gulf Coast RTC Model as a baseline but removed all randomization and selected the best performing of the thirty 2019 Base Case seeds with which to create their model.¹⁰ This single revised seed is called the Unadjusted 2019 Freight Base Case. Messrs. Crowley and Fapp then made five modifications to the Unadjusted 2019 Freight Base Case that they assert would better reflect real-world operations, to create the Adjusted 2019 Freight Base

⁹ See *infra* at 1 n.2.

¹⁰ See Crowley & Fapp Supplemental V.S. at 9.

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Case.¹¹ Amtrak trains were then added to the Adjusted 2019 Freight Base Case to create the 2019 Passenger Base Case.¹² Finally, Messrs. Crowley and Fapp tested a series of so-called “operating changes” as well as infrastructure changes on an individual and cumulative basis and reported out the results.¹³

At every step of this process, Messrs. Crowley and Fapp deployed improper modeling techniques, made basic modeling errors that skew their results, constructed RTC cases in a manner that conflicts with what they claim to have done in their verified statement, or some combination of all three. The RTC Modelers have submitted a RTC Supplemental Reply Report that details the numerous errors in Amtrak’s RTC model. For example, Amtrak’s experts utilize unsound modeling methodology by creating a model premised on a single seed with no randomization and then failing to use the same RTC .PERMIT file across all of their cases. Messrs. Crowley and Fapp also modeled operating changes that are unworkable in real-life operations in an effort to avoid having to pay even a penny on new infrastructure, including haphazard and inconsistent freight scheduling changes, moving maintenance-of-way windows to nighttime hours, and increasing the limit on blocked crossings up to two hours. Moreover, Amtrak’s experts overstated the impact of the FRA-identified projects, modeled CSXT and NSR’s infrastructure solutions such that passenger trains did not use the projects as intended, and

¹¹ *Id.* at 11–15.

¹² *Id.* at 15–16.

¹³ *See id.* at 17–42.

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skewed the results by removing interchange delays in New Orleans and inserting train schedule adjustments in each infrastructure case.

Despite all these errors, Amtrak's 2019 Passenger Base Case ironically shows even more degradation to freight traffic caused by the introduction of passenger service than was reflected in the freight railroads' 2021 Gulf Coast RTC Model. The RTC Modelers generated the performance metrics from Amtrak's 2019 Passenger Base Case, which revealed that the introduction of passenger trains resulted in a 26.2% increase in delay, a 4.4% reduction in speed, a 55.8% increase in dispatching conflicts, and a 37.5% increase in unplanned reworks.¹⁴ Perhaps most staggering is the impact to interchange partners and CSXT local trains that serve customers. Amtrak's RTC model predicts a 219.1% increase in delay to interchange traffic from other New Orleans railroads to NSR and CSXT.¹⁵ And CSXT local trains experience a 55.6% increase in delay and a 7% decrease in speed.¹⁶ Every single performance metric from Amtrak's RTC model is "similar or worse than seen in the original modeling presented on November 3, 2021, in the 2021 Gulf Coast RTC Report."¹⁷

¹⁴ RTC Supplemental Reply Report at 16, Table 3-4 (§ 3.6).

¹⁵ *Id.* Amtrak's argument that shifting the adverse impact to other freight carriers is reasonable and otherwise not relevant to a determination of reasonable impact is as inconsistent with the Board's basic regulatory mission as Amtrak's argument that communities along the Amtrak route should suffer unreasonable grade crossing delays as a cost of permitting Amtrak's operations.

¹⁶ *Id.* at 17, Table 3-6.

¹⁷ *Id.* at 15.

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A. The RTC Model Prepared by Amtrak's Experts Is Unreliable Because It Is Premised on a Single Seed and a Failure to Hold Variables Constant Across Cases.

Messrs. Crowley and Fapp's analysis was methodologically flawed from the outset, because they developed an alternative base case derived from a single RTC seed from the 2021 Gulf Coast RTC Model submitted by CSXT and NSR. Freight operations are inherently variable, because of the numerous factors that can impact train performance. For example, the performance of a particular freight train at a particular time on the Gulf Coast will be affected by the amount and timing of interchange traffic arriving on the corridor, the opening times and durations of movable bridges, when routine maintenance-of-way work is performed, and departure and dwell times.¹⁸ No two days on the corridor are identical. Therefore, the RTC Modelers randomly generated 30 seeds with each seed "reflect[ing] a different combination of variables on the corridor that may be experienced in real-world operations."¹⁹

As CSXT and NSR's witnesses have explained on multiple occasions, any solution to freight impairment that is based on a single set of operating conditions will be insufficient.²⁰ Indeed, an analysis premised on solving for conflicts in a one-

¹⁸ See RTC Supplemental Reply Report at 7 (§ 2.1).

¹⁹ *Id.* (§ 2.1.1).

²⁰ See, e.g., 2021 RTC Rebuttal Report at 6–7 (§ 2.1) (explaining how a model using "exact train inputs, direct from a specific time period" will "only determine if the proposed service would have worked during a specific historical period, not over the preponderance of days"); Rosse & Sinkkanen Rebuttal V.S. at 3 (explaining that a representative model allows a modeler to evaluate how "a proposed infrastructure solution would stand up under a variety of conditions regularly observed on the

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seed RTC model is nothing more than a stringline analysis of a moment in time, which in turn is “merely manual dispatching, not a true test of an operational change.”²¹ Stringline analyses are unable “to represent variability in train operations” because they only “present capacity problems by displaying what actually happens in a static, non-changing set of conditions,”²² which is why the Board long ago recognized the value of RTC modeling over stringlines.²³ In practical terms, this means that any solution designed to respond to such a limited dataset is likely to result in over-construction and inflated maintenance costs²⁴ or the inverse.

The purpose of using multiple seeds is to create a reasonable, randomized average of RTC results that is not overly influenced by a single seed. But rather than follow this standard approach, Crowley and Fapp took a single scenario and “solved” for a solution. This flaw alone is sufficient cause to reject their model.

corridor over time”).

²¹ RTC Supplemental Reply Report at 9 (§ 2.1.3); *see also id.* at 8 (§ 2.1.2) (“Simulating a single case without randomization is as effective as a stringline analysis, which is to say, not effective at all. It is a snapshot of a specific situation that does not demonstrate any ability to support the proposed service under any other operating conditions.”).

²² Banks & Guthrie Rebuttal V.S. at 17.

²³ *See Pub. Serv. Co. of Colo. d/b/a Xcel v. BNSF Ry.*, S.T.B. Docket No. NOR 42057 (served June 8, 2004), slip op. at 26–27 (rejecting a “string program” due to its “proven unreliability” and highlighting preferred “commercially available products” including Rail Traffic Controller).

²⁴ *See Rosse & Sinkkanen Rebuttal V.S.* at 3 (quoting Johnson & Hunt V.S. at 13–14); RTC Supplemental Reply Report at 8 (§ 2.1.2).

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The unreliability of Amtrak's RTC model is compounded by the fact that Messrs. Crowley and Fapp disabled randomized dispatching, reran each of the 30 seeds in the 2019 Base Case, and selected the scenario that "resulted in the least amount of aggregate train delay from the cases that did not fail to dispatch."²⁵ This is problematic for several reasons. First, the "best seed" in any given model is by definition an outlier compared to the remaining seeds. The "best seed" by definition represents a set of operating conditions where all the freight and passenger meet and pass events work out well, which may be possible but generally is rare in the real world. It would be like assuming that the time that a person typically spent driving to work was best represented by the day that they hit all green lights. By excluding the other 29 seeds, Messrs. Crowley and Fapp eliminated the model's ability to provide more balanced results. Second, RTC generally provides more optimistic results because it does not consider unforeseeable circumstances (*e.g.*, emergency maintenance and severe weather) because of its omniscient dispatching ability. Combining that omniscience with the most ideal set of operating circumstances only further biases any analysis or conclusions derived from the model. Finally, "[u]sing the seed with the lowest delay is choosing a scenario with conditions that create the most capacity available for passenger movements."²⁶ This significantly understates the capacity consumed by existing freight operations and

²⁵ Amtrak Supplemental Evidence at 9.

²⁶ RTC Supplemental Reply Report at 11–12 (§ 3.0); *see* Crowley & Fapp Supplemental V.S. at 11, Table 1 (setting forth performance metrics for "version 'R126'" from the RTC Modelers' 2019 Base Case).

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suggests that there is more capacity available for passenger trains than actually exists.²⁷

Even assuming that the use of the single best seed without randomization is an appropriate RTC modeling approach, Messrs. Crowley and Fapp failed to implement that approach correctly because they used the wrong .PERMIT file. The .PERMIT file instructs RTC how to model maintenance-of-way work and bridge openings on the corridor; therefore, it has a meaningful impact on freight and passenger trains operating in the model.²⁸ Messrs. Crowley and Fapp utilized seed 126 from the RTC Modelers' 2019 Base Case for Amtrak's 2019 Unadjusted Base Case and compared all subsequent cases against that baseline.²⁹ But for all those subsequent cases, Messrs. Crowley and Fapp utilized the .PERMIT file for seed 107.³⁰ This error doubles the amount of pre-passenger, freight congestion in the Adjusted 2019 Freight Base Case as compared to the Unadjusted 2019 Freight Base Case.³¹ In essence, Messrs. Crowley and Fapp fail to hold maintenance-of-way work³² and bridge openings constant across their cases.

²⁷ See RTC Supplemental Reply Report at 12 (§ 3.0).

²⁸ *Id.* at 14 (§ 3.5).

²⁹ *Id.*

³⁰ *Id.*

³¹ *Id.* at 14–15 & Table 3-2 (explaining that “half of the difference between the Adjusted and Unadjusted 2019 Freight Base Cases is due to using a different .PERMIT file and not the changes proposed by Messrs. Crowley and Fapp”).

³² An impact requiring a freight railroad to increase its maintenance-of-way force or its operating crew to accommodate the addition of an Amtrak service is an adverse freight rail service impact.

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This fictitious congestion in the base case in turn undermines any conclusions drawn from comparing the Unadjusted 2019 Freight Base Case results to the results of any subsequent case. Yet Messrs. Crowley and Fapp do just that on three separate occasions.³³ This flaw fatally undermines Table 4, where Messrs. Crowley and Fapp claim that the introduction of passenger service plus their five “operating changes” improves average train speed by 0.4 mph and reduces delay per 100 train miles by 11.4 minutes.³⁴ Because the bridge openings and maintenance-of-way windows are not the same across these two cases, there is no way to determine whether these improvements in train performance are entirely (or at all) due to the proposed operating changes.

There is an additional reason to reject the results presented in Table 4. Messrs. Crowley and Fapp claim that they “fixed” six issues in the Adjusted 2019 Freight Base Case. Those issues pertained to how maintenance-of-way windows impacted passenger trains, removal of a passenger window in New Orleans, removal of interchange delays, altering how trains meet at sidings, crew walk speed, and the duration of maintenance-of-way windows.³⁵ But Messrs. Crowley and Fapp did not make these changes to the Unadjusted 2019 Freight Base Case.³⁶

³³ See Crowley & Fapp Supplemental V.S. at 26, Table 3, at 28, Table 4, and at 41, Table 6 (In each table, Rows A.1–A.3 inappropriately compare the Unadjusted 2019 Freight Base Case to the Adjusted 2019 Freight Base Case and the 2019 Passenger Base Case.).

³⁴ Crowley & Fapp Supplemental V.S. at 28 & Table 4.

³⁵ *Id.* at 12–15.

³⁶ See RTC Supplemental Reply Report at 12 (§ 3.0), 25 (§ 4.7).

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Therefore, the results reported in Table 4 from the comparison between the Unadjusted 2019 Freight Base Case and the Cumulative Operating Changes RTC Case reflect three sets of changes: (1) a change in bridge openings and maintenance-of-way windows due to different .PERMIT files, (2) six “corrections” to the model, and (3) five so-called operating changes. There is simply no way to conclude that the five operating changes account for the improvement in average train speed and minutes of delay depicted in Table 4.

B. Amtrak’s Model Relies on Several Unacceptable or Unworkable Solutions to Avoid the Need for Infrastructure Improvements.

Amtrak’s proposed “operational changes” are plainly not compatible with real-world railroading. In lieu of funding infrastructure to support its passenger service, Amtrak suggests that (1) freight railroads should operate freight trains on inconsistent, unrepeatable, and ever-changing schedules; (2) maintenance-of-way crews should have to work nighttime shifts despite the safety risks and cost to CSXT and NSR; and (3) CSXT and NSR should plan to routinely burden local communities with lengthy blocked crossings up to two hours in duration to accommodate passenger trains. These solutions are unworkable, are reckless, and shift costs from Amtrak to other stakeholders.

1. Amtrak’s haphazard scheduling changes are not a viable solution because they cannot be replicated in real life.

Amtrak claims that it “reschedule[ed] the freight trains away from the hours of” Gulf Coast passenger service and to “times with higher levels of available line

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capacity.”³⁷ But a scheduling change involves shifting the departure time for a freight train **consistently** across each day that the train operates.³⁸ This uniformity in a train’s departure time is critical to scheduling when crews will be called on duty and creates predictability that is necessary when determining how a particular train fits into the larger system-wide train plan.³⁹ This is not what Amtrak did.

Instead, Amtrak’s experts manually dispatched freight trains at different times on each day in the model, creating an incoherent and unpredictable schedule for each train that was altered.⁴⁰ Specifically, Messrs. Crowley and Fapp reviewed the results of their 2019 Passenger Base Case and then moved a total of 42 trains over the 14-day simulation to eliminate conflicts.⁴¹ And those trains were not changed in any uniform or predictable manner; each train’s scheduled departure time was “shifted a different amount of time and on varying days.”⁴² To make matters worse, Messrs. Crowley and Fapp wrongly claim that “in most instances, the rescheduling involved moving the identified train schedules two (2) hours or less

³⁷ Crowley & Fapp Supplemental V.S. at 22–23; *see* Amtrak Supplemental Evidence at 11.

³⁸ Johnson Supplemental Reply V.S. at 4; RTC Supplemental Reply Report at 21 (§ 4.4).

³⁹ Johnson Supplemental Reply V.S. at 3; RTC Supplemental Reply Report at 21 (§ 4.4).

⁴⁰ This practice would have a cascading effect on rail cars and trains interchanged with other freight carriers as well.

⁴¹ RTC Supplemental Reply Report at 21 (§ 4.4).

⁴² *Id.*

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from the [original] start times.”⁴³ In fact, 27 of the 42 trains (64%) were rescheduled more than two hours from the original departure times.⁴⁴ For example, one CSXT local train was scheduled to depart more than 11 hours after its original departure time on the third day of the model and 2 hours earlier than its departure time on the sixth day of the model.⁴⁵ No customer and no freight rail interchange partner could plan its business activities around such a drastically unpredictable schedule.

This rescheduling analysis is, yet again, nothing more than a stringline analysis with a myopic focus on only the freight trains on the narrow geographic route involved. Messrs. Crowley and Fapp ran their 2019 Passenger Base Case, identified all points of conflict, and moved the freight trains out of the way on a day-by-day basis. But of course, in the real world, dispatchers do not have the ability to predict the future so as to start freight trains at the precise best time for the unique set of operating conditions present on that day. Messrs. Crowley and Fapp’s approach results in a schedule uniquely tailored for the specific set of operating variables present in the RTC seed they chose. This schedule is thus not repeatable on a monthly or even weekly basis.⁴⁶ No railroad could function in this matter.

Moreover, as with many of Amtrak’s proposed “operating changes,” this non-uniform scheduling approach merely shifts delay from the Gulf Coast Corridor to

⁴³ Crowley & Fapp Supplemental V.S. at 23.

⁴⁴ RTC Supplemental Reply Report at 21 (§ 4.4).

⁴⁵ RTC Supplemental Reply Report at 22, Table 4-1.

⁴⁶ See Johnson Supplemental Reply V.S. at 4.

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other portions of CSXT and NSR's networks. As both the RTC Modelers and Mr. Johnson explain, to implement a schedule like this, dispatchers would need to hold trains in terminals hundreds of miles away to avoid future conflicts with passenger trains on the Gulf Coast.⁴⁷ And rail cars that would ordinarily make a connection under the original schedules "now must wait another day to depart on the outbound train, increasing travel times and adversely impacting customers."⁴⁸

In contrast, Amtrak claims that no modifications to the passenger schedules would be productive.⁴⁹ Yet Messrs. Crowley and Fapp provide no support for that assertion other than their assurances that they considered "moving the departure times up to plus or minus one hour from the proposed [Gulf Coast] train departure times."⁵⁰ It is unclear from this representation whether Messrs. Crowley and Fapp considered adjusting the schedules for passenger trains in only one direction so as to alter the potential meet location to a more suitable one.⁵¹

In any event, even if Amtrak's proposed rescheduling of freight trains was a viable solution, Messrs. Crowley and Fapp's modeling errors render the results unreliable. To start, they modeled these scheduling changes as well as the removal of hi-rail bridge tender movements in the same case such that the hi-rail removal

⁴⁷ RTC Supplemental Reply Report at 21 (§ 4.4); Johnson Supplemental Reply V.S. at 4.

⁴⁸ RTC Supplemental Reply Report at 21 (§ 4.4).

⁴⁹ Crowley & Fapp Supplemental V.S. at 24.

⁵⁰ *Id.*

⁵¹ *See* RTC Supplemental Reply Report at 24–25 (§ 4.6).

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accounted for 14% (0.07 mph) of the benefits supposedly attributable to rescheduling freight trains.⁵² And as previously discussed, Messrs. Crowley and Fapp utilized the best performing, single seed as the foundation for these cases. But when these proposed scheduling changes are implemented in the seed with the second least amount of delay (129), those changes “only mitigate 49% (0.46 mph of the 0.94 mph degradation) of the impact of the passenger service.”⁵³ And if the seed with the most delay (117) is used, the case will not run even with the scheduling changes.⁵⁴ This further highlights how these scheduling changes are bound to fail unless the real-world conditions mirror exactly those present in seed 126.

2. Rescheduling maintenance-of-way work to nighttime hours is not a viable solution to freight degradation.

Amtrak objected to the fact that some maintenance-of-way (“MOW”) work occurred during what it describes as “peak rail operations,” which it did not clearly define.⁵⁵ Amtrak’s preferred solution was to reschedule MOW windows. Of the 21 rescheduled windows in the 14-day RTC model, 16 MOW work windows (76%) were shifted “outside normal working hours (7 am to 3:30 pm) with 12 of them occurring overnight (between 10 pm and 6 am).”⁵⁶ This “solution” poses several issues.

⁵² *Id.* at 22–23 (§ 4.4).

⁵³ *Id.* at 23.

⁵⁴ *Id.*

⁵⁵ Amtrak Supplemental Evidence at 11; Crowley & Fapp Supplemental V.S. at 22.

⁵⁶ RTC Supplemental Reply Report at 20 (§ 4.3).

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First, CSXT schedules planned MOW work for daytime hours “when outdoor visibility is highest and worker fatigue is minimal” to promote crew safety.⁵⁷

Second, as Mr. Johnson explains in his verified statement, CSXT’s MOW crews typically work 8-hour shifts from Monday to Friday and begin work between 6 am and 8 am.⁵⁸ Rescheduling a substantial number of MOW crews to evening hours will disrupt the personal lives of those crew members and “exacerbate CSXT’s existing challenges attracting and retaining employees to these demanding jobs.”⁵⁹

Additionally, rescheduling MOW work merely shifts costs from freight service delay to labor, because crews performing nighttime maintenance work could earn as much as two-and-a-half times more than daytime crews performing the same work under governing labor agreements.⁶⁰ Shifting MOW work windows to nighttime hours is simply not a viable solution to the freight degradation caused by Amtrak.

3. Amtrak’s recommendation that CSXT and NSR plan for lengthy blocked crossing durations as an operational change is unacceptable.

Amtrak asks the Board to order passenger service that would require freight trains to block crossings along the Gulf Coast for up to 121 minutes. Messrs. Crowley and Fapp justify their modeling choice to increase crossing blockages on

⁵⁷ Johnson Supplemental Reply V.S. at 6.

⁵⁸ *Id.*

⁵⁹ *Id.* at 7.

⁶⁰ *Id.* Of course, increased operating costs in the form of greater employee expense that is incurred as a direct result of the introduction of the Amtrak service is itself an adverse impact on the freight rail service of the host railroad.

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the claim that CSXT and NSR trains block corridor crossings in excess of 20 minutes today. But they base this claim on a specious deduction from an unverified data source prone to sampling bias. The FRA's blocked crossing data is constructed from reports from first responders, public officials, and the public in general, who naturally will be more inclined to report abnormally long blockages. The Crowley and Fapp assumption that the average length of a grade crossing blockage reported to FRA equates to the average length of all grade crossing blockages is thus plainly inaccurate.⁶¹ After all, people are less likely to report short crossing blockages.

Messrs. Crowley and Fapp nevertheless claim that “[i]ncreasing the limits of the road crossing restriction does not mean that many trains in the simulation will block a road crossing for long and extended periods of time.”⁶² But this assertion is directly refuted by their own submission, which acknowledges that 86 trains over their 14-day simulation sat on a grade crossing.⁶³ Of those 86, “17 percent of the trains dwelled between 21 and 107 minutes.”⁶⁴ This equates to approximately “one additional train per day will be parked on a crossing for longer than 20 minutes as

⁶¹ Perhaps recognizing the limitations of this data set, Congress has prohibited the use of complaints and data collected through the FRA's blocked crossing portal “to infer or extrapolate the rate or instances of crossings beyond the data received through the portal” or “for any regulatory or enforcement purposes except those specifically described in this section.” Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429, 737 (Nov. 15, 2021).

⁶² Crowley & Fapp Supplemental V.S. at 19 (taking the average duration for all blocked crossings in the FRA database).

⁶³ *Id.*

⁶⁴ *Id.*

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part of Amtrak's plan for normal Gulf Coast operations" after the introduction of passenger service.⁶⁵

Amtrak casts this as an “operational change[] . . . to better accommodate Regional Amtrak service.”⁶⁶ But there is a fundamental difference between freight trains occasionally blocking a grade crossing for more than 20 minutes due to unforeseen circumstances (like severe weather, track outages, or traffic surges) and designing freight service with the expectation of routine blockages greater than 20 minutes.⁶⁷ Amtrak explicitly is calling on the Board to approve an operational change that will increase burdens on the communities along the route “to better accommodate Regional Amtrak service.”⁶⁸ This proposal is particularly egregious when one considers that Amtrak developed its model using the best performing seed from the 2021 Gulf Coast RTC Model and removed all randomization. So while Amtrak tries to downplay the impact of this “operational change” by noting how few trains actually dwell on crossings for more than 20 minutes,⁶⁹ the frequency and duration of these lengthy blocked crossings will only worsen on more congested days on the corridor,⁷⁰ moving the lengthy blocked crossing from an occasional unfortunate occurrence to one that is a generally accepted and Board-approved

⁶⁵ See RTC Supplemental Reply Report at 19 (§ 4.1) (emphasis added).

⁶⁶ See Crowley & Fapp Supplemental V.S. at 17–18.

⁶⁷ See RTC Supplemental Reply Report at 19 (§ 4.1).

⁶⁸ Crowley & Fapp Supplemental V.S. at 17.

⁶⁹ See *id.* at 19.

⁷⁰ See RTC Supplemental Reply Report at 19 (§ 4.1).

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norm. Modeling longer blockages on “good” days while ignoring the “bad” days practically assures more-severe blockages will occur in reality, especially considering that RTC dispatches more efficiently than any human can.

CSXT and NSR work hard to avoid lengthy blocked crossings and do not support a “solution” that permanently shifts rail delays onto Gulf Coast communities that they operate through and partner with.⁷¹ Amtrak’s proposal also contravenes the FRA’s public position on blocked crossings. As CSXT and NSR explained in their opening evidence, the FRA has publicly discouraged lengthy crossing blockages by encouraging the public to report grade-crossing blockages of more than 20 minutes.⁷² But this is yet more evidence of how Amtrak has completely disregarded the interests of stakeholders along the Gulf Coast Corridor throughout its attempt to institute this passenger service. Amtrak is more than content to snarl highway traffic in Gulf Coast communities in order to run its service and let CSXT and NSR shoulder the fallout from unhappy neighbors.

C. Amtrak’s Modeling of Infrastructure Impacts Is Unreliable.

Messrs. Crowley and Fapp fare no better in their attempt to model the potential impact of projects identified by the FRA and proposed in the 2017 Gulf Coast Working Group Report. Amtrak’s modeling of the FRA-identified projects assigns greater benefits to many of those projects than can be achieved in the real

⁷¹ See Johnson Supplemental Reply V.S. at 8–9.

⁷² CSXT/NSR Opening Evidence at 32 (citing Fed. R.R. Admin., Stuck at a #BlockedCrossing?, Facebook (July 28, 2021), <https://m.facebook.com/USDOTFRA/photos/a.246307702143616/4189178157856531>).

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world, and is characterized by inexplicable train scheduling modifications and methodological changes that render the whole analysis hopelessly unreliable.

1. The impact of the FRA-identified projects is greatly overstated due to a number of modeling errors in the 2019 FRA Improvements Case.

Messrs. Crowley and Fapp modeled the full set of FRA-identified projects in 2019 except the dedicated Mobile station and layover track and the Gentilly bypass track. But their modeling contains a series of cascading errors that cause them to overstate the mitigating impact of those projects. For example, Messrs. Crowley and Fapp used the **2039** FRA Case in the 2021 Gulf Coast RTC Model as a starting point for developing a 2019 FRA Improvements Case.⁷³ All 2039 cases in the original RTC Model contained four siding extensions between Mobile and Montgomery that CSXT plans to build but that were not yet constructed as of 2019.⁷⁴ Because these four siding improvements were not removed by Amtrak's RTC experts prior to running the 2019 FRA Improvements Case, the performance improvements attributed to the FRA-identified projects (minus the Mobile station track and Gentilly bypass) in Table 6 are in fact partially the result of these siding extensions.⁷⁵

⁷³ RTC Supplemental Reply Report at 26 (§ 5.1.1).

⁷⁴ *Id.*; see 2021 Gulf Coast RTC Report at 24 (§ 3.3) (describing the four siding extension projects).

⁷⁵ RTC Supplemental Reply Report at 26 (§ 5.1.1).

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Moreover, Messrs. Crowley and Fapp modeled a number of projects that have been completed and are thus already part of the base case, including a crossing closure, modifications to two interlockings, and miter rail upgrades.⁷⁶ The miter rails do not achieve increased speeds on most of the Gulf Coast Corridor bridges because of their age and design.⁷⁷ A number of FRA siding speed improvements are not attainable because of the length of existing sidings or the proximity of sidings to other features of the line that mandate slower speeds such as moveable bridges and passenger stations.⁷⁸ And while at-grade crossing closures are impactful projects, they are outside the control of the railroads to implement as they require community and governmental support.⁷⁹ Moreover, Messrs. Crowley and Fapp did not recognize that the operations of a CSXT local train had been modified in 2039 due to the planned construction of a new connection to the Missouri Export Railroad.⁸⁰ For all of these reasons, Amtrak's experts greatly overstate the mitigating impact of the 2019 FRA Improvements Case.

2. Passenger trains fail to utilize the Mobile station track and Gentilly bypass in Amtrak's RTC model.

Messrs. Crowley and Fapp modeled the Mobile station track and Gentilly bypass track independently from the remainder of the FRA-identified projects.⁸¹

⁷⁶ See RTC Supplemental Report at 8–11 & Table 2-1 (§ 2.0).

⁷⁷ See *id.*

⁷⁸ See *id.*

⁷⁹ See *id.*

⁸⁰ RTC Supplemental Reply Report at 26 & n.76 (§ 5.1.1).

⁸¹ Crowley & Fapp Supplemental V.S. at 33 and 41, Table 6 (comparing Rows B.5

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The dedicated Mobile station and layover track eliminates the need for multiple, capacity-consuming movements by Amtrak trains on CSXT's mainline on a daily basis in the busy Mobile terminal. Yet Amtrak's experts claim that the Mobile station "*decreases* average Freight Train speeds by 0.1 mph and *increases* Delay per 100 Train Miles by 1.1 minutes" when modeled individually.⁸² This absurd result is the product of a significant modeling error. In Amtrak's RTC model, "passenger trains are still traveling to and from Choctaw Yard for midday and overnight storage even though the dedicated station and layover track makes this unnecessary."⁸³ It is no surprise that the Mobile station track does not appear to be a useful project when passenger trains are failing to use the station track for its primary purpose.

Amtrak's modeling of the Gentilly bypass is even more egregious. The Gentilly bypass "provides a track clear of the yard work that the passenger trains will use," which in turn "reduces the risk of the delays to the passenger trains and allows yard work to continue on the mainline unhindered."⁸⁴ Messrs. Crowley and Fapp assert that the Gentilly bypass track results in a marginal benefit of 0.1 mph increase in speed and 1.1 minutes decrease in delay per 100 train miles when

and B.6 to A.3).

⁸² *Id.* at 34 (emphasis added).

⁸³ RTC Supplemental Reply Report at 26 (§ 5.1.2).

⁸⁴ RTC Supplemental Reply Report at 27 (§ 5.1.3).

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modeled individually.⁸⁵ Yet when modeled individually, “the *bypass is never used by the passenger trains*” because Messrs. Crowley and Fapp failed to “apply certain RTC settings that would cause the passenger trains to use the bypass.”⁸⁶ It is hardly shocking that Amtrak’s RTC model shows that a critical piece of infrastructure has little benefit when their modeling errors cause it to be unused by the passenger trains.⁸⁷

3. The NSR Terminal Improvements show no benefit because Amtrak removed interchange delays from the model without justification.

The RTC permits used to depict real-world delays associated with interchange operations between NSR and CSXT in New Orleans were removed from the model by Amtrak’s experts. Messrs. Crowley and Fapp incorrectly believed that these permits represented instances when a foreign train was crossing the Gulf Coast Corridor at an at-grade rail crossing, rendering that portion of the Gulf Coast Corridor unavailable to CSXT, NSR, or Amtrak traffic.⁸⁸ Based on this incorrect understanding, Messrs. Crowley and Fapp determined the permits were duplicative of conflicting trains using the at-grade rail crossings.⁸⁹ However, the RTC Modelers

⁸⁵ Crowley & Fapp Supplemental V.S. at 35.

⁸⁶ RTC Supplemental Reply Report at 27 (§ 5.1.3).

⁸⁷ This is not to say that an infrastructure improvement must be used by a passenger train to benefit the fluidity of passenger service, but in the case of the Gentilly bypass, ensuring that the passenger train does not use the infrastructure improvement guarantees that it is not used for its intended purpose.

⁸⁸ See Crowley & Fapp Supplemental V.S. at 13–14.

⁸⁹ See *id.*

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have repeatedly explained (across multiple RTC reports) that these permits were included “to represent the normal delays that occur during interchanges between CSXT and NSR.”⁹⁰ And these permits were placed at the NE Tower location not because they have anything to do with at-grade rail crossings there, but because that was the best location from a modeling perspective.⁹¹ The purpose of the crossover projects on NSR in New Orleans is “to provide increased flexibility to enable a route to remain clear for the passenger traffic while a train is working at Terminal Junction and trains are being delayed for the interchange between NSR and CSXT.”⁹² Because the interchange delays were unnecessarily removed from the model, the value and impact of the NSR Terminal Improvements are understated in Amtrak’s RTC model.

4. Amtrak’s modelers inexplicably alter train schedules in nearly every single infrastructure modeling case.

Messrs. Crowley and Fapp modeled individually a number of the other 14 infrastructure projects recommended in the 2021 Gulf Coast RTC Report submitted by CSXT and NSR. The RTC Modelers observed that in each of these infrastructure cases, Messrs. Crowley and Fapp modified the operations of at least one freight train. For example, in the case modeling the Bayou Cassotte Turnout, a CSXT

⁹⁰ RTC Supplemental Reply Report at 13 (§ 3.1).

⁹¹ *Id.* (explaining that the permits were located at NE Tower to represent the delays without interfering with modeled switching operations in Gentilly Yard).

⁹² *Id.* at 27 (§ 5.1.4).

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through train's departure time is shifted one hour later in the model.⁹³ In the case studying the Beauvoir Double Track, a NSR train's departure time is modified by 34 minutes.⁹⁴ Messrs. Crowley and Fapp offer no explanation for these random freight train scheduling changes, nor do they offer any analysis or reassurance that these scheduling changes are not negatively skewing how much these projects mitigate harm to freight service.

* * *

The 14 infrastructure projects set forth by CSXT and NSR's RTC Modelers were designed to work cohesively when implemented together.⁹⁵ Amtrak's choice to model each project in isolation obscures their benefits. Indeed, this may be deliberate, since Amtrak did not model the various Gulf Coast Working Group projects individually. Messrs. Crowley and Fapp's methodology for evaluating the cumulative impact of the various infrastructure projects is also misleading. Rather than model the 14 projects together in Amtrak's modified RTC model, Messrs. Crowley and Fapp model a subset of CSXT and NSR's projects cumulatively *with*

⁹³ *Id.* at 28 & n.86 (§ 5.1.9).

⁹⁴ *Id.* at 28 & n.84 (§ 5.1.7).

⁹⁵ Evidentiary Hearing Day 5 (Apr. 12, 2022), Tr. 1772:1–1773:10 (Mr. Dinger explained that terminal projects were designed to mitigate specific congestion and that the remainder of the 14 projects were “designed to work together” such that if you “remove one project, we want to go back and remodel it and see how that might affect . . . the ability of the other projects . . . to mitigate” the degradation.); *id.* at 1708:22–1709:4 (“[I]t’s a set of projects. They are selected to work together to mitigate the impact to freight.”).

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the FRA-identified projects.⁹⁶ CSXT and NSR's 14 projects were designed as an alternative solution set to the FRA-identified projects. As such, "[s]ome of the FRA-identified projects and the 2021 Gulf Coast RTC Model projects address similar issues" such that modeling them altogether creates redundancies and obscures the true benefit of the projects.⁹⁷

And of course, the numerous modeling errors and unexplained alterations to train schedules present in the individual infrastructure cases carried over to the cumulative modeling, thereby tainting those results as well. The Board should disregard Amtrak's flawed RTC analysis of the various infrastructure solutions in its entirety.

II. DB ENGINEERING'S ANALYSIS IS UNRELIABLE BECAUSE IT ASSUMES AWAY REAL-WORLD VARIABLES.

DB Engineering's supplemental analysis boils down to one ultimate conclusion: passenger trains have no detrimental impact on freight train performance.⁹⁸ This conclusion is absurd on its face, especially given the statutory preference accorded to Amtrak trains. The only conceivable basis for such a

⁹⁶ Crowley & Fapp Supplemental V.S. at 41, Table 6, Section C.

⁹⁷ RTC Supplemental Reply Report at 29 (§ 5.2).

⁹⁸ See Johanson & Mussanov Supplemental V.S. at 3 (claiming that (1) "the reduction in Amtrak service on the [CSXT] segments analyzed did not have a significant measurable effect on average train velocity, (2) "no relationship exists between Amtrak frequency and [NSR] freight train velocity," and (3) "restoration of Amtrak service to the Gulf Coast Corridor will not cause appreciable impacts to customers served by CSX local trains").

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conclusion is a flawed analytical methodology, which is exactly what the DB Engineering team offers here.

A. DB Engineering Failed to Account for Variables That Impact Freight Train Performance Other Than Passenger Trains.

The DB Engineering team made no effort to control for obvious variables that can impact average freight train speed when comparing CSXT's NO&M Subdivision and NSR's Back Belt to six comparative subdivisions or segments on each respective railroad ("Comparative Corridors"). Some of the most common variables that impact average freight train speed are "track speed, train volumes, train mix, local traffic, length of sidings and double track, movable bridges, and planned work for trains."⁹⁹ Planned work for trains is a good example. If a merchandise freight train's work plan is adjusted so that it performs more low-speed setoffs and pickups of railcars at intermediate stops between its ultimate origin and destination points, that change in work will reduce average speeds on that segment.¹⁰⁰ However, those reduced speeds are not attributable to delay.¹⁰¹ Messrs. Johanson and Mussanov's report does not explain why they failed to control for these variables.

Amtrak states that the COVID-19 pandemic "created an opportunity to assess the impact of reduced Amtrak services on CSX subdivisions."¹⁰² Amtrak then

⁹⁹ Supplemental Reply Report to DB's Corridor Analysis at 4 (§ 2.0).

¹⁰⁰ *Id.* at 9 (§ 5.0).

¹⁰¹ *Id.* at 4 (§ 2.0).

¹⁰² Amtrak Supplemental Evidence at 8; *see* Johanson & Mussanov Supplemental V.S. at 3 (similar).

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claims that the reduction of passenger service frequencies—presumably due to low ridership and crew availability¹⁰³—corresponded with decreased corridor fluidity on four of the six subdivisions analyzed.¹⁰⁴ Yet Messrs. Johanson and Mussanov failed to account for the impact of COVID-19 *on freight service*. The freight rail industry has also experienced well-documented crew shortages during the pandemic period, which is a “significant driver of decreased freight train velocity.”¹⁰⁵ As Mr. Dingler explains, “[w]hen there are insufficient crews, freight trains will have wait in yards, and as the yards and terminals get congested, freight trains will then be forced to park outside the yards because there is nowhere to place the arriving train.”¹⁰⁶ Freight trains forced to sit on the mainline waiting for a crew consume capacity and drag down the average speed of that segment.¹⁰⁷ The impact of insufficient crews to operate freight trains “is greater than any improvements in freight performance attributable to reduced passenger service.”¹⁰⁸

¹⁰³ L. Lazo, *Amtrak worker shortage slows railroad’s pandemic recovery, expansion plans*, The Washington Post (Dec. 8, 2021, 2:34 p.m.), <https://www.washingtonpost.com/transportation/2021/12/08/amtrak-worker-shortage-service/> (“Amtrak is struggling to hire and retain workers amid a national labor shortage, down 1,500 people since the start of the coronavirus pandemic. It has left the railroad unable to resume pre-pandemic service levels, expand dining services to some trains or launch long-planned routes. . . . The railroad estimates it will be at 75 percent of normal passenger levels this month after hitting a low of 3 percent early last year.”).

¹⁰⁴ See Amtrak Supplemental Evidence at 8; Johanson & Mussanov Supplemental V.S. at 3.

¹⁰⁵ Supplemental Reply Report to DB’s Corridor Analysis at 6 (§ 3.1).

¹⁰⁶ *Id.*

¹⁰⁷ See *id.*

¹⁰⁸ *Id.*

B. CSXT's NO&M Subdivision and NSR's Back Belt Experience Greater Variability Than Any of the Corridors Studied by DB Engineering.

Mr. Dingler employed a statistical method known as the Coefficient of Variation¹⁰⁹ to analyze the average freight train speed on CSXT's NO&M Subdivision, NSR's Back Belt, and the respective Comparative Corridors. That method better isolates the variability of the average freight train speeds so that a proper comparison can be made between corridors. High variability in train operations is an indicator that less capacity is available because maintaining sufficient excess capacity is how railroads can "absorb the variability in operations without major degradations in speed."¹¹⁰

Applying this method reveals that the NO&M Subdivision has the greatest variability of all the CSXT Comparable Corridors, and the Back Belt has the greatest variability of all the NSR Comparable Corridors.¹¹¹ This is particularly noteworthy because unlike all of the CSXT Comparative Corridors, the NO&M Subdivision does not currently host passenger service. Given that the NO&M Subdivision already has significantly higher variability than the Comparative

¹⁰⁹ Mr. Dingler explains in his Supplemental Reply Report to DB's Corridor Analysis how the Coefficient of Variation statistical method isolates a data set (average freight train speed) from the influence of other variables. *See id.* at 5 (§ 2.0).

¹¹⁰ *Id.*

¹¹¹ *Id.* at 5, 7 (§§ 3.0, 4.2). The Lakeland Subdivision was excluded from comparison because the NO&M Subdivision is seven times longer and the Lakeland Subdivision has just two sidings longer than 5,000 feet. *Id.* at 5 (§§ 3.0).

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Corridors *with passenger service*, the introduction of Gulf Coast passenger service will only further increase that variability and cause degradation to freight service.¹¹² And although the Back Belt already hosts some passenger service, “the level of variability on the Back Belt makes increased passenger operations highly detrimental to both the underlying freight service and the reliability of the new and existing passenger services.”¹¹³ In sum, this corridor comparison supports what CSXT and NSR have been saying since the beginning of this proceeding: the Gulf Coast Corridor “presents a number of unique operating challenges that must be considered and mitigated prior to the introduction of the proposed Gulf Coast passenger service.”¹¹⁴

C. Changes in Average Freight Train Speed on the Gulf Coast Corridor During the Pandemic Do Not Support the Conclusion That Passenger Service Will Not Unreasonably Interfere with Freight Service.

Amtrak argues that the Gulf Coast passenger service will not result in unreasonable impairment because the degradation in average freight train speed (0.7 mph) predicted by the 2021 Gulf Coast RTC Model is less than decrease of 33% (8.7 mph) in average train velocity that occurred from September 2019 to August 2021 when no passenger trains operated.¹¹⁵ Amtrak’s experts make several

¹¹² *Id.*

¹¹³ *Id.* at 7 (§ 4.2).

¹¹⁴ Johnson & Hunt V.S. at 6.

¹¹⁵ Amtrak Supplemental Evidence at 8; Johanson & Mussanov Supplemental V.S. at 5.

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mistakes in drawing this comparison. First, the 0.7 mph metric is for the entire model from New Orleans (including NSR's Back Belt) to Montgomery. Isolating train performance on just the NO&M Subdivision over which Amtrak will operate reveals that passenger trains will cause a 13.5% decrease (4.7 mph) in average train speed.¹¹⁶ Additionally, the RTC Supplemental Report submitted on July 27, 2022, explains that operations of a merchandise train were changed between September 2019 and August 2021, which added "low-speed operations of picking and setting out of railcars" to the train's normal operations.¹¹⁷ That operating change together with the impact of crew shortages and demand fluctuations described above explain the large discrepancy between the 33% decrease in average train speed present in CSXT's train data and the 13.5% decrease in average train speed predicted by the 2021 Gulf Coast RTC Model to arise from introduction of passenger trains.¹¹⁸ Messrs. Johanson and Mussanov have drawn a false comparison that only underscores the importance of controlling for all variables that can impact freight speed.¹¹⁹

¹¹⁶ Supplemental Reply Report to DB's Corridor Analysis at 8 (§ 5.0) (citing RTC Supplemental Report at 36 & Table 5-3).

¹¹⁷ *Id.* at 9 (§ 5.0) (citing RTC Supplemental Report at 35).

¹¹⁸ *Id.*

¹¹⁹ *Id.*

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D. Messrs. Johanson and Mussanov Inappropriately Compare Actual Values from RTC to Real-World Data When Evaluating Customer Impact.

Messrs. Johanson and Mussanov analyzed runtimes for CSXT local trains in CSXT's OS Data and the outputs from the 2019 Passenger Case on days when customer service was perfect. Because local train runtimes from the 2019 Passenger Case were better than those reflected in the OS Data, Messrs. Johanson and Mussanov concluded that the introduction of Gulf Coast passenger service will not harm on-time service of customers by local trains.¹²⁰ In reaching this conclusion, the DB Engineering team fell prey to the same mistaken perception held by Messrs. Crowley and Fapp: that RTC perfectly represents the corridor's operations.¹²¹

The RTC Modelers have explained that the RTC model is “designed to consider all future information regarding planned train movements and drawbridge openings, allowing for more optimal train movements than possible with a human dispatcher.”¹²² And RTC's results are inherently optimistic because it does not account for unforeseeable, real-world sources of delay like derailments, mechanical failures, emergency events (e.g., grade crossing collisions with vehicular traffic), weather events (e.g., hurricanes, heat orders), and major track maintenance or construction.¹²³ So while the 2019 Base Case reflects the OS Data that was used to

¹²⁰ Johanson & Mussanov Supplemental V.S. at 14 & Figure 4.

¹²¹ RTC Supplemental Reply Report at 6 (§ 1.1).

¹²² 2021 Gulf Coast RTC Report at 23 (§ 3.1); *see* RTC Supplemental Reply Report at 6 (§ 1.1).

¹²³ 2021 Gulf Coast RTC Report at 23 (§ 3.1); *see* RTC Supplemental Reply Report

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develop the model's inputs, runtimes in any RTC case will always outpace those reflected in the underlying data.¹²⁴ Therefore, the entire foundation for Messrs. Johanson and Mussanov's customer impact analysis is flawed and there is "no basis for [their] expectation that passenger service will not impact local train service to the severe degree projected by the 2021 Gulf Coast RTC Model."¹²⁵

III. AMTRAK'S SUPPLEMENTAL EVIDENCE ON OTHER POINTS IS MERITLESS.

A. Amtrak Misrepresents the Evidentiary Hearing Record and the Findings of the 2021 Gulf Coast RTC Model.

Amtrak's supplemental filing misrepresents the evidentiary hearing record on several key issues. *First*, Amtrak wrongly claims that the Board concluded CSXT and NSR failed to meet their burden of proof on impairment.¹²⁶ The Chairman explicitly stated at the beginning of his closing remarks that "[t]he Board, other than the evidentiary rulings we have made, has made no rulings in this case and is not making any rulings today."¹²⁷ Amtrak's claim to the contrary in the first sentence of its supplemental evidence is a stunning mischaracterization of the record, perhaps intended more for media consumption than as a serious argument.

at 6 (§ 1.1).

¹²⁴ See RTC Supplemental Reply Report at 6 (§ 1.1).

¹²⁵ Supplemental Reply Report to DB's Corridor Analysis at 10 (§ 6.0).

¹²⁶ See Amtrak Supplemental Evidence at 1, 6 & n.3.

¹²⁷ Evidentiary Hearing Day 11 (May 12, 2022), Tr. 4040:5–8. In fact, the Chairman criticized the evidentiary presentations of all parties, including Amtrak's "poor litigation strategy" that he suggested should result in "no trains." *Id.* at 4059:5–22.

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Second, Amtrak suggests that the 2021 Gulf Coast RTC Model did not “identify ‘unreasonable impairment’” and the Chairman therefore found that it did not “meet the standards of the statute.”¹²⁸ This is incorrect for several reasons. To start, the RTC Modelers did not opine on reasonableness because that is a legal term, but testified that the Model clearly established “severe degradation,” particularly in the form of “a 45% increase . . . in delays to [CSXT] locals” and a “22% increase in delay overall.”¹²⁹ As CSXT and NSR have argued previously, this severe degradation rises to the level of unreasonable impairment and set forth the application of the statutory standard in their Supplemental Evidence filing.¹³⁰

Moreover, the Chairman’s comments concerning the statutory standard pertained to the RTC Modelers’ decision to develop an infrastructure solution set that returned freight operations to their pre-passenger service performance.¹³¹ Whether or not the Board believes all 14 projects are necessary to bring Amtrak’s proposed passenger service into conformity with § 24308(e) is an entirely separate question from whether the passenger service will cause unreasonable impairment without any mitigation at all. And in any event, the 14 projects modeled do not eliminate all freight service degradation caused by Amtrak. Rather, they return the

¹²⁸ Amtrak Supplemental Evidence at 17 (citations omitted).

¹²⁹ Evidentiary Hearing Day 6 (Apr. 14, 2022), Tr. 2001:8–20 (testimony of Mr. Dingler).

¹³⁰ See CSXT/NSR Supplemental Evidence at 66–80.

¹³¹ See Evidentiary Hearing Day 11 (May 12, 2022), Tr. 4043:19–4044:6 (expressing doubts as to whether the statute requires a “no degradation” solution).

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average performance of all freight trains in the model as close to the pre-passenger service status quo as possible.¹³²

This approach accords with standard modeling practices.¹³³ As the RTC Modelers have repeatedly explained, RTC is more efficient than a human dispatcher and does not take into account unforeseeable, real-world sources of delay such as weather events and emergency maintenance.¹³⁴ Therefore, the RTC Modelers developed projects that return freight service quality to the status quo to account for the fact that these 14 projects are unlikely to mitigate 100% of the degradation caused by passenger service. And the Model shows that although the 14 projects returned the overall average performance of freight service to its pre-passenger levels, some individual freight trains (including CSXT locals) continued to experience service degradation after their installation.¹³⁵

B. Amtrak Witness Jim Blair Provided No Evidence Concerning Amtrak’s Statutory Goal of a System-Wide Average Speed of at Least 60 MPH.

Amtrak contends that witness Jim Blair’s equivocal and speculative testimony as to the compatibility of Gulf Coast passenger service with Section

¹³² See 2021 Gulf Coast RTC Model at 41, Table 16 (§ 5.1).

¹³³ Evidentiary Hearing Day 5 (Apr. 12, 2022), Tr. 1793:20–1794:4 (Mr. Dingler explains that the standard industry practice for RTC modeling is to restore service back to “as close to zero as possible.”).

¹³⁴ 2021 Gulf Coast RTC Report at 23 (§ 3.1).

¹³⁵ *Id.* at 40–41 & Table 16 (§ 5.1) (“While the passenger train impact is mitigated to the operations overall, some freight trains still experience degraded operations,” including two CSXT locals.).

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24308(e)(2)(B)’s 60 mph requirement constitutes an “unchallenged fact” that “must be taken as established.”¹³⁶ That assertion is perplexing, for two reasons: (1) Jim Blair’s testimony—which Amtrak helpfully excerpts¹³⁷—does not establish any facts at all, and (2) CSXT and NSR have submitted evidence that specifically disputes the notion that proposed Gulf Coast passenger service complies with the statutory requirement.

First, Mr. Blair’s testimony does not establish any facts. When asked for a legal conclusion—whether “the Gulf Coast service [will] be compatible with [the] statutory goal”—Mr. Blair replied in speculative terms: “[w]e believe it will.”¹³⁸ He then stated that maximum speeds of “79 miles an hour”—a fact already in the record prior to his testimony¹³⁹—“gives [Amtrak] a good opportunity to -- to try and meet that standard.”¹⁴⁰ He provides no reasoning to support this conclusory opinion. His testimony therefore rehashes one fact that was already part of the record, baldly states Amtrak’s subjective belief that Gulf Coast service “will” comply with the statutory standard, and then walks that statement back with an unreasoned opinion about Amtrak’s “opportunity” to “try” to comply with its obligations. No new

¹³⁶ Amtrak Supplemental Evidence at 22.

¹³⁷ *See id.* (quoting Evidentiary Hearing Day 8 (Apr. 19, 2022), Tr. 3004:10–3005:1).

¹³⁸ *Id.* (citation omitted).

¹³⁹ *See* CSXT/NSR Opening Evidence Workpaper, “NO_AND_M_Timetable” (The New Orleans and Mobile Subdivision timetable includes the maximum authorized speeds for passenger and freight trains on tracks 1 and 2 (where applicable) in the far left-hand column on each page, which at times is 79 miles per hour.).

¹⁴⁰ *See* Amtrak Supplemental Evidence at 22 (citation omitted).

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fact is discernible from any of these opinions, let alone one that is helpful to the Board.¹⁴¹ Moreover, these opinions constitute inappropriate lay testimony—Amtrak has made no attempt to ground them in Mr. Blair’s firsthand knowledge or perception, and no such grounding is readily apparent.¹⁴²

Second, even if Mr. Blair did offer new facts as part of his testimony, Amtrak provides no authority for the proposition that those facts must be taken as true. To the extent that Amtrak means to use Mr. Blair’s vague testimony to imply that maximum speeds of 79 mph can be achieved across the entire route, that proposition is squarely contradicted by other testimony.¹⁴³ And in any case, Section 24308(e) contains no burden-shifting language with respect to the element of Amtrak’s application that relates to the 60 mph requirement. That means the default rule—that the burden of proof lies with the applicant for an order seeking relief¹⁴⁴—applies, and the obligation to come forward with evidence and persuade

¹⁴¹ Fed. R. Evid. 701 (noting that “meaningless assertions which amount to little more than choosing up sides” should be excluded for lack of helpfulness).

¹⁴² Fed. R. Evid. 701(a) (“If a witness is not testifying as an expert, testimony in the form of an opinion is limited to one that is rationally based on the witness’s perception”); *HMC Hotel Properties II Ltd. P’ship v. Keystone-Texas Prop. Holding Corp.*, 439 S.W.3d 910, 916 (Tex. 2014) (“Testimony based on nothing but speculation is evidence of nothing at all.”).

¹⁴³ Evidentiary Hearing Day 2 (Apr. 5, 2022), Tr. 461:19–462:2 (Mr. Johnson testified that trains move at restricted speed at signaled locations or where there are town ordinances, regardless of maximum authorized speed of 79 mph); *see also* CSXT/NSR Opening Evidence Workpaper, “NO_AND_M_Timetable,” at 2–7 (depicting maximum authorized passenger train speeds of between 15 mph and 79 mph).

¹⁴⁴ *See E. Alabama Ry.—Petition for Declaratory Ord.*, S.T.B. Docket No. FD 35583 (served Mar. 9, 2012), slip op. at 4 (“Generally, the proponent of an agency order

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the Board on this issue rests with Amtrak. That burden surely requires more than Mr. Blair's ambivalent and unproven statement.

C. Amtrak Cannot Avoid the Need for Infrastructure to Support Gulf Coast Passenger Service by Highlighting the Impact of Future Freight Growth.

Amtrak claims it is entitled to immediate access to the Gulf Coast Corridor without any infrastructure investments, because the immediate substantial impairment predicted by the 2021 Gulf Coast RTC Model is less than the delays predicted from projected freight growth over a 20-year period. Amtrak's theory is that so long as the level of immediate impairment to freight service is comparable to the level of impairment that NSR and CSXT are willing to accept due to organic growth that is projected to occur over a 20-year period, then imposing that immediate and permanent impairment on the freight railroads is perfectly reasonable. This new theory is deeply flawed for five independent reasons.

First, Amtrak ignores the overwhelming and uncontested evidence that without major infrastructure investments the Gulf Coast Corridor lacks sufficient capacity to accommodate **both** the projected freight growth and the new passenger service. It is the recommended and standard industry practice to examine a twenty-year period.¹⁴⁵ And the record is clear. Adding four passenger trains a day no, when combined with the projected freight growth over the next 20 years, will lead to gridlock. Such gridlock may not occur immediately, but, absent infrastructure, it

bears the burden of proof.” (citing 5 U.S.C. § 556(d)).

¹⁴⁵ See CSXT/NSR Supplemental Evidence at 10–18.

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will occur. Under this scenario, the RTC Model cannot find a dispatching solution that does not involve blocking the numerous public crossings for hours at a time, which is no solution at all. The proposed Amtrak service will not simply unreasonably impair future freight service, but without major capital investment, it will prevent CSXT and NSR from meeting the rising demand for rail transportation services over the corridor. Amtrak's approach would result in CSXT and NSR subsidizing Amtrak's passenger service. This is an uncontested showing of unreasonable impairment directly attributable to the Amtrak service.

Second, Amtrak misstates the record. Amtrak cherry-picked testimony to support the claim that CSXT and NSR's witnesses "testified that no new infrastructure is necessary to accommodate their own freight growth on the Gulf Coast corridor over the next twenty years."¹⁴⁶ Nowhere have CSXT or NSR claimed that they would not invest to support future growth on the line. What CSXT and NSR have said is that they have not currently planned for any particular investments to address future freight needs (other than the sidings between Mobile and Montgomery that are already included in the 2039 cases).¹⁴⁷

CSXT and NSR witnesses testified that they have, do, and in the future will invest in the Gulf Coast Corridor when necessary to accommodate their operations. For example, Ricky Johnson testified that CSXT recognizes that there will be future

¹⁴⁶ Amtrak Supplemental Evidence at 18 & n.16.

¹⁴⁷ See 2021 Gulf Coast RTC Report at 24 (§ 3.3) (describing four siding projects that CSXT is planning to complete before 2039).

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growth on the Gulf Coast and is “investing over \$70 million in building siding capacity and growing our capacity north [of Mobile] in conjunction with the port and the state of Alabama.”¹⁴⁸ But Mr. Johnson explained that at the moment, CSXT “do[es] not have any plans to build infrastructure in our Sibert Yard area” or between New Orleans and Mobile because CSXT does not “have a need for it *right now*.”¹⁴⁹ Similarly, Randy Hunt described a number of infrastructure improvements to the Back Belt in recent years including the construction of a Paris Interlocking in collaboration with the western carriers “to increase fluidity,” the signalization of the entire Back Belt from Huey P. Long Bridge to Terminal Junction, the installation of positive train control, and upgrades to the East Bridge Interlocking.¹⁵⁰ And Mr. Hunt stated that NSR has “made lots of investments” in New Orleans and will “continue to invest *as the freight business requires it*.”¹⁵¹

Third, any infrastructure that is deemed necessary—over time—to serve rising freight demand on this corridor (and only freight demand) is CSXT’s and NSR’s responsibility, not Amtrak’s. But to the extent adding Amtrak requires additional investment so as to accommodate both passenger and freight, which the RTC Model shows it does, then that responsibility properly belongs to Amtrak, not

¹⁴⁸ Evidentiary Hearing Day 2 (Apr. 5, 2022), Tr. 499:9–13.

¹⁴⁹ *Id.* at 507:6–13 (emphasis added).

¹⁵⁰ Evidentiary Hearing Day 3 (Apr. 6, 2022), Tr. 821:10–822:5.

¹⁵¹ *Id.* at 822:5–7 (emphasis added). Indeed, the control for this in the RTC modeling is the fact that the baseline metrics for the future case are the future case—not today’s operations—and the impairment is measured by a change in those future case metrics.

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the freight railroads. It would have served no purpose to analyze what investments the carriers might explore in 20 years' time in a freight-only world with no Amtrak Gulf Coast service. As such, the analysis was properly limited to the impact of the proposed passenger service on current and future freight fluidity and an infrastructure package was developed to address only the harm caused by that service.

Fourth, even the immediate impairment projected by the RTC model is massive, without comparison to the uncontested long-term impairment to growth opportunity. Amtrak wishes to commence Gulf Coast passenger service as quickly as possible.¹⁵² The 2021 Gulf Coast RTC Report establishes that introduction of passenger service today will result in “an increase in freight delays by 22.7%, reduce train speeds by 4.5%, increase dispatching conflicts by 38.1%, increase re crews by 37.7%, and increase the variability of service.”¹⁵³ CSXT local trains will immediately experience a 45.4% increase in delay and a 6.9% decrease in speed.¹⁵⁴ This degradation is entirely attributable to the presence of high priority passenger trains on the corridor and will occur long before the projected freight growth

¹⁵² See Amtrak Supplemental Evidence at 25–26 n.26 (Amtrak seeks to begin crew qualification on NSR's portion of the Gulf Coast Corridor “to ensure that Amtrak employees are prepared to safely and reliably operate the *Gulf Coast* service whenever the Board orders it can commence.”).

¹⁵³ 2021 Gulf Coast RTC Report at 45 (§ 6.0).

¹⁵⁴ *Id.* at 46, Table 20 (§ 6.0).

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materializes. For this reason, 11 of the 14 infrastructure projects are required to mitigate harm to freight service from the introduction of passenger trains today.¹⁵⁵

This immediate and permanent harm is different in both kind and scope to the incremental congestion that the Gulf Coast Corridor will experience over time in a freight-only world. Simply put, absent Amtrak, CSXT and NSR can invest and expend capital over time as needed and as driven by freight demands. But because of the statutory preference accorded to Amtrak, CSXT and NSR will not have that same level of flexibility when working to incorporate new passenger service. Host railroads are unable to alter passenger schedules to improve line fluidity, and they must clear mainline track sufficiently far in advance of a passenger train's arrival to ensure proper preference is given. For example, NSR currently clears the Back Belt for "approximately one hour, twice per day . . . to ensure on-time operation of the existing Crescent Amtrak service."¹⁵⁶ The addition of the four Gulf Coast service passenger trains, without additional infrastructure, would require NSR to shut down operations on the Back Belt for a total of six hours per day.¹⁵⁷

¹⁵⁵ *See id.* at 50, Table 22 (§ 7.0).

¹⁵⁶ *Johnson & Hunt V.S.* at 8.

¹⁵⁷ *See* Evidentiary Hearing Day 3 (Apr. 6, 2022), Tr. 806:3–19 (testimony of R. Hunt describing how the four Gulf Coast service trains will "introduce these additional windows"); *see also* Evidentiary Hearing Day 5 (Apr. 12, 2022), Tr. 1568:12–1569:11 (testimony of H. Sinkkanen explaining that providing these additional Amtrak trains with proper preference will require moving NSR's freight trains off the mainlines).

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In contrast, the conservatively projected freight growth is expected to materialize gradually over the next 20 years. This gradual growth affords CSXT and NSR time to assess the fluidity of the Gulf Coast Corridor and make determinations about how best to absorb the new freight traffic and avoid any degradation to the quality of operations. That process may involve the construction of new or upgraded infrastructure or efficiencies in railroading realized through technological innovation or automation. And in the event CSXT or NSR determines additional infrastructure is necessary to support future freight growth, the freight railroads can mobilize resources to address those infrastructure needs. These infrastructure improvements, when made, will be constructed not only with the immediate future in mind, but—when made 5, 10, or 15 years from now—with the added focus of many further years down the line. CSXT and NSR will invest their own capital wisely and with the goal of ensuring each project’s suitability now and well into the life of the infrastructure as well as its suitability to handle growth anticipated at the time the infrastructure is built—something Amtrak seems not inclined to consider.

Finally, whataboutism is no defense. The unreasonableness of the impairment Amtrak believes it is entitled to inflict on NSR, CSXT, the Port, the communities through which they operate, and the current and future businesses they serve, is not informed by a comparison to future congestion from projected growth. It is best revealed by focusing on the harm caused by Amtrak itself and its stubborn unwillingness to commit to even the most obvious of infrastructure

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solutions—a dedicated station track at Mobile. This FRA-recommended solution addresses the obvious harm from having four passenger trains traverse and occupy mainline track in Mobile eight times a day. Yet Amtrak is unwilling to commit to even this simple solution prior to starting service, nor the solutions in New Orleans, nor indeed any infrastructure solution at all. When there are readily available solutions, but Amtrak refuses to adopt them, then imposing passenger service without requiring such infrastructure is the essence of unreasonableness. And Amtrak's defense—what about potential congestion in 20 years from projected growth on the line?—will be cold comfort to the thousands of businesses that will be immediately and permanently harmed by adding four daily passenger trains with no infrastructure.

In sum, the record is clear that Gulf Coast passenger service will severely harm CSXT and NSR's ability to operate both now and in the future without sufficient supporting infrastructure in place. Amtrak's position has been consistent throughout this litigation: it is entitled to any extra capacity on the line even if that extra capacity has been constructed and maintained by the freight railroads with the expectation that it would be available to them to handle anticipated, future freight growth. This position is akin to telling homeowners with three bedrooms but only one child that because they have a spare bedroom, it can be occupied by someone else for another purpose. Under Amtrak's view, it does not matter that the homeowners are expecting a second child in a few months, the room is not utilized

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today, so it may be taken for nothing more than the cost of maintaining it. Taking that room is an impairment, pure and simple.¹⁵⁸

Amtrak's claim that it is entitled to immediately consume all future freight capacity on the Gulf Coast Line and require freight railroads and their customers to either accept delays or pay to replace the future capacity that Amtrak seized is inconsistent with the statute and fundamentally unreasonable. The Board should reject such a position and instead require Amtrak to pay for the infrastructure required to accommodate the proposed passenger service.

D. Amtrak's Allegations About Mid-1990s Freight Service on the Gulf Coast Line Are False.

Amtrak asserts that it "offered un rebutted evidence that in the past, the corridor between New Orleans and Mobile had considerably more freight traffic than it does today."¹⁵⁹ But that assertion is neither correct nor un rebutted (or, for that matter, relevant). The source of Amtrak's assertion appears to be Table 13.8-2 from the 1997 Conrail control application, which reports that in 1995 there were 20.6 trains per day on the New Orleans-Mobile segment.¹⁶⁰ But that average daily train count from 1995 is consistent with current operations. As Mr. Johnson

¹⁵⁸ Of course, if an addition to the house is needed in the future to accommodate more children, then the homeowners should pay for it, just as CSXT and NSR will pay for what is needed solely to support future freight service. But Amtrak is plainly not entitled to seize future capacity for itself and then expect freight railroads and their customers to pay to replace that lost capacity.

¹⁵⁹ Amtrak Supplemental Evidence at 4.

¹⁶⁰ See Amtrak Reply Evidence, Blair V.S. ¶ 8 & App'x A (attaching Conrail Table).

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testified on cross-examination, currently CSXT operates “eight to ten through trains a day . . . one to three coal trains per day . . . [and] six to seven locals across the property per day”—equating to 15 to 20 total trains per day.¹⁶¹ And while train counts are similar, Mr. Johnson testified that total freight traffic on the line has grown considerably: “the volume of business has grown on the NO&M sub approximately 20 percent . . . since the 2004 to 2006 time frame.”¹⁶²

While Amtrak may be under the misimpression that the 20.6 average trains reported in the Conrail application was only a partial count of “through trains” that did not include unscheduled unit trains or local trains, there is not a shred of evidence to support that view. Table 13.8-2 refers to “trains per day,” not “through trains per day.”¹⁶³ Nowhere in the full Conrail operating plan is there any suggestion that the train counts in the operating plan only represented some of the trains on the affected lines. On the contrary, the operating plan explicitly discusses local train service and potential post-merger changes to local train service.¹⁶⁴

In short, even if the number of freight trains operating over the Gulf Coast line in 1995 were relevant to the question here (and it is not), Amtrak’s claims that

¹⁶¹ Evidentiary Hearing Day 2 (Apr. 5, 2022), Tr. 669:5–12.

¹⁶² *Id.* at 667:20–22.

¹⁶³ *See* Amtrak Reply Evidence, Blair V.S., App’x A (Conrail Table).

¹⁶⁴ *See* CSX Operating Plan, Labor Impact Exhibit, Density Charts and Supporting Statements (Exhibits 13 and 14), Conrail Application Volume 3A (CSX/NS-20), CSX Corp. *et al.*—*Control and Operating Leases/Agreements—Conrail Inc. et al.*, S.T.B. Docket No. FD 33388 (filed June 23, 1997), at 177.

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CSXT is operating significantly fewer trains over the line than it did in 1995 are simply not true.

E. Amtrak’s New Attempts to Redefine “Unreasonable” Are Unavailing.

Amtrak also uses supplemental evidence to claim again that when Congress instructed the Board to consider “unreasonable” impairment to freight service it actually only was concerned about “excessive” impairment. Apparently recognizing that its prior reliance on an internet dictionary was unpersuasive,¹⁶⁵ Amtrak now claims that the Board should interpret “unreasonable” in § 24308(e) in light of “other areas of the law.”¹⁶⁶ But Amtrak’s citations to cases about intentional infliction of emotional distress, habeas corpus, and cruel and unusual punishment have little relevance to the Board’s application of § 24308(e).

The proper place to begin an interpretation of § 24308(e) is not Hawaii tort law or the notoriously restrictive Anti-Terrorism and Effective Death Penalty Act, but rather the statutory scheme that the Board administers and the surrounding statutory text. Statutes must be interpreted as a whole, and similar language in a statute should be accorded a consistent meaning.¹⁶⁷ And as CSXT and NSR have demonstrated, there is no basis in Title 49 for saying that “unreasonable” actually

¹⁶⁵ See CSXT/NSR Rebuttal Evidence at 11–14 (demonstrating that Amtrak’s selective citation of a subsidiary definition in an internet dictionary was at odds with every reliable dictionary definition and statutory interpretation practices).

¹⁶⁶ Amtrak Supplemental Evidence at 14.

¹⁶⁷ See CSXT/NSR Rebuttal Evidence at 14–15 & nn. 19–21 (citing multiple Supreme Court cases).

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means “excessive.” Multiple provisions of the Board’s governing statute require it to assess whether conduct is “reasonable” or “unreasonable,” and it has never held that “unreasonable” conduct must be “excessive.”¹⁶⁸ Indeed, if Amtrak were correct that “unreasonable” actually means “outrageous” and “beyond all bounds of decency,”¹⁶⁹ then Congress’s instruction that the Board ensure that railroad rates and practices are reasonable would be toothless. Is the Board only permitted to disallow a railroad tariff provision if it goes “beyond all bounds of decency”? Is a rate only above a reasonable maximum if it is “outrageous”? Amtrak’s attempt to give “unreasonable” a special heightened meaning cannot be squared with the way that the Board has consistently applied other statutes requiring it to assess reasonableness.¹⁷⁰

¹⁶⁸ See *id.* at 15–16 & nn. 22–25 (describing various instances in Title 49 of Board having jurisdiction to determine whether conduct was reasonable or unreasonable).

¹⁶⁹ Amtrak’s Supplemental Evidence at 14 (citations omitted).

¹⁷⁰ Amtrak’s assertion that the unreasonable impairment of § 24308(e) is “a higher bar” than the “substantial impairment” language in § 11102(a) is made without any citation or argument, see Amtrak Supplemental Evidence at 15, and indeed appears made up out of whole cloth. Congress used different language for these subsections, and there is no basis for holding that “substantial impairment” is a lesser standard. Indeed, the Board’s precedent holding that “substantial impairment” “set[s] a fairly high bar” in terminal trackage rights cases indicates that “substantial impairment” is something more than “unreasonable impairment”—particularly since the Board has never held that any other Title 49 statutes with “unreasonable” language set a high bar. *Cf. BNSF Ry.—Terminal Trackage Rights—Kansas City So. Ry. & Union Pac. R.R.*, S.T.B. Docket No. FD 32760 (Sub-No. 46), slip op. at 16–17 (served July 5, 2016).

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CONCLUSION

At the close of supplemental evidence, it is clear that CSXT and NSR have met their burden under § 24308(e), and that Amtrak has not. The 2021 Gulf Coast RTC Model has been exhaustively reviewed by the Board, and been explained and examined in hundreds of pages of evidence, hours of testimony, and multiple supplemental RTC runs. And it remains the only credible evidence in the record about the impact that Amtrak's proposed new service would have on freight transportation in the Gulf Coast region. Amtrak's eleventh-hour attempt to produce different RTC results has multiple fatal flaws, from selecting a single RTC seed, to reshuffling train starts on a daily basis, to proposing midnight maintenance and two-hour-long grade crossing blockages. Indeed, the fact that Amtrak's witnesses were forced to resort to such transparent gimmicks is further evidence that there is no way to accommodate the proposed passenger service without either substantially impairing freight service or requiring sufficient infrastructure to prevent that impairment. There is no question that Amtrak has not met its burden of proving it is entitled to an order to permit immediate Gulf Coast passenger service with no additional infrastructure.

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Respectfully submitted,

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Dated: August 31, 2022

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CERTIFICATE OF SERVICE

I hereby certify that on this 31st day of August, 2022, a copy of the foregoing Reply to Amtrak's Supplemental Evidence was served by email or first class mail on the service list to Finance Docket No. 36496.

/s/ Raymond A. Atkins

Raymond A. Atkins

SIDLEY AUSTIN LLP

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Exhibit 1

Supplemental Verified Statement of Mark H. Dingler

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**BEFORE THE
SURFACE TRANSPORTATION BOARD
DOCKET NO. FD 36496**

**APPLICATION OF THE NATIONAL RAILROAD PASSENGER
CORPORATION UNDER 49 U.S.C. § 24308(e) – CSX TRANSPORTATION,
INC. AND NORFOLK SOUTHERN CORPORATION**

**CSX TRANSPORTATION, INC. AND NORFOLK SOUTHERN RAILWAY
COMPANY'S REPLY TO AMTRAK'S SUPPLEMENTAL EVIDENCE**

**SUPPLEMENTAL REPLY VERIFIED STATEMENT OF
MARK H. DINGLER**

PUBLIC VERSION

My name is Mark H. Dingler, and I am the Senior Rail Simulation Project Manager at HNTB Corporation. My background and experience are described in my resume submitted into the record, and my prior hearing testimony in this proceeding on April 12 and April 14, 2022.

On July 27, 2022, the National Railroad Passenger Corporation (“Amtrak”) submitted supplemental briefing and evidence that included a Rail Traffic Controller (“RTC”) model developed by Thomas D. Crowley and Daniel L. Fapp of L.E. Peabody & Associates, Inc. That model is premised on the 2021 Gulf Coast RTC Model submitted with the opening evidence filed by CSX Transportation, Inc. (“CSXT”) and Norfolk Southern Railway Company (“NSR”) on November 3, 2021, and supplemented in subsequent filings in this proceeding. Larry R. Guthrie and I were asked to review Amtrak’s RTC model, and our analysis of that model is set forth in the 2021 New Orleans – Mobile Gulf Coast Passenger Service RTC Modeling Supplemental Reply Report attached as Appendix A.

Amtrak also submitted a supplemental analysis performed by Clayton S. Johanson and Darkhan Mussanov of DB E.C.O. North America, Inc. (“DB Engineering”). In that analysis, DB Engineering conducted a study comparing CSXT’s NO&M Subdivision and NSR’s Back Belt to other corridors on each freight railroad’s respective network where Amtrak already operates passenger service. DB Engineering also evaluated certain CSXT customer service data against the outputs from the 2021 Gulf Coast RTC Model. I was asked to review this supplemental analysis by DB Engineering. My findings and conclusions from that review are set

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forth in the 2021 New Orleans – Mobile Gulf Coast Passenger Service –
Supplemental Reply Report In Response to DB Engineering’s Corridor Analysis
attached as Appendix B.

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VERIFICATION

I, Mark H. Dingler, declare under penalty of perjury that the foregoing information is true and correct. Further, I certify that I am qualified and authorized to file this statement, the attached reports, and the analysis contained therein.

Executed on this 31st day of August, 2022.

A handwritten signature in black ink, appearing to read "Mark H. Dingler", written in a cursive style.

Mark H. Dingler

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Appendix A to Exhibit 1

RTC Modeling Supplemental Reply Report by HNTB Corporation and R.L. Banks & Associates, Inc.

Highly Confidential Material Redacted

2021 NEW ORLEANS - MOBILE GULF COAST PASSENGER SERVICE RTC MODELING SUPPLEMENTAL REPLY REPORT

PREPARED FOR

Sidley Austin LLP / Baker & Miller PLLC

PREPARED BY

HNTB Corporation

&

R.L. Banks & Associates, Inc.

August 31, 2022

PUBLIC VERSION

2021 NEW ORLEANS - MOBILE GULF COAST PASSENGER SERVICE RTC MODELING SUPPLEMENTAL REPLY REPORT

**HNTB Corporation
R.L. Banks & Associates, Inc.**

Report Prepared By:

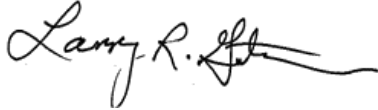
Mark H. Dinger
HNTB Corporation

Larry Guthrie
R.L. Banks & Associates, Inc.

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Verification

The authors believe that the analysis in this RTC Supplemental Reply Report follows industry best practices and that the RTC cases represented in the 2021 New Orleans - Mobile Gulf Coast Passenger Service RTC Supplemental Reply Report dated August 31, 2022, as well as the underlying model, accurately depict current and future constraints on the Gulf Coast Corridor. The cases were developed using the best information available and accurately reflect the potential impact of a new proposed Amtrak passenger service on the New Orleans - Mobile Corridor.



Larry Guthrie

DATE 08/31/2022



Mark H. Dingler, PE

DATE 08/31/2022

Executive Summary

The Rail Traffic Controller ("RTC") Modelers, HNTB Corporation and R.L. Banks & Associates, Inc., were provided the Supplemental Verified Statement of Thomas D. Crowley and Daniel L. Fapp of L.E. Peabody & Associates, Inc ("Crowley & Fapp Supplemental V.S."). That supplemental verified statement presents RTC modeling that makes changes to the 2019 Base Case, evaluates proposed operational changes, and individually evaluates the proposed infrastructure projects from the 2021 New Orleans - Mobile Gulf Coast Passenger Service RTC Modeling Report ("2021 Gulf Coast RTC Report") jointly developed by HNTB Corporation and R.L. Banks & Associates, Inc. (the "RTC Modelers"). This 2021 New Orleans - Mobile Gulf Coast Passenger Service RTC Modeling Supplemental Reply Report ("RTC Supplemental Reply Report") reviews these RTC cases and demonstrates that the modeling performed by Messrs. Crowley and Fapp is fatally flawed. This RTC Supplemental Reply Report also draws on the RTC Modelers' analysis presented in the 2021 New Orleans - Mobile Gulf Coast Passenger Service RTC Modeling Rebuttal Report ("2021 RTC Rebuttal Report") and the 2021 New Orleans - Mobile Gulf Coast Passenger Service RTC Modeling Supplemental Report ("RTC Supplemental Report").

The RTC cases provided by Messrs. Crowley and Fapp in their supplemental evidence are riddled with methodological flaws, misrepresentations of results, and unexplained modifications to RTC model inputs. Our review of their RTC Base cases found that:

- Results are based on a single, unrandomized seed;
- Presentation of the results obscures the adverse impact that the passenger service will have on the fluidity of freight rail service;
- The .TRAIN file and .PERMIT file for the Adjusted 2019 Freight Base Case were taken from different seeds without explanation; and
- The results show a greater impairment to the fluidity of freight rail service arising from the introduction of new passenger service than the original modeling showed.

The so-called "operational" changes modeled by Messrs. Crowley and Fapp include changes that are:

- Adjustments to supposedly reflect the real-world disguised as operational changes;
- Not capable of being replicated or implemented in the real world; and
- Shifting of delays arising from introduction of the passenger service from the freight rail service to the general public, to other portions of the CSXT and NSR network that were not modeled, or to maintenance-of-way crews.

The infrastructure changes by Messrs. Crowley and Fapp are flawed for the following reasons:

- Messrs. Crowley and Fapp directly compare the benefit of multiple FRA projects to that of individual projects;
- Messrs. Crowley and Fapp make unexplained changes to individual cases that make it impossible to directly compare cases; and
- Several projects are not used or used incorrectly by trains in the model.

In sum, the results provided by Messrs. Crowley and Fapp are flawed and the metrics are presented in a manner that is of no use in answering the questions posed in this case. Messrs. Crowley and Fapp do not identify any operational change that is able to mitigate the impairment caused by the proposed passenger service, and they never directly compare the benefits of the projects proposed in the 2021 Gulf Coast Modeling Report to the FRA Improvements.

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1.0 Introduction

The RTC Modelers were provided the Crowley & Fapp Supplemental V.S., which presents RTC modeling that makes changes to the 2019 Base Case, evaluates proposed operational changes, and individually evaluates the proposed infrastructure projects from the 2021 Gulf Coast RTC Report.

This 2021 RTC Supplemental Reply Report reviews these RTC cases and demonstrates that the modeling performed by Messrs. Crowley and Fapp is fatally flawed. This report identifies these modeling errors and provides additional modeling and analysis to better evaluate their work.

1.1 Flawed Understanding of Simulation Modeling

Throughout this proceeding, Messrs. Crowley and Fapp have demonstrated a clear misunderstanding of the purpose of simulation models. They argue repeatedly that the freight railroads' modelers intentionally manipulated the model to over-represent the congestion on the corridor.¹ The RTC Supplemental Report clearly demonstrates that, on the contrary, the RTC model in this case has *higher* average speeds than the real world does. This is not to the result of any flaw in RTC; rather, it is inherent in any reliable simulation modeling. Simulation models have the inherent advantage of knowing about delay-causing events that are unforeseeable to a human dispatcher and thereby can better evaluate and optimize multiple decisions. When using a simulation to evaluate railroad infrastructure, the cases do not, and should not, attempt to include the many unforeseeable sources of delay. Infrastructure needs to be designed to be robust under a wide range of events, not just the specific ones modeled.

Messrs. Crowley's and Fapp's assumption that RTC results are a perfect representation of the corridor is wrong.² This assumption is foundational to how Messrs. Crowley and Fapp believe RTC models should be built, using exact values without randomization. Yet even with exact values, the RTC model will not provide a perfect replication of the operations on a corridor. If you run a model with the exact same departure times, dwells, bridge openings times and durations, and other events, you will still get a different result than occurred on that day in the real-world. As previously mentioned, the dispatching function in RTC is more precise than a human dispatcher because it is able to foresee exact future events, enabling more efficient meets between trains and other events. For this reason, and trains will typically traverse the corridor faster in an RTC model.

Messrs. Crowley and Fapp also propose operational solutions that are only achievable in a simulation model. They simulated a single seed, enabling the user to make backward-looking, 20-20 hindsight changes that may work for that seed, but that will not address the variety of other situations the freight railroads will experience in the ordinary course on the corridor.³ The static operations using one seed will not replicate identically day after day in real-world, non-computer simulated railroad operations. Under the aforementioned circumstances, the

¹ Crowley & Fapp Reply V.S. at 16 ({"Redacted

}); *id.* at 25 ("[I]t is evident that they deliberately produced a model that included unrealistic congestion, underutilized infrastructure, unrealistic blockages, unrealistic operations, overextended dwell times, and inefficient dispatching options."); *id.* at 34 ("Banks/Guthrie detached its model from the real-world data that it possessed, inflated the number and frequency of the trains involved and dispatched those trains at times designed to create the greatest number of conflicts and delays.").

² *Id.* at 36 ("Banks/Guthrie simply assume that the RTC simulation requires a higher OTP than actual operations. . . . [T]here is little difference between real world operations and RTC simulations of the same part of a rail network.").

³ A "seed" refers to a specific randomized scenario of a case (e.g., the 2019 Base Case) that is generated using a unique set of randomized inputs into the model. A modeler will typically run a number of different seeds consisting of different combinations of variable inputs into the model including bridge opening times, train departure time, and train lengths.

one-seed model that can account for unplanned events, coupled with a modeler who makes decisions with perfect hindsight is not realistic. This is far removed from reality where dispatchers can only foresee operational challenges shortly before they happen and cannot go back in time to adjust their decisions. Essentially, the type of analysis performed by Messrs. Crowley and Fapp (making backward looking changes on a single case) is a form of stringline analysis, not simulation modeling. This level of planning is not achievable in variable, real-world operations.

Any review of an RTC model and its results requires an understanding of the strengths and weaknesses of simulation modeling. Models are powerful tools that do not represent every potential event on the corridor.⁴ As such, using the model as if it were a perfect representation of reality and presenting modeling results in absolute values, and then directly comparing those values to actual, real-world values, is an improper (and unrealistic) way to evaluate and use RTC modeling results.

2.0 Modeling Methodology

The RTC modeling performed by Messrs. Crowley and Fapp deviates significantly from the method of calculating and presentation of the data used in the 2021 Gulf Coast RTC Report, 2021 RTC Rebuttal Report, and RTC Supplemental Report. In their modeling, Messrs. Crowley and Fapp use no randomization and only present a systemwide, single output value for all freight traffic. This approach provides results that are not robust and that obscure the impact of the passenger service and the benefits of the infrastructure projects.

2.1 Removing Randomization

When developing the cases for the 2021 Gulf Coast RTC Model, randomization was used to best represent the high degree of variability in North American freight operations. Train departure times, train dwells, train consists, bridge openings, maintenance-of-way outages, and interchange delays in New Orleans were all randomized. In each case, a .TRAIN and .PERMIT file were generated for each scenario with an assigned seed number, starting at seed 100. These scenarios were generated and simulated in RTC until 30 seeds were achieved for each case, providing a robust sample for each case.

2.1.1 Sources of RTC Randomization

Each seed was randomly generated to reflect a different combination of variables on the corridor that may be experienced in real-world operations. This randomization was developed using a combination of an external tool and RTC's internal randomization logic.⁵

RTC's internal randomization logic only supports the ability to randomize departure times, dwells and operator performance using uniform distributions. To overcome this limitation, the RTC Modelers used external randomization to enable more distribution types with additional flexibility to better reflect operations on the corridor. However, RTC's internal randomization logic was still used on 40% of the trains, either alone or in combination with the external randomization. Included in this 40% of trains are New Orleans Public Belt Railroad trains, coal trains arriving and departing from Mobile, bridge tenders, and Mobile yard train movements. Messrs. Crowley and Fapp did not deploy RTC's internal randomization logic in their cases. By

⁴ 2021 Gulf Coast RTC Report at 23 (§ 3.1).

⁵ See CSXT-NSR Opening Evidence RTC Workpaper Index at 3 ("To recreate the report results for each case the random seed in the .OPTION file and the .TRAIN and .PERMIT file for the same seed need to be selected in the .INPUT file.").

not using the RTC randomization, 40% of the trains depart at the exact same time in every day of the simulation.

2.1.2 Reasoning for Randomization

Randomization is used to represent a wide range of potential operations on a corridor. Modeling is essentially irrelevant if only a single set of unchanging variables is considered. Without randomization, a RTC case will only reflect a single, fixed set of bridge openings, maintenance-of-way ("MOW") work events, interchange delays, and train operations. This will lead to overconfidence in the RTC results and may result in the construction of too much infrastructure, too little infrastructure, or in infrastructure being built at the wrong location. As described in the FRA Guidance, it is critical that the proposed infrastructure "is flexible enough to reliably accommodate a full spectrum of the potential changes."⁶ Simulating a single case without randomization is as effective as a stringline analysis, which is to say, not effective at all. It is a snapshot of a specific situation that does not demonstrate any ability to support the proposed service under any other operating conditions. Even minimal randomization is preferable to none in order to confirm that the results are not the product of a perfect collection of settings that cannot be repeated.

2.1.3 Crowley and Fapp Justification

Messrs. Crowley and Fapp argue that no randomization should be performed. Messrs. Crowley and Fapp justify this claim by arguing that randomization (1) artificially increases the number and duration of conflicts, (2) makes comparisons between cases less meaningful, and (3) hinders the ability to consider operational or infrastructure changes. Accordingly, they selected a single set of .TRAIN and .PERMIT input files and then ran cases with no RTC randomization.

The claim by Messrs. Crowley and Fapp that randomization "artificially" increases delays is not supportable. First, randomization is the best way to represent the high degree of variability inherent in American freight railroad operations. Trains depart at various times, and have different lengths of dwells each day despite railroads' best efforts to adhere to their train plans, bridges open and close at different times, and there are wide range of outside factors that can disrupt or alter operations. Representing this variability is not an attempt to do anything but best reflect real-world operating conditions. "Artificial" modeling would be selecting a specific seed and only using those results, as was done by Messrs. Crowley and Fapp. With a single seed, the results cannot be presented as representative of a wide spectrum of possible (and real world) operations conditions.

Messrs. Crowley and Fapp's claim that comparisons between cases become less meaningful when randomized shows a misunderstanding of basic modeling methodology and statistics. Simulating or recalculating a set of random numbers is a well-known method referred to as a Monte Carlo Simulation.⁷ A Monte Carlo simulation is used to model the probability of different outcomes in a process that cannot easily be predicted due to the intervention of random variables. This type of analysis is used in many real-life analyses in the fields of engineering, operational research, artificial intelligence, economics, and medicine. When evaluating any random event, the more data points a modeler uses, the more confidence that can be ascribed to the robustness of the results.

⁶ Federal Railroad Administration, Rail Corridor Transportation Plans, A Guidance Manual (2005), at 15, <https://railroads.dot.gov/elibrary/railroad-corridor-transportation-plans-guidance-manual>.

⁷ Robert L. Harrison, Introduction to Monte Carlo Simulation (2010), National Library of Medicine - National Center for Biotechnology Information, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2924739/>; Monte Carlo Simulation, IBM Cloud Education (Aug. 24, 2020), <https://www.ibm.com/cloud/learn/monte-carlo-simulation>.

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Messrs. Crowley and Fapp claim that “using a single RTC simulation as a base reference point allows us to see the impact of operational or infrastructure changes that may be included in all subsequent RTC simulations.”⁸ But without randomization, one cannot know if infrastructure provides benefits across the wide range of operations that are inevitable over the many years of the proposed passenger service. Any particular project or combination of projects may show significant or even a negative benefit, when a slightly different set of conditions would give different results. This is no way to plan infrastructure that will be used for decades into the future. Similarly, operational changes need to be robust and provide a benefit in a range of possible scenarios, not just in a single situation. When considering a schedule change, that schedule may shift, but the variability in departure times will remain. As discussed later in **Section 4.4**, the way to evaluate an operational change is to adjust the departure time by the same amount each day, with the variability remaining the same. If a modeler uses only a single seed, then any modification is merely manual dispatching, not a true test of an operational change.

In addition to the three arguments Messrs. Crowley and Fapp make above, they suggest the randomization should not be used since they are unable to verify the model inputs.⁹ However, they provide no further explanation for why that is the case. Randomization and the quality of the data are not linked. Whether or not the data is verifiable has no correlation to, or impact on, whether randomization should be used.

2.1.4 Results with Randomization

The lack of randomization has a significant impact on the RTC results for the Adjusted 2019 Freight Base Case. The results of the 2019 Base Case from the 2021 Gulf Coast RTC Model using external and the RTC internal randomization logic, the Unadjusted 2019 Freight Base Case based on seed 126¹⁰ using only the RTC internal randomization, and the Unadjusted 2019 Freight Base Case with no randomization at all are shown in **Table 2-1**. One form of randomization, using only the built-in RTC randomization, while less accurate, was fully available to Messrs. Crowley and Fapp and could have been used by them to represent the variations in operations and results in similar output values as provided by the RTC Modelers. But they chose not to use it. The simulations run without randomization are not robust and misrepresent the actual operations on the corridor.

Table 2-1: Unadjusted 2019 Freight Base Case with Randomization¹¹

Case	External Random	RTC Random	# Runs	Delay/ 100	Miles/ Hour	Seed
2019 Base Case	Y	Y	30	82.1	14.9	N/A
Unadjusted 2019 Freight Base Case	N	Y	30	84.1	14.8	126
Unadjusted 2019 Freight Base Case	N	N	1	75.3	15.1	126

2.2 Output Metric Presentation

Messrs. Crowley and Fapp deviate from how the RTC Modelers present their modeling results. Rather than reporting results at the individual train level, train group level, *and* for the entire simulated network, they provide four metrics for the entire network: average train speed, delay percentage, total true delay time, and delay per 100 train miles. These metrics are then

⁸ Crowley & Fapp Supplemental V.S. at 9.

⁹ *Id.* (repeating the incorrect claim the 2021 Gulf Coast RTC Model was “based upon unsupported and unverifiable information”).

¹⁰ Selection of seed 126 is discussed in Section 3.0.

¹¹ Calculated using metrics and methodology proposed by Messrs. Crowley and Fapp.

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provided for four train groups, Amtrak Long-Haul, Regional Amtrak, Yard and Freight. The Freight metric encompass all trains in the RTC Cases, from NSR operations in New Orleans to CSXT operations in Montgomery, except yard trains. By choosing to present the outputs as a single value, with no breakdowns by location, railroad, or traffic type, Messrs. Crowley and Fapp's results do not provide sufficient detail to determine the impact of the proposed passenger service or help answer the questions raised in this case. Knowing the average performance of every freight train operating somewhere between New Orleans and Montgomery and lumping their performance together does not provide insight into the impact to local customers, adjoining railroads, or even between NSR and CSXT.

2.2.1 Evaluated Metrics

Messrs. Crowley and Fapp state that these metrics are "common and recognized" and "are direct outputs from the RTC model and reflect an unvarnished assessment of the simulation because they do not require complex calculations by a third party."¹² Three of these metrics are essentially the same. Delay percentage and delay per 100 train miles are the total true delay time divided by the ideal runtime and train miles, two metrics that are not measurably different between cases. When considering differences between cases, all three of the metrics will change by the same percentage, corresponding to the percentage change in the delay. This means since the RTC Modelers provide average speed and delay per 100 train miles, they provided the same data as Messrs. Crowley and Fapp.

In addition to average speed and delay per 100 train miles, the RTC Modelers reported variability, dispatching conflicts, interchange delays, and recrew metrics are provided. Consideration of metrics without consideration of the variability is not meaningful. Increased variability has a greater impact to freight operations because any additional delay experienced on the corridor is not distributed equally each day. Increased variability also limits a railroad's ability to effectively plan operations. Dispatching conflicts and re crews are also "direct outputs from the RTC model" that should always be provided to better contextualize the operations and related challenges. The interchange delays are included because the shifting of delays from the NSR Back Belt to the interchange partners is not apparent in the overall train metrics.

Messrs. Crowley and Fapp again claim in their supplemental report that the presentation of dispatching conflicts, interchange delays, and re crews "were calculated in a way to overstate the impact of reinstating Regional Amtrak service."¹³ The basis of this claim is unclear. Dispatching conflicts and re crews are direct outputs from the RTC .DELAY file that requires no further calculation or manipulation by the modeler.

2.2.2 Metric Subgroups

In previous reports, the RTC Modelers have presented the results by average speed, train delay, and variability metrics for select trains on the corridor, as well as an average for three specific sub-groups: CSXT Local Trains, CSXT Through Trains, and NSR Trains. A single overall average for each performance metric was provided for ease of review. But as discussed in the RTC Supplemental Report, focusing on this single value to the exclusion of all else obscures the full impact to various train types on the corridor.¹⁴ The overall value could obscure a degradation on CSXT due to a benefit to NSR or vice versa. Or it could obscure a degradation

¹² *Id.* at 10.

¹³ Crowley & Fapp Supplemental V.S. at 27.

¹⁴ RTC Supplemental Report at 31 ("While a single overall number was provided for ease of the reader, each of the groups of traffic must be considered individually. . . . [S]ince the impacts of the passenger service are not distributed equally throughout the corridor, these overall performance metrics obscure the full degradation to freight trains on the passenger route.").

to local traffic while improving through traffic. Or it could obscure significant increases in delays in terminal areas while reducing them along the corridor.

2.2.3 Benefit of Simulation Modeling

What makes simulation modeling useful is that the outputs can be analyzed and broken down to understand the complex interactions on a corridor. Not making use of all available data (outputs) from the model when conducting an analysis and drawing conclusions is a failure to use one of the key benefits of simulation modeling. For example, detailed analysis of the model outputs demonstrated that delays were being shifted from the NSR Back Belt to the foreign carriers in New Orleans and the differing impacts to merchandise trains versus local trains on CSXT's NO&M Subdivision. The RTC Modelers also used model outputs to identify where the delays are occurring to select projects that effectively mitigate the impact of the passenger service and the increased blockage of crossings that would result in the system over the 20-year term of the study (ultimately culminating in the conditions represented in the 2039 Passenger Case).

2.2.4 Use of Absolutes

The use of percentages as compared to absolute values has been explained in detail in the 2021 RTC Rebuttal Report, the RTC Supplemental Report, and by Hannah Rosse and Holly Sinkkanen in their rebuttal verified statement. As clearly demonstrated in the RTC Supplemental Report,¹⁵ the RTC cases in this study were not "deliberately" created to include "unrealistic congestion, underutilized infrastructure, unrealistic blockages, unrealistic operations, overextended dwell times, and inefficient dispatching options."¹⁶ Railroad operations simulation models are actually inherently more optimistic with faster train speeds and fewer delays, which is why percentages is the best way to demonstrate the results. By focusing only on a comparison of the real world and simulated train speeds, Messrs. Crowley and Fapp demonstrate that it is they who are playing "games" with the data.¹⁷ As demonstrated in the RTC Supplemental Report, in some circumstances the use of absolute difference could overrepresent the potential impact of the passenger service.¹⁸ Direct comparison of absolute differences from RTC simulations to historical data implies an ability of simulation models to perfectly replicate operations on a corridor, which is simply not the case.

3.0 Base Case

Messrs. Crowley and Fapp developed a new base case, making six changes to the model. As discussed in **Section 2.1**, the cases in their study are based on a single seed with no RTC randomization. To determine the base seed, Messrs. Crowley and Fapp ran each of the 2019 Base Case (also referred to as "2019 F") seeds from the 2021 Gulf Coast RTC Report without any RTC randomization. They then selected the seed with the lowest amount of delay, seed "R126."¹⁹ They claim that it is conservative to selectively choose the best performing seed to serve as the new base case. But the opposite is true. A conservative approach to evaluating the impact of introducing passenger service would be to select a case with more congestion, not less. Using the seed with the lowest delay is choosing a scenario with conditions that

¹⁵ See RTC Supplemental Report at 14-30 (§§ 3.0-3.3.5).

¹⁶ Crowley & Fapp Reply V.S. at 48.

¹⁷ *Id.* at 11.

¹⁸ RTC Supplemental Report at 36 (§ 5.3.2) (explaining that, "[s]ince the RTC model has higher speeds than achieved in actual operations, using the absolute change in speed (4.7 mph) would be a higher percentage change in actual operations than in the model," resulting in an over-representation of the impact).

¹⁹ Crowley & Fapp Supplemental V.S. at 11.

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create the most capacity available for passenger movements. Messrs. Crowley and Fapp not only run their cases without randomization, but they choose the best seed to serve as the baseline, all in an effort to create a model with less freight congestion.

Messrs. Crowley and Fapp then applied the six changes to the “unadjusted” base case to create a new “adjusted” base case for further study. The changes to the Adjusted 2019 Freight Base Case are:

- 1) Adjusted permit file so that passenger trains are purposefully blocked during maintenance-of-way windows.
- 2) Disabled passenger window that holds freight trains off the Back Belt to provide a clear path for P020, the northbound train from the Crescent Service operating in New Orleans.
- 3) Disabled interchange permits, which means that most inherent delays to trains engaging in interchange between NSR to CSXT simply disappear.
- 4) Changed RTC logic to prefer placing the first arriving train into the siding during a meet event.
- 5) Adjusted crew walk speed from 2 mph to 3 mph.
- 6) Limited duration of maintenance-of-way windows to 120 minutes.

In their supplemental verified statement, Messrs. Crowley and Fapp combine changes (1) and (2) but the RTC Modelers separated them out as they are distinct modeling issues.²⁰

The RTC Modelers acknowledge that the 2021 RTC Rebuttal Report incorrectly described the length of maintenance-of-way window permits. The change to the dispatching logic with respect to train meets at sidings has minimal to no impact on the model’s results. The remaining four changes are examples of Messrs. Crowley and Fapp’s continuing to ignore previous written reports and verbal testimony from the RTC Modelers.²¹

The justification to remove the interchange delays misunderstands the purpose and goal of the permits. Messrs. Crowley and Fapp argue that stopping passenger trains for maintenance-of-way windows creates unrealistic delays to passenger trains. With respect to crew walking speed, they insist that using a “default” value is more important than what best represents actual conditions. Finally, while Messrs. Crowley and Fapp claim they would ordinarily modify the modeling of the yard trains by “linking yard trains in the CSXT and NSR rail yards,” they declined to do so based on the debunked argument that the train data provided does “not provide a sufficient level of detail about how the yard trains moved in their yard,”²² even though the 2021 RTC Rebuttal Report Workpapers²³ clearly showed the trains and their movements in the CSXT dispatching data.

3.1 Interchange Permits

The most significant of the changes to the base case is the removal of the permits used to represent the typical delays to trains interchanging between NSR and CSXT. No interchange is seamless, and trains are often delayed on the Back Belt waiting to enter CSXT Gentilly Yard. These delays are one of the largest sources of congestion in New Orleans.

²⁰ See Crowley & Fapp Supplemental V.S. at 12-13.

²¹ The RTC Modelers maintain that the cases presented in the 2021 Gulf Coast RTC Report are the best representation of railroad operations on the Gulf Coast Corridor and disagree with the changes proposed by Messrs. Crowley and Fapp unless explicitly stated otherwise. Some of the changes have minimal impact on the modeling results and therefore are not discussed in depth in this Supplemental Reply Report.

²² *Id.* at 12 n.16.

²³ See CSXT-NSR Rebuttal Evidence RTC Workpaper Y and Z train Data Analysis.xlsx.

Messrs. Crowley and Fapp claim that the purpose of these permits is to represent the impact of operations at the NE Tower diamond crossing.²⁴ To reach this conclusion, they ignore the 2021 Gulf Coast RTC Report,²⁵ 2021 RTC Rebuttal Report,²⁶ and workpapers,²⁷ where the RTC Modelers clearly state that these permits are included to represent the normal delays that occur during interchanges between CSXT and NSR. The RTC Modelers placed these permits at NE Tower because that location was able to represent the delays while not interfering with switching operations at Gentilly Yard. The effect of removing these permits, is that trains coming from other carriers and crossing the NSR Back Belt to CSXT all experience unrealistically minimal delays in the model. The exclusion of these real-world delays is a fatal flaw and impacts the modeling results for projects on NSR.

3.2 Passenger Trains and MOW Permits

The RTC modelers used permits to represent MOW events in order to best reflect real world operations on the corridor. MOW is a critical safety activity on the corridor, and time for these events must be provided even as the traffic on the corridor increases. While railroads try to plan routine, daily MOW events between train traffic, the location, start time, and duration of the MOW work changes each day. Over time, these MOW events in the real world will act will like a random variable, and any corridor planning must consider that these events can occur at all times of the day and locations on the corridor. While MOW work is planned around train traffic in the real world, RTC cannot “plan” permits around train traffic.²⁸ And even in the real world, while a railroad does its best to plan these windows around freight traffic, trains are occasionally delayed for this work to be completed.

As described in the 2021 RTC Rebuttal Report, the windows were designed around the passenger service, but at times a conflict would occur.²⁹ Since railroads avoid blocking passenger service with MOW activities in the real world, in those situations where a conflict would occur, passenger trains were allowed to pass through the permit to avoid any delays. In those situations, this modeling approach represents situations where the MOW work will be held off, cleared up, or rescheduled at a different time due to the oncoming passenger traffic. Contrary to Messrs. Crowley and Fapp’s claim, this does not represent trains operating through a curfew.³⁰ Similar to the process described to model bridge openings in the RTC Supplemental Report,³¹ these situations underrepresent the potential impact of the passenger service, as the work would be completely moved to another time where only freight is operating to avoid interfering with passenger service.

In the Adjusted 2019 Freight Base Case, Messrs. Crowley and Fapp adjusted the MOW permits to block Amtrak, for reasons that are not clear. Enabling the passenger trains to be stopped by MOW permits only serves to artificially reduce the OTP of the passenger trains.

3.3 Back Belt Passenger Windows

Messrs. Crowley and Fapp removed the curfews that closed one track on the Back Belt to freight train movements for 20 minutes each time the northbound Crescent train (train 20) departs New Orleans. They claim that this permit increased delays and is not necessary given

²⁴ Crowley & Fapp Supplemental V.S. at 14 (“In their RTC cases, Banks/Guthrie included both permits and conflicting trains using the at-grade crossing.”).

²⁵ 2021 Gulf Coast RTC Report at 88 (App’x G), Item 4.c (“Curfews used to replicate delays due to interchange event between CSXT and NSR”).

²⁶ 2021 RTC Rebuttal Report at 24 (§ 3.2.3.2).

²⁷ See CSXT-NSR Opening Evidence RTC Workpaper, “Observed Foreign Moves.docx.”

²⁸ This same issue was discussed in the context of bridge openings in the RTC Supplemental Report. See *id.* at 28 (§ 4.0).

²⁹ 2021 RTC Rebuttal Report at 25 (§ 3.2.3.3).

³⁰ See Crowley & Fapp Supplemental V.S. at 12.

³¹ RTC Supplemental Report at 28 (§ 4.0).

the high priority status of the passenger trains.³² However, this modeling change to the Adjusted 2019 Freight Base Case does not accurately reflect NSR's present day operations, which include a "one hour, twice per day" window where freight traffic is cleared from the Back Belt.³³ The RTC Modelers stand by their decision to model a 20-minute curfew for the northbound movements using a permit, which was a conservative modeling choice considering the permits are only in one direction and considering the length of the curfews in the real-world.

3.4 Walking Speed

While the train walking speed seemed to be a major point of emphasis in their reply verified statement and in their testimony, Messrs. Crowley and Fapp have not provided any real-world justification for the 3 mph setting except that it is the RTC "default."³⁴ In the 2021 Gulf Coast RTC Model, 2 mph was selected as it better represents the speed of someone walking on ballast along the railroad right-of-way and is the default setting for all CSXT RTC studies. The claim that a 3-mph crew walk speed is not only correct but "conservative"³⁵ does not hold up based on the walking conditions along the railroad right-of-way. This setting impacts the amount of time a train will be stopped while the crew uses a hand-thrown switch which is only performed by local trains.

3.5 Unadjusted 2019 Freight Base Case vs. Adjusted 2019 Freight Base Case

As explained in **Section 2.1**, Messrs. Crowley and Fapp utilized seed 126 from the 2021 Gulf Coast RTC Model to develop revised cases in their model. In particular, they used the .TRAIN and .PERMIT files from that seed. In multiple tables throughout the report, results are compared against the Unadjusted 2019 Freight Base Case.³⁶ However, the Adjusted 2019 Freight Base Case, and all subsequent cases throughout the study were developed using the .PERMIT file from seed 107, not seed 126 as described in Messrs. Crowley and Fapp's supplemental report.³⁷ The .PERMIT file includes all the bridge openings and maintenance permits on the corridor; each seed has different start times and durations of the bridge openings and maintenance-of-way work. Changes to the .PERMIT file will influence the results, making it impossible to do a direct comparison between the Unadjusted 2019 Freight Base Case and any other case with a different .PERMIT file.

To determine how much of the change in results is due to the six changes and how much is due to the change in .PERMIT file, the Adjusted 2019 Freight Base Case was rerun with a seed 126 .PERMIT file, adjusted to include the changes for the adjusted case (**Table 3-1**).³⁸ As shown in **Table 3-2**, half of the difference between the Adjusted and Unadjusted 2019 Freight Base Cases is due to using a different .PERMIT file and not the changes proposed by Messrs. Crowley and Fapp.

³² Crowley & Fapp Supplemental V.S. at 13.

³³ Johnson & Hunt V.S. at 8.

³⁴ *Id.* at 14. The only source cited by Messrs. Crowley and Fapp is a RTC .OPTION file produced in discovery by NSR, *id.* at 15 n.22, but during the evidentiary hearing Mr. Fapp was shown multiple RTC .OPTION files produced in discovery by CSXT that confirmed Ms. Rosse's testimony that CSXT ordinarily models a crew walk speed of 2 mph. Evidentiary Hearing Day 10 (May 11, 2022), Tr. 3641:12-3645:3 (cross examination of Mr. Fapp concerning Exhibit CSX-NS 309 (produced in discovery as CSX_Amtrak_GC_0006799), Exhibit CSX-NS 310 (produced in discovery as CSX_Amtrak_GC_0006862)); *see also* Evidentiary Hearing Day 4 (Apr. 8, 2022), Tr. 1384:12-1385:7 (Ms. Rosse testified that CSXT "use[s] two miles an hour" for crew walk speed based on how difficult it is to "walk in steel-toed boots on ballast.").

³⁵ Crowley & Fapp Supplemental V.S. at 15.

³⁶ *Id.* at 26, Table 3, at 28, Table 4, and at 41, Table 6.

³⁷ All of Messrs. Crowley and Fapp's cases used the seed 126 .TRAIN file, but not all cases used the seed 126 .PERMIT file.

³⁸ The Unadjusted 2019 Freight Base Case with Permit Seed 107 would not complete in RTC.

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**Table 3-1: 2019 Unadjusted 2019 Freight Base Case and
Adjusted 2019 Freight Base Case by Permit File**

Case Name	PERMIT Seed	Average Speed	Delay %	Total Delay	Delay /100
Unadjusted 2019 Freight Base Case	126	15.15	23.4%	563.6	75.3
Adjusted 2019 Freight Base Case	126	15.25	22.7%	544.6	72.8
Adjusted 2019 Freight Base Case	107	15.36	21.8%	524.4	70.1

**Table 3-2: Comparison between Unadjusted 2019 Freight Base Case
and Adjusted 2019 Freight Base Case**

Unadjusted PERMIT Seed	Adjusted PERMIT Seed	Average Speed	Delay %	Total Delay	Delay/ 100
126	126	-0.7%	3.4%	3.5%	3.5%
126	107	-1.4%	6.9%	7.0%	7.0%

The biggest change to the Unadjusted 2019 Freight Base Case is the removal of the interchange delays. As discussed in **Section 3.1**, this removes many of the delays in the model that interchange traffic experiences on a day-to-day basis in New Orleans. The removal of the permits that reflect this interchange delay increases the NSR average speed by 4% and reduces delay by 13% (**Table 3-3**). This is not due to any operational or other change except removing many of the delays to trains interchanging from NSR to CSXT.

**Table 3-3: NSR Train Results in Unadjusted 2019 Freight Base Case
and Adjusted 2019 Freight Base Case³⁹**

	Average Speed	Delay/ 100
Unadjusted 2019 Freight Base Case	4.55	392.9
Adjusted 2019 Freight Base Case	4.73	341.7
	0.18	-51.1
	4.0%	-13.0%

3.6 Adjusted 2019 Freight Base Case vs. 2019 Passenger Base Case

While the Unadjusted 2019 Freight Base Case and the Adjusted 2019 Freight Base Case were created using a different .PERMIT file, the same incorrect .PERMIT file was used for both the Adjusted 2019 Freight Base Case and the 2019 Passenger Base Case created by Messrs. Crowley and Fapp, enabling an accurate comparison between those cases.

As discussed in **Section 0**, the presentation of the results by Messrs. Crowley and Fapp obscures the true impact on the corridor. The results from 2019 Adjusted Freight Base Case and 2019 Passenger Base Case are shown in **Table 3-4** and **Table 3-6**. Every single performance metric is similar or worse than seen in the original modeling presented on November 3, 2021, in the 2021 Gulf Coast RTC Report. Importantly, the modeling provided by

³⁹ To conduct the analysis in Table 3-3, the Adjusted 2019 Freight Base Case was rerun with the .PERMIT file from seed 126. The NSR metrics were calculated using same methodology as in 2021 Gulf Coast RTC Report.

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Messrs. Crowley and Fapp shows that delays to other railroads in New Orleans will increase 219%. Once the interchange permits and corresponding delays between NSR and CSXT are removed, that change isolates and highlights the significant impact of the passenger service on a complex terminal. To preserve routing through the terminal, the model is shifting these passenger-caused delays to the foreign railroads in New Orleans.

When broken out by train group, the modeling done by Messrs. Crowley and Fapp also shows a greater impact to both the CSXT locals and NSR traffic. CSXT local trains experience an increase in delay from 45.4%⁴⁰ to 55.6%. Even a flawed evaluation using the absolute differences shows a similar impact (Table 3-5), an approach to evaluating RTC models that we do not recommend.

Table 3-4: Change in Key Freight Train Metrics Due to the Addition of Passenger Trains in 2019 using Messrs. Crowley and Fapp Modeling Results

% Change in Modeled Freight Train Delay / 100 Train Miles		% Change in Modeled Freight Train Speed		% Change in Dispatching Conflicts		% Change in Delay to Other New Orleans Railroads ⁴¹		% Change in Recrews	
26.2%	↑	-4.4%	↓	55.8%	↑	-219.1%	↑	37.5%	↑

Table 3-5: Absolute Difference between Base Case and Passenger Case by Train Group⁴²

Train Group	Average Speed		Delay/100	
	Messrs. Crowley and Fapp's RTC Model	2021 Gulf Coast Modeling Report	Messrs. Crowley and Fapp's RTC Model	2021 Gulf Coast Modeling Report
CSXT Local	-0.74	-0.71	42.4	41.6
CSXT Through	-0.76	-0.95	10.0	12.5
NSR	-0.21	-0.10	56.2	32.4
Overall	-0.69	-0.67	18.2	18.9

⁴⁰ 2021 Gulf Coast RTC Report at 46, Table 20 (§ 6.0).

⁴¹ This metric reflects change in delay for the subset of inbound freight trains (eastbound) to NSR and CSXT from other New Orleans railroads.

⁴² The train group metrics were calculated using same methodology from 2021 Gulf Coast RTC Report. While we acknowledge our mistake in not including some of the coal trains in the CSXT through and Overall metrics we used the same methodology in this report to provide consistency with previous work and allow for fair comparisons.

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Table 3-6: Change in Freight Train Operating Performance between Adjusted 2019 Freight Base Case and 2019 Passenger Base Case Using Messrs. Crowley and Fapp's Modeling Results

	TRAIN PROFILE	% CHANGE IN DELAY/100	% CHANGE IN SPEED	% CHANGE IN VARIABILITY
CSX Local Trains	CSXT 1	29.8%	-2.2%	18.3%
	CSXT 2	189.4%	-24.5%	25.6%
	CSXT 3	-15.6%	2.1%	-17.8%
	CSXT 4	198.4%	-10.7%	80.1%
	CSXT 5	86.2%	-10.9%	44.6%
	TASD	286.0%	-18.3%	169.7%
	CSXT LOCAL TOTAL	55.6%	-7.0%	
CSX Through Trains	CSXT A	39.2%	-4.3%	16.4%
	CSXT B	-16.9%	3.7%	-18.0%
	CSXT C	59.2%	-10.1%	49.6%
	CSXT D	32.8%	-5.7%	17.9%
	CSXT E	28.5%	-5.4%	66.1%
	CSXT F	81.2%	-10.1%	-4.7%
	CSXT G	-11.6%	2.1%	-27.1%
	CSXT H	41.8%	-6.6%	12.5%
	COAL	14.8%	-2.7%	-2.4%
	CSXT THROUGH TOTAL	21.6%	-3.5%	
NS Trains	NSR A	0.0%	0.0%	0.0%
	NSR B	210.6%	-6.6%	63.8%
	NSR C	-67.5%	4.0%	-24.6%
	NSR D	25.3%	-9.9%	192.6%
	NSR E	102.2%	-12.4%	47.7%
	NSR F	23.8%	-2.3%	-0.3%
	NSR G	-8.0%	0.9%	-22.5%
	NSR H	-18.2%	3.8%	17.6%
	INTERCHANGE	33.2%	-8.7%	19.0%
	NSR TOTAL	17.2%	-4.4%	
OVERALL TOTAL		26.2%	-4.4%	

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Following the methodology described in Section 5.0 of the RTC Supplemental Report, the results were evaluated for five local trains (**Table 3-7**) and six CSXT merchandise trains (**Table 3-8**) on the CSXT NO&M Subdivision. The alternative modeling provided by Messrs. Crowley and Fapp does not diminish the significant impact of the proposed passenger service to the local traffic and has a greater degradation in CSXT merchandise train runtimes and average speeds. The model from Messrs. Crowley and Fapp show significant degradation due to the introduction of passenger trains on the corridor with merchandise train speeds dropping 19% or 6.8 mph.

Table 3-7: Change in CSXT Local Train Work & Travel Speeds and Runtimes Due to the Proposed Passenger Service on the NO&M Subdivision

	Average Speed		Runtime Minutes	
	Δ	%	Δ	%
Crowley and Fapp Supplemental	-1.2	-13.4%	60.3	15.4%
2021 Gulf Coast Modeling Report	-1.2	-13.2%	59.6	15.2%

Table 3-8: Change in CSXT Merchandise LOR Speeds and Runtimes Due to the Proposed Passenger Service on the NO&M Subdivision

	Average Speed		Runtime Minutes	
	Δ	%	Δ	%
Crowley and Fapp Supplemental	-6.8	-19.0%	48.8	23.5%
2021 Gulf Coast Modeling Report	-4.7	-13.5%	33.0	15.5%

The changes made by Messrs. Crowley and Fapp removed other sources of delay that trains experience on a daily basis (i.e., maintenance-of-way, interchange). This results in a model that is farther removed from the actual speeds on the corridor, and provides a case where the underlying, typical freight-only delays are less, which in turn results in the delays caused by the proposed passenger service to be more significant.

4.0 Operational Changes

Messrs. Crowley and Fapp evaluated five changes that they claim would mitigate the impact of the proposed passenger service as an alternative to adding infrastructure.⁴³ However, the proposed changes are not practical solutions to mitigate the impact of new passenger service. Messrs. Crowley and Fapp are presenting changes that they argue better reflect existing operations (adjusted crossing sit times, rescheduling planned maintenance, and allowing trains to use available yard tracks) and presenting them as operational changes. These three modifications are not operational changes but should have been made to the Adjusted 2019 Freight Base Case. By only including these three modifications in the operational change cases, any reductions in delay are incorrectly allocated as benefits. Instead, had these modifications been made to the Adjusted 2019 Freight Base Case, any impact would have been properly included in the pre-passenger freight performance that serves as the baseline for

⁴³ They also considered changing passenger schedules but did not propose any changes.

comparison. The other modifications either have no impact (automating moveable bridges, allowing trains to use more yard tracks) or are fatally flawed in methodology (rescheduling freight trains).

4.1 Adjusted Grade Crossing Train Sit Times

As discussed in the 2021 Gulf Coast RTC Report⁴⁴ and RTC Supplemental Report,⁴⁵ grade crossings are a major constraint on the Gulf Coast Corridor. At-grade crossings limit the ability of railroads to use existing sidings for longer meets and overtakes and limits the locations where a new siding or expanded existing siding can be built on the corridor. Messrs. Crowley and Fapp propose that the time trains block crossings be increased as an operational change to mitigate the impact of the proposed passenger service.

Proposing to increase the grade crossing blockage time again shows a misunderstanding of simulation modeling. RTC is a great tool to evaluate infrastructure and operational changes, but RTC models do not represent the full range of congestion on a corridor. Extended grade crossing blockages typically occur due to unplanned events. As stated in the RTC Rebuttal Report:

Limiting blockages is standard in all RTC modeling as railroads make every effort to limit the time crossings are blocked during normal operations. There is a fundamental difference between developing an RTC solution set that requires crossings to be blocked on the one hand, and real-world experiences in which some crossings are blocked during periods of high congestion in actual operations on the other hand.⁴⁶

No modeling solution should plan for longer grade crossing blockages (and, by extension, plan to add delays on the traveling public). The blockages that occur on the higher congestion days will not go away, and any operational change to increase blockages will only increase these delays. The longer blockages imposed by Messrs. Crowley and Fapp in their model when rail operations are fluid will be worsened when there is higher rail congestion, when blockages not caused by passenger traffic are the greatest. Messrs. Crowley and Fapp adjusted the maximum allowed train sit time at crossings in the model from 20 minutes to 121 minutes. Their models found that one additional train per day will be parked on a crossing for longer than 20 minutes as part of Amtrak's plan for normal Gulf Coast operations. Messrs. Crowley and Fapp's use of the best performing seed, further reduces the impact shown in the model. In the other seeds that have higher aggregate delays, the modeled blockages and impact to the public will likely be greater.

They justify the change in blockage time by stating that this higher limit better reflects the actual operations on the corridor based on data from FRA's Blocked Road Crossing Database. This database provides a publicly contributed and unverified list of crossing blockage events.⁴⁷ They then took the midpoint in blockage times for all reported incidents at crossings on CSXT and NSR and adjusted all crossings in the model to 121 minutes.⁴⁸

If this is in fact what the railroads do today in the absence of passenger service, then the change in maximum time a train may sit at a crossing should have been altered in the Adjusted 2019 Freight Base Case, not evaluated as an operational change to solve for degradation to freight service. By including the increased grade crossing blockage time as an

⁴⁴ 2021 Gulf Coast RTC Report at 16-17 (§ 2.1).

⁴⁵ RTC Supplemental Report at 20-21 (§ 3.2).

⁴⁶ RTC Rebuttal Report at 23 (§ 3.2.2).

⁴⁷ Crowley & Fapp Supplemental V.S. at 18-19.

⁴⁸ *Id.* at 19.

operational change, it is being presented as a potential solution to the congestion on the corridor. In effect, Messrs. Crowley and Fapp are stating that freight train delays should be mitigated by shifting the impact from the railroad onto the population along the corridor.

4.2 Automating Moveable Bridges

Messrs. Crowley and Fapp evaluated the benefit of automating the moveable bridges on the corridor that currently require a hi-rail vehicle to bring the bridge tenders to the bridge. This mirrors the analysis done in the Supplemental Modeling Report.⁴⁹ While the RTC Supplemental Report also considered giving priority to the passenger trains over maritime traffic, the findings were the same as Messrs. Crowley and Fapp's. Removing bridge tender hi-rail movements does not meaningfully reduce the impact of the proposed passenger service to freight service quality.⁵⁰

Interestingly, the results in the model developed by Messrs. Crowley and Fapp show that operations will get *worse* if hi-rail vehicles are removed from the model due to bridge automation.⁵¹ This is not a logical result of the change and demonstrates why multiple random seeds are important for a robust RTC model.⁵²

4.3 Rescheduling Planned Maintenance-of-Way

Messrs. Crowley and Fapp propose moving MOW activities away from peak hours to mitigate the impact from the passenger service. The 2021 Gulf Coast RTC Model's random MOW events were included to represent another source of congestion on the corridor. As discussed previously in **Section 3.2**, over time, MOW work will appear to be random in the real world, and since RTC cannot plan maintenance, it was modeled as a random event.

Messrs. Crowley and Fapp claim that railroads would not plan the track outages during peak hours. And as with grade crossing sit times, Messrs. Crowley and Fapp claim moving MOW work off peak hours better reflects reality. Accordingly, this change should have also been made to the Adjusted 2019 Freight Base Case, which Messrs. Crowley and Fapp failed to do, rather than as an operational change that they claim will mitigate passenger operations.

Messrs. Crowley and Fapp made 21 changes⁵³ to the MOW windows over the 14 simulated days. Of the 21 changes, 16 of the MOW changes (76%) shifted the MOW work to outside normal working hours (7:00 am to 3:30 pm) with 12 of them occurring overnight (between 10:00 pm and 6:00 am).⁵⁴ This change shifts the costs from freight train delays to overtime and maintenance-of-way crew scheduling costs, which itself is an added adverse impact on freight rail operations. While unplanned maintenance or major outages may occur overnight, that is not what is modeled. Planned regular maintenance is performed on freight railroads during daylight hours.⁵⁵

4.4 Rescheduling Freight Trains

Messrs. Crowley and Fapp propose rescheduling freight trains to mitigate the impact from the passenger service. Of all the operational changes proposed by Messrs. Crowley and Fapp,

⁴⁹ See RTC Supplemental Report at 28-31 (§§ 4.0-4.3).

⁵⁰ Compare *id.* at 30, Table 4-2 (§ 4.1) with Crowley & Fapp Supplemental V.S. at 20 (describing the removal of hi-rails as having "a minimal impact when looked at in isolation").

⁵¹ As shown in Table 3, Peabody supplemental report as compared to the 2019 Passenger Case, speeds decline from 14.7 mph to 14.6 mph and delays increase from 88.2 min per 100 train miles to 89.9 min per 100 train miles.

⁵² The discussion on the impact of not using random seeds can be found in Section 2.1.

⁵³ They also shifted a Biloxi Bay bridge opening by 70 minutes. No explanation was provided as to the reasoning for this shift. See Amtrak Supplemental RTC Workpaper "MOW Change Analysis.xlsx" (see highlighted row 1383).

⁵⁴ See Johnson Supplemental Reply V.S. at 6 (explaining that MOW crews typically work 8-hour days from Monday to Friday with shifts beginning between 6 am and 8 am).

⁵⁵ See *id.*

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rescheduling freight trains had the greatest impact.⁵⁶ To reschedule a freight train means making a regular change in a train's departure time each day that the train operates. Changing a train schedule shifts when a crew is called on-duty to avoid delays of the train on the mainline, which can result in additional overtime and recrews. However, major changes in schedules disrupt the system-wide train plan. Rail cars that are able to make a connection under the current schedule now must wait another day to depart on the outbound train, increasing travel times and adversely impacting customers. Furthermore, changes to schedules can impact the ability of rail cars to make interchange with other carriers, or to make spotting windows available for the rail carrier's customers.

A change to a train's schedule does not alter the underlying variability in the departure times themselves, which is due to many factors including crew availability, the amount of work a train performs before departure, and congestion in the yard. For example, if a train is scheduled at 8:00 am, it may depart the yard anytime between 8:00 am and 10:00 am. If the train schedule is shifted to 9:00 am, this distribution of departure times remains. The train will now depart anytime between 9:00 am and 11:00 am based on the real-world circumstances of that day.

This is not how Messrs. Crowley and Fapp evaluated or implemented rescheduling freight trains. Instead, they selectively shifted 42 trains over the 14-day simulation, with each train being shifted a different amount of time and on varying days,⁵⁷ so as to not conflict with the passenger trains. They review the 2019 Passenger Case results and used those results to move freight trains that conflicted with passenger trains. This is not an operational change or "rescheduling" as much as manually dispatching the trains in the model using 20-20 hindsight to effectively hide the increase in delay caused by the introduction of the Gulf Coast passenger service.

A different operating plan each day is not a practical way to manage a railroad. To avoid recrews, trains are typically staged at crew change points, which means that trains will either be held in Birmingham and Atlanta on CSXT or in Meridian on NSR, expecting a conflict along the Gulf Coast a day in the future. The trains will hold in the terminal, increasing congestion while those trains wait for the passenger trains hundreds of miles away. Messrs. Crowley and Fapp's proposed approach just removes the delays from the New Orleans to Mobile corridor and shifts them to locations on the network beyond the scope of the model in this case.

Messrs. Crowley and Fapp state that "in most instances, the rescheduling involved moving the identified train schedules two (2) hours or less from start times scheduled."⁵⁸ That is not accurate. After reviewing these proposed scheduling changes, 27 of the 42 trains (64%) of the trains were shifted *more* than two hours. On CSXT, no train was shifted more than a third of the days and when they did shift the trains it was a different amount each day (**Table 4-1**).⁵⁹

⁵⁶ Crowley & Fapp Supplemental V.S. at 26, Table 3.

⁵⁷ Messrs. Crowley and Fapp also removed the bridge tenders from this case.

⁵⁸ Crowley & Fapp Supplemental V.S. at 23.

⁵⁹ In addition to the rescheduled trains, the routing of {{Redacted}} was adjusted with no explanation. Removal of this change results in the case, with the proposed scheduling changes proposed Messrs. Crowley and Fapp, to fail in RTC.

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Table 4-1: Freight Trains with Adjusted Departure Times

Railroad	Base Train Profile	Report Profile ^a	RTC Day	Schedule Shift (minutes) ^b	Railroad	Base Train Profile	Report Profile ^a	RTC Day	Schedule Shift (minutes) ^b
NSR	{{Redacted}}	NSR D	5	180	CSXT	{{Redacted}}	*	5	-300
NSR	{{Redacted}}	NSR E	3	150	CSXT	{{Redacted}}	*	6	-180
NSR	{{Redacted}}	NSR E	4	138	CSXT	{{Redacted}}	Interchange	7	180
NSR	{{Redacted}}	NSR E	5	135	CSXT	{{Redacted}}	**	5	137
NSR	{{Redacted}}	NSR E	6	-148	CSXT	{{Redacted}}	***	9	-119
NSR	{{Redacted}}	NSR E	7	166	CSXT	{{Redacted}}	CSXT 3	3	670
NSR	{{Redacted}}	NSR E	9	117	CSXT	{{Redacted}}	CSXT 3	6	-180
NSR	{{Redacted}}	NSR E	10	102	CSXT	{{Redacted}}	CSXT 5	10	-235
NSR	{{Redacted}}	NSR E	11	135	CSXT	{{Redacted}}	****	3	60
NSR	{{Redacted}}	NSR E	12	115	CSXT	{{Redacted}}	CSXT A	1	120
NSR	{{Redacted}}	NSR E LE	3	465	CSXT	{{Redacted}}	CSXT B	6	91
NSR	{{Redacted}}	NSR E LE	4	450	CSXT	{{Redacted}}	CSXT B	13	180
NSR	{{Redacted}}	NSR E LE	5	510	CSXT	{{Redacted}}	CSXT D	6	120
NSR	{{Redacted}}	NSR E LE	6	450	CSXT	{{Redacted}}	CSXT D	8	120
NSR	{{Redacted}}	NSR E LE	7	510	CSXT	{{Redacted}}	CSXT D	10	65
NSR	{{Redacted}}	NSR E LE	8	300	CSXT	{{Redacted}}	CSXT E	4	123
NSR	{{Redacted}}	NSR E LE	9	450	CSXT	{{Redacted}}	CSXT E	6	180
NSR	{{Redacted}}	NSR E LE	10	510	CSXT	{{Redacted}}	CSXT E	12	120
NSR	{{Redacted}}	NSR E LE	11	540	CSXT	{{Redacted}}	CSXT E	13	120
NSR	{{Redacted}}	NSR E LE	12	450	CSXT	{{Redacted}}	CSXT F	4	15
					CSXT	{{Redacted}}	CSXT F	7	-15
					CSXT	{{Redacted}}	CSXT G	6	120

- a) NSR E LE is a light engine move for NSR E that connects to the train from Oliver Yard. Asterisk used when generic profile was not provided in previous reports.
- b) Positive value is shifting timing to later in the day, negative is a shift to earlier in the day.

Of the “rescheduled” trains, 10 are light engine moves NSR E LE {{Redacted}}. This light engine departs from NSR’s Oliver Yard to pick up the cars left on the mainline by NSR E {{Redacted}}. The external randomization tool used to randomize NSR E’s departure times was unable to set the departure time of NSR E LE based on the randomly selected departure of NSR E. Therefore, NSR E LE was scheduled to depart well in advance of NSR E to make sure that it was present when the NSR E block of cars left on the mainline was ready for pickup. RTC counts the time NSR E LE waited for the block of cars to arrive as delay, however, since this same operation was modeled into 2019 Base Case, the delay is not attributable to the introduction of passenger service. When proposing alternative freight schedules, Messrs. Crowley and Fapp adjusted the light engine departure times to match those from the corresponding NSR E train, something the RTC modelers were unable to do to the random scenarios at the time. Often this shift in departure is more than 4 hours, and accounts for 75% of the supposed improvement in speeds of all the scheduling changes. Because this delay was a result of a modeling restriction and was not attributed to passenger trains in 2021 Gulf Coast RTC Report metrics, Messrs. Crowley and Fapp are wrong to attribute delay savings to moving these light engine trains.

The cases provided by Messrs. Crowley and Fapp also remove the hi-rail bridge tender movements, which accounts for another 14% (0.07 mph) of their claimed improvements in

speed (but only when paired with their proposed scheduling changes). After these corrections to light engine moves and bridge tenders, the rescheduling of trains only improves speeds by 0.06 mph, far less than the 0.52 mph that Messrs. Crowley and Fapp claim.

Even if these changes did constitute a legitimate rescheduling of freight trains, and the changes to the light engine moves are changes that have real world benefits, the rescheduling was done on only a single seed. At best, Messrs. Crowley and Fapp have provided evidence that on one day, under a specific set of conditions, these changes will work. In the cases provided by Messrs. Crowley and Fapp (using .TRAIN seed 126 and .PERMIT seed 107) the proposed rescheduling of trains can mitigate 77% of the degradation (0.52 mph of the 0.68 mph degradation) due to the proposed passenger service. As described previously, seed 126 was selected since it was the case with the least delay when the Unadjusted 2019 Freight Base case was run without any randomization. If the case with the second least amount of delay (seed 129) is used to evaluate the operational changes, the scheduling changes only mitigate 49% (0.46 mph of the 0.94 mph degradation) of the impact of the passenger service. If the benefit obtained from the changing of light engine train departure times is removed, the solution will reduce average train speeds, and if seed 117 is used, which had the highest amount of delay, the case does not run.

4.5 Allowing Trains to Use More Yard Tracks

In their reply evidence filed on December 3, 2021, Messrs. Crowley and Fapp provided a number of examples of infrastructure that they claimed was being underutilized by the railroads in the model.⁶⁰ In their supplemental evidence, they argue that the selection of alternate nodes⁶¹ was done to “restrict[] the locations that trains could move when entering or leaving the rail yards.”⁶² This ignores the facts that many trains will not enter the yard, as is typical for crew changes, and that tracks in yards are used for events other than arriving and departing trains (such as car storage). That said, Messrs. Crowley and Fapp amended the alternate nodes at five locations (Table 4-2). Again, Messrs. Crowley and Fapp argue this is done to better reflect actual operations.⁶³ If that is true, these changes must be added to the Adjusted 2019 Freight Base Case, not proposed as an operational change. Yet Messrs. Crowley and Fapp neglected to incorporate these changes into the Adjusted 2019 Freight Base Case.

Indeed, in nearly every instance where Messrs. Crowley and Fapp modified so-called restrictions on the use of infrastructure, the freight trains are too long to use the supposedly underutilized track. As to the remaining instances, the tracks are rarely used after the restriction is lifted. This further demonstrates that the 2021 Gulf Coast RTC Model was not created with underutilized capacity or in a manner designed to inflate the impact of passenger trains.

⁶⁰ See Crowley & Fapp Reply V.S. at 40-44 & Exhibit 7.

⁶¹ In RTC, a train's route is defined by locations (“nodes”) along the tracks the train will pass over. The model enables the assigning of “alternate nodes” that enables the model logic can to use an alternative route if the primary node (route) is occupied.

⁶² Crowley & Fapp Supplemental V.S. at 23.

⁶³ See *id.* at 24 (“By restricting the available locations for trains to move in yards, Banks/Guthrie significantly limited the available capacity on the network compared to real world operations.”).

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Table 4-2: Locations with Changed Alternate Nodes

Location	Change	Response	Increased Utilization ⁶⁴
Montgomery - Chester Yard	Linked mainline node to yard tracks (20, 21, & 22).	None of the trains that currently work off the mainline fit into the yard tracks (all yard tracks are less than 3,000 feet)	0
Montgomery - S&N Yard	Added nodes 000487.07518 & 000487.025Y1 into alternate node loops.	Configurations and lengths of these tracks limit the ability of trains to dwell on these tracks.	2
Chapman Storage	Alternate nodes were added to allow trains that would work off mainline to enter storage track.	Not only is this track typically blocked with cars, none of the three trains that work at this location utilize the storage track in the model.	0
Flomaton	Alternate nodes were added to the two yard tracks (01 & 02).	Three trains use these tracks. Two daily local trains {{Redacted}} and {{Redacted}} that are scheduled 11 hours apart so they will never both be at the Flomaton track at the same time and local train {{Redacted}} that occurs twice in the model.	0
New Orleans - Gentilly Yard	Linked two nodes on M1 and M2 (000802.650 to 000801.940) to each other.	In the 2021 Gulf Coast RTC Model's base cases, nodes at 000801.940 are only used by yard trains. They were not linked to each other since the yard movements using track M1 would block all movement into and out of the yard.	6
New Orleans - NE Tower	Removed alternate nodes on (NON193.350M1 and NON193.350M2).	This limits the ability of trains to use both tracks when there is congestion.	1
New Orleans - Oliver Yard	Added NON194.43002 into alternate node loop.	This track was not included in the 2021 Gulf Coast RTC Model since it is used for the yard movements, and its omission best reflects the operations. If a dedicated track is not provided for the yard trains, there will be conflicts with arriving and departing trains and lead to bunching of yard train movements instead of them being spaced out throughout the day as actually occurs.	0
New Orleans - Terminal Jct.	Enabled trains working from M1 and M2 to work from freight lead.	The existing freight lead is too short (< 2,500 feet) for trains working at Terminal Jct.	0

4.6 Rescheduling Passenger Trains

Messrs. Crowley and Fapp claim they considered shifting passenger schedules, which unsurprisingly showed no benefit since the passenger schedules proposed by Amtrak and attached to its Application were designed around the existing freight schedules.⁶⁵ As Amtrak's experts, it is unclear why Messrs. Crowley and Fapp do not mention any consideration of

⁶⁴ The additional number of times throughout the 10 simulated days that the identified track was used in Amtrak's model as compared to the 2019 Passenger Case.

⁶⁵ Evidentiary Hearing Day 8 (Apr. 19, 2022), Tr. 3002:17-3004:9 (Jim Blair testified that Amtrak used heat maps provided by CSXT to "try and slot the train into the freight activity" by focusing on the blue or "colder zones" on the heat map where there was less freight activity.).

adjusting passenger trains in only one direction (just southbound or northbound) to shift the potential meet location between passenger trains to a better location. Under the current schedule, the passenger trains meet between two existing sidings, which increased the amount of infrastructure necessary to mitigate harm to freight service.

4.7 Cumulative Operational Changes

Messrs. Crowley and Fapp also simulated the five proposed operational changes (adjusting sit times, automating moveable bridges, rescheduling maintenance, rescheduling freight trains, and allowing trains to use all tracks) together in the Cumulative Operating Changes RTC Case.⁶⁶ Messrs. Crowley and Fapp present these cumulative results in Table 4, but compare those results back to the Unadjusted 2019 Freight Base Case (the base case premised on seed 126 from the 2021 Gulf Coast RTC Model).⁶⁷ This is misleading, because the Cumulative Operating Changes RTC Case was developed using the Adjusted 2019 Freight Base Case as a baseline, which utilized a different .PERMIT file from seed 107 rather than seed 126 and includes the six changes made by Messrs. Crowley and Fapp in the Adjusted 2019 Freight Base Case discussed in **Section 3.0**, as well as the Operating Changes.

5.0 Infrastructure Changes

Messrs. Crowley and Fapp developed RTC simulation cases to evaluate the FRA-identified projects and the infrastructure projects proposed in the 2021 Gulf Coast RTC Report. Our review of these cases revealed numerous errors in the modeling. In their supplemental report, Messrs. Crowley and Fapp state that “To properly test the impact of a particular change to a model, everything except the one change being evaluated should be the same in the cases being compared.”⁶⁸ However, Messrs. Crowley and Fapp’s own modeling of the infrastructure projects does not adhere to this standard. In addition, projects are not entered in the model to achieve their full benefit, and many of the cases have changes in operations that are not explained.

5.1 Individual Results

When developing RTC Cases to evaluate infrastructure, it is critical that only the infrastructure change and corresponding operational changes that are enabled by the new infrastructure, be included in the new case. It is also important that the infrastructure created in the model reflects how that infrastructure will be used if built. The infrastructure cases Messrs. Crowley and Fapp developed contain a wide range of errors including unexplained changes to train departure times, inclusion of additional infrastructure other than what is being evaluated, and modeling settings that prevent trains from making full use of the proposed projects. While reviewing Messrs. Crowley and Fapp’s results, one must also be aware that the FRA-identified improvements (multiple projects modeled together) are being compared directly to individual projects. This is not a one-to-one comparison and creates a misperception of the comparative benefit of the FRA-identified projects as compared to those proposed by the RTC Modelers.

⁶⁶ The cumulative case is labeled as “Allowing Trains to Use All Tracks” in Row C.13 of Table 3. Crowley & Fapp Supplemental V.S. at 26, Table 3.

⁶⁷ See *id.* at 28, Table 4.

⁶⁸ *Id.* at 7-8.

5.1.1 FRA Improvements

The 2019 FRA Improvements Case includes grade crossing closures, miter rail improvements that supposedly will increase speeds to 45 mph for passenger and freight trains over moveable bridges, and siding speed increases of up to 45 mph.⁶⁹ Additionally, Messrs. Crowley and Fapp increased the speed from 45 mph for passenger and freight to 60 mph for passenger and 50 mph for freight for 2.5 miles through Biloxi. This is based on the FRA's statement in the Gulf Coast Working Group Report ("GCWG Report") that *if* the grade crossings in Biloxi can be closed, and subject to further study by CSXT, speeds could *potentially* be improved.⁷⁰ As discussed in the 2021 Gulf Coast RTC Report⁷¹ and RTC Supplemental Report,⁷² grade crossing closures are out of the control of any parties in this case. The Biloxi speed improvements are at best conjecture. Relying on benefits from projects that have no guarantee of being completed creates uncertainty with respect to the ability to mitigate degradation. Any review of the results needs to consider this uncertainty. Moreover, certain of the FRA-identified projects have already been completed by CSXT and are therefore already part of the base case.⁷³

Messrs. Crowley and Fapp modeled the infrastructure from the 2039 FRA Case from the 2021 Gulf Coast RTC Report.⁷⁴ The 2039 FRA Case included four siding extensions between Mobile and Montgomery (M&M Subdivision) that CSXT anticipates building before 2039 and are therefore already part of the 2039 Base Case.⁷⁵ Therefore, the results of the 2019 FRA Improvements Case developed by Messrs. Crowley and Fapp not only include projects that are out of the control of the railroads and projects that are already completed, but also include four siding projects that were not identified by the FRA. Since Messrs. Crowley and Fapp are presenting metrics for the entire network, the benefits of the FRA projects are actually the benefits of the FRA projects *and* siding extensions on the M&M Subdivision.

The 2019 FRA Improvements Case also contains multiple unexplained train changes that are unrelated to the FRA-identified projects. The operations of a CSXT local train {{Redacted}} was modeled based on its projected 2039 operations, not its 2019 operations.⁷⁶ Additionally, departure times and train lengths for a CSXT local train {{Redacted}}, and two CSXT through trains have adjusted departure times.⁷⁷ These operational changes to freight trains may account for some of the benefit attributed to the FRA-identified projects although Messrs. Crowley and Fapp provide no analysis of this issue.

5.1.2 Mobile Station

One of the primary benefits of the Mobile Station track is that the passenger operations can keep clear of freight train movements between Choctaw and Sibert Yards. Yet Messrs. Crowley and Fapp modeled the Mobile station such that the passenger trains only use it to drop off and pick up passengers. In their model, passenger trains are still traveling to and from Choctaw Yard for midday and overnight storage even though the dedicated station and layover track makes this unnecessary. This results in conflicting moves between the station

⁶⁹ As previously explained, "[t]he FRA did not identify any projects on NSR or otherwise to mitigate the impact of the introduction of the proposed passenger service to freight service operating on the NSR-owned segment of the route." RTC Supplemental Report at 12 (§ 2.1). The modeling of the FRA-identified projects performed by Messrs. Crowley and Fapp also reflects this reality.

⁷⁰ See Joint Exhibit 1B, GCWG Report at 24.

⁷¹ 2021 Gulf Coast RTC Report at 84-85 (App'x F).

⁷² RTC Supplemental Report at 10 (§ 2.0).

⁷³ *Id.* at 8-10.

⁷⁴ 2021 Gulf Coast RTC Report at 83-86 (App'x F).

⁷⁵ *Id.* at 24.

⁷⁶ Due to the construction of a new connection to the Missouri Export Railroad (MSE), {{Redacted}} will no longer need to leave cars in Gautier Siding. In 2039, there will also be a new local {{Redacted}} that will operate between Bayou Cassotte Yard and MSE.

⁷⁷ The {{Redacted}} departure time was moved from 06:03 to 06:18 and the {{Redacted}} departure time was moved from 06:20 to 07:00.

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and Choctaw Yard that consume mainline capacity and requires the construction of unnecessary additional infrastructure in Choctaw Yard and an additional crossover at the passenger station. There are also two unexplained changes to the departure times for two CSXT through trains.⁷⁸ These operational changes to freight trains may mask some of the benefit from this project, but Messrs. Crowley and Fapp provide no analysis of this issue.

5.1.3 Gentilly Bypass

The benefit of the Gentilly Bypass project⁷⁹ is that it provides a track clear of the yard work that the passenger trains will use. This reduces the risk of the delays to the passenger trains and allows yard work to continue on the mainline unhindered. When modeled by Messrs. Crowley and Fapp, the *bypass is never used by the passenger trains*. There is obviously reduced benefit to a project designed primarily for passenger trains to avoid yard operations if those passenger trains never use it. It appears that Messrs. Crowley and Fapp did not apply certain RTC settings that would cause the passenger trains to use the bypass. In addition, there is one unexplained change to a CSXT through train's departure time.⁸⁰ This operational change to a freight train may mask some of the benefit from this project, but Messrs. Crowley and Fapp provide no analysis of this issue.

5.1.4 NSR Terminal Improvements

In the Adjusted 2019 Freight Base Case, the permits that create the delays during the interchange process between NSR and CSXT were removed by Messrs. Crowley and Fapp. This results in a model where the trains coming from the other foreign carriers at CN/IC Junction will cross the Back Belt with minimal to no delays. The sole benefit of the proposed crossovers on NSR is to provide increased flexibility to enable a route to remain clear for the passenger traffic while a train is working at Terminal Junction and trains are being delayed for the interchange between NSR and CSXT. By removing the interchange delays, the modeling shows less benefit for this project. There is also one unexplained change to a NSR train's departure time.⁸¹ This operational change to a freight train may mask some of the benefit from this project but Messrs. Crowley and Fapp provide no analysis of this issue.

5.1.5 Claiborne Double Track

The Claiborne Double Track provides a location for through trains to dwell and a local train to work during passenger operations. One of the benefits of the project is that it shifts movement of a CSXT local train {{Redacted}} from the mainline onto the new double track. However, in modeling the project, Messrs. Crowley and Fapp without explanation removed the work event for a CSXT local train {{Redacted}}. Removing these work events from the model, which range from 17 to 31 minutes in duration, improves train speeds in the model. There is also one unexplained change to a NSR train's departure time.⁸² This operational change to a freight train may mask some of the benefit from this project, but Messrs. Crowley and Fapp provide no analysis of this issue.

5.1.6 Nicholson Siding Extension

The Nicholson Siding Extension enables the passenger train meet to occur in the existing siding, reducing the likelihood of a meet at adjacent sidings that are used by freight trains. However, the modeling by Messrs. Crowley and Fapp shows that this project will reduce the

⁷⁸ The {{Redacted}} departure time was moved from 06:20 to 07:00 and the {{Redacted}} departure time was moved from 17:51 to 18:25.

⁷⁹ The model includes the longer, 12,000-foot version of the bypass proposed in the 2021 Gulf Coast RTC Report.

⁸⁰ The {{Redacted}} departure time was moved from 11:19 to 12:19.

⁸¹ The {{Redacted}} departure time was moved from 13:28 to 13:53.

⁸² The {{Redacted}} departure time was moved from 17:51 to 18:25.

overall average speed by 0.3 mph (2%) as compared to the 2019 Passenger Base Case.⁸³ It does not make sense that a siding extension project would *increase* the congestion on the corridor, and Messrs. Crowley and Fapp provide no explanation as to these results. Since the results are based on only a single seed, additional cases might show a larger benefit and clarify that seed 126 is an outlier.

5.1.7 Beauvoir Double Track

The Beauvoir Double Track project provides a place to meet trains without blocking grade crossings in the center of the subdivision. The RTC Modelers have no issues with how the infrastructure was modeled, but again there is one unexplained change to a NSR train's departure time.⁸⁴ This operational change to a freight train may mask some of the benefit from this project but Messrs. Crowley and Fapp provide no analysis of this issue.

5.1.8 Fountainbleau Siding

Fountainbleau Siding provides a new location to perform a meet and can hold a train clear of grade crossings. The RTC Modelers have no issues with how the infrastructure was modeled, but again there is one unexplained change to a NSR train's departure time.⁸⁵ This operational change to a freight train may mask some of the benefit from this project but Messrs. Crowley and Fapp provide no analysis of this issue.

5.1.9 Bayou Cassotte Turnouts

Powered turnouts at Bayou Cassotte Yard enable local trains to move on and off the mainline without stopping. Like the Nicholson Siding Extension, the modeling results for this project shows a degradation in operations on the corridor. Messrs. Crowley and Fapp make no effort to explain this curious result. Additionally, there is one unexplained change to a CSXT through train's departure time.⁸⁶ This operational change to a freight train may mask some of the benefit from this project but Messrs. Crowley and Fapp provide no analysis of this issue.

5.1.10 Brookley Siding Extension

Extending Brookley Siding provides a siding long enough for all the freight trains to clear into the siding. One freight train unrelated to the project had adjusted departure times.⁸⁷ This operational change to a freight train may mask some of the benefit from this project but Messrs. Crowley and Fapp provide no analysis of this issue.

5.2 Cumulative Results

The infrastructure projects were tested cumulatively in an attempt to show the incremental benefit of the projects. However, the results are directly related to the order in which the projects were tested. No explanation was provided by Messrs. Crowley and Fapp as to why they chose to test projects in the order they did.

In the cumulative cases, every project proposed by the RTC Modelers is added to the FRA-identified projects. Considering there are numerous errors in the 2019 FRA Improvement Case as identified in **Section 5.1**, these errors repeated in every cumulative case. As noted above in **Section 5.1.1**, the FRA case includes sidings CSXT anticipates constructing by 2039. There are also projects that are out of the control of the railroads to implement, and projects that have

⁸³ Crowley & Fapp Supplemental V.S. at 41, Table 6.

⁸⁴ The {{Redacted}} departure time was moved from 17:51 to 18:25.

⁸⁵ The {{Redacted}} departure time was moved from 17:51 to 18:25.

⁸⁶ The {{Redacted}} departure time was moved from 11:19 to 12:19.

⁸⁷ The {{Redacted}} departure time was moved from 17:51 to 18:25.

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already been completed. This means that every case in the cumulative list will have these same errors affecting their results.

The 14 projects proposed by the RTC Modelers were never considered with nor designed as additions to the FRA-identified projects. They were designed *as alternatives* to the FRA-identified projects, which have evident shortcomings. Some of the FRA-identified projects and the 2021 Gulf Coast RTC Model projects address similar issues. By including the FRA-identified projects first, the benefits of each individual project added later in the cumulative modeling are obscured. As described during the evidentiary hearing, the 14 projects were designed to work together and avoid redundancy.⁸⁸ Removing one of the 14 projects or adding in the FRA-identified projects changes the dynamics of the corridor and how the projects interact with one another.

Not only were the RTC Modelers' projects added to the FRA-identified projects, Messrs. Crowley and Fapp also fail to mention in their report that in the Claiborne Double Track Case the project replaces the FRA's Ansley Siding project. Therefore, the benefit shown in their modeling is the *incremental* benefit of the Claiborne Project as compared to the Ansley Siding, not the benefit of the Claiborne project alone.

In addition to the errors from the 2019 FRA Improvements Case, the Mobile Station track and Gentilly Bypass were incorrectly modeled in RTC, reducing their benefit. Similar to the individual cases, the passenger trains in the cumulative cases continue to use Choctaw Yard for overnight storage. Further, the Gentilly Bypass is not correctly used by the passenger trains, with only the northbound trains using the bypass. Note that unlike the individual case studying the Gentilly bypass where no passenger trains utilize the track, this mistake is partially corrected in the cumulative case. And just as in the individual cases, many of the cumulative cases have unexplained operational changes.⁸⁹

⁸⁸ See, e.g., Evidentiary Hearing Day 5 (Apr. 12, 2022), Tr. 1772:1-1773:10 (Mr. Dingler explained that terminal projects were designed to mitigate specific congestion and that the remainder of the 14 projects were "designed to work together" such that if you "remove one project, we want to go back and remodel it and see how that might affect the -- the ability of the other projects to -- to mitigate" the degradation.); *id.* at 1708:22-1709:4 ("[I]t's a set of projects. They are selected to work together to mitigate the impact to freight.").

⁸⁹ Between the Gentilly Bypass and NSR Terminal Improvements Cases, NSR train's {{Redacted}} departure time was moved from 13:28 to 12:29. Between the NSR Terminal Improvements and Claiborne Cases, CSXT train's {{Redacted}} departure time was moved from 8:44 to 7:44. Between the Nicholson and Beauvoir Cases, CSXT train's {{Redacted}} departure time was moved from 13:32 to 11:00. Between the Fountainbleau and Bayou Cassotte Cases, CSXT train's {{Redacted}} departure time was moved from 13:04 to 15:04 and CSXT train's {{Redacted}} departure time was moved from 16:56 to 16:30. Between the Bayou Cassotte and Brookley Cases, CSXT train's {{Redacted}} departure time was moved from 4:06 to 2:06.

Appendix B to Exhibit 1

Supplemental Reply Report In Response to DB Engineering's Corridor Analysis by HNTB Corporation

Highly Confidential Material Redacted

**2021 NEW ORLEANS -
MOBILE GULF COAST
PASSENGER SERVICE
SUPPLEMENTAL
REPLY REPORT IN
RESPONSE TO DB
ENGINEERING'S CORRIDOR
ANALYSIS**

PREPARED FOR

Sidley Austin LLP / Baker & Miller PLLC

PREPARED BY

HNTB Corporation

August 31, 2022

PUBLIC VERSION

2021 NEW ORLEANS - MOBILE GULF COAST PASSENGER SERVICE SUPPLEMENTAL REPLY REPORT IN RESPONSE TO DB ENGINEERING'S CORRIDOR ANALYSIS

HNTB Corporation

Report Prepared By:

Mark H. Dingler
HNTB Corporation

Verification

The author believes that the analysis in this Supplemental Reply Report in Response to DB Engineering's Corridor Analysis follows industry best practices and appropriate statistical principles. The analyses contained herein were developed using the best information available.



Mark H. Dinger, PE

DATE 08/31/2022

1.0 Introduction

This Supplemental Reply Report is in response to the supplemental verified statement of Clayton S. Johanson and Darkhan Mussanov of DB E.C.O. North America, Inc. (“DB Engineering” or the “DB Authors”). Messrs. Johanson and Mussanov assert that an evaluation of historical data and RTC outputs shows that the proposed Gulf Coast passenger service will have no impact on CSXT and NSR freight operations. However, their findings are based on calculation errors, flawed statistical methodology, and an underlying misunderstanding of simulation modeling.

2.0 Corridor Comparisons

Messrs. Johanson and Mussanov compared the daily average speeds on CSXT’s New Orleans - Mobile (“NO&M”) Subdivision and NSR’s Back Belt with six CSXT line segments and six NSR line segments (“Comparative Corridors”). The CSXT Comparative Corridors¹ were selected “because they had between one and three existing daily Amtrak round trips and large stretches of single track through generally flat terrain.”² Similarly, for the NSR Comparative Corridors, “two- to four- mile segments with passenger traffic” were selected.³

Messrs. Johanson and Mussanov compared the daily average speeds of the CSXT NO&M Subdivision and NSR Back Belt to those for “Comparative Corridors” for the time period of September 1, 2019, to August 31, 2021. The DB authors state that the average train speed on the NO&M Subdivision and Back Belt are within one standard deviation of the average train speeds on the Comparative Corridors that host Amtrak service. Implicit in this statement is the conclusion that the non-Gulf Coast segments are in fact appropriate comparisons to the NO&M Subdivisions and the Back Belt. But they are not.

There are many variables that impact subdivision velocity, and subdivision performance is usually only compared to itself—not to other subdivisions. Such variables include (but are not limited to) track speed, train volumes, train mix, local traffic, length of sidings and double track, spacing between sidings, movable bridges, planned work for trains, and influence of adjacent terminals. Messrs. Johanson and Mussanov failed to control for any other variables in their comparison of average speeds across corridors. Neither the DB Engineering report nor the supporting workpapers discuss any effort to control for the impact of these different variables.

Moreover, not all decreases in average speed correspond to increased delays. For example, if a freight train’s operations were changed so that it performed more enroute work between its ultimate origin and destination points, that would decrease average speeds, but it would not be the result of increased delays. Similarly, changes to the length and number of trains on a subdivision may cause average speeds to decrease without there being any overall increase in delays. These changes are the result of modifications to the planned operations on a corridor, and those modifications actually reduce the congestion by reducing the amount of trains.

To build on this point, consider two hypothetical subdivisions, Alpha and Beta. Alpha has a planned speed of 15 mph; Beta has a planned speed 30 mph. If passenger service is added to

¹ The CSXT Comparative Corridors are the following subdivisions: Auburndale, Charleston, Columbia, Grand Rapids, Lakeland, and Nahunta.

² Johanson & Mussanov Supplemental V.S. at 4.

³ *Id.* at 8. The NSR Comparative Corridors are located on the following subdivisions: AGS South (Birmingham, AL), Danville District / Raleigh West Line (Greensboro, SC), AGS South / NO&NE (Meridian, MS), Lambert’s Point Branch / Norfolk Line (Norfolk, VA), and two portions of the Chicago Line (Porter, IN and Toledo, OH).

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Beta, dropping the speed to 15 mph, this does not make the two subdivisions equivalent, even though they have the same average speed. Alpha is performing well because it has a 15-mph speed that is equivalent to its planned speed of 15 mph; in contrast, Beta is performing poorly because it has a 15-mph speed that is only half of its planned speed of 30 mph. A core benefit of RTC analysis is the software's ability to evaluate operations when many variables impact both the planned speed and the actual speed.

From a statistical standpoint, for Messrs. Johanson and Mussanov to perform a direct comparison between multiple corridors, they could have compared the Coefficient of Variation (CV) for each of the subdivisions. CV is simply the standard deviation of a variable divided by the average of that variable. This statistical approach better isolates the variability of a data set from the impact of the other variables.⁴ This statistic provides a standardized way of comparing the variability of operations from the average across different sampled corridors.

When evaluating corridor performance and capacity, variability is a better measure than speed. While there are many factors that influence speed, a high amount of variability is one indicator of limited capacity. When there is sufficient capacity, a corridor can absorb the variability in operations without major degradations in speed. There is sufficient capacity such that when trains are being delayed on the subdivision because of a disruption, there is capacity available to still move trains without a significantly increasing delays. However, if there is insufficient capacity, there is limited capacity to recover from minor disruptions, and small delays can have major cascading impacts. Because all the available sidings are required to move trains, any disruption that requires a train to dwell in the siding will increase the delays to other trains.

3.0 CSXT NO&M Subdivision Comparison

An appropriate CV methodology was applied to the six CSXT Comparative Corridors and the NO&M Subdivision, and the results of that analysis are set forth in **Table 1** below. To start, the Lakeland Subdivision is vastly different from the other five Comparative Corridors and the NO&M. The Lakeland Subdivision is only 21.9 miles long, and only two sidings are longer than 5,000 feet. By contrast, the NO&M Subdivision is more than *seven times longer*. Removing the Lakeland Subdivision leaves the NO&M Corridor with the largest coefficient of variation of the remaining five Comparative Corridors.

The comparative subdivisions selected by Messrs. Johanson and Mussanov have a lower CV than the NO&M Subdivision, which means the NO&M Subdivision has the greatest variability. As explained earlier, higher variability is an indicator of less available capacity. Yet the NO&M is the only subdivision without any currently operating passenger traffic. With the introduction of four daily passenger trains, this variability will increase, which will result in degradation to freight operations.

⁴ Coefficient of Variation, Cuemath, <https://www.cuemath.com/coefficient-of-variation-formula/> (last visited Aug. 25, 2022).

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Table 1: Traffic and Infrastructure Characteristics of Analyzed CSXT Subdivisions

Subdivision	Miles	Avg Speed	Std Dev	CV	Freight Train Count ^a	% Two Tracks ^b	Daily Amtrak Trains
Auburndale	142.8	26.71	4.87	0.18	{{Redacted}}	21%	4
Charleston	200.0	24.15	3.02	0.13	{{Redacted}}	47%	6
Columbia	137.7	23.79	6.05	0.25	{{Redacted}}	10%	2
Grand Rapids	130.5	23.54	3.61	0.15	{{Redacted}}	20%	2
Lakeland	21.9 ^c	10.89	7.22	0.66	{{Redacted}}	35%	4 ^d
Nahunta	125.2	32.47	4.11	0.13	{{Redacted}}	55%	6
NO&M	134.0	19.94	5.61	0.28	{{Redacted}}	18%	0

a) Train counts calculated by dividing daily train miles by length of subdivision.

b) Length of second main and sidings divided by total length.

c) The Lakeland Subdivision includes an 8.4-mile branch (prefix AY) off the main corridor. Due to the lower train volumes on this portion and the absence of Amtrak trains, this segment was not included in the distance or calculations.

d) The passenger trains travel across the Lakeland Subdivision into Tampa and then return via the same route, doubling the number of passenger trains that impact operations.

3.1 CSXT Comparative Corridors Covid-19 Analysis

Messrs. Johanson and Mussanov further evaluated the CSXT subdivision data for the Comparative Corridors in an attempt to show that freight average speeds did not improve during the Covid-19 pandemic when fewer passenger trains were operating. Messrs. Johanson and Mussanov claim that Amtrak's reduction of train frequencies during the Covid-19 pandemic enables an evaluation of the impact of passenger service on freight train performance. Based on this analysis, they make the broad claim that "the reduction in Amtrak service on the segments analyzed did not have a significant measurable effect on average train speed."⁵

As discussed earlier, this type of analysis fails to consider the other variables that affected average speed during this period. There have been well documented crew shortages at all the Class I Railroads during the Covid-19 pandemic period, both when Amtrak reduced passenger service and after many of those services were restored to pre-pandemic levels. This freight crew shortage, which has no relationship to passenger service levels, is a significant driver for the decreased freight train speed. When there are insufficient crews, freight trains will have wait in yards, and as the yards and terminals get congested, freight trains will then be forced to park outside the yards because there is nowhere to place the arriving train. These trains waiting on the mainline are counted in the speed metric despite not operating. These trains also reduce the available capacity to move trains that do have crews, further reducing average speeds on the subdivision. This impact is greater than any improvements in freight performance attributable to reduced passenger service.

4.0 NSR Back Belt Segment Comparison

To provide a comparison between the speeds and volumes on the Back Belt and the NSR Comparable Corridors, Messrs. Johanson and Mussanov used historical UTCS Movement Data

⁵ Johanson & Mussanov Supplemental V.S. at 3.

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to calculate a comparable daily average speed.⁶ Since the speeds on the six NSR Comparative Corridors were calculated from “freight trains that operated across the full segments,”⁷ they attempted to match this methodology on the Back Belt. However, Messrs. Johanson and Mussanov’s incorrect calculations failed to count half of the trains and doubled the average speed of those trains.

4.1 NSR Back Belt Speed Calculation

Messrs. Johanson and Mussanov calculated that the Back Belt had {{Red}} trains per day with an average speed of 10.34 mph. A corrected calculation found {{Redac}} trains per day with a speed of 5.51 mph. In reviewing the data to find the trains that passed both the Elysian Fields and East City Junction control points, Messrs. Johanson and Mussanov missed many of the event records and as a result, missed many of the trains in the process. If a train had an event record from one of four mileposts, they considered it a train passing the control point.⁸ However, a review of train movements in the data would have revealed that this is an incomplete set of mileposts. The event records for East City Junction should also include three additional mileposts⁹ and the event records for East City Junction should also include five additional mileposts.¹⁰ When the calculation was redone with the corrected milepost list, the data shows a median train count of {{Redac}} trains per day, an average speed of 5.51 mph, and one standard deviation of speed is 3.09 mph. This count does not include train movements when a single train symbol traverses the segment multiple times and does not include trains that only travel over a portion of the segment before receiving a new train symbol.¹¹

4.2 Corrected NSR Back Belt Comparison

The characteristics of the six NSR Comparative Corridors is provided in **Table 2** below, but using the correct train count and average speed for the Back Belt. Similar to the CSXT NO&M Subdivision, when the CV of the Back Belt is compared to the NSR Comparative Corridors, it is clear that the Back Belt has significantly more variability than all but one of the other segments. The only segment with comparable variability is Greensboro. The CV values for the remaining five NSR Comparative Corridors are half of the CV value (or less) of the Back Belt and Greensboro.¹² This analysis shows that the Back Belt has greater variability than all of the NSR Comparative Corridors, which in turn means that the Back Belt has less available capacity. While NSR’s Back Belt operation can provide the level of service required for freight traffic, the level of variability on the Back Belt makes increased passenger operations highly detrimental to both the underlying freight service and the reliability of the new and existing passenger services.

⁶ Messrs. Johanson and Mussanov refer to NSR’s UTCS Data as “OS data,” which is the name for a CSXT train movement data source.

⁷ *Id.*

⁸ Event mileposts for Elysian Fields are 7.0264, 7.0268, 7.0269, and 7.0637. Event mileposts for East City Junction are 3.5597, 3.8265, 3.8676, and 3.8679.

⁹ Mileposts 3.3055, 3.3060, and 3.3406.

¹⁰ Mileposts 7.1400, 7.1490, 7.2261, 7.2300, and 7.7257.

¹¹ This limitation was correctly noted and implemented by DB Engineering: “The Back Belt Line features trains that may arrive on the line under the symbol of one railroad, change train symbols in the section between Elysian Fields and East City Jct., and proceed off the Back Belt.” *Id.* at 9, Table 2, note 2.

¹² However, CV value is where the similarity of the Back Belt and Greensboro stops. Greensboro includes single track and has corresponding delays for trains waiting to travel across the single-track portion, a challenge the Back Belt does not have.

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Table 2: Traffic and Infrastructure Characteristics of Analyzed NSR Segments

Segment	Miles	Avg Speed	Std Dev	CV	Freight Train Count	Amtrak Trains
Birmingham, AL	3.00	14.24	2.31	0.16	{{Redact}}	2
Greensboro, NC	2.81 ^a	11.10	5.21	0.47	{{Redact}}	10
Meridian, MS	4.09	11.94	3.27	0.27	{{Reda}}	2
Norfolk, VA	3.17	19.34	5.09	0.26	{{Reda}}	4
Toledo, OH	4.00	44.78	5.06	0.11	{{Redact}}	14
Porter, IN	3.30	11.57	1.33	0.12	{{Redact}}	4
Back Belt	3.15	5.51	3.09	0.56	{{Redact}}	2

a) Includes 2.01 miles of double track and 0.80 miles of single track. All other Comparative Corridors are entirely double track.

4.3 Corrected NSR Back Belt Comparison

Messrs. Johanson and Mussanov claim that “[a]n analysis of data from six locations on NSR comparable to the Back Belt Line indicates that no relationship exists between Amtrak frequency and freight train speed.”¹³ As described in **Section 2.0** above, this hypothesis is based on a flawed methodology that fails to control for other variables that impact train speed. On any corridor, one of the largest factors influencing average speeds are the durations of time trains are stopped on the mainline. As described in the 2021 Gulf Coast RTC Report, the Back Belt has trains dwelling to work at Oliver Yard or to interchange with foreign railroads.¹⁴ This is clearly reflected in the lower average speeds and higher CV on the Back Belt than the Comparative Corridors. The Back Belt has more variability and lower speeds than the NSR Comparative Corridors, all before passenger service is added.

5.0 CSXT NO&M Subdivision Historical Performance

Messrs. Johanson and Mussanov evaluated the CSXT Subdivision data over the period between September 1, 2019 and August 31, 2021, to show that actual speeds decreased more during this period than the degradation predicted by the 2021 Gulf Coast RTC Model. Over the study period, the freight train average speeds on the NO&M Subdivision declined 33% (8.7 mph) according to the data, while Messrs. Johanson and Mussanov note that the model only shows a 0.7 mph decline when passenger trains are added. This is a significant misreading of the findings of the RTC study.

The 0.7 mph metric is an overall value that includes trains *from the entire model*, which runs from NSR’s Back Belt in New Orleans all the way to Montgomery, not just the NO&M Subdivision. In the RTC Supplemental Report, the RTC Modelers calculated the simulated line-of-road (LOR) speeds for Merchandise trains on the NO&M Subdivision, the same set of trains that are included in the CSXT average speed metrics used by the DB Engineering team. This analysis showed that the modeling predicts that speeds will decline 13.5% or 4.7 mph *on the NO&M Subdivision* with the introduction of the passenger service.¹⁵

¹³ *Id.* at 3.

¹⁴ 2021 Gulf Coast RTC Report at 14, 18 (§§ 1.1.2, 2.3).

¹⁵ RTC Supplemental Report at 36 & Table 5-3.

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Messrs. Johanson and Mussanov once again failed to control for the many variables that can impact freight train speed. For example, the RTC Supplemental Report documents how the decline in freight train speeds during the September 1, 2019 to August 31, 2021 timeframe (when no passenger trains operated) is in part the result of changes in merchandise train operations to shift work events from local trains.¹⁶ Work events inherently require a merchandise train to stop on the mainline and perform low-speed operations of picking and setting out of railcars. Crew shortages due to labor market challenges are another source of reduced freight train speed that is different from the kind of increased line-of-road congestion that would follow from the introduction of the passenger service.

In sum, Messrs. Johanson and Mussanov set up a false comparison. The degradation in the 2021 Gulf Coast RTC Model (13.5%) is a permanent change in the quality of freight operations resulting from new passenger service. In contrast, the change in average monthly speed (33%) over a two-year study period is the result of more than just natural variability in freight speeds over time. It reflects the impact of unique challenges experienced by the railroad industry during the Covid-19 pandemic and the associated crew shortages and demand fluctuations. If new passenger service was added when the freight speeds were artificially depressed, the degradation from that introduction would be greater than predicted in the 2021 Gulf Coast RTC Model.

6.0 CSXT CSD Data Analysis

In an attempt to determine the potential impact to local customers when passenger service is added to the Gulf Coast, Messrs. Johanson and Mussanov reviewed CSXT Customer Switch Data (CSD) and compared that data to the output metrics from the 2021 Gulf Coast RTC Model. They conclude that the analysis “shows that the restoration of Amtrak service to the Gulf Coast Corridor will not cause appreciable impacts to customers served by CSX local trains.”¹⁷

To reach this conclusion, Messrs. Johanson and Mussanov analyzed days that reported a 100% CSD, and then determined runtimes and arrival windows for those days from the CSXT OS data. They then compared that OS data to the RTC output files from the 2019 Base Case (2019 F) and 2019 Passenger Case (2019 P). Since the 2019 Passenger Case runtimes are less than those in the OS Data, Messrs. Johanson and Mussanov claim that “this indicates that the introduction of passenger service does not push local train run times out of the range of values consistent with acceptable rail customer service.”¹⁸

In the first place, Messrs. Johanson and Mussanov’s decision to only use the 100% CSD days hopelessly biased their results. 78% of the 100% CSD days fall on a weekend, when there is an average of 35% fewer local trains operating on the corridor as compared to weekdays. The corridor averages {{Redacted}} local trains per day on weekends and {{Redacted}} local trains per day on weekdays. Not only are there fewer local trains operating on weekends, but those weekend trains also typically have less work.

More fundamentally, Messrs. Johanson’s and Mussanov’s analysis rests on the flawed premise that RTC is a perfect representation of the operations on the corridor. They claim that local trains serving CSXT customers on the NO&M Subdivision will continue to provide “satisfactory service after the restoration of Amtrak Gulf Coast service to the corridor.”¹⁹ The basis for this

¹⁶ *Id.* at 35.

¹⁷ Johanson & Mussanov Supplemental V.S. at 3.

¹⁸ *Id.* at 14.

¹⁹ *Id.* at 16.

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claim is that CSXT local trains in the 2021 Gulf Coast RTC Model have similar runtimes to those in actual operation on 100% CSD days.

This is a fundamental misunderstanding of RTC modeling results. The 2019 Base Case reflects the OS Data because it is the OS Data (supplemented with data from other sources as needed) that is used to create the 2019 Base Case. The reason that Messrs. Johanson and Mussanov's analysis in Figure 4 of their supplemental verified statement suggests that local train runtimes in the OS Data are longer than those in the 2019 Base Case is because RTC is an omniscient dispatcher that will produce optimal results and does not account for unforeseeable, real-world sources of delay like derailments, mechanical failures, emergency events, weather events, and major track maintenance or construction.²⁰ Therefore, there is no basis for DB's expectation that passenger service will not impact local train service to the severe degree projected by the 2021 Gulf Coast RTC Model.

²⁰ 2021 Gulf Coast RTC Report at 23.

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Exhibit 2

Supplemental Reply Verified Statement of Ricky Johnson

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**BEFORE THE
SURFACE TRANSPORTATION BOARD
DOCKET NO. FD 36496**

**APPLICATION OF THE NATIONAL RAILROAD PASSENGER
CORPORATION UNDER 49 U.S.C. § 24308(e) – CSX TRANSPORTATION,
INC. AND NORFOLK SOUTHERN CORPORATION**

**CSX TRANSPORTATION, INC. AND NORFOLK SOUTHERN RAILWAY
COMPANY'S REPLY TO AMTRAK'S SUPPLEMENTAL EVIDENCE**

**SUPPLEMENTAL REPLY VERIFIED STATEMENT OF
RICKY JOHNSON**

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I. INTRODUCTION AND BACKGROUND

My name is Ricky Johnson, and I am the Senior Vice President of Operations for CSX Transportation, Inc. (“CSXT”). My background and experience are described in my prior written testimony in this proceeding.

On July 27, 2022, the National Railroad Passenger Corporation (“Amtrak”) submitted supplemental briefing and evidence in response to the May 12, 2022, requests of the Surface Transportation Board (“Board”). That filing contains analysis from Rail Traffic Controller (“RTC”) modeling undertaken by Amtrak’s experts, which claims to “identif[y] five reasonable operating changes that, when made, effectively mitigate all impacts from reinstating the Gulf Coast service.”¹ In this Supplemental Reply Verified Statement, I explain why three of these changes are unreasonable and infeasible.

Section II discusses why haphazardly rescheduling freight trains on a daily basis with the benefit of perfect hindsight is impossible to do in the real-world. Section III explains why moving maintenance-of-way windows to overnight hours is neither safe nor practical. And Section IV highlights the reasons why Amtrak’s assumption that CSXT’s freight trains could routinely block grade crossings for hours at a time in order to accommodate Amtrak service is no solution at all because it would unreasonably burden communities along the line.

¹ Amtrak Supplemental Evidence at 11.

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II. SCHEDULING CHANGES MUST BE UNIFORMLY APPLIED TO CREATE PREDICTABILITY FOR CUSTOMERS AND AVOID SCHEDULING PROBLEMS THROUGHOUT THE BROADER NETWORK.

Having the benefit of 20-20 hindsight from the RTC Model's results, Amtrak's RTC experts made a number of scheduling changes to CSXT's freight trains in an attempt to minimize the delays caused by adding Amtrak trains with no supporting infrastructure. As the RTC Modelers explain in their RTC Supplemental Report, Amtrak's RTC experts first identified when conflicts happened between passenger and freight trains in their model.² They then adjusted freight train departure times manually on some, but not all, of the 14 days in the model to eliminate those conflicts.³ Under this approach, none of the freight trains with scheduling adjustments departs at the same time each day. In other words, Amtrak's witnesses did not identify a particular new schedule that could minimize freight-passenger conflicts. Rather, they assumed that CSXT train schedules could be adjusted on a daily basis in order to best avoid whatever (future) congestion that would occur that day. Even assuming that CSXT's dispatchers had the crystal ball necessary to predict the best departure time for each freight train each day, no railroad could operate in such an unscheduled and haphazard manner.

Scheduling consistency is essential to the efficiency of CSXT's operations. Consistency in train schedules impacts crew staffing, equipment provisioning, and

² RTC Supplemental Reply Report at 21 (§ 4.4).

³ *Id.*

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maintenance planning.⁴ For example, a shift in departure time impacts when the train crew is called on-duty to ensure as close to an on-time departure as possible. Scheduling a train to depart at the same time each day that it operates creates consistency in crew schedules, which is good for both CSXT's planning purposes and our crew members' quality of life. Customers also plan their businesses around anticipated railcar deliveries based on CSXT's train schedules. Dramatic and unpredictable changes on a daily basis cause those schedules to fail to meet the settled expectations of CSXT's customers, who plan their workers' shifts and production runs based on reliable, predictable, and consistent service from CSXT.

Freight train schedules (or trip plans) are also designed to sync with the rest of the traffic on the network. The more reliable a train's operations are day after day, the easier it is for CSXT's Network Planning team to coordinate interchanges and switching activities elsewhere on the network that are impacted by that train. When a particular train experiences significant, unforeseen delay on a given day, that delay can cause system-wide disruptions to the movement of freight. Railcars will miss connections and be delayed and terminals and yards will be forced to accommodate railcars that were not scheduled to be there and consume capacity.

⁴ The Board is well aware of the impacts inconsistent operation of train schedules is having on CSXT's network and the overall supply chain in our country. CSXT is working tirelessly to improve those issues through an aggressive hiring and training plan. However, operating in the manner in which Amtrak's RTC model recommends would perpetuate the status quo indefinitely. The variable departures that Amtrak's experts propose would further strain crew resources across the network, not just in the Gulf Coast region.

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Therefore, when CSXT modifies a particular train's schedule, often by shifting the departure time, CSXT applies that change uniformly across all days that particular train operates.

The rescheduling approach advocated for by Amtrak's RTC experts is simply not implementable from a dispatching standpoint. CSXT's dispatchers are talented and professional individuals, but they are not all-knowing. Human dispatchers do not have the benefit of perfect hindsight to predict conflicts far enough into the future to schedule trains in the manner Amtrak's experts propose. For example, a dispatcher would not be able to foresee a conflict happening 16 hours later and hundreds of miles away at the Beauvoir siding in Mississippi to justify holding a train in Atlanta to avoid that future conflict. There are simply too many variables over too wide a territory for a dispatcher to successfully anticipate every permutation of circumstances that could create delays.

Furthermore, the schedule that Amtrak's experts perfected for this specific 14-day simulation is not repeatable from one week to the next or from one month to the next. The same schedule is not even repeatable day to day within the 14-day simulation. And it never will be, due to non-constant customer and traffic demands and natural operating variability, including from unique features on the Gulf Coast line like drawbridges. For example, in New Orleans, CSXT has limited-to-no ability to prevent interchange partners from delivering traffic. CSXT would be forced to use capacity in the New Orleans terminal to stage trains to accommodate the

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unpredictable schedule Amtrak proposes. Doing so in turn would congest other terminals across the national rail network.

CSXT's physical network and freight schedules are designed to contain enough slack to accommodate ordinary variability. The approach advocated for by Amtrak's RTC experts would eliminate that resiliency in CSXT's network. The delays freight customers would experience from the unmitigated introduction of Gulf Coast passenger service would expand further to other locations. A true solution would eliminate that delay outright, not spread it to other regions. Amtrak's Gulf Coast passenger service could not succeed under such an unpredictable and haphazard scheduling regime and neither can CSXT's freight service.

III. AMTRAK'S EXPERTS SHIFT MAINTENANCE-OF-WAY WINDOWS TO OVERNIGHT HOURS, NEGATIVELY AFFECTING RAILROAD SAFETY AND MAINTENANCE COSTS.

The RTC Modelers discovered that Amtrak's RTC experts moved a significant number of planned maintenance-of-way windows on the Gulf Coast corridor from daytime hours to overnight hours,⁵ when such work is more dangerous and more costly to perform. Permanently shifting maintenance-of-way windows overnight is an undesirable long-term practice that shifts risk and expense onto CSXT.

⁵ *Id.* at 20 (§ 4.3).

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A. CSXT Schedules Planned Maintenance Windows During Daytime Hours in the Ordinary Course of Business.

Maintaining a railroad in top operating condition, with the highest standard of safety, is a labor-intensive endeavor. Routine maintenance and inspections are conducted multiple times a week to keep CSXT's track, bridges, signals, and other facilities operating in good working order and in compliance with Federal Railroad Administration ("FRA") regulations.⁶ Planned maintenance occurs in dedicated windows when the track is shut down to traffic to allow work to commence on the line. Planned activities include tasks like tamping the track, welding rail joints, and replacing damaged ties.

As a general practice, CSXT schedules planned maintenance for daytime hours. Predictable daytime hours offer several advantages. Most importantly, they promote safety because work on or near the tracks is conducted when outdoor visibility is highest and worker fatigue is minimal. Offering standard working hours is also key to CSXT's ability to attract and retain a quality workforce for these demanding maintenance-of-way jobs.

CSXT's ordinary maintenance-of-way forces work their assigned territories in 8-hour days from Monday to Friday, with shifts starting anytime between 6 a.m. and 8 a.m. local time. Amtrak's RTC experts would turn this approach on its head. They moved 21 planned maintenance windows over a 14-day simulation period, 16

⁶ Planned maintenance does not ordinarily include emergency repairs in response to isolated incidents like a cracked rail, washout, or malfunctioning trackside detector.

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of which (76%) they rescheduled for overnight hours between 10 p.m. and 6 a.m. CSXT would not voluntarily do this. For CSXT, nighttime maintenance work is the exception, not the rule.

B. Overnight Work Creates Unnecessary Safety Risks and Comes at Significant Added Expense.

Nighttime work requires additional equipment to illuminate the work area, requires workers to take additional steps to perform tasks safely, and requires additional precautions to assure road worker protection is maintained. Because of the heightened safety risk and inconvenience of nighttime work, labor agreements establish significantly higher pay for crews working at night. In simple terms, a crew performing maintenance work at night could earn as much as 2.5 times what a crew would earn performing equivalent work during the day. CSXT does not have discretion to change compensation formulas in labor agreements.

Rescheduling maintenance-of-way work overnight as Amtrak's experts suggest would shift costs of passenger service without sufficient infrastructure to CSXT. Increased labor costs and increased risk to crews are two such costs that would come from making nighttime work on this corridor routine. The approach of Amtrak's RTC experts also fails to consider the impact on real people. A permanent shift from daytime to nighttime work will diminish quality of life for many of CSXT's hard-working maintenance-of-way employees. Shifting work to nighttime hours would exacerbate CSXT's existing challenges attracting and retaining employees to these demanding jobs. In this historically tight labor market, the inability to fully staff maintenance crews leads to longer maintenance outages and

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inevitably to longer freight delays, exactly the opposite of CSXT's objectives and this Board's priorities.

IV. AMTRAK'S EXPERTS WOULD ALLOW TRAINS TO BLOCK GRADE CROSSINGS FOR UP TO TWO HOURS, POSING AN UNACCEPTABLE BURDEN ON GULF COAST COMMUNITIES.

Amtrak's experts take issue with the 20-minute limitation on blocked highway-rail grade crossings that the RTC Modelers built into the 2021 Gulf Coast RTC Model.⁷ The RTC Modelers explain that Amtrak's experts increased the maximum time a train may block a crossing to 121 minutes, or just over two hours of allowable crossing delay.⁸ Blocked crossings of this duration would impose a severe burden on Gulf Coast communities.

CSXT does not believe that the solution to freight train delays caused by passenger trains is to create new highway traffic delays for Gulf Coast communities. CSXT operates through and partners with these communities, has employees and stakeholders living and working in these communities, and strives to be a good neighbor. And of course, Amtrak will not bear the brunt of any fallout caused by these increased blockages. Gulf Coast communities will see locomotives and railcars with CSXT logos blocking their crossings, and the FRA will receive reports of the same.

CSXT advised the RTC Modelers to set a maximum limit of 20 minutes for blocked crossings based on its real-world operations, a view that accords with the

⁷ Crowley & Fapp Supplemental V.S. at 5, 18–19.

⁸ RTC Supplemental Reply Report at 19 (§ 4.1).

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FRA's.⁹ While unforeseeable circumstances on the ground occasionally lead to longer blockages, CSXT works hard to limit blocked crossing durations generally. CSXT certainly never designs its freight service to block crossings for extended periods intentionally, as Amtrak's experts suggest we should. The burden of the long blockages Amtrak would allow would be disproportionately felt by the specific motorists stuck at the crossings and by the residents who live near those crossings and use them every day. This would be a massive and unfair burden for Amtrak to unilaterally impose on Gulf Coast communities.

⁹ See CSXT-NSR Opening Evidence at 32. I understand that the Clean Team (CSXT and NSR) made this joint recommendation to the RTC Modelers.

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VERIFICATION

I, Ricky Johnson, declare under penalty of perjury that the foregoing information regarding CSXT is true and correct. Further, I certify that I am qualified and authorized to file this statement with regard to CSXT operations.

Executed on this 31st day of August, 2022.

A handwritten signature in black ink, appearing to read "Ricky Johnson", is written over a light gray rectangular background.

Ricky Johnson