EXPEDITED CONSIDERATION REQUESTED

BEFORE THE
SURFACE TRANSPORTATION BOARD
DOCKET NO. FD 36496

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

AMTRAK'S SUPPLEMENTAL BRIEF AND EVIDENCE IN RESPONSE TO THE MAY 12, 2022 REQUESTS OF THE SURFACE TRANSPORTATION BOARD

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INTRODUCTION

The Surface Transportation Board ("Board") correctly found that as of the conclusion of the hearing on the record on May 12, 2022, CSX Transportation, Inc. ("CSX") and Norfolk Southern Railway Company ("NS") failed to meet their burden under Section 24308(e) of demonstrating that Amtrak's proposed *Gulf Coast* service would cause unreasonable impairment of their freight transportation. However, the Chair expressed the belief that it would not serve the public interest to conclude "simply that the railroads have failed their standard of proof." Hr'g Tr. at 4059. The Chair suggested that the *Gulf Coast* service would cause at least "some disruption," and although the Chair stated that the Board could not determine based on the existing record whether that disruption would be unreasonable, the Chair offered his opinion that "there's enough that, particularly, given the current state of affairs in the rail industry, we don't need to make it worse." *Id.* The Board then invited all parties to submit additional evidence in response to questions raised by the Board. Hr'g Tr. at 4060.

Amtrak herein responds to the Board's requests. Amtrak's additional analyses confirm that there will be no unreasonable impairment to freight transportation from the *Gulf Coast* service. CSX's and NS's arguments to the contrary are without merit, and their predictions (as well as the Port's) about the impact resulting from two additional round-trip Amtrak trains are greatly exaggerated. As described below, and in the accompanying Supplemental Verified Statements of Clayton S. Johanson and Darkhan Mussanov of DB E.C.O. North America, Inc. ("DB") (Ex. A) and Thomas D. Crowley and Daniel L. Fapp of L.E. Peabody & Associates, Inc. (Ex. B), it is clear that *Gulf Coast* service can be restored without the extraordinary capital investments that CSX, NS, and the Port have demanded, and that any impacts from Amtrak service can be mitigated with routine operational changes and cooperative service planning.

Although Amtrak has provided additional evidence and analyses to fulfill the Board's request, Amtrak's position remains that the evidentiary burden is on the host railroads to demonstrate unreasonable impairment to freight transportation. Because CSX and NS failed to meet this burden after an extensive evidentiary hearing, Amtrak is entitled to an order in its favor regardless of the evidence submitted here, which is in addition to the evidence Amtrak already provided at the hearing.

The only quantifiable evidence of "unreasonable impairment" that CSX and NS have offered throughout this proceeding is their flawed Rail Traffic Controller ("RTC") model. Amtrak has already established the numerous problems with that model, but even taking it on its own terms, it confirms Amtrak's position. The RTC model predicts that restoration of Amtrak's *Gulf Coast* service in the "2019 P" case will cause an increase of 18.9 minutes of freight train delay per 100 miles; a reduction in freight train speed of 0.7 miles per hour; and an increase of 2.4 recrews per week. To mitigate this asserted "unreasonable impairment," CSX and NS have demanded half-a-billion dollars for taxpayer-funded infrastructure improvements. In contrast, CSX and NS have stated that they do not require (and thus have not planned to make) *any* infrastructure improvements to accommodate their own freight growth on the corridor over the next twenty years. But even if Amtrak never runs a single train on the Gulf Coast, the RTC model predicts that this freight growth will cause nearly the same (or worse) impacts: an increase of 18.3 minutes of freight train delay per 100 miles; a reduction in freight train speed of 1.3 miles per hour; and an increase of 1.5 recrews per week. To recap:

CSX's and NS's Position on Impacts that Cause Unreasonable Impairment and Must be Mitigated		
	Unreasonable Impairment	**Acceptable Impact**
	Impacts Assumed from Amtrak's Gulf Coast Service Requiring Half-a-Billion Dollars in Infrastructure to Mitigate	***Impacts Assumed from Freight Growth without Amtrak's Gulf Coast Service Requiring No Infrastructure to Mitigate***
Increased delay in minutes per 100 train miles	18.9 minutes	18.3 minutes
Decrease in freight train speed	0.7 mph decrease	1.3 mph decrease
Increase in recrews per week	2.4 recrews	1.5 recrews

These numbers speak for themselves. CSX's and NS's case for unreasonable impairment has failed.

The unreasonable impairment standard established by Congress is a demanding one. As discussed below, in seeking guidance on how to apply the standard, the Board should look to the plain text and legislative history of Section 24308(e), which makes clear that there is a presumption in favor of adding Amtrak service absent a demonstration of *serious adverse impacts* to freight railroads. The Board should also look to the meaning of "unreasonable" in other legal contexts, as well as the Board's decisions applying similar standards. Each of these sources establishes that unreasonable impairment is a high bar that CSX and NS have not come close to meeting.

Although Amtrak recognizes and appreciates that the Board's request for supplemental evidence is rooted in the Board's desire to protect the public interest, Amtrak respectfully submits that Congress determined what is in the public interest through its statutory enactments concerning passenger rail. When Congress created Amtrak a half-century ago, it struck a grand bargain with the freight railroads, relieving them of their statutory obligation to provide passenger service and the significant cost of providing these services, but only if they agreed to host Amtrak on their

tracks and facilities so that Amtrak could provide essential passenger rail service in their place.[1] Congress then reaffirmed that Amtrak service is in the public interest when it enacted Section 24308(e)—the statute at issue here—establishing a presumption in favor of additional passenger service unless the host railroads meet their burden of demonstrating that the service will "unreasonably impair" their freight transportation. And Congress later explicitly determined that restoring Amtrak service for the people of the Gulf Coast region on this specific passenger line—the *Gulf Coast* service—is in the public interest.[2] The public interest thus weighs strongly in favor of granting Amtrak's application, which is well supported by the actions of Congress, the record in this case, and the views submitted by other interested parties who have supported the restoration of passenger service to the Gulf Coast region. The Board should order Amtrak service to resume on the Gulf Coast corridor on the schedule and terms proposed by Amtrak.

I. AMTRAK'S ADDITIONAL EVIDENCE CONFIRMS THAT THE GULF COAST SERVICE DOES NOT UNREASONABLY IMPAIR CSX'S AND NS'S FREIGHT TRANSPORTATION AND THAT THEIR INFRASTRUCTURE DEMANDS ARE UNSUPPORTED.

In its prior submissions and at the hearing on the record, Amtrak already offered abundant evidence that restoration of *Gulf Coast* service will not cause unreasonable impairment to CSX's and NS's freight operations. *First,* Amtrak offered unrebutted evidence that in the past, the corridor between New Orleans and Mobile had considerably more freight traffic than it does today, and yet was still able to accommodate both the tri-weekly *Sunset Limited* and the daily round-trip

[1] *See Dep't of Transp. v. Ass'n of Am. R.R.*, 575 U.S. 43, 46-47 (2015) ("Congress recognized that Amtrak, of necessity, must rely for most of its operations on track systems owned by the freight railroads. So, as a condition of relief from their common-carrier duties, Congress required freight railroads to allow Amtrak to use their tracks and facilities at rates agreed to by the parties—or in the event of disagreement to be set by the Interstate Commerce Commission (ICC).").

[2] In both the Passenger Rail Investment and Improvement Act of 2008 (Pub. L. No. 110-432, tit. II, § 226, 122 Stat. 4907, 4934) ("PRIIA") and the Fixing America's Surface Transportation Act of 2015 (Pub. L. No. 114-94, § 11304, 129 Stat. 1312, 1655) (the "FAST Act"), Congress demanded a plan to restore passenger service to the Gulf Coast and directed the creation of the Gulf Coast Working Group to do so.

New Orleans-to-Mobile *Gulf Coast Limited*, even though the daily *Gulf Coast Limited* operated on a schedule ten minutes faster than Amtrak is proposing for the current *Gulf Coast* service. Joint Ex. 31C, Verified Statement of Jim Blair at ¶ 49; Hr'g Tr. at 2975-76 (noting that there are about half as many freight trains operating on the corridor today as were operating during the time when both the *Sunset Limited* and *Gulf Coast Limited* were running). And this was, of course, without the half-a-billion dollars in infrastructure that CSX and NS are now proposing.

Second, Amtrak offered comparative evidence showing how Amtrak service operates on far busier corridors without causing unreasonable impairment. For example, in response to NS witness Randy Hunt's comparison of the New Orleans terminal to the Chicago terminal, Amtrak's witness Jim Blair testified that Amtrak runs fifty trains in and out of Chicago every day, including sixteen that run on NS and CSX lines without causing any unreasonable impairment. Hr'g Tr. at 3015. Mr. Blair also testified that Amtrak's *Southwest Chief* service navigates approximately one hundred BNSF trains per day on the corridor between Chicago and Los Angeles without causing any unreasonable impairment. *Id.* at 3011-12.

Third, Amtrak offered a capacity study showing that there is sufficient capacity to accommodate Amtrak service between New Orleans and Mobile. Joint Ex. 31ZA, Verified Statement of Clayton Johanson; Hr'g Tr. at 3741-92. Although the Board discounted the capacity study because it did not show the impacts of Amtrak service on the freight railroads, the purpose of the study was to demonstrate that the existing infrastructure is sufficient to accommodate both Amtrak and freight service. The capacity analysis showed that it is possible to add back Amtrak service through increased coordination and cooperative service planning rather than by building infrastructure. And CSX and NS have conceded that there is "sufficient theoretical capacity on

the Gulf Coast Corridor to accommodate the passenger trains." Joint Exhibit 61, CSX and NS Response to Amtrak's Surrebuttal, at 4.

At the close of the hearing on May 12, taking into consideration the evidence of all parties, the Board found that CSX and NS had not proven that their freight transportation would be unreasonably impaired by the *Gulf Coast* service.[3] Based on its "concerns about the inadequacies of the evidence,"[4] the Board then asked the parties to provide further evidence on unreasonable impairment, including potentially by comparison to other lines on CSX's and NS's network that host Amtrak service. The Board likewise asked for further evidence on customer impacts. And the Board suggested that Amtrak consider providing RTC modeling, using the RTC model that CSX and NS supplied as a base, despite Amtrak's criticisms of that model. Amtrak has endeavored here to respond to each of the Board's requests.[5]

A. There Is No Unreasonable Impairment When Comparing the *Gulf Coast* Service to Similar CSX and NS Lines.

First, Amtrak attempted to respond to the Board's inquiry about how the predicted decrease in freight train velocity of 0.7 miles-per-hour as a result of the restoration of the *Gulf Coast* service compares with velocity fluctuations on other lines on CSX's and NS's network in order to provide the Board with context on whether this decrease in velocity constitutes "unreasonable impairment"

[3] *See, e.g.*, Hr'g Tr. at 4044 (observing "that the RTC modeling that has been supplied so far doesn't meet the standards of the statute"); *id.* at 4047 (stating that, with respect to whether impairment is unreasonable, "I can't tell, based on the evidence that we have to date"); *id*. at 4059 (stating that while there has been testimony "to suggest that [the *Gulf Coast* service] would cause some disruption. I can't tell whether it's unreasonable").

[4] Appl. of the Nat'l R.R. Passenger Corp. Under 49 U.S.C. § 24308(e)—CSX Transp., Inc., and Norfolk Southern Ry. Company, FD 36496, slip op. at 3 (S.T.B. served July 22, 2022).

[5] To be clear, however, Amtrak does not believe the statutory framework requires Amtrak to submit this evidence given Section 24308(e)'s allocation of the burden of proof. Where, as here, one party is charged by Congress with the burden of proof, the other party can prevail simply by pointing out that the statutory burden was not satisfied; the other party need not offer its own affirmative evidence. As one leading treatise summarizes: "While the opposite party is entitled to introduce contrary evidence [after a prima facie case is made], he is under no compulsion to do so and may submit the issue to the trier of fact on this evidence alone. No burden of producing evidence is cast upon him." 2 HANDBOOK OF FED. EVID. § 301:4 (9th ed). As discussed in more detail below, CSX and NS should not be afforded a second opportunity to meet the very same evidentiary burden they already failed to meet the first time.

to freight transportation.[6] To do so, Amtrak asked CSX and NS to provide velocity and other data for comparable lines on their networks where Amtrak currently is operating. After protracted negotiations, a motion to compel from Amtrak, and the Board's subsequent orders, in late June and early July, CSX and NS ultimately provided at least some of the information Amtrak was seeking. Amtrak then attempted on an extremely expedited basis to use what CSX and NS provided to answer the Board's query for comparative velocity information.

The full explanation of the methodology and results of this analysis are set forth in the accompanying Supplemental Verified Statement of Messrs. Johanson and Mussanov of DB (Ex. A). Unfortunately, because CSX and NS designated their velocity information "Highly Confidential," Amtrak cannot set forth DB's exact findings in this public filing. (Nor was Amtrak outside counsel able to share DB's full work product with in-house counsel or personnel at Amtrak.) However, Amtrak can report that DB's analysis conclusively showed the following:

- The decrease of 0.7 miles-per-hour in velocity (or 4.5%) that the 2021 CSX/NS RTC Study predicts the *Gulf Coast* service will cause for freight traffic on the Gulf Coast corridor is well within the standard deviation for fluctuations in freight velocity on comparable CSX and NS corridors with existing Amtrak service.
- The average train velocity on the NO&M Subdivision is within a standard deviation of average train velocity on comparable CSX corridors that host Amtrak service.
- The average train velocity on the Back Belt is within a standard deviation of similar NS segments that host Amtrak service.

[6] *See* Hr'g Tr. at 4054 ("Do we look at, well, what is the velocity on CSX's overall network? What is the velocity on other lines that are similar to this? How do we know whether velocity of whatever it is, 20 miles an hour or 14 miles, is or is not reasonable? What do we compare it to? We've been given no guidance as to how to measure reasonableness.").

- Average train velocity on CSX's NO&M Subdivision decreased by 33% (8.7 mph) during the two-year period from September 2019 through August 2021. This decrease in velocity—which occurred without any Amtrak service on a corridor that CSX argues is performing well and does not require any infrastructure investment from CSX—is more than 12 times larger than the 0.7 mph decrease that the CSX/NS RTC model predicts would occur with the restoration of Amtrak *Gulf Coast* service.
- The COVID-19 pandemic created an opportunity to assess the impact of reduced Amtrak services on CSX subdivisions like the NO&M Subdivision. Using average train velocity as a metric of corridor fluidity, four of the six analyzed subdivisions showed a percentage decrease in velocity during the period of reduced passenger service. On the examined subdivisions, prolonged reductions in Amtrak frequencies, ranging from 33% to 57% from previous schedules, did not directly lead to improvements in corridor fluidity. Proportionally, the reduction in Amtrak service on the segments analyzed did not have a significant measurable effect on overall subdivision train velocity.
- An 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 velocity.

DB's analysis, which is set forth in full in the accompanying Supplemental Verified Statement and Appendix, therefore confirms that an 0.7 mile-per-hour, or 4.5% decrease in velocity, does not constitute unreasonable impairment of freight operations.

B. There Is No Unreasonable Impairment to Customers on the Gulf Coast Line.

The Board also asked the parties to provide evidence showing what the impacts would be to Gulf Coast customers from the restoration of *Gulf Coast* service.[7] Amtrak thus requested that

[7] *See* Hr'g Tr. at 4050-51 ("[W]e have had no data presented to us that, I guess, could be described as impairment of customer-centric freight service…. I'm not sure what's required, but what is missing is any indication on whether the

CSX provide information about its customers along the Gulf Coast corridor, including any information about switching reliability, required delivery windows, or other circumstances faced by customers that could be affected by the restoration of Amtrak service. CSX stated that it would not and could not provide such information without undertaking a "special study," including because CSX "ha[d] not identified a complete data set of customer service metrics that would be useful, reliable, and producible," and stated that Amtrak instead should use Customer Switch Data ("CSD") data for the NO&M Subdivision to determine any impacts on Gulf Coast customers.[8] Amtrak has done so.

As set forth in the accompanying Supplemental Verified Statement of Messrs. Johanson and Mussanov of DB, the CSD data conclusively demonstrates that the restoration of Amtrak service will have no impact on customers on the Gulf Coast corridor currently served by CSX local freight trains. DB took the CSD data and identified all days on the Gulf Coast corridor where CSX reported a 100% CSD rate for the calendar day. This measurement was interpreted to mean that every car was pulled, delivered, or placed in a manner that allowed it to be counted as within the standard for this CSX-generated metric. It follows that on days when every car was pulled, delivered, or placed within CSX's standard, the local trains responsible for transporting those cars had run times and arrival windows that allowed them to meet the 100% CSD rate. It also follows that on 100% CSD days, CSX provided a satisfactory level of service to rail customers. Therefore, rail customer impacts were evaluated with respect to local trains on those 100% days by comparing their run time and arrival time ranges at stations in the OS data to their simulated run time and

13-hour delay, the 4.5 percent reduction in velocity -- and I'm just picking the many metrics in these RTC studies -- what it really means to a customer. A customer who only gets serviced twice a week and doesn't need it more often may not be hurt at all by a 4.5 percent reduction in velocity. I can't tell, and I think that kind of impact of passenger service is -- is missing.").

[8] R. Atkins Email to J. Amunson (June 21, 2022) (on file with Amtrak).

arrival time ranges within the RTC model.[9] In comparing the real-world data for the five local trains to the RTC data, DB concluded the following:

- For four of the five local trains, end-to-end run times for the trains in the 2021 CSX/NS RTC Study that included the restoration of Amtrak service (the "2019 P" case) were still *lower* than real-world end-to-end run times from the OS data on days where CSX reported 100% CSD. In other words, even with the 2021 CSX/NS RTC Study's predicted increase in minutes of delay for these four local trains as a result of the restoration of *Gulf Coast* service (ranging from 12 to 30 minutes), these trains were still completing their runs faster than those CSX counted in real-life as achieving 100% CSD performance.
- The fifth local train had a 2019 P (Passenger Trains Added) median end-to-end run time that was 162 minutes longer than in the 2019 F (Freight Only) scenario. However, when compared to real-world CSX data, the median run time for this fifth train on days when it achieved 100% CSD was almost four hours less than in the 2019 F RTC scenario. This particular train's RTC profile was therefore quite different from its real-world profile.
- Further analysis for this fifth train showed that per this train's transportation service plan, most of its shippers are served on the southbound segment of the route. On this segment, even with Amtrak trains operating, this local train still reached its shippers within the measure CSX designated as "100% satisfactory performance" 95% of the time. And on the northbound segment, that statistic was 90%.

In sum, DB's analysis shows on a train-by-train basis that restoration of Amtrak service will not cause any impact to customers along the Gulf Coast line, and certainly will not

[9] The analysis assumed that all shippers are served by the five local train symbols that were reported for the Gulf Coast corridor.

unreasonably impair CSX's ability to serve its customers satisfactorily in accordance with CSX's own measures of satisfactory customer service.

C. RTC Modeling Shows that All Impacts of Amtrak Service Can Be Mitigated by Making Reasonable Operational Changes Rather than Building Costly Infrastructure.

The Board also asked Amtrak to undertake RTC modeling using the 2021 CSX/NS RTC Study as a baseline, despite Amtrak's contentions that the 2021 CSX/NS RTC Study is deeply flawed.[10] Notwithstanding its continuing objections to the RTC study, Amtrak has undertaken an analysis to fulfill the Board's requests. The additional modeling is set forth in the Supplemental Verified Statement of Messrs. Crowley and Fapp (Ex. B), and shows the following:

First, Messrs. Crowley and Fapp identified and corrected five issues from the 2021 CSX/NS RTC Study that they determined were not the norm in RTC modeling, unnecessarily deviated from the standard RTC default settings, deviated from Messrs. Banks, Guthrie, and Dingler's stated modeling assumptions, and did not reflect actual real-world operations. Correcting these five issues had a material impact on the 2021 CSX/NS RTC Study results.

Second, Messrs. Crowley and Fapp identified five reasonable operating changes that, when made, effectively mitigate *all* impacts from reinstating the *Gulf Coast* service. These changes include: eliminating hi-rail movements of bridge tenders from automating movable bridges; rescheduling planned maintenance outages away from times of peak rail operations; rescheduling freight train operations to eliminate conflicts with scheduled *Gulf Coast* service; allowing freight trains to better utilize yard infrastructure to receive inbound freight trains; and adjusting the restriction at at-grade highway crossings to reflect CSX's actual real-world operations. Messrs.

[10] *See* Hr'g Tr. at 4061 (asking Amtrak to have its experts model operational changes that may require "far less infrastructure than the railroads are asking for").

Crowley and Fapp show both the individual and cumulative impact of each of these changes in rail operations in their Supplemental Verified Statement. In sum, their analysis makes clear what Amtrak has argued all along—that no new infrastructure is needed to accommodate the *Gulf Coast* service. All that is needed is cooperative service planning, which, unfortunately, CSX and NS have thus far been unwilling to provide.

Third, pursuant to the Board's request, Messrs. Crowley and Fapp also evaluated both the individual and cumulative impact of changes in rail infrastructure along the New Orleans to Mobile network, including modeling the improvements recommended by the Gulf Coast Working Group against 2019 operations. Their analyses indicate that the FRA-recommended infrastructure improvements are the most effective recommendations in mitigating the effects of restoring *Gulf Coast* service, assuming no other changes in CSX's, NS's, or Amtrak's operations. Their analyses also demonstrate that the infrastructure changes that CSX and NS have insisted are necessary to accommodate Amtrak service are not in fact necessary.

In sum, the additional RTC analysis performed by Messrs. Crowley and Fapp fully answers the Board's inquiries and supports the position that Amtrak has maintained since the start of this case: there is no need for half-a-billion dollars of additional taxpayer-funded infrastructure to restore *Gulf Coast* service.

II. CSX AND NS HAVE NOT SHOWN AND CANNOT SHOW THAT RESTORATION OF THE GULF COAST SERVICE WILL UNREASONABLY IMPAIR THEIR FREIGHT TRANSPORTATION.

Pursuant to Section 24308(e), it is CSX's and NS's burden to demonstrate that their freight transportation would be unreasonably impaired by restoration of *Gulf Coast* service. They failed to meet this burden.[11] Rather than pointing to real-world issues, they offered the Board a flawed

[11] *See* Hr'g Tr. at 4043-44 ("[T]he overwhelming approach of the briefing and the RTC studies submitted to us by the railroads is that they have met their burden of proof because they are entitled to have, if there is to be passenger service,

RTC model that generated a series of percentage figures of no practical use. Amtrak already exhaustively demonstrated the problems with the CSX/NS RTC model and will not repeat them again here. But it is important to highlight that CSX and NS witnesses frankly admitted that their RTC model had nothing to do with the statutory unreasonable impairment standard. Instead, CSX and NS modeled what the Board aptly termed a "no degradation" standard. Hr'g Tr. 4043. Below, Amtrak first briefly responds to the Board's request for further guidance on the "unreasonable impairment" standard, and then explains why CSX and NS have not met and cannot meet that standard. Amtrak also addresses the Board's concerns about the public interest.

A. The Unreasonable Impairment Standard Establishes a High Bar for CSX and NS to Overcome.

In its comments at the conclusion of the evidentiary hearing on May 12, the Board requested further guidance on the "unreasonable impairment" standard that CSX and NS are required to meet.[12] As Amtrak has previously argued, the text of the statute, the legislative history, and the underlying purposes of the statute support the position that "unreasonable impairment" is a high bar—one that CSX and NS have failed to satisfy.

The plain language Section 24308(e) compels this view. As Amtrak has previously explained, the established meaning of "unreasonable" requires impairment that is "clearly inappropriate" or "excessive." Joint Ex. 31, Amtrak Reply Argument and Evidence, at 14-16. CSX and NS have conceded that the plain meaning of "unreasonable" requires impairment that "exceed[s] the bounds of reason or moderation." Joint Ex. 41, CSX and NS Rebuttal, at 13-14; Joint Ex. 49, Amtrak Surrebuttal, at 5. Therefore, both Amtrak and CSX and NS understand the

no degradation…. The statute talks about unreasonable impairment; presumably, that Congress expected there might be some impairment when they wrote that language. So I am concerned that the RTC modeling that has been supplied so far doesn't meet the standards of the statute.")

[12] *See* Hr'g Tr. at 4053-55.

plain meaning of "unreasonable" to require a level of impairment much greater than simply "no degradation."

The legislative history of Section 24308(e) further supports this view. In enacting the statute, Congress established a presumption that freight railroads must provide Amtrak with access to their tracks and facilities so that Amtrak can fulfill its mission of providing intercity passenger rail. The only way for a freight railroad to overcome this presumption under Section 24308(e) is to show that allowing such access would "unreasonably impair" its freight operations. As Congress stated in enacting Section 24308(e):

> ***The Congress is concerned that in the past Amtrak's efforts to add or modify services have involved protracted arbitration proceedings and have often prompted requests by the railroads for inordinate capital improvements,*** which is paid from appropriations authorized for Amtrak's operating expenses. ***It is important that Amtrak have available to it an expedited procedure for making necessary modifications or additions to its operations.*** The conferees have agreed that, rather than being absolutely constrained, the Secretary should have discretion to take into account any ***serious adverse impacts*** on a railroad's freight operations which may result from additional service. ***However, it is the purpose of this provision to ensure that such service may be added where no significant impairment of freight operations is demonstrated.***

H.R. Rep. No. 96-1041, at 42 (Conf. Rep.) (emphasis added). Congress thus intended the statute to set a high bar, evidenced by the House Conference Report's reference to "*serious adverse impacts* on a railroad's freight operations." *Id.* (emphasis added).

In addition to looking at the legislative history of Section 24308(e), the Board can look to the definition of "unreasonable" in other areas of the law, as well as the Board's own precedents. As defined in various other legal contexts, unreasonableness means more than simply excessive. For example, for the tort of intentional infliction of emotional distress, federal courts have held that an "unreasonable" act is one that is "without just cause of excuse and beyond all bounds of decency," and "the act complained of must be outrageous." *Mukaida v. Hawaii*, 159 F. Supp. 2d 1211, 1239 (D. Haw. 2001) (quoting *Takaki v. Allied Mach. Corp.*, 951 P.2d 507, 516 n. 13 (Haw.

1998)), *aff'd,* 85 F. App'x 631 (9th Cir. 2004). For a federal court considering a writ of habeas corpus on behalf of a state prisoner, a state court's application of federal law is "unreasonable" if it is "well outside the boundaries of permissible differences of opinion." *Thompkins v. Pfister,* 698 F.3d 976, 983 (7th Cir. 2012); *see also Lockyer v. Andrade*, 538 U.S. 63, 65 (2003) (state court's decision must be objectively unreasonable, "not just incorrect or erroneous"). For claims pursuant to the Eighth Amendment's ban on cruel and unusual punishment, the Supreme Court has held an "unreasonable risk" is one that is "so grave that it violates contemporary standards of decency," and "is not one that today's society chooses to tolerate." *Helling v. McKinney*, 509 U.S. 25, 36 (1993).

The Board's precedents applying similar standards likewise illustrate that "unreasonable impairment" is a demanding standard. For example, in the Board's trackage rights cases under 49 U.S.C. § 11102, the Board can require a rail carrier to allow its terminal facilities, including main-line tracks, to be used by another rail carrier if the Board finds that use to be "practicable and in the public interest without *substantially impairing* the ability of the rail carrier owning the facilities or entitled to use the facilities to handle its own business." 49 U.S.C. § 11102(a) (emphasis added). Although "*unreasonable* impairment" is a higher bar than "*substantial* impairment," cases where the Board has found no "substantial impairment" nonetheless are instructive. In those cases, the Board has "set a fairly high bar for concluding that operations issues rise to the level of substantial impairment." *BNSF Railway Co.–Terminal Trackage Rights–Kansas City Southern Railway Co. and Union Pacific Railroad Co.*, FD 32760 (Sub-No. 46), slip op. at 16-17 (S.T.B. served July 5, 2016).

The BNSF trackage rights case is informative. There, the Board recognized that the two carriers presently using the tracks "must already engage in detailed coordination," and that

"introducing a third carrier would make operations more complex." *Id.* at 16. However, the Board "d[id] not find on this record that any potential BNSF interference with KCS and UP operations would rise to the level of substantial impairment" and granted BNSF's application for trackage rights. *Id.* at 16, 17. In reaching its decision, the Board acknowledged that adding a third carrier to the tracks would "require increased coordination," but the Board emphasized that the "ultimate question" was whether the introduction of a third carrier would "so complicate" the facility as to rise to the level of substantial impairment. *Id.* at 17. In finding no substantial impairment, the Board noted that "a certain level of interference and delay is common and expected in the railroad industry, as carriers increasingly consolidate operations and enter into agreements to jointly operate on the system's diminishing track space." *Id.* at 17 n.17.[13] Thus, the Board concluded that merely showing increased interference or greater delay does not constitute "substantial impairment."[14]

In all events, the question is a simpler one in this case, since the host railroads have not tried to meet *any* standard of impairment, as discussed in more detail below. CSX and NS have stated repeatedly throughout this hearing that *any* impact from Amtrak service constitutes unreasonable impairment and must be mitigated. That is an untenable reading of the statute, and

[13] In an earlier decision in the same docket, the Board noted that a carrier who previously has agreed to certain terms and conditions cannot reasonably expect no interference with their operations. *See Union Pacific Corp., Union Pacific Railroad Co., and Missouri Pacific Railroad Co.– Control and Merger–Southern Pacific Rail Corp., Southern Pacific Transp. Co., St. Louis Southwestern Railway Co., SPCSL Corp., and the Denver and Rio Grande Western Railroad Co.*, FD 32760, slip op. at 4 (S.T.B. served March 4, 2002) (noting that "BNSF's trackage rights operations, by definition, potentially interfere with UP's operations on the trackage rights lines" but "UP agreed to this potential interference when it accepted the conditions, including the terms of the BNSF Agreement, that [the Board] imposed when [the Board] approved the UP/SP merger"). Here, CSX's and NS's predecessors accepted the terms of the grand bargain when they agreed to host Amtrak service and they likewise cannot reasonably expect a "no impact" standard given their prior acceptance of the terms of that bargain.

[14] The Board found no substantial impairment based solely on a record made up of a proposed operating plan and critiques of that operating plan. There were no RTC studies offered and no live testimony. *See BNSF Railway Co.–Terminal Trackage Rights–Kansas City Southern Railway Co. and Union Pacific Railroad Co.*, FD 32760 (Sub-No. 46). The Board denied a BNSF request for oral argument "[g]iven the extensive record already developed" in the case. *BNSF Railway Co.–Terminal Trackage Rights–Kansas City Southern Railway Co. and Union Pacific Railroad Co.*, FD 32760 (Sub-No. 46), slip op. at 6 (S.T.B. served July 5, 2016).

one that undermines Amtrak's very purpose. The text and legislative history of Section 24308(e), the meaning of "unreasonable" in other legal contexts, and the Board's precedent in trackage rights cases all demonstrate that the statutory standard of "unreasonable impairment" is demanding.

B. CSX and NS Failed to Meet Their Statutory Burden to Demonstrate that their Freight Transportation Would be Unreasonably Impaired by Gulf Coast Service.

At the conclusion of the hearing on the record, the Board correctly observed that the RTC study that CSX and NS offered as their evidence of unreasonable impairment "doesn't meet the standards of the statute." Hr'g Tr. at 4044. That is because—as the RTC study itself shows, and as every witness who testified for CSX and NS confirmed—the RTC study did not model to identify "unreasonable impairment." As one member of the so-called CSX/NS "Clean Team" aptly summarized: "The model didn't define reasonable or unreasonable. The model defined a set of projects that would mitigate the impact to Amtrak on our lines….[s]o that we could keep our operations as they exist today." Hr'g Tr. at 1576 (Sinkkanen). CSX's and NS's entire case thus boils down to this one simple syllogism:

> Amtrak = Impacts
>
> Impacts = Impairment
>
> Impairment = Unreasonable

Merely showing that *Gulf Coast* service will impact CSX and NS freight transportation is not sufficient to meet the statutory burden and therefore Amtrak was entitled to an order in its favor as of the close of the hearing on May 12.[15] Nonetheless, even assuming for the sake of

[15] The D.C. Circuit has held multiple times that a statutory burden of proof must be given effect. *See, e.g., Port Norris Express Co. v. ICC*, 746 F.2d 69 (D.C. Cir. 1984) (reversing a decision by the ICC granting a motor common carrier authority to transport certain commodities in bulk form solely because the carrier failed to satisfy the evidentiary burden specifically placed upon the carrier by the statute); *Nat'l Ass'n of Recycling Indus., Inc. v. ICC*, 585 F.2d 522,

argument that the 2021 CSX/NS RTC Study could be considered on its own terms, CSX and NS's arguments would still fail. The 2021 CSX/NS RTC Study predicts that restoration of the *Gulf Coast* service will cause the following impacts on freight service: an increase of 18.9 minutes of freight train delay per 100 miles (from 83.1 to 102 minutes); a reduction in freight train speed of 0.7 miles per hour (from 14.8 to 14.1 mph); and an increase of 2.4 recrews per week. This is the impact that CSX and NS argue must be mitigated by approximately half-a-billion dollars in new infrastructure, as set forth in the table below.

Restated Table 19: Changes in Key Freight Train Metrics Due to the Addition Of Passenger Trains in 2019

% Change in Modeled Freight Train Delay / 100 Train Miles 1/	% Change in Modeled Freight Train Speed 2/	% Change in Dispatching Conflicts 3/	% Change in Delay to Other New Orleans Railroads 4/	% Change in In Recrews 5/
83.1	14.8	7,803	29,727	273.00
102.0	14.1	10,776	39,701	376.00
22.7%	-4.5%	38.1%	33.6%	37.7%

1/ Average delay in minutes per train from 30 simulations.
2/ Average miles per hour per train from 30 simulations.
3/ Average gross RTC conflicts per run from 30 simulations.
4/ Total delay in minutes from 30 simulations.
5/ Total recrews from 30 simulations.

As a counterpoint, CSX's and NS's witnesses also testified that no new infrastructure is necessary to accommodate their own freight growth on the Gulf Coast corridor over the next twenty years.[16] Thus, it is instructive to compare the predicted impacts of potential freight growth

530 (D.C. Cir. 1978) (reversing ICC decision because the ICC had "unlawfully relieved the railroads of their burden of proof").

[16] *See, e.g.*, Hr'g Tr. at 1568 ("Q. So NS can accommodate three additional trains that will occupy the back belt for several hours without any infrastructure investment but it can't accommodate Amtrak trains that will be on the back belt for 32 minutes without $100M in infrastructure investment from Amtrak. Is that correct? A. That's correct." (Amunson (Q) Sinkkanen (A))); *id.* at 507 ("Q: So just to -- my understanding, I think from what Matt said, is that there is no new infrastructure planned by CSX between Mobile and New Orleans? A: That is correct." (Hedlund (Q)) (Johnson (A))).

on the corridor—for which CSX and NS contend ***no*** infrastructure is needed—with the predicted impacts of Amtrak service on the corridor—for which CSX and NS argue approximately ***half-a-billion dollars*** of infrastructure is needed. Their RTC model predicts that increased freight traffic in 2039 (with no Amtrak service) will result in the following impacts: an increase of 18.3 minutes of freight train delay per 100 miles (from 83.1 to 101.4 minutes); a reduction in freight train speed of 1.3 miles per hour (from 14.8 to 13.5 mph); and an increase of 1.5 recrews per week, as shown in the following table.

Change in Key Freight Train Metrics Between 2019 F and 2039 F Cases

% Change in Modeled Freight Train Delay / 100 Train Miles 1/		% Change in Modeled Freight Train Speed 2/		% Change in Dispatching Conflicts 3/		% Change in Delay to Other New Orleans Railroads 4/		% Change in In Recrews 5/	
83.1		14.8		7,803		29,727		273.00	
101.4	↑	13.5	↓	11,054	↑	42,507	↑	338.00	↑
22.1%		-9.1%		41.7%		43.0%		23.8%	

1/ Average delay in minutes per train from 30 simulations.
2/ Average miles per hour per train from 30 simulations.
3/ Average gross RTC conflicts per simulation from 30 simulations.
4/ Total delay in minutes from 30 simulations.
5/ Total recrews from 30 simulations.

Thus, to summarize, CSX and NS plan to invest ***zero dollars*** of CSX's or NS's money to mitigate the 18.3 minutes of freight train delay per 100 miles, 1.3 mile-per-hour reduction in freight speeds and 1.5 additional recrews per week that will result from the growth in their freight operations, but CSX and NS argue that taxpayers must invest ***half-a-billion dollars*** to mitigate the 18.9 minutes of freight train delay per 100 miles, 0.7 mile-per-hour reduction in freight speeds,

and 2.4 additional recrews per week that the 2021 CSX/NS RTC Study indicates will result from the additional of Amtrak service on the corridor.[17]

CSX's and NS's Position on Impacts that Cause Unreasonable Impairment and Must be Mitigated		
	Unreasonable Impairment	**Acceptable Impact**
	Impacts Assumed from Amtrak's Gulf Coast Service Requiring Half-a-Billion Dollars in Infrastructure to Mitigate	***Impacts Assumed from Freight Growth without Amtrak's Gulf Coast Service Requiring No Infrastructure to Mitigate***
Increased delay in minutes per 100 train miles	18.9 minutes	18.3 minutes
Decrease in freight train speed	0.7 mph decrease	1.3 mph decrease
Increase in recrews per week	2.4 recrews	1.5 recrews

Thus, even taking their evidence on its own terms, the impacts that CSX and NS claim from the proposed Amtrak service cannot possibly constitute unreasonable impairment of their freight operations because their own operations will cause impacts that are the same, if not worse, yet CSX and NS say they can be accommodated without a single dollar of mitigation.

C. The Port's Evidence Does Not Assist CSX and NS in Meeting their Burden Under Section 24308(e)(2)(A).

The Port's evidence does not help CSX and NS in meeting their burden. As Amtrak has previously explained, Section 24308(e) speaks only in terms of, and requires the Board to look only to, whether and to what extent the Gulf Coast service will "impair unreasonably freight

[17] CSX's NS's testimony that they plan to invest zero dollars of their own money into infrastructure projects is especially noteworthy considering that freight railroads have already directly benefitted from billions of dollars of public investment for intercity passenger rail development over the last 15 years, much of which has involved investments in host railroad infrastructure. *See* U.S. Department of Transportation and Federal Railroad Administration Amicus Brief at 6 (Congress appropriated over $10 billion for grant programs authorized in 2008, nearly $3 billion for grant programs authorized in 2015, and $66 billion through the 2021 Bipartisan Infrastructure Law).

transportation *of the rail carrier*, with *the carrier* having the burden of demonstrating that the additional trains will impair the freight transportation." 49 U.S.C. § 24308(e) (emphasis added). The Port is not the "rail carrier" contemplated by the statute because it does not own any of the track over which Amtrak seeks to travel. Accordingly, CSX and NS are the entities that bear the evidentiary burden here and the Port's evidence—which is only about impacts to the Port and not about impacts to CSX or NS—does not help CSX or NS meet their burden.

Even assuming that the Port's evidence had bearing upon the analysis, that evidence does not demonstrate that restoration of the *Gulf Coast* service would cause an unreasonable impairment to the Port. First, the testimony regarding existing Port operations and asserted impacts was unsubstantiated by documents, data, or quantitative analysis.[18] Second, the Port did not show that asserted effects of restoring the *Gulf Coast* service are unreasonable in view of how similarly sized ports perform.[19] Finally, portions of the Port's testimony were internally inconsistent, as well as inconsistent with the 2021 CSX/NS RTC Study, even though that model accounted for Port traffic.[20]

In short, the Port's evidence does not establish that *Gulf Coast* service would cause any unreasonable impairment of Port operations. As the Port's witnesses acknowledged, the new infrastructure the Port is seeking purportedly to mitigate the impacts of Amtrak would benefit the Port even if Amtrak never ran a single train.[21] Ultimately, it is telling that the 2021 CSX/NS RTC

[18] *See* Joint Exs. 24-24C (Port Initial Evidence); 33-33A (Port Reply Evidence); 43 (Port Rebuttal Evidence); Hr'g Tr. at 2374-674 (Port Trial Evidence); *see also* Hr'g Tr. at 2635-36 (Golden) (acknowledging that the Port did not perform quantitative analysis).

[19] *See generally* Joint Exs. 24-24C (Port Initial Evidence; 33-33A (Port Reply Evidence); 43 (Port Rebuttal Evidence); Hr'g Tr. at 2374-674 (Port Trial Evidence).

[20] *Compare, e.g.,* Hr'g Tr. at 2640-41 *with* 2655-57; *see also, e.g.*, Joint Ex. 31 at 42.

[21] *See* Hr'g Tr. at 2647 (acknowledging that constructing flyover track would result in operating conditions superior to present conditions at Port); 2424-27 (acknowledging benefits that the Port's infrastructure proposals would deliver to the Port even if Amtrak never ran a train).

Study does not recommend a single one of the infrastructure projects mentioned in the Port's evidence, even though the study modeled railroad operations all around the Port facilities where no Amtrak operations are planned. The Port's evidence does not demonstrate any unreasonable impairment.

D. There Is No Dispute that the Criteria of Section 24308(e)(2)(B) are Satisfied.

At the conclusion of the hearing on the record on May 12, 2022, the Chair observed that Section 24308(e) also instructs that the Board "shall consider…when establishing scheduled running times, the statutory goal of Amtrak to implement schedules that attain a system-wide average speed of at least 60 miles an hour that can be adhered to with a high degree of reliability and passenger comfort." 49 U.S.C. § 24308(e)(2)(B). The Chair then stated that "there's been virtually no testimony by anybody in this case so far [about] the 60 miles an hour part" of the statute. Hr'g Tr. 4042. On this point, Mr. Jim Blair from Amtrak testified to the following:

> Q. Are you aware that the statute that is at issue here requires that the Board consider when deciding whether to order service, the statutory goal of Amtrak to implement schedules that attain a systemwide average speed of at least 60 miles an hour that can be adhered to with a high degree reliability and passenger comfort?
>
> A. Yes, I am.
>
> Q. Will the Gulf Coast service be compatible with that statutory goal?
>
> A. We believe it will. The maximum authorized speeds on the line are 79 miles an hour for passenger trains and so that gives us a good opportunity to -- to try and meet that standard.

Hr'g Tr. at 3004-05. No party challenged that testimony. CSX, NS, and the Port were afforded ample opportunity to question Mr. Blair on this and did not do so. Accordingly, this unchallenged fact must be taken as established.

In Section 24308(e)(2)(B), Congress contemplated that in certain circumstances, the Board might need to involve itself in "establishing scheduled running times" for Amtrak. 49 U.S.C.

§ 24308(e)(2)(B); *see id.* at § 24308(e)(1) (stating that "after a hearing on the record, the Board may order the carrier, within 60 days, to provide or allow for the operation of the requested trains on a schedule *based on legally permissible operating times*" (emphasis added); *compare also* 49 U.S.C. § 24308(e)(2)(A) (setting forth what the Board "shall consider" "when conducting a hearing" *with* 49 U.S.C. § 24308(e)(2)(B) (setting forth what the Board "shall consider" "when establishing scheduled running times"). Here, since the maximum authorized passenger speeds are already timetabled for the Gulf Coast, no such order from the Board is required for Amtrak trains to operate at the 79 mile-per-hour maximum speeds described by Mr. Blair. No one has challenged that the scheduled running times that Amtrak has proposed will allow Amtrak to attain a systemwide average speed of at least 60 miles-per-hour that can be adhered to with a high degree reliability and passenger comfort. Accordingly, this statutory criterion must be taken as established.

E. The Public Interest is Best Served by Allowing Additional Amtrak Service in Accordance with Section 24308(e).

As noted above, the Board's request for additional evidence following the close of the hearing on May 12 was rooted in its desire to protect the public interest. Amtrak recognizes and appreciates the Board's concern for the public interest, which is foundational to Amtrak's mission and services. However, Amtrak respectfully submits that Section 24308(e) is itself a Congressional determination that increased Amtrak service is in the public interest. Indeed, as discussed above, the statute was specifically enacted to address exactly the situation that is occurring here—freight carriers obstructing and delaying additional rail passenger service by demanding "inordinate capital improvements" as a condition of Amtrak's use of their lines to provide such service. H.R. Rep. No. 96-1041, at 42 (Conf. Rep.).

Accordingly, Congress posed a specific question the Board "shall consider" in Section 24308(e), which is "whether an order [for additional Amtrak intercity passenger service] would impair unreasonably freight transportation of the rail carrier, with the carrier having the burden of demonstrating that the additional trains will impair the freight transportation." 49 U.S.C. § 24308(e)(2). Unlike many of the other statutes administered by the Board, generalized public interest concerns were not part of the statutory framework Congress expressly prescribed in Section 24308(e).[22] And as the Supreme Court has stated, "no matter how 'important, conspicuous, and controversial' the issue…an administrative agency's power to regulate in the public interest must always be grounded in a valid grant of authority from Congress." *Food & Drug Admin. v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 161 (2000).[23]

Amtrak also appreciates the Board's concern for the current state of the rail industry as a whole. Hr'g. Tr. at 4059. However, Section 24308(e) does not permit considerations of short-term national freight rail industry issues to decide the questions of whether and how passenger rail service should be operated along a particular line. The history of this matter, and the delay in restoring *Gulf Coast* service, illustrate the point—there will always be some short-term economic

[22] *Cf., e.g.,* 49 U.S.C. § 11324(b)(2) ("In a proceeding under this section which involves the merger or control of at least two Class I railroads, as defined by the Board, the Board shall consider at least . . . (2) *the effect on the public interest* of including, or failing to include, other rail carriers in the area involved in the proposed transaction . . . ."); 49 U.S.C. § 11102 (a) ("The Board may require terminal facilities, including main-line tracks for a reasonable distance outside of a terminal, owned by a rail carrier providing transportation subject to the jurisdiction of the Board under this part, to be used by another rail carrier *if the Board finds that use to be practicable and in the public interest* without substantially impairing the ability of the rail carrier owning the facilities or entitled to use the facilities to handle its own business."); 49 U.S.C. § 10705 (a)(1) ("The Board may, and shall *when it considers it desirable in the public interest,* prescribe through routes, joint classifications, joint rates, the division of joint rates, and the conditions under which those routes must be operated, for a rail carrier providing transportation subject to the jurisdiction of the Board under this part.") (emphases added).

[23] Throughout these proceedings, the Board has cited the quote at page 61 of CSX's and NS's December 23, 2021 rebuttal brief (Joint Ex. 41) as the source of the Board's obligation to act as a "guardian of the public interest." The statute at issue in that case—49 U.S.C. § 11701(a)—provides the Board with extremely broad authority to "begin an investigation . . . on the Board's own initiative" into any "issues that are of national or regional significance" for rail carriers. *See Public Service Company of Colorado d/b/a Xcel v BNSF Railway Company,* NOR No. 42057, slip op. at 3-4 (S.T.B. served Jan. 19, 2005) (discussing the scope of the Board's authority as the "guardian of the general public interest").

concern that a host railroad may raise to obstruct passenger service over the long term. Amtrak respectfully submits that in Section 24308(e), Congress already reflected its determination that it is in the public interest to allow additional Amtrak service, absent a demonstration by the freight railroads of a serious adverse impact on their business.[24] And in both PRIIA and the FAST Act, Congress then explicitly determined that this specific additional service—the *Gulf Coast* service—is in the public interest.

The public interest weighing in favor of restoring *Gulf Coast* service is further demonstrated by the extensive comments at the Board's public hearing and filed on the record by parties who support the restoration of the *Gulf Coast* service, including the Department of Transportation, the Federal Railroad Administration, elected officials, passenger rail groups, communities, and individual members of the public.[25] Accordingly, it has been clearly established that restoration of *Gulf Coast* service is in the public interest.

CONCLUSION

Amtrak greatly appreciates that the Board has worked extremely diligently throughout this proceeding. It is now more than sixteen months since Amtrak first filed its application seeking to start the *Gulf Coast* service on or about January 1, 2022.[26] Amtrak respectfully requests that the

[24] *Cf., e.g., Ginsburg, Feldman & Bress v. Federal Energy Administration*, 591 F.2d 717, 739, *aff'd en banc and per curiam by an equally divided court*, 591 F.2d 752 (D.C. Cir. 1978), *cert. denied*, 441 U.S. 906 (1979) (holding that the balancing of the public interest "had already been done by Congress when it passed the Act" and has "already been the subject of a policy judgment made by Congress"); *Marin All. For Med. Marijuana v. Holder*, 866 F. Supp. 2d 1142, 1161 (N.D. Cal. 2011) ("Where the elected branches have enacted a statute based on their understanding of what the public interest requires, this Court's 'consideration of the public interest is constrained[,] for the responsible public officials … have already considered that interest.'").

[25] *See, e.g.*, Amtrak Ex. 1, U.S. Department of Transportation and Federal Railroad Administration Amicus Brief (filed Dec. 14, 2021); Comment of Hon. Roger Wicker, U.S. Senator for Mississippi (filed Apr. 21, 2021); Comment of Hon. Phil Bryant, former Governor of Mississippi (filed Apr. 22, 2021); Comment of Southern Rail Commission (filed Apr. 23, 2021); Comment of Rail Passengers Association (filed May 17, 2021); Comment of William L. Sones, Jr. (filed Feb. 3, 2022).

[26] With this filing, Amtrak also respectfully requests a ruling on its pending February 10, 2022 motion containing a renewed request for an interim order requiring NS to provide Amtrak with access to NS's rail lines so that Amtrak can begin scheduling crew qualification trains for the Gulf Coast service. As Amtrak explained in that motion, crew

Board bring this matter to a quick resolution based on CSX's and NS's failure to meet their burden of proof as of the close of the hearing on May 12, 2022. However, if the Board chooses to consider additional evidence in this proceeding, Amtrak respectfully requests the opportunity to respond to any additional evidence offered by CSX, NS, or the Port.[27]

For the above-stated reasons, as well as those set forth in Amtrak's prior submissions and at the evidentiary hearing, Amtrak respectfully requests that the Board order CSX and NS, within 60 days, to allow for the operation of the *Gulf Coast* service on the schedule and terms requested by Amtrak.

July 27, 2022

Respectfully submitted:

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qualification will take some time, so an interim order is necessary to ensure that Amtrak employees are prepared to safely and reliably operate the *Gulf Coast* service whenever the Board orders it can commence.

[27] Moreover, although Amtrak certainly hopes there will not be a need for Amtrak to bring any future applications to the Board under Section 24308(e), Amtrak also would welcome the opportunity to provide further briefing to the Board on potential process improvements for any future Section 24308(e) proceedings, keeping in mind Congress's desire that such proceedings should provide Amtrak an "expedited" means to add new service.

CERTIFICATE OF SERVICE

I, Jessica Ring Amunson, certify that I have this day served copies of this document upon all parties of record in this proceeding, by email on the service list to Finance Docket No. 36496.

July 27, 2022

/s/ Jessica Ring Amunson
Jessica Ring Amunson

EXHIBIT A

HIGHLY CONFIDENTIAL

BEFORE THE

SURFACE TRANSPORTATION BOARD

	)	
	)	
	)	**Application of the National Railroad**
	)	**Passenger Corporation Under**
Docket No. FD 36496	)	**49 U.S.C. § 24308(e) – CSX**
	)	**Transportation, Inc., and Norfolk**
	)	**Southern Corporation**
	)	

Supplemental Verified Statement

of

Clayton S. Johanson
Principal Consultant

and

Darkhan Mussanov
Senior Consultant

DB E.C.O. North America, Inc.

Engineering and Consulting Services

On Behalf of

The National Railroad Passenger Corporation

Introduction

We are Clayton S. Johanson, Principal Consultant and Darkhan Mussanov, Senior Consultant with DB E.C.O. North America, Inc. We are the same Clayton Johanson and Darkhan Mussanov that previously provided a reply verified statement and a surrebuttal verified statement, in Surface Transportation Board ("STB") 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*. Our qualifications are set out comprehensively in the reply verified statement submitted in this proceeding.

The DB E.C.O. NA ("DB") team were retained as experts by the National Railroad Passenger Corporation ("Amtrak") to analyze the railroad capacity implications of the proposed addition of Amtrak's Gulf Coast Service on CSX Transportation, Inc. ("CSX") and Norfolk Southern Railway Company ("NSR"). More specifically, DB was retained to analyze the implications of the proposed Gulf Coast Service on a corridor that begins with CSX's New Orleans & Mobile ("NO&M") Subdivision,[1] continues onto NSR's Back Belt Line,[2] and concludes at Amtrak's New Orleans Union Passenger Terminal ("NOUPT"). DB refers to this corridor as the Gulf Coast Corridor.

DB is a subsidiary of Deutsche Bahn AG, the German Federal Railway company. The organization is engaged in operations, planning, management, and engineering consulting services to the freight rail, passenger rail, and transit industry, and is based in Sacramento, California. The

[1] The NO&M subdivision runs from Sibert Yard in Mobile to NOT Junction in New Orleans.

[2] The Back Belt Line runs to East City Junction in New Orleans.

company has been active in the United States since 2017 and has developed a diverse portfolio of clients spanning the North American continent.

Assignment and Summary of Findings

Amtrak asked DB to analyze certain information provided by CSX and NSR to respond to questions posed by the Surface Transportation Board ("the Board") at the end of the evidentiary hearing on May 12, 2022. To accomplish that, DB evaluated real-world operational data provided by CSX and NSR, and data previously provided in connection with the RTC analysis conducted by CSX and NSR. DB then prepared two analyses.

The first analysis that DB prepared is based on a study of network velocity metrics for several subdivisions, or sections of subdivisions, across the CSX and NSR networks where Amtrak services presently operate. This analysis contextualizes the rail carriers' assertion that restoring Gulf Coast service would cause a diminution in freight velocity on the Gulf Coast Corridor that would unreasonably impair their freight operations. Due to the differences in data provided by both railroads, two slightly different methodologies were used to analyze the CSX and NSR data, respectively. This will be covered in greater detail in this verified statement.

The second analysis investigated potential impacts to local train operations on the NO&M Subdivision using both real world data and data generated by the 2019 Freight ("2019 F") and 2019 Passenger ("2019 P") RTC simulations. This analysis contextualizes projected impacts to the local trains on the subdivision through comparison to their current real-world operations. After performing the additional analyses, DB has concluded:

- The average train velocity on the NO&M Subdivision is within a standard deviation of average train velocity on comparable CSX corridors that host Amtrak service.

- The average train velocity on the Back Belt Line is within a standard deviation of average train velocity on comparable NSR segments that host Amtrak service.
- Average train velocity on the NO&M Subdivision decreased by 33% (8.7 mph) during the two-year period from September 2019 through August 2021. This decrease was more than 12 times larger than the 0.7 mph decrease that the RTC model prepared by CSX and NSR predicts would occur with the introduction of Amtrak Gulf Coast service.
- The COVID-19 pandemic created an opportunity to assess the impact of reduced Amtrak frequencies on CSX subdivisions like the NO&M Subdivision. Using average train velocity as a metric of corridor fluidity, four of the six analyzed subdivisions showed a percentage decrease in velocity during the period of reduced passenger service. On the analyzed subdivisions, prolonged reductions in Amtrak frequencies, ranging from 33% to 57% from pre-pandemic schedules, did not directly lead to improvements in corridor fluidity. Proportionally, the reduction in Amtrak service on the segments analyzed did not have a significant measurable effect on average train velocity.
- An 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 velocity.
- Examination of Customer Switch Data ("CSD") provided by CSX shows that the restoration of Amtrak service to the Gulf Coast Corridor will not cause appreciable impacts to customers served by CSX local trains. The 2019 F and 2019 P RTC models show that even with the introduction of Amtrak Gulf Coast service, local trains on the NO&M Subdivision will continue performing in a manner consistent with operations on days where CSX reported achieving a 100% "Customer Switch Data" (CSD) rate.

CSX Network Data Analysis

In late June 2022, CSX provided counsel for Amtrak with additional data on subdivisions across its network where Amtrak currently operates, which included metrics such as train velocity, on-time origination percentage, train length, ton-miles, crew starts, and CSD percentage. The data was aggregated by day for each subdivision between January 1, 2019, and September 8, 2021. CSX did not share its methodology for calculating each metric, and the data points were analyzed at face value.

DB compared fluidity on the NO&M Subdivision against six other subdivisions on the CSX network: the Auburndale, Charleston, Columbia, Grand Rapids, Lakeland, and Nahunta Subdivisions. These subdivisions were selected because they had between one and three existing daily Amtrak round trips and large stretches of single track through generally flat terrain, which is similar to the two daily round trips proposed for the mostly single-track NO&M Subdivision. Subdivisions with higher Amtrak frequencies and greater amounts of double-track, such as the RF&P Subdivision, or that pass through mountainous territory, such as the Keystone Subdivision, were excluded because they are more likely to have substantially different operational characteristics. Subdivisions like the Aberdeen Subdivision were excluded due to a lack of data during the analysis period, covering data from September 1, 2019 through August 31, 2021. This period was selected because it was the most recent two-year period for which data was available and complete for each full month. This period also encompasses the period of time when Amtrak reduced services due to the Covid-19 pandemic from early 2020 to mid-2021.

Daily average freight train velocity, as provided by CSX, was used to compare corridor fluidity on each subdivision over the analysis period. The speed at which a train moves through a

subdivision directly affects the consumption of a railroad's capacity. As a result, corridor fluidity is optimized by increased train velocity indicative of efficient operations.

Of the subdivisions analyzed, the average train velocity on the NO&M Subdivision is within one standard deviation of average train velocity on the Charleston, Columbia, and Grand Rapids Subdivisions (**Figure 1**).

Figure 1 –Distribution of daily average train velocities based on CSX data from subdivisions around the CSX network. For each subdivision, the labelled values are, from top to bottom, mean average plus one standard deviation, mean average, and mean average minus one standard deviation. Number of Amtrak round trips per week on each subdivision listed on the bottom.

Furthermore, on the NO&M Subdivision, CSX's data shows that, when averaged by month, train velocity decreased by 33% from September 2019 through August 2021 with no Amtrak service operating. The 8.7 mph decrease in train velocity that CSX experienced during this time solely as the result of freight train operations is twelve times greater than the 0.7 mph decrease in velocity the RTC study prepared by CSX and NSR predicts will result from restoration of Gulf Coast service in the 2019 P case.

Figure 2 NO&M Subdivision monthly average train velocity and ton-miles

DB also looked at whether a reduction in Amtrak service is correlated with increased freight velocity. In 2020, Amtrak reduced service frequency on several long-distance routes from daily service to 3 or 4 roundtrips per week in response to the effects of the COVID-19 pandemic on passenger rail demand. Service was subsequently restored in 2021. Monthly average train velocity and ton-mile data for the two-year period from September 2019 through August 2021 was analyzed to examine how CSX traffic and performance levels fluctuated before, during, and after the reductions in passenger service. As shown in **Table 1**, fluidity did not improve during the periods of Amtrak service reductions.

Table 1: Changes in CSX-reported train velocity and ton-mile metrics on CSX subdivisions during the reduction period in Amtrak service due to the COVID-19 pandemic[3]

CSX Subdivision	Reduction in Amtrak roundtrips per week (time period)	Percent change in velocity	Percent change in ton-miles	Conclusion
Auburndale	14 to 7 (Jul 20-Jun 21)	-3%	+18%	Amtrak reduction did not improve corridor fluidity
Charleston	21 to 17 to 13 (Jul 20-Oct 20-Jun 21)	-16%	+13%	Amtrak reduction did not improve corridor fluidity
Columbia	7 to 3 (Jul 20-Jun 21)	-16%	0%	Amtrak reduction did not improve corridor fluidity
Grand Rapids	7 to 0 (Mar 20-Jun 20)	-9%	0%	Amtrak reduction did not improve corridor fluidity
Lakeland	7 to 3 (Jul 20-Jun 21)	+35%	-7%	Increase in velocity was from a low base [redacted]
Nahunta	21 to 14 (Jul 20-Jun 21)	+2%	+19%	Small velocity increase is within a standard deviation from the average

Of the six subdivisions, only the Lakeland and Nahunta Subdivisions experienced an increase in train velocity during the period when fewer passenger trains were operating on the CSX corridors. In the case of the Lakeland Subdivision, the 35% increase was from a low initial train velocity of [redacted] mph. Train velocity on the Nahunta Subdivision increased 2% ([redacted] mph), but this increase was well within a standard deviation ([redacted] mph) of the average for the subdivision.

When Amtrak service was reduced from 7 to 3 roundtrips per week on the Columbia Subdivision, and completely suspended on the Grand Rapids Subdivision, CSX velocity decreased. This indicates that corridor fluidity degraded despite fewer passenger trains running. On the Auburndale and Charleston Subdivisions, freight traffic increased, passenger traffic decreased, and train velocity decreased during the measurement period, suggesting that the

[3] Absolute values of the change in velocity and ton-miles can be found in the Appendix starting on page 7.

impacts of higher freight traffic on corridor fluidity outweighed the effect of corresponding reductions in passenger traffic.

On the analyzed subdivisions, prolonged reductions in Amtrak frequencies, ranging from 33% to 57% from pre-pandemic schedules, did not have a significant measurable effect on average train velocity as shown in the Appendix.

Based on review of these corridors, there is evidence that the removal or addition of Amtrak service does not in itself make a meaningful difference in corridor fluidity as measured by average train velocity. The corridors saw changes that were within their normal operational ranges. CSX and NSR have stated that the addition of Amtrak service without additional infrastructure will immediately degrade their freight service on the corridor.[4] However, the analyses set out above demonstrate that on four of the six analyzed subdivisions, average train velocity actually decreased when Amtrak frequency was reduced. From this, DB concludes that there is no direct and significant correlation between an increase or decrease in passenger trains (in numbers analogous to the proposed Gulf Coast Service) and freight train velocity.

NSR Back Belt Line and Network Data Analysis

An analysis of NSR train velocity metrics was conducted utilizing additional data provided to counsel for Amtrak in late June and early July by NSR. The data provided a daily average freight train speed for a two- to four- mile segment of six corridors on the NSR network for the period from January 1, 2019, to December 31, 2019. Three of the corridors were selected by NSR, and three were selected by Amtrak. NSR indicated that for purposes of the data it provided, only freight trains that operated across the full segments (*i.e.*, excluding passenger

[4] CSXT_NSR Opening Evidence at 21.

trains and trains that went into yard or foreign tracks in the middle of the section) were included in its calculations. Additionally, NSR provided answers to a questionnaire from Amtrak on the traffic and infrastructure characteristics of each of the analyzed segments.

Using the data described above, and 2019 OS data previously provided by NSR for the Back Belt,[5] DB was able to compare velocity across the segments. In its use of 2019 OS data for the Back Belt, DB attempted to mirror the methodology NSR said that is used for the other segments. DB therefore calculated the velocity of individual freight trains that traversed the full segment between Elysian Fields and East City Junction using timestamps and mileposts from the OS data. Daily average train velocity was then calculated using the mean average of individual freight train velocities on each day. **Table 2** summarizes the analyzed segments.

Table 2: Traffic and Infrastructure Characteristics of Analyzed NSR Segments

Location	Subdivision	Segment Length (mi)	Track Configuration	Passenger Trains per Day	Avg Freight Trains per Day[1]
Birmingham, AL	AGS South	3.00	Double track	2	[redacted]
Greensboro, NC	Danville District / Raleigh West Line	2.81	2.01 mi double track 0.80 mi single track	10	[redacted]
Meridian, MS	AGS South / NO&NE	4.09	Double track	2	[redacted]
Norfolk, VA	Lambert's Point Branch / Norfolk Line	3.17	Double track	4	[redacted]
Porter, IN	Chicago Line	4.00	Double track	14	[redacted]
Toledo, OH	Chicago Line	3.30	Double track	4	[redacted]
New Orleans, LA	Back Belt Line	3.15	Double track	2 (+4 proposed)	[redacted] (OS Data)[2]

1. Sum of number of average NSR daily through trains, NSR daily local trains, foreign daily through trains, and foreign daily local trains listed in NSR response to data questionnaire

2. Median daily count of freight trains making full movement between Elysian Fields and East City Jct. Trains that had these control point timestamps and did not report passenger train symbols were included. 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. The methodology utilized by NSR would not count these trains because they did not fully traverse the section. Therefore, the OS Data count may undercount the actual number of trains operated.

Figure 3 depicts distributions of daily average train velocities as well as the mean average and average plus/minus one standard deviation for each analyzed segment. Average

[5] DB relied on the 2019 OS data for the Back Belt because NSR did not include in its post-hearing production any data on train velocity or traffic metrics for the Back Belt Line.

train velocities at Birmingham, Greensboro, Meridian, and Toledo are within one standard deviation of the average Back Belt train velocity. In the case of the Porter, IN segment, maximum authorized main line speeds are high and there is a substantial number of through intermodal traffic, leading to much higher daily average train velocities.

Figure 3 Distribution of daily average train velocities based on NSR data from locations around the NSR network. For each location, the labelled values are, from top to bottom, mean average plus one standard deviation, mean average, and mean average minus one standard deviation. The number of Amtrak trains per day at each location is listed on the bottom.

Looking at just the mean averages, if train velocity was directly correlated with Amtrak train frequency, one would expect to see locations with the most passenger traffic having the lowest train velocities. However, this relationship does not exist. For example, the two locations with the most Amtrak trains per day: Porter and Greensboro, have the 1st and 6th highest average train velocities, respectively.

Based on the review of these corridors, the Back Belt Line has an average daily freight train velocity that is comparable to other locations on the NSR network, as identified by both NSR and Amtrak. In the case of Greensboro, NC, the volume of Amtrak traffic is higher than

the 6 trains per day (2 TPD existing, 4 TPD proposed) that would operate on the Back Belt Line after restoration of Amtrak Gulf Coast service, while the distribution of average train velocities was broadly similar. The existing level of service of operations through all analyzed locations during this period was assumed to be satisfactory to NSR. Additionally, this data shows that, by itself, the frequency of Amtrak train service does not correlate with changes in average train velocity. An alternate hypothesis is that freight train velocity is more dependent on freight train operations. Therefore, based on our analysis and experience, DB does not expect the restoration of Amtrak Gulf Coast service to the Back Belt Line to change fluidity beyond what is acceptable at comparable locations on the NSR network.

CSX NO&M Customer Switch Data (CSD) Analysis

In order to address the Board's questions regarding customer service on the Back Belt, at the request of Amtrak's counsel, DB reviewed Customer Switch Data (CSD) provided by CSX. The CSD metric measures the number of rail cars pulled, delivered, or placed on-time within the standard on a calendar day. Using CSX's CSD measurement, combined with the real-world OS-data and RTC model outputs, DB sought to contextualize the potential impact to rail customers from the restoration of Amtrak Gulf Coast service.

DB analyzed OS data from all days on the Gulf Coast Corridor where CSX reported a 100% CSD rate for the calendar day ("100% CSD day"). A 100% CSD performance rate was interpreted to mean that every car was pulled, delivered, or placed in a manner such that it was within the CSX standard with respect to the metric. Therefore, on days when every car was pulled, delivered, or placed within standard, the local trains responsible for transporting those cars had run times and arrival windows that allowed them to meet the 100% CSD rate. Furthermore, on 100% CSD days, it follows that CSX provided a satisfactory level of service to

rail customers (at least in CSX's view). Rail customer impacts were evaluated by comparing run times and arrival windows of local trains in the OS data on 100% CSD days with the simulated run times and arrival windows in the RTC simulation outputs.

The analysis assumed that all shippers on the Gulf Coast Corridor are served by local trains. Five local train symbols were analyzed. These trains are identified within this report as Local Trains A, B, C, D, and E. Each local train's work plan, as described in the CSX-provided Transportation Service Plan (TSP) and RTC .TRAIN files, was used to define three segments for which run times were calculated. Outbound travel was calculated from a control point close to the train's origination point to the last control point before the furthest shipper or group of shippers' facilities. Time spent past this control point was then used to approximate a "work time." Finally, return travel time to the origination point was calculated. Note that the outbound and inbound travel times could also include time spent serving shippers enroute. **Table 3** lists the analyzed local trains as well as the endpoints of each train's three analysis segments.

Table 3 Analysis Segments of NO&M Local Trains

RTC run times were calculated for each segment using the timestamps contained in the .ROUTE output files previously provided by CSX for two scenarios: 2019 F (existing freight traffic) and 2019 P (existing freight traffic plus Amtrak Gulf Coast service). The RTC analysis

included data from all 30 seeds run for each scenario. Each seed run consisted of a 14-day simulation, from which the first and last two days were excluded to remove the RTC warmup and cooldown times required to populate the simulated network with traffic. This resulted in 10 days of data from 30 seeds, or 300 days (about 10 months) of simulation data per scenario.

Similarly, OS data from 2019 provided by CSX was used to calculate local train segment run times. The data was filtered to only include data from days corresponding to 100% reported CSD rates. DB thus compared the service outcomes from the RTC model with the operational outcomes where CSX achieved a 100% CSD metric. Data from days when locals made short turns (i.e., they did not complete the entire TSP) was excluded. DB excluded these days as outlier events because the underlying reasons for not making the full run are not known. **Figure 4** shows median segment run times in hours for the five NO&M local trains.

Figure 4 Median local train segment run times per CSX-provided RTC (2019 F and 2019 P) and OS data.

Four of the five local trains (A, B, C, and D) experienced the following:

- End to end run times in RTC data (provided by CSX) were lower than the real-world OS data run times on the days where CSX reported 100% CSD
- Median end to end run times for the 2019 P scenarios ranged from 12 minutes to 30 minutes longer than the 2019 F scenarios but remained below the OS data run times. 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.

The fifth local train, Local Train E had a 2019 P median end-to-end run time that was 162 minutes (2.7 hours) longer than in the 2019 F scenario. Moreover, when compared to the CSX

OS data on 100% CSD days, the OS data median run time was almost four hours less than in the 2019 F RTC scenario. To provide additional context to Local Train E's operations, a follow-up analysis was performed that looked at the train's range of typical arrival times at key shipper locations in the OS data on 100% CSD days. Arrival times during these windows were considered to be consistent with an acceptable level of service for Local Train E's customers. The timestamps of Local Train E at the same key locations were then pulled from 2019 P RTC data to determine the impacts of passenger rail service on rail shippers. **Table 4** lists the resulting arrival distributions for train E.

Table 4 Local Train E Arrival Time Distributions at Key Shipper Locations

Direction		**Southbound**			**Northbound**	
Location		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
OS Data	Arrival Times on 100% CSD Days	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
RTC Data (2019 P)[2]	% of Arrivals After Window[1]	0.0%	0.0%	3.5%	9.7%	19.0%
	% of Arrivals During Window	97.8%	100.0%	96.5%	51.3%	81.0%
	% of Arrivals Before Window	2.2%	0.0%	0.0%	39.1%	0.0%

1. Includes any arrivals during the early hours of the following morning
2. Includes data from all 30 seed runs; Excludes data from first and last two days of each 2-week simulation

Per Local Train E's CSX-provided TSP, most of its shippers are served on the southbound segment through [redacted]. On this segment, Local Train E arrives during the 100% CSD window greater than 95% of the time. The remaining shippers are served on the northbound segment ending at [redacted], where less than 10% of arrivals are later than the 100% CSD window. Even though the CSX/NSR RTC model predicts that Local Train E will have a longer median run time than in the OS data, the vast majority of the Local Train E runs simulated in RTC after the restoration of Amtrak Gulf Coast service still fall within the arrival range actually experienced by trains on 100% CSD days. No shippers are served on the

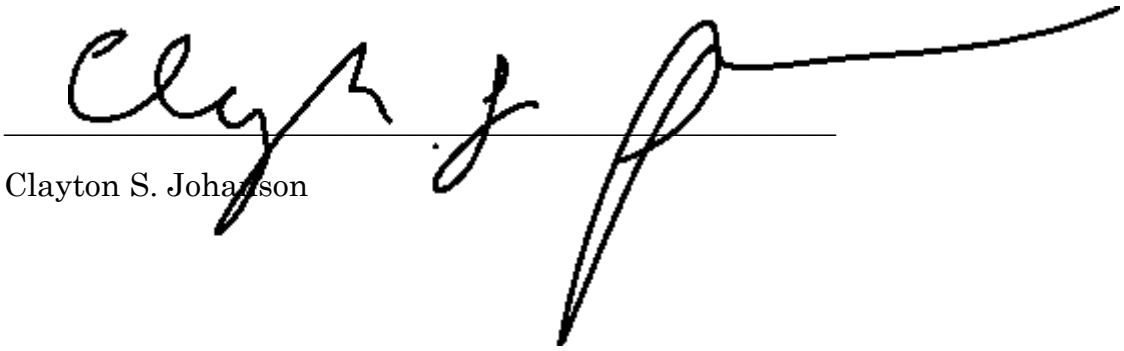
northbound segment ending at [redacted] per the TSP. Therefore, even though the median run time may be higher, most of Local Train E's shippers will continue to see an acceptable level of service with the introduction of passenger trains on the corridor.

In conclusion, CSX-provided CSD, OS, and RTC data indicates that after the introduction of Amtrak Gulf Coast service, four out of five local trains (which serve the majority of shippers on the NO&M Sub) will continue to have run times consistent with observed run times on 100% CSD days. Shippers served by the fifth local train will continue to see arrival times within a window consistent with 100% CSD. On 100% CSD days, it follows that CSX provided a satisfactory level of service to rail customers (at least in CSX's view). Therefore, based on its analysis and experience, DB expects the operations of trains serving local shippers on the NO&M Subdivision to remain consistent with satisfactory service after the restoration of Amtrak Gulf Coast service to the corridor.

VERIFICATION

I, Clayton S. Johanson, 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.

Executed on this 27th day of July, 2022.

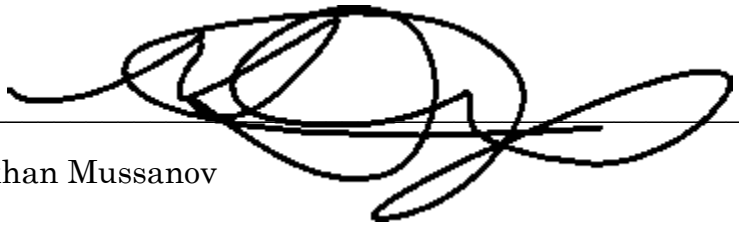


Clayton S. Johanson

VERIFICATION

I, Darkhan Mussanov, 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.

Executed on this 27th day of July, 2022.



Darkhan Mussanov

Appendix to Supplemental Verified Statement of Clayton S. Johanson and Darkhan Mussanov

Gulf Coast Further Data Analysis

DB E.C.O. North America | July 27, 2022

Gulf Coast Further Data Analysis

CSX Network Data Analysis

NSR Back Belt Line and Network Data Analysis

CSX NO&M Customer Switch Data (CSD) Analysis

Mean daily average train velocity (fluidity) on the NO&M Sub is within a standard deviation of several other CSX subdivisions with Amtrak service

CSX provided 2019 daily average train velocities for subdivisions with existing Amtrak service as well as the NO&M Sub

CSX did not share its methodology and assumptions for calculating train velocities, including which train types are included

(1) For each location, top value = avg (μ) + 1 standard deviation (σ), middle value = avg, bottom value = avg − 1 standard deviation
(2) Data covers period from September 1, 2019 through August 31, 2021

On the NO&M Sub, train velocity decreased 33% while ton-miles increased 7% from Sept 2019 through Aug 2021 with no Amtrak service operating

Examples across the CSX network demonstrate that corridor fluidity generally did not improve after a prolonged reduction in Amtrak passenger train frequencies

CSX Subdivision	Reduction in Amtrak roundtrips per week (time period)	Percent change in velocity	Percent change in ton-miles	Conclusion
Auburndale	14 to 7 (Jul 20-Jun 21)	-3%	+18%	Amtrak reduction did not improve corridor fluidity
Charleston	21 to 17 to 13 (Jul 20-Oct 20-Jun 21)	-16%	+13%	Amtrak reduction did not improve corridor fluidity
Columbia	7 to 3 (Jul 20-Jun 21)	-16%	0%	Amtrak reduction did not improve corridor fluidity
Grand Rapids	7 to 0 (Mar 20-Jun 20)	-9%	0%	Amtrak reduction did not improve corridor fluidity
Lakeland	7 to 3 (Jul 20-Jun 21)	+35%	-7%	Increase in velocity was from a low base [redacted]
Nahunta	21 to 14 (Jul 20-Jun 21)	+2%	+19%	Small velocity increase is within a standard deviation from the average

Subdivisions were selected for analysis based on whether they had 1 to 3 Amtrak round trips per day, single-track sections, ran through generally flat territory, and experienced a reduction in Amtrak frequencies during the COVID-19 pandemic.

There was a reduction in passenger service between Winter Haven and West Palm Beach due to the pandemic

Between Winter Haven (FL) and West Palm Beach (FL), Amtrak runs on the CSX Auburndale Sub

One daily roundtrip was removed between July 2020 and June 2021

Roundtrips per Week between Winter Haven and West Palm Beach

	Before July 2020	July 2020-June 2021	After June 2021[1]
Silver Meteor	7	4	7
Silver Star	7	3	7

[redacted]

(1) Amtrak subsequently suspended the Silver Meteor in January 2022

Average train velocity decreased 3% between July 2020 and June 2021 during Amtrak service reduction

There was a reduction in passenger service between Florence and Savannah due to the pandemic

Between Florence (SC) and Savannah (GA), Amtrak runs on the CSX Charleston Sub

Service was reduced between July 2020 and June 2021

	Roundtrips per Week between Florence and Savannah			
	Before July 2020	July 2020-Oct 2020	Oct 2020-June 2021	After June 2021[1]
Silver Meteor	7	4	4	7
Palmetto	7	7	3	7
Auto Train	7	7	7	7

Between July 2020 and June 2021, average daily ton-miles increased by 13% on the Charleston Sub

[redacted]

(1) Amtrak subsequently suspended the Silver Meteor in January 2022

Average train velocity decreased 16% between July 2020 and June 2021 during Amtrak service reduction

There was a reduction in passenger service between Columbia and Savannah due to the pandemic

Between Columbia (SC) and Savannah (GA), Amtrak runs on the CSX Columbia Sub

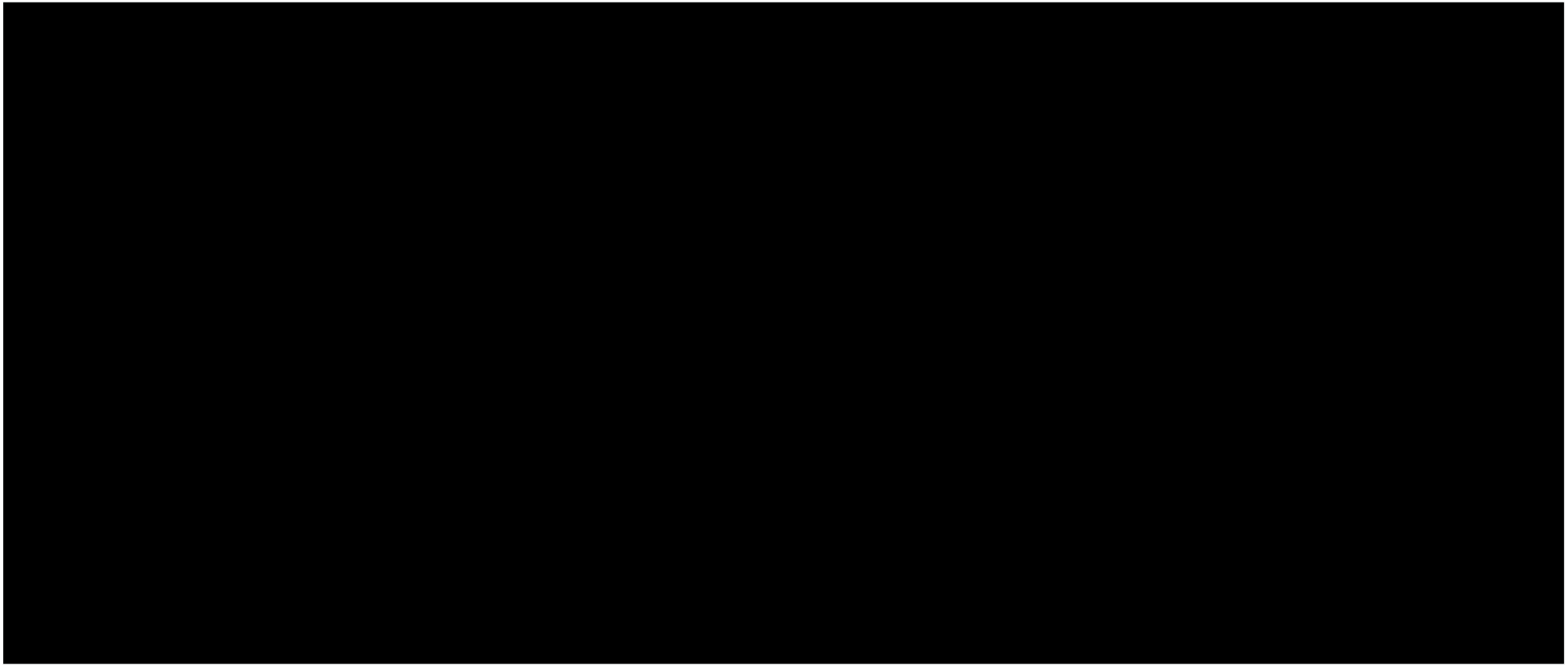
The Silver Star only ran three days per week between July 2020 and June 2021

	Roundtrips per Week between Columbia and Savannah		
	Before July 2020	July 2020-June 2021	After June 2021
Silver Star	7	3	7

Between July 2020 and June 2021, average daily ton-miles changed by <1% on the Columbia Sub

[redacted]

Average train velocity decreased 16% between July 2020 and June 2021 during Amtrak service reduction



There was a reduction in passenger service between Porter and Grand Rapids due to the pandemic

Between Porter (IN) and Grand Rapids (MI), Amtrak runs on the CSX Grand Rapids Sub

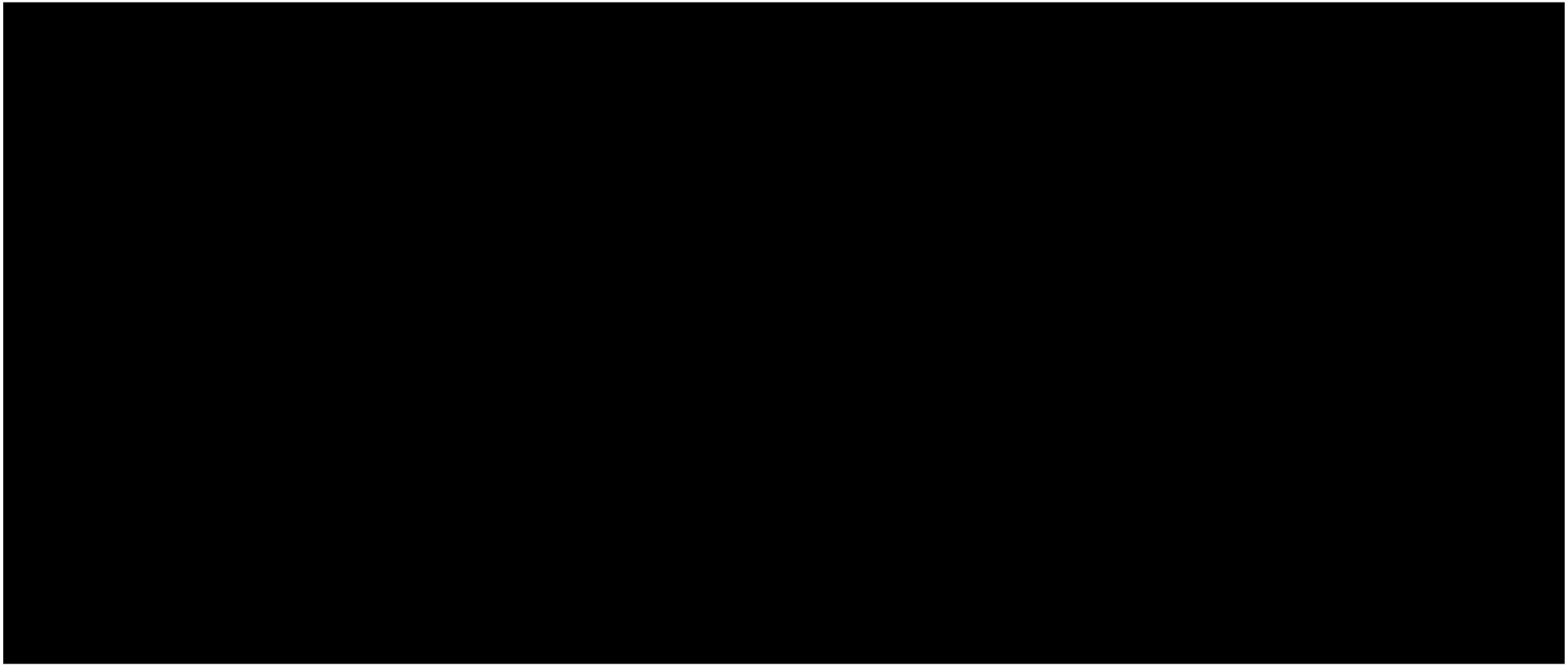
The Pere Marquette was suspended between March and June 2020

	Roundtrips per Week between Porter and Grand Rapids		
	Before March 2020	March 2020-June 2020	After June 2020
Pere Marquette	7	0	7

Between March 2020 and June 2020, average daily ton-miles changed by <1% on the Grand Rapids Sub

[redacted]

Average train velocity decreased 9% between March and June 2020 during Amtrak service reduction



There was a reduction in passenger service between Lakeland and Tampa due to the pandemic

Between Lakeland (FL) and Tampa (FL), Amtrak runs on the CSX Lakeland Sub

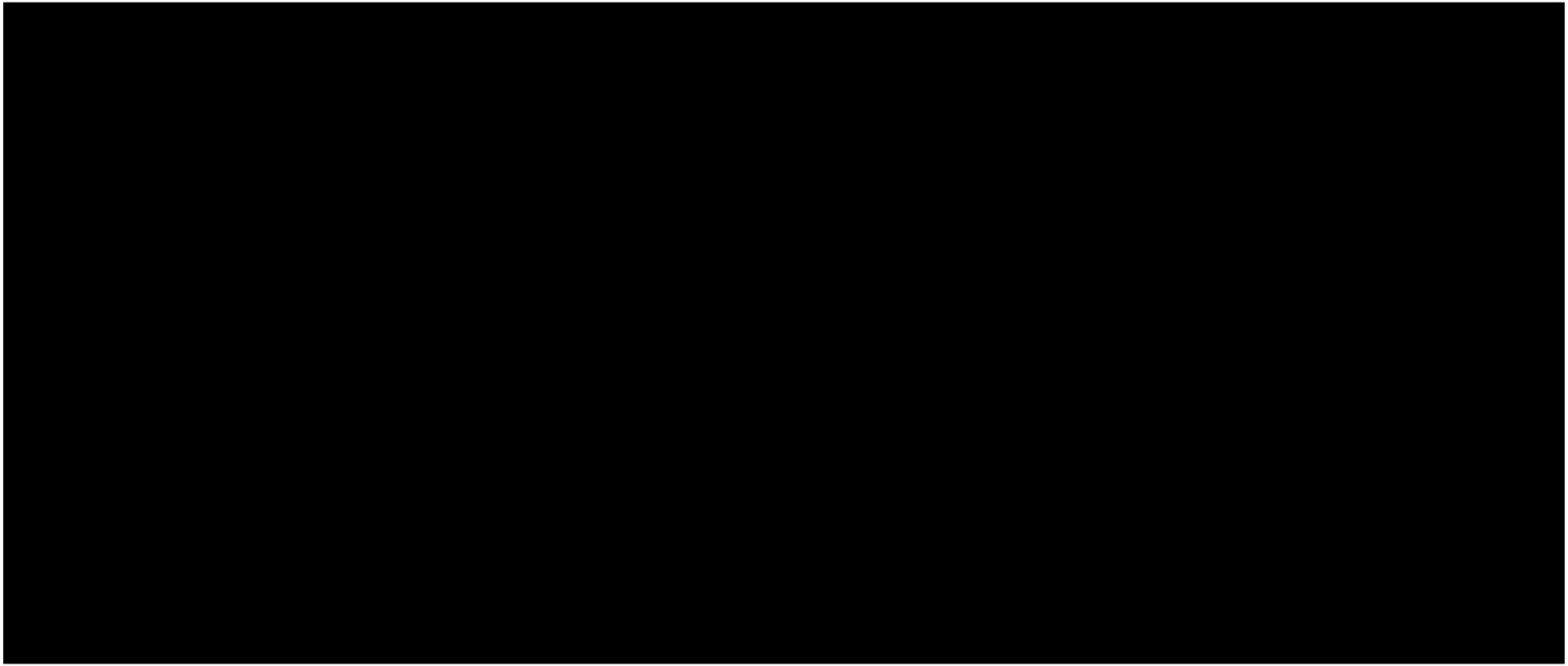
The Silver Star only ran three days per week between July 2020 and June 2021

	Roundtrips per Week between Lakeland and Tampa		
	Before July 2020	July 2020-June 2021	After June 2021
Silver Star	7	3	7

Between July 2020 and June 2021, average daily ton-miles decreased by 7% on the Lakeland Sub

[redacted]

Average train velocity increased by 35% between July 2020 and June 2021 from a low base during Amtrak service reduction



There was a reduction in passenger service between Savannah and Jacksonville due to the pandemic

Amtrak runs on the CSX Nahunta Sub between Savannah (GA) and Jacksonville (FL)

Amtrak operated one fewer roundtrip per day between July 2020 and June 2021

Roundtrips per Week between Savannah and Jacksonville

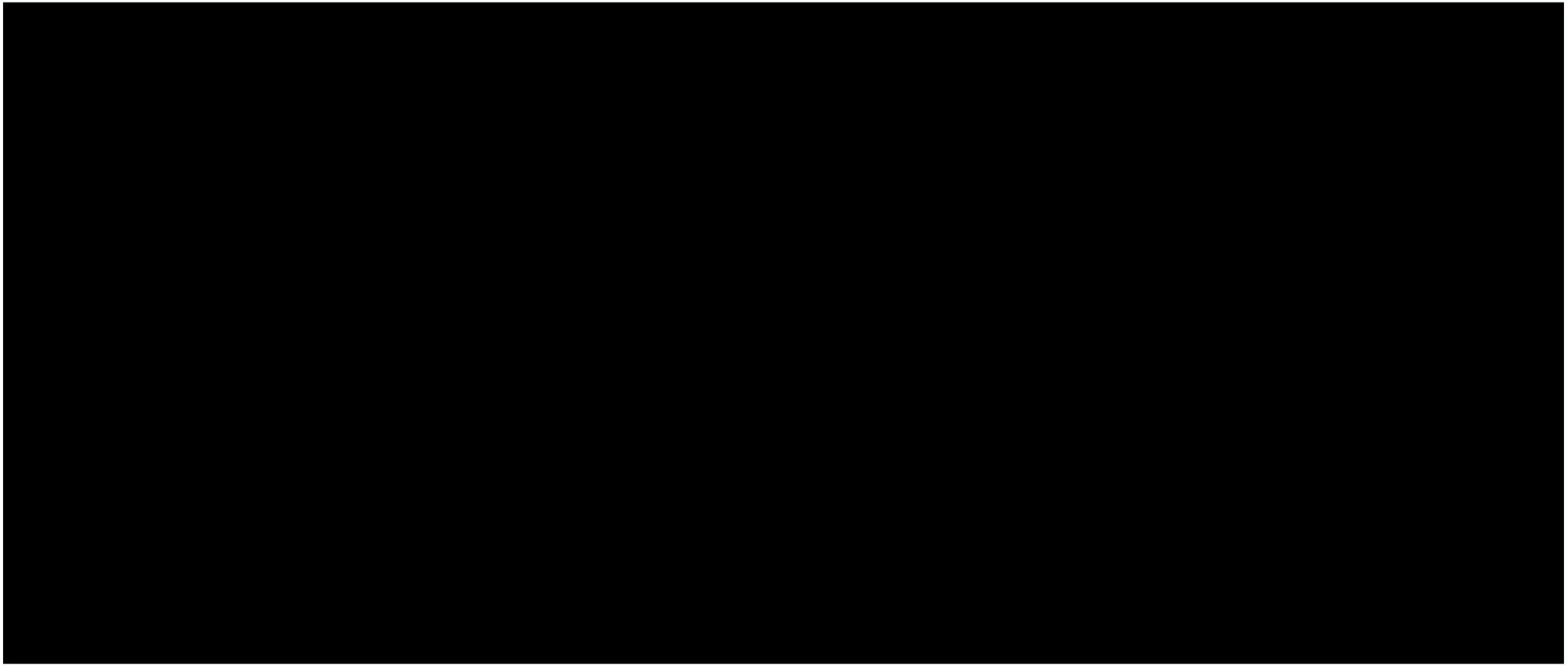
	Before July 2020	July 2020-June 2021	After June 2021
Silver Star/Silver Meteor	14	7	14
Auto Train	7	7	7

Between July 2020 and June 2021, average daily ton-miles increased 19% on the Nahunta Sub

[redacted]

(1) Amtrak subsequently suspended the Silver Meteor in January 2022

Average train velocity increased 2% between July 2020 and June 2021 during Amtrak service reduction, within a standard deviation from the average



Gulf Coast Further Data Analysis

CSX Network Data Analysis

NSR Back Belt Line and Network Data Analysis

CSX NO&M Customer Switch Data (CSD) Analysis

NS provided train velocity, traffic and track data from six locations on its network comparable to the Back Belt Line in New Orleans

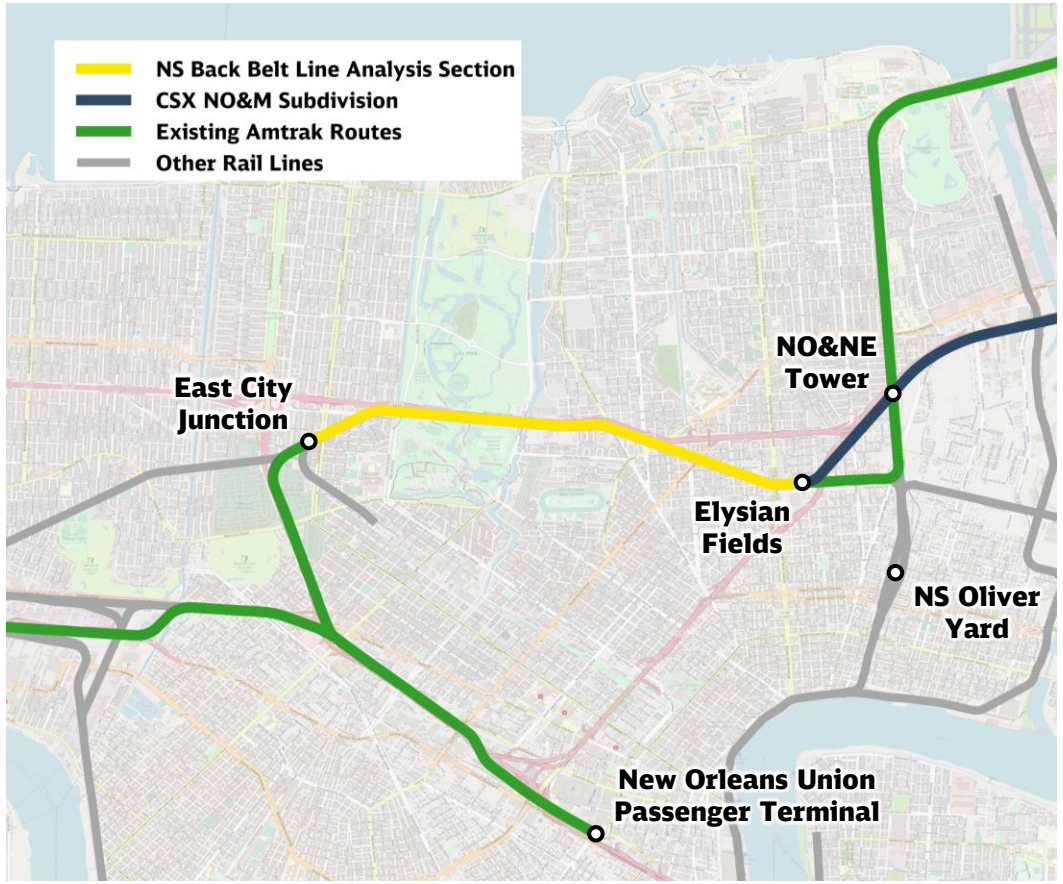
Train velocity data was provided for all of 2019 (365 days). NS did not provide similar train velocity, infrastructure, and traffic data on the Back Belt Line so OS data was analyzed.

Location	Subdivision	Section Length (mi)	Track Configuration	Passenger Trains per Day	Avg Freight Trains per Day[1]
Birmingham, AL	AGS South	3.00	Double track	2	
Greensboro, NC	Danville District / Raleigh West Line	2.81	2.01 mi double track 0.80 mi single track	10	
Meridian, MS	AGS South / NO&NE	4.09	Double track	2	
Norfolk, VA	Lambert's Point Branch / Norfolk Line	3.17	Double track	4	
Porter, IN	Chicago Line	4.00	Double track	14	
Toledo, OH	Chicago Line	3.30	Double track	4	
New Orleans, LA	Back Belt Line	3.15	Double track	2 (+4 proposed)	[redacted] (OS Data)[2]

(1) Sum of number of average NS daily through trains, NS daily local trains, foreign daily through trains, and foreign daily local trains listed in NS response to data questionnaire
(2) Median daily count of freight trains making full movement between Elysian Fields and East City Jct. Trains that had these control point timestamps and did not report passenger train symbols were included.
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. The methodology utilized by NSR would not count these trains because they did not fully traverse the section. Therefore, the OS Data count may undercount the actual number of trains operated.

OS data was used to compare train velocity on the Back Belt Line with other locations on the NS network

Amtrak Gulf Coast service would run on the NS Back Belt Line between Elysian Fields and East City Jct



OS simulation data was used to calculate train velocities on the Back Belt Line for comparison with other locations

- Individual train velocity calculated between Elysian Fields and East City Junction using timestamps in the OS data as follows:

$$\frac{2nd\ Milepost\ -\ 1st\ Milepost^{1}}{Back\ Belt\ Dep\ Time\ -\ Back\ Belt\ Arr\ Time}$$

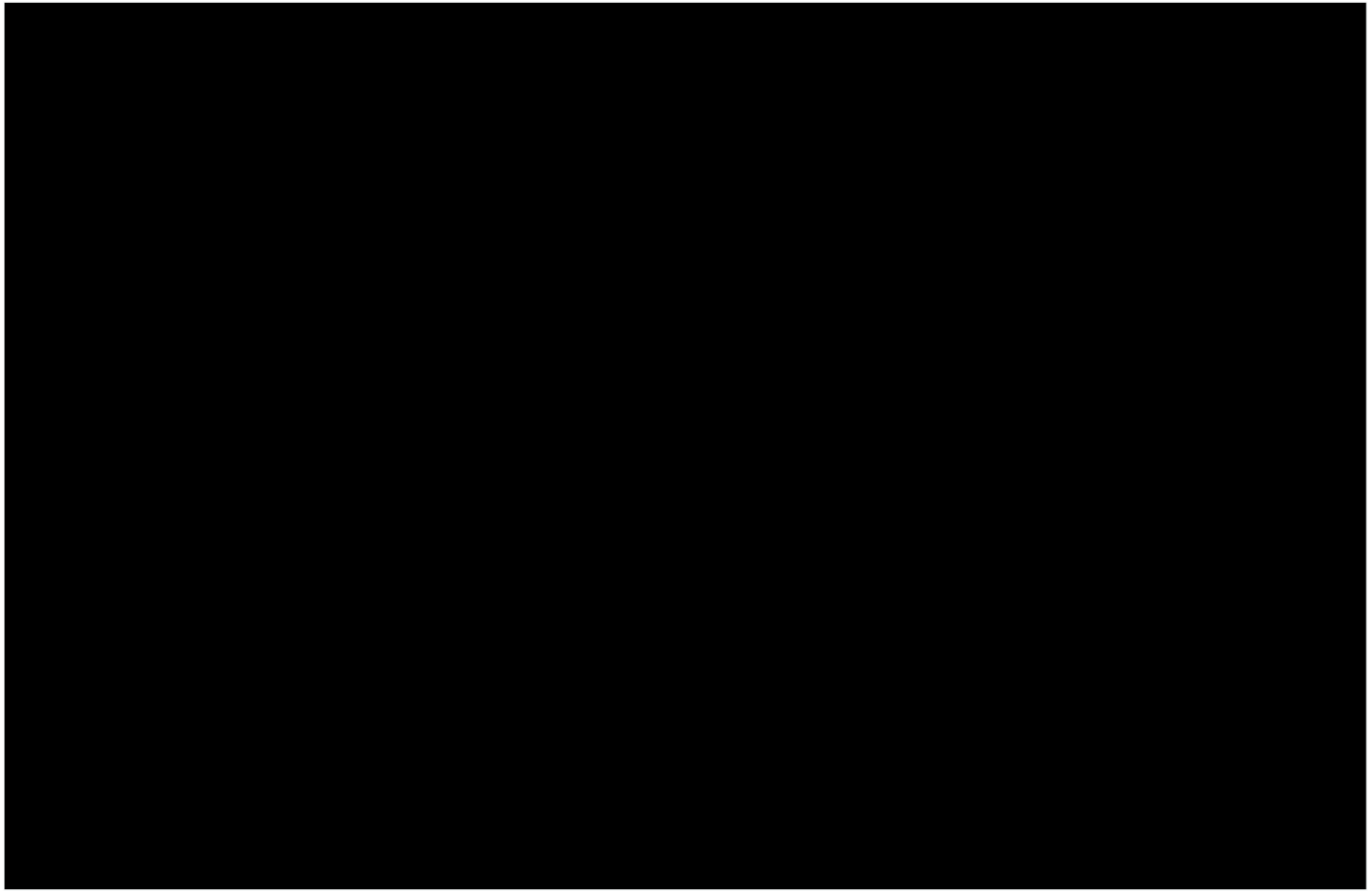
- Analysis excluded passenger trains and only included freight trains that report timestamps at both Elysian Fields and East City Junction
- Mean average of all train velocities calculated for each day
- Daily average train velocities from NS and OS data used to generate box and whisker plots

(1) Length in route-miles of the segment between Elysian Fields and East City Junction

Freight train fluidity on the Back Belt Line is consistent with other parts of the NS network identified NSR and Amtrak

(1) Depicted daily average train velocities exclude passenger train velocities
(2) For each location, top value = avg (μ) + 1 standard deviation (σ), middle value = avg, bottom value = avg − 1 standard deviation

Higher Amtrak frequencies do not correlate with lower average train velocity



Gulf Coast Further Data Analysis

CSX Network Data Analysis

NSR Back Belt Line and Network Data Analysis

CSX NO&M Customer Switch Data (CSD) Analysis

Performance of local trains on the NO&M sub was used to evaluate if Amtrak service would negatively impact shipper level of service

RTC simulation data was used to calculate run times on the NO&M Sub with and without Amtrak Gulf Coast service

- Two scenarios were considered for the analysis: 2019 F and 2019 P[1]
- The analysis did not exclude any seeds, and included all simulated service days except the first and last two days to remove the RTC warmup and cooldown period
  - 10 days per seed x 30 seeds = 300 days of simulation data per scenario
- Train run times were calculated between each endpoint of the analysis segment using timestamps in the RTC .ROUTE file

OS data from 2019 was used to calculate train run times on the NO&M sub on the subset of days that reported 100% CSD

- OS data provided by CSX was filtered to only include data from days corresponding to 100% CSD
- Data from days when locals made short turns were excluded as outlier events as underlying reason for not making full run is unknown

Local train run times from OS and RTC data were compared using box and whisker plots

- Analysis assumed that all shippers are served by local trains on the corridor
- Five local trains analyzed: Local A, B, C, D, and E
- Run times for three segments were calculated for each local:
  - Outbound travel from origination point to the last control point before a key shipper or group of shippers
  - Time spent serving the key shipper or group of shippers
  - Return travel from the shippers to the origination point
- Average train run times from CSX OS and RTC data were used to generate box and whisker plots
- 2019 F and OS run time plots were used to determine comparability of RTC and OS operational data
- 2019 P and OS run time plots were then compared to determine if introduction of Amtrak service would produce run times consistent with observed run times on 100% CSD days

(1) 2019 F includes existing freight count; 2019 P added Amtrak Gulf Coast movements

We reviewed two RTC scenarios to estimate the impact of Amtrak Gulf Coast service on freight operations and shipper service quality

RTC File[1]	Report Name	Description
2019 F	2019 Base Case	Model representing existing (2019) infrastructure and operations. Allows validation of model against actual data.
2019 P	2019 Passenger Case	2019 base case with no projects and the addition of the proposed passenger service.
2019 BUILD	2019 Build Case	Case with 2019 freight operations, proposed passenger service, and infrastructure changes. This case is used to determine projects required to mitigate impact of proposed passenger service.
2039 F	2039 Base Case	Case representing future (2039) operations on the corridor without the proposed passenger service. This case incudes anticipated future freight growth, and any currently anticipated infrastructure. This case is sometimes referred to as the "No Build."
2039 P XINGS	2039 Passenger Case	2039 Base Case with no projects and the addition of the proposed passenger service. Grade crossing dwell time between New Orleans and Flomaton increased to 150 minutes.
2039 BUILD	2039 Build Case	Case with 2039 freight operations, proposed passenger service, and currently anticipated infrastructure. This case is used to determine required projects to mitigate impact of proposed passenger service.
2039 BUILD NO BRIDGE	2039 Build Case with no Bridge Openings	2039 Build Case with no bridge openings to determine how bridge openings limit potential OTP of proposed service on the corridor with the inclusion of the 2039 projects.

(1) Source: Exhibit 2 CSXT/NSR Opening Evidence VS of Banks and Guthrie p. I-12 Table 2

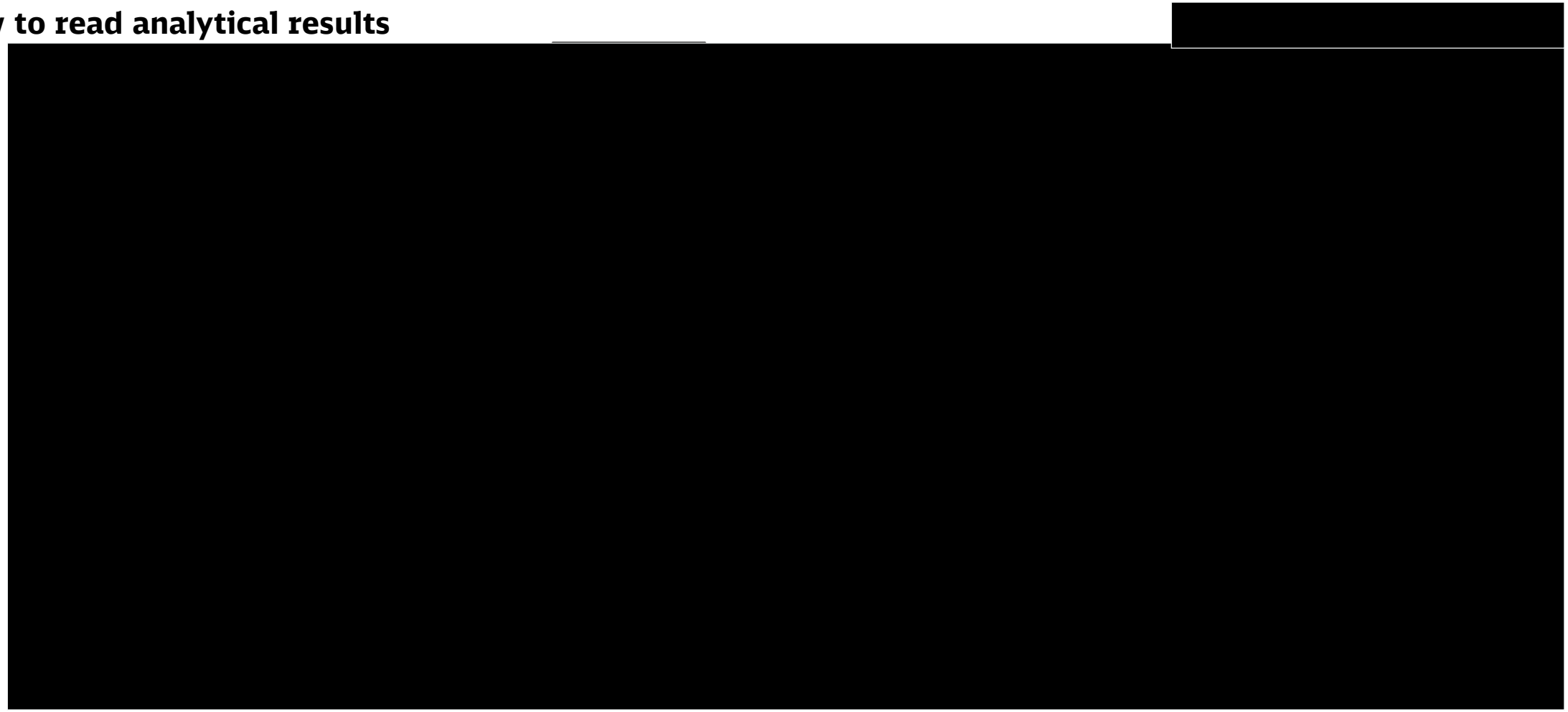
We reviewed CSX-provided input and output files from each of the 30 simulations run for each RTC scenario

.TRAIN files as well as CSX-provided descriptions of each local train's Transportation Service Plan (TSP) were used to understand each local train's work plan and inform the analysis segments.

.ROUTE files, which contain time-distance data for trains at every node, were used to calculate run-times for local trains across each analysis segment.

Run times from OS and RTC data for outbound, work, and return segments are presented as box and whisker plots

How to read analytical results



Local A travels from [redacted] before serving shippers in the [redacted]

Local train B travels from [redacted] before serving shippers in that area. Local B's median work time does not increase with Amtrak service.

Local train C travels from [redacted] before serving shippers at [redacted] Local C's median work time does not increase with Amtrak service.

Local train D travels from [redacted] before serving shippers in that area. Local D's median work time does not increase with Amtrak service.

Local train E serves shippers between [redacted]

On days with 100% CSD, Local E arrived within [redacted] windows at key points on the route

Local trains will continue to have run times and shipper arrival times consistent with existing service after the introduction of Amtrak Gulf Coast service

EXHIBIT B

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**

Supplemental Verified Statement

of

Thomas D. Crowley
President

and

Daniel L. Fapp
Senior Vice President

L. E. PEABODY & ASSOCIATES, INC.
ECONOMIC CONSULTANTS

On Behalf Of

The National Railroad Passenger Corporation

Due Date: July 27, 2022

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LIST OF EXHIBITS[1]

Exhibit No.	Exhibit Description
(1)	(2)
10	Amtrak Gulf Coast RTC Simulation Results from Operating Changes for All Trains
11	Amtrak Gulf Coast RTC Simulation Results from Investment Changes for All Trains

[1] Exhibit No. 1 to Exhibit No. 9 were included in our Reply VS.

I. INTRODUCTION

We are Thomas D. Crowley and Daniel L. Fapp, President and a Senior Vice President, respectively, of L. E. Peabody & Associates, Inc. L. E. Peabody & Associates, Inc. is an economic consulting firm that specializes in addressing economic, transportation, marketing, financial, accounting, operating and fuel supply matters. We are the same Thomas D. Crowley and Daniel L. Fapp that submitted a Reply Verified Statement in Surface Transportation Board ("STB") 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* on December 3, 2021 ("Reply VS"), and a Surrebuttal Verified Statement in the same proceeding on January 28, 2022 ("Surrebuttal VS"). A copy of our credentials was included as Exhibit No. 1 and Exhibit No. 2, respectively, to our Reply VS.

We were initially asked by Counsel for the National Railroad Passenger Corporation ("Amtrak") to review the presentation of the Rail Traffic Controller ("RTC") simulations that cover the rail line from New Orleans, LA through Mobile, AL to Montgomery, AL on the rail lines of the Norfolk Southern Railway Company ("NS") and CSX Transportation, Inc. ("CSXT") (collectively "Railroads"). The RTC simulations that we critiqued were presented in the Opening Verified Statement of Charles H. Banks and Larry R. Guthrie ("Banks/Guthrie Opening VS"), the Opening RTC Modeling Report included as Appendix A to the Banks/Guthrie Opening VS ("Opening RTC Report") and the Opening Verified Statement of Hannah Rosse and Holly Sinkkanen ("Rosse/Sinkkanen Opening VS").

We described in detail in our Reply VS the deficiencies and flaws with the Railroads' RTC evidence including, but not limited to, the Railroads' RTC model's lack of resemblance to real world CSXT and NS operations, the Railroads' lack of support for the inputs in their RTC models,

the Railroads' lack of supporting workpapers for their RTC models and the unusual and out of norm RTC model inputs used in the Railroads' RTC models.

Subsequent to the submission of our Reply VS, the Railroads filed their Rebuttal evidence in this proceeding on December 23, 2021, including the Rebuttal Verified Statement of Charles H. Banks and Larry R. Guthrie ("Banks/Guthrie Rebuttal VS"), the Rebuttal RTC Modeling Report included as Appendix A of the Banks/Guthrie Rebuttal VS ("Rebuttal RTC Report") and the Rebuttal Verified Statement of Hannah Rosse and Holly Sinkkanen ("Rosse/Sinkkanen Rebuttal VS"). Banks/Guthrie included additional RTC simulations with their Rebuttal RTC Report that addressed some of the flaws that we identified in their RTC models and that introduced new scenarios not included in their Opening evidence. We identified several flaws with their Rebuttal RTC models in our Surrebuttal VS.

Counsel for Amtrak asked us to respond to the STB Chairman's May 12, 2022 request inviting the parties to submit additional evidence to address a number of evidentiary issues raised during the STB's oral hearing, which occurred between April 4, 2022 and May 12, 2022 ("STB Hearing"). These evidentiary issues related, in part, to developing and running different rail network simulation scenarios using the RTC software to evaluate the impact of reinstating Amtrak passenger service on CSXT and NS rail lines between New Orleans, LA and Mobile, AL.

The STB members raised many issues during the STB Hearing concerning the inputs and settings used by Banks/Guthrie in developing their RTC simulations, and more importantly, had questions about scenarios that Banks/Guthrie did not evaluate using the RTC software. The STB members requested that Amtrak's team evaluate certain scenarios using the Railroads' RTC models. Working with Counsel for Amtrak, and a small team of Amtrak individuals authorized by the STB to participate in this analysis, we developed a series of RTC simulations based primarily

upon Banks/Guthrie's RTC simulations. Our use of the Banks/Guthrie RTC simulations as a base case or starting point does not indicate our acceptance or agreement with the inputs and settings used in those simulations, and we continue to stand by our criticisms of these simulations included in our Reply VS and Surrebuttal VS.

As we indicated in our Reply VS, our Surrebuttal VS and our testimony during the STB Hearing, we did not have the time nor the underlying information to completely correct the many flaws in the Banks/Guthrie RTC simulations.[2] Moreover, the STB Chairman requested that we rely upon the Banks/Guthrie RTC simulations to address the issues raised by the STB, while acknowledging that we do not accept their validity.[3]

Based on data developed in this proceeding and on our own independent research, we developed a series of RTC simulations to address the issues raised by the STB during the STB Hearing. We address the development of these different simulations and their results below under the following topical headings:

II. Summary of Findings

III. Base Case RTC Simulations

IV. RTC Results from Changes in Freight Operations

V. RTC Results with Added Infrastructure

[2] *See*, Surrebuttal VS at p. 4 and STB Hearing Transcript at pp. 2757-2758 and 4061.
[3] *See*, STB Hearing Transcript at pp. 3713-3717.

II. SUMMARY OF FINDINGS

A summary of our findings include:

1. We identified five (5) primary issues in Banks/Guthrie's RTC models that, based on our experience, are not the norm in RTC modeling, unnecessarily deviate from the standard RTC default settings, deviated from Banks/Guthrie's stated modeling assumptions and do not reflect actual real world operations. These issues include:

    a. The Banks/Guthrie RTC models allowed Amtrak trains to operate over sections of track under planned maintenance-of-way ("MOW") outages along the modeled network, and their RTC models restricted Freight train movements over the NS portion of the modeled route to reflect the Amtrak trains' statutory priority while operating on freight railroads. Banks/Guthrie used RTC .PERMIT files to prevent Amtrak trains from stopping at the MOW outages and to reflect the Amtrak trains' priority on the NS portion of the network. We corrected the RTC .PERMIT files in the Banks/Guthrie RTC models so that, consistent with real world conditions, Amtrak trains would not operate through MOW outages and Amtrak trains operating on the NS route would have priority, but not unencumbered access to the network.

    b. Banks/Guthrie's RTC cases modeled foreign trains crossing the CSXT network at at-grade crossings two (2) different ways and included both in their models. First, they included network outages in .PERMIT files to reflect foreign trains crossing the CSXT line, and second, they modeled foreign trains crossing the CSXT track at the same location. Including both track outages in the .PERMIT file and foreign trains crossing the same section of track accounts for the same operation twice. To correct this redundancy, we removed the track outages from the RTC .PERMIT files for foreign train crossings that were already modeled in the RTC simulation.

    c. The Banks/Guthrie RTC cases adjusted the default meet/pass logic in the RTC model, which favors sending the first arriving train into a passing siding where it will wait allowing an oncoming train to pass unimpeded. Banks/Guthrie changed the default setting so that the RTC model will instead stop the first train on the main line where it will wait for the oncoming train to slowly pull onto the passing siding and come to a complete stop before the first train is allowed to proceed. We reset the meet/pass logic to the original default setting included in the RTC model.

    d. The default setting in the RTC software for crew walk speeds is three (3) mph. Banks/Guthrie changed this default setting for the CSXT portions of the network to two (2) mph. We reset the crew walks speeds in the RTC model to the default three (3) mph.

    e. Banks/Guthrie included network outages in their RTC model using the .PERMIT files to reflect CSXT and NS planned MOW work. While their Opening RTC

Report stated that the outages would last between 30 and 120 minutes, a review of the .PERMIT files show that their MOW track outages actually ranged between 35 and 179 minutes. We corrected the .PERMIT file to limit MOW outages to no longer than 120 minutes.

2. Banks/Guthrie's Opening and Rebuttal RTC cases assumed no changes in CSXT and NS operating practices to accommodate the reinstatement of Amtrak service between New Orleans and Mobile ("Regional Amtrak").

3. We identified five (5) practical operating changes that, when made in the RTC model, virtually eliminate the impact of reinstating Regional Amtrak service. We also tested one additional operating change, but did not include the change in our final RTC models. These changes include:

    a. Banks/Guthrie limited the amount of time trains moving on the modeled network could block at-grade highway crossings to 20-minutes. Blocked crossing data reported by the FRA shows that, in many cases in the real world, CSXT and NS trains operating over the Railroads' network included in the Banks/Guthrie RTC models sit at crossings for much longer than 20 minutes. We adjusted the maximum 20-minute sit-time restriction at at-grade highway crossings to reflect actual real world operations incurred by CSXT and NS.

    b. Eliminating hi-rail movements of bridge tenders from automating movable bridges. Of the six (6) movable bridges along the CSXT line between CSXT's Siebert Yard in Mobile and its Gentilly Yard in New Orleans, four (4) of the bridges require CSXT to hi-rail bridge tenders to their work locations. Automating these bridges so that CSXT could operate the bridges remotely would eliminate the need for hi-railing bridge tenders to their workstations and free-up track capacity.

    c. Banks/Guthrie included network outages in their RTC model using the .PERMIT files to reflect CSXT and NS planned maintenance work. However, Banks/Guthrie set these planned maintenance outages at random times, including during peak operating times on the network. Real world railroads do not set planned maintenance outages during peak operating periods and instead perform planned maintenance during non-peak hours. We corrected the .PERMIT files to reflect planned maintenance during non-peak operating hours.

    d. Banks/Guthrie assumed that CSXT and NS would not make adjustments to Freight train operating schedules to accommodate the reintroduction of Regional Amtrak train service. Rescheduling existing trains, however, is a common method to accommodate the introduction of new rail services. We therefore made minor rescheduling changes to selected Freight train operations to eliminate interfering with scheduled Regional Amtrak service.

e. Banks/Guthrie assumed that trains entering and exiting rail yards along the modeled route would only use certain tracks within the yards. Restricting the tracks to maximize available resources is inconsistent with actual rail operations. We adjusted the RTC model to allow freight trains to better utilize yard infrastructure to receive inbound freight trains

4. Pursuant to the STB's request, we also evaluated the individual and cumulative impact of selected changes in rail infrastructure along the New Orleans to Mobile network. Our RTC analyses indicate that of the studied alternatives, the FRA recommended infrastructure improvements would have the greatest level of positive impact, assuming no other changes in CSXT, NS or Amtrak operations.

III. BASE CASE RTC SIMULATIONS

Standard railroad network capacity analysis calls for the development of a base case scenario.[4] Typically, a base case includes all current freight traffic, mixed freight and passenger trains moving over the network. Subsequent simulation runs test the impact of making changes to the base case, including the addition, in this case, of reinstated Amtrak passenger trains. This approach allows for quantifying the difference in operating metrics under existing and proposed railway track conditions.

We identified various issues with the RTC model inputs and settings used by Banks/Guthrie that impacted their RTC simulation results. For example, each of the 328 Banks/Guthrie RTC simulations was developed by randomly generating the departure times and dwell times of trains as well as the time and duration of track permits.[5] In addition to randomizing the train departure time and dwell time inputs external to the RTC model, Banks/Guthrie also utilized the Randomized Dispatching option built-in to the RTC model.[6] The Railroads' decision to randomize departure times and permits artificially increased the number and duration of conflicts on the network. When randomizing the inputs for every scenario of the model, comparisons between cases become less meaningful. To properly test the impact of a particular

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[4] *See,* "*Capacity Modeling Guidebook for Shared-Use Passenger and Freight Rail Operations*," National Cooperative Highway Research Program Report 773, Transportation Research Board, 2015 ("TRB Report") at p. 35.

[5] The RTC software uses a series of standard text files to input the required information for each simulation. Some of the more important files are the ".PERMIT," ".TRAIN," ".NODE," and ".LINK" files. The ".PERMIT" file is used to represent track outages along the modeled rail network for different events, including MOW events and slow orders. The ".TRAIN" file contains the information on the different train types operating on the modeled network, including the train departure times, origin and destination locations, dwell locations and train size. The ".NODE" file contains information for specific locations along the network, including changes to control point locations and turnouts. The ".LINK" file represents the rail network between RTC nodes, and is used to set speed limits, track curvature and elevation.

[6] The RTC Randomized Dispatching function randomizes a train's initial departure time from within the RTC model, i.e., the train departure times are arranged unpredictably or unsystematically and not given a predetermined, planned or scheduled start time.

change to a model, everything except the one change being evaluated should be the same in the cases being compared.

In most RTC modeling situations where the modeler is testing the impact of introducing additional traffic to a segment of rail line, the modeler develops a base case of current rail operations to test the changes from introducing additional traffic. However, the peculiarities of the Banks/Guthrie RTC model and the scenarios that the STB requested be tested required us to develop an additional base case. Many of the RTC scenarios sought by the STB are based upon adjustments made after the introduction of the reinstated Regional Amtrak service, and therefore, required the development of a second base case reflecting the introduction of Regional Amtrak trains.

We discuss our development of the freight base case and the passenger base case below under the following topical headings.

A. Unadjusted 2019 Freight Base Case
B. Adjusted 2019 Freight Base Case
C. 2019 Passenger Base Case

A. UNADJUSTED 2019 FREIGHT BASE CASE

We began by working with the Banks/Guthrie 2019 Freight-only case, i.e., what Banks/Guthrie call their "2019 F" case, which was used in their Opening evidence in this proceeding. This scenario reflects what Banks/Guthrie claim is representative of full 2019 operations along the New Orleans, LA to Montgomery, AL corridor, including NS and CSXT freight and yard operations, Amtrak passenger train operations other than the proposed New

Orleans to Mobile service ("Long Haul Amtrak"),[7] maintenance of way outages and movable bridge operations.[8]

While accepting their 2019 F scenario as our initial Freight Base Case, we did not follow the same modeling approach as Banks/Guthrie that relied upon the running of 30 different RTC scenarios with various random inputs.[9] Instead, we disabled the Randomized Dispatching option Banks/Guthrie included within the RTC model and reran each of the 30 different "2019 F" scenarios provided by Banks/Guthrie. We then analyzed the results and identified the Banks/Guthrie "2019 F" scenario that resulted in the least amount of aggregate train delay from the cases that did not fail to dispatch.[10] This reflected the best Banks/Guthrie base case scenario that we used as our starting point ("Unadjusted 2019 Freight Base Case"). This was a conservative choice because when we compared our models that included Amtrak trains to this freight only case, we were comparing to the best performing freight train case of the 30 that were provided by Banks/Guthrie.

We followed this approach for two (2) reasons. First, as we indicated in our Reply VS and our Surrebuttal VS, the Banks/Guthrie RTC models are based upon unsupported and unverifiable information that in many cases Banks/Guthrie randomized. Second, 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.

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7 Long Haul Amtrak includes Amtrak's Crescent, City of New Orleans and Sunset Limited trains that operate from the New Orleans Union Passenger Terminal.

8 *See,* Opening RTC Report at p. 23.

9 *See,* Opening RTC Report at p. 22.

10 An RTC case that can successfully find a way to route all of the trains included in the .TRAIN file while meeting all network constraints is said to have "fully dispatched," or, in other words, to have run to completion. Many of the scenarios set-up by Banks/Guthrie did not run to competition or "failed." Banks/Guthrie continued their RTC modeling process until they successfully dispatched 30 RTC runs for each scenario.

To evaluate the results of the simulation, we developed four (4) primary metrics for each class of train. These metrics are: (1) average train speed (including dwell time); (2) delay percentage; (3) total true delay time; and (4) delay per 100 train miles. Each of these metrics is defined as follows:

1. Average train speed is calculated by dividing total train miles by total elapsed time, including all delay times along the route.

2. Delay percentage is calculated by dividing a train's total delay time along the route by its ideal run time over the route. For example, if a train with an ideal run time of 60 minutes between its origin and destination incurs an actual run time of 66 minutes, of which 60 minutes is running time and six (6) minutes is delay time, then the train would have a delay percentage of 10 percent.[11] Delay percentage is an indicator of congestion on the modeled network, where a delay of 10 minutes is less significant for a 10-hour movement than it is for a one-hour movement.

3. Total true delay time provides an indicator of increased congestion across all train types. True delay is equal to a train's total elapsed run time less its ideal run time, and includes the acceleration and deceleration associated with conflicts the train may incur along its route.

4. Delay per 100 train miles shows delay results assuming a constant distance of 100 miles. This metric is useful for comparing total delay time between train movements traveling different distances. This metric assumes that the delays encountered along a train's route are consistent over the entire length of the movement. For example, if a train travels only one mile in the RTC model and is delayed for one hour, this metric assumes that the train would be delayed by one hour for every mile it travels for the 100 miles, i.e., 100 hours of delay.

These metrics are common and recognized approaches to analyzing the results of rail simulations.[12] Additionally, these metrics 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.

Table 1 below shows the above metrics for the Unadjusted 2019 Freight Base Case, separated by train type, for the entire simulated network.

[11] Six (6) minutes of true delay divided by 60 minutes ideal run time equals a 10 percent delay percentage.
[12] *See*, TRB Report pp. 54-56.

Table 1
Unadjusted 2019 Freight Base Case RTC Results

Train Group	Average Train Speed	Delay Percentage	Total True Delay Time (hours)	Delay per 100 Train Miles (minutes)
(1)	(2)	(3)	(4)	(5)
1. Amtrak Long-Haul	31.7	2.1%	0.4	4.0
2. Yard	3.9	18.7%	49.1	242.7
3. Freight	15.1	23.4%	563.6	75.3
4. All Traffic	14.2	22.8%	613.0	78.8

Source: Supplemental VS e-workpaper "Exhibit No. 10.xlsx."

The metrics shown in Table 1 above, reflect the operation of the CSXT/NS New Orleans to Montgomery network as modeled by Banks/Guthrie in version "R126" of their 2019 F cases. The RTC statistics Banks/Guthrie included in their RTC Reports reflect only changes in "Freight" operations, which are shown in Table 1, Line 3 above.[13] For greater transparency, we included the summary statistics for Freight, Yard, Amtrak and All train types in Table 1 above.[14] As we explained above, while we do not agree with many of the inputs and settings used by the Railroads' witnesses, we utilized their RTC simulation as our Freight Base Case to assess the impact of operational or infrastructure changes made in future RTC simulations.

B. ADJUSTED 2019 FREIGHT BASE CASE

In our Reply VS, our Surrebuttal VS and our STB Hearing testimony, we explained in detail many of the issues that we found in Banks/Guthrie's RTC models, including their lack of

[13] Banks/Guthrie defined "Freight" operations in their workpapers that developed their RTC statistics as auto, coal, empty coal, foreign, grain, light engine, local, merchandise, military and work trains. Stated differently, "Freight" included all train types excluding Amtrak trains and "Yard" trains. *See*, Banks/Guthrie Opening workpaper "Train Analysis.accdb."

[14] Banks/Guthrie did not show the actual statistics in their Opening and Rebuttal RTC Reports, but instead showed only the percentage change. We developed the Table 1 statistics from the Banks/Guthrie workpapers.

clear documentation and support for the trains they included in their RTC simulations.[15] We also identified five (5) issues[16] in Banks/Guthrie's RTC models that, based on our experience, are not the norm in RTC modeling cases we have presented before the STB nor used in RTC modeling developed in the normal course of our practice, unnecessarily deviate from the standard RTC default settings, deviate from Banks/Guthrie's stated modeling assumptions or do not reflect actual real world operations. These five (5) issues are summarized below.

First, we corrected the RTC .PERMIT file to apply the maintenance of way ("MOW") outages that impact all traffic to also impact Amtrak trains, and we removed the curfew permits on the NS portion of the network that allowed only Amtrak trains to operate on the NS portion of the network.[17] Modelers can use RTC entries in the .PERMIT file to limit what type of train may traverse a track, to reduce the speed limit during a particular time of day, or to completely shut down a track thereby preventing all trains from crossing.[18] The Banks/Guthrie RTC simulations used this method to exclusively allow passenger trains to traverse track during planned MOW outages while preventing all other traffic from using the track. While there may be certain instances where a planned MOW outage may allow a few trains to operate over the portion of the network where the MOW event occurs, to always allow Amtrak trains to operate over sections of track under MOW events while disallowing freight trains to operate is not consistent with actual

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[15] *See,* Reply VS at p. 28, Surrebuttal VS at p.7 and STB Hearing Transcripts at pp. 3579-3580.

[16] In addition to the five (5) issues described above, our Reply VS identified an additional flaw in the Banks/Guthrie RTC models of not linking yard trains in the CSXT and NS rail yards, except the CSXT Gentilly Yard. *See,* Reply VS at pp. 21–23. As we explained in our Reply VS, not linking the yard trains in the RTC model effectively adds more yard trains than actually moved in the real world because the RTC model will dispatch a yard train's next movement even though the yard train's prior movement had not completed its assignment. In other words, what is in the real world a single train working around a yard, the RTC will show as two (2) trains working at two (2) different yard locations at the same time. While we would normally correct such a flaw, the CSXT and NS data provided in the record does not provide a sufficient level of detail about how the yard trains moved in their yards. Without this level of granularity, any adjustments we would make would be speculative. We, therefore, continue to use the Banks/Guthrie unlinked yard trains in our Supplemental VS RTC runs.

[17] Banks/Guthrie exempted the Amtrak trains from MOW outages included in their .PERMIT files.

[18] *See,* Reply VS at p. 40.

rail operations, especially given that Banks/Guthrie posit that the New Orleans to Mobile line segment will see three (3) MOW outages every day. This approach is not the way MOW outages are normally modeled in developing RTC analyses presented to the STB, nor consistent with RTC modeling we use in the normal course of business modeling rail networks.

We also adjusted the .PERMIT file to remove the freight train restrictions on the NS portion of the line during times Amtrak trains operated over that portion of the network. Banks/Guthrie indicated they used curfews entered in the .PERMIT files to limit freight train interference with Amtrak trains operating over the NS portion of the network.[19] The use of curfews in the .PERMIT file is not required as the Amtrak trains' high priority status relative to freight trains already provides a way to limit freight train interference with Amtrak trains. Moreover, the problem with using a curfew entered into the .PERMIT file to limit the network to only Amtrak trains is that it will stop all freight traffic, even if it is not required for an Amtrak train to move over the NS portion of the system unimpeded. The use of a freight-only curfew unnecessarily increases the delay to the freight trains when a delay is unwarranted by operating conditions. We removed the curfew from the .PERMIT file and allowed the Amtrak trains' high prioritization status in the RTC model dictate their routing over the NS portion of the network.

Second, we removed the entries from the .PERMIT files where Banks/Guthrie included curfews for foreign trains crossing the modeled rail network because foreign trains crossing the network were already included in the model. RTC modelers need to account for times a rail line is not available because another railroad is crossing the line at an at-grade rail crossing. RTC users can model this type of outage by including a network permit in the .PERMIT file to show that the section of track where the crossing occurs is unavailable or by modeling the foreign rail line

[19] *See*, Opening RTC Report at p. 88.

crossing the section of track. In their RTC cases, Banks/Guthrie included both permits and conflicting trains using the at-grade crossing. As the Banks/Guthrie model included both types of adjustments, we corrected this issue by removing the foreign train crossing permits, while leaving the modeled foreign trains in the RTC model.

Third, we reset one of the simulation's meet/pass logic settings to the default RTC setting from the alternative used by Banks/Guthrie. The default meet/pass logic setting in the RTC model favors sending the first arriving train into a passing siding where it will sit allowing the oncoming train to pass unimpeded. If this setting is changed, which is what Banks/Guthrie did, the RTC model will instead stop the first train on the main line where it must sit and wait for the oncoming train to slowly pull onto the passing siding and come to a complete stop while slowly clearing the main line before the first train is allowed to proceed.[20] Essentially, the setting used in the Banks/Guthrie models requires both trains to come to a complete stop in the event of a conflict rather than having one of the trains stop and allowing the other to continue unrestricted. As this type of adjustment is, in our experience, inconsistent with default RTC modeling practice and not representative of efficient real-world train operations, we corrected this setting.

Fourth, we reset the crew walk speed from the two (2) mph used by Banks/Guthrie to the RTC default of three (3) mph. As we explained in our Reply VS, one of the adjustable settings in the RTC model is the train crew walk speed.[21] This setting impacts the amount of time a train will dwell in the event that the simulated train crew must walk from one end of the train to the other for a turnaround move, walk to a manual track switch to throw the switch, walk to the end of the train to decouple cars, etc. By default, this walk speed is set to three (3) mph, an already

[20] *See*, Reply VS at p. 46.
[21] *See*, Reply VS at p. 46.

conservative number.[22] As this type of adjustment is, in our experience, inconsistent with default RTC modeling practice, we corrected this setting.

Fifth, we corrected the MOW track outage times Banks/Guthrie included in their RTC cases. Banks/Guthrie indicated in in their Opening RTC Report that they assumed MOW track outages would last between 30 and 120 minutes.[23] A review of the .PERMIT file used in the Banks/Guthrie Unadjusted 2019 Freight Base Case shows that their MOW track outages (or what they call "Track and Time" Permits in their RTC model) actually ranged between 35 and 179 minutes and not the 30 to 120 minutes stated in their Opening RTC Report.[24] In addition, over 40 percent, or 17 of 42, of the MOW track outages that they included on the CSXT rail line between New Orleans and Mobile exceeded 120 minutes. To correct for this apparent misstatement, we restricted the MOW track outages to a maximum of 120 minutes.

After we made these corrections to the Banks/Guthrie Unadjusted 2019 Freight Base Case, we ran the RTC model and developed our Adjusted 2019 Freight Base Case. We then used our Adjusted 2019 Freight Base Case to develop our 2019 Passenger Base Case as described below.

C. 2019 PASSENGER BASE CASE

The Regional Amtrak service will consist of two (2) round trip passenger trains per day operating between New Orleans and Mobile for a total of four (4) trains per day. Amtrak provided proposed schedules for the Regional Amtrak trains, which Banks/Guthrie used in their simulations.[25]

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[22] *See*, for example, Bates No. NSR-00006057, which is a RTC .OPTION file produced by NS in discovery showing the NS portion of the Amtrak route modeled in 2020.

[23] *See*, Opening RTC Report at p. 88, "[o]n CSXT, MOW main line work 3 events per day on each sub, 30 to 120 minutes each event."

[24] *See*, Supplemental VS e-workpaper "Analysis of Bank-Guthrie Permit File.xlsx."

[25] *See*, Opening RTC Report at p. 25.

To develop our 2019 Passenger Base Case, we added the four (4) Regional Amtrak trains to the Adjusted 2019 Freight Base Case inputs exactly as they were modeled in the Banks/Guthrie simulations, and dispatched the RTC model. The results of the Adjusted 2019 Freight Base Case and the 2019 Passenger Base Case are shown in Table 2 below.

Table 2
Adjusted 2019 Freight Base Case and
2019 Passenger Base Case RTC Results

Train Group	Average Train Speed	Delay Percentage	Total True Delay Time (hours)	Delay per 100 Train Miles (minutes)
(1)	(2)	(3)	(4)	(5)
A. Adjusted 2019 Freight Base Case				
1. Amtrak Long-Haul	31.1	4.1%	0.7	7.5
2. Yard	3.9	17.5%	45.8	226.4
3. Freight	15.4	21.8%	524.4	70.1
4. All Traffic	14.4	21.3%	570.8	73.4
B. 2019 Passenger Base Case				
5. Regional Amtrak	36.3	11.9%	17.1	17.6
6. Amtrak Long-Haul	31.9	1.7%	0.3	3.1
7. Yard	3.7	24.5%	64.2	317.6
8. Freight	14.7	27.5%	660.2	88.2
9. All Traffic	14.7	26.3%	741.8	84.8

Source: Supplemental VS e-workpaper "Exhibit No. 10.xlsx."

As shown in Table 2 above, the addition of the Regional Amtrak trains decreases average train speed for freight traffic by 0.7 miles per hour[26] and increases delays per 100 train miles for freight traffic by 18.1 minutes.[27] However, these changes do not take into consideration reasonable operating changes the Railroads would likely make to reduce or eliminate the impact of Regional Amtrak service as discussed below.

[26] Table 2, Line A.3, Column (2) minus Line B.8, Column (2).
[27] Table 2, Line B.8, Column (5) minus Line A.3, Column (5).

IV. RTC RESULTS FROM CHANGES IN FREIGHT OPERATIONS

Banks/Guthrie developed their RTC passenger simulations under the assumption that there would be no change in passenger or freight train schedules, and no changes in freight train or other rail related operations.[28] Stated differently, Banks/Guthrie introduced a fixed passenger train schedule into a randomly dispatched freight system and did not attempt any operational adjustments to accommodate the added passenger trains. Without the ability to make even modest operating changes, Banks/Guthrie were left only with adding and/or changing rail infrastructure along the New Orleans-Mobile route to mitigate any impact from the reintroduction of Regional Amtrak service. According to the Railroads, this additional and changed infrastructure would cost between $485 million and $520 million.[29]

One of the primary areas of inquiry during the STB Hearing was the question of whether it is necessary to add rail infrastructure to accommodate Regional Amtrak trains on the New Orleans-Mobile line segment, or whether the Railroads could accommodate the additional Amtrak traffic through modest changes in their operating plans.[30] STB members and other parties suggested possible CSXT and NS operational changes during the STB Hearing, including but not limited to, automating movable bridges, rescheduling maintenance operations, and rescheduling freight and passenger trains.[31]

We developed RTC simulations to test the impact of a variety of operational changes, including changing freight and/or passenger schedules to better accommodate Regional Amtrak service. We also developed one RTC simulation that included all of the operating changes

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[28] *See*, Opening RTC Report at p. 6.

[29] This includes the $405 million to $440 million the Railroads state they need to construct the infrastructure projects included in Banks/Guthrie's Opening RTC Report and an additional $80 million to construct the NS Freight Lead included in Banks/Guthrie's Rebuttal RTC Report.

[30] *See*, STB Hearing Transcript at pp. 4045-4046.

[31] *See*, STB Hearing Transcript at pp. 3915-3916 and 4075-4078.

modeled. We based these operating plan simulations on the 2019 Passenger Base Case described above, and discuss our development of the operating plan changes below under the following topical headings.

A. Adjusting Train Sit-Times at Highway Crossings
B. Automating Movable Bridges
C. Rescheduling Planned Maintenance
D. Rescheduling Freight Trains
E. Allowing Trains in Yards to Use Available Tracks
F. Rescheduling Passenger Trains
G. Results of Operating Changes

A. ADJUSTING TRAIN SIT-TIMES AT HIGHWAY CROSSINGS

Banks/Guthrie stated in their Opening RTC Report that they limited the amount of time a modeled train could block an at-grade road crossing to 20 minutes because this time limit was in-line with FRA social media posts about blocked at-grade crossings.[32] While FRA posted statements about railroads limiting the amount of time that they block at-grade crossings, FRA has no official guidance on the subject, and ultimately, no regulatory authority to establish limits for how long railroad trains can block crossings.[33]

In fact, CSXT and NS trains in the real world do block at-grade highway crossings for time periods much longer than 20-minutes. Using the FRA's Blocked Road Crossing Database,[34] we were able to determine a range of time that real world CSXT and NS trains block road crossings along the New Orleans to Montgomery route that Banks/Guthrie included in their RTC models. FRA develops this database from public reports of blocked crossings, including the specific crossing location, the date and time the blocking occurred and the duration of the blockage

[32] *See,* Opening RTC Report at p. 23.
[33] *See,* "*The Highway-Rail Crossing Handbook*," 3rd Edition at p. 152, "The FRA regulations do not specifically address the length of time a train may block a grade crossing" and "*Blocked Crossing Fast Facts*," Office of Railroad Safety, November 2021.
[34] *See,* https://www.fra.dot.gov/blockedcrossings/.

indicated by a time range. Using the FRA information, we identified 81 reported blocked crossings over the 28-month period included in the FRA database.[35] The simple average duration for the blocked crossings ranged from 74 minutes to 168 minutes on CSXT and 99 to 141 minutes on NS depending upon whether the low or high end of the reported blocking duration is used. While the FRA's self-reported data is not a comprehensive study because of the voluntary nature of the FRA's reporting system, the number of times at grade crossings are blocked more than 20 minutes is likely higher than what is represented in our analysis.

To reflect the fact that real world CSXT and NS trains block at-grade rail crossings for periods well beyond the 20 minute limit imposed by Banks/Guthrie, we adjusted the RTC .LINK file to allow trains to sit to match the midpoint of the times in the FRA analysis.

Increasing 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. In the Adjusted 2019 Freight Base case scenario a total of 86 trains out of 1,180 trains sat at a highway crossing during the RTC simulation period. Of the 86 trains that did sit at a highway crossing, over 83 percent dwelled for less than 20 minutes. The remaining 17 percent of the trains dwelled between 21 and 107 minutes.[36] This change in "sit time"[37] at at-grade crossings leads to a 0.1 mph increase in freight train speeds in the RTC model, and a 3.7 minute decline in Delays per 100 Train-Miles over the 2019 Passenger Base Case. (*See,* Table 3, Line B.4).

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[35] We only included those reported blockages in our analysis that met Banks/Guthrie's criteria for adding a road crossing to the RTC model which included an average annual traffic count of greater than 200 vehicles a day and the crossing must have crossing gates and/or lights protecting the crossing. *See,* Opening RTC Report at p. 88.

[36] *See,* Supplemental VS e-workpaper "Adjusted 2019 Freight Base Case F_RC Road Crossings.xlsx."

[37] "Sit time" is a short hand term for the time a train is sitting at an at-grade highway crossing in the RTC model. Within an RTC .LINK, the maximum "sit time" is termed the "maximum Meet-pass Delay Time."

B. AUTOMATING MOVABLE BRIDGES

The 2017 Gulf Coast Working Group Report ("GCWG Report") discussed the impact of moveable bridges along the New Orleans-Mobile line segment on passenger and freight train operations noting that hi-rail movements transporting bridge tenders during shift changes could block the main line for up to 60 minutes.[38] While the GCWG Report did not recommend automating the movable bridges along the route to eliminate the need for hi-rail movements to transport bridge tenders, bridge automation was discussed during the STB Hearings, and in fact, CSXT has already automated several movable bridges east of Mobile, Alabama.[39]

Several of CSXT's movable bridges between New Orleans and Mobile are staffed with bridge tenders, which in some cases use hi-rail vehicles over CSXT's rail line to move the bridge tenders to and from their work stations.[40] The presence of hi-rail vehicles on the line absorbs track capacity that could otherwise be used to move passenger and freight trains. As such, automating the movable bridges so that CSXT could operate the bridges remotely would eliminate the need for bridge tenders to hi-rail to and from their locations and would free up track capacity.[41] This change has a minimal impact when looked at in isolation, producing a decline in train speed of 0.1 mph in the RTC model and an increase in Delay per 100 Train-Miles of 1.7 minutes relative to the 2019 Passenger Base Case. (*See,* Table 3, Line B.5 and Line C.10).

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[38] *See*, GCWG Report at p. K-36.

[39] *See*, STB Hearing Transcript at pp. 4075-4076.

[40] *See*, Rosse/Sinkkanen Opening VS at p. 5 and Opening RTC Report at p. 4. The four (4) bridges that require bridge tenders to hi-rail to their positions are the Biloxi, Bay St. Louis, Pearl River and Rigolets movable bridges.

[41] We understand that automating the movable bridges along the route of movement will not happen without investing in automating technology. With that being said, the fact that bridge automation will lead to a significant change in CSXT operations, i.e., the elimination of bridge tenders staffing the bridges along the route and the elimination of high-rail movements, we evaluated automating bridges as an operating change for this RTC analysis.

C. RESCHEDULING PLANNED MAINTENANCE

Banks/Guthrie assumed that the planned MOW events would occur on each CSXT subdivision modeled (the "M&M" Subdivision and the "NO&M" Subdivision) three (3) times per day at random times.[42] Banks/Guthrie also stated that their RTC cases did not include any unforeseen disruptions, including derailments, mechanical failures, and emergency events.[43] Rosse/Sinkkanen confirmed that the MOW track outages Banks/Guthrie included in the RTC model were for routine maintenance events and not unplanned or emergency maintenance activities. Rosse/Sinkkanen stated: "CSXT and NSR provided guidance to the RTC Modelers for routine maintenance parameters."[44]

Unplanned MOW events can occur at any time given the 24 hour / 365 day nature of railroad operations, and including unplanned events in a RTC simulation based on a randomized process would make sense. But that is not the situation modeled by Banks/Guthrie that assumed planned, not unplanned, MOW events should be randomized.[45] Curiously, Banks/Guthrie attempted to model routine, planned MOW events, which by their very nature are planned events, using a randomization process. Typically, the planned MOW events included in the RTC model would not be randomized, as their location, schedule and duration would be known beforehand. Railroads diligently work to plan their maintenance events to minimize the impact on their operations.[46] No railroad would schedule planned track maintenance during the busiest time of day when it can be more efficiently performed at a time when there is little or no activity on the line. It makes no sense to include routine MOW events in the RTC model on a randomized basis.

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[42] *See*, Banks/Guthrie opening workpaper "2019 PERMIT.xlsx," which includes the randomization parameters used to develop the MOW track outages.
[43] *See*, Opening RTC Report at p. 23.
[44] *See*, Rosse/Sinkkanen Opening VS at p. 6.
[45] *See*, Opening RTC Report at p. 23.
[46] *See*, for example, https://www.bnsf.com/news-media/railtalk/service/maintenance-planning.html.

To reflect the fact that real world railroads would minimize the impact of planned, routine MOW on their operations, we adjusted the MOW event inputs included in the .PERMIT file to avoid peak rail operating periods, including the times that Regional Amtrak trains would be operating between New Orleans and Mobile. This reduced the times the RTC model delayed Regional Amtrak trains and CSXT freight trains for routine MOW events. (*See*, Table 3, Line B.6 and Line C.11).

D. RESCHEDULING FREIGHT TRAINS

Banks/Guthrie state that they developed train departure times based upon historical data provided by CSXT and NS.[47] Rosse/Sinkkanen indicated that the CSXT historical data consisted of train schedules, actual train performance against those schedules and control point and dispatcher data, while the NS data included train movement data and train schedules.[48] In other words, Banks/Guthrie developed the train start times they included in their RTC cases based, in large part, upon historical train schedules and train movement data supplied to them by Rosse/Sinkkanen. After developing their base trains or "seed trains,"[49] Banks/Guthrie then randomized the train departure times based upon different types of statistical distributions.[50]

Given that the trains Banks/Guthrie included in their RTC runs are based, at least in part, upon CSXT and NS train schedules, we adjusted the dispatch times for the seed trains included in the RTC model to reflect rescheduling the freight trains away from the hours of Regional Amtrak operations and moving train schedules to times when there were higher levels of available line

[47] *See*, Opening RTC Report at p. 88.
[48] *See*, Rosse/Sinkkanen Opening VS at pp. 4-5.
[49] *See*, Banks/Guthrie opening workpapers "2019 CSX.xlsx," and "2019 NS.xlsx." "Seed trains" are the base level trains that contain the nonrandomized train characteristics such as each train's base departure time and dwell time. It is these seed train departure times that Banks/Guthrie randomized.
[50] *See*, Banks/Guthrie Opening VS at p. I-20. Banks/Guthrie used both uniform and triangular distributions to randomize train departure times.

capacity.[51] In most instances, the rescheduling involved moving the identified train schedules two (2) hours or less from start times scheduled by Banks/Guthrie, but there were instances where we moved trains more than two (2) hours from the original start times to better accommodate the Regional Amtrak trains. The impact of this operating change was a reduction in Delay per 100 Train-Miles of 13.9 minutes, a reduction in Total True Delay Time of 104.2 hours and an increase in Average Train Speed of 0.5 mph. (*See,* Table 3, Line B.7 and Line C.12).

E. ALLOWING TRAINS IN YARDS TO USE AVAILABLE TRACKS

For the most part, Banks/Guthrie modeled local and through freight trains to begin and end their movements in one of the CSXT or NS rail yards, and in the case of trains operating between New Orleans and Montgomery, Banks/Guthrie included an intermediate stop in the Mobile yard.[52] When inputting the trains in the RTC model, Banks/Guthrie restricted the locations that trains could move when entering or leaving the rail yards.[53] When modeling a train stop within a yard in the RTC model, the user must indicate which yard track is the primary stop location for any given train. However, the user can tell the RTC program that if the designated track where a train is scheduled to stop is already occupied when the train arrives, then the train may stop on an alternative yard track other than the originally designated yard track. For example, a user might configure a yard so that trains destined for Track 1 are allowed to use Track 2 or Track 3 if Track 1 is occupied. Failure to program each yard in this way will require the train to use Track 1 even if Track 2 or Track 3 is available to hold the arriving train.

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[51] As noted above, we also removed the Randomized Dispatching option Banks/Guthrie included in their RTC cases.

[52] *See,* Banks/Guthrie Opening VS workpapers "2019 CSX.xlsx" and "2019 NS.xlsx."

[53] From an RTC modeling perspective, Banks/Guthrie limited the number of alternate node loops at different yard locations in their RTC models.

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. We adjusted Banks/ Guthrie's RTC programing to reflect a train's ability to use other available yard tracks, if the designated primary track was already occupied. The impact of this operating change had no appreciable impact on average train speed and 0.8 minute increase in Delay per 100 Train-Miles as compared to the 2019 Passenger Base Case. (*See,* Table 3, Line B.8 and Line C.13).

F. RESCHEDULING PASSENGER TRAINS

As stated above, the Regional Amtrak service will consist of two (2) round trip passenger trains per day operating between New Orleans and Mobile for a total of four (4) trains per day. Amtrak provided proposed schedules for the Regional Amtrak trains, which Banks/Guthrie used in their simulations. Banks/Guthrie modeled the Regional Amtrak trains to always depart on-time from the Mobile and New Orleans passenger stations based upon the proposed schedule provided by Amtrak.[54] Stated differently, Banks/Guthrie assumed that the Regional Amtrak departure times were fixed, and did not test whether adjusting the Regional Amtrak departure times would improve their RTC statistics.

We tested moving the departure times up to plus or minus one hour from the proposed Regional Amtrak train departure times. We found that adjusting the departure times for the Regional Amtrak trains did not improve the results of the RTC simulations, and excluded this option from the RTC scenarios included in this Supplemental VS. We include this brief discussion to address the fact that we did investigate this option.

[54] *See*, Opening RTC Report at p. 25.

G. RESULTS OF OPERATING CHANGES

The results of adding the changes in operations are shown in Exhibit No. 10 to this Supplemental VS and summarized in Table 3 below on both individual and cumulative bases.[55] We show the results on an individual and cumulative basis because, in some cases, the results on an individual basis may not be indicative of the results when changes are looked at on a cumulative basis.

In developing both the individual and cumulative impacts, we began with the 2019 Passenger Base Case (Table 3, Line 3).

[55] In Table 3 below, we only show the statistics for freight traffic. The statistics for Regional Amtrak, Amtrak Long Haul and Yard trains are shown in Exhibit No. 10 to this Supplemental VS.

Table 3
Amtrak Gulf Coast RTC Simulation Results from Operating Changes
To the 2019 Passenger Base Case
Freight Trains Only

RTC Case	Average Train Speed	Delay Percentage	Total True Delay Time (hours)	Delay per 100 Train Miles (minutes)
(1)	(2)	(3)	(4)	(5)
A. Base Cases				
1. Unadjusted 2019 Freight Base Case	15.1	23.4%	563.6	75.3
2. Adjusted 2019 Freight Base Case	15.4	21.8%	524.4	70.1
3. 2019 Passenger Base Case	14.7	27.5%	660.2	88.2
B. Individual Impact of Changes in Operations				
4. Adjusting Train Sit Times at Hwy Crossings	14.8	26.3%	632.2	84.5
5. Automating Movable Bridges	14.6	28.0%	673.2	89.9
6. Rescheduling Planned Maintenance	14.9	25.4%	610.7	81.6
7. Rescheduling Freight Trains	15.2	23.1%	556.0	74.3
8. Allowing Trains to Use All Tracks	14.7	27.7%	666.3	89.0
C. Cumulative Impact of Changes in Operations				
9. Adjusting Train Sit Times at Hwy Crossings	14.8	26.3%	632.2	84.5
10. Automating Movable Bridges	14.8	26.0%	625.4	83.5
11. Rescheduling Planned Maintenance	15.0	24.4%	586.6	78.4
12. Rescheduling Freight Trains	15.5	20.6%	495.5	66.2
13. Allowing Trains to Use All Tracks	15.5	20.4%	489.3	65.4

Source: Exhibit No. 10.

As shown in Table 3 above, each of the different operating changes has a different impact on the RTC case (Lines B.4 through B. 8). When all of the changes are viewed on a cumulative basis, the statistics for the combined operating changes, shown in Line C.13, exceed all the statistics for the Adjusted 2019 Freight Base Case in Line A.2. Average Train Speeds increased by 0.1 mph as compared to the Adjusted 2019 Freight Base Case, while the Delay Percentages, Total True Delays and Delays per 100 Train-Miles all declined.

In our Reply VS and during the STB Hearing, we discussed the statistics presented by Banks/Guthrie in their Opening VS and Rebuttal VS, especially their presentation of their RTC

output as percent changes and not the actual underlying metrics.[56] We also stated that several of the Banks/Guthrie RTC metrics, including gross conflicts, delay to foreign trains in New Orleans and recrews, are not normally reported RTC metrics. In addition, these metrics were calculated in a way to overstate the impact of reinstating Regional Amtrak service. By comparison, the RTC metrics that we include in Table 1 through Table 3 above are commonly reported metrics in RTC analyses, and represent outputs calculated directly by the RTC software.[57] These metrics are widely understood by RTC users and are a better way to compare RTC cases than the information provided by Banks/Guthrie.

While we believe these metrics represent standard industry practice for reporting RTC output statistics as shown in the TRB Report,[58] we are also providing the STB with comparative data using the statistics provided by Banks/Guthrie in Tables 4 and 5 below, to permit a direct comparison to results presented by the Railroads in their supplemental evidence.

The statistics contained in Table 4 reflect Banks/Guthrie's analysis of Freight traffic operating on the modeled network. In other words, the Freight traffic RTC statistics shown in

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[56] *See*, Reply VS at p. 10 and STB Hearing Transcript at p. 3534.

[57] The ".SUMMARY" file produced at the end of a successful RTC run normally develops the statics shown in Table 3 for all trains in aggregate and for specific Train Groups. Banks/Guthrie classified their RTC trains into six (6) Train Groups: (1) Passenger; (2) Expedited: (3) Carload; (4) Pipeline; (5) Industry; and (6) Miscellaneous. Because Banks/Guthrie developed their RTC statistics on a train-by-train basis and not by Train Group basis and because we adopted the Banks/Guthrie RTC models, we could not simply extract the Freight Traffic only statistics directly from the RTC ".SUMMARY" file at the end of our RTC case runs. Instead, to identify the statistics for the Freight Traffic only group, we used the data contained in the ".SUMMARY" file to calculate the statistics. In the alternative, we could have reclassified the trains in the RTC model into new train groups reflecting Freight, Yard, Regional Amtrak and Amtrak Long Haul, but this would have deviated from the Banks/Guthrie RTC models. We instead reduced the differences between our models and Banks/Guthrie's models, and calculated the statistics outside the RTC model.

[58] *See*, TRB Report pp. 54-56.

Table 3, Line 1 and Line 15 above, are comparable to the Freight traffic RTC statistics shown in Table 4 below.[59]

Table 4
Banks/Guthrie Statistics
Unadjusted 2019 Freight Base Case and Cumulative Operating Changes

RTC Case	Delay per 100 Train Miles (minutes)	Average Train Speed (mph)	Dispatching Conflicts	Delay to Other New Orleans Trains (minutes)	Recrews
(1)	(2)	(3)	(4)	(5)	(6)
1. Unadjusted 2019 Freight Base Case	76.0	15.1	6,627	701.1	9
2. Cumulative Operating Changes	64.6	15.5	6,976	458.2	11
3. Percent Change 1/	-15.0%	2.6%	5.3%	-34.6%	22.2%

Source: Supplemental VS e-workpaper "Train Analysis – Amtrak.accdb."
1/ [(Line 1 ÷ Line 2) -1] x 100.

As shown in Table 4 above, the train Delay per 100 Train Miles declined by 11.4 minutes, or 15.0 percent (Column (2)), from the Unadjusted 2019 Freight Base Case to the Cumulative Operating Changes RTC Case, while average train speed increased by 0.4 mph or 2.6 percent (Column (3)). The number of dispatching conflicts increased by 5.3 percent, while the delay to Other New Orleans Trains declined by 242.9 minutes, or 34.6 percent (Column (5). The number of recrews over the 14 day RTC reporting period increased from 9 to 11 (Column (6)).

[59] The small differences in Average Train Speed and Delay per 100 Train Miles shown in Table 3, Line 1 and Table 4, Line 1 are due to the slightly different freight trains included in this Supplemental VS and Banks/Guthrie's Opening VS statistical analyses. The Average Train Speed and Delay per 100 Train Mile for Freight traffic from this Supplemental VS shown on Table 3, Line 1 includes all freight trains operating during the RTC models 10-day statistical reporting period. The Freight Train statistics shown in Table 4, Line 1 were developed using Banks/Guthrie's Opening VS Access database scripts, which excluded some freight trains from the 10-day statistical reporting period. Specifically, Banks/Guthrie's Opening VS analyses excluded statistics for loaded coal trains N243, N247, N248, and N250, for empty coal trains E243, E247, E249 and E250, and for TASD train Z760. Banks/Guthrie's Opening and Rebuttal RTC Reports do not explain the reasons for the exclusion of these trains from their RTC statistics.

Table 5 below shows the Customer On-Time Percentage ("OTP") for the Cumulative Operating Changes RTC case calculated using the same approach used by Banks/Guthrie.[60]

Table 5
Banks/Guthrie Statistics for Customer On-Time Percentage for the Cumulative Operating Changes RTC Case

Regional Amtrak Trains	Customer OTP
(1)	(2)
1. 23	81.7%
2. 24	100.0%
3. 25	100.0%
4. 26	96.7%
5. Total	94.6%

Source: Supplemental VS e-workpaper "Cumulative Operating Changes OTP.xlsx."

As shown in Table 5 above, the results of the Cumulative Operating Changes RTC Case indicate that the Customer OTP is above the 80 percent FRA threshold for each Regional Amtrak train, and over 94 percent for all Regional Amtrak trains in aggregate.

[60] *See*, Banks/Guthrie Opening VS workpaper "OTP.accdb."

V. RTC RESULTS WITH ADDED INFRASTRUCTURE

The GCWG Report included a number of projects proposed by the FRA to allow for the reinstatement of Amtrak passenger service along the Gulf Coast. The FRA proposed projects included adding and extending passing sidings, adding bypass tracks at Gentilly and Bayou Cassotte yards, upgrading speeds on sidings and bridges, turnout improvements and a station track at the Mobile Amtrak station.[61]

Banks/Guthrie indicated that they modeled the impact of adding the FRA's proposed infrastructure projects as outlined in the GCWG Report (excluding automating the movable bridges), and that the additional infrastructure did not mitigate the reinstatement of Regional Amtrak trains between New Orleans and Mobile.[62] That Banks/Guthrie analysis, however, tested the FRA's proposed infrastructure against estimated 2039 traffic levels and not the 2019 base-case traffic levels.[63] The STB requested during the STB Hearing that the parties test the FRA proposed infrastructure against 2019 traffic levels.[64]

Banks/Guthrie contended that because the proposed FRA infrastructure projects did not mitigate the impact to freight trains of the reintroduction of Regional Amtrak service, a different portfolio of infrastructure projects was required.[65] To this end, Banks/Guthrie identified 14 infrastructure projects that they indicated are required to provide the same level of service for projected 2039 freight traffic after the reintroduction of Regional Amtrak service.[66] Banks/Guthrie also stated that two (2) of their proposed 14 infrastructure additions, the Michoud Double Track and Mobile Double Track, were not required until 2039 so were not required in a 2019 RTC

[61] *See*, GCWG Report at pp. 23-27.
[62] *See*, Opening RTC Report at p. 83.
[63] *See*, STB Hearing Transcript at pp. 3713-3714.
[64] *See*, STB Hearing Transcript at p. 4056.
[65] *See*, Opening RTC Report at pp. 39 and 83.
[66] *See*, Opening RTC Report at p. 39.

model.[67] In addition, five (5) of the Banks/Guthrie proposed projects, the Gentilly Bypass, the Mobile Station Track, the Harbin Siding Extension, the St. Elmo Siding Extension and the Theodore Industrial Park Improvements, are virtually the same as projects proposed by the FRA.[68] This means that seven (7) of the Banks/Guthrie proposed projects, the NS Terminal Improvements, the Clairborne Double Track, the Nicholson Siding Track, the Beauvoir Double Track, the Fountainbleau Siding, the Bayou Cassotte Power Turnouts and the Brookley Siding Extension, are separate infrastructure projects from the FRA proposed infrastructure projects for the 2019 RTC cases.

During the STB Hearing, the STB noted that Banks/Guthrie only presented the cumulative results of adding the additional infrastructure they proposed and did not present the results of the individual additions.[69] The STB requested an examination of the results of adding the 2019 infrastructure projects on an individual basis.[70]

Pursuant to the STB's request for further analysis of infrastructure along the New Orleans-Mobile line segment, we developed a series of RTC cases to explore the impact of infrastructure changes on the freight train performance after the reintroduction of Regional Amtrak trains on the line. We discuss these analyses below under the following topical headings.

A. FRA Recommended Track Improvements
B. Banks/Guthrie Infrastructure Changes
C. Results of Added Infrastructure

[67] *See*, Opening RTC Report at pp. 61 and 67.
[68] *See*, Opening RTC Report at pp. 64, 66 and 67. The Opening RTC Report indicates the Clairborne Double Track was also recommended by the FRA and the St. Elmo Siding Extension was not recommended by the FRA. It appears that Banks/Guthrie mistakenly switched these issues in their Opening RTC Report as their RTC workpapers show the opposite.
[69] *See*, STB Hearing Transcript at p. 4052.
[70] *See*, STB Hearing Transcript at pp. 4052 and 4056.

A. FRA RECOMMENDED TRACK IMPROVEMENTS

The GCWG Report noted that FRA recommended various upgrades and changes to the rail infrastructure between New Orleans and Mobile that would benefit both the freight operations and the proposed passenger service.[71] We discuss these improvements below.

1. Turnout, Crossing and Movable Bridge Improvements

The GCWG Report stated the FRA's primary changes were to passing sidings along the line segment, including replacing No. 15 turnouts with No. 20 turnouts, upgrading track, and extending and adding sidings, i.e., the Harbin Siding Extension and the St. Elmo Siding Extension.[72] The GCWG Report also indicated that FRA identified numerous at-grade highway crossings that could be closed or upgraded to allow for more efficient use of the passing sidings, i.e., the Theodore Industrial Park Improvements.[73] FRA also noted that CSXT had voluntarily reduced speeds on its track west of Gulfport through Biloxi because of the large number of at-grade highway crossings on this section of track. FRA believed that these speed restrictions could be removed if three (3) crossings were removed and CSXT upgraded the signals at two (2) other crossings.[74]

The GCWG Report also stated that when a movable bridge closes, it must be locked in position with the rails on the movable part of the bridge precisely aligned with the rails on the fixed part of the bridge.[75] To ensure that proper alignment is maintained, special miter rails are

[71] *See*, GCWG Report at p. 23.
[72] *See*, GCWG Report at pp. 23-24.
[73] *See*, GCWG Report at p. 25.
[74] *See*, GCWG Report at p. 24.
[75] *See*, GCWG Report at p. 26.

required,[76] but the type of miter rail used at most of the CSXT bridges currently restricts train speeds.[77] Changing the type of miter rails used on the moveable bridges would increase available train speeds and help to reduce train delays.

We tested the impact of adding all of the FRA recommended infrastructure improvements in a single RTC scenario with two (2) exceptions. First, FRA recommended the addition of a station track at the Mobile Amtrak station so that Amtrak Regional trains would clear CSXT's main line. Because the construction of a station track in Mobile was a large point of emphasis during the STB Hearings, we tested the impact of its construction separately from the other FRA recommended changes. Second, like the Mobile Station track, a Gentilly Yard bypass also raised a serious amount of discussion during the STB Hearing.[78] Given the level of interest in this added infrastructure, we tested the Gentilly Yard Bypass as a separate case.

The impact of including the other FRA proposed infrastructure projects are shown on Table 6, Line B.4 and Line C.14 below. On an individual basis, adding the FRA recommended turnouts, power crossings and movable bridge improvements increases average Freight train speeds by 0.7 mph and decreases Delay per 100 Train Miles by 12.2 minutes over the 2019 Passenger Base Case. Because this is the first change in the cumulative analysis the cumulative impact is the same as the individual impact.

2. <u>Mobile Station Track</u>

The GCWG Report stated that FRA believed that the reintroduction of Reginal Amtrak service would require a place for the Amtrak trains to park in Mobile during the middle of the day

[76] Miter rails are rails that overlap from the movable span to the fixed span on movable bridges. They provide a smooth transition for the wheel of the railcar from the rail on the approach (fixed) span to the movable span. *See*, https://www.railwayage.com/mw/movable-bridge-best-practices/

[77] *See*, GCWG Report at p. 26.

[78] *See*, STB Hearing transcript at p. 4007.

when not in use.[79] To that end, FRA proposed that Amtrak construct a 1,000-foot track on the west side of the existing Mobile station platform and connected to the main track with a fully signaled and interlocked No. 10 turnout.[80]

The impact of including this additional infrastructure is shown on Table 6, Line B.5 and Line C.15 below. On an individual basis, adding the Mobile Station track decreases average Freight Train speeds by 0.1 mph and increases Delay per 100 Train Miles by 1.1 minutes over the 2019 Passenger Base Case. On a cumulative basis, adding the Mobile Station track to the FRA recommended turnouts, power crossings and movable bridge improvements increases average Freight Train speeds by 0.1 mph and decreases Delay per 100 Train Miles by 3.6 minutes.

3. Gentilly Yard Bypass

The GCWG Report indicated that while railroads construct yard facilities to separate yard and main line operations, rail yard operations can impact traffic on main line tracks by trains pulling into and out of the yard.[81] Additionally, in some locations due to yard space limitations, railroads must use main line tracks for assembling and disassembling trains and/or for pushing and pulling strings of cars to and from yard tracks.[82]

The GCWG Report noted that operations at CSXT's Gentilly Yard frequently block main line tracks running through the yard, which could impact Amtrak passenger operations.[83] FRA recommended that a new, fully signaled bypass track around Gentilly Yard be constructed for passenger trains on the north side of the existing main line for approximately two (2) miles with No. 20 turnouts at each end.

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[79] *See*, GCWG Report at p. 27.
[80] *Id.*
[81] *See*, GCWG Report at p. 25.
[82] *Id.*
[83] *Id.*

The impact of including this additional infrastructure is shown on Table 6, Line B.6 and Line C.16 below. On an individual basis, adding the Gentilly Bypass Track increases Freight Train speeds by 0.1 mph and decreases Delay per 100 Train Miles by 2.7 minutes over the 2019 Passenger Base Case. On a cumulative basis, adding the Gentilly Bypass Tack to the other FRA recommended improvements has no impact on average Freight Train speeds and decreases Delay per 100 Train Miles by 0.7 minutes.

B. BANKS/GUTHRIE INFRASTRUCTURE CHANGES

Banks/Guthrie contended that even with the proposed FRA infrastructure improvements, freight rail operations on the NS and CSXT lines between New Orleans and Mobile in 2039 would decline after the reintroduction of Regional Amtrak passenger service.[84] Our Reply VS explained the reasons why Banks/Guthrie's RTC models do not support their contentions.[85] However, as requested by the STB, we evaluated the addition of the infrastructure projects identified in Banks/Guthrie's Opening RTC models, but not Banks/Guthrie's Rebuttal RTC models, specifically, the NS Freight Lead extension. We excluded the NS Freight Lead extension from our analyses because STB Chairman Oberman indicated in his May 12, 2022 comments during the STB Hearing that he discounted the need for the NS Freight Lead Extension given that it was not in Banks/Guthrie's Opening RTC Report.[86]

We tested the impact of the additional infrastructure on individual and cumulative bases. In other words, we began with the 2019 Passenger Base Case with all FRA recommended improvements added (including the Mobile Station Track and Gentilly Yard Bypass Track), and incrementally added the Banks/Guthrie suggested infrastructure. In this way, the impact that the

[84] *See*, Opening RTC Report at pp 83-84.
[85] *See*, Reply VS at p. 40.
[86] *See*, STB Hearings transcript at pp. 4062-4063.

added infrastructure has on rail operations can be evaluated. Each infrastructure addition is discussed briefly below.

1. NS Terminal Improvements

Banks/Guthrie included upgrades and additions to NS's Back Belt line in New Orleans in their Opening 2019 Build Case, including but not limited to, adding two (2) powered crossovers at Terminal Junction, two (2) powered crossovers at New St. Johns Interlocking and one powered crossover and one powered turnout at Elysian Fields.[87] Banks/Guthrie also included an extension of the NS Freight Lead from 3,000 feet to 12,000 feet in their Rebuttal RTC case.[88] We included the additional crossovers in our Supplemental RTC analyses, but as discussed above, excluded the NS Freight Lead Extension.

The impact of including this additional infrastructure is shown on Table 6, Line B.7 and Line C.17 below. On an individual basis, adding the NS Terminal Improvements increases average Freight train speeds by 0.1 mph and decreases Delay per 100 Train Miles by 3.3 minutes over the 2019 Passenger Base Case. On a cumulative basis, adding the NS Terminal Improvements has no impact on the average Freight train speeds and shows a 0.3 minute increase in Delay per 100 Train Miles.

2. Clairborne Double Track

Banks/Guthrie state that the Regional Amtrak train pairs are scheduled to meet between Clairborne and Nicholson in the afternoon several miles north of the current Clairborne Siding.[89] By expanding the Clairborne Siding into a segment of double track, Banks/Guthrie state that the

[87] *See*, Opening RTC Report at p. 59.
[88] *See*, Rebuttal RTC Report at p. 38.
[89] *See*, Opening RTC Report at p. 62.

track may be used both for the passenger trains to meet and for a passenger train to meet with a freight train.

The impact of including this additional infrastructure is shown on Table 6, Line B.8 and Line C.18 below. On an individual basis, adding the Clairborne double track increases average Freight Train speeds by 0.1 mph and decreases Delay per 100 Train Miles by 1.5 minutes over the 2019 Passenger Base Case. On a cumulative basis, adding the Clairborne double track decreases average Freight Train speeds by 0.1 mph and shows a 1.8 minute increase in Delay per 100 Train Miles.

3. <u>Nicholson Siding Extension</u>

As stated above, Banks/Guthrie state that the Regional Amtrak train pairs are scheduled to meet between Clairborne and Nicholson Sidings.[90] While they assert that an extended Nicholson siding cannot be used to hold freight trains during meets due to the number of at-grade highway crossings, they claim that the extended Nicholson siding allows for Amtrak trains to move over the siding at higher speeds and to reduce Regional Amtrak train delays.

The impact of including this additional infrastructure is shown on Table 6, Line B.9 and Line C.19 below. On an individual basis, adding the Nicholson siding extension decreases average Freight Train speeds by 0.3 mph and increases Delay per 100 Train Miles by 8.4 minutes over the 2019 Passenger Base Case. On a cumulative basis, adding the Nicholson siding extension has no impact on average Freight train speeds, and shows a 1.3 minute increase in Delay per 100 Train Miles.

[90] *See*, Opening RTC Report at p. 63.

4. Beauvoir Double Track

Banks/Guthrie state that extending the current Beauvoir siding to become effectively a double main line section of track allows freight and Regional Amtrak trains to meet without blocking existing at-grade highway crossings for extended periods of time.[91]

The impact of including this additional infrastructure is shown on Table 6, Line B.10 and Line C.20 below. On an individual basis, adding the Beauvoir double track increases average Freight Train speeds by 0.1 mph and decrease Delay per 100 Train Miles by 2.0 minutes over the 2019 Passenger Base Case. On a cumulative basis, adding the Beauvoir double track increases average Freight Train speeds by 0.1 mph, and shows a 1.7 minute decrease in Delay per 100 Train Miles.

5. Fountainbleau Siding

Banks/Guthrie state that existing sidings at Beauvoir, Ocean Springs, and Gautier have limited potential for expansion due to grade crossings.[92] They contend that a new Fountainbleau Siding provides a location clear of highway crossings for train meets and allows Regional Amtrak trains to overtake freight trains.

The impact of including this additional infrastructure is shown on Table 6, Line B.11 and Line C.21 below. On an individual basis, adding the Fountainbleau siding increases average Freight Train speeds by 0.1 mph and decreases Delay per 100 Train Miles by 4.4 minutes over the 2019 Passenger Base Case. On a cumulative basis, adding the Fountainbleau siding increases average Freight Train speeds by 0.1 mph, and shows a 2.8 minute decrease in Delay per 100 Train Miles.

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[91] *See*, Opening RTC Report at p. 65.
[92] *Id.*

6. Bayou Cassotte Power Turnouts

Banks/Guthrie state that three (3) local trains serve the Bayou Cassotte Yard, which is connected to the CSXT main line through the use of unpowered turnouts.[93] They claim that when a local train leaves the Bayou Cassotte Yard, the local must dwell on the main line while a crew member walks back to restore the turnout. They believe adding power turnouts at the Bayou Cassotte Yard will reduce train dwell time on the main line.

The impact of including this additional infrastructure is shown on Table 6, Line B.12 and Line C.22 below. On an individual basis, adding the Bayou Cassotte power turnouts decreases average Freight Train speeds by 0.3 mph and increases Delay per 100 Train Miles by 8.8 minutes over the 2019 Passenger Base Case. On a cumulative basis, adding the Bayou Cassotte power turnouts increases average Freight Train speeds by 0.1 mph, and shows a 1.8 minute decrease in Delay per 100 Train Miles.

7. Brookley Siding Extension

Banks/Guthrie state that the Brookley siding is important to allow freight trains to hold clear of the CSXT main line if there is congestion in Mobile.[94] They claim that their proposed additions ensure that the siding is sufficiently long to fit all freight trains and allows for the siding to have a higher speed limit.

The impact of including this additional infrastructure is shown on Table 6, Line B.13 and Line C.23 below. On an individual basis, adding the Brookley siding extension has no impact on average Freight Train speeds and increases Delay per 100 Train Miles by 0.5 minutes over the 2019 Passenger Base Case. On a cumulative basis, adding the Brookley siding extension has no

[93] *See*, Opening RTC Report at p. 66.
[94] *See*, Opening RTC Report at p. 67.

impact on average Freight Train speeds and shows a 1.3 minute increase in Delay per 100 Train Miles.

C. RESULTS OF ADDED INFRASTUCUTRE

The results of adding the additional infrastructure discussed above are shown in Exhibit No. 11 to this Supplemental VS and summarized in Table 6 below on both individual and cumulative bases.[95] In developing both the individual and cumulative impacts, we began with the 2019 Passenger Base Case (Table 6, Line 3).

[95] In Table 6 below, we only show the statistics for Freight trains. The statistics for Regional Amtrak, Amtrak Long Haul and Yard trains are shown in Exhibit No. 11 to this Supplemental VS.

Table 6
Amtrak Gulf Coast RTC Simulation Results from
Investment Changes To the 2019 Passenger Base Case
Freight Trains Only

RTC Case	Average Train Speed	Delay Percentage	Total True Delay Time (hours)	Delay per 100 Train Miles (minutes)
(1)	(2)	(3)	(4)	(5)
A. Base Cases				
1. Unadjusted 2019 Freight Base Case	15.1	23.4%	563.6	75.3
2. Adjusted 2019 Freight Base Case	15.4	21.8%	524.4	70.1
3. 2019 Passenger Base Case	14.7	27.5%	660.2	88.2
B. Individual Impact of Changes in Investment				
4. FRA Improvements	15.4	24.1%	567.8	76.0
5. Mobile Station	14.6	27.8%	668.1	89.3
6. Gentilly Yard Bypass	14.8	26.6%	640.1	85.5
7. NS Terminal Improvements	14.8	26.5%	635.6	84.9
8. Clairborne Double Track	14.8	27.1%	649.1	86.7
9. Nicholson Siding Extension	14.4	30.1%	723.4	96.6
10. Beauvoir Double Track	14.8	26.9%	645.5	86.2
11. Fountainbleau Siding	14.8	26.1%	627.4	83.8
12. Bayou Cassotte Turnouts	14.4	30.3%	725.9	97.0
13. Brookley Siding Extension	14.7	27.6%	663.7	88.7
C. Cumulative Impact of Changes in Investment				
14. FRA Improvements	15.4	24.1%	567.8	76.0
15. Mobile Station	15.5	22.9%	541.1	72.4
16. Gentilly Yard Bypass	15.5	22.7%	535.8	71.7
17. NS Terminal Improvements	15.5	22.8%	538.3	72.0
18. Clairborne Double Track	15.4	23.4%	551.5	73.8
19. Nicholson Siding Extension	15.4	23.8%	561.5	75.1
20. Beauvoir Double Track	15.5	23.2%	548.4	73.4
21. Fountainbleau Siding	15.6	22.4%	527.5	70.6
22. Bayou Cassotte Turnouts	15.7	21.9%	514.2	68.8
23. Brookley Siding Extension	15.7	22.3%	523.7	70.1

Source: Exhibit No. 11.

As shown in Table 6 above, the FRA proposed improvements have the largest impact on freight train operations of the modeled scenarios. While Delay per 100 Train Miles is 5.9 minutes higher[96] with the FRA proposed infrastructure than the Adjusted 2019 Freight Base Case, the

[96] Compare Table 6, Line 2, Column (5) to Table 6, Line 4 or Line 14, Column (5).

average train speeds for freight trains are actually equal to[97] the Adjusted 2019 Freight Base Case. By comparison, many of the recommended infrastructure projects identified in the Banks/Guthrie Reports have little or no impact, and produce no better results than the 2019 Passenger Base Case. Overall, when all infrastructure changes are included, the average train speed increases by 0.3 mph compared to the Adjusted 2019 Freight Base Case and Delay per 100 Train Miles remains the same at 70.1 minutes.

[The remainder of this page is intentionally left blank.]

[97] Compare Table 6, Line 2, Column (2) to Table 6, Line 4 or Line 14, Column (2).

VERIFICATIONS

I, Thomas D. Crowley, verify under penalty of perjury that I have read this Supplemental Verified Statement on behalf of the National Railroad Passenger Corporation, that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.

Thomas D. Crowley

Executed on 7/27/22

***

I, Daniel L. Fapp, verify under penalty of perjury that I have read this Supplemental Verified Statement on behalf of the National Railroad Passenger Corporation, that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.

Daniel L. Fapp

Executed on 7-27-22

LIST OF EXHIBITS

Exhibit No.	Exhibit Description
(1)	(2)
10	Amtrak Gulf Coast RTC Simulation Results from Operating Changes for All Trains
11	Amtrak Gulf Coast RTC Simulation Results from Investment Changes for All Trains

Amtrak Gulf Coast RTC
Simulation Results From Operating Changes

RTC Case	Average Speed 1/	Delay % 2/	True Delay (Hours) 3/	Delay/ 100 TM 4/
(1)	(2)	(3)	(4)	(5)
BASE CASES				
1. Unadjusted Freight Base Case				
a. Regional Amtrak	N/A	N/A	N/A	N/A
b. Amtrak Long Haul	31.7	2.1%	0.4	4.0
c. Yard Trains	3.9	18.7%	49.1	242.7
d. Freight Trains	15.1	23.4%	563.6	75.3
e. All Trains	14.2	22.8%	613.0	78.8
2. Adjusted Freight Base Case				
a. Regional Amtrak	N/A	N/A	N/A	N/A
b. Amtrak Long Haul	31.1	4.1%	0.7	7.5
c. Yard Trains	3.9	17.5%	45.8	226.4
d. Freight Trains	15.4	21.8%	524.4	70.1
e. All Trains	14.4	21.3%	570.8	73.4
3. Passenger Base Case				
a. Regional Amtrak	36.3	11.9%	17.1	17.6
b. Amtrak Long Haul	31.9	1.7%	0.3	3.1
c. Yard Trains	3.7	24.5%	64.2	317.6
d. Freight Trains	14.7	27.5%	660.2	88.2
e. All Trains	14.7	26.3%	741.8	84.8
INDIVIDUAL IMPACT OF OPERATING CHANGES				
4. Adjusting Train Sit-Times at Highway Crossings				
a. Regional Amtrak	36.9	10.2%	14.5	15.0
b. Amtrak Long Haul	32.1	1.1%	0.2	2.1
c. Yard Trains	3.9	19.8%	52.0	257.0
d. Freight Trains	14.8	26.3%	632.2	84.5
e. All Trains	14.9	24.7%	698.9	79.9
5. Automating Movable Bridges				
a. Regional Amtrak	36.2	12.3%	17.5	18.1
b. Amtrak Long Haul	31.9	1.7%	0.3	3.1
c. Yard Trains	3.7	24.3%	63.8	315.5
d. Freight Trains	14.6	28.0%	673.2	89.9
e. All Trains	14.7	26.7%	754.8	86.3
6. Rescheduling Planned Maintenance				
a. Regional Amtrak	38.8	4.8%	6.9	7.1
b. Amtrak Long Haul	32.1	1.0%	0.2	1.9
c. Yard Trains	3.8	21.6%	56.5	279.4
d. Freight Trains	14.9	25.4%	610.7	81.6
e. All Trains	15.0	23.9%	674.3	77.1

Amtrak Gulf Coast RTC
Simulation Results From Operating Changes

RTC Case	Average Speed 1/	Delay % 2/	True Delay (Hours) 3/	Delay/ 100 TM 4/
(1)	(2)	(3)	(4)	(5)
7. Rescheduling Freight Trains				
a. Regional Amtrak	36.6	11.0%	15.7	16.2
b. Amtrak Long Haul	32.1	1.1%	0.2	2.1
c. Yard Trains	3.7	23.9%	62.6	309.3
d. Freight Trains	15.2	23.1%	556.0	74.3
e. All Trains	15.2	22.5%	634.4	72.5
8. Allowing Trains in Yards to Use Available Tracks				
a. Regional Amtrak	36.9	10.3%	14.7	15.2
b. Amtrak Long Haul	32.1	0.9%	0.1	1.6
c. Yard Trains	3.8	22.6%	59.2	292.8
d. Freight Trains	14.7	27.7%	666.3	89.0
e. All Trains	14.7	26.2%	740.4	84.6
CUMMULATIVE IMPACT OF ALL OPERATING CHANGES				
9. Adjusting Train Sit-Times at Highway Crossings				
a. Regional Amtrak	36.9	10.2%	14.5	15.0
b. Amtrak Long Haul	32.1	1.1%	0.2	2.1
c. Yard Trains	3.9	19.8%	52.0	257.0
d. Freight Trains	14.8	26.3%	632.2	84.5
e. All Trains	14.9	24.7%	698.9	79.9
10. Automating Movable Bridges				
a. Regional Amtrak	36.6	11.0%	15.7	16.2
b. Amtrak Long Haul	32.1	1.1%	0.2	2.0
c. Yard Trains	3.8	20.3%	53.3	263.6
d. Freight Trains	14.8	26.0%	625.4	83.5
e. All Trains	14.9	24.6%	694.6	79.4
11. Rescheduling Planned Maintenance				
a. Regional Amtrak	38.5	5.7%	8.1	8.4
b. Amtrak Long Haul	32.0	1.3%	0.2	2.4
c. Yard Trains	3.9	17.5%	45.9	227.0
d. Freight Trains	15.0	24.4%	586.6	78.4
e. All Trains	15.2	22.7%	640.8	73.3
12. Rescheduling Trains				
a. Regional Amtrak	38.6	5.5%	7.8	8.1
b. Amtrak Long Haul	32.2	0.7%	0.1	1.4
c. Yard Trains	3.9	18.7%	48.9	241.8
d. Freight Trains	15.5	20.6%	495.5	66.2
e. All Trains	15.6	19.5%	552.4	63.1

Amtrak Gulf Coast RTC
Simulation Results From Operating Changes

RTC Case	Average Speed 1/	Delay % 2/	True Delay (Hours) 3/	Delay/ 100 TM 4/
(1)	(2)	(3)	(4)	(5)
13. Allowing Trains in Yards to Use Available Tracks				
a. Regional Amtrak	38.8	4.8%	6.9	7.1
b. Amtrak Long Haul	32.3	0.5%	0.1	0.9
c. Yard Trains	3.9	17.3%	45.3	224.1
d. Freight Trains	15.5	20.4%	489.3	65.4
e. All Trains	15.6	19.2%	541.6	61.9

1/ The simple average of all train speeds within a train category taking into consideration all delays. Amtrak average train speeds shown above should not be confused with the Amtrak system average train speeds required under 49 U.S.C. 24101.

2/ The total delay time represented as a percent of total transit time.

3/ Aggregate delay time by train type in hours.

4/ Measures delays on a normalized 100 train mile basis taking into consideration the impact on long-haul through trains and short distance local trains.

Amtrak Gulf Coast RTC
Simulation Results From Investment Changes

RTC Case	Average Speed 1/	Delay % 2/	True Delay (Hours) 3/	Delay/ 100 TM 4/
(1)	(2)	(3)	(4)	(5)
BASE CASES				
1. Unadjusted Freight Base Case				
a. Regional Amtrak	N/A	N/A	N/A	N/A
b. Amtrak Long Haul	31.7	2.1%	0.4	4.0
c. Yard Trains	3.9	18.7%	49.1	242.7
d. Freight Trains	15.1	23.4%	563.6	75.3
e. All Trains	14.2	22.8%	613.0	78.8
2. Adjusted Freight Base Case				
a. Regional Amtrak	N/A	N/A	N/A	N/A
b. Amtrak Long Haul	31.1	4.1%	0.7	7.5
c. Yard Trains	3.9	17.5%	45.8	226.4
d. Freight Trains	15.4	21.8%	524.4	70.1
e. All Trains	14.4	21.3%	570.8	73.4
3. Passenger Base Case				
a. Regional Amtrak	36.3	11.9%	17.1	17.6
b. Amtrak Long Haul	31.9	1.7%	0.3	3.1
c. Yard Trains	3.7	24.5%	64.2	317.6
d. Freight Trains	14.7	27.5%	660.2	88.2
e. All Trains	14.7	26.3%	741.8	84.8
INDIVIDUAL IMPACT OF INVESTMENT				
4. FRA Improvements				
a. Regional Amtrak	37.0	10.1%	14.5	14.9
b. Amtrak Long Haul	31.9	1.7%	0.3	3.2
c. Yard Trains	3.8	22.6%	58.5	289.5
d. Freight Trains	15.4	24.1%	567.8	76.0
e. All Trains	15.4	23.1%	641.1	73.4
5. Mobile Station				
a. Regional Amtrak	36.2	11.9%	17.1	17.6
b. Amtrak Long Haul	31.9	1.7%	0.3	3.2
c. Yard Trains	3.7	25.1%	65.9	325.8
d. Freight Trains	14.6	27.8%	668.1	89.3
e. All Trains	14.7	26.6%	751.3	85.9
6. Gentilly Yard Bypass				
a. Regional Amtrak	35.2	15.5%	22.2	22.9
b. Amtrak Long Haul	31.9	1.7%	0.3	3.1
c. Yard Trains	3.9	20.2%	52.7	260.7
d. Freight Trains	14.8	26.6%	640.1	85.5
e. All Trains	14.9	25.3%	715.3	81.8

Amtrak Gulf Coast RTC
Simulation Results From Investment Changes

RTC Case	Average Speed 1/	Delay % 2/	True Delay (Hours) 3/	Delay/ 100 TM 4/
(1)	(2)	(3)	(4)	(5)
7. NS Terminal Improvements				
a. Regional Amtrak	36.2	12.3%	17.6	18.2
b. Amtrak Long Haul	32.1	1.6%	0.3	2.9
c. Yard Trains	3.8	23.5%	61.6	304.8
d. Freight Trains	14.8	26.5%	635.6	84.9
e. All Trains	14.9	25.4%	715.1	81.7
8. Clairborne Double Track				
a. Regional Amtrak	36.7	10.8%	15.5	16.0
b. Amtrak Long Haul	31.9	1.6%	0.3	2.9
c. Yard Trains	3.8	20.9%	54.8	271.0
d. Freight Trains	14.8	27.1%	649.1	86.7
e. All Trains	14.8	25.5%	719.7	82.3
9. Nicholson Siding Extension				
a. Regional Amtrak	36.8	10.6%	15.2	15.6
b. Amtrak Long Haul	28.9	12.4%	2.1	22.9
c. Yard Trains	3.5	32.7%	85.7	424.0
d. Freight Trains	14.4	30.1%	723.4	96.6
e. All Trains	14.4	29.2%	826.4	94.5
10. Beauvior Double Track				
a. Regional Amtrak	34.8	16.8%	24.0	24.8
b. Amtrak Long Haul	31.4	3.3%	0.5	6.0
c. Yard Trains	3.8	20.6%	53.9	266.8
d. Freight Trains	14.8	26.9%	645.5	86.2
e. All Trains	14.8	25.6%	724.0	82.8
11. Fountainbleau Siding				
a. Regional Amtrak	35.9	13.4%	19.2	19.8
b. Amtrak Long Haul	32.0	1.3%	0.2	2.3
c. Yard Trains	3.8	23.3%	61.2	302.5
d. Freight Trains	14.8	26.1%	627.4	83.8
e. All Trains	14.9	25.1%	707.9	80.9
12. Bayou Cassotte Turnouts				
a. Regional Amtrak	36.6	11.3%	16.1	16.6
b. Amtrak Long Haul	32.0	1.4%	0.2	2.5
c. Yard Trains	3.5	31.0%	81.2	401.5
d. Freight Trains	14.4	30.3%	725.9	97.0
e. All Trains	14.4	29.2%	823.4	94.1

Amtrak Gulf Coast RTC
Simulation Results From Investment Changes

RTC Case	Average Speed 1/	Delay % 2/	True Delay (Hours) 3/	Delay/ 100 TM 4/
(1)	(2)	(3)	(4)	(5)
13. Brookley Siding Extension				
a. Regional Amtrak	35.8	13.6%	19.4	20.0
b. Amtrak Long Haul	31.8	1.9%	0.3	3.6
c. Yard Trains	3.7	25.3%	66.4	328.4
d. Freight Trains	14.7	27.6%	663.7	88.7
e. All Trains	14.7	26.5%	749.8	85.7
CUMMULATIVE IMPACT OF INVESTMENT				
14. FRA Improvements				
a. Regional Amtrak	37.0	10.1%	14.5	14.9
b. Amtrak Long Haul	31.9	1.7%	0.3	3.2
c. Yard Trains	3.8	22.6%	58.5	289.5
d. Freight Trains	15.4	24.1%	567.8	76.0
e. All Trains	15.4	23.1%	641.1	73.4
15. Mobile Station				
a. Regional Amtrak	37.1	9.7%	13.8	14.3
b. Amtrak Long Haul	31.9	1.7%	0.3	3.1
c. Yard Trains	3.9	21.1%	54.9	271.4
d. Freight Trains	15.5	22.9%	541.1	72.4
e. All Trains	15.5	22.0%	610.0	69.8
16. Gentilly Yard Bypass				
a. Regional Amtrak	37.0	9.9%	14.2	14.6
b. Amtrak Long Haul	31.8	1.9%	0.3	3.4
c. Yard Trains	4.0	18.0%	46.8	231.5
d. Freight Trains	15.5	22.7%	535.8	71.7
e. All Trains	15.6	21.5%	597.1	68.3
17. NS Terminal Improvements				
a. Regional Amtrak	37.4	8.7%	12.4	12.8
b. Amtrak Long Haul	31.9	2.2%	0.4	4.1
c. Yard Trains	4.0	18.5%	47.9	237.0
d. Freight Trains	15.5	22.8%	538.3	72.0
e. All Trains	15.5	21.6%	599.0	68.6
18. Clairborne Double Track				
a. Regional Amtrak	37.0	10.1%	14.4	14.8
b. Amtrak Long Haul	31.9	2.3%	0.4	4.2
c. Yard Trains	3.9	19.5%	50.6	250.1
d. Freight Trains	15.4	23.4%	551.5	73.8
e. All Trains	15.5	22.2%	616.8	70.6

Amtrak Gulf Coast RTC
Simulation Results From Investment Changes

RTC Case	Average Speed 1/	Delay % 2/	True Delay (Hours) 3/	Delay/ 100 TM 4/
(1)	(2)	(3)	(4)	(5)
19. Nicholson Siding Extension				
a. Regional Amtrak	36.0	12.9%	18.5	19.1
b. Amtrak Long Haul	31.8	2.3%	0.4	4.2
c. Yard Trains	3.9	19.9%	51.5	254.8
d. Freight Trains	15.4	23.8%	561.5	75.1
e. All Trains	15.4	22.7%	631.9	72.3
20. Beauvior Double Track				
a. Regional Amtrak	36.6	11.1%	15.9	16.4
b. Amtrak Long Haul	31.8	2.3%	0.4	4.2
c. Yard Trains	4.0	18.5%	47.9	236.8
d. Freight Trains	15.5	23.2%	548.4	73.4
e. All Trains	15.5	22.0%	612.5	70.1
21. Fountainbleau Siding				
a. Regional Amtrak	36.9	10.4%	14.9	15.4
b. Amtrak Long Haul	31.8	2.3%	0.4	4.2
c. Yard Trains	3.9	18.8%	48.8	241.3
d. Freight Trains	15.6	22.4%	527.5	70.6
e. All Trains	15.6	21.3%	591.5	67.7
22. Bayou Cassotte Turnouts				
a. Regional Amtrak	36.8	10.7%	15.3	15.8
b. Amtrak Long Haul	31.8	2.3%	0.4	4.2
c. Yard Trains	3.9	18.9%	49.1	243.1
d. Freight Trains	15.7	21.9%	514.2	68.8
e. All Trains	15.7	20.9%	579.0	66.3
23. Brookley Siding Extension				
a. Regional Amtrak	36.5	11.5%	16.5	17.0
b. Amtrak Long Haul	31.8	2.3%	0.4	4.2
c. Yard Trains	3.9	18.8%	48.7	240.7
d. Freight Trains	15.7	22.3%	523.7	70.1
e. All Trains	15.6	21.3%	589.2	67.4

1/ The simple average of all train speeds within a train category taking into consideration all delays. Amtrak average train speeds shown above should not be confused with the Amtrak system average train speeds required under 49 U.S.C. 24101.

2/ The total delay time represented as a percent of total transit time.

3/ Aggregate delay time by train type in hours.

4/ Measures delays on a normalized 100 train mile basis taking into consideration the impact on long-haul through trains and short distance local trains.