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

CSX TRANSPORTATION, INC.'S AND NORFOLK SOUTHERN RAILWAY
COMPANY'S REBUTTAL EVIDENCE

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EXECUTIVE SUMMARY

Amtrak’s Reply Evidence is a case study in overreach. Amtrak all but admits that its proposal to add four daily passenger trains to the Gulf Coast Corridor with no supporting infrastructure would immediately impair freight service over the corridor.¹ But according to Amtrak, this is a matter of no concern, because Amtrak has a statutory right to impair freight service so long as the impairment is not “excessive.” And according to Amtrak, the Board cannot even consider the interests of affected stakeholders like freight shippers, the Ports of Mobile and New Orleans, other freight rail carriers, or commuters impacted by grade crossing delays. Amtrak says that these parties and their interests are irrelevant, because supposedly “[t]he statute does not contemplate that the Board account for interests of other parties that may use or cross a rail carrier’s track.”² And Amtrak simply ignores the Board’s request that parties present “evidence on the service’s potential effects on freight transportation, such as an RTC study or other study or studies.”³ Amtrak instead chose to present no RTC modeling at all regarding whether its proposed new passenger service could be implemented without unreasonably impairing freight service, relying instead on baseless criticisms of CSXT’s and NSR’s

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

² Amtrak Reply at 40.

³ Decision at 7, *Application of Nat’l Passenger R.R. Corp. Under 49 U.S.C. § 24309(e)—CSX Transp., Inc., & Norfolk S. Ry. Co.*, Docket No. FD 36496 (STB served Aug. 6, 2021) (“August 6 Decision”).

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submitted evidence, and submitting a theoretical capacity analysis based on the unrealistic assumptions that all train traffic is equal in service characteristics, can be robotically dispatched in 15 minute increments, is infinitely flexible in when and how it is to run, and can ignore the need for local service or interchange with other carriers.

The extreme positions that Amtrak takes in its reply evidence are a complete about-face. Less than two years ago, Amtrak, CSXT, and NSR agreed to work together on an RTC model to evaluate the impacts of Gulf Coast passenger service on “current and future freight service,” including potential infrastructure required to mitigate impacts of the new service.⁴ This model was designed to build upon the Gulf Coast Working Group’s 2017 Report to Congress, in which all participants agreed that some level of new infrastructure was necessary to support passenger service. Even after Amtrak refused to renew the joint RTC model (and refused to allow CSXT and NSR to pay to complete it), it indicated in its Application instituting this proceeding that it would be willing to fund the infrastructure projects set forth in Table 5 of the Gulf Coast Working Group’s 2017 Report to

⁴ See RTC Study Agreement at 5–6 (attached as Exhibit E to CSXT and NSR’s Motion to Dismiss (filed Apr. 5, 2021)). As discussed below, Amtrak’s complaints about data sharing are a red herring. Amtrak specifically negotiated a data sharing agreement under which CSXT, NSR, and Amtrak agreed to provide confidential data to HDR but not to each other, and non-confidential summaries to Amtrak. Sometime after that agreement, Amtrak apparently negotiated a different funding agreement with FRA in which it promised FRA would be given a broader set of data. NSR and CSXT cannot be responsible for Amtrak agreeing with them on the one hand, and then turning around agreeing to something completely to the contrary with FRA.

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Congress.⁵ That position has been left by the wayside. Now Amtrak insists upon immediate access, with no supporting infrastructure, and without bothering to present any RTC modeling.

There is no explanation for Amtrak’s abrupt decisions to abandon cooperative evaluation of the impact of its proposed new service and to walk away from its initial recognition that infrastructure investments would be necessary to support that service—except perhaps a hope that shifting political winds will lead the Board to ignore negative impacts on freight shippers so it can give Amtrak a “win.” But this Board is not a political rubber-stamp. It is an independent arbiter required to neutrally apply the statute in a way that balances the interests of all stakeholders. And here Congress has made clear that Amtrak is not allowed to add passenger trains that will “unreasonably impair” freight transportation.

Amtrak’s maximalist arguments cannot conceal the complete lack of support for its positions. Its assertion that “impair unreasonably” actually only encompasses “excessive” impairment is built upon a fanciful “plain language” reading that ignores the primary definitions of “unreasonable” in favor of a partial quotation of an obscure ancillary definition in an internet dictionary. Moreover, Amtrak’s claim that “unreasonably” is synonymous with “excessively” is utterly inconsistent with the rest of the statute and the common-sense understanding of the word. Its one-sided citation of the legislative history ignores that Congress

⁵ See Application at 3 n.3.

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rejected a bill that would have provided automatic approval of Amtrak requests to add trains. The proper interpretation of a congressional decision to reject proposed statutory language is not to assume that Congress really wanted to adopt it. Rather, it is to recognize that Congress rejected that proposal for a reason and that it intended the Board to deny Amtrak requests for additional trains that would “unreasonably impair” freight rail transportation.

Even if Amtrak could rewrite the statute, the facts show that adding four daily passenger trains on the Gulf Coast line with no supporting infrastructure would create immediate and severe disruptions to freight rail service that would satisfy any standard of impairment, whether “unreasonable,” “excessive,” or otherwise. The RTC model presented by CSXT and NSR clearly establishes that fact. In contrast, Amtrak retained consultants familiar with the RTC program, but did not present any RTC evidence to argue that the interference Amtrak caused to freight service would be within reasonable levels. Instead, Amtrak’s consultants launch criticisms of the 2021 Gulf Coast RTC Model, accusing CSXT and NSR of intentionally manipulating RTC to overestimate the amount of interference that adding Amtrak’s trains would cause. This overheated charge is replete with mistakes, exaggerations, and misunderstandings, which are addressed in detail in the Rebuttal Verified Statement of Hannah Rosse and Holly Sinkkanen and the 2021 New Orleans – Mobile Gulf Coast Passenger Service RTC Modeling Rebuttal Report (“2021 RTC Rebuttal Report”).

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For example, Amtrak's RTC experts criticize the 2021 Gulf Coast RTC Model for modeling a representative period rather than replicating traffic for a "peak two weeks." But the goal of RTC capacity modeling is to test capacity for normal operations, not peak operations. Moreover, this quibble from Amtrak's consultants makes no difference to the results, because train counts in the representative period used by the RTC Modelers are just 2.5% different from train counts in Amtrak's "peak period"—after one corrects the multiple oversights and data errors by Amtrak's consultants.

And Amtrak's complaint that the Gulf Coast RTC Model contains "257% more trains" than exist in the real world is flatly wrong. The RTC Modelers explain in detail how all the trains in the 2021 Gulf Coast RTC Model correspond to real-world trains. Amtrak's claim to the contrary is predicated on a misunderstanding of the data (and how to use it in developing an RTC model). Amtrak's mischaracterization of data would result in the Board having to ignore the impact of bridge tenders, light engines, and many local and yard trains on the performance of freight rail transportation.

Critically, Amtrak has produced no RTC evidence to show how the alleged flaws it identifies in the 2021 Gulf Coast RTC Model would affect the results. As the 2021 RTC Rebuttal Report shows, Amtrak's complaints would have little to no impact on the model's conclusions, which show a serious degradation of freight service at current volumes and catastrophic system gridlock at future volumes. And Amtrak has failed to identify a single service route with acceptable passenger OTP

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that contains the unique confluence of features and dispatching challenges present along the Gulf Coast Corridor, from movable bridges and single track to congested terminals and numerous grade crossings. Instead, the best Amtrak can do is identify a few passenger service routes from around the country that have some, but not all of the complexities of the Gulf Coast Corridor.

It is difficult to fathom how Amtrak can suggest that there would be no significant harm in introducing its new passenger rail service without any supporting infrastructure notwithstanding the clear results of the 2021 Gulf Coast RTC Model. That model shows that there would be significant harm created by introducing the proposed passenger service with no supporting infrastructure. In the first place, Amtrak's claim that CSXT and NSR only presented percentages showing impairment to key metrics and not the total impact is false—the total figures are readily available in the Opening Evidence Workpapers. Moreover, the impact numbers are serious and excessive by any measure. For example, the train speed decline in 2019 that Amtrak's consultants claim is minor corresponds to 13 hours of additional delay per day. A 45.4% increase in local train delays has a real impact on first-mile/last-mile service to individual customers. The increase in variability—as high as 63.3% for one CSXT local train—means that more local service will be unpredictable and sporadic, directly impacting freight users. A 37.7% increase in re crews shows a substantial increase in the number of trains that are so delayed that the crews have to be relieved because otherwise they would exceed hours of service limits. This is not mere “inconvenience.” It is unreasonable

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impairment by any definition. And this is just the impact at current volumes—at future volumes, the network approaches complete gridlock unless trains are allowed to block grade crossings for hours at a time.

In an attempt to patch its glaring failure to produce RTC evidence, Amtrak presents the results of its own proprietary, “back of the envelope” model, which it claims shows that the Gulf Coast Corridor has sufficient capacity to accommodate its new passenger service. This so-called “model” has never been used to present evidence to the STB. Amtrak’s evidence fails to include any of the proprietary software or information necessary to replicate its analysis, instead presenting its results as the product of a black box. But on its face, the model appears to ignore most relevant features of the Gulf Coast Corridor:

- It does not account for movable bridges, the delays caused by movable bridges, or bridge tender hi-rail movements.
- It fails to account for the differences between yard, local, and through trains—instead developing a “model train” and pretending that all the freight trains are the same.
- It does not track the impact on grade crossing delays.
- It does not attempt to model future volumes and infrastructure needs.

Indeed, Amtrak’s proprietary “model” appears to be a glorified string model. Board precedent does not accept string modeling as a substitute for RTC modeling in rate cases for hypothetical stand-alone railroads—where all that is at stake is the rate to be charged. And the Board cannot reasonably accept such a model here, where Amtrak’s proposal would have real impacts on freight consumers, and where

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a reliable and accepted methodology shows that unsupported passenger trains will wreak havoc on the quality of freight service.

As CSXT and NSR said on Opening, this case is not about whether Amtrak may institute a new passenger service on the Gulf Coast Corridor. Rather, it is about whether Amtrak will be allowed to implement that service with no supporting infrastructure investments, in a way that would cause serious, demonstrable harm to the many stakeholders who rely on Gulf Coast freight service. CSXT and NSR have long stated and reiterated that they are willing to work with Amtrak to institute its new service, so long as the necessary supporting infrastructure is funded. The investments that CSXT and NSR have proposed are reasonable, conservative, and backed by an RTC model that Amtrak's consultants have failed to undermine. The Board should deny Amtrak's application, and encourage it to reengage in a cooperative process to invest in the infrastructure necessary to support its desired service. Alternatively, the Board should order that any Amtrak access be conditioned on its agreement to ensure timely construction of the infrastructure projects that the 2021 Gulf Coast RTC Model shows are necessary to support passenger service.

The Department of Transportation's ("DOT's") comments supporting Amtrak do not change the analysis. Indeed, DOT largely engages with strawmen. DOT first argues that this case is about ensuring Amtrak's right to install passenger service on the Gulf Coast. But the question here is not whether to permit passenger service, it is whether to order passenger service with no supporting infrastructure,

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despite reliable evidence that such an order would immediately harm freight service, and that the impairment to freight rail service would only grow over time. DOT previously supported the 2020 HDR RTC Study and the Gulf Coast Working Group's study of infrastructure needs, and its abandonment of those positions to support Amtrak's extreme demands is inexplicable.

Second, DOT argues that insufficient information has been provided to support the conclusions of the 2021 Gulf Coast RTC Model. But ample supporting documentation was provided in CSXT's and NSR's workpapers, and far more was made available in discovery. DOT could have sought access to that information by moving to intervene as a party, asking to see discovery under the protective order, or asking to see workpapers. The Board and the parties to this case have that information, and DOT did not request an opportunity to review it before complaining that it was not included in the public evidence.

Part I responds to Amtrak's attempts to rewrite "unreasonably" to mean "excessively." These attempts are based on a serious misrepresentation of the dictionary definition on which Amtrak claims to rely, and a decision to ignore the substantial statutory evidence that the term "unreasonably" does not have any heightened or unusual meaning. Part II responds in detail to Amtrak's criticism of the 2021 Gulf Coast RTC Model, summarizing the evidence presented in the enclosed Rebuttal Verified Statements of Charlie Banks and Larry Guthrie and Hannah Rosse and Holly Sinkkanen, and the 2021 RTC Rebuttal Report. Part III addresses Amtrak's other arguments. Among other things, Part III summarizes the

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major problems with the untested proprietary model that Amtrak presents, and shows that this model of the maximum theoretical capacity of the line is an insufficient substitute for RTC evidence. Part IV responds to other recent comments in this proceeding, including the Port of Mobile's filing and the amicus comments of the DOT. Part V concludes by demonstrating that CSXT and NSR have satisfied their burden of establishing that Amtrak's plan to institute passenger service without infrastructure investments would unreasonably impair freight service.

I. "UNREASONABLE IMPAIRMENT" MEANS UNREASONABLE IMPAIRMENT, NOT EXCESSIVE IMPAIRMENT.

Amtrak asserts that under the "plain language" of the statute, the requirement that Amtrak refrain from imposing additional passenger trains that will unreasonably impair freight service in fact permits Amtrak to harm freight service so long as the impairment is not "clearly inappropriate" or "excessive."⁶ Amtrak's argument collapses when one looks at the actual definitions of the words in the statute, when one considers the overall statutory scheme, and when one considers the serious constitutional implications of a statutory interpretation that gives Amtrak free rein to damage freight service short of some unspecified level of "excessiveness."

⁶ Amtrak Reply at 15.

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A. Amtrak's purported dictionary definition is a fantasy.

According to Amtrak, the “plain language” of 49 U.S.C. § 24308(e) shows that Congress intended to allow Amtrak to impose trains that impaired freight transportation so long as that impairment is not “‘clearly inappropriate’ or ‘excessive.’”⁷ This interpretation allegedly flows from the dictionary meaning of “unreasonable.” According to Amtrak, the Merriam-Webster Online dictionary defines “unreasonable” as “clearly inappropriate” or “excessive.”⁸ But that is simply not true: the primary definitions listed in that internet dictionary are “not governed by or acting in accordance with reason,” “not conformable to reason,” and “exceeding the bounds of reason or moderation.”⁹ Those primary definitions mirror those in the Webster’s dictionary contemporaneous with the adoption of § 24308(e), which provides the same three primary definitions of “unreasonable”: “not governed by or acting in accordance with reason”; “not conformable to reason”; and “exceeding the bounds of reason or moderation.”¹⁰ Black’s Law Dictionary has a similar definition of “unreasonable” as “[n]ot guided by reason, irrational, or capricious.”¹¹

So where does Amtrak get its claim that “unreasonable” actually means “excessive” or “‘clearly inappropriate’”? One must go hunting through page after

⁷ *Id.* at 15–16.

⁸ *Id.* at 15.

⁹ Unreasonable, Merriam Webster Online Dictionary, <https://www.merriam-webster.com/dictionary/unreasonable> (last visited Dec. 11, 2021).

¹⁰ Webster’s Third New Int’l Dictionary 2507 (1981).

¹¹ Black’s Law Dictionary 1537 (7th ed. 1999).

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page of its internet dictionary citation, past the synonyms (which do not include “excessive” or “clearly inappropriate”); past the comments; past the “English Language Learners Definition” (which is “not fair, sensible, or appropriate”); past the “Kids Definition” (which is “not fair, sensible, appropriate, or moderate”); and into a section called “Legal Definition of *unreasonable*,” which gives a primary definition of “not reasonable: beyond what can be accepted.”¹² Amtrak appears to be citing a secondary definition in this “legal definition” section which includes the words “clearly inappropriate” and “excessive.”

The shortcomings of this extreme definition-shopping are almost too numerous to list. First, it makes little sense to ignore the primary definition of a term in favor of an ancillary one. If the purported goal is to use the dictionary to derive a “plain meaning” of a term, one does not ascertain that plain meaning by skipping past definition after definition until you find one that you like.¹³ Second, definitions in a 2021 internet dictionary are plainly not reliable evidence of what a word meant at the time Congress wrote it in 1980.¹⁴ Amtrak has provided no

¹² Unreasonable, Merriam Webster Online Dictionary, <https://www.merriam-webster.com/dictionary/unreasonable> (last visited Dec. 11, 2021).

¹³ In each of the two decisions Amtrak cites as evidence of the Board relying on a dictionary definition, the Board cited a primary definition, not an ancillary one. See Amtrak Reply at 15 n.38 (citing *Final Offer Rate Review Expanding Access to Rate Relief*, Ex Parte No. 755 (served Nov. 15, 2021) and *Diana Del Grosso et al.—Petition for Declaratory Order*, Fin. Docket No. 35652 (served July 31, 2017)).

¹⁴ See, e.g., *Food Mktg. Inst. v. Argus Leader Media*, 139 S. Ct. 2356, 2363 (2019) (citing “[c]ontemporary dictionaries” from time of statute’s enactment to interpret statutory term); *Ngiraingas v. Sanchez*, 495 U.S. 182, 202 (1990) (citing

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evidence that its preferred definition was in any published dictionary at the time that § 24308(e) was adopted. Third, the accepted source for legal definitions is Black's Law Dictionary, not an unsourced internet legal definition. Amtrak's claimed definition does not appear in Black's.¹⁵ Fourth, Amtrak omits key language from the ancillary internet definition. The full ancillary definition is "clearly inappropriate, excessive, *or harmful in degree or kind*."¹⁶ So even if one were to accept that the right way to interpret "unreasonably" is to look toward an ancillary definition on a website that was not reflected in dictionaries at the time §24308(e) was adopted, that definition recognizes that something can be unreasonable if it is excessive, clearly inappropriate, *or* merely "harmful."¹⁷

In short, Amtrak's claim that its partial quotation of an obscure alternative definition in an internet dictionary represents the "plain meaning" of § 24308(e) is nonsense. Looking up the right words and using their real, contemporaneous

"contemporary law dictionaries" from 19th century to interpret term in 19th century statute).

¹⁵ See Black's Law Dictionary 1537 (7th ed. 1999) (defining "unreasonable" as "[n]ot guided by reason, irrational, or capricious.").

¹⁶ Unreasonable, Merriam Webster Online Dictionary, <https://www.merriam-webster.com/dictionary/unreasonable> (last visited Dec. 11, 2021) (emphasis added).

¹⁷ Amtrak compounds its made-up definition of "unreasonably" by looking up the wrong definition for "impair." In an attempt to argue that "impair" somehow has a special, heightened meaning, Amtrak points to language in the definition of "impaired." Amtrak Reply at 15. But of course the statutory term is *impair*, not "impaired." Amtrak's chosen dictionary defines "impair" as "to weaken or make worse." Impair, Merriam Webster Online Dictionary, <https://www.merriam-webster.com/dictionary/impair> (last visited Dec. 11, 2021) (emphasis added); see Webster's Third New Int'l Dictionary 1131 (1981) (defining "impair" as "to make worse: diminish in quantity, value, excellence, or strength: do harm to").

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definitions demonstrates that “impair unreasonably freight transportation” means “to make worse” or “do harm to” freight transportation in a manner “exceeding the bounds of reason or moderation.”¹⁸ This is what CSXT and NSR have demonstrated will happen to freight service if Amtrak refuses to contribute its fair share to infrastructure improvements.

B. Amtrak’s interpretation of Section 24308(e) ignores the statute as a whole.

Amtrak’s purported “dictionary” interpretation of Section 24308(e) also fails because Amtrak proposes to interpret Section 24308(e) in isolation, without reference to the statutory scheme that the Board administers or the surrounding statutory text. “Unreasonable” is not an uncommon term in Title 49, and the Board is charged in many contexts with determining whether something is “reasonable” or “unreasonable.” There is no support in any of those contexts for Amtrak’s assertion that “unreasonable” actually is a “heightened” standard that should be read as meaning “clearly inappropriate” or “excessive.”

It is a primary tenet of statutory interpretation that statutes are to be interpreted as a whole.¹⁹ As a corollary, “similar language contained within the

¹⁸ See Webster’s Third New Int’l Dictionary 1131, 2507 (1981).

¹⁹ See, e.g., *AT&T Mobility LLC v. Concepcion*, 563 U.S. 333, 354 (2011) (“Statutory interpretation focuses on “the language itself, the specific context in which that language is used, and the broader context of the statute as a whole.”); *United States v. Morton*, 467 U.S. 822, 828 (1984) (“We do not, however, construe statutory phrases in isolation; we read statutes as a whole.”); *K Mart Corp. v. Cartier, Inc.*, 468 U.S. 281, 294 (1988) (“In ascertaining the plain meaning of the statute, the court must look to the particular statutory language at issue, as well as the language and design of the statute as a whole.”).

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same section of a statute must be accorded a consistent meaning,”²⁰ and it is generally presumed “that a given term is used to mean the same thing throughout a statute.”²¹

Here, the Board’s governing statute is replete with instances where the Board must judge what is “reasonable” or “unreasonable.”²² But Amtrak does not identify a single instance in which the Board has interpreted “unreasonable” to mean “excessive” or to impose a “high burden.” Statutory evidence actually shows the contrary. For example, 49 U.S.C. § 10702 requires rail carriers to establish “reasonable” rates, rules, and practices for their service.²³ In applying these provisions, the Board does not determine whether a rate “excessively” surpasses a lawful maximum—instead, it determines that maximum, and anything over that maximum is deemed unreasonable.²⁴ In the same vein, a shipper arguing that a

²⁰ *National Credit Union Admin. v. First Nat’l Bank & Trust Co.*, 522 U.S. 479, 501 (1998); *see also Ratzlaf v. United States*, 510 U.S. 135, 143 (1994) (“[A] term appearing in several places in a statutory text is generally read the same way each time it appears.”).

²¹ *Brown v. Gardner*, 513 U.S. 115, 119 (1994).

²² Title 49, Subtitle IV Part A alone contains 32 different sections that contain at least one instance of the terms “reasonable” or “unreasonable.” *See* 49 U.S.C. §§ 10101, 10701, 10702, 10703, 10704, 10705, 10706, 10707, 10709, 10741, 10742, 10745, 10901, 10902, 10904, 10905, 10907, 10909, 10910, 11101, 11102, 11103, 11121, 11164, 11322, 11323, 11501, 11701, 11704, 11706, 11707, 11708.

²³ *Id.* § 10702(1)–(2).

²⁴ *See, e.g., Consumers Energy Co. v. CSX Transp., Inc.*, STB Docket No. NOR 42142 (served Jan. 11, 2018), at 73 (calculating maximum lawful rate and ordering railroad to “maintain a rate for movement of the issue traffic that does not exceed the maximum reasonable R/VC ratios prescribed in this decision”).

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railroad practice is unreasonable does not face a “high burden” requiring the shipper to demonstrate that the practice is “excessive.” The shipper’s only burden is to prove by a preponderance of the evidence that the practice is unreasonable.

Similarly, § 10741 defines “unreasonable discrimination” as instances where a carrier charges or receives “different compensation . . . for performing a like and contemporaneous service in the transportation of a like kind of traffic under substantially similar circumstances.” There is no hint in § 10741 that the discrimination need be “excessive” in order for it to be deemed unreasonable. And in § 11501, Congress’s definition of tax discrimination that “unreasonably burden[s]” railroads encompasses taxes that treat railroads differently from other businesses—not taxes that “excessively” target railroads. Moreover, when the Board is analyzing ICCTA preemption claims to determine whether a state or local regulation “unreasonably burdens interstate commerce,” it does not require the burden to be “excessive” or “clearly inappropriate.”²⁵ In short, there is no context in which the Board has construed the term “unreasonably” to have the heightened meaning that Amtrak wishes it had.

Amtrak’s citation of the terminal trackage rights statute of 49 U.S.C. § 11102(a) is only further evidence against its position. Amtrak cites § 11102(a) as evidence that the Board uses a “substantial impairment” standard for evaluating terminal trackage rights requests. But Amtrak ignores the critical fact that this

²⁵ *Norfolk S. Ry. Company—Petition for Declaratory Order*, Fin. Docket No. 35701 (served Nov. 4, 2013).

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standard flows directly from the language of § 11102(a), which specifically charges the Board with determining whether the proposed terminal use is “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.”²⁶ Congress thus chose to use “substantially impair[]” in § 11102(a) and “unreasonably impair” in § 24308(a). It is well settled that Congress’s decision to use different words in different sections of the same statute signifies that Congress intended different meanings.²⁷ Thus, in choosing to modify “impair” with “unreasonably” in one context and “substantially” in another, Congress was in fact establishing separate and distinct standards. Choosing to equate the two standards would directly contradict the statute’s plain language.

Amtrak’s reliance on legislative history does not help its position. It points out, correctly, that Congress adopted § 24308(e) after rejecting an alternative that would have left DOT with no discretion but to grant all Amtrak requests to add trains. But evidence that Congress *rejected* a proposal under which Amtrak could have gained access to freight lines on demand is not evidence that the freight

²⁶ 49 U.S.C. § 11102(a) (emphasis added).

²⁷ See, e.g., *Keene Corp. v. United States*, 508 U.S. 200, 208 (1993) (quoting *Russello v. United States*, 464 U.S. 16, 23 (1983)) (“[W]here Congress includes particular language in one section of a statute but omits it in another . . . , it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion.”); see also *Bailey v. United States*, 516 U.S. 137, 146 (1995) (“We assume that Congress used two terms because it intended each term to have a particular, nonsuperfluous meaning.”).

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impairment standard was a congressional afterthought.²⁸ It is rather evidence that Congress made a deliberate decision to ensure that § 24308(e) was not a rubber stamp for Amtrak's desires. That congressional intent cannot be served by adopting Amtrak's proposed interpretation that § 24308(e) sets an unachievably high burden for demonstrating unreasonable impairment.

Amtrak's observations about congressional support for passenger rail miss the point. CSXT and NSR have not and are not refusing to accommodate Gulf Coast passenger service—they are simply asking for the necessary infrastructure to support that service. Freight rail, and the customers that use it, should not subsidize passenger rail service. That was one of the driving factors behind the rescue that Congress constructed back in the 1970s. To ignore that fact is to risk the same dangerous forces that nearly drove freight rail service into the ground so many years ago.²⁹ And the fact that the recent infrastructure bill included dedicated funds for passenger rail and capital investments in passenger rail is plainly not evidence that Congress wanted Amtrak to be able to unreasonably

²⁸ See *Microsoft Corp. v. Comm'r*, 311 F.3d 1178, 1186 (9th Cir. 2002) (determining that where Congress considered and “rejected more limiting language in favor of more expansive language,” a conclusion that Congress “intended to retain the limited meaning” would be “unreasonable”); See also *Russello*, 464 U.S. at 23–24 (“Where Congress includes limiting language in an earlier version of a bill but deletes it prior to enactment, it may be presumed that the limitation was not intended.”); *West v. Sullivan*, 973 F.2d 179, 187 (3d Cir. 1992), *as amended* (Aug. 25, 1992) (noting that where Congress specifically rejected language of an earlier draft in favor of different language, the different language controls).

²⁹ Over the past two years, the fragility of the supply chain has been amply demonstrated. The Board should not add yet another impediment to the mix.

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impair freight transportation without providing for mitigation. If anything, it is evidence that Congress recognizes that expansion of passenger rail onto the freight rail network must be accompanied by investments to prevent the unreasonable impairment of freight.

In short, there is simply no evidence in the language of Title 49 suggesting that “unreasonably” creates a “high bar” that actually means “excessively.” Indeed, the statutory evidence points in the opposite direction.

C. Amtrak’s interpretation of Section 24308(e) would effect an unconstitutional taking.

Amtrak’s proposed interpretation of Section 24308 would also create serious constitutional issues. In Amtrak’s view, Section 24308 means that Amtrak has free rein to impair freight transportation up to some unspecified level of “excessiveness.” According to Amtrak, the serious degradation in freight service shown in the 2019 no-build passenger scenario is insufficient to meet this standard, and even the complete gridlock shown in the 2039 model does not strike Amtrak as problematic. It claims that it has no obligation to mitigate future delays caused by its service because they have not yet been “actually incurred.”³⁰ And Amtrak shrugs its shoulders at CSXT’s and NSR’s argument that permitting Amtrak to harm freight service by imposing new passenger trains with no supporting infrastructure would effectively require freight customers to cross-subsidize passenger service, claiming

³⁰ Amtrak Reply at 32.

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that there is “no support” for suggesting that freight customers should not be cross-subsidizing passenger service.³¹

In essence, Amtrak argues that it has a statutory right to deprive CSXT and NSR of their right to use their property for reliable freight service and to force freight shippers to either accept degraded service or to themselves fund the infrastructure necessary to accommodate Amtrak without harming freight transportation.³² Amtrak’s assertion that it is entitled under § 24308(e) to take private property for public use but that it need not mitigate the damage that taking would inflict upon freight users would raise serious constitutional questions under the Fifth Amendment’s Takings Clause.³³ Under the doctrine of constitutional avoidance, § 24308(e) should not be interpreted in a way that would create such a constitutional issue.³⁴

³¹ *Id.* at 31.

³² Equally untenable is Amtrak’s argument—arising from its claim that the service arguably being newly introduced in 2022 is somehow a “reintroduction” of previously existing service that was “suspended” in 2005 after Hurricane Katrina destroyed major portions of the route. Amtrak has not over the past 16+ years compensated either CSXT or NSR to maintain the capacity it was using at that time, nor is the service sought to be introduced in any way similar to that which previously ran. Essentially, Amtrak’s argument is that it has the right to parachute at any time onto any freight rail line and it is the freight rail host’s problem if it has not maintained—at the freight rail host’s own expense—sufficient capacity to accommodate that passenger service.

³³ U.S. Const., Amend. 5 (“nor shall private property be taken for public use, without just compensation”).

³⁴ *Nielsen v. Preap*, 139 S. Ct. 954, 971 (2019) (“When a serious doubt is raised about the constitutionality of an act of Congress, this Court will first ascertain whether a construction of the statute is fairly possible by which the question may be avoided.” (cleaned up)); *Nat’l Mining Ass’n v. Kempthorne*, 512 F.3d 702, 711 (D.C. Cir. 2008)

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* * *

To decide this case, the Board does not need to establish a definitive definition of “reasonableness” that will control in all situations. Rather, the Board can follow its traditional case-by-case approach to reasonableness questions, and determine this case on its own merits.³⁵ Here, the evidence is clear that imposing four new daily passenger trains with no supporting infrastructure will cause immediate harm to freight users in a way that easily satisfies the “unreasonably impair” standard.

II. THE 2021 GULF COAST RTC MODEL’S INPUTS ACCURATELY REPRESENT REAL WORLD OPERATING CONDITIONS AND ARE BASED ON SOUND MODELING METHODOLOGY.

CSXT and NSR have met their burden in this proceeding of demonstrating that the Gulf Coast passenger service Amtrak proposes to operate will “impair

(“Because the judiciary must rightly presume that Congress acts consistent with its duty to uphold the Constitution, courts make every effort to construe statutes so as to find their constitutional foundations and thus avoid needless constitutional confrontations.”).

³⁵ See *Solid Waste Rail Transfer Facilities*, Ex Parte No. 684 (Mar. 14, 2011) (declining to adopt regulatory definition of “unreasonably burdens,” and instead choosing to address term’s meaning “on a case by case basis”); *N. Am. Freight Car Ass’n, et al. v. BNSF Ry.*, STB Docket No. NOR 42060 (Sub-No. 1) (served Jan. 26, 2007), at 8 (noting that “in section 10702, Congress did not limit the Board to a single test or standard for determining whether a rule or practice is reasonable; instead, it gave the Board ‘broad discretion to conduct case-by-case fact-specific inquiries to give meaning to those terms, which are not self-defining, in the wide variety of factual circumstances encountered’”); see also *National R.R. Passenger Corp. and The Texas and Pac. R. Co., Use of Tracks and Facilities and Establishing Just Compensation*, 348 I.C.C. 357, 373–74 (1975) (noting that where the word “reasonable” was not accompanied by language referencing a distinct principle, it took its typical statutory meaning, imposing “[no] mandate to determine compensation other than according to the particular facts and circumstances of the case”).

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unreasonably freight transportation.”³⁶ As explained in the opening evidence, the 2021 Gulf Coast RTC Model unequivocally shows that adding four passenger trains per day between New Orleans and Mobile during peak hours and without any additional infrastructure will cause significant and unreasonable impairment to freight.³⁷ That showing should end this case. But because CSXT and NSR do not oppose Gulf Coast passenger service, they went one step further and identified a set of 14 projects that, if constructed, would permit Amtrak to run its proposed Gulf Coast passenger service without unreasonably impairing existing or future freight service.³⁸

Amtrak never challenges the location, purpose, effectiveness, or cost of any of the proposed infrastructure solutions put forth by the RTC Modelers. Instead, Amtrak attempts to overcome the devastating freight train delay and speed statistics in both the 2019 and 2039 Passenger Cases by claiming that the RTC Modelers “used unreasonable and unrealistic inputs” that “do not simulate the current conditions that exist along the Gulf Coast” to develop the 2021 Gulf Coast RTC Model.³⁹ To accomplish this, Amtrak offers the Reply Verified Statement of Thomas D. Crowley and Daniel L. Fapp of L.E. Peabody & Associates, Inc.,⁴⁰ which

³⁶ 49 U.S.C. § 24308(e)(2)(A).

³⁷ See CSXT and NSR Opening Evidence at 21–46.

³⁸ 2021 Gulf Coast RTC Report at 6–7, 38–41 (Exec. Summary, §§ 5.0, 5.1), App’x D.

³⁹ Amtrak Reply at 4–5.

⁴⁰ See Amtrak Reply, Ex. 3 – Reply Verified Statement of Thomas D. Crowley and Daniel L. Fapp of L.E. Peabody & Associated, Inc. (“Crowley & Fapp V.S.”).

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purports to identify a series of flaws in the Model's inputs including inflated train counts and under-utilized infrastructure.

Messrs. Crowley and Fapp's criticism of the Model's inputs is grounded in a series of misunderstandings, misuses, and misrepresentations of the data provided by the RTC Modelers in the workpapers. CSXT and NSR highlight some of the most egregious and impactful errors below and respond to Amtrak's criticism of the preference given to passenger trains in the Model as well as complaints that the OTP obtained by the passenger trains after the proposed infrastructure solutions are added to the Model are too high. CSXT and NSR also demonstrate that the RTC Performance Metrics show real, quantifiable harm to freight service that easily satisfies the "unreasonable impairment" standard.

A. The RTC Modelers did not inflate train counts by building a representative model rather than a replicative model.

The centerpiece of Messrs. Crowley and Fapp's critique is their belief that the Model contains 257% more freight trains than actually operate over the subject corridor.⁴¹ They assert that the RTC Modelers developed "made-to-order extreme values that bear no resemblance to reality" in an effort to "skew[]" the modeling results in CSXT and NSR's favor and argue that the Model should have been based on data from "an actual two-week period" in November 2019 that allegedly reflects "peak" freight operations.⁴² However, the development of a representative model is

⁴¹ Crowley & Fapp V.S. at 3 ¶¶ 1, 3(a), 14–15; Amtrak Reply at 24.

⁴² Crowley & Fapp V.S. at 3 ¶¶ 1, 3(a), 14–15; Amtrak Reply at 5, 23–24.

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the proper way to evaluate the impact of passenger service on freight operations, not the two-week replicative model called for by Amtrak. And when one peels back the layers of hyperbole and false accusation, it is clear that Messrs. Crowley and Fapp's train calculation is based on a fundamental misunderstanding and misuse of the various train data sources available in the workpapers.

1. The RTC Modelers rightly developed a representative rather than a replicative model.

The RTC Modelers developed a “robust, two-week ‘representative’” model based on train data from September to November 2019 as provided by CSXT and NSR.⁴³ It is standard practice in the rail industry to develop representative models because they best capture dynamic freight operations and fluctuating traffic volumes.⁴⁴ The representative model allowed the RTC Modelers to test the impact of Amtrak's passenger service and any proposed solutions to mitigate that impact against a variety of traffic scenarios, thereby producing “more accurate, robust, and complete results.”⁴⁵ And in the context of a year-round, twice-daily roundtrip passenger service, it would be imprudent to construct a model that results in an

⁴³ 2021 RTC Rebuttal Report at 4, 6–10 (Exec. Summary, §§ 2.1, 2.2); *see* Ex. 2, Rebuttal Verified Statement of Hannah Rosse and Holly Sinkkanen at 2 (“Rosse & Sinkkanen Rebuttal V.S.”).

⁴⁴ *See* Rosse & Sinkkanen Rebuttal V.S. at 2–3; 2021 RTC Rebuttal Report at 7 (§ 2.1) (quoting FOX, JUSTIN, ET AL., CAPACITY MODELING GUIDEBOOK FOR SHARED-USE PASSENGER AND FREIGHT RAIL OPERATIONS 11 (NCHRP Report 773, Transp. Research Bd., Editor 2014) (“Rail planners, accordingly, rely on rail traffic data from the corridor's owning railroad that spans several days, weeks, or even a month or a year in order to capture the true nature of the line operations.”)).

⁴⁵ Rosse & Sinkkanen Rebuttal V.S. at 3.

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infrastructure solution set that is only equipped to handle a “specific historical period” rather than “the preponderance of days.”⁴⁶

Messrs. Crowley and Fapp posit that CSXT and NSR should have built an RTC model that replicates a peak two-week traffic period because “[t]he STB confirmed that a railroad’s peak operating period reflects the real world constrain[t]s [sic] faced by that railroad.”⁴⁷ Amtrak does not endorse this perspective anywhere in its reply argument. And why would it? In any event, CSXT and NSR deliberately and in good faith built a representative model precisely to avoid over- or underestimating freight traffic.⁴⁸

The sole Board decision cited by Messrs. Crowley and Fapp, *FMC Wyoming*, does not “confirm” that a replicative model based on a peak operating period is required in this or any case. In *FMC Wyoming*, a rate reasonableness case, the railroad argued that the locomotive fleet estimate should be based on the “peak 2 days of the year” while the shipper argued that it was unnecessary for a railroad to have sufficient locomotives to handle “absolute traffic peaks.”⁴⁹ The Board rejected the shipper’s position not because the peak period approach was superior, but

⁴⁶ 2021 RTC Rebuttal Report at 7 (§ 2.1).

⁴⁷ Crowley & Fapp V.S. at 13 (citing *FMC Wyoming Corp. and FMC Corp. v. Union Pac. R.R.*, STB Docket No. NOR 42022, 4 S.T.B. 699, 825–26 (2000) (“*FMC Wyoming*”)).

⁴⁸ See CSXT and NSR Opening Evidence, Ex. 1, Rebuttal Verified Statement of Charles H. Banks and Larry R. Guthrie at 3, 28 (“Banks & Guthrie Rebuttal V.S.”); Rosse & Sinkkanen Rebuttal V.S. at 3.

⁴⁹ *FMC Wyoming*, 4 S.T.B. at 826.

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because the Board found that the shipper’s “mathematical approach to developing locomotive requirements fails to demonstrate that even normal service requirements could be met.”⁵⁰ The Board adopted the railroad’s evidence because the shipper had “failed to demonstrate the feasibility of its estimate.”⁵¹ CSXT and NSR have met that burden here. Like the shipper in *FMC Wyoming*, Amtrak offers a model based in large part on simple arithmetic for the Board’s consideration, so the Board should similarly reject it. And as discussed below, the RTC Modelers confirmed that train count in the representative 2021 Gulf Coast RTC Model is comparable to the train count calculated by Messrs. Crowley and Fapp using a peak two-week period from November 2019.

2. The train count in the representative model developed by the RTC Modelers closely resembles the train count for the “peak” two-week period.

Freight railroads collect train data in a variety of formats in the ordinary course of business. As Ms. Rosse and Sinkkanen explain, CSXT and NSR each collect train data from at least three different sources.⁵² No one train data source contains sufficient information to develop an accurate picture of any given train’s

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² Rosse & Sinkkanen Rebuttal V.S. at 6–11, 15–17 (describing Train Profile Data, OS Data, and Dispatch Data used by CSXT and OPD Data, Teradata Data, and UTCS Data used by NSR).

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movements and activities.⁵³ And certain trains and movements are not captured in these data sets at all and must be collected directly from the observations of field personnel.⁵⁴ Therefore, in order to create an accurate RTC model of any portion of the rail network, an RTC modeler must synthesize these data sets and confirm the accuracy of certain data with field personnel.⁵⁵

Messrs. Crowley and Fapp ignore this, and rely solely on train profile data when conducting their own analysis of the trains operating over the Gulf Coast corridor.⁵⁶ To make matters worse, they chose to ignore the raw data and instead used a truncated train profile workpaper developed by the RTC Modelers for analytical purposes.⁵⁷ This workpaper was missing many trains because it only included NSR trains and trains that operated in Mobile.⁵⁸ Because Messrs. Crowley and Fapp ignored many of the trains operating on the corridor, their claim to have identified the “peak” period in November 2019 is also faulty.⁵⁹

⁵³ *See id.* at 14 (describing how the three primary data sources are used together to develop a precise picture of a train’s movements for input into RTC); *see* 2021 RTC Rebuttal Report at 17 (§ 3.1.3).

⁵⁴ Rosse & Sinkkanen Rebuttal V.S. at 11–12; 18 (describing how capturing the complete nature of a crew event requires consultation with field personnel); 2021 RTC Rebuttal Report at 17. (§ 3.1.3).

⁵⁵ Rosse & Sinkkanen Rebuttal V.S. at 6 (describing how the development of a .TRAIN file is “an iterative process that requires information from multiple sources as well as validation personnel”).

⁵⁶ *Id.* at 12–13 & n.11; 2021 RTC Rebuttal Report at 16 (§ 3.1.1).

⁵⁷ Rosse & Sinkkanen Rebuttal V.S. at 12–13 & n.11; 2021 RTC Rebuttal Report at 16 (§ 3.1.1).

⁵⁸ 2021 RTC Rebuttal Report at 16 (§ 3.1.1).

⁵⁹ *Id.*

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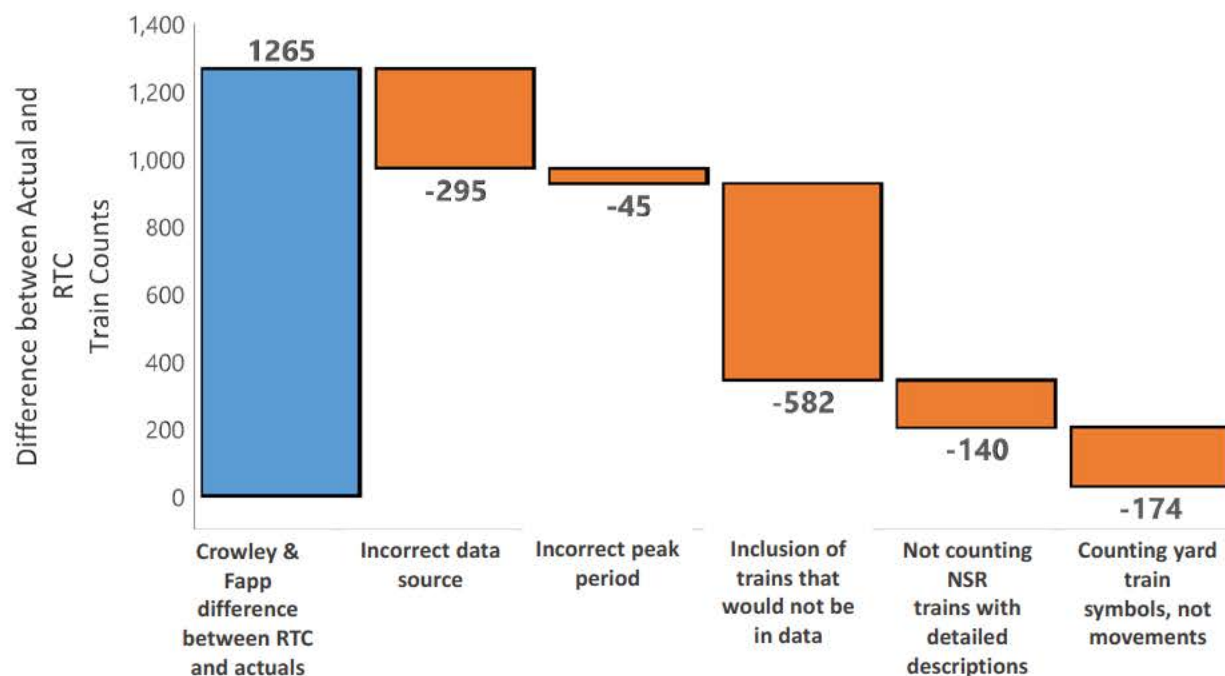
Nevertheless, the RTC Modelers undertook a comprehensive review of all trains in the 2021 Gulf Coast RTC Model, including the 1,265 trains that Messrs. Crowley and Peabody claim are not present in the various data sources provided by the freight railroads.⁶⁰ To conduct this analysis, the RTC Modelers compared the trains present in the model against the train volumes for a specific two-week period in November 2019, which Messrs. Crowley and Fapp contend represents the “peak” traffic period in the fall 2019 data provided by the freight railroads, and which the RTC Modelers assumed was true for purposes of this exercise.⁶¹ The RTC Modelers determined that the vast majority of these 1,265 trains did in fact operate on the study corridor, but either had no counterpart in the train data (*e.g.*, certain yard trains, light engines, bridge tenders) or were provided to the RTC Modelers in narrative form by the field personnel most familiar with the complex operations in terminal areas on the corridor.⁶² This finding underscores how dependent the accuracy of an RTC model is on a thorough understanding of typical railroad operations and how railroads collect and utilize train data.

A breakdown of the RTC Modelers’ comprehensive review of the difference between the train counts in the 2021 Gulf Coast RTC Model and the Messrs. Crowley and Fapp’s purported peak period is set forth in Figure 1 below.

⁶⁰ *Id.* at 14–15 (§ 3.1).

⁶¹ *Id.* at 16–17 (§ 3.1.2); *see* Crowley & Fapp V.S. at 14–15.

⁶² 2021 RTC Rebuttal Report at 17 (§ 3.1.3).

2021 RTC Rebuttal Report Figure 1**Figure 1: : Waterfall Chart of the Source of Difference between RTC and Actual Train Counts**

Source: *Id.* at 15, Figure 1 (§ 3.1).

After accounting for the trains that do not appear in the train data sources or that were provided through narratives, the RTC Modelers concluded that “the 2021 Gulf Coast RTC Model was within 2.5% of the actual volumes in the peak period.”⁶³ Thus, Amtrak’s contention that CSXT and NSR inflated the train count in the Model is simply baseless.

⁶³ 2021 Gulf Coast RTC Rebuttal Report at 15 (§ 3.1).

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B. The Model does not under-utilize existing infrastructure.

Messrs. Crowley and Fapp contend that the 2021 Gulf Coast RTC Model is “missing *much* of the infrastructure that exists in the real world.”⁶⁴ Yet a mere seven instances of “missing” track are identified in their verified statement, all but one of which are industry or storage tracks.⁶⁵ Relatedly, Messrs. Crowley and Fapp identify three locations where there are yard tracks “never used by any train” in the Model.⁶⁶ As the RTC Modelers explain in their rebuttal report, RTC is a dispatch simulation tool that is not designed to simulate railcars in yards or at industry locations.⁶⁷ Industry and storage tracks “have no impact on the ability of the corridor to host *trains*” and therefore, modelers often include only some yard or storage tracks merely for the purpose of visually signaling to the viewer the existence of a yard or industry.⁶⁸ And although local trains frequently conduct their operations on the mainline (*e.g.*, leaving some railcars on the mainline while servicing a customer), this impact on the corridor can be modeled without the industry track being present in the model.⁶⁹ Ultimately, because these tracks are not “locations where trains meet, their exclusion from the Model is not an attempt

⁶⁴ Crowley & Fapp V.S. at 5 ¶ 5 (emphasis added).

⁶⁵ *Compare* Crowley & Fapp V.S., Ex. 7 at 1–7 *with* 2021 Gulf Coast RTC Rebuttal Report at 21–22 & Table 10 at 22 (§ 3.2.1).

⁶⁶ Crowley & Fapp V.S. at 5 ¶ 5.

⁶⁷ 2021 Gulf Coast RTC Rebuttal Report at 21–22 (§ 3.2.1).

⁶⁸ *Id.* at 22 (§ 3.2.1).

⁶⁹ 2021 Gulf Coast RTC Rebuttal Report at 22 (§ 3.2.1).

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to underutilize capacity.”⁷⁰ The 2021 Gulf Coast RTC Model presents a complete picture of the subject corridor.

C. Passenger trains are properly given preference and excluded from sidings in the Model just as Amtrak has demanded for decades.

Amtrak complains that CSXT and NSR attempt to inflate infrastructure demands by modeling passenger trains so they “would never use a siding.”⁷¹ Amtrak insists that preference does not preclude a passenger train from taking a siding if, for example, the passenger train encounters a freight train that is too long to enter the nearest available siding or if two passenger trains meet.⁷² Yet the RTC Modelers accounted for both these scenarios in the Model. Their initial report explained that sidings were coded in the Model to “allow two passenger trains to pass one another” and, “on rare occasions, the model did permit a passenger train to enter a siding to allow a freight train to pass.”⁷³

Significantly limiting the circumstances under which a passenger train enters a siding was a reasonable modeling decision based on Amtrak’s longstanding public position on this issue. In the opening evidence, CSXT and NSR cited multiple occasions where Amtrak has complained to Congress and in the media that freight railroads fail to abide by Amtrak’s right to preference when passengers are made to

⁷⁰ *Id.*

⁷¹ Amtrak Reply at 27.

⁷² *Id.* at 28 (citing Amtrak Reply, Ex. 2 – Reply Verified Statement of Jim Blair ¶ 41 (“Blair Reply V.S.”)).

⁷³ 2021 Gulf Coast RTC Report at 25 (§ 3.4).

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wait in sidings for freight trains to pass.⁷⁴ Amtrak's only response is to meekly suggest that it has never said it "will not take a siding."⁷⁵ Yet these examples are just the tip of the iceberg. Amtrak has argued before the Board that "compel[ling] Amtrak trains to enter sidings" while freight trains use the mainlines "is a clear violation of Amtrak's statutory right to preference."⁷⁶ And Amtrak has publicly complained about host railroads forcing "passengers to wait in a siding."⁷⁷ Amtrak is free to negotiate an agreement with CSXT and NSR that establishes operating procedures for the more frequent use of sidings by passenger trains. But absent such a voluntary agreement, it is hypocritical for Amtrak to object to CSXT and

⁷⁴ CSXT and NSR Opening Evidence at 35 & n.98.

⁷⁵ Amtrak Reply at 27 n.88.

⁷⁶ *Petition for Relief by Amtrak Requiring the Initiation of an Investigation of Substandard Performance Under Section 213 of the Passenger Rail Investment and Improvement Act Of 2008*, STB Docket No. NOR 42134 (filed Jan. 19, 2012), at 21. In addition, when Amtrak slows and then diverges to enter a siding, Amtrak often allocates delay minutes to the host coded as a "routing" delay, which is then held against the host railroad for purposes of monthly reporting and otherwise. *See, e.g.*, Host Railroad Report, Amtrak Train Performance on Host Railroads (Data through November 2021), at slide 5 ("Total Host-Responsible Delays"), slide 7–10 ("Minutes of Delay per 10K Train Miles by Host for November 2021"), slide 12 ("Host Railroad Responsible Delays," defining "RTE" as "Routing" and "Routing-dispatching delays including diversions, late track bulletins, etc."), available at <https://www.amtrak.com/content/dam/projects/dotcom/english/public/documents/corporate/HostRailroadReports/November-2021-Amtrak-Host-Railroad-Report.pdf> (last accessed Dec. 22, 2021).

⁷⁷ Testimony of Stephen J. Gardner Before the United State House of Representatives, House Committee on Transportation & Infrastructure (November 18, 2020); Amtrak 2020 Host Railroad Report Card and FAQs: "Host railroads often delay Amtrak trains [by forcing] passengers to wait in a siding while a freight train that is too long to fit in any sidings on the rail line is prioritized first."

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NSR's decision to assign passenger trains a high RTC priority in the 2021 Gulf Coast RTC Model.

In any event, CSXT and NSR asked the RTC Modelers to investigate what would happen if the preference given to passenger trains in the Model were removed. The RTC Modelers assigned passenger trains the same level of RTC priority as the highest priority freight trains and removed any settings that would prevent passenger trains from entering a siding, including dedicated passenger windows in the New Orleans terminal.⁷⁸ This 2019 No Preference Case resulted in less degradation to freight service than was present in the 2019 Passenger Case, but freight traffic still experienced an 8.4% increase in delay, with CSXT local trains experiencing the brunt of that delay at a 28.4% increase.⁷⁹ And three of the four Amtrak passenger trains operated below the 80% OTP threshold specified by federal law.⁸⁰ Although the 2019 No Preference Case is merely a thought exercise, it highlights how reducing passenger train preference is not an easy solution to the degradation freight traffic will experience when Amtrak's passenger trains begin operating on the Gulf Coast without additional infrastructure.

⁷⁸ 2021 Gulf Coast RTC Rebuttal Report at 12 (§ 2.3.1). The RTC Modelers had to keep two freight trains at a higher priority than all other freight and passenger trains because their lengths are longer than many of the available sidings. *Id.*

⁷⁹ *Id.* at 13, Table 2 (§ 2.3.1).

⁸⁰ *Id.*

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D. The RTC Modelers did not design the Model or the proposed infrastructure solutions to achieve a 95% OTP.

CSXT and NSR explained in their opening evidence that it is important to design the RTC model to attain a higher-than-desired OTP because RTC models rail operations under perfect conditions and with expert dispatching ability. In other words, RTC does not consider unexpected or outsized events such as derailments and other emergencies and severe weather events.⁸¹ And the RTC computerized model benefits from a more omniscient dispatching ability than a human dispatcher because, as a computerized model, it can predict future events (*e.g.*, the precise time a randomized bridge opening will begin and conclude) and “go back in time and change dispatching decisions it made to optimize the network’s performance.”⁸² For these reasons, the RTC Modelers emphasized the importance of passenger trains achieving at least a 95% OTP.⁸³

The RTC Modelers recognize that this 95% OTP benchmark may have led to some confusion. For example, Messrs. Crowley and Fapp appear to interpret 95% OTP as a Model input.⁸⁴ To set the record straight, 95% OTP was not Model input, nor were infrastructure projects selected based on their impact on passenger train

⁸¹ CSXT and NSR Opening Evidence at 34.

⁸² Rosse & Sinkkanen Rebuttal V.S. at 28 (These “omniscient” “features of RTC do not render it any less effective or useful for modeling dynamic corridors,” but this informs how to evaluate an RTC model’s outputs); CSXT and NSR Opening Evidence at 34.

⁸³ *See, e.g.*, 2021 Gulf Coast RTC Report at 32 (§ 3.7).

⁸⁴ *See* Crowley & Fapp V.S. at 35–36.

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OTP.⁸⁵ Infrastructure projects were selected based on their ability to mitigate the negative impact on freight service quality from the introduction of passenger trains.⁸⁶ The 95% OTP threshold was selected as a “performance target” in recognition of the fact that actual OTP is unlikely to equal or outperform the RTC-simulated OTP and the federal standard of 80% OTP.⁸⁷ The OTP measurement serves as a confirmation that the “service works for passenger trains in addition to freight trains” once infrastructure solutions to mitigate freight degradation are implemented.⁸⁸

Amtrak never disputes the fact that a passenger train’s OTP in RTC does not translate one-to-one into the real world or that RTC only models a sunny, 70 degree day and cannot account for all of the unforeseeable challenges associated with operating a railroad. Instead, Amtrak simply criticizes the 95% OTP performance result as arbitrary and then asserts that dispatching decisions and proper preference are sufficient to ensure passenger trains reach 80% OTP on other routes.⁸⁹ The only examples Mr. Blair provides are four routes that he claims “have certain similar characteristics as the Gulf Coast corridor.”⁹⁰ Yet the only obvious commonality is that the routes are all under 260 route miles and two have four or

⁸⁵ 2021 RTC Rebuttal Report at 11 (§ 2.3).

⁸⁶ *Id.* at 10 (§ 2.3).

⁸⁷ 2021 Gulf Coast RTC Report at 32 (§ 3.7).

⁸⁸ 2021 RTC Rebuttal Report at 12 (§ 2.3).

⁸⁹ Amtrak Reply at 26–27.

⁹⁰ Blair Reply V.S. ¶ 38.

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fewer daily passenger trains.⁹¹ Amtrak has no examples of a passenger route that faces a confluence of challenges similar to those on the Gulf Coast Corridor, because there is none.

E. The RTC Performance Metrics are the proper way to present the harm shippers will experience if passenger service commences without additional infrastructure.

Grasping at straws, Amtrak also attacks the usefulness of the RTC Performance Metrics. These RTC Performance Metrics clearly show that, in 2019 alone, the introduction of passenger trains without additional infrastructure will result in “an increase in freight delays by 22.7%, reduce train speeds by 4.5%, increase dispatching conflicts by 38.1%, increase reworks by 37.7%, and increase the variability of service.”⁹² Amtrak and Messrs. Crowley and Fapp suggest that CSXT and NSR “play [] games” by reporting these “bare percentages” instead of reporting the absolute changes in value (*e.g.*, speed change in miles per hour) and by “provid[ing] no context in which to evaluate the seriousness of the asserted impairment.”⁹³ This position not only reflects a fundamental misunderstanding of RTC analysis but also an untenable application of the governing statute.

To start, CSXT and NSR provided both Amtrak and the Board with all of the absolute value differences underlying the RTC Performance Metrics. Indeed, Messrs. Crowley and Fapp had no trouble cherry-picking absolute values from the

⁹¹ *Id.* ¶ 38.

⁹² 2021 Gulf Coast RTC Model at 45 (§ 6.0).

⁹³ Crowley & Fapp V.S. at 10–11; Amtrak Reply at 4, 19, 20–21.

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RTC workpapers.⁹⁴ For example, Messrs. Crowley and Fapp criticize the RTC Modelers for reporting a 4.5% decrease in freight train speed in 2019 instead of the absolute value change of 0.7 miles per hour, or a 37.7% increase in train crews in 2039 instead of an absolute value change of one additional train crew every three days.⁹⁵ They claim these absolute values are “significantly less dramatic” than the percentages reported in the 2021 Gulf Coast RTC Report.⁹⁶

The problem with this perspective is twofold. First, the absolute values do not tell the whole story. What Messrs. Crowley and Fapp omit is that the 4.5% decrease in speed (0.7 miles per hour) in 2019 is inextricably connected to the 22.7% increase in freight train delay per 100 miles, the absolute value of which is approximately 18.89 minutes of delay per 100 train miles.⁹⁷ As the RTC Modelers explain, the 0.7 mile-per-hour decrease in freight train speed “equates to over 13 hours of additional delay *per day*” experienced by freight trains “due to passenger traffic.”⁹⁸ Contrary to Messrs. Crowley and Fapp’s suggestion, a “percentage better describes this impact” than the absolute values.⁹⁹

⁹⁴ Crowley & Fapp V.S. at 10–11 (citing 2021 Gulf Coast RTC Model workpaper “FREIGHT.xlsx, tab “AGGREGATE”)

⁹⁵ *Id.* at 10.

⁹⁶ *Id.*

⁹⁷ See 2021 Gulf Coast RTC Model workpaper “FREIGHT.xlsx, tab “AGGREGATE”); 2021 Gulf Coast RTC Model at 45 (§ 6.0).

⁹⁸ 2021 RTC Rebuttal Report at 34 (§ 4.3) (emphasis added).

⁹⁹ *Id.*

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Second, RTC modelers are typically careful about reporting absolute values because of the risk of misuse. When one reads an absolute value output of an RTC model, the natural inclination is to immediately compare that value to one's own experience or the observed, actual data.¹⁰⁰ But as Mses. Rosse and Sinkkanen explain, RTC output metrics represent the difference between two simulated RTC cases.¹⁰¹ These cases are part of a comprehensive, representative model that reflects typical rail operations under ideal conditions (*e.g.*, no unexpected events such as derailments), and RTC can make more precise, instantaneous dispatching decisions to resolve conflicts than could a human dispatcher.¹⁰² Therefore, juxtaposing absolute values from the Model with real-world operations, or “actuals,” is not a one-to-one comparison and any operational decisions based on such a comparison can result in inefficient or problematic business decisions.¹⁰³

The Board should also reject Amtrak's suggestions that the RTC Performance Metrics “provide no context” for evaluating harm to freight service and should be rejected because they do not count as “real-world evidence.”¹⁰⁴ Amtrak's position is both self-serving and contrary to the command of 49 U.S.C. § 24308(e). The statute tasks the Board with holding a hearing to evaluate whether an order for additional

¹⁰⁰ 2021 RTC Rebuttal Report at 34 (§ 4.3).

¹⁰¹ Rosse & Sinkkanen Rebuttal V.S. at 28–29.

¹⁰² *Id.* at 28.

¹⁰³ *Id.* at 28–29.

¹⁰⁴ Amtrak Reply at 4, 20–21.

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Amtrak trains “*would* impair unreasonably freight transportation of the rail carrier.”¹⁰⁵ CSXT and NSR are not required to meet their burden by establishing *existing*, real-world harm for a *proposed* passenger service that has not yet commenced. If that was the standard, the Board would never have cause to deny a request under § 24308(e) made by Amtrak. And such an approach contradicts Amtrak’s longstanding practice—which it has repeatedly abandoned in the context of the Gulf Coast—of conducting RTC studies *before* implementing new or modifying existing passenger service.¹⁰⁶

In any event, CSXT and NSR have contextualized the real-world harm represented by the RTC Performance Metrics. It requires no expert to understand that an additional 13 hours of delay per day to freight trains will significantly harm shippers. And Amtrak and Messrs. Crowley and Fapp cite only to the aggregate total RTC Performance Metrics for 2019. While all freight trains in the model experience an average increase in delay per 100 train miles of 22.7% as a result of the introduction of the proposed Amtrak service, CSXT local trains experience double the increase in delay per 100 train miles at 45.4%.¹⁰⁷ There is no question that delays of this magnitude will unreasonably impair freight rail transportation to customers, hindering their ability to obtain the raw materials necessary to run their businesses in an efficient and predictable manner, to honor their obligations to

¹⁰⁵ 49 U.S.C. § 24308(e)(2)(A) (emphasis added).

¹⁰⁶ See Amtrak Reply at 22.

¹⁰⁷ 2021 Gulf Coast RTC Model at 45 (§ 6.0).

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provide finished goods to their respective customers on time, to effectively and efficiently utilize their employment base, and, ultimately, to contribute efficiently to their states' economy.

* * *

None of Amtrak's efforts to discredit the 2021 Gulf Coast RTC Model withstand scrutiny. Ms. Rosse and Sinkkanen have explained the veracity of the Model's inputs and provided a comprehensive explanation of how each of the train data sources maintained by CSXT and NSR are utilized to build a .TRAIN file for a study corridor. The RTC Modelers and Messrs. Banks and Guthrie have defended the industry-standard, representative modeling methodology and its application to the 2021 Gulf Coast RTC Model. This robust Model and the voluminous supporting documentation provides the Board with the RTC study it requested to adjudicate this dispute.

III. AMTRAK'S OTHER ARGUMENTS CANNOT OVERCOME THE OVERWHELMING RTC EVIDENCE OF UNREASONABLE IMPAIRMENT

Amtrak raises a number of other arguments in an attempt to compensate for its ineffective response to the 2021 Gulf Coast RTC Study. First, it claims that an Amtrak analysis based in part on a Swiss passenger scheduling program called "Viriato" shows sufficient capacity on the Gulf Coast Corridor to accommodate four new daily passenger trains. But Amtrak's analysis ignores almost all the relevant operating characteristics of the line Amtrak seeks to access—from local freight train activity, to freight interchange and crossover traffic, to movable bridge openings to accommodate commercial barge traffic, to grade crossings that, if blocked, has a

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spill-over effect on auto and truck traffic. Further, the program as applied by Amtrak and its consultants amounts to a stunningly simplistic analysis, reminiscent of the standalone string-line programs that the Board has long found to be inferior substitutes to RTC. Second, Amtrak argues that the Gulf Coast Corridor does not have unique characteristics that make accommodating passenger service difficult. But Amtrak's chosen examples only illustrate the particular confluence of factors on the Gulf Coast Corridor that make it impossible to add passenger trains without either introducing mitigation infrastructure or, failing that, creating unreasonable freight interference. Third, Amtrak's reliance on the history of the line ignores the stark differences between the infrequent, middle-of-the-night pre-2005 service and the four daily peak hour trains that it proposes to run now. Fourth, Amtrak revives its complaint that CSXT and NSR did not share certain information with Amtrak during the course of the 2020 RTC Study—ignoring the fact that that issue is entirely moot (and significantly mischaracterized by Amtrak in the first place). Fifth, Amtrak wrongly argues that the Board lacks authority to place conditions on Amtrak's access, or that the Board should defer considering these issues to a potential contract arbitration.

A. Amtrak's "capacity analysis" is superficial, flawed, and plainly no substitute for an RTC analysis.

In lieu of presenting RTC evidence supporting its extraordinary assertion that four daily passenger trains can be added to the Gulf Coast Corridor without unreasonably impairing freight service, Amtrak and its consultants from DB present a capacity analysis of its own creation, based in small part on the output of

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Viriato, a Swiss modeling software most commonly used to create schedules for high-frequency passenger trains in Europe. Neither Amtrak's proprietary capacity model nor Viriato has ever been used to present evidence to the STB. Viriato itself is rarely used in the United States, because it is largely not useful for modeling non-timetabled American freight operations.¹⁰⁸ Amtrak's capacity analysis contains gaping holes and does not present any reason to think that Amtrak's proposal would not create immediate harm to Gulf Coast freight service.

In the first place, the Amtrak analysis only purports to be an analysis of theoretical capacity, which is useless for present purposes. As Messrs. Banks and Guthrie show in their rebuttal verified statement, the theoretical capacity of a line is not the same as its actual practical capacity.¹⁰⁹ Usable, practical capacity generally amounts to far less than theoretical capacity in real-world freight operations.¹¹⁰ In estimating this flawed, maximum theoretical capacity benchmark for the Gulf Coast Corridor, Amtrak's model uses a representative train, abstracted from train performance data outputted by Viriato, and a representative headway, abstracted from CSXT and NSR operational data.¹¹¹ The Amtrak model then replicates the representative train in robotic fashion, causing the representative

¹⁰⁸ See Banks & Guthrie Rebuttal V.S. at 20–21 & n.23, 25; see also *id.* at 21 n.24 (showing that only two consultants are licensed to use Viriato in the United States, demonstrating its lack of U.S. acceptance).

¹⁰⁹ *Id.* at 24–25.

¹¹⁰ *Id.*

¹¹¹ *Id.* at 24 (describing the “standard train” that operates at 15-minute “standard train spacing”).

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trains to move every fifteen minutes. In short, Amtrak assumes simple, uniform freight trains and simplistic, automatic schedules. While this model might be useful for its original purpose of scheduling passenger trains operating on a set schedule with uniform consists, it is useless for the task of modeling a dynamic and complex line where trains are not all the same. Employing this many levels of abstraction causes Amtrak's model to become totally disconnected from the reality of 21st century train operations with diverse traffic and countless operating variables. Even the FRA recognizes that RTC is the superior tool because it facilitates "Detailed Analysis" compared to Viriato's primary function of "Timetable design."¹¹²

The Board should reject Amtrak's model for five reasons. First, it is a stringline program of a maximum theoretical capacity that suffers all the same flaws of stringline programs the Board has rejected in the past. In *Xcel Energy*, the Board rejected a similar stringline model because it modeled the infrastructure at an overly high level that created train conflicts and held trains at terminals to await "slots."¹¹³ That slotting produced "massive congestion and gridlock" at the line's terminals and "inappropriately shift[ed]" costs to the party that would have to

¹¹² *Id.* at 18–19 (quoting 2016 FRA Rail Program Delivery Meeting, California's Network Integration & State Rail Plan, Federal Railroad Administration, at Slide 43) (link provided in verified statement).

¹¹³ *Pub. Serv. Co. of Colo. D/B/A Xcel Energy v. The Burlington N. and Santa Fe Ry. Co.*, STB Docket No. 42057 at 42, 43, 46 (served June 8, 2004).

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construct storage tracks to hold all the waiting trains.¹¹⁴ The Amtrak model does the very same thing, requiring CSXT and NSR to hold freight trains in terminals to await slots between Amtrak trains. The nightmarish gridlock that would result in New Orleans and Mobile would have a devastating impact on freight customers and the railroads' interchange partners. Concerns like these prompted the Board, in its initial order in this proceeding, to require a rigorous model like RTC that could “detail” infrastructure needs with evidentiary support; Amtrak's model does not even attempt to meet this burden.¹¹⁵

Second, Amtrak fails to model the real-world complexity of the Gulf Coast line. The Amtrak model generalizes the vast diversity of this line's traffic—merchandise, automotive, local, and bulk commodity trains as well as bridge tender hi-rails and maintenance-of-way activity—into just one representative train, despite vastly different operating characteristics and train dynamics.¹¹⁶ Lumping all potential sources of delay into an abstract “variability” factor, the model fails to account for the randomness of movable bridge openings and completely ignores bridge tender movements, which consume capacity at unpredictable times. Furthermore, Amtrak fails to model any of the hundreds of grade crossings along

¹¹⁴ *Id.*

¹¹⁵ August 6 Decision at 7.

¹¹⁶ This simplistic arithmetic is reminiscent of the “tabulation” the Board rejected in *FMC Wyoming*. 4 S.T.B. at 826.

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this corridor or account for delays to the public from trains holding on sidings, an unacceptable omission in mainstream operations planning.

Third, Amtrak’s “maximum capacity” theoretical analysis assumes a robotic pattern of train dispatching that cannot be replicated in the real world, given the variability inherent in real-world freight operations. Critically, Amtrak’s model assumes that CSXT and NSR can simply hold freight trains in or waiting to enter the congested New Orleans and Mobile terminals until slots open for them. This assumption is fatal, and radical, in that Amtrak essentially proposes to add to the present-day congestion in these two terminals without any ameliorating infrastructure. This sort of flawed thinking was the very reason the Board rejected a similarly simplistic string analysis in *Xcel Energy* in favor of the more sophisticated RTC model.

Fourth, Amtrak’s model does not report the key metric in this case: delays to freight trains, including connecting carriers and local traffic. It does not report how long interchange partners will need to hold trains in or waiting to enter New Orleans. It does not report (or even model) delays to the operations of local trains. It does not address how long merchandise trains must hold in or near New Orleans to await their approved slots. And, as previously discussed, it does not model the grade crossing blockages that would result from the train holding patterns it mandates. A scheduling model that does not report out the key metrics needed to prove or disprove “unreasonable impairment” is useless.

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Finally, Amtrak's model does not appear to resolve conflicts, despite conflict detection being a capability of the Viriato software upon which Amtrak's model is minimally based.¹¹⁷ Every time that Amtrak's time-distance "string lines" cross in a location with no suitable sidings, real-world trains would collide. The proper analytical method is to iterate the model numerous times until all conflicts are resolved, by forcing the string lines to cross at locations with sidings suitable for meets and passes. There is no indication Amtrak's witnesses manually undertook these labor-intensive steps with their static model. Those steps are performed automatically by RTC's robust simulation model.

Any of these flaws would be sufficient in isolation to reject Amtrak's analysis. In combination, these errors render Amtrak's capacity analysis utterly useless.

B. Amtrak identifies no passenger service in the country that operates over a corridor with the same level of complexity present on the Gulf Coast corridor.

Amtrak claims that the Gulf Coast corridor is not "unique" because the characteristics highlighted by CSXT and NSR "are actually quite common in Amtrak's experience."¹¹⁸ But Amtrak completely misses the point. CSXT and NSR do not claim that single-track routes or movable bridges or grade crossings are unique in and of themselves. Rather, it is the *combination* of these and other characteristics that render the Gulf Coast Corridor uniquely challenging to dispatch. And Amtrak's list of examples only amplify that uniqueness. Not a single

¹¹⁷ Banks & Guthrie Rebuttal V.S. at 21 & n.26.

¹¹⁸ Amtrak Reply at 35; Blair Reply V.S. ¶¶ 44–50.

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comparative example identified in the verified statement of Mr. Blair contains *all* the features of the Gulf Coast identified in CSXT and NSR's opening evidence: predominantly single-tracked route; more than 160 grade crossings; 13 movable bridges, seven of which are located between Mobile and New Orleans; vital transportation artery with four international ports; and two congested terminal areas with major interchange operations at either end of the route.¹¹⁹

Amtrak first holds out the Northeast Corridor as an example of a route with significant movable bridge that open during peak periods.¹²⁰ What Amtrak omits is that the Northeast Corridor is double, triple, and in some places quadruple-tracked and almost entirely grade-separated, providing significant operational flexibility for freight traffic of mixed priority and maximum speeds that simply does not exist on the Gulf Coast Corridor.¹²¹ And Amtrak owns and dispatches the majority of the Northeast Corridor, allowing it to significantly restrict freight access to evening operations to fit Amtrak's operational model.¹²² Mr. Blair's comparison to BNSF Railway's Chicago to Los Angeles Transcon Line is likewise unhelpful.¹²³ While that line may handle more trains than the congested New Orleans and Mobile terminals,

¹¹⁹ See CSXT and NSR Opening Evidence at 22–28; 2021 Gulf Coast RTC Report at 13–14 16–21 (§§ 1.1, 2.0).

¹²⁰ Amtrak Reply at 36; Blair Reply V.S. ¶ 45.

¹²¹ Banks & Guthrie Rebuttal V.S. at 13–14.

¹²² *Id.*

¹²³ Blair Reply V.S. ¶ 47.

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that high-speed mainline is a 2,200-mile long double-tracked corridor with passing sidings and triple track segments in key locations.¹²⁴

Amtrak also argues that the majority of its passenger services operate over single-tracked routes.¹²⁵ CSXT and NSR do not doubt this. But Amtrak's single-track corridor example—BNSF Railway's mainline between Bakersfield and Stockton, California—has approximately 40% fewer grade crossings than the Gulf Coast Corridor and no movable bridges.¹²⁶ And on the grade crossing issue, Amtrak touts the Florida East Coast Railway's line between Miami and West Palm Beach, Florida, which accommodates more freight and passenger traffic with more grade crossings over a shorter distance than the Gulf Coast Corridor.¹²⁷ While impressive, these trains again have the advantage of a double-tracked corridor, which was specifically double-tracked at the cost of more than \$1 billion to accommodate the new passenger services. This double track significantly reduces the need for trains to stop to allow trains with higher priority or speed to pass, thereby reducing the negative impact on local communities associated with lengthy blocked crossings.¹²⁸

In sum, Amtrak has failed to identify another passenger service route with the unique confluence of characteristics present on the Gulf Coast Corridor. Even if

¹²⁴ Banks & Guthrie Rebuttal V.S. at 15.

¹²⁵ Amtrak Reply at 35; Blair Reply V.S. ¶ 44.

¹²⁶ Banks & Guthrie Rebuttal V.S. at 14.

¹²⁷ Amtrak Reply at 36; Blair Reply V.S. ¶ 46.

¹²⁸ Banks & Guthrie Rebuttal V.S. at 14–15.

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one of Amtrak's examples were sufficiently similar to the Gulf Coast Corridor, Amtrak provides no metrics by which to compare the passenger and freight service quality or the impact of passenger service on host railroads' freight service on those other routes with the Gulf Coast Corridor. And most importantly, Amtrak provides no RTC study and corresponding metrics of its own that undermine the 2021 Gulf Coast RTC Study's showing that these characteristics combined with the addition of passenger trains produce significant dispatching challenges that only additional infrastructure will solve.

C. Amtrak's Arguments About the History of the Line Are Meritless and Irrelevant.

Amtrak also suggests that the Board should grant its application because the Gulf Coast Corridor hosted some passenger trains before 2005. But as CSXT and NSR have explained, the pre-2005 service was profoundly different from the current proposal. Amtrak previously ran only three trains a week in the middle of the night—it is currently proposing four trains a day during peak hours.

In the same vein, Amtrak suggests that CSXT and NSR are somehow at fault for not maintaining sufficient extra capacity on the Gulf Coast Corridor for decades to accommodate Amtrak's current service proposal. It is not reasonable to expect freight common carriers to build and maintain their lines and facilities to a level that can easily accommodate hypothetical future requests for passenger service that may or may not come. It would be one thing if Amtrak had been paying CSXT and NSR to keep capacity available. But it did not. Absent support from Amtrak to

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maintain capacity, there was no obligation from CSXT and NSR to keep capacity in place to accommodate a potential future service.¹²⁹

D. Confidentiality Disputes About the 2020 RTC Model Are Moot.

Amtrak suggests that it is entitled to a § 24308(e) order because of alleged uncooperativeness by CSXT and NSR. Faced with the inconvenient fact that it was Amtrak that walked away from the joint 2020 RTC study, Amtrak tries again to shift the blame to the freight railroads, claiming that their refusal to provide highly confidential train data to Amtrak personnel or the FRA rendered the 2020 RTC model invalid.¹³⁰

In the first place, Amtrak negotiated and signed a Data Sharing Agreement that protected each railroad's highly confidential train data from disclosure to any party's internal personnel and provided that the FRA would only be given "non-confidential summaries of all data."¹³¹

Redacted

¹²⁹ Amtrak's assertion that it has been attempting to institute a Gulf Coast passenger service since 2006 are a significant exaggeration. Amtrak Reply at 10. Tellingly, Amtrak's account of its efforts to implement passenger service does not include any events between a pro forma letter sent in 2006 and 2015. *See* Blair Reply V.S. ¶¶ 12–13; *see also id.* at 11 (stating that "Amtrak has negotiated in good faith for more than five years"—not fifteen years).

¹³⁰ Amtrak Reply at 12; *see* Blair Reply V.S. ¶¶ 22, 25–27.

¹³¹ Data Sharing Agreement at 5–6 (attached as Exhibit D to CSXT and NSR's Motion to Dismiss).

Redacted

}; only now, for litigation convenience to allege CSXT and NSR non-cooperation, does Amtrak change its tune and contend it always wanted such extensive data.¹³³

Regardless, Amtrak agreed to the precise terms that it now complains about. Nine months after signing the Data Sharing Agreement with the railroads, on or about September 28, 2020, Amtrak executed a grant agreement with FRA to fund the 2020 HDR study.¹³⁴ That grant agreement contained data requirements that were in direct conflict with the Data Sharing Agreement it had signed nine months prior.¹³⁵ Amtrak should have either negotiated different terms in the Data Sharing Agreement or should not have accepted the conflicting FRA grant. In any event,

¹³² Exhibit 3,
}

Redacted

¹³³ Exhibit 4,

Redacted }

¹³⁴ Exhibit 5,

Redacted

¹³⁵

Redacted

} See Exhibit 6, {

Redacted

7, {

Redacted

; see also Exhibit
}

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Amtrak's arguments that CSXT and NSR would not comply with the Data Sharing Agreement are disingenuous at best.

More importantly, the confidentiality disputes over the 2020 HDR Study are moot. Pursuant to the Protective Order in this proceeding, Amtrak was given access in discovery to all the information that CSXT and NSR provided to HDR in the 2020 HDR Study (in addition to other responsive RTC files). Amtrak similarly was given access to the full workpapers of the RTC Modelers. Amtrak had everything it needed to understand the 2021 Gulf Coast RTC Model and to construct an alternative if it wished. Its decision not to present RTC evidence here is a litigation choice, not a result of lack of information or any confidentiality restrictions. Given Amtrak's extensive access to RTC information in discovery, it is reasonable for the Board to treat that litigation choice as an admission that Amtrak cannot provide RTC evidence demonstrating that adding four daily passenger trains with no supporting infrastructure would not unreasonably impair freight service.

E. The Board Can and Should Determine What Infrastructure Is Necessary to Support Amtrak's Proposed New Service.

Amtrak also asserts that the Board lacks authority under the statute to evaluate the Proposed Passenger Infrastructure or what mitigation might be required to support Amtrak's proposed new service. According to Amtrak, the Board only has the authority to approve the application or to deny it. If that were so, then the outcome of this case is clear—Amtrak's proposal to add four daily trains without any supporting infrastructure would unreasonably impair freight service, and thus the application should be denied.

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The Board's authority is not so limited, however. No lesser authority than the Supreme Court has found that the agency has authority to consider the impact of mitigation actions when determining Amtrak's rights under the Rail Passenger Service Act.¹³⁶ In *Boston & Maine*, Amtrak sought to condemn a Boston & Maine rail line via eminent domain, and the question was whether the condemnation would "significantly impair" the freight railroad's ability to provide common carrier service.¹³⁷ Boston & Maine argued that the ICC did not have discretion under the statute to consider whether a grant of trackage rights to Boston & Maine would mitigate the impairment.¹³⁸ The Court rejected that argument, finding no basis for such a "restrictive" interpretation of the ICC's authority, and that the agency acted reasonably by considering the impact of mitigating conditions on the "significant impairment" question.¹³⁹

Here, there is similarly no basis for a "restrictive inquiry" in which the Board may only unconditionally approve Amtrak's application for access or completely deny it. CSXT and NSR have done the hard work of identifying, through a rigorous model, infrastructure investments that would mitigate the impact of Amtrak's

¹³⁶ See *Nat'l R.R. Pass'r Corp. v. Boston & Maine Corp.*, 503 U.S. 407 (1992).

¹³⁷ *Id.* at 423.

¹³⁸ *Id.* ("B&M's argument . . . relies on the notion that in assessing impairment the ICC may consider only the conveyance itself, not any mitigating measures adopted in response to the conveyance, such as the grant of trackage rights to B&M.")

¹³⁹ *Id.* ("We find no basis in the text or structure of § 562(d) for this position and cannot say that the statute must be interpreted to mandate such a restrictive inquiry.").

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proposed new passenger service. The Board plainly has the authority to determine whether construction of some or all of that Proposed Passenger Infrastructure should be a condition of granting Amtrak's application.

Amtrak also argues that the Board should grant access unconditionally and leave the question of supporting infrastructure to be determined through contractual arbitration. But Amtrak cannot pick and choose forums that way. Amtrak chose to bring this dispute to the Board—not through arbitration. Having chosen to bring this dispute to the Board, Amtrak cannot argue that the Board lacks the authority to consider the whole dispute.

Moreover, Amtrak's suggestion that this case is simply about compensation is untrue. Damage to the quality of freight service will be irreparable, and would affect many parties who will not be made whole through some future hypothetical contract arbitration or § 24308(a) case. (Indeed, Amtrak is already laying the groundwork to argue that the damages that it would cause to freight service would not count as incremental costs and could not be recovered.¹⁴⁰) Allowing Amtrak to unreasonably impair freight service with impunity, based on a theoretical possibility of a future contract arbitration or STB litigation over the costs of Gulf Coast Passenger Service, would turn Congress's concerns over unreasonable freight impairment into a dead letter, and would ignore the interests of the many stakeholders who depend on freight service over the Gulf Coast Corridor

¹⁴⁰ See Amtrak Reply at 32.

IV. RESPONSE TO THIRD PARTIES

CSXT and NSR appreciate the participation of third parties with an interest in this proceeding, including the Port of Mobile and the Department of Transportation. Amtrak's contention that the Board is not permitted to consider impacts to any party other than CSXT, NSR, or Amtrak is baffling.¹⁴¹ Amtrak focuses most of its fire on attempting to silence the Port of Mobile, but argues more generally that the Board may only consider objections of "the rail carrier," and cannot consider the interests of other parties, such as commuters impacted by grade crossing closures.¹⁴² To the contrary, much of the Board's mission is to consider the interests of parties who are impacted by freight transportation without themselves being freight railroads—from communities to shippers to ports and terminals. In mergers, abandonments, unreasonable practice cases, and a host of other contexts, the Board listens carefully to the views of affected stakeholders. It should do the same here.¹⁴³

¹⁴¹ *Id.* at 30, 40.

¹⁴² *Id.* at 41 n.137 ("[A]n individual could not submit evidence for the Board to consider regarding whether his vehicle could be held at a crossing for longer than he otherwise might due to Amtrak's Gulf Coast Service."); *id.* at 6 ("any possible inconvenience to T ASD is irrelevant to the issues before the Board").

¹⁴³ Indeed, Amtrak's attempt at limiting the Board's considerations in this proceeding as to what can be considered when determining the "freight transportation of the rail carrier" would conflict both with the STB's invocation of jurisdiction over other aspects of freight rail transportation and what interests are able to participate in other proceedings before the Board.

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A. The Port of Mobile Raises Important Concerns

CSXT and NSR have reviewed the Port of Mobile's evidentiary submissions, and the freight railroads understand and appreciate the Port's perspective. The Port is precisely the type of stakeholder that could be negatively affected by an unreasonable impairment of freight transportation. While Amtrak tries to dismiss the serious service degradations shown by the 2021 Gulf Coast RTC Model as mere statistics, the Port shows the actual consequences of unreasonably impairing freight transportation on freight users.

The Port has proposed a number of infrastructure mitigation projects for the Board's consideration. In this Rebuttal Evidence, CSXT and NSR stand behind the suite of projects they proposed in their Opening Evidence, which the 2021 RTC Model found would be sufficient to mitigate the negative service impacts from adding four daily passenger trains. If the Board wishes to see additional iterations of the 2021 Gulf Coast RTC Model to reflect the impact of the Port's proposed projects, CSXT and NSR are willing to perform any additional modeling that the Board requests.

B. DOT's Comments Do Not Help Amtrak Satisfy § 24308(e).

DOT's amicus comments do not add much to the Board's analysis. While DOT clearly wishes to be on record as supporting Amtrak, its comments do not meaningfully reflect or engage with the evidence in the record. Moreover, in its efforts to support Amtrak's extreme positions, DOT directly and inexplicably contradicts the agency's prior policies for the Gulf Coast Corridor and beyond.

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DOT tellingly does not endorse either the Crowley and Fapp criticism of the 2021 Gulf Coast RTC Model or the DB Engineering proprietary maximum theoretical capacity analysis. Instead, DOT claims that insufficient information was provided about the Gulf Coast Corridor and that more “transparency” was needed in the 2021 Gulf Coast RTC Model.¹⁴⁴ This contention makes little sense. Ample supporting documentation about the Gulf Coast Corridor was provided in CSXT’s and NSR’s workpapers, and far more was made available to Amtrak in discovery. And, of course, the entirety of the 2021 Gulf Coast RTC Model and its supporting workpapers were provided to the Board and to Amtrak. At no time before its amicus filing did DOT move to intervene as a party, ask CSXT or NSR to see discovery under the protective order, or ask CSXT and NSR for their workpapers. DOT’s complaint that all possible supporting information was not enclosed with the 276-page public opening evidence and its 87-page RTC report is baffling. The Board and the parties to this case have that information, and DOT never asked for it.

DOT also argues that CSXT and NSR should have taken more account of “non-construction solutions” such as adjusting the proposed Amtrak schedule or reconfiguring bridge openings.¹⁴⁵ But it is not CSXT’s and NSR’s responsibility to propose and model a different schedule than the one Amtrak proposed in its

¹⁴⁴ Comments of *Amici* United States Department of Transportation and Federal Railroad Administration (filed Dec. 14, 2021), at 10–12, 16 (“DOT Comments”).

¹⁴⁵ *Id.* at 13–15.

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Application. Indeed, if CSXT and NSR had chosen to model a passenger service schedule different from the one Amtrak has proposed, that would likely have been Complaint #1 in Messrs. Crowley and Fapp's Verified Statement. In the same vein, CSXT and NSR clearly do not have the power to change the schedule for movable bridge openings, and it would make little sense to design an RTC model to assume hypothetical regulatory changes.¹⁴⁶

More importantly, if DOT believes that these mechanisms could be part of a solution, then it should direct its complaints to Amtrak. Amtrak's Reply does not propose any changes to its proposed service schedule, let alone show how any changes would mitigate harm to freight service. Nor does it announce any agreed accommodations with the Coast Guard for bridge openings, or explain how such hypothetical agreements would reduce the delays caused by adding passenger trains. CSXT and NSR cannot be blamed for not identifying non-construction solutions that Amtrak itself does not identify.

Finally, it should be noted that DOT's comments are a stark departure from its past policies. DOT sponsored the 2017 Gulf Coast Study Report to Congress, which identified certain projects that FRA believed would be necessary to support Gulf Coast Passenger Service. Indeed, when it instituted this case Amtrak indicated that it planned to build the GCWG projects.¹⁴⁷ Midway through, Amtrak

¹⁴⁶ DOT's call for CSXT and NSR to explore the effects of "better dispatching" is out of place in the context of an RTC model. *Id.* at 14. The RTC program itself assumes an omniscient dispatcher who will always arrive at the ideal dispatching solution.

¹⁴⁷ See Application at 3 n.3.

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chose to switch to the maximalist position that no infrastructure would be required. DOT apparently has switched right with it, and its comments do not call for construction of any of the GCWG projects.¹⁴⁸

This reversal is just the tip of the iceberg. Like Amtrak, DOT completely ignores the extensive evidence that imposing passenger trains without supporting infrastructure will dramatically increase grade crossing blockages, an issue that until recently was a high priority for DOT.¹⁴⁹ It pays no mind to the serious concerns expressed by the Port of Mobile or the potential impact of unsupported passenger trains on supply chain issues, which has been an particular focus for DOT in 2021.¹⁵⁰ It questions the need for modeling passenger trains in light of

¹⁴⁸ The 2021 Gulf Coast RTC Model includes an analysis of the GCWG projects, which the model shows to not be sufficient in themselves to eliminate unreasonable freight interference. *See* 2021 Gulf Coast RTC Model at App’x F. In part that is because the Gulf Coast Working Group’s Report to Congress was incomplete and did not analyze an important segment of the proposed route. *See* Blair Reply V.S., App’x C, GCWG Report at 10 (explaining that the NS segment of the anticipated new route, involving three different dispatching entities, was the subject of a separate study that was (and continues to be) on hold). DOT does not even mention this aspect of the 2021 Gulf Coast RTC Model, let alone respond to it.

¹⁴⁹ *See, e.g.*, Press Release, Federal Railroad Administration Launches Web Portal For Public to Report Blocked Railroad Crossings, *available at* <https://railroads.dot.gov/newsroom/press-releases/federal-railroad-administration-launches-web-portal-public-report-blocked-0> (Dec. 20, 2019).

¹⁵⁰ *See, e.g.*, Press Release, U.S. Transportation Secretary Pete Buttigieg Announces \$12.6 Million in Grants for America’s Marine Highways, *available at* <https://www.transportation.gov/briefing-room/us-transportation-secretary-pete-buttigieg-announces-126-million-grants-america> (Dec. 10, 2021) (emphasizing DOT “near-term actions to address supply chain disruptions”).

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future freight traffic growth,¹⁵¹ thus directly contradicting DOT guidelines on 20-year modeling.¹⁵²

While DOT's reversals are troubling, it is encouraging that it recognizes the Board's authority to consider what infrastructure investments would be necessary to ensure that Amtrak's proposed passenger service does not unreasonably impair freight service.¹⁵³ CSXT's and NSR's evidence provides a clear explanation of the infrastructure that is necessary to ensure that the institution of Gulf Coast passenger service would not undermine all of DOT's non-passenger priorities, from ensuring safe and efficient freight service, to improving supply chain fluidity, to limiting highway-rail grade crossing blockages.

V. IN CONCLUSION, CSXT AND NSR HAVE CLEARLY MET THEIR BURDEN OF DEMONSTRATING UNREASONABLE IMPAIRMENT

Much of Amtrak's reply is dedicated to emphasizing that CSXT and NSR have the burden of demonstrating unreasonable impairment to freight service. That is true enough, and for the reasons detailed above CSXT and NSR have easily met that burden through their preparation of the 2021 Gulf Coast RTC Model and rebuttal of Amtrak's ineffectual criticisms of that model. Amtrak's emphasis on the

¹⁵¹ DOT Comments at 8.

¹⁵² See Federal Railroad Administration, Rail Corridor Transportation Plans, A Guidance Manual (2005), <https://railroads.dot.gov/elibrary/railroad-corridor-transportation-plans-guidance-manual> (noting that analysis of new or improved intercity rail services should "attempt to take into account the plans of intercity rail passenger service, local commuter rail service, and rail freight operators over a relatively long period of 20 years").

¹⁵³ See DOT Comments at 15–16.

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burden of proof may be an attempt to excuse its own failure to present any reliable evidence to rebut the 2021 Gulf Coast RTC Model. Amtrak's assumption that the burden of proof means that all Amtrak needs to do is attack CSXT's and NSR's RTC evidence while presenting nothing of its own is flatly contrary to the Board's precedents.

In *Public Service Company of Colorado d/b/a Xcel v. BNSF Railway Company*, the Board found that a shipper in a rate reasonableness case had not presented a feasible operating plan.¹⁵⁴ The defendant railroad argued that this was a failure of proof, and that because the complainant had not met its burden of proof, the Board was required to dismiss the complaint.¹⁵⁵ The Board disagreed, holding that the Board, like its predecessor the ICC, was “not intended to be a passive arbiter but the ‘guardian of the general public interest,’ with a duty to see that this interest is at all times effectively protected.”¹⁵⁶ As a result, the Board rejected the idea that a case simply comes to an end if a party with the burden of proof submitted imperfect evidence.

¹⁵⁴ STB Docket No. 42057, at 3 (served Jan. 19, 2005). Ironically enough, the operating plan was deemed infeasible because it relied on a “string model” like the DB proprietary model that Amtrak presents here. *Id.* at 24–25 (served June 8, 2004).

¹⁵⁵ *Id.* at 3 (served Jan. 19, 2005) (“BNSF’s argument assumes that, in considering a challenge to the reasonableness of a rate, our role is simply to act as an umpire, calling balls and strikes for the adversaries appearing before us, and that a significant deficiency in the complainant’s opening presentation must therefore be fatal to its case.”).

¹⁵⁶ *Id.* at 4.

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Instead, when a party believes that it can identify flaws in another party's evidence, that party must present its own corrective evidence as a substitute, and cannot simply announce that the case is at an end because the other party allegedly failed to carry its burden.¹⁵⁷ Here, Amtrak claimed to identify flaws in the 2021 Gulf Coast RTC Model, but it failed to submit any corrective evidence. That may be because (as the RTC Modelers show), corrective evidence would continue to show seriously impaired freight service. But it would be a sharp break from Board precedent for the Board to excuse Amtrak from the traditional burden of a party to correct evidence that it believes is flawed—not simply criticize it.

* * *

CSXT and NSR have plainly met their burden under § 24308(e). The 2021 Gulf Coast RTC Model shows that Amtrak's proposed new service would cause significant impairment to freight transportation in the Gulf Coast region, absent conditions requiring Amtrak to build adequate infrastructure to support its new service. Section 24308 does not permit Amtrak to force freight railroads to accept new passenger trains that will unreasonably impair freight service, and thus Amtrak's Application must be denied.

¹⁵⁷ *Xcel* at 5 (served Jan. 19, 2005) (setting forth the expectation that the party on reply demonstrate the opening evidence to be “infeasible or unsupported and . . . offer[] feasible, realistic alternative evidence that avoids the infirmities in the [opening] evidence and that is itself supported”).

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Respectfully submitted,

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Dated: December 23, 2021

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CERTIFICATE OF SERVICE

I hereby certify that on this 23rd day of December, 2021, a copy of the foregoing Rebuttal Evidence was served by email or first class mail on the service list to Finance Docket No. 36496.

/s/ Matthew J. Warren

Matthew J. Warren
SIDLEY AUSTIN LLP

Exhibit 1

Rebuttal Verified Statement of
Charles H. Banks and Larry R. Guthrie

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

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

**CSX TRANSPORTATION, INC. AND NORFOLK SOUTHERN RAILWAY
COMPANY'S JOINT REBUTTAL EVIDENCE**

**REBUTTAL VERIFIED STATEMENT OF
CHARLES H. BANKS AND LARRY R. GUTHRIE**

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I. INTRODUCTION

This Rebuttal Verified Statement responds to the criticisms that Amtrak and its experts, Thomas D. Crowley and Daniel L. Fapp of L.E. Peabody & Associates, Inc. (“Peabody”), leveled at the 2021 Gulf Coast RTC Model. Messrs. Crowley and Fapp make unfounded claims that the RTC Modelers (R.L. Banks & Associates and HNTB Corporation) inflated the number of trains in the model, erred by developing a representative model instead of replicating a two-week peak period, and unreasonably gave Amtrak the preference over freight trains required by law. The RTC Modelers conducted supplemental analysis and modeling to rebut these and numerous other baseless criticisms of the 2021 Gulf Coast RTC Model, the methodology and conclusions of which are presented in the 2021 New Orleans – Mobile Gulf Coast Passenger Service RTC Modeling Rebuttal Report (“2021 RTC Rebuttal Report”) attached as Appendix A to this Rebuttal Verified Statement.¹

Messrs. Crowley and Fapp’s statement is reminiscent of the old proverb: “It is easier to pull down than to build up.” Despite having access to all the underlying workpapers as well as the voluminous RTC files and inputs obtained in discovery from past RTC studies, Amtrak and its experts prefer to tear apart our Model and results rather than put forward anything constructive. Amtrak and its experts have failed to enter into evidence their own RTC model that measures the impact of passenger service on the Gulf Coast Corridor, nor have they attempted to rerun the 2021 Gulf Coast RTC Model with revised inputs that they believe are more accurate.

¹ The resume of RTC Modeler Mark Dingler of HNTB Corporation is attached as Appendix B, which was inadvertently omitted from our November 3 Joint Verified Statement.

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Instead, Amtrak merely criticizes the 2021 Gulf Coast RTC Model without offering any corrective evidence. To patch this gaping hole in its presentation, Amtrak presents a proprietary analysis of the theoretical capacity of the Gulf Coast Corridor, based in part on a passenger scheduling program known as Viriato. And therein lies the problem. Amtrak's analysis solves for theoretical capacity rather than actual capacity. Actual capacity is a function of a complex set of variables ranging from the preference passenger trains receive, the speed differentials between passenger and freight trains, and differences in the lengths, weight, speed, and other characteristics and movements attributes of many different categories of freight trains. It further ignores altogether the already limited capacity for trains to sit in or beyond New Orleans and Mobile while waiting for a "slot" to open on the line. The theoretical capacity report that Amtrak puts forward does not deal with any of these complex yet real-world variables encountered every day. A thorough comparison of CSXT and NSR's RTC Model and Amtrak's "model" leads to one inescapable conclusion: the RTC Model in this case is superior. The RTC Model captures the granularity, complexity, and variability of train movements along the study corridor and focuses on practical capacity, rather than theoretical capacity.

Indeed, Amtrak and the experts at DB Engineering declined to model the theoretical capacity of the line in 2039. The only evidence in the record that addresses the future impact of Amtrak's proposed passenger service is the 2021 Gulf Coast RTC Model and its 2039 modules, which show that catastrophic gridlock would result from imposing Amtrak's proposed service with no responsive, supporting infrastructure.

Based on CSXT's and NSR's opening submission and our comprehensive review of Amtrak's Reply Argument and Evidence, we reach two overarching findings.

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First, the RTC Modelers used generally-accepted standard statistical principles and a robust knowledge of railroad operations and train movement data to develop a representative model that fairly and accurately captures typical operations on the Gulf Coast Corridor. None of Amtrak's criticisms of the 2021 Gulf Coast RTC Model are grounded in reality. Nor do Amtrak's criticisms reflect industry standard RTC modeling practices. Therefore, the 2021 Gulf Coast RTC Model's outputs, including the RTC Performance Metrics, can be trusted and relied upon by the STB in reaching a decision in this proceeding.

Second, Amtrak's alternative, static presentation is a poor substitute for the model produced by the dynamic tool, RTC. The RTC Modelers used RTC to capture a level of granularity and variability of train operations that far exceeds Amtrak's limited theoretical report. Amtrak's flawed report on the theoretical capacity of the Gulf Coast Corridor in this case is neither useful nor accurate.

II. AMTRAK'S ATTACKS ON THE RTC MODEL ARE INACCURATE AND EXAGGERATED.

On opening, we provided a detailed RTC model to explore the impact on freight rail services from the introduction of four daily passenger trains during peak hours, both in 2019 and in 2039. The STB specifically requested an analysis of future infrastructure needs, and so we used the RTC model to suggest locations for infrastructure projects to resolve various dispatching challenges created by the introduction of the passenger trains. We chose RTC because it has been endorsed by the STB, it is commonly used by all Class I railroads in the ordinary course of business, and, in our opinion, it is the best modeling tool to inform capacity-related infrastructure project decisions that must be made within the context of a complex freight corridor. Amtrak responded by criticizing the model while offering no alternative RTC analysis of its own. It is telling that not only Amtrak does not present an independent RTC study, it does not even offer any evidence to show that

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any of the alleged deficiencies in the 2021 Gulf Coast RTC Model might affect the ultimate results.

Amtrak and its experts make three major criticisms and a host of minor ones. *First*, they critique the inputs into the Model, claiming we overstated the number of trains or other movements on the line. *Second*, Amtrak demands that we should have followed the “replicative” approach used by parties in Stand-Alone Cost cases (rate cases) before the STB and modeled the peak 2 weeks from the study period in the fall of 2019, rather than conduct a “representative” analysis. *Finally*, Amtrak and its experts object to the preference the 2021 Gulf Coast RTC Model provided to Amtrak trains, claiming that the Model exaggerates the passenger trains’ impact on freight rail service. As discussed below, not one of these major criticisms is well-founded, nor is there any merit to Amtrak’s other criticisms of the RTC model, which are addressed in detail in the enclosed 2021 RTC Rebuttal Report and/or the Rebuttal Verified Statement of Hannah Rosse and Holly Sinkkanen.

There is no question that any reliable operations model must capture and reflect the actual trains and other capacity constraints on the study corridor as a baseline, before studying the impact of adding four, high-priority passenger trains. Failure to do so would be a failure to show whether or not the introduction of those trains “would impair unreasonably freight transportation.” This modeling effort required multiple data sources from CSXT and NSR and information from each railroad’s field personnel with respect to trains operating within the vicinity of key terminals, yards, and customer locations. Each bit of intelligence was pieced together to determine how the trains actually operate and how to best represent those operations in RTC. Train data was provided in the first instance by CSXT and NSR staff, as they are the experts on what and how trains traverse their respective lines. This data included track profiles, timetables, train profile data, OS data, dispatch data, and field personnel input. (We note that each railroad refers to these

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categories of data slightly differently). In their Rebuttal Verified Statement, Mses. Rosse and Sinkkanen describe in detail how a thoughtful modeler uses these data sources to piece together the story of each train's movements along the route.

It is clear that Messrs. Crowley and Fapp misunderstood and misused these data sources in developing their critiques of the Model. In Section 3.0 of the 2021 RTC Rebuttal Report, the RTC Modelers state:

The majority of Messrs. Crowley and Fapp's critiques of the 2021 Gulf Coast RTC Model center on the [traffic] inputs into the Model. They repeatedly misrepresent how the 2021 Gulf Coast RTC Model was constructed, misinterpret the actual data provided by the railroads, fail to acknowledge items clearly stated in the modeling report, and argue that operations typical across all railroads in North America are atypical.

Based on their flawed review of the train data, Messrs. Crowley and Fapp assert that the Model simulated 257% more trains than actually operated on the corridor. This claim is wildly inaccurate. Section 3.1 of the 2021 RTC Rebuttal Report points out that:

[Messrs. Crowley and Fapp's] analysis demonstrates a fundamental misunderstanding of the RTC modeling process, insofar as it both overcounts the RTC trains and undercounts the actual train volumes in the relevant data sources. This faulty analysis was based on:

1. A misunderstanding of what types of "trains" will show up in train movement data;
2. Using actual train volumes from the wrong source file;
3. Misuse and misidentification of the peak period; and
4. A lack of understanding of railroad data by using the wrong data set.

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While the 2021 Gulf Coast RTC Model was not developed by importing the precise details of a specific, two-week period from the train data provided by CSXT and NSR, the volumes in the representative model closely match the peak period preferred by Messrs. Crowley and Fapp.

We have reviewed the traffic inputs, supporting databases, and verified statements filed by CSXT and NSR officials. In our judgment, it is readily apparent that Amtrak is wildly overstating any traffic input issues. The inputs employed in the 2021 Gulf Coast RTC Model are legitimate inputs, not “garbage” as described by Messrs. Crowley and Fapp in their critique. See Section 3.1 of the 2021 RTC Rebuttal Report to obtain a detailed explanation of the many flaws in Messrs. Crowley and Fapp’s train count analysis. Furthermore, once data and analysis errors by Messrs. Crowley and Fapp were corrected, it was found that the train counts depicted in the 2021 Gulf Coast RTC Model for 2019 were within a reasonable margin of error, 2.5%, of the properly calculated, actual peak week train counts. The various categories of freight traffic in the 2021 Gulf Coast RTC Model and how they factor into the train counts is set forth in more detail in Section 3.1 of the 2021 RTC Rebuttal Report. In our judgment, all of the movements on the line described in Section 3.1 consume capacity and must be accounted for to permit any model to accurately capture the impacts on freight rail service of introducing four priority passenger trains. Indeed, Amtrak never identifies any train categories or movements that it believes should be ignored and excluded from the Model.

Another criticism leveled by Amtrak’s experts is that the 2021 Gulf Coast RTC Model failed to replicate the exact movements that occurred in a peak, 2-week period in 2019. That criticism seems to have evolved from stand-alone cost (SAC) methodology rate reasonableness cases, where modeling evidence sometimes looks at a “peak” period to test whether the infrastructure proposed by the complainant in

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its hypothetical stand-alone railroad is sufficient to handle the selected traffic group.

As shown in the 2021 Rebuttal RTC Report, this “peak week” objection makes no material difference. The volumes in the 2021 Gulf Coast RTC Report and the actual volumes in the “peak period” are within 2.5% of one another. Moreover, replicating a peak, two-week period is not the industry norm concerning RTC capacity modeling. Modeling the peak weeks of a year may be appropriate to stand-alone cost (SAC) methodology rate reasonableness cases, but it is not the common practice generally used by railroads in their capital investment project planning, to our knowledge, or used by the railroads themselves, in our experience, during the ordinary course of business.

In any case, the STB should strive to use a dynamic model that captures inevitable, real-world volatility in traffic patterns on the line. Replicating a single week or two (whether a peak period or a random, non-peak period) in an RTC model may demonstrate that a line can accommodate four passenger trains given that *precise* traffic pattern on the study corridor. But is that finding something that can be reasonably relied upon week after week by the traveling public? Railroad operations are dynamic, not static, and freight trains often diverge from planned operations to meet ever-changing demands of customers and other transportation partners like ports and interchange partners. The pattern of traffic, movable bridge openings, local movements, infrastructure maintenance requirements, weather conditions, interchange traffic, and other variables impacting capacity never exactly replicate themselves from week to week, let alone day to day. Railroading, freight railroading in particular, is fluid and dynamic—so, too, should be the model used to study the capacity inherent in a rail line.

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III. **AMTRAK'S CRITICISMS OVER PROVIDING TOO MUCH PREFERENCE TO PASSENGER TRAINS ARE WRONG.**

Amtrak, through Messrs. Crowley and Fapp, claims that the 2021 Gulf Coast RTC Model is fundamentally flawed due to how the passenger trains were handled in the Model. Specifically, they contend that the 2021 Gulf Coast RTC Model includes inputs designed to ensure a high On-Time Performance (“OTP”) achieved by the passenger trains at a “cost” of an extremely high level of investment in infrastructure projects. In addition, they erroneously claim that a 95% OTP target was a model input (rather than an output) and that the proposed infrastructure projects were designed to achieve a 95% OTP. To clarify, any project chosen as a result of the RTC modeling effort that happened to have a benefit to passenger trains was selected to mitigate harm to freight operations stemming from those passenger trains, not the other way around.

Amtrak has stated repeatedly in public statements that *any* delays due to freight trains are a strong indicator of a preference violation and that an Amtrak train entering a siding while a merchandise train uses the mainline is a clear violation of Amtrak’s statutory right to preference. Some of those examples were highlighted in CSXT and NSR’s Opening Evidence, including testimony by Amtrak personnel before Congress. Amtrak’s assertion that the RTC modeling does not reflect the preference for which it advocates in the real world is baffling. Indeed, Amtrak does not suggest that it expects a lesser standard of preference on the Gulf Coast Corridor nor that it would not assert that the freight railroads were not providing appropriate preference if OTP on the Gulf Coast Corridor were ever less than 80%. It was therefore entirely appropriate for the RTC Modelers to model the preference that Amtrak consistently expects.

Preference can be controlled by the use of two key parameters or “dials” in the RTC model, specifically “priority” and “rank,” which are assigned to each train

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type in the train file. The Capacity Modeling Guidebook Section 4.3.3.2 best describes these key features as follows:

One of the key features of RTC is its meet-pass conflict resolution logic. RTC resolves “meets” or conflicts of opposing trains on the basis of priority, just as a human dispatcher would. For example, if a passenger train has a higher priority than a freight train, then when a passenger train and a freight train are approaching each other on single track, the passenger train would “hold” (remain on) the main line while the freight train would “take” (enter) a siding in order to let the passenger train pass. Also, if a train is running late, its priority increases. The opposite is true if a train is running early on its schedule.

There are three priority values to be set in RTC: minimum, initial, and maximum. The initial priority is a value assigned to a train when it goes on line; minimum and maximum are the lowest and highest boundaries.

RTC also offers a second layer of dispatching criteria based on train ranks. This parameter is used to handle special trains such as high and higher speed rail. There are seven ranks available: ranks 1 to 3 designate train types as elite, while 4 to 7 as regular. RTC will strive to keep higher ranked trains on schedule; lower ranked trains can be forced to take large delay in order to keep elite trains on schedule.²

The preference accorded to Amtrak trains in reality and in our RTC Model is the greatest single contributor to what makes Amtrak trains so difficult to accommodate on the Gulf Coast Line. Amtrak trains have a statutory right to preference over freight trains and, as such, would only enter a siding under particular circumstances, such as:

² FOX, JUSTIN, ET AL., CAPACITY MODELING GUIDEBOOK FOR SHARED-USE PASSENGER AND FREIGHT RAIL OPERATIONS 47 (NCHRP Report 773, Transp. Research Bd., Editor 2014) (“CAPACITY MODELING GUIDEBOOK”).

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- (1) When there is a train meet at a location where there is another passenger train that is further behind schedule; in that case, the passenger train further behind schedule will get priority; or
- (2) When a passenger and freight train meet at a location where the freight train is too long to fit in the nearby siding. There, the only solution is to put the passenger train into the siding until the freight train can pass.³

The preference accorded to Amtrak trains is not the only significant contributor to freight train delays. Amtrak trains are sufficiently equipped and its crews properly trained to operate over FRA's "general railroad system of transportation" so as to ensure smooth and safe interface across this country's rail infrastructure.⁴ But beyond that threshold, Amtrak trains have little in common with the vast majority of freight trains operating in this country. In particular, they are short and lightweight, since all of the passengers even on a sold-out Amtrak train weigh very little in comparison to the average 100-ton loads per freight car that are now the freight rail industry standard.⁵ As a result, the proposed Amtrak trains are much more nimble than their freight rail counterparts. They will accelerate faster, decelerate faster, and are able to sustain higher speeds longer than any of either host railroad's freight trains. The higher speed characteristics of passenger trains are fundamentally at odds with the host railroads' trains because the faster Amtrak trains are continuously closing the distance between themselves and the nearest freight trains in front of them, regardless of which direction they

³ See Testimony of Stephen J. Gardner, Amtrak, House Committee on Transportation & Infrastructure (Nov. 18, 2020), at 9 ("However, passengers traveling over lines owned by railroads . . . have experienced severe delays, in part driven by the operation of trains too long to fit into the existing sidings on the line.")

⁴ 49 C.F.R. § 234.401.

⁵ Railcar Weights, Bureau of Transportation Statistics (Sept. 10, 2012), available at https://www.bts.gov/archive/publications/transportation_statistics_annual_report/2003/chapter_02/railcar_weights.

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are headed. Due to the speed differential between Amtrak and freight trains, what is otherwise adequate capacity in a freight-only environment gets squeezed far faster than if Amtrak trains ran at the same speed as the fastest freight trains on the Gulf Coast Corridor. So, the speed differential is a huge challenge to smooth on a seamless shared-use operation of freight and passenger trains on any corridor, not just the Gulf Coast Corridor. Preference to Amtrak trains exacerbates that challenge. And preference and speed differentials, combined with the unique combination of factors that characterize this route (described below), will impair freight operations and delay motorists to absurdly high levels unless sufficient infrastructure is built to mitigate that combination of ingredients.⁶

In short, modeling the statutory preference that is afforded to passenger trains with inherently different characteristics from freight trains is essential to understanding the actual impact of adding four, daily, passenger trains to the Gulf Coast Corridor.

For the purpose of argument, however, Section 2.3.1 of the 2021 RTC Rebuttal Report shows that adding Amtrak's new trains with no supporting infrastructure would unreasonably impair freight transportation even if passenger trains receive no preference.⁷ Additional modeling was performed to demonstrate the effect of preference and the modeling decisions made by the RTC Modelers. The preference previously accorded to Gulf Coast Corridor passenger trains was removed, and all but two freight trains were assigned equal or lower priority than all passenger trains. Those two freight trains required a higher priority because they do not fit into existing sidings.

⁶ See 2021 Gulf Coast RTC Report at 14–15, 32–38 (§§ 1.2, 4.0, 4.1).

⁷ 2021 RTC Rebuttal Report at 12–14 (§ 2.3.1).

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In the originally modeled 2019 Passenger Case (base infrastructure with passenger trains), one of the passenger trains (Amtrak Train 25) did not achieve an OTP of 80%. When the preference was removed, three of the Amtrak passenger trains experienced an OTP below the 80% threshold.⁸ As one might expect, removing passenger train preference has a significant impact on projected passenger performance, with passenger train delays doubling, resulting in a stark reduction in their OTP. But this reduction in preference does nothing to mitigate the adverse impact on freight rail service of adding four daily Amtrak trains. The 2021 RTC Rebuttal Model still shows a 28.4% increase in delays experienced by CSXT local traffic, and an 19.2% increase in delays experienced by the interchange partners in New Orleans even when the preference normally provided to passenger trains is largely removed.⁹

* * *

Amtrak cannot have its cake and eat it, too. Its trains consume an oversized amount of capacity because of the preference they are entitled to by law and regularly demand. That preference is one of the key reasons that adding Amtrak passenger trains to this currently freight-only route impairs the fluidity of the route and introduces significant delays to freight rail traffic, thereby impairing freight rail operations. In our judgment, any inquiry into whether the level of impairment is unreasonable cannot be uncoupled from the statutory preference the host railroads must provide Amtrak.

⁸ *Id.* at 13.

⁹ *Id.*

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IV. THE GULF COAST CORRIDOR PRESENTS A UNIQUE COMBINATION OF FACTORS THAT REQUIRE INVESTMENT TO ACCOMMODATE NEW PASSENGER SERVICE.

On Opening, CSXT and NSR explained that the Gulf Coast's unique set of characteristics was a major contributing factor toward the difficulty of accommodating passenger service on the current infrastructure. As CSXT and NSR explained, the combination of movable bridges, single-tracked line, grade crossings, and significant freight needs, work together to make the Gulf Coast Corridor a unique challenge. Amtrak's attempt to counter that argument misses the point. Amtrak points to routes on its rail network that share *one or two* characteristics with the Gulf Coast Corridor but points to no route that shares *all* of the characteristics. In the Verified Statement of Jim Blair, Amtrak cites four individual and geographically disparate instances of passenger service across its national network, none of which faces the combination of operational challenges that constitute the unique situation that the Gulf Corridor presents:

- 1) ***Northeast Corridor ("NEC")***. Amtrak's own NEC indeed features lift bridges that open during peak rail traffic periods.¹⁰ But the NEC ranges between a two and four-track mainline, which Amtrak completely controls, and with that dispatching authority comes the ability to restrict

¹⁰ Amtrak Reply, Ex. 2 – Reply Verified Statement of Jim Blair ¶ 44 ("Blair Reply V.S.").

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- freight access to when it suits its operational model.¹¹ Additionally, the vast majority of the NEC is grade-separated¹²;
- 2) ***BNSF Railway (“BNSF”) Bakersfield Subdivision.*** BNSF’s Mainline between Bakersfield and Fresno, California, described by Mr. Blair as operating in only one direction, from Bakersfield to Stockton, California, is indeed a good example of a single-track freight railroad hosting a large number of trains.¹³ However, Amtrak service on BNSF’s Bakersfield subdivision encounters less than 100 grade crossings,¹⁴ about 40% fewer than the more than 160 found on the Gulf Coast Corridor, plus its passage through California’s Central Valley necessitates no lift bridges;
- 3) ***The Florida East Coast Railway (“FEC”).*** The FEC’s corridor runs between Miami, Florida and points north and crosses 183 grade crossings.¹⁵ However, the FEC not only has several fewer bridges, it also enjoys a fully double-tracked mainline, which was expanded to that

¹¹ The NEC is one of the few mainlines in the country entirely consisting of multiple tracks, as compiled in this map by *Trains Magazine*, which is informed by data made available through the Surface Transportation Board: <https://www.trains.com/trn/railroads/maps/free-preview-multiple-track-main-lines/>; see About the NEC, Amtrak (2021), <http://nec.amtrak.com/about-the-nec/>.

¹² “Track Record: Last at-grade crossings on Amtrak’s Northeast Corridor are in southeastern Connecticut,” THE DAY (May 2, 2015), available at <https://www.theday.com/article/20150502/NWS01/150509825>.

¹³ Blair Reply V.S. ¶ 45.

¹⁴ As counted from proprietary BNSF Bakersfield Subdivision Track Charts on portions of the territory Amtrak serves.

¹⁵ Blair Reply V.S. ¶ 46.

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- capacity, at a cost of more than \$1 billion, specifically to accommodate high quality passenger service¹⁶ *as based on an RTC simulation*; and
- 4) ***BNSF Transcon Line.*** BNSF's Transcon Line between Chicago and Los Angeles is one of the nation's great arteries of freight rail traffic—a 2,200-mile long, double-tracked, high-speed mainline.¹⁷ However, the Gulf Coast Corridor bears little resemblance to the BNSF Transcon. Amtrak's Southwest Chief service in some years has been allowed to travel at 90 mph on portions of it, making it the fastest American long-distance passenger train that does not touch the NEC.¹⁸

In sum, what makes the Gulf Coast Corridor unique is not the disparate elements of its 13 movable bridges (7 of which are on-line between New Orleans and Mobile, 6 of which directly affect traffic bound to or from it), extensive single-track operation, high density of grade crossings, or the busy port terminals at either end, but the fact that all those challenges to reliable, safe, and effective shared-use operations are manifest in the same corridor.

V. AMTRAK'S FAILURE TO SUBMIT A COMPETING RTC MODEL SPEAKS VOLUMES.

No model is perfect, and the RTC Model is a complex one that requires considerable effort, data, and judgment to execute it in an appropriate fashion. Indeed, its complexity is its principal virtue, permitting a micro-simulation of any

¹⁶ "All Aboard Florida: a new approach for US passenger rail," INTERNATIONAL RAILWAY JOURNAL (Aug. 17, 2016), available at https://www.railjournal.com/in_depth/all-aboard-florida-a-new-approach-for-us-passenger-rail.

¹⁷ Blair Reply V.S. ¶ 47; see "BNSF Railway's Southern Transcon: Rail's Super Highway," BNSF RailTalk (Oct. 23, 2018), available at <https://www.bnsf.com/news-media/railtalk/service/southern-transcon.html>.

¹⁸ "America's Fastest Rail Lines," TRAINS (Mar. 11, 2014), available at <https://www.trains.com/trn/railroads/maps/americas-fastest-rail-lines/>.

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railroad line that captures the minutia of real-world freight railroad operations. That is why every Class 1 railroad operating in the U.S. has a license to use RTC and relies on it not only in the case of disputes with third parties but even when undertaking internal capacity planning exercises. Because the model requires such explicit inputs, and the data employed is so granular, the model is an open book, inviting reasonable minds to disagree on how to capture most accurately the key features of a line and how best to study the impact from adding four, high-priority passenger trains through two, highly congested freight rail terminals such as Mobile and New Orleans.

Therefore, we find it telling that Amtrak complains about the 2021 Gulf Coast RTC Model, but offers no alternative or corrected RTC model cases of its own. This may be because Amtrak and its RTC consultants recognized that the criticisms they might put forward would not materially impact the Model's results and would still show a dramatic impairment to freight rail service from the introduction of new passenger service, absent capital projects.

As a result of all of the above, we continue to stand behind all the inputs and assumptions that went into the 2021 Gulf Coast RTC Report. But we also appreciate that, as a case of first impression, the STB may prefer that we had modeled the Gulf Coast Corridor slightly differently in one respect or another so as to thereby create precedent to guide future disputes. That is why we provided all inputs and materials to the STB and Amtrak.¹⁹ That is also why we would happily

¹⁹ Amtrak signed the protective order and could have retained outside consultants to use the data provided by NSR and CSXT to validate the 2021 Gulf Coast RTC Model and/or commission Amtrak's own RTC model. Amtrak chose not to do so. Because preparation of an RTC model requires data that is highly sensitive commercial and/or freight railroad information, such as the non-public terms of transportation agreements involving the railroads and third parties, customer-specific traffic, revenue, price, or cost information, or traffic and revenue

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adjust the RTC Model at the STB's request to address any modeling disagreements or preferences requested by the STB and report out aggregated results to all interested parties.

VI. OUR DYNAMIC RTC MODEL IS VASTLY SUPERIOR TO AMTRAK'S "OLD-SCHOOL" COMPUTERIZED STRINGLINE PROGRAM.

Using computerized stringline programs alone is an antiquated means of modeling dynamic railroad operations. A stringline chart is a time-distance plot showing all trains operating on a line segment over a given time period, most often, 24 hours. Usually, distance in miles is shown on the vertical axis, which also will show select station, passing siding, or crossover locations. The horizontal axis shows time in hours and minutes. Train movements are shown as forward or backward sloping lines depending on the direction of travel. Steeper slopes indicate a faster train. A stationary train, usually at a passing siding or at a station stop, is shown as a horizontal line.

Stringline charts are used in many capacity analyses, but they are just one aspect of most capacity analyses. Because of their intrinsic inability to represent variability in train operations, they are relied upon to a lesser degree than dynamic freight train modeling such as an RTC model. Stringlines attempt to illustrate present capacity problems by displaying what actually happens in a static, non-changing set of conditions, especially delays at different points along the line segment. Stringlines can be provided as one of the outputs from complex simulation analyses, along with delay statistics, journey time data and animations. But they are also capacity analysis tools in themselves. Stringline charts display the results of "what if" exercises, such as adding additional trains, adding passing sidings or

projections, such data cannot be exchanged publicly, or made available to Amtrak's in-house personnel.

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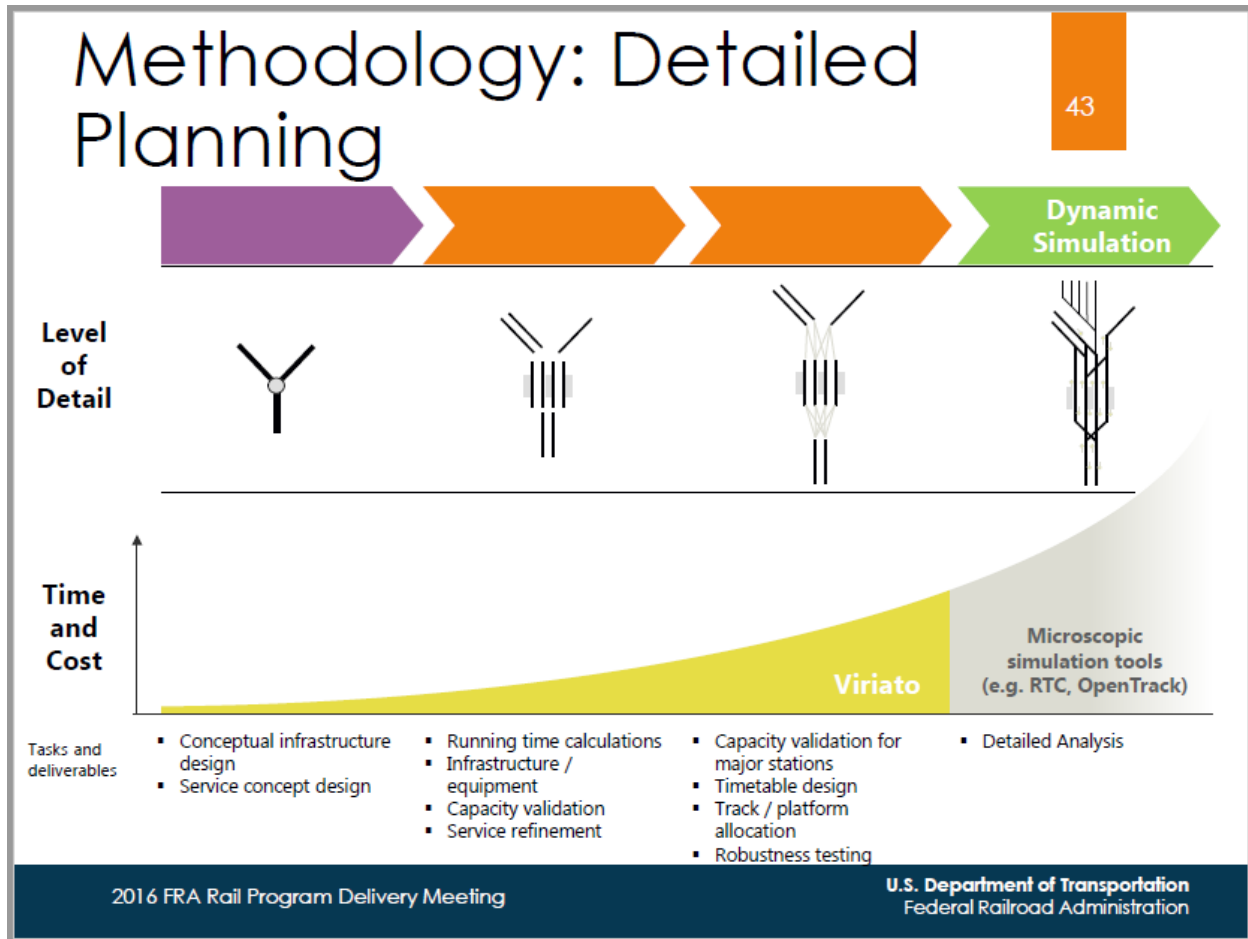
crossovers, adding double track sections, or changing schedules. Stringline analyses, typically of a representative 30-day period, provide realistic estimates of journey time and operating delays associated with each train operating on a line segment in connection with each scenario and highlight problem locations warranting further study.²⁰ Finally, stringlines can be produced manually, making them an easier analysis to perform. However, freight railroad operations are too dynamic in nature to be accurately analyzed using only a static, stringline model.

A. RTC is a dynamic modeling tool capable of capturing granular and variable detail of a railroad's operations to a greater extent than static stringlines.

There are two different kinds of modeling that can be performed on a railroad line: macro-simulation or micro-simulation. RTC is obviously a micro-simulation depicted as a dynamic, microscopic simulation tool providing detailed analyses. As described in a PowerPoint presentation delivered in the 2016 FRA Rail Program Delivery Meeting, Viriato is a static, macro-simulation tool used primarily as regards capacity validation in connection with major stations, timetable, design, track/platform allocation and robustness testing.²¹ So rather than performing an RTC model, Amtrak consultant, DB Engineering, used Viriato to evaluate the track capacity between New Orleans and Mobile. It makes little sense. This slide certainly emphasizes that Viriato is a more simplistic and less granular model than RTC.

²⁰ See CAPACITY MODELING GUIDEBOOK, *supra* n.2, at 27–28.

²¹ 2016 FRA Rail Program Delivery Meeting, California's Network Integration & State Rail Plan, Federal Railroad Administration, at Slide 43, *available at* https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/16918/01%20-%20California%27s%20Network%20Integration%20and%20State%20Rail%20Plan.pdf (last visited Dec. 23, 2021).



Further research reveals that Viriato fits the definition of a Grid Time Analysis tool described in the Capacity Modeling Guide Book which states:

Another relatively simple scoping method is known as a grid time analysis, which is used to test the upper limit number of daily trains a corridor can handle, without consideration of individual train service commitments.²²

The theoretical capacity calculation assumes the availability of an unlimited supply of trains at both ends of a line segment throughout the day. This is not a realistic depiction of actual freight train operations, so a downward scaling factor must be derived and applied by the analyst to derive the practical capacity of the line. The

²² CAPACITY MODELING GUIDEBOOK, *supra* n.2, at 28.

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scaling factor reduces the theoretical number to reflect a typically uneven sequence of trains entering the track segment, as well as to reflect typical delays due to track maintenance work, slow orders, unplanned service disruptions, etc. As a general rule, the practical capacity of a line with one or more single track segments falls in the range of 50% to 75% of its theoretical capacity. However the scaling factor is very subjective. A lower percentage could reflect assumptions about particular conditions due to the time of year, such as during periods of extreme heat in the summer when maximum track speeds may be reduced below timetable speeds over extended periods of time, requiring slower operations. The range also can reflect the bias of the analyst: a more conservative analyst, knowing fewer details about operations of a line, may assume a lower percentage to guard against potentially overstating practical capacity. The subjectivity of the scaling factor calls into question the veracity of the Viriato modeling results and certainly limits its relevance in complex freight rail capacity simulations, especially when compared with a dynamic model like RTC, which is robust enough to recognize explicitly and avoid the required subjectivity that compromises the accuracy and, therefore, the confidence that can be reposed in Viriato-generated results.

B. Amtrak's model falls well short of the Board's standards and omits key features and challenges of the Gulf Coast corridor.

Viriato is a tool used primarily in Europe to model highly scheduled, passenger-centric, timetable-based, slotted operations. This model of operation is vastly different from the unstructured, non-timetable-based operation of North American Class I freight railroads.²³ That is particularly true on the Gulf Coast

²³ See Hamed Pouryousef, Pasi Lautala, and Thomas White, *Railroad Capacity Tools and Methodologies in the U.S. and Europe*, J. Mod. Transport. 33 (2015) (characterizing U.S. railroad operations as unstructured, with dispatchers employing just-in-time judgments to resolve conflicts among trains).

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Corridor, where a static, deterministic, timetable-based tool would require countless manual interventions and iterations to model the highly variable characteristics—including movable bridge openings, varying train lengths, and diverse departure times—that a dynamic model like RTC handles with ease. Amtrak did not provide the actual Viriato model to the Board nor to CSXT and NSR, so there is no way to replicate the results reported by Amtrak’s witnesses. Amtrak provided *inputs* into the model as Excel and PDF files (many of which were supplied to it by CSXT and NSR in the first instance), provided no manipulable working files, and shared its few model *outputs* in filetypes unreadable by all but those with a Viriato license, which it did not provide.²⁴ The Board has made clear it disfavors proprietary, “black-box” software.²⁵ That said, Amtrak *could have* produced visual diagrams from its black box that could have allowed experts to analyze its model; for example, Amtrak did not provide any output to show that its proposed model avoids train conflicts on the line, despite the Viriato software’s ability to visually output precisely that information.²⁶

Amtrak’s macro-simulation that relies on a computerized stringline model suffers from numerous, obvious shortcomings that are inherent in most stringline

²⁴ Indeed, only two U.S.-based consultants hold Viriato licenses—one used by Amtrak in this proceeding and another that provides substantial services to Amtrak across its network.

²⁵ See *Simplified Standards for Rail Rate Cases*, STB Docket No. EP 646 (Sub-1), 54 (served Sept. 5, 2007) (The Board independently tested a “black-box[] computer model” that was “proprietary . . . from an outside party” because it “was not open for either the Board or other parties to examine,” finding its underlying assumptions invalid).

²⁶ SMA and Partners Ltd., *Conflict Detection: The Dark Side of Capacity*, available at <https://www.sma-partner.com/en/software/viriato/functionality/conflict-detection> (last visited Dec. 23, 2021) (illustrating Viriato’s “[g]raphic display of conflicts on the track occupancy diagram and graphic timetable”).

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programs. It fails to model all traffic on the line, ignoring and generalizing the diversity of corridor traffic and their greatly varying performance outcomes into one “standard train.”²⁷ This standard train always has the same characteristics, *i.e.*, four 4400 HP locomotives, 17,000 trailing tons and 11,000-feet long and always is dispatched the same, at identically spaced intervals.²⁸ These assumptions are worthless and meaningless in the context of the Gulf Coast Corridor. Even if CSXT and NSR were to design a perfect timetable for operating this line, it would quickly be rendered moot by the randomness that characterizes freight railroading in the United States. For example, the model fails to account for movable bridges, lumping them into a single, corridor-wide “variability” metric that is subjective, uninformative and methodologically suspect.²⁹ It completely ignores hi-rail bridge tender movements, which must operate on the line and consume capacity and are not accounted for in the slots Amtrak reserves for its trains. Critically, Amtrak fails to model hundreds of public grade crossings on the corridor, which could cause untold delay—untold only because Amtrak did not model it. Amtrak illogically proposes to extend the Ocean Springs siding 6,000 feet,³⁰ which we would never recommend, because doing so would block grade crossings when trains hold there

²⁷ Amtrak Reply, Ex. 4 – Reply Verified Statement of Clayton S. Johanson, Michael Weaver, and Darkhan Mussanov of DB Engineering & Consulting USA Inc. at 7–8 (“DB Report”).

²⁸ DB Report, App’x A at 18.

²⁹ *See id.*, App’x A at 24. Even accepting the dubious validity of a single variability metric, Amtrak’s own graph shows that “actual” variability exceeds its set threshold 72 times over 91 days—36 days northbound and 36 days southbound—meaning that Amtrak sacrifices its passengers to extreme variability, at the tails of its variability distribution, on 40% of all days.

³⁰ DB Report at 3.

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for pass movements. These omissions illustrate Amtrak's complete disregard for the realities of operating this rail line in the real world.

Amtrak fails to indicate how train conflicts are addressed where its stringline program would show meets in locations without sidings. Every time stringlines cross in a location with no suitable sidings, real-world trains following that schedule would collide. To fix this, in the days before sophisticated simulation software, railroad planners would manually iterate their models numerous times until they found a solution that would resolve all conflicts. The planners would manually set conflicts to occur at locations with sidings suitable for meets and passes. Amtrak inexplicably went down an outdated and obsolete route in its analysis, using a static model that did not appear to use any automatic, iterative conflict resolution capability like RTC, which is a dynamic simulation model. There is no indication Amtrak's witnesses manually undertook the labor-intensive steps to resolve conflicts that RTC performs automatically.

Perhaps most fundamentally, Amtrak's slot-based dispatching model relies on a major fallacy: it assumes freight traffic can be held at (or before entering) the busy New Orleans or Mobile terminals until a "slot" opens up, and then the train can zip across the line. But it is a clear analytical mistake to assume there is unlimited holding capacity at these terminals in which freight trains can wait patiently until they move into their assigned slots. This queuing practice would cause massive congestion and gridlock at the New Orleans and Mobile terminals unless sufficient capacity were added. Further, it is not clear what the queuing would do to freight rail staffing requirements, given mandatory hours of service requirements. Amtrak's model magically assumes away all this congestion, delay and impairment to freight customers with its myopic focus only on the capacity of the segments between terminals, which is not where the major challenges even are.

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Amtrak's model purports to analyze capacity, but it glosses over a key distinction: theoretical capacity versus practical capacity.³¹ As discussed earlier, theoretical capacity is the maximum number of train paths that can be placed on infrastructure in a given time window in an idealized world.³² It is an upper limit of infrastructure capacity that presumes homogenous traffic, with identical trains spaced optimally throughout the time period like passenger service in Europe, with neither of these assumptions experienced in real-life, American freight railroading.³³ This is the approach Amtrak took by specifying a 95th percentile "standard train" and 15-minute "standard train spacing."³⁴ In other words, Amtrak's model would robotically dispatch the same train over and over, with no accounting for different traffic types, train performance characteristics, or variability in bridge tender movements, movable bridge openings, local movements, or other sources of random variation. Practical capacity, by contrast, is the maximum number of train paths on infrastructure in a given time window given realistic and varying traffic patterns, operational characteristics, or timetable structure; thus, it reflects a mix of trains with different characteristics.³⁵ Theoretical maximum capacity will never arise when train priority and the variable demands of heterogeneous traffic are taken into account; it can only be achieved on routes that are dedicated to no more than one type of traffic with standardized and

³¹ Alternative terms used in academic literature for the concept of theoretical capacity include design capacity, absolute capacity, and capacity throughput; for practical capacity, they include achievable capacity and effective capacity. Ralf Borndorfer et al., *Handbook of Optimization in the Railway Industry*, 27 (2018).

³² *Id.*

³³ *Id.*

³⁴ DB Report at 8 & App'x A at 9.

³⁵ *Handbook of Optimization*, *supra* n.31, at 27.

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predictable schedules, for example on subway lines.³⁶ For this reason, models of theoretical capacity like Amtrak's do not give any practical insight into the operational and infrastructure needs on a North American freight line. A glaring example of *impractical* insight is in the Amtrak capacity analysis. DB Engineering calculated a theoretical maximum capacity of 48 trains per day in both directions over most of the corridor between New Orleans and Mobile resulting in its conclusion that this corridor enjoyed the capacity to handle four additional, daily passenger trains without any additional infrastructure required. However, at face value, one would infer from the DB analysis that CSXT had the capability to dispatch 48 trains per day, *i.e.*, one train per hour from both origins, which is impossible given terminal operating requirements and infrastructure constraints enroute to both New Orleans and Mobile. That is why, despite being more costly and time intensive, Class I railroads have gravitated to RTC—it works because it is detailed and dynamic and delivers practical results.

Viriato is not well-suited to evaluate capacity requirements of the New Orleans - Mobile corridor because it was primarily designed in Europe to facilitate development of timetable schedules on routes featuring regularly scheduled, high frequency, passenger operations. Application of this software in Europe assumes that the traffic mix is homogenous with little to no freight trains, which is generally the case. If there are freight trains, they are slotted into available time gaps in the passenger schedule so as not to negatively impact passenger train schedule adherence. The closest example in the United States that is analogous to this model is Amtrak's Northeast Corridor operation which runs freight trains at night when there is no passenger service on the Corridor.

³⁶ *Id.* at 5.

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Furthermore, DB Engineering used only one component of Viriato, *i.e.*, the Train Performance tool, to calculate unopposed train running times in its analysis. The main Viriato tools used in designing timetables were not deployed in its analysis and Amtrak did not submit any evidence of any timetable modeling or how trains might operate.

DB Engineering evaluated theoretical capacity, as mentioned above, without adequately accounting for operational and infrastructure constraints such as:

- dispatching 48 trains per day requires evenly spaced trains departing New Orleans and Mobile every hour;
- most trains work in New Orleans and Mobile for over an hour making dispatching one train per hour impossible;
- no meaningful consideration of merchandise and local train work requirements and the time necessary for trains to setoff and pickup blocks of cars at terminals and industries (activity that sometimes occurs on the mainline); and
- all New Orleans – Mobile Corridor passing sidings are shorter than 11,000 feet, preventing the 11,000-foot “average” train DB modeled in Viriato from actually using the siding.

Additionally, there is no meaningful evaluation of variability in the analysis. DB Engineering purports to have derived a variability metric from CSXT data to adjust the theoretical capacity downward to a number, that presumably replicates practical capacity. The adjustments allowed for a single daily variation summarizing a multitude of factors outside of the railroad’s control that impact the ability of a train to adhere to a particular schedule. Lumping multiple unique sources into one variability metric is inadequate to reflect individual sources of variance, *e.g.*, bridge openings, freight train departures, local train operations, non-

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uniform siding placement and lengths, and grade crossing blockages. According to DB Engineering, the various adjustments cut the nominal theoretical capacity but left a significant margin sufficient to accommodate the Amtrak trains. This conclusion by the consultants is questionable (if for no other reason than) because lumping multiple unique sources into one variability factor applicable across the Corridor is imprecise, misleading, and does not accurately represent the impact of cascading train delay that reduces capacity.

Finally, perhaps most tellingly, Amtrak's model fails to report or quantify how adding four additional trains will delay existing freight rail operations. It does not consider impacts to connecting carriers in New Orleans, to local traffic, or to communities at grade crossings. It does not report on how long interchange partners will need to hold trains in or outside of New Orleans, or how long local trains (which are not modeled) or merchandise trains must hold in New Orleans to enter their approved slots. It is unclear how Amtrak can judge unreasonable impairment, or lack thereof, without even attempting to quantify it.

It may be that the computerized stringline program used by DB Engineering is a useful tool for sketch-planning timetables of precision passenger services—like an urban subway system or passenger operations in Europe—or for taking superficial first looks at combined freight and passenger operations in relatively stable-scheduled operating environments. But it is ill-suited for analyzing and resolving infrastructure and capacity constraints on highly dynamic and variable freight lines like the Gulf Coast corridor, where established models like RTC shine. The idea of creating “slots” on this corridor for passenger trains, overhead trains, bridge tenders, local trains, yard movements, interchange traffic, cross-over traffic, and water traffic is simplistic and unrealistic, if even possible—and Amtrak certainly has not attempted it here. That renders Amtrak's static, computerized, string program unworkable and its analysis deeply flawed.

VII. CONCLUSIONS

Based on all of the above, we reached two overarching findings.

First, the RTC Modelers used standard statistical principles and a robust knowledge of railroad operations and train movement data to develop a representative model that fairly and accurately captures typical operations on the Gulf Coast Corridor. None of Amtrak's criticisms of the 2021 Gulf Coast RTC Model are grounded in reality or the product of industry standard RTC modeling practices. Therefore, the 2021 Gulf Coast RTC Model's outputs, including the RTC Performance Metrics, can be trusted and relied up on the by STB in reaching a decision in this proceeding.

Second, Amtrak's alternative, static model is a poor substitute for the model produced by the dynamic tool, Rail Traffic Controller. The RTC Modelers used RTC to capture a level of granularity and variability of train operations that far exceeds how Amtrak deployed the Viriato tool. Amtrak's use of Viriato to study the theoretical capacity of the Gulf Coast Corridor in this case is neither useful nor accurate.

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VERIFICATION

I, Charles H. Banks, 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 23rd day of December 2021.

A handwritten signature in black ink that reads "Charles H. Banks". The signature is written in a cursive style with a large initial 'C' and a stylized 'H'.

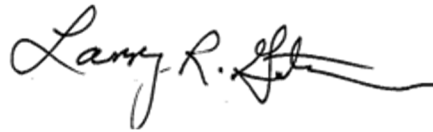
Charles H. Banks

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VERIFICATION

I, Larry R. Guthrie, 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 23rd day of December 2021.

A handwritten signature in black ink, appearing to read "Larry R. Guthrie", with a stylized flourish extending to the right.

Larry R. Guthrie

Appendix A to Exhibit 1

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

Confidential and Highly Confidential
Information Redacted

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

PREPARED FOR

Sidley Austin LLP / Baker & Miller PLLC

PREPARED BY

HNTB Corporation

&

R.L. Banks & Associates, Inc.

December 23, 2021

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

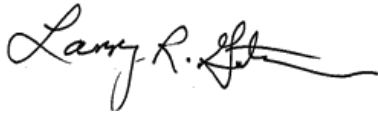
**HNTB Corporation
R.L. Banks & Associates, Inc.**

Report Prepared By:

**Mark H. Dingler
HNTB Corporation**

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

The authors believe that the analysis in this rebuttal report follows industry best practices and that the RTC cases represented in the New Orleans - Mobile Gulf Coast Passenger Service RTC Modeling Report dated November 3, 2021, as well as this rebuttal report accurately depict the current and future constraints on the Gulf Coast Corridor. The cases were developed using the best information available and accurately reflect the potential impact of a new proposed Amtrak passenger service on the Mobile to New Orleans corridor.



Larry Guthrie

DATE 12/23/2021



Mark H. Dingler

DATE 12/23/2021

Executive Summary

This 2021 New Orleans – Mobile Gulf Coast Passenger Service RTC Modeling Rebuttal Report (“2021 RTC Rebuttal Report”) has been jointly developed by HNTB Corporation and R.L. Banks & Associates, Inc. (the “RTC Modelers”), who also developed the 2021 New Orleans – Mobile Gulf Coast Passenger Service RTC Modeling Report (“2021 Gulf Coast RTC Model”) filed in this proceeding on November 3, 2021. The RTC Modelers have reviewed the Reply Verified Statement of Thomas D. Crowley and Daniel L. Fapp of L.E. Peabody & Associates, Inc (“Crowley & Fapp V.S.”) and its supporting workpapers. The Crowley & Fapp V.S. launches a number of criticisms at the 2021 Gulf Coast RTC Model, claiming that the inputs, outputs, and modeling processes underlying the 2021 Gulf Coast RTC Model were flawed.

We note that the Crowley & Fapp V.S. does not present any independent RTC evidence that contradicts the findings of the 2021 Gulf Coast RTC Model, or any model runs demonstrating that its complaints (if true) would have materially affected the results of the 2021 Gulf Coast RTC Model.

This 2021 RTC Rebuttal Report responds to the criticisms of Messrs. Crowley and Fapp, and demonstrates that the modeling performed by the authors accurately represents the current and proposed operations on the Gulf Coast Corridor, is supported by data, and follows accepted industry-standard practices. This rebuttal shows that:

- The modeling methodology used in the 2021 Gulf Coast RTC Study is consistent with industry practices and is an accurate representation of the operations on the Gulf Coast Corridor;
- The RTC Modelers developed a robust, two-week “representative” model based on train data from September to November 2019 as provided by CSXT and NSR; and
- The representative model allowed the RTC Modelers to test the impact of Amtrak’s passenger service and any proposed solutions to mitigate that impact against a variety of traffic scenarios, thereby producing more accurate and complete results.

The Crowley and Fapp allegations that the 2021 Gulf Coast RTC Study contains too many trains are based on a fundamental misapprehension of both RTC studies and the data used in this RTC study in particular. The RTC Modelers undertook a comprehensive review of all trains in the 2021 Gulf Coast RTC Model, including the 1,265 trains that Messrs. Crowley and Peabody claim are not present in the train data. The RTC Modelers confirmed that these trains accurately reflected train operations on the study corridor, many of which did not appear in the truncated train data that Amtrak’s experts chose to use in supporting their allegations, but which appear in other data sources provided by the freight railroads.

This rebuttal also shows that:

- The modeled preference of the proposed passenger trains best reflects how planned operations should perform per Amtrak’s public statements;
- Almost all the examples shown by Messrs. Crowley and Fapp of underutilized or missing infrastructure are tracks that are not used to facilitate train meets on the mainline; and
- The modeled movable bridge openings, reflecting the assumption that bridges will close after each vessel, were modeled to best represent the frequency and duration of the openings.

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1.0 Introduction

The Rail Traffic Controller (“RTC”) Modelers were provided the Reply Verified Statement of Thomas D. Crowley and Daniel L. Fapp of L.E. Peabody & Associates, Inc (“Crowley & Fapp V.S.”), which calls into question a number of the inputs, outputs, and modeling processes underlying the 2021 New Orleans – Mobile Gulf Coast Passenger Service RTC Modeling Report (“2021 Gulf Coast RTC Model”) jointly developed by HNTB Corporation and R.L. Banks & Associates, Inc. (the “RTC Modelers”).

This 2021 New Orleans – Mobile Gulf Coast Passenger Service RTC Modeling Rebuttal Report (“2021 RTC Rebuttal Report”) responds to those criticisms, and further demonstrates that the modeling performed by the authors represents the current and proposed operations on the Gulf Coast Corridor, is supported by data, and follows accepted industry-standard practices. Messrs. Crowley and Fapp repeatedly claim that nefarious motives drove modeling decisions when minimal investigation would have shown that the 2021 Gulf Coast RTC Model demonstrates the best way to represent the data, and in many cases, the modeling decisions represent a conservative approach. Messrs. Crowley and Fapp fail to provide sufficient evidence to support their unfounded assertions that the 2021 Gulf Coast RTC Model is invalid.

This rebuttal first responds to criticisms about the methodology, followed by the criticisms concerning modeling inputs, outputs, and the project selection.

2.0 Modeling Methodology

Messrs. Crowley and Fapp argue that inputs used in the 2021 Gulf Coast RTC Model were “made-to-order extreme values” and that the Model “bears little resemblance to real-world CSX Transportation, Inc. (CSXT) and Norfolk Southern Railway Company (NSR) operations and contains inputs that were manufactured to limit, to the greatest extent possible, the ability of the issue corridor to handle any increase in rail traffic.”¹ Contrary to these claims, the 2021 Gulf Coast RTC Model followed industry-standard methodologies to best represent existing railroad operations along the Gulf Coast Corridor and introduction of Amtrak’s proposed passenger operation between New Orleans, LA and Mobile, AL (“Gulf Coast Service”).

2.1 Replicative vs. Representative Modeling

Messrs. Crowley and Fapp claim that the 2021 Gulf Coast RTC Model inputs “bear no resemblance to reality and other inputs that should have come from actual CSXT and NS data for an actual two (2) week period in 2019.”² This criticism, and many of the other critiques, are based on Messrs. Crowley and Fapp’s flawed premise that the best way to model the Gulf Coast is to create a replicative model instead of a representative model. A replicative model will use exact train inputs, direct from a specific period. A representative model incorporates data from a larger time sample and uses data distributions and a selection of trains to represent typical operations.³ Representative modeling was employed because it is not only a better way to develop a model, but it

¹ Crowley & Fapp V.S. p. 3 ¶ 1, p. 23.

² *Id.* p. 3 ¶ 1, 23–24.

³ Indeed, calibration of a representative model set is not only a fundamental aspect of RTC modeling, but of all reasonable modeling approaches. *See, e.g.*, Interim Guidance on the Application of Travel and Land Use Forecasting in NEPA, Federal Highway Administration, March 2010, at § 2.2.2, https://www.environment.fhwa.dot.gov/nepa/Travel_LandUse/travel_landUse_rpt.aspx#I2-2-2-Calibration-Validation-and-Reasonableness-Checking-of-Travel-Models.

follows industry best practice. The Capacity Modeling Guidebook for Shared-Use Passenger and Freight Rail Operations⁴ states:

Observations of rail traffic, to discern patterns to fluctuations, are impractical given the nature of around-the-clock rail operations, seasonality, and cyclicalities inherent in rail traffic. One day observations are essentially meaningless. Rail planners, accordingly, rely on rail traffic data from the corridor's owning railroad that spans several days, weeks, or even a month or a year in order to capture the true nature of the line operations.⁵

A replicative model will only determine if the proposed service would have worked during a specific historical period, not over the preponderance of days. Freight train schedules change, local train operations are variable, and bridge openings vary daily. Over-optimizing a model to a specific period is not useful to the freight railroads or Amtrak and results in "an unjustified level of confidence in the infallibility and durability of the underlying assumptions and results."⁶

As shown in Table 1, a number of the critiques result from Messrs. Crowley and Fapp's unsupported opinion that a replicative model should have been developed. Specifically, Messrs. Crowley and Fapp claim that the replicative model methodology utilized in rate cases should have been used in the 2021 Gulf Coast RTC Model.⁷ While both use the same tool, RTC, the models are attempting to answer fundamentally different questions and are not directly comparable. In rate cases, RTC is used to confirm that the capacity of a hypothetical stand-alone railroad (SARR) is sufficient to handle the peak railroad demands, in the peak week, of the peak year of forecast operations. In this proceeding, RTC is used to quantify impact to freight performance both near and long-term regarding the introduction of passenger service, not in the peak week of the peak year, but using data from a representative month with randomized inputs. Both use the same tool, but do so to answer fundamentally different questions presented by the STB.

Table 1: Comparison Between Replicative and Representative Model Methodology

Replicative Modeling	Representative Modeling
Inputs directly from two-week period with no or limited randomization (Crowley & Fapp V.S. p. 3)	Inputs developed using large data set represented through randomized inputs
Modeling includes exact train movements each day including exact train lengths (Crowley & Fapp V.S. p. 18)	Train movements input to best represent the operational impact of each train movement
Bridge openings should use actual openings from two-week period (Crowley & Fapp V.S. p. 52)	Bridge openings should best represent how they will occur with the proposed service. Closing the bridge between all vessel passages
Use exact train symbols from each day (Crowley & Fapp V.S. p. 19-21)	Use general train symbol in model when representing general train movements that are completed by different trains

⁴ Fox, Justin, et al., Capacity Modeling Guidebook for Shared-Use Passenger and Freight Rail Operations (NCHRP Report 773, Transp. Research Bd., Editor 2014).

⁵ *Id.* p. 11.

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

⁷ Crowley & Fapp V.S. p. 12.

2.2 Model Building Process

Messrs. Crowley and Fapp assert multiple times that there is no direct match between the trains in the 2021 Gulf Coast RTC Model and those in their selected two-week period.⁸ This comment is based on the assertion that a replicative model should have been used in the 2021 Gulf Coast RTC Model. With a representative model, the inputs are developed in an iterative process using multiple data sources to determine the best way to represent operations.

When building an RTC case, after it has been determined that an RTC model is required, historical data is analyzed. Historical volumes, train performance, and key metrics are reviewed to determine a representative statistical period. For this study, September to November 2019 was selected because it preceded train volume decreases due to COVID-19 and it limited the impact of irregular events, including major weather events, track renewal curfews, or temporary rerouting of trains in the data.⁹ The length of the RTC simulation period is also determined during this initial review. In this study, the three-month sample was condensed into a two-week simulation period, however, shorter durations are often used.

The first step in modeling an individual train in RTC is determining its typical operations. This often requires multiple data sources and information from local operating personnel. Each bit of intelligence must be pieced together to determine how the train typically operates and in turn, how to represent it in RTC. As described in the Rosse and Sinkkanen Rebuttal Verified Statement:

It is often difficult to capture precise movements from the above data sources with respect to trains operating within and in the vicinity of terminals and at customer locations. There are numerous reasons for this difficulty. For example, the data may not accurately capture how a local train works at a customer location (*e.g.*, arrives at customer facility, pulls forward, shoves back into facility with part of train hanging out on the mainline) or activities such as picking up, setting out, and switching railcars.¹⁰

In the 2021 Gulf Coast RTC Model, operations in the complex terminal areas of Mobile, AL, and New Orleans, LA are fundamental to the constraints on the Gulf Coast Corridor as a whole. A single data set—*i.e.*, train profile data, OS data, dispatch data, or field personnel input—cannot be relied on alone. These data sets, as described in the Rosse and Sinkkanen Rebuttal Verified Statement, each provide different pieces of critical information about a train that must be evaluated as a whole. To rely on a single data source, or even train movement data alone, to make statements about train operations on a corridor is a fatally flawed approach. Data can often tell what occurred but not why a train operated the way it did. It must be interpreted by the modeler to ensure the model does not misrepresent the train's actions. For example, train movement data will show that a local train enters a siding for 90 minutes. What is not known is if that train is serving a customer, waiting to meet another train, waiting due to another train at the facility it is serving, waiting on a curfew, or some combination of these reasons.

Once typical operations are determined, randomization is added to the train, as necessary, to represent the variability in train operations and reflect that train's

⁸ Crowley & Fapp V.S. p. 4-5.

⁹ 2021 Modeling Report p. 23 & n.17.

¹⁰ Rosse & Sinkkanen Rebuttal V.S. at 12.

operations on a preponderance of days. The use of randomization and probability distributions will be discussed further in Section 3.3.4.

Once a base model has been completed, the model is reviewed with knowledgeable operations personnel and reviewed against historical data. There are many activities on any rail corridor that impact operations but do not show up in train movement data. On the Gulf Coast Corridor, these activities include blocks of cars blocking sidings and mains, hi-rail movements of bridge tenders, bridge openings, interchange train delays, and yard movements. Including these impacts is not “ignor[ing] the actual CSXT and NS data,” but understanding the complexities and limitations of that available data.¹¹

In modeling the train movements, one must be careful in translating actual data into RTC inputs. A modeler must appreciate that the logic of the RTC model cannot always directly match the movement of an individual train. RTC is, after all, a model. For example, a train will operate differently when no other trains are in proximity than it would operate when there are multiple other freight and passenger trains nearby. In some situations, RTC is able to represent those differences, but not always. For example, in New Orleans, a local train traveling to Oliver Yard can either take Main 2 and pull into the yard or take Main 1 but would then have to pull towards the NE Tower diamond, thereby blocking it, before shoving back into the yard. These two movements are available for a dispatcher to use in actual operations, but they are not possible to model in RTC directly. Pulling towards NE Tower and shoving back into the yard would require another event location in the RTC .TRAIN file where a train changes direction. It is not possible to add event nodes in resolving dispatching decisions in RTC and so a crossover was added to enable this movement. RTC settings were assigned so that when a train takes the crossover, the NE Tower diamond will be blocked for CSXT train movements. This imitates the operational impact that of a train pulled past the diamond. This crossover is inserted into the model to best represent actual operations, even though it is not currently present in the physical system. A replicative model would not include this crossover and would require the modeler to preselect which movement to use. We note that preselecting movements as would be required in a replicative model would actually *increase* the congestion in the model because the model will have less flexibility to resolve a conflict than an actual dispatcher.

The importance of best *representing* operations and not directly *copying* actual operations is further demonstrated by the lack of hi-rail track inspection activity in the model. Track inspectors will physically ride the tracks two or more times a week in a hi-rail truck to visually inspect the track. This is an important safety regime for both the freight and passenger traffic that moves over CSXT and NSR’s rail systems, and cannot be ignored. From a modeling standpoint, therefore, it is critical to ensure that any increase in traffic does not compromise the ability to perform these inspections. These movements are another example of activity that limits the capacity of the corridor and would be well within a reasonable methodology to include in the model. However, it was determined that RTC does not reasonably represent these movements and the RTC Modelers therefore decided not to include them. RTC does not have the same flexibility to select the time and location of using the corridor for hi-rail maintenance movements, so their inclusion in the RTC model would over represent their impact. Accordingly, in an effort to best reflect actual operations, rather than directly replicate “train” movements on the corridor, they were not included in the model.

This determination of what best represents the movements over a corridor is not fixed, and depends on the location. In the 2021 Gulf Coast RTC Model, trains that work at NSR’s Oliver Yard are represented by showing the actual pick up and drop off

¹¹ Crowley & Fapp V.S. p. 3 ¶ 2.

movements, with a block of cars remaining on the track at Terminal Junction. Alternatively, at Mobile these movements were not directly modeled but represented with two dwell events. Again, these different approaches in different locations on the study corridor were selected to best represent the various movements and activities, not in an effort to influence the results. The trains working in Mobile are constrained on the southside by the busy Alabama State Docks control point and the Three Mile Creek moveable bridge to the north. After a review of the dispatch data it was determined that showing a single dwell did not best represent this movement as it would either result in a train blocking a majority of train movements at the Alabama State Docks control point or increase delays as the train waits for a gap in bridge openings. Accordingly, the actual dwells were split, and the individual pickup and setout movements were not shown, so as not to overrepresent the delays at this location.

This iterative model-building process does not result in one or even two data sets that have a direct match to what is in the model. When information was provided directly to the RTC Modelers, the inputs were reviewed against the historical data and we used our experience to confirm that the values and train movements were realistic. Messrs. Crowley and Fapp repeatedly criticized the lack of workpapers describing how the trains that were used in the model were developed.¹² The RTC Modelers provided Messrs. Crowley and Fapp with all the necessary inputs to the 2021 Gulf Coast RTC Model but simply cannot provide direct one-to-one matches for the trains in the model. This demand for one-to-one train matching is based on their insistence that we should have developed a replicative model, and further based upon a fundamental misunderstanding of the process by which the most accurate RTC models are created.

2.3 Modeling Passenger Trains

Messrs. Crowley and Fapp also claim that the modeling gave inappropriately high preference to passenger trains.¹³ They argue the 2021 Gulf Coast RTC Model includes inputs to ensure a high On-Time Performance (“OTP”) by passenger trains. Messrs. Crowley and Fapp appear to interpret statements in the 2021 RTC Modeling Report to mean that a 95% OTP target was a model input, or that the infrastructure projects were designed to achieve a 95% OTP.¹⁴ In hindsight, the RTC Modelers acknowledge that the Modeling Report could have been clearer as to how the OTP metrics were used in the modeling process, resulting in Messrs. Crowley and Fapp’s confusion. To clarify, the goal of the 2021 Gulf Coast RTC Model was to determine the infrastructure required to mitigate the impact of passenger service on the freight service operating over the Gulf Coast Corridor while affording the preference to passenger trains required by law. Infrastructure projects were selected to mitigate harm to freight operations stemming from those passenger trains. Some of the selected projects would also benefit passenger trains. For example, the Nicholson and Claiborne Siding extensions reduce delays for passenger trains, but this project was selected not to achieve an OTP target, but rather to limit the congestion impacting freight trains caused by the meet between the passenger trains. When a passenger train is sitting in a siding for a meet, that same siding cannot be used by freight trains. It is to the benefit of the freight railroad to get the passenger train off its network as soon as possible to enable freight operations to return to normal.

¹² *Id.* p. 13, 17.

¹³ *Id.* p. 46-48.

¹⁴ *Id.* p. 35-36.

In public statements, Amtrak has stated that any delays due to freight are “a strong indicator of a preference violation”¹⁵ and that an Amtrak train entering a siding while a merchandise train uses the mainline “is a clear violation of Amtrak’s statutory right to preference.”¹⁶ These public statements and numerous other examples directly attributing the root cause of many of Amtrak’s delays as being “driven by the operation of trains too long to fit into the existing sidings on the line”¹⁷ informed the RTC Modelers’ decision to design a model where passenger trains are not required to use sidings for meets with freight trains. This is not only the publicly stated desire of Amtrak but also how CSXT and NSR ordinarily dispatch passenger service (as they informed the RTC Modelers). This is not to say that, in regular operations, the sidings will never be used by passenger traffic, just that the model should not plan for the use of the sidings to meet freight traffic.

As described above, the 2021 Gulf Coast RTC Model was designed to discourage or eliminate the use of sidings for a passenger train when meeting a freight train. However, Amtrak’s statement that the 2021 Gulf Coast RTC Model was designed to never have Amtrak use a siding is based on an incomplete reading of the Modeling Report or an incomplete review of the RTC cases.¹⁸ The Report states, “sidings must be coded to allow two passenger trains to pass one another.”¹⁹ Claiborne, Nicholson, Harbin, Lake Catherine, and Beauvoir Sidings were all enabled to permit passenger trains to enter the siding. Based on the proposed schedules, these are the feasible locations where the northbound and southbound passenger trains will meet.

Messrs. Crowley and Fapp also state that the RTC Modelers included permits—which are used to authorize one train type to traverse track that is blocked for all other types of traffic—“to assure that Amtrak passenger trains would achieve uninterrupted service and meet the necessary OTP levels for Amtrak trains.”²⁰ This conflates the type of permits used in the 2021 Gulf Coast RTC Model. While permits will be discussed more in-depth in Section 3.2.3.1, in congested double-track areas that experience significant numbers of trains parking on the mainline, like New Orleans, permits are used to best reflect how the railroad will reduce delays to any passenger service. As described in the 2021 Gulf Coast RTC Model, trains can be parked on the mainline for hours waiting to interchange or work at Oliver Yard. During periods of high congestion, all possible routes through the terminal are blocked and the passenger train could be delayed for hours in an RTC model case. No railroad would operate this way. A host railroad will anticipate the scheduled arrival times of passenger trains and maintain, to the best of its ability, a clear route.

The modeling inputs and infrastructure projects selected were not done to obtain a high OTP, nor is the 95% OTP an input into the 2021 Gulf Coast RTC Model. Rather, this is the final OTP obtained in the model once the freight impacts were fully mitigated. When a passenger train is provided preference, it will have a high OTP regardless of the impact on other traffic. Other traffic will attempt to avoid delaying that train, even if it results in significant delays to freight. The OTP measure was

¹⁵ *Petition for Relief by Amtrak Requiring the Initiation of an Investigation of Substandard Performance Under Section 213 of the Passenger Rail Investment and Improvement Act Of 2008*, Docket No. NOR 42134 (S.T.B. filed Jan. 19, 2012), at p.15

¹⁶ *Id.* p. 21.

¹⁷ Testimony of Stephen J. Gardner Before the United State House of Representatives November 18, 2020; Federal Railroad Administration, *Root Causes of Amtrak Train Delays*, Report No. CR-2008-076, at 4 (issued Sept. 8, 2008), p. 4.

¹⁸ Amtrak’s Reply Argument and Evidence p. 27.

¹⁹ 2021 Gulf Coast RTC Report p. 25.

²⁰ Crowley & Fapp V.S. p. 48.

provided as a confirmation that service works for passenger trains in addition to freight trains.

When modeling a proposed passenger service, the modeling should not just barely reach the desired service threshold.²¹ Having a high OTP will ensure that when events that are not fully modeled in RTC occur (*e.g.*, derailments, extreme weather events, mechanical issues), the trains are still able to reach each station on-time with regularity. Many events are not represented in RTC that will decrease the actual OTP that can be obtained. RTC, while an excellent tool, does not model all potential operational scenarios, especially high congestion events. This study also did not include any direct passenger train delays including delayed departure times, slow passenger boarding, or passenger emergencies that will degrade OTP.

It is impossible to precisely calculate the difference in value between RTC modeled OTP and real-world expected OTP. But it is clear that RTC-modeled OTP will be higher, due to the characteristics of RTC discussed above. The precise difference between actual operations and RTC modeled operations is dependent on the corridor. We expect that the combined challenges of the Gulf Coast Corridor and the number of elements that are out of the control of the host railroads (*e.g.*, interchange, movable bridges, grade crossings), would result in greater differences between actual and RTC modeled operations than observed on other corridors.

2.3.1 Impact of Preference on RTC Results

Additional modeling was performed to demonstrate the effect of preference and the modeling decisions made by the RTC Modelers. Passenger rail preference is inherent not only in typical railroading, but it is also the law. Nevertheless, even if the practical and legal requirement for passenger rail preference is ignored, the introduction of the Gulf Coast passenger trains would adversely impact freight rail service.

In the additional modeling, the preference for the Gulf Coast passenger trains was removed to demonstrate that not only is the preference important to the performance of the proposed passenger traffic, but even removing passenger train preference does not mitigate the impact to freight. To remove the preference accorded to the passenger trains in the 2021 Gulf Coast RTC Model and have them use the sidings as if they were simply another track,²² four elements were removed from the 2021 Gulf Coast RTC Model:

- Removed any lockouts and penalties from sidings;
- Adjusted passenger priority to be the same as the majority of freight;
- Removed Crescent Train passenger window in New Orleans; and
- Changed settings to favor the first train to arrive at a siding.

In the 2019 Cases, two freight trains required a higher priority than passenger trains as this was the only way to have RTC accurately model the two CSXT trains that are longer than many of the existing sidings. Without this additional preference, these two freight trains will experience even higher delays, create added congestion, and ultimately show a greater freight impact than would be likely. But all other freight trains had equal or lower priority than passenger trains. Since the Crescent Train passenger window in New Orleans was removed, the Base Cases were remodeled as well to provide a fair comparison.

²¹ While a customer OTP of 80% is the statutory limit, any new service should plan to achieve a higher value.

²² "A siding is simply track, which can be used much the same way any track can be used." Amtrak Reply Argument and Evidence p. 27.

Even in the originally modeled 2019 Passenger Case (base infrastructure with passenger trains), one of the passenger trains (train 25) did not obtain an OTP of 80%. When the preference was removed, three of the trains were below the 80% threshold on a regular and on-going basis. Although the RTC Modelers acknowledge that one does not design a new passenger service to fail to meet a statutory threshold, it was important to understand the Amtrak claims, and the reality that follows from those claims. This reduction in preference still does not mitigate the impact on freight. While more than doubling the delays to passenger trains and reducing their OTP, the adverse impact of the proposed passenger service on freight rail service is reduced, but not materially. There is still a significant degradation to freight. The 2021 RTC Rebuttal Model still shows a 28.4% increase in delay to CSXT local traffic and a 19.2% increase in delays to the interchange partners in New Orleans.

Table 2: 2019 Train OTP with Different Passenger Priority Settings

Metric	Original Passenger Case	Equal Preference Case
Amtrak Train 23 OTP	96.3%	89.6%
Amtrak Train 24 OTP	99.2%	75.3%
Amtrak Train 25 OTP	79.2%	79.8%
Amtrak Train 26 OTP	88.5%	78.5%
Passenger Minutes of Delay per 100 Train Miles	9.1	18.8
Siding Usage per Passenger Train	0.7	1.5

Table 3: 2019 Freight Train Metrics

Metric	Original Passenger Case	Equal Preference Case
CSXT Local Trains Delay	45.4%	28.4%
Overall Change in Train Delay	22.7%	8.4%
Change in Interchange Traffic Delay	33.6%	19.2%

Removing the preference given to passenger trains in the 2039 Passenger Case allows the 2039 Passenger Case to run without adjusted crossing blockage time. However, both the freight and passenger traffic operate at unacceptable levels. Three of the passenger trains are not only at or below the 80% threshold, one of those passenger trains (train 25) is relegated to having an OTP of only 66.7%. Not only are the passenger trains operating at unacceptable levels (exposing the freight host carriers to unjustified investigations, criticisms, and attendant costs), the model shows that if there are no projects to mitigate the adverse impact, all freight traffic experiences a 10.0% increase in delay, CSXT local freight trains experience a 28.0% increase in delay, and interchange traffic delays increase by 7.7%.

Table 4: 2039 Train OTP with Different Passenger Priority Settings

Metric	Equal Preference Case
Amtrak Train 23 OTP	87.6%
Amtrak Train 24 OTP	72.4%
Amtrak Train 25 OTP	66.7%
Amtrak Train 26 OTP	73.1%
Passenger Minutes of Delay per 100 Train Miles	24.6
Siding Usage per Passenger Train	1.5

Table 5: 2039 Freight Train Metrics

Metric	Equal Preference Case
CSXT Local Trains Delay	28.0%
Overall Change in Train Delay	10.0%
Change in Interchange Traffic Delay	7.7%

3.0 Model Inputs

The majority of Messrs. Crowley and Fapp’s critiques of the 2021 Gulf Coast RTC Model center on the inputs into the Model. They repeatedly misrepresent how the 2021 Gulf Coast RTC Model was constructed, misinterpret the actual data provided by the railroads, fail to acknowledge items clearly stated in the modeling report, and argue that operations typical across all railroads in North America are atypical. We have organized these criticisms into several categories and responded to them in turn. Those categories are Train Counts, Infrastructure, and Train Characteristics, Departure Times, and Dwells.

3.1 Train Counts

Central to Messrs. Crowley and Fapp’s critique of the 2021 Gulf Coast RTC Model is the assertion that the RTC modeling had **257%** more trains than actually operate on the Gulf Coast Corridor.²³ This analysis demonstrates a fundamental misunderstanding of the RTC modeling process, insofar as it both overcounts the RTC trains and undercounts the actual train volumes in the relevant data sources. Their faulty analysis was based on:

1. A misunderstanding of what types of “trains” will show up train movement data;

²³ *Id.* p. 3 ¶ 3(a), p. 13–17.

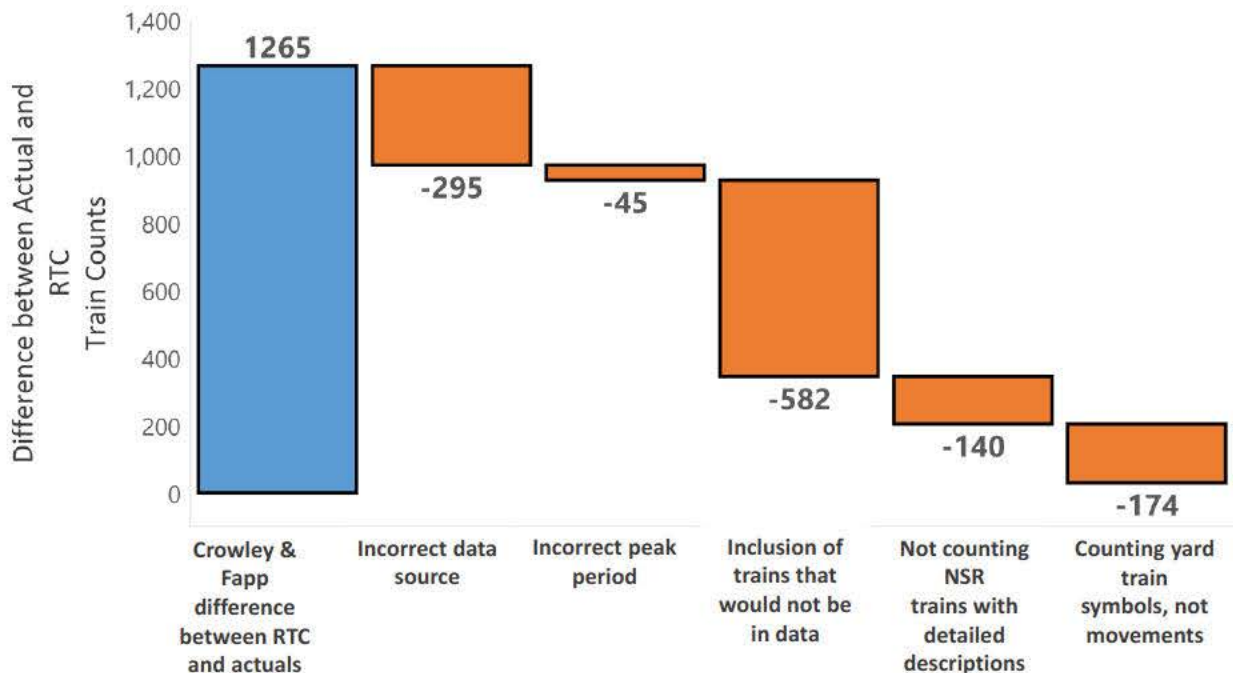
2. Using actual train volumes from the wrong source file;
3. Misuse and misidentification of the peak period; and
4. A lack of understanding of railroad data by using the wrong data set.

While the model was not developed by matching a specific two-week period from the train data provided by CSXT and NSR, when the train counts are accurately calculated, the volumes in the representative model and actuals closely match. In the subsections that follow, we identify the train counting errors made by Messrs. Crowley and Fapp. The 2021 Gulf Coast RTC Model was within **2.5%** of the actual volumes in the corrected peak period after the following mistakes by Messrs. Crowley and Fapp were rectified:

1. Actual values were low due to Crowley and Fapp's use of an incorrect data source;
2. Actual values were low due to the Crowley and Fapp's selection of an incorrect peak period;
3. Crowley and Fapp's data did not include events like hi-rail movements, light engine movements, and certain yard movements that are incorporated as "trains" in the RTC train counts;
4. Actual values were low as Crowley and Fapp did not include NSR trains that were provided through detailed descriptions rather than data; and
5. Actual values were low since Crowley/Fapp counted yard train symbols instead of yard train movements.

These five categories account for the entire difference between the actuals and RTC values (Figure 1). The detailed reasoning and trains included in each category are in the sections below.

Figure 1: Waterfall Chart of the Source of Difference between RTC and Actual Train Counts



3.1.1 Incorrect Data Set for Actual Volumes

Messrs. Crowley and Fapp not only used the wrong data set, but the data they did use was from a workpaper that was truncated for analytical reasons and not the raw data that was included in the workpapers. The spreadsheet Messrs. Crowley and Fapp used was developed using train profile data (called Train Profile Data or TM2 Data at CSXT, and OPD Data at NSR). As described in the Rosse and Sinkkanen Rebuttal Verified Statement, train profile data is processed and is not designed to reflect train movements but activities along a route.²⁴ In contrast, OS data and dispatch data are directly created based on train movements in the dispatch system and better reflect actual train movements. While OS data is sufficient for most of the route, more granular dispatch data is required to quantify operations in the congested Gentilly and Sibert terminal areas.

The train profile data Messrs. Crowley and Fapp did use was not from the raw train profile data but a workpaper—as described in the 2021 Gulf Coast RTC Model workpaper index—that was developed to evaluate train dwells and departure times. This spreadsheet has a large number of trains missing as the spreadsheet only included NSR trains and trains that operate in Mobile.

A pitfall of blindly adopting the actuals, as Messrs. Crowley and Fapp advocate, is that it can result in over-counting actuals due to how CSXT created the train profiles. Sometimes a single train will be assigned two separate profiles, which would show up in the data, per Messrs. Crowley and Fapp's methodology, as two separate trains, when in reality it is one train operating with two distinct profiles for different segments of its route. This occurs twice with the trains in Messrs. Crowley and Fapp's selected period and data set. In both cases, the RTC Modelers chose to model the train movement as a single train in RTC instead of as two different profiles as presented in the data. These instances are:

- Model combined {{Redacted}} which operated from New Orleans to Mobile and {{Redacted}} which operated between Mobile and New Orleans into a single train.
- Model combined {{Redacted}} which operated between New Orleans and Montgomery and {{Redacted}} which departed from Montgomery into a single train.

Using the correct data set explains **295 trains (23%)** of the 1,265-train difference between the RTC Model and the actuals identified by Messrs. Crowley and Fapp.

3.1.2 Incorrect Peak Time Period

Messrs. Crowley and Fapp used the uncorrected and incomplete data set to calculate the 14-day peak period of November 7, 2019, to November 20, 2019.²⁵ When OS data was used to determine train volumes on CSXT, the peak period was found to be 4 days earlier, between November 3, 2019, to November 16, 2019. Unlike rate cases that Messrs. Crowley and Fapp are familiar with, this study includes the operations on two railroads. Since CSXT has the preponderance of the trains along the study corridor, peak volumes on CSXT mask lower volumes on NSR. While operations between railroads are highly interconnected due to their interchange points in New Orleans and Mobile, each railroad must have sufficient capacity to independently ensure that the passenger service maintains high service levels. And each railroad operates under its own business model, with its own customers and service partners. By looking at each railroad's volumes separately, it was found that the combined overall and CSXT peak volume period (November 3, 2019, to November 16, 2019) has 10% fewer NSR trains

²⁴ Rosse & Sinkkanen Rebuttal V.S. at 9–10.

²⁵ Crowley & Fapp V.S. p. 14.

compared to the NSR peak period (October 17, 2019 to October 30, 2019).²⁶ As such, the independent peak periods for CSXT and NSR should be used and are used in this analysis. Correcting the peak period, accounts for **45 trains (3.6%)** of the 1,265-train difference between the RTC Model and the actuals identified by Messrs. Crowley and Fapp.

3.1.3 RTC Trains that would have no Counterpart in the Train Data

As described in the Rosse and Sinkkanen Rebuttal Verified Statement, train movement data (*i.e.*, train profiles, OS data, and dispatch data for CSXT) are not able to fully capture all train movements,²⁷ including:

- “Trains” in an RTC .TRAIN file that are not actually trains (including blocks of cars and hi-rails);
- Trains that never occupy CSXT-controlled or NSR-controlled track (for example, foreign cross-traffic);
- Train movements that would not have separate train profiles (such as light engine moves, headroom movements to build trains, and split train moves); and
- Train movements that never occupy dispatcher-controlled track (including some yard trains and movements at south end of Gentilly Yard).

Comparing these trains that would never show up in train data to actuals is highly misleading. Of the 1,265-train difference between the RTC Model and actuals identified by Messrs. Crowley and Fapp, **582 (46%) of those “trains”** are in the 2021 Gulf Coast RTC Model, but would have no counterpart in the train data. These trains were identified based on conversations with field personnel or direct observation of the dispatching. These trains that were provided to the RTC Modelers from CSXT and NSR were reviewed and determined to accurately reflect realistic and typical railroad operations. The count and explanation of these trains can be found in Table 6 below.

Table 6: Trains in RTC that Would Not Appear in any Train Movement Data Set due to Location of Train or What They represent in the 2021 Gulf Coast RTC Model.

“Train” Type	Number of Instances	Explanation
Blocks of Cars	50	These are not trains. But when a train works and leaves its cars behind, these cars will still occupy track capacity.
Foreign: CN Trains crossing diamond at Mobile	17	These trains never occupy CSX track, but they represent traffic at the diamond that will delay CSX traffic.
Foreign: NOPB trains	112	These trains only occupy the mainline for 0.1 miles at the south end of Gentilly and only use yard-controlled switches.
Merchandise: Train split in two to interchange	14	These are trains in New Orleans that are split to interchange. They are similar to blocks of cars that will not show up in the data cleanly.
Light Engines: Montgomery	42	These trains are engine swaps in Montgomery. Engine movements do not have separate train profiles. These trains will use the original train’s profile or occur on yard tracks.
Light Engines: New Orleans	30	These are engine swaps in New Orleans. Engine movements will use the train profile or occur on yard tracks.

²⁶ Analysis of peak periods found on the “Peak” tab of Combined Data Oct-Nov.xlsx

²⁷ See Rosse & Sinkkanen Rebuttal V.S. at 5–21.

"Train" Type	Number of Instances	Explanation
Yard: Light Engines	28	These are engines that run around the Terminal Jct. wye in New Orleans. A light yard engine would use a generic train profile and since it occupies only a single control point, it would not have a direct match in the data. These were misclassified as yard trains in the RTC model.
Yard: Transflo	10	Train Y150 represents a yard train that services Transflo facility by Gentilly. This movement typically accesses the facility using the switches at the south end of Gentilly that are controlled by the yard.
Yard: Switching in CSXT Sibert Yard that stays in yard	111	These trains do not touch any dispatcher-controlled switches and are therefore not in the train data. These switches are controlled by the yard.
Yard: Switching at south end of CSXT Gentilly Yard	42	These trains do not touch any dispatcher-controlled switches and are therefore not in the train data. These switches are controlled by the yard.
Bridge Tender	126	These are not trains, but hi-rail vehicles. Hi-Rail movements are not represented in train movement data.
TOTAL	582	

3.1.4 NSR Trains with No Data but have Detailed Descriptions

As described in the Rosse and Sinkkanen Rebuttal Verified Statement, due to the complexity of operations in New Orleans, it was necessary to preprocess the data before providing that data to the RTC Modelers.²⁸ These trains were developed by NSR using train data and field input. In each case, detailed descriptions of the train movements, departure times, and consists were provided to the RTC Modelers. Upon receipt, the RTC modelers found these inputs to be reasonable and they were included in the base cases. These **140 trains account for 11%** of the difference between the RTC and actuals identified by Messrs. Crowley and Fapp.

Table 7: Trains from NSR with Detailed Descriptions but no Data Provided

Train Type	Modeled Instances	Explanation
NSR Locals	42	Three daily locals, information provided in narrative but no direct train data provided.
NSR Oliver Yard Switching	98	Trains were developed by NSR based on field interviews and data review and then provided directly to the RTC Modelers.
Total	140	

3.1.5 Calculating Yard and Foreign Train Movements Not Train Symbols

As described in the Rosse and Sinkkanen Rebuttal Verified Statement, it is common for a single yard train profile to be used across multiple "trains" during a day.²⁹ As such, the individual movements of the trains should be considered and not the number of train symbols. The yard train movements in the RTC Model at the north end of Gentilly

²⁸ *Id.* at 21–23.

²⁹ *Id.* at 20.

and in Sibert Yard used a different “train” to represent each mainline blockage event. Since a single yard profile will enter the mainline on multiple occasions, and yard train profiles are repeated (*i.e.*, there are situations where the same yard train symbol is used in Mobile and New Orleans), calculating movements better reflects the impacts and matches the methodology utilized in RTC. The TASD trains in Mobile are similar—these trains are sometimes profiled with different prefixes that can be recycled throughout the day. Accordingly, yard and TASD trains were modeled in the 2021 Gulf Coast RTC Model with standard, generic train profiles instead of attempting to match the actual profiles of any given day.

Of the 570 yard trains and 70 TASD foreign in the 2021 Gulf Coast RTC Model identified in the Crowley & Fapp Verified Statement,³⁰ 191 have already been identified in Table 6 as operating where no train data would be created; 98 are on NSR and were provided to the RTC Modelers through detailed descriptions, not through data; and 107 are explained by using the correct data set and correct peak period. That leaves 174 yard train movements and 70 TASD trains that are in RTC that both are in the data and have not already been explained.

To determine the number of switching events, the use of the more detailed train dispatch data is required. The CSXT dispatch data was analyzed to show the number of movement events in the data. Due to the complexity of the data in terminal areas, these counts are likely underrepresenting the train movements. This data was therefore supplemented by information provided by CSXT that was obtained from local operating personnel. The dispatch data was found to be sufficiently close to the volumes provided by the field personnel to validate those numbers and use them in the 2021 Gulf Coast RTC Model.

Yard Switching Trains

The investigation of the dispatch data found that 265 switching train movements,³¹ could be identified in that data (Table 8), significantly more than the 8 trains found by Messrs. Crowley and Fapp in their analysis.³² Even this is likely not inclusive of all movements due to the complexity of deciphering terminal train movements. The remaining difference is due to input from the field and rounding the number of movements up to capture the events that are not captured in the count below.

TASD Foreign Trains Volumes

Of the 70 movements modeled in RTC, 55 were able to be identified in the dispatch data, and the rest were identified through field personnel. The TASD movements traverse at most only 1.5 miles on CSXT between Choctaw Yard and Alabama State Docks. Due to the limited distance these trains travel, as described by Ms. Rosse in her rebuttal verified statement, the OS data is not able to fully represent these movements.³³ The train counts were provided by the field and confirmed by TASD’s opening comments.³⁴

Correct accounting of the yard and TASD train movements in the actuals explains for **174 (14%)**³⁵ of the 1,265-difference between RTC and actuals identified by Messrs. Crowley and Fapp.

³⁰ Crowley & Fapp V.S. p. 14, Table 1.

³¹ Detailed analysis found in “Y and Z Train Data Analysis.xlsx” workpaper.

³² Crowley & Fapp V.S. p. 14, Table 1.

³³ See Rosse & Sinkkanen Rebuttal V.S. at 11, 14.

³⁴ TASD Opening Comments and Evidence, p. 5–6 & nn.9–10.

³⁵ 174 is the difference between the 320 yard switching and foreign trains identified in the dispatch data subtracting out the 146 yard and foreign trains on CSX that are in the peak time period OS data.

Table 8: Yard switching movements and TASD Foreign Trains on CSXT

Train Type	Modeled Instances	Actual Instances
North end of CSXT Sibert Yard	14	15
South end of CSXT Sibert Yard that occupy mainline	127	103
North End of CSXT Gentilly Yard	140	147
TASD Trains	70	55
Total	351	320

3.1.6 Remaining Difference

Once the actual and RTC train counts are corrected across all of the above described categories, the RTC Model has a total of **29 more trains (2.5%)** than are represented in the actual data for the proper peak period. These remaining trains are spread across all train types, with a concentration in the foreign and yard train categories. This 2.5% difference in train counts is within a reasonable margin of error and is best explained by honest efforts to reconcile imperfect data with field personnel observations in creating a representative model.

3.1.7 Almonaster Bridge Train “Volumes”

As Rosse explains, the Port of New Orleans redacted the Almonaster bridge data before providing it to CSXT, which in turn provided it to the RTC Modelers.³⁶ It is unknown what the redacted data includes. Any speculation by Messrs. Crowley and Fapp is just that, a guess, and drawing any conclusions is highly misleading and unproductive. In evaluating this bridge data, it is likely, but not confirmable, that a yard job will be listed as a single train when, in fact, it makes multiple movements over the bridge.

3.1.8 2039 Train Volumes

The 2039 train sizes and volumes criticized by Messrs. Crowley and Fapp represent a conservative view of growth.³⁷ Messrs. Crowley and Fapp use ton-mile data from the Energy Information Administration (“EIA”) to argue that since overall rail traffic is projected to grow 0.68% annually,³⁸ the growth projected by CSXT and NSR (less than 1.5%) is not valid. Using a growth escalator that is the summation of all freight rail traffic, rather than the freight rail traffic that actually moves over the corridor, is misleading. It also ignores better forecast data available from other United States government agencies. The United States Department of Transportation’s Freight Analysis Framework (“FAF”)³⁹ includes expected tons⁴⁰ in traffic by mode, by commodity type. Following the methodology employed by the Cambridge Systematics

³⁶ *Id.* at 30–31.

³⁷ Crowley & Fapp V.S. p. 25, p. 30.

³⁸ This calculation was done using projected growth over the 19 years between 2020 and 2039.

³⁹ Version 5.2.

⁴⁰ Only tons were available in current version.

National Rail Freight Infrastructure Capacity and Investment Study,⁴¹ the commodities can be assigned to likely train types. Using 2020 as the base year, the FAF data shows that freight is expected to grow 0.74% annually between 2020 and 2040, closely matching the EIA data over the same time period (Table 9). However, when looking at growth rates by train type, expected growth in Auto, Intermodal, and Merchandise is offset by an anticipated decrease in Bulk traffic. The traffic on the Gulf Coast Corridor is almost entirely merchandise traffic, which has a projected growth rate of 1.9% annually according to the FAF, higher than CSXT or NSR's supposedly inflated values.

Table 9: Annual Growth Rates by Type and Source of Data

Train Type	2040 vs. 2020	Annual Rate
Auto	95%	3.40%
Bulk	-7%	-0.38%
Intermodal	77%	2.88%
Merchandise	46%	1.90%
FAF Total	16%	0.74%
EIA Total	14%	0.66%

Separate and apart from the values provided by the railroads, yard switching movements were increased by the same proportion as the merchandise traffic.⁴² This is logical, as additional carloads in each yard will result in additional train movements, and due to increased train lengths, those yard movements will more frequently occupy the mainline.

3.2 Infrastructure

Messrs. Crowley and Fapp make a number of critiques of the infrastructure in the 2021 Gulf Coast RTC Model, arguing that the "RTC model is also missing much of the infrastructure that exists in the real world."⁴³ The examples of "missing" infrastructure are all instances of tracks not used in mainline train movements to meet trains. The tracks identified are utilized for car storage and demonstrate Messrs. Crowley and Fapp's misunderstanding of both railroad operations and what operations RTC models represent.

3.2.1 Missing Track Infrastructure

Basic knowledge of railroad operations includes an understanding of the distinction between yard and storage tracks as compared to mainline tracks. Trains do not use yard or storage tracks to perform meets. Not including these tracks in the Model does not diminish the capacity of the route at all.

An RTC model is a dispatch simulation tool; it does not simulate railcars in yards. The examples provided by Messrs. Crowley and Fapp of tracks that could have been used for through train movements, perhaps gleaned from aerial photos, track charts, dispatch screens, and/or timetables, are for *railcar* storage, not through train

⁴¹ Cambridge Systematics. National Rail Freight Infrastructure Capacity and Investment Study, Cambridge Systematics, (Cambridge, MA. 2007), p. A-8.

⁴² 2021 Gulf Coast RTC Report p. 24.

⁴³ Crowley & Fapp V.S. p. 5.

movements. These tracks, therefore, have no impact on the ability of the corridor to host *trains*. These tracks are included for visual purposes (*i.e.*, to visually represent the existence of the yard) or to best represent the facilities that can handle concurrent trains.

Depending on the preference of the modeler, a model may depict only a subset of tracks that are required to arrive and depart trains or a larger number of tracks where some are simply not used but still represented. Both approaches are used in the 2021 Gulf Coast RTC Model. Additionally, while railroads will often include industry tracks for visual purposes, the actual train operations will often involve leaving its cars on the mainline while servicing the customer. This impact can be modeled with or without the industry track being in the model. The infrastructure reflected in the 2021 Gulf Coast RTC Model accurately reflects railroad operations, and because none of the examples identified by Messrs. Crowley and Fapp are locations where trains meet, their exclusion from the Model is not an attempt to underutilize capacity.

Table 10: Allegedly Missing Infrastructure in Exhibit 7 to the Crowley & Fapp V.S.

Location	Page	Response
PBVR Track	Exhibit No. 7 page 1	The tracks identified are for cars, not trains, as can clearly be seen in the aerial photo at Appendix A, page 1. One local train per day, and no passenger trains, are simulated on this connection.
Ocean Springs Siding	Exhibit No. 7 page 2	The three tracks identified are the main, Ocean Springs Siding, and Coastal Storage. This 650 feet stub-end storage track has a hand-thrown switch at one end and is not used for meets between trains. <i>See</i> Appendix A, page 2.
KCS Interchange	Exhibit No. 7 page 3	Even if the tracks identified are for cars, not trains, no trains in the model travel on this segment of track. The railroad would not shove an entire train onto the KCS merely to perform the interchange. Accordingly, the local picks up and sets out cars from these tracks while the remainder of the train remains on the CSXT mainline.
Watts Yard	Exhibit No. 7 page 4	The tracks identified are for cars, not trains. The yard has the capacity to support one local train operating at a time and was modeled as such.
Gentilly	Exhibit No. 7 page 5	First, Messrs. Crowley and Fapp misread the track charts, which show that there are not two mainline tracks past Gentilly Yard. <i>See</i> Appendix A, page 3. Second, since only a single train per day ({{ Redacted }}) serves the Transflo facility, including additional tracks in the model has no impact on the capacity of the Gulf Coast Corridor. Third, it is not clear what Messrs. Crowley and Fapp are referring to when they claim the model has mislabeled the track type in Gentilly Yard. These yard tracks are correctly represented by the Freight Yard link class in RTC.
Gautier	Exhibit No. 7 page 6	Messrs. Crowley and Fapp confuse the Gautier Rock industry track just to the south of the siding with the siding itself. The industry track is occupied by cars as can be seen in the aerial photo and is not used for meets. <i>See</i> Appendix A, page 4.
Bayou Cassotte	Exhibit No. 7 page 7	The tracks identified are for cars, not trains. Only tracks needed to represent train movements were included in the Model.

3.2.2 Grade Crossings

Messrs. Crowley and Fapp argue the modeling of grade crossings is flawed since (1) railroads sometimes exceed the 20-minute maximum blockage goal and (2) the limit is applied to all rail crossings uniformly.⁴⁴ The grade crossing limit in RTC is a fixed constraint, meaning there is no way to penalize blocking a crossing while also allowing trains to sometimes block crossings for longer durations. Therefore, Messrs. Crowley and Fapp are essentially arguing that grade crossings should not be modeled at all. It is fundamental to planning a passenger service to avoid not only impacts to freight trains but on the public as a whole.

Planning for passenger service, or regular freight operations, to block crossings should never be done. When blockages do occur in actual operations, they are often the result of the unplanned events that cause increased rail congestion and are therefore not represented in the 2021 Gulf Coast RTC Model. Limiting blockages is standard in all RTC modeling as railroads make every effort to limit the time crossings are blocked during normal operations. There is a fundamental difference between developing an RTC solution set that requires crossings to be blocked on the one hand, and real-world experiences in which some crossings are blocked during periods of high congestion in actual operations on the other hand.

As stated in the 2021 Gulf Coast RTC Report, only active crossings with greater than 200 average annual daily traffic ("AADT") were included.⁴⁵ Messrs. Crowley and Fapp object to the inclusion of the Dauphin Street crossing near the Mobile Convention Center because a 20-minute dwell is impractical, the crossing is a gravel access road, and the CSXT track charts do not show the crossing.⁴⁶ Yet this crossing, Dauphin Street, experiences over 500 AADT.⁴⁷ Messrs. Crowley and Fapp both cherry-pick a single location to paint the modeling of all crossings as problematic and provide no alternative criteria by which to evaluate what crossings should be modeled and are permissible (or not) to block.

Messrs. Crowley and Fapp also argue that since every crossing on CSXT is modeled to be 528 feet across, this not only places an "unrealistic restriction upon all trains but also greatly limits the ability of trains to fit between road crossings."⁴⁸ Using a standard length of 0.1 miles (528 feet) for each crossing is a standard process at CSXT in all RTC models and is done to represent the operational impact of the crossing, not the crossing itself. CSXT Operating Rule 312.1 states that trains should not park within 200 feet of any crossing. The rule creates an area of greater than 400 feet around the width of the crossings where trains cannot dwell. Such a gap or width is in rules since it increases the viewshed of the motoring public and thereby increases the safety of both motorists and train crews. For simplicity in modeling, this length is increased, by often less than 100 feet or 0.02 miles, to 0.1 miles.

3.2.3 Blockages

Messrs. Crowley and Fapp claim that the 2021 Gulf Coast RTC Model includes "unrealistic blockages."⁴⁹ This not only misrepresents the actual model inputs but shows a misunderstanding of basic statistics and actual railroad operations. The 2021 Gulf Coast RTC Model made use of four types of permits to represent actual railroad

⁴⁴ Crowley & Fapp V.S. p. 37.

⁴⁵ 2021 Gulf Coast RTC Report p. 23.

⁴⁶ Crowley & Fapp V.S. p. 37-38.

⁴⁷ See "Grade Crossings.xlsx" in workpapers.

⁴⁸ Crowley & Fapp V.S. p. 38.

⁴⁹ *Id.* p. 47-52.

operations on the corridor: passenger windows, interchange delays, maintenance windows, and bridge openings.

3.2.3.1 Passenger Permits

To best model the impact of the existing Crescent passenger service on the NSR network, passenger windows were created for the departure of Amtrak train 20. These windows create a clear route from East City Junction to Terminal Junction and block the route for a 20-minute window when that train departs. This permit best reflects how the railroad will keep a route clear for a passenger train to avoid delays. Due to a number of factors outside NSR's control, NSR creates effective passenger windows when the Crescent train operates. To ensure that an interchange train does not arrive on its network and then get delayed waiting to transfer to CSXT, blocking the route for Amtrak, NSR will prevent these trains from entering its network. This in turn increases the delays on all freight rail interchange partners.

A permit was employed only after it became clear that priorities alone were unable to represent this impact as there were repeated events where the passenger train would be delayed, even with the high priorities assigned, for over an hour due to congestion in the terminal. A similar passenger window was not included for the arrival of Amtrak train 19 since this train could potentially arrive any time in a span of 90-minutes. Permits in RTC cannot be aligned with train arrivals and to avoid having a passenger window with no passenger trains or an excessively long window, no window was included.

While passenger windows best reflect how a railroad would dispatch passenger trains in a complex terminal area like New Orleans, passenger windows were not provided in connection with the proposed Gulf Coast trains to avoid the perception of influencing the results. This lessens the modeled impact to freight and interchange partners and results in findings that likely *underrepresent* the impact on freight.

3.2.3.2 Interchange Permits

One of the largest sources of congestion in New Orleans are the delays due to the trains interchanging between CSXT and NSR. Due to the complexity of operations, it is common that CSXT will not be able to receive a train, and that train will be required to be delayed on NSR. These delays are due to many factors including the internal yard operations. Since RTC does not model detailed internal yard operations, it was decided that these permits, instead of directly adding dwells to the trains, were the best way to represent these operations. These delays in the interchange process do not affect passenger train movements, or movements from CSXT to NSR, and were modeled as such.

3.2.3.3 Maintenance Permits

There was confusion by Messrs. Crowley and Fapp about the maintenance outages described in the 2021 Gulf Coast RTC Model. The Modeling Report describes the permits as representing daily routine maintenance-of-way activities, not "emergency maintenance" arising from switch failures or broken rails as Messrs. Crowley and Fapp assumed.⁵⁰ As described in the Rosse and Sinkkanen Rebuttal Verified Statement, regular maintenance activities are performed daily and can include tamping, spot tie replacements, welding, spot undercutting, and many more

⁵⁰ See *id.* p. 38, 49.

potential activities that would limit the access to the track by trains.⁵¹ Routine maintenance activities consume track capacity and are vital to protect the freight and passenger rail service that operate over the lines, and are required by Federal law. There are three outages included in the Model for between 30 and 120 minutes between New Orleans and Mobile (the outages were less frequent on New Orleans due to less infrastructure). This is one outage every 45 miles during the day.

Data of track maintenance work is complicated and difficult to decipher. Track maintenance work can be performed using multiple authority types, and the data provided included many non-maintenance activities. Accordingly, to accurately depict these maintenance activities, the modelers used their experience and input from CSXT and NSR to develop the permits used in the model.

If these permits were representing track failures and emergency maintenance, the RTC Modelers agree that these outages would be “unrealistic, greatly overstated,”⁵² but for regular track maintenance, as described in the Rosse and Sinkkanen Rebuttal Verified Statement, both the duration and frequency of these outages are well within expected values.⁵³

These permits were scheduled, as they would be in actual operations, around the potential passenger service. However, if these windows conflict with the passenger service, the teams would make every attempt to clear the tracks and avoid delays to the passenger trains. Freight trains, on the other hand, will typically hold until the window is closed, both in the Model and in reality. Accordingly, this is how the maintenance permits were modeled.

3.2.3.4 Bridge Openings

Messrs. Crowley and Fapp claim that bridge openings are “unrealistically high in number”⁵⁴ and that “there is almost no documentation to support these bridge openings.”⁵⁵ They make these claims based on no facts, in contrast with the many facts they were provided, including the raw bridge logs, a working aggregated spreadsheet used to develop the opening frequencies and durations, and diagrams of distributions used for the bridge opening times and durations, all of which are in the appendix of the Modeling Report.

Messrs. Crowley and Fapp would have easily been able to confirm the average number and duration of the bridge openings from the workpapers provided. The easily verifiable average number of daily openings and durations was in Table 2 of the 2021 Gulf Coast RTC Model. On any given day, that data shows that there are on average 54 openings of the 13 bridges included in the Model. For example, the Chickasaw (also referred to as Chickasabogue) bridge opens nearly nine times per day, so it should be no surprise that a bridge opens more than 100 times (an average of 7.1 per day) in the modeling period.⁵⁶

Another example Messrs. Crowley and Fapp point to is the Almonaster Bridge (also referred to as Industrial Canal), which only opened 84 times during the November 7 to November 20 “peak” period.⁵⁷ Messrs. Crowley and Fapp came up with this number based on a manually written column of the number of openings in the

⁵¹ Rosse & Sinkkanen Rebuttal V.S. at 29–30.

⁵² Crowley & Fapp V.S. p. 39.

⁵³ Rosse & Sinkkanen Rebuttal V.S. at 29–30.

⁵⁴ Crowley & Fapp V.S. p. 49.

⁵⁵ *Id.* p. 51.

⁵⁶ *See id.* p. 51, Table 5.

⁵⁷ *Id.* p. 52.

bridge logs⁵⁸ while ignoring the actual records of the bridge openings in the logs. This column is often blank or incomplete.⁵⁹ Recording each bridge opening based on the log record of the bridge opening and closing time would reveal that the bridge actually opened 124 times,⁶⁰ nearly 50% more than Messrs. Crowley and Fapp claim.

Messrs. Crowley and Fapp attempt to inflate the number of openings represented in the models by listing in their Table 5 separate permits for each track (*i.e.*, Three Mile Creek Track M1, Y1 & S1, Industrial Canal M1 & M2, and Seabrook M1 & M2).⁶¹ They cite that the Model has an “unrealistically high number” of bridge openings by directly pointing to the 1,196 openings in the table.⁶² However, a quick review of the permit data shows that while permits were included for each track separately, the openings on each track per bridge occur simultaneously, representing a single opening of that bridge. This double, and in one case triple, counting of the bridge openings employed by Messrs. Crowley and Fapp inflated the total number of openings by 25%.

The number of bridge openings in the 2021 Gulf Coast RTC Model is higher than those that actually occur, not to over-represent their impact, *but to do the exact opposite*. Two of the bridges (Seabrook and Pascagoula) regularly remain open, except for when train traffic needs to cross. This is done to limit the number of openings to reduce wear and tear on the bridge. This results in long bridge opening durations with multiple vessels passing the bridge in each opening. If a train were to pass and no vessels are present, the bridge will lower. Similarly, at other locations, it is clear in the data that bridges are often left open for long durations if there are multiple vessels and no train traffic. To avoid over-representing the duration of the bridge openings, it is important to not model the openings as depicted in these bridges’ data but to instead represent the number of vessels, with the assumption that the bridges will close after every vessel. This modeling decision *reduced the impact of these bridges on freight and passenger service* that would be experienced if the exact opening lengths and durations were used. A review of the modeled distributions of bridge opening times show that they closely match the actual data and durations and these distributions were selected to not include the many long bridge opening durations that actually occurred.

Another example Messrs. Crowley and Fapp use to support their claim that the bridge openings are unrealistic is Tensaw bridge. They argue that using “uniform distributions of bridge openings rather than actuals creat[es] more blockages than occurred in the real world.”⁶³ This statement is puzzling and shows a complete misunderstanding of basic statistics. The distribution that Messrs. Crowley and Fapp refer to shows the random distribution of the time of day the bridge will open, not the frequency. The Tensaw bridge opens infrequently, with it modeled to only opens once per week. To determine when the bridge would open on any day, the CSXT M&M Timetable and data were used. Per the CSXT M&M Timetable,⁶⁴ this bridge is actively staffed between 10:00 am and 5:00 pm. The data does show one instance of the bridge opening outside that timeframe at 7:30 am, so a uniform distribution was used to represent that the bridge, when it does open, will only

⁵⁸ Almonaster Ave Bridge Log (2019-11-17 Day), column “Opening #”.

⁵⁹ *See id.*

⁶⁰ *See id.* Columns “Bridge Opened” and “Bridge Closed”.

⁶¹ Crowley & Fapp V.S. p. 51, Table 5.

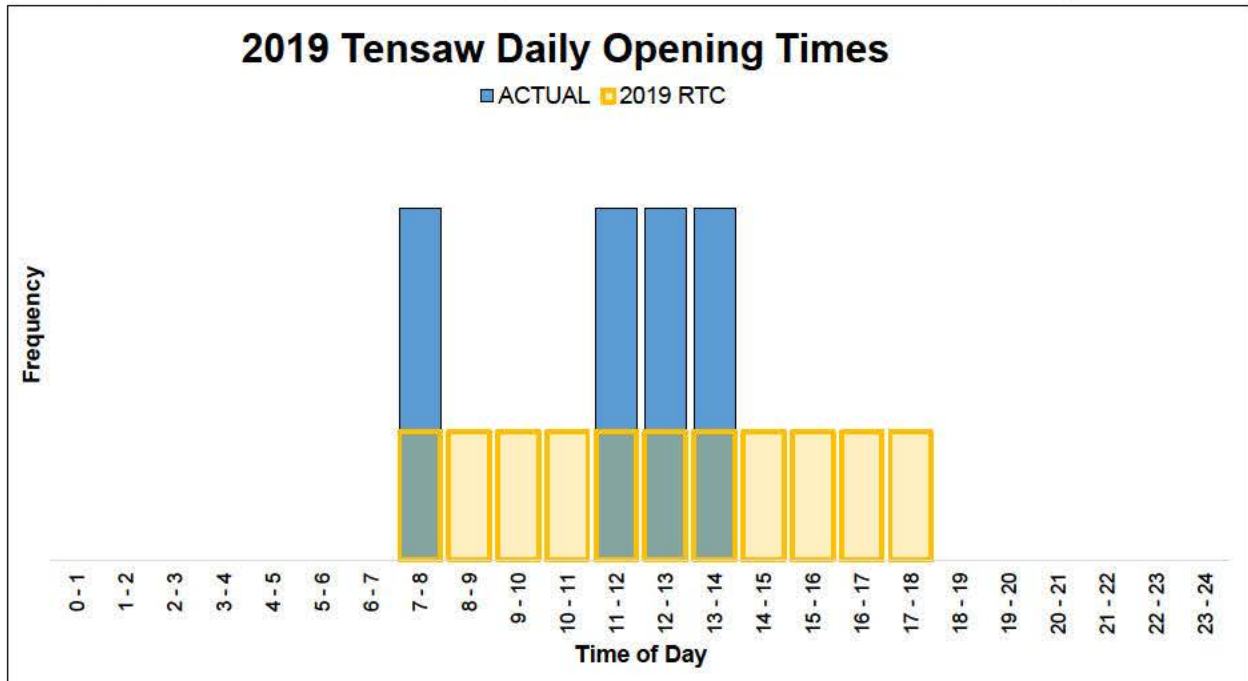
⁶² *Id.* p. 49.

⁶³ *Id.* p. 52.

⁶⁴ CSXT M&M Timetable Effective November 1, 2017, p. 7.

open between 7:00 am and 5:00 pm. The diagram from Appendix E of the 2021 RTC Modeling Report and in Figure 2 below, shows the frequency of the actual opens (blue) and the probability distribution of the openings used in the Model (yellow). The yellow bars show the potential frequency of the openings based on the modeled inputs. Using a uniform distribution has no bearing on the frequency of openings. Just because a train *could* occur at other hours does not mean that the 2021 Gulf Coast RTC Model has “openings every hour” as Messrs. Crowley and Fapp incorrectly claim.⁶⁵

Figure 2: Tensaw Bridge Opening Times found in Appendix E of the Modeling Report.



3.3 Train Characteristics, Departure Times, and Dwells.

3.3.1 Through and Local Train Lengths

As described in the Rosse and Sinkkanen Rebuttal Verified Statement, CSXT provided the RTC Modelers with an RTC .TRAIN file at the beginning of the study. This .TRAIN file included train lengths for all the trains in the model. These values, along with the other inputs provided to the RTC Modelers, were reviewed, and determined to be sufficiently representative of the train sizes on the corridor⁶⁶. Most of the sizes reflected in the Model were found to be less than the average lengths in the train profile data. If anything, using a higher value or fully randomizing the train sizes would better represent the data but also result in higher delays and increased infrastructure. By using a static number for train lengths, it ensured that only two of the train profiles were longer than the majority of sidings between New Orleans and Mobile ({{ Redacted Redacted}}). This enabled the RTC Modelers to better represent actual operations by

⁶⁵ *Id.*

⁶⁶ See “2019 CSX Length Analysis.xlsx” in workpapers.

avoiding instances where two trains longer than the available sidings would operate simultaneously.

3.3.2 Yard Train Lengths

Messrs. Crowley and Fapp use the size of switching yard trains as an example of train size errors in the Model.⁶⁷ They use {{ Redacted }} as an example. They do identify a typo in the train inputs that incorrectly changed the number of the cars by 20 but not the train length. Messrs. Crowley and Fapp further critique this train due to its length of 5,000 feet.⁶⁸ The train lengths for this yard train and all the yard trains were not selected to match any actual train sizes, but to be representative of the operational impact of the trains. During switching operations, even though a train will clear a switch does not mean it is immediately available for another train movement. The lead and mainline tracks are blocked to other train movements during switching movements even when the train is not physically occupying the space. This length, and the lengths of the trains in Mobile, were selected to ensure the tail end of the train would block the yard lead during the switching operation. If the train is modeled as too short, another train could enter the yard while the first train is switching, or a new yard train could appear on the tracks from which the first train had departed from. This train length is therefore not an error, but in fact, represents the most accurate way to model switching movements in RTC.

3.3.3 Dispatch Times

Messrs. Crowley and Fapp report that the 2021 Gulf Coast RTC Model “adjusted the dispatch times from the times agreed to by the Railroads for use in the 2020 non-litigation RTC model.”⁶⁹ They claim it was an attempt to “create more conflicts and greater delays to all trains on the network.”⁷⁰ A simple review of the data would show that not only do the adjusted times better reflect the actual departure times, but the new times also reduce the amount of variability in the 2021 Gulf Coast RTC Model, thereby having the exact opposite impact Messrs. Crowley and Fapp claim. The RTC Modelers reevaluated the provided departure times and found them to be overly conservative; it appeared that a uniform distribution covered the entire spectrum of times that trains departed in the sample data. However, this included outliers and departure times adjusted due to curfews. The new times remove departure times during a curfew on the Gulf Coast Corridor, have a smaller range, and are thereby more conservative than the original times.

3.3.4 Use of Distributions

Messrs. Crowley and Fapp claim that the RTC Modelers manipulated the inputs “to suit their needs using triangular distribution methods, i.e., a ‘lack of knowledge’ distribution”⁷¹ and that the RTC Modelers “abandoned those actual trains in favor of trains they manufactured.”⁷² This critique is centered on the premise of using a replicative model instead of a representative one. The use of distributions, including triangular distributions, was done to best depict actual variability of trains operations, using actual train data. Messrs. Crowley and Fapp were provided a workbook used to review and determine the distributions for the departure times, dwells, and bridge openings.

⁶⁷ Crowley & Fapp V.S. p. 18.

⁶⁸ *Id.*

⁶⁹ *Id.* p. 25.

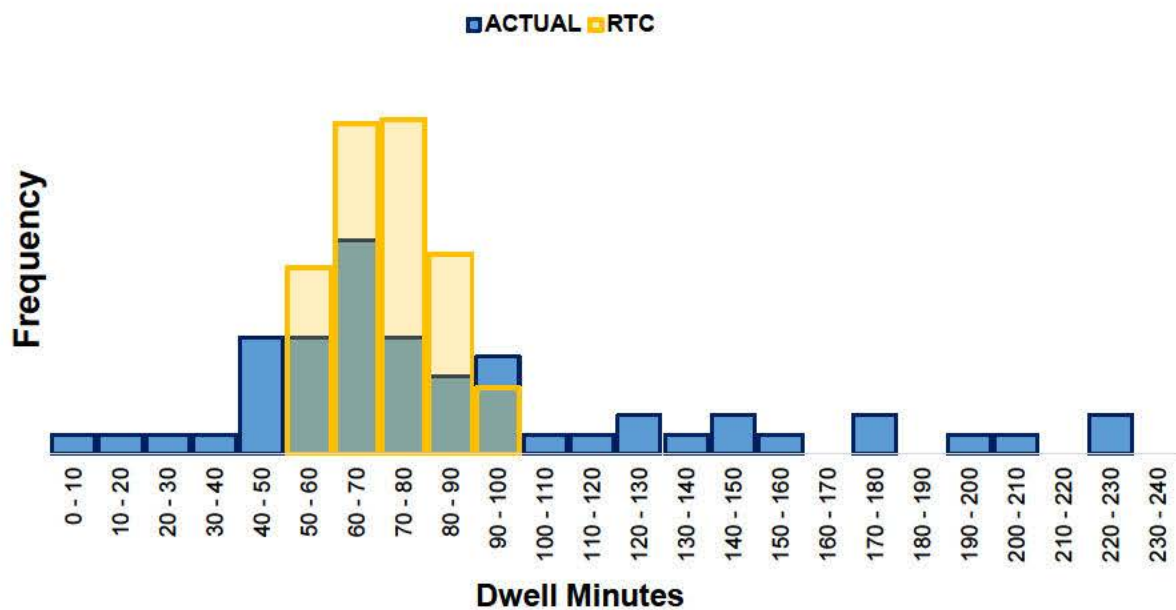
⁷⁰ *Id.*

⁷¹ *Id.* p. 11.

⁷² *Id.* p. 12.

While Messrs. Crowley and Fapp characterize the triangular distribution as a “lack of knowledge” distribution, in this study it is the best way to represent the variability of the data without including outliers. When representing train dwells and departure times, the triangular distributions were created with the maximum, not being the maximum of the entire data set, but the maximum of the preponderance of the data, removing outliers. Alternatively, if a normal distribution was used, which may actually fit the data better, the long “tails” would influence the 2021 Gulf Coast RTC Model and the results. Long “tails” or outliers in the data are rare events and far outside the normal operations. As shown in Figure 3, the selected distribution for train dwells is centered around the average, removing the tails of short and long dwells that are not representative of the actual data. Including the long tails of the dwell would greatly increase the delays and congestion in the base model and would result in additional required infrastructure to mitigate the passenger traffic.

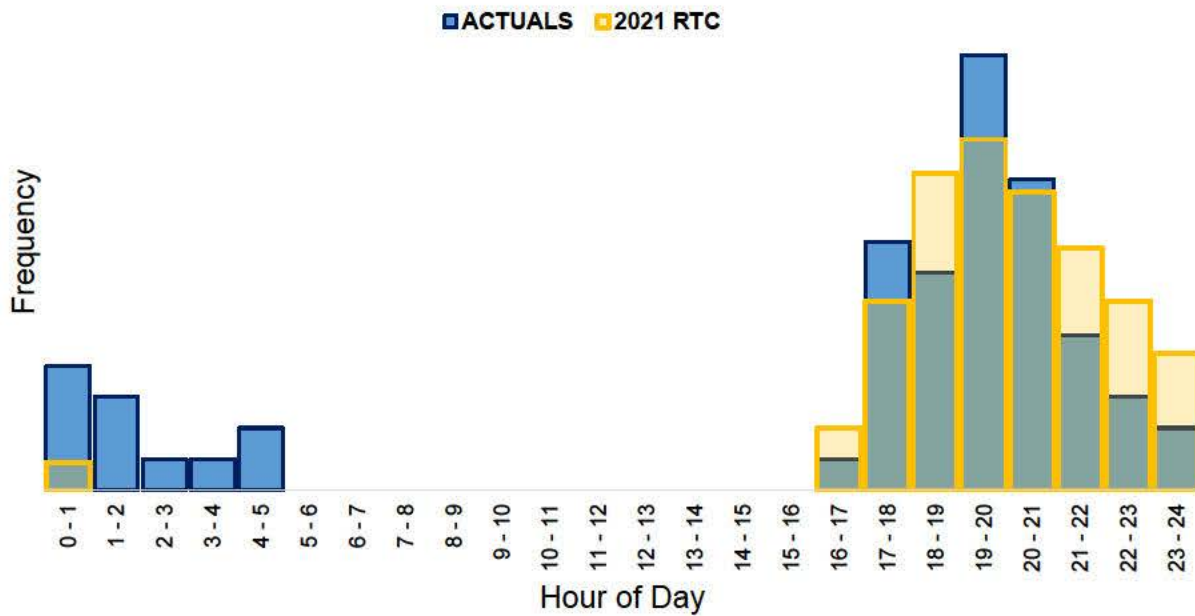
Figure 3: Train Dwell in 2021 RTC Model Triangular Distribution Vs. Actual Data of CSXT Train {{Redacted}} at Montgomery



With train departure times, the tails will increase the potential delays and impact on freight and passenger traffic as it is increasingly likely that multiple trains will enter the network at a similar time. The distributions used were carefully selected to represent actual variability without including extreme values. This can be observed in the random distribution selected for CSXT train {{Redacted}} (Figure 4).

A triangular distribution with the extreme times in the morning removed provides a conservative and accurate representation of this data.

Figure 4: Train Departure times in 2021 RTC Model Triangular Distribution
Vs. Actual Data of CSXT Train {{Redacted}}



3.3.5 Walking Speed

Messrs. Crowley and Fapp claim that the RTC Modelers “inexplicably . . . reduced the crew walk speed to two (2) MPH for all trains” as “part of a larger, cumulative effort to slow down everything possible in the model resulting in the need for more infrastructure to handle the issue traffic.”⁷³ This is yet another example of Messrs. Crowley and Fapp claiming malfeasance when inputs to best represent actual operations were used. 2 mph is a standard input used by CSXT in its internal models to best represent the actual walking speed of a crew member.⁷⁴ While walking 3 mph is possible on level terrain, walking on rough terrain is closer to 2 mph.⁷⁵ Ballast is not easy to walk on, and one would expect that railroad personnel would walk even slower while it is raining, in the heat, and/or in the dark. Therefore, setting the preferred walking speed on rough terrain to 2.0 mph is a reasonable assumption.

⁷³ *Id.* p. 46.

⁷⁴ Rosse & Sinkkanen V.S. at 12 n.11.

⁷⁵ Knight, K. Hikers trade speed and efficient for stability. *Journal of Experimental Biology*. Vol. 222. Issue 9, May 2019. Study found a walking speed of 1.07 m/s (2.39 mph) on a rugged route.

4.0 Simulation

Messrs. Crowley and Fapp argue the modeling effort is invalid since there is underutilized infrastructure,⁷⁶ improperly modeled trains,⁷⁷ and percentages were used to “play [] games” with the statistics.⁷⁸

4.1 Underutilized Infrastructure

Messrs. Crowley and Fapp state “the track in the simulations do not reflect how Class I railroads would utilize the available track,”⁷⁹ but each of the examples they provide are storage tracks that are for railcars—not sidings—and are not designed for nor used to meet trains. Messrs. Crowley and Fapp’s examples⁸⁰ listed in Table 11 are tracks that would not be used for mainline train operations or the volumes affected are so low that they would not be needed.

**Table 11: List of Examples of Underutilized Infrastructure
in the Crowley & Fapp Verified Statement**

Location	Page	Response
Chester Yard	41	There is no double-track mainline running through the yard. The second track is a yard track, as labeled in RTC, and unused tracks are all yard tracks for storing cars and would not be used for mainline operations.
Gentilly Yard	42, Exhibit No. 7 page 10	Yard tracks are not used to meet trains. The track identified are only modeled to be used by the yard switching movements. These tracks are too short (<5,000 feet) to be used to arrive and depart trains.
Flomaton	43	On average, only two local trains per day travel south towards Pensacola. The tracks identified are storage tracks or yard tracks, and are not designed for or used for train meets. It is common for trains to block switches accessing yard and storage tracks, especially on low-volume routes.
Montgomery	Exhibit No. 7 pages 8, 9	The yard tracks are either blocked by cars or required to represent the operations of the terminal area. The Day Street Siding has hand thrown switches and is required to be used since the volumes on that route are low. See Appendix A, page 5.

4.2 Improperly Modeled Trains

Messrs. Crowley and Fapp also argue that the 2021 Gulf Coast RTC Model improperly modeled dwell times since the trains often use the “main line to conduct operations, even when there is an available siding, industry, or yard directly adjacent to the train.”⁸¹

Their prime examples are train {{ Redacted }} in a “passing siding,” and {{ Redacted }} next to a siding.⁸² For {{Redacted}} as can

⁷⁶ Crowley & Fapp V.S. p. 40–44.

⁷⁷ *Id.* p. 54.

⁷⁸ *Id.* p. 10–11.

⁷⁹ *Id.* p. 40.

⁸⁰ *Id.* p. 40–44.

⁸¹ *Id.* p. 54.

⁸² *Id.* p. 52, Exhibit No. 8 p. 5.

be clearly seen in Figure No. 6 of the Crowley & Fapp Verified Statement, the train is in an industrial track, correctly is coded as industrial link class track in RTC, and would never be used to meet trains. Appendix A, page 6, that shows the track types are easily identifiable based on the name and color in the model.

Train {{Redacted}} is actually conservatively modeled. As observed in the dispatch data, the train occupies the main but also moves around blocking each end of the siding, and sometimes the siding itself⁸³. Having the train dwell without these other movements actually enables other trains to travel in the siding around the train movement.

Messrs. Crowley and Fapp claim that “[a]ny Class I railroad would only dwell a train on the mainline as a last resort, but the [2021 Gulf Coast RTC Model] includes trains that dwell on the main line for no explained reason.”⁸⁴ Messrs. Crowley and Fapp make this assertion without providing any evidence. The movements of the trains in the 2021 Gulf Coast RTC Model not only can be supported by the dispatch data, that dispatch data was confirmed by field personnel. In addition, and as described in the Rosse and Sinkkanen Rebuttal Verified Statement,⁸⁵ it is quite common for locals to work from the mainline. Messrs. Crowley and Fapp provide further examples of this so-called “last resort” activity in Exhibit 8 to their verified statement. In every case, these activities are correctly modeled in the 2021 Gulf Coast RTC Model, and the reasoning is provided below in Table 12.

⁸³ See A015.xlsx in workpapers.

⁸⁴ *Id.* p. 55.

⁸⁵ Rosse & Sinkkanen V.S. at 12.

Table 12: List of Examples of Improperly Modeled Trains in Crowley & Fapp V.S.

Location	Page	Response
South end of Gentilly	Exhibit No. 8 page 1	When a train is switching, it is not possible for other trains to enter the yard. The train was modeled to best represent this action.
South end of Gentilly	Exhibit No. 8 page 2	Same as above.
Harrison Spur	Exhibit No. 8 page 3	This local is accurately modeled on the mainline. This is clear in the dispatch data and documented in the Appendices of the Gulf Coast Working Group's 2017 Report to Congress (p. L-2). ⁸⁶
Mobile, Choctaw Yard	Exhibit No. 8 page 4	Empty coal trains departing the McDuffie Coal pier must park on the mainline while swapping crews and doubling up the train. This movement was identified by field personnel and confirmed in the data. This accurately limits the ability of {{Redacted}} to arrive. {{Redacted}} is a train that connects between TASD Interchange Yard and TASD Riverfront Yard. This requires the train to enter the CSXT mainline and shove back into Riverfront Yard, which is the dwell that is shown.
McGehees Siding	Page 55, Exhibit No. 8 page 5	See section above for response.
Montgomery	Exhibit No. 8 page 6	{{Redacted}} in the data works out of Vera Siding, which is an alternate node from this location. Trains were permitted to dwell at this location to reduce congestion as Montgomery was not a focus of the modeling effort.
Harrison Spur	Exhibit No. 8 page 7	See description for Harrison Spur above. This is not due to a modeling setting, but that {{Redacted}} must work off the mainline.
KCS Interchange	Exhibit No. 8 page 8	{{Redacted}} stops here on half of all days, with an average of nearly 40 minutes. This train leaves the tail end of the train on the mainline when picking up and dropping off cars with KCS.
Pascagoula	Exhibit No. 8 page 9	The train requires headroom on the mainline. The blockage of the mainline when working at this location is documented in the Appendices of the Gulf Coast Working Group's 2017 Report to Congress (p. L-3).
Gautier	Exhibit No. 8 page 10	The dwell identified is the train clearing the switch before shoving back to pick up the cars left in the siding.
Maintenance-of-Way	Exhibit No. 8 page 11	A detailed description of the accuracy of how maintenance-of-way was modeled can be found in Section 3.2.3.3.
Bridge Delay	Exhibit No. 8 page 12	It is unclear why Messrs. Crowley and Fapp find it incorrect that a train is delayed for a bridge opening.
Maintenance-of-Way	Exhibit No. 8 page 13 & 14	It is a decision by the RTC logic, not the RTC Modelers for {{Redacted}} to wait on the mainline and {{Redacted}} in a siding for the permit. The windows are random, and the RTC Modelers cannot make individual decisions about how the trains are dispatched in the model.

⁸⁶ The Gulf Coast Working Group's 2017 Report to Congress ("GCWG Report") and related appendices are Appendix B to Amtrak's Application and are publicly available at <https://railroads.dot.gov/elibrary/gulf-coast-working-group-report-congress> and https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/17158/2017-06-27%20Appendices%20-%20Gulf%20Coast%20Report.pdf.

4.3 Use of Percentages

Messrs. Crowley and Fapp claim that the RTC Modelers “play [] games” with their statistics by using percentage changes instead of absolute differences.⁸⁷ When considering RTC outputs, any modeler must be careful about how the results are presented. As described in the 2021 RTC Modeling Report⁸⁸ and this rebuttal, RTC does not fully capture all events that occur on a railroad. While it is a strong tool for suggesting the amount and location of track infrastructure improvements, one must be careful in comparing alternative scenario results to actual values. As described in the Rosse and Sinkkanen Rebuttal Verified Statement, when performing RTC modeling, once a validated base case is developed all results should compare RTC results to RTC results.⁸⁹ If the absolute difference was used instead of percentages, the general audience will compare this number to their own experiences, without a knowledge foundation of how the absolute difference may impact a railroad network or an appreciation for the fact that the absolute difference statistic comes from a simulation model.

Underlying the statement by Messrs. Crowley and Fapp that “trains speeds only change 0.7 mph”⁹⁰ is the perspective that somehow a decrease in speed of 0.7 is acceptable. The 0.7 mph difference in the 2019 Passenger Case and 2019 Base Case (misreported as 2039 by Messrs. Crowley and Fapp) equates to over 13 hours of additional delay per day due to passenger traffic.⁹¹ The percentage, 4.5%, better describes this impact than simply describing a change of 0.7 mph.

5.0 Solution Set

Messrs. Crowley and Fapp erroneously assert that the solution set is invalid as it is unsupported since no projects are needed, no non-infrastructure solutions were evaluated, and each project was not modeled individually.

5.1 Consideration of Non-Infrastructure Solutions

Amtrak’s Reply states that the modeling does “not even consider solutions other than significant new infrastructure, such as whether more efficient use of existing infrastructure, schedule adjustments, dispatching decisions, or minor signal improvements could address any impacts from the *Gulf Coast* service.”⁹² It is not clear what “minor signal improvements” Amtrak is referring to in this statement, but it is likely it is referring to the projects proposed by the FRA in the Gulf Coast Working Group’s 2017 Report to Congress. Modeling was performed to evaluate these projects and the results are set forth in Appendix F of the 2021 Gulf Coast RTC Report. It was found that not only did these FRA-proposed projects not mitigate the passenger impact to freight, but many of these projects are not feasible due to limits with railroad signals (siding speed improvements) or circumstances outside the control of CSXT, NSR, or Amtrak (grade crossings or requiring significantly more effort and cost than

⁸⁷ Crowley & Fapp V.S. p. 10-11.

⁸⁸ 2021 Gulf Coast RTC Report at 23.

⁸⁹ Rosse & Sinkkanen V.S. at 28–29.

⁹⁰ Crowley & Fapp V.S. p. 10.

⁹¹ See Percentages.xlsx in workpapers

⁹² Amtrak’s Reply Argument and Evidence at 34.

estimated (miter rails). As described in the 2021 Gulf Coast RTC Report, no freight train schedule changes were considered since “many freight trains involved in this study operate well off of the geography covered by this study and consequently have connections across the broader CSXT and NSR rail networks. Changing schedules could increase congestion or result in longer travel times for shipments.”⁹³ Also, due to the variability of freight traffic, it is not feasible to schedule freight trains into dedicated slots to avoid passenger traffic as is proposed by DB Engineering. Changing the schedules of locals or through traffic would have a direct impact on freight shipments and shippers along the Gulf Coast Corridor and beyond.⁹⁴

5.2 Modeling Projects Individually

Amtrak argues that CSXT and NSR “do not explain how these system-wide numbers are affected by the projects they propose at various locations”⁹⁵ or “offer any order of priority for the projects.”⁹⁶ The modeling found that all 14 projects are required in 2039 with a subset of 11 of those projects necessary in 2019. Narratives of the benefit of each project are provided in Appendix D to the 2021 Gulf Coast RTC Report, but since all the projects are required to mitigate the impact of passenger service on freight service, individual consideration does not make sense.

5.3 Impact on NSR Interchange Partners

Amtrak’s Reply states that the “the recommended infrastructure would go above and beyond . . . current capacity needs, and the growth forecast.”⁹⁷ The modeling showed, however, that there is a significant degradation of service on CSXT, NSR, and NSR’s interchange partners in New Orleans. The projects were selected to mitigate the delays to CSXT and NSR trains due to the introduction of Amtrak’s proposed Gulf Coast passenger service in 2019 and 2039.

However, the recommended infrastructure does not address the substantial delays to connecting rail partners in New Orleans. The RTC model revealed that the proposed passenger service resulted in additional delays to NSR’s interchange partners in New Orleans that could not be fully mitigated even with the completion of all 14 proposed projects. Since the other freight railroad’s infrastructure and operations were not included in the modeling effort, the full impact of the delays to the networks of other freight carriers was not fully quantified. Given Amtrak’s attempts to exclude meaningful participation by other impacted carriers, however, the RTC Modelers performed additional analysis of the impact of Amtrak’s proposed passenger service on interchange carriers in connection with the 2021 RTC Rebuttal Report. This additional analysis, described below, demonstrates that Class I interchange railroads and shortlines will also be impacted by Amtrak’s proposed passenger service, and to

⁹³ 2021 Gulf Coast RTC Report at 27.

⁹⁴ The claim that NSR or CSXT could simply reschedule its freight rail operations ignores the potential impact of those actions on freight rail customers who schedule rail-related activities (potentially resulting in the need to add additional staff for loading/unloading operations) or the downstream effect of modified freight schedules on freight and passenger rail services outside of the studied geographic area. In fact, keeping freight rail service operations steady is a conservative approach to mitigate the need to evaluate impairment to freight rail service on a far more expanded geographic region.

⁹⁵ Amtrak’s Reply Argument and Evidence at 35.

⁹⁶ *Id.* at 33.

⁹⁷ Amtrak’s Reply Argument and Evidence at 34.

meaningfully mitigate the impact on such carriers, an additional project in New Orleans is necessary.

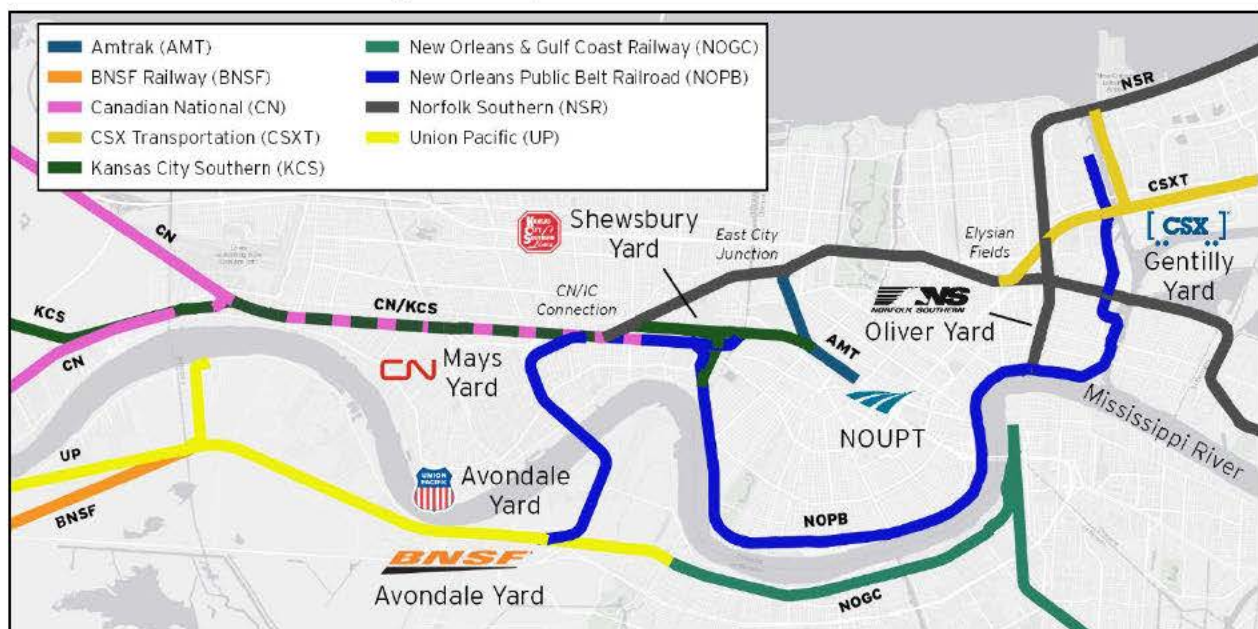
5.3.1 New Orleans Operations

New Orleans terminal is a major junction for North American railroads.⁹⁸ In addition to CSXT, NSR, and Amtrak, the following railroads have operations in the terminal: Union Pacific Railroad (UP), BNSF Railway (BNSF), Canadian National Railway (CN), Kansas City Southern Railway Company (KCS), New Orleans and Gulf Coast Railway (NOGC), and New Orleans Public Belt Railroad (NOPB) (Figure 5). Most of the traffic across all carriers in the terminal passes over the same NSR-owned and operated portion of the Gulf Coast Corridor over which the proposed passenger service will operate. The west end of the NSR track is a major junction with CN, KCS, NOPB, BNSF, CSXT, and UP (interchange partners). Four trains per day (two in each direction) interchange directly between their rail corridors and NSR. An additional ten trains a day (five in each direction) cross the NSR while transferring between CSXT and various other interchanging railroads.

Whenever a train transfers between railroads, both the departing railroad and arriving railroad must be able to accommodate the move within the same window of time. When a train transfers from an interchange railroad to CSXT, three railroads must all have an open, clear route to avoid causing delays because all such trains must traverse NSR track to reach CSXT. New Orleans has complex terminal operations with multiple yards, a significant amount of freight traffic, and three existing Amtrak routes. Yard tracks are often blocked due to yard trains switching cars and utilizing the mainline for that work, local train movements, or other through trains arriving and departing. It is a regular occurrence that several freight trains are delayed because of the terminal operations within the yards. The dwelling on the NSR track is compounded further when freight trains wait to interchange with other carriers (sometimes for extended periods).

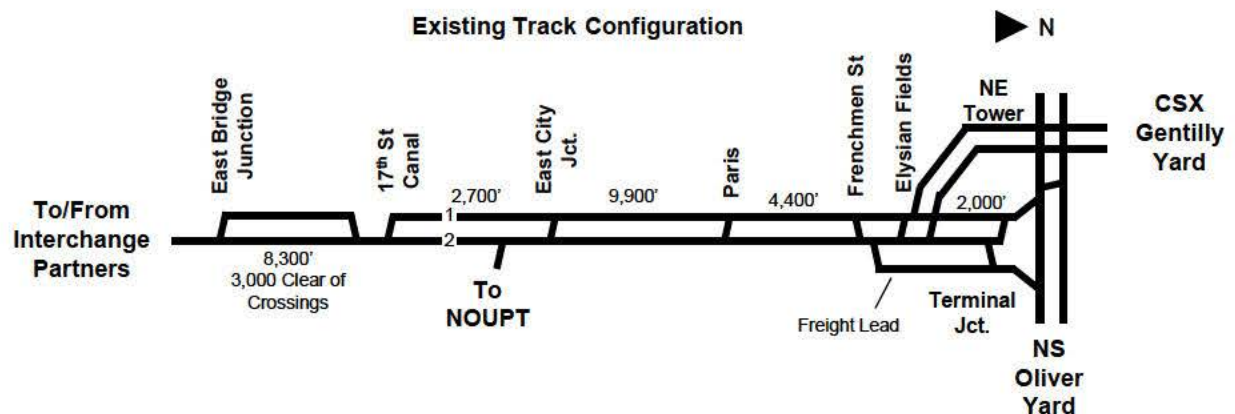
⁹⁸ The Gulf Coast Working Group Report to Congress, submitted by Amtrak in its opening petition, makes this clear, referring to it as a "critical link in the east-west distribution of freight traffic and allow[ing] access to Canada and Mexico" and further stating that "[i]nitiating additional passenger frequencies in this congested area may have operational impacts beyond those already studied separate from this effort, as a result of the occupation of the terminal area track that is otherwise used by these freight carriers on through and connecting routes and in order to interchange traffic. Additionally, within one 3.3-mile segment of an anticipated new route, there are three different dispatching entities (Amtrak, NS and CSX)." GCWG Report at 10.

Figure 5: Map of New Orleans Railroads



Trains are unable to dwell while delayed between the CN/IC Connection and 17th Street Canal due to the number of at-grade crossings (Figure 6). All trains waiting to interchange, both eastbound and westbound, must dwell between 17th Street Canal and Elysian Fields. The interchange trains arriving on NSR work at Oliver Yard and occupy the mainline for more than 12 hours every day as they pick up or set out cars and locomotives before departing. Eastbound freight trains sit at Terminal Junction, with most of those freight trains blocking the Elysian Fields connection to CSXT. Longer freight trains will also block the Paris crossover. Yard movements combined with sitting freight trains leave only a single-track available for other train movements between Terminal Junction and East City Junction.

Figure 6: NSR New Orleans Existing Track Schematic



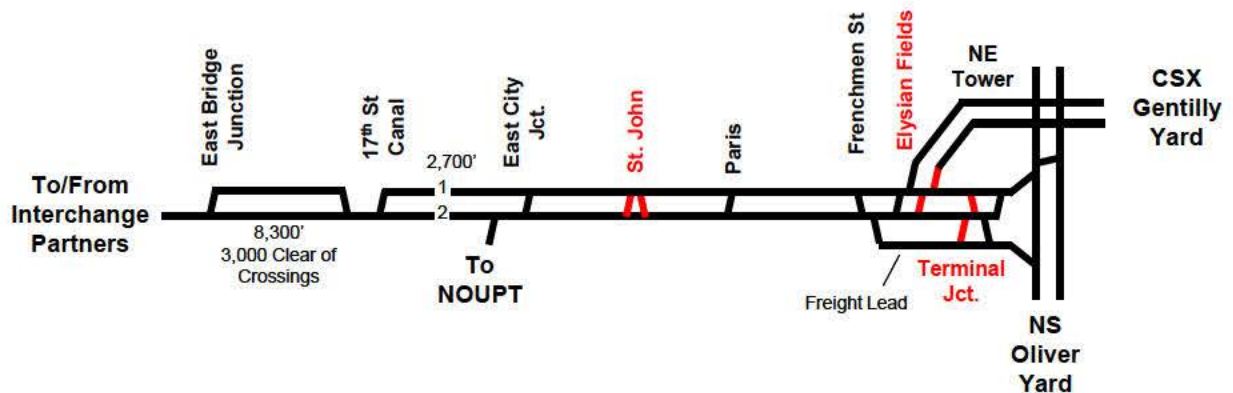
By 2039, both the number and length of trains traveling on NSR will increase. These changes, in turn, will increase the frequency and duration of the delays and the likelihood that a train working at Oliver Yard will be blocking the Paris crossover. The section of track between East City Junction and Terminal Junction will be limited to a single track for most of the day. Even without the proposed passenger service, this single track will share operations with Amtrak, eastbound interchange trains, westbound interchange trains, local trains, and yard switching movements.

It is often the case that a train is working at Oliver Yard on Main 2 while another train is waiting to interchange on Main 1. This leaves no open track for a passenger train. To avoid delaying the passenger trains, freight traffic must be held back to keep the track clear. This results in delays both to the east of NE Tower and also to trains waiting to arrive on NSR from its (and CSXT's) interchange partners. Currently, this occurs twice per day for the Amtrak Crescent service (trains 19 and 20). The modeling shows that there will be sufficient capacity on NSR in 2039 to accommodate the existing twice-a-day Amtrak Crescent trains and the projected freight traffic. However, the proposed Gulf Coast service will add an additional four passenger trains per day over NSR trackage in New Orleans, and with each additional passenger train, the freight traffic will be further delayed, resulting in increased interruptions to the interchange railroads.

5.3.2 Proposed Project

Three sets of crossovers were proposed as part of the Modeling Report's Build projects: St. Johns, Elysian Fields, and Terminal Junction (Figure 7). These projects enabled more fluid and flexible movements in the terminal to lower the interference between passenger and freight trains. However, the projects do not provide any additional capacity for trains to sit during any delay events and the projects did not sufficiently mitigate the increased delays on the interchanging railroads.

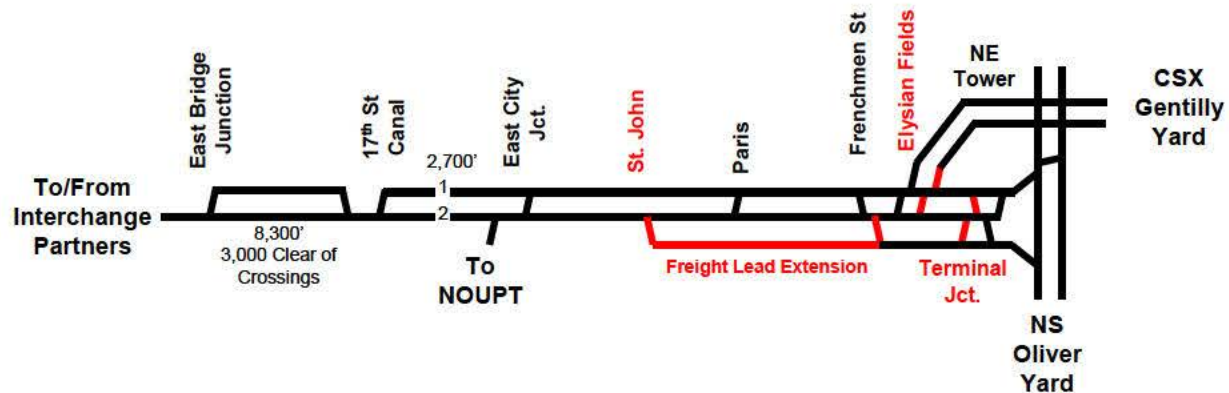
Figure 7: Originally Proposed NSR New Orleans Infrastructure



An additional solution was identified to mitigate the delays to the interchange partners: the extension of the Freight Lead from 3,900 feet to 12,000 feet. Due to limited right-of-way, bridges, and grade crossings, there are few locations along NSR's Back Belt that can support a third track. The Freight Lead Extension provides a third track to enable trains working at NSR's Oliver Yard or holding to operate north to keep the two mainline tracks clear for passenger and interchanging traffic (Figure 8), thus

eliminating the need for the St. Johns crossover proposed in the Modeling Report.⁹⁹ However, Terminal Junction crossovers are still required to enable train movements from the Freight Lead and the Elysian Fields crossover primarily benefits passenger trains. The Elysian Fields crossover enables the freight trains that are delayed at NE Tower to not limit the movement of any passenger trains to and from CSXT.

Figure 8: Alternative Proposed NSR New Orleans Infrastructure Project

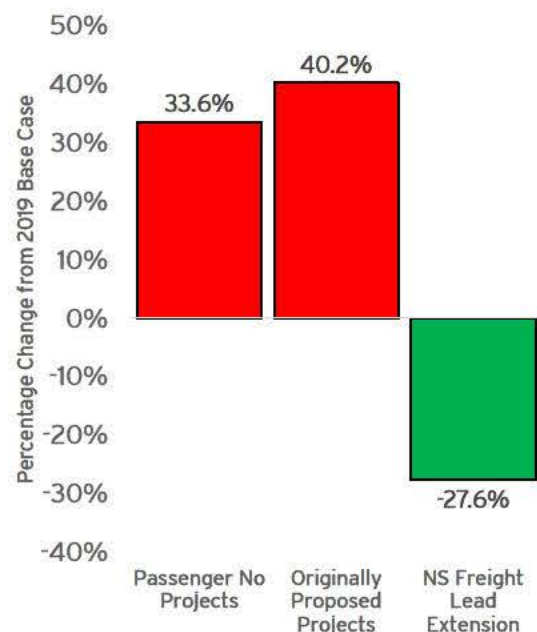


5.3.3 RTC Modeling Results

The Modeling Report found that while the projects were able to mitigate the delays for the trains traveling on NSR, there was a shift in the location of the delays from the NSR Back Belt to the interchange partners including BN, UP, KCS, and CN. In 2019, the proposed projects, while reducing overall delays, actually resulted in a slight increase in delays to the interchange partners (Figure 9). The full impact of this increase in delay cannot be fully quantified as the operations of the interchange railroads were not comprehensively modeled. These delays will likely result in additional knock-on,¹⁰⁰ or cascading, delays to other traffic and could result in delays to the existing two Amtrak routes that already operate on interchange partners out of New Orleans (Sunset Limited on UP, City of New Orleans on CN).

The inclusion of the Freight Lead Extension fully mitigates the impact of the proposed passenger service. It will enable the track infrastructure to support both the proposed

Figure 9: Change in Interchange Delay as Compared to 2019 Base Case



⁹⁹ The Freight Lead Extension is designed as a replacement for the St. John crossover. If the Freight Lead Extension is not constructed, the St. John crossover is required to mitigate the impact of passenger traffic to freight traffic in the terminal.

¹⁰⁰ A primary, or direct, delay from a passenger train can result in secondary, or knock-on, delays. This is the result of the originally delayed train operating slower, resulting in longer and more frequent train meets, which can affect subsequent trains as well. In congested networks, these secondary delays can be significantly larger than the primary delays created by the addition of passenger traffic.

passenger service as well as the projected freight growth. The Freight Lead Extension was not included in the Modeling Report because of the potential cost of construction. However, no alternative project was found to fully mitigate the risks of delays to the interchange partners.

All freight trains traveling between Oliver Yard and East Bridge Junction are interchanging, and any disruption on this section of track results in widespread impacts to the entire region.

Appendix A

Response to Exhibit No. 7 Page 1

Google Earth



The tracks identified are clearly shown to include cars and not used to meet trains. This PBVR connection is only a single train in the simulation and would have no need to meet another train.

Redacted - Confidential

Redacted - Highly Confidential

Google Earth



Redacted - Highly Confidential

Redacted - Confidential and Highly Confidential Material

Redacted - Confidential and Highly Confidential Material

Google Earth



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Appendix B to Exhibit 1

Resume of Mark H. Dingler of HNTB Corporation

Mark H Dingler

Senior Rail Simulation Project Manager

Mark Dingler has 13 years of experience working in the railroad industry with extensive experience in rail capacity and simulation modeling, built on a broad knowledge of railroad engineering and operations. In graduate school he developed an understanding of railroad capacity theory, performing research using Berkeley Simulation's Rail Traffic Controller (RTC) to quantify the impact of train attributes and technologies on rail capacity. Upon graduation Mark joined CSX Transportation where he worked in the Service Design, Finance and Engineering Departments. At CSXT he supported or led all line-of-road simulation projects with a primary focus on commuter and passenger rail projects. Using his analytic and programming skills, Mark developed new methods on how CSXT studies capacity, developed tools to improve locomotive utilization and improved track geometry data used in capital planning. At HNTB he leads the RTC Simulation modeling group and has led intercity passenger, commuter feasibility and freight rail congestion studies. He is an expert in the impact of passenger operations on freight through his extensive work experience and multiple published research papers.

HNTB experience includes the following:

Metra, OAR7 O'Hare/A-2/Rock Island 75th St CIP (OAR7) Funding Strategy, IL
RTC modeling lead of Rock Island service and O'Hare Express Service. Modeling determined additional capacity required to support the movement of the Metra Southwest Service onto Rock Island. O'Hare Express modeling considered potential operations and infrastructure to support a new express train service from Union Station to O'Hare Airport.
Services: 05/2021 – Present

Metra, A-2 RTC and Value Engineering Study, IL
RTC modeling lead of A-2 interlocking value engineering study. A-2 interlocking is the busiest interlocking in the region's entire transportation network and has been a critical bottleneck and source of train conflict that reduces on-time performance. Model included two downtown terminals, two storage yards and six Metra commuter lines. The RTC model was calibrated against existing train operations and used to evaluate capacity impact during construction and potential value engineering alternatives.
Services: 12/2020 – Present

Florida Department of Transportation, FEC Trespass Mitigation Project, FL
Project manager responsible for the study of trespassing on the nearly 200 mile Florida East Coast Railway (FECR) Corridor between Cocoa and Miami. Performed analysis of historical data, spatial analysis of GIS data, and review of aerial imagery was performed to determine potential areas where repeated trespassing is likely to have occurred. Managed a field review of the rail corridor, determination of corrective engineering solutions, and development of conceptual designs for 70 potential trespassing mitigation projects.
Services: 09/2020 – 05/2021

MARK H DINGLER, PE

Firm

HNTB Corporation

Education

M.S., 2010, Civil Engineering, University of Illinois, Urbana-Champaign, IL
B.S., 2007, Civil Engineering, University of Illinois, Urbana-Champaign, IL

Professional Registrations

Professional Engineer (FL 92339)

Professional Affiliations

American Railway Engineering and Maintenance-of-Way Association

Hire Date with HNTB

July 2018

Years of Experience with other Firms

10

Massachusetts Bay Transportation Authority, Draw 1 Bridge Replacement Project, MA

This study considered the replacement of movable bridges and major track reconfigurations at the MBTA North Station. Mark supported RTC modeling of the complex MBTA North side commuter train operations including the terminal and all rail lines. Historical delays were analyzed for representative random distributions that were integrated into the train operations. This randomization resulted in a model that was validated against historical on-time performance measures. This model was then used to quantify construction staging impacts and study the benefits and weaknesses of various bridge and terminal configurations.

Services: 04/2020 – 10/2020

Texas Department of Transportation, Houston Rail Freight Study, TX

RTC modeling lead for a Houston Freight Rail Study. The study evaluated the costs and benefits of various track capacity and grade crossing separation projects in the Houston Area. The RTC model, with thousands of trains covering a week of freight rail operations in the terminal, was built and calibrated against current operations. Worked closely with freight railroads to obtain data, understand terminal operations and develop potential projects. Projects were evaluated for public benefit including reduced train congestion, reduced truck congestion, and reduced grade crossing blockages.

Services: 06/2019 – 01/2021

MARK H DINGLER

Jacksonville Transportation Authority, JTA Commuter Rail Feasibility Study, FL

Managed study to determine capital and operating cost of proposed commuter rail service between Jacksonville, FL and St Augustine, FL. Created an RTC simulation model of existing railroad operations. Evaluated numerous operational and infrastructure scenarios to allow client to see tradeoff between frequency and required infrastructure. Developed train plan by determining the train schedule, required number of vehicles and mid-day storage requirements to meet specified headways. Created capital and operating cost estimates for selected alternative.

Services: 03/2019 – 08/2020

Florida Department of Transportation, Review of Gulf Coast Passenger Rail Initiative Cost Estimate, FL

Project manager responsible for the determination of the cost to add passenger service between New Orleans, LA and Orlando, FL. Developed and ran RTC simulation models to provide an objective determination of required infrastructure upgrades when adding passenger service to a freight only corridor. Worked closely with engineering providing construction cost estimates to find most cost-effective projects.

Services: 07/2018 – 12/2018

Brightline, Orlando to Walt Disney World Extension, FL

Project involves the construction of new higher-speed rail from Orlando International Airport to Walt Disney World. Alignment makes use of existing track, highway right-of-way and median. Tasks included developing cost estimates, developing and modeling of multiple track infrastructure alternatives to evaluate special trackwork requirements, impact of shared operations on the Central Florida Rail Corridor and train plans for proposed commuter service on the corridor.

Services: 07/2018 – Present

Prior to joining HNTB, Mark's relevant project experience included the following:

CSX Transportation, Jacksonville, FL – Engineer for Scheduling and Analysis who planned routes and managed three rail bound geometry cars to complete required testing, resulting in CSXT's most geometry tested miles ever. Prepared reports and analyzed data for the engineering department.

Start – End Date: 05/2016 – 06/2018

CSX Transportation, Jacksonville, FL – Manager of Network Service Quality who supported track maintenance by developing a subdivision congestion scoring system that highlighted the best times to perform maintenance to reduce conflicts with traffic. Completed analytics that found crew savings while reducing operational variability by analyzing train tonnage capacities. Created a tool to increase speed and accuracy of monthly horsepower per hour settlements between railroads.

Start – End Date: 05/2015 – 05/2016

MARK H DINGLER

CSX Transportation, Jacksonville, FL – Modeling and Analytics Manager who performed capacity planning for public projects through simulation modeling and data analytics. Led capacity analysis for all Amtrak and commuter projects developing passenger rail projects for MARC and VRE and Commonwealth of Virginia. Won a CSXT Chairman's Award of Excellence for support of negotiations that resulting in CSXT receiving \$500M from the Commonwealth of Virginia for new capacity improvements. Created new analytical methods and tools that transformed how CSXT evaluates capacity and network performance. Built new tools and methodologies to reduce the time to build simulation models. Engaged government and academia as a member of Transportation Research Board (TRB) committees on railroad operating technologies and capacity.

Start – End Date: 08/2010 – 05/2015

University of Illinois, Urbana-Champaign, IL – Graduate Research Assistant who managed undergraduate research assistants, published papers and presented research at numerous conferences. Master's Thesis was "The Impact of Operational Strategies and New Technologies on Railroad Capacity." Used simulation modeling to study impact of train performance attributes on capacity. Evaluated technologies including moving block and electronic brakes for capacity benefit. Took multiple railroad classes covering signaling and train control, railroad engineering, high speed rail engineering and railroad construction management

Start – End Date: 01/2008 – 06/2010

Publications

Dingler, M.H., Y-C. Lai and C.P.L. Barkan (2009) Impact of train type heterogeneity on single-track railway capacity. Transportation Research Record - Journal of the Transportation Research Board. No. 2117: 41–49.

Dingler, M.H., Y-C. Lai and C.P.L. Barkan (2010) A review of the effects of CBTC and ECP brakes on railroad capacity. Transportation Research Record: Journal of the Transportation Research Board, No. 2159, pp. 77–84.

Lai, Y-C, M. H. Dingler, C-E Hsu, P-C. Chiang (2010) Optimizing train network routing with heterogeneous traffic. Transportation Research Record: Journal of the Transportation Research Board, No. 2159, pp. 69–76.

Dingler, M.H., Y-C. Lai and C.P.L. Barkan (2013) Mitigation train-type heterogeneity on single-track line Proceedings of the Institute of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, Vol. 227 No. 2, pp. 140-147

Exhibit 2

Rebuttal Verified Statement of
Hannah Rosse and Holly Sinkkanen

Highly Confidential Information Redacted

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

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

**CSX TRANSPORTATION, INC. AND NORFOLK SOUTHERN RAILWAY
COMPANY'S JOINT REBUTTAL EVIDENCE**

**REBUTTAL VERIFIED STATEMENT OF
HANNAH ROSSE AND HOLLY SINKKANEN**

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I. INTRODUCTION

Our names are Hannah Rosse and Holly Sinkkanen. We are, respectively, the former Director of Service Measurements and Network Modeling for CSX Transportation, Inc. (“CSXT”), and the Manager Strategic Capacity for Norfolk Southern Railway Company (“NSR”). Our backgrounds are described in our prior testimony in this proceeding.

On November 3, 2021, we filed a Verified Statement to explain the data and information provided to R.L. Banks & Associates and HNTB Corporation (“RTC Modelers”) for inclusion in the Rail Traffic Controller (“RTC”) modeling study of the proposed passenger service between New Orleans, Louisiana and Mobile, Alabama (“2021 Gulf Coast RTC Model” or the “Model”). In that statement, we described the significant inputs into the Model including the physical network and .TRAIN file for each freight railroad, moveable bridge data, maintenance-of-way windows, yard train operations, and proposed passenger operations. We also described the various “Cases” that comprised the 2021 Gulf Coast RTC Model.

On December 3, the National Railroad Passenger Corporation (“Amtrak”) filed its reply argument and evidence in this proceeding, which included a Verified Statement of Thomas D. Crowley and Daniel L. Fapp of L.E. Peabody & Associates, Inc. (“Crowley & Fapp V.S.”) that challenges the legitimacy of the 2021 Gulf Coast RTC Model. As a threshold matter, Messrs. Crowley and Fapp’s testimony rests on the incorrect belief that a representative RTC model is less accurate or useful than a replicative RTC model that mirrors an exact two-week period of train data. The Crowley & Fapp V.S. also offers unfounded criticisms of CSXT and NSR’s data inputs (including foreign railroad data), conservative growth projections, and moveable bridge data. Most strikingly, the Crowley & Fapp V.S. reveals that Messrs. Crowley and Fapp lack an understanding of the train data sources provided

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to the RTC Modelers by the railroads, which may explain their misuse and mischaracterizations of those data sources in challenging the trains modeled in the 2019 Cases. We address Messrs. Crowley and Fapp's claims in detail herein.

II. FREIGHT RAILROADS ROUTINELY UTILIZE “REPRESENTATIVE” RTC MODELS RATHER THAN “REPLICATIVE” MODELS.

The Crowley & Fapp V.S. claims that, because the RTC Modelers did not use “actual CSXT and NS data for an actual two (2) week period in 2019” to develop the 2019 Base Case, the 2021 Gulf Coast RTC Model “bears little resemblance to real-world CSXT and NS operations.”¹ Yet it is precisely because railroads want to model real-world conditions that representative models are used. Messrs. Crowley and Fapp's accusation that the RTC Modelers “manufactured” trains by creating a representative model reveals a complete lack of appreciation for the complexity and variability of a freight network.² This shortsighted view conflicts with how CSXT and NSR model freight corridors in the ordinary course of business and how RTC models reviewed and vetted by Amtrak to study the prior institution of new passenger service were developed.

Freight volumes and operations change throughout the year as customer demand and resources fluctuate. For this reason, freight railroads commonly develop RTC models by first collecting data over a long period of time (*e.g.*, several months) and then condensing that data into a robust, representative model, as CSXT and NSR did here. Beginning with a larger data set allows the model to contemplate a more robust set of operating circumstances occurring on the modeled portion of the network that may not be present in a smaller data set.

¹ Crowley & Fapp V.S. at 3 ¶ 1, 11–12.

² *Id.* at 3 ¶ 1, 12.

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A representative model is developed by fitting a distribution to the actual data for relevant variables (*e.g.*, departure time, dwell time) for each train and then randomly sampling from that probability distribution many times (*e.g.*, a 14-day simulation period multiplied by the number of seeds for each variable for each train). Rather than a static 14-day snapshot of the network (“exact” or “replicative” model), the modeler is able to test the scenarios and solutions many times against the representative model, and therefore produce more accurate, robust, and complete results. Here, the representative model allowed the RTC Modelers to review how, for example, a proposed infrastructure solution would stand up under a variety of conditions regularly observed on the corridor over time. Conversely, using an exact two-week “slice” of a corridor’s operations would not allow for proper testing of scenarios and solutions such that any modeling results may be biased by or only responsive to the conditions present in the two weeks that were selected.

The use of representative RTC models is consistent with CSXT and NSR’s standard business practices. As Ricky Johnson and Randall Hunt explained in their November 3 verified statement, rail infrastructure projects are significant investments such that “[o]ver-construction and unnecessarily inflated maintenance obligations are simply not a smart business strategy.”³ A freight railroad must consider the breadth of traffic patterns and operational challenges on a given corridor when contemplating what infrastructure is necessary and sufficient to support existing and future freight traffic, passenger traffic, or both. Basing such consequential decisions on a replicative model that mirrors a single two-week period is the antithesis of sound business strategy.

³ CSXT/NSR Opening Evidence, Exhibit 1 – Verified Statement of Ricky Johnson and Randall W. Hunt at 13–14.

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The same representative modeling principles would be employed even if a railroad were using a smaller data set. If a railroad pulled a 14-day dataset, certain adjustments would still be made to ensure that the data was an accurate representation of current circumstances. For example, if a hypothetical train “A” were scheduled to run every day but the specific 14-day data set only showed 13 instances of train A operating, the railroad would increase the number of trains in the model by one for a total of 14 train A instances because that is a more accurate representation of normal operations during any given 14-day span.

Because “representative” models are constructed instead of “exact” replicas of a static time period, certain inputs are often fitted to a distribution such as dwell, departure time, and train size. As stated above, random sampling from these fitted distributions allows the scenarios or solutions to be tested many times rather than just one time. Some of the most commonly used distributions in RTC modeling at CSXT are Triangular, Normal, and Uniform, though others are also used. The appropriate distribution is selected by plotting the actual data in a histogram and picking a probability distribution that closely aligns with the majority of the observed distribution (i.e. disregards outliers). Messrs. Crowley and Fapp describe the triangular distribution as “a ‘lack of knowledge’ distribution,” while failing to consider the statistical benefits of that distribution.⁴ Triangular distributions are often used because they can be easily developed in a way that disregards “long tails.” The term “long tail” refers to events that are statistically unlikely to occur such as an abnormally long train delay or bridge opening. If a distribution that has a long tail was used and a value from that tail was selected, it can cause unnecessary complications within the RTC model or, in this proceeding, may result

⁴ Crowley & Fapp V.S. at 11.

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in more new infrastructure than is actually necessary to support Amtrak's proposed passenger service.

The representative modeling approach contrasts with the stand-alone railroad ("SARR") approach to RTC modeling used in rate cases, an approach which Messrs. Crowley and Fapp appear to believe should be used in this proceeding as well. I (Hannah Rosse) have worked on rate cases before the Board, and it is my opinion that the SARR approach is not the appropriate modeling methodology to determine the impact on freight service caused by the introduction of passenger service. A rate case focuses on determining the cost of operations and appropriate revenue, in a situation where the shipper proposing the SARR has selected a subset of the railroad's traffic to model and typically proposes a reduced and optimized infrastructure to serve that traffic. SARR modeling is designed to ensure that a shipper's optimized infrastructure remains sufficient to serve the highest volume period for its selected traffic group, hence why the parties in those cases create a one-to-one replicative model of the "peak" 14-day period.

In contrast, the purpose of modeling the subject corridor in this proceeding is to determine the impact on freight service from the introduction of passenger service that will operate year-round and (presumably) indefinitely (*i.e.*, which is in part why a 20-year horizon model is contemplated). A representative model better reflects typical (or average) operations on the subject corridor rather than peak or low traffic periods. To do that effectively, the model must represent traffic volumes and train starts over more than a two-week period.

III. MESSRS. CROWLEY AND FAPP'S VERIFIED STATEMENT REFLECTS A COMPLETE MISUNDERSTANDING OF HOW A .TRAIN FILE IS CREATED.

A cornerstone of Messrs. Crowley and Fapp's attack on the 2021 Gulf Coast RTC Model is the contention that the RTC Modelers "manufactured" trains in the

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2019 Base Case and that, with respect to the RTC .TRAIN file, there are “no formulas, documents[,] or workpapers supporting how they developed the train inputs to the RTC model.”⁵ This attack reveals a critical problem with the Crowley & Fapp V.S.: Messrs. Crowley and Fapp appear not to understand the process by which a representative .TRAIN file is created from different data sources or maintained by a railroad in the ordinary course of business.

The proper creation of a .TRAIN file is an iterative process that requires information from multiple sources as well as validation from field personnel. No one data source contains sufficient information to develop an accurate .TRAIN file and in some cases, multiple data sources are needed to compile even a single input (*e.g.*, crew change location). CSXT and NSR follow substantially similar processes when developing a .TRAIN file for RTC in the ordinary course of business, but each railroad compiles data slightly differently. This section describes in detail the data sources underlying the development of a CSXT .TRAIN file as the Crowley & Fapp V.S. focuses the majority of its arguments on the CSXT-specific portion of the route and workpapers. This section also includes a description of how NSR creates .TRAIN files.

A. Development of a CSXT .TRAIN File

Below are summaries of each train data source that was used to create the CSXT portion of the .TRAIN file used in the 2021 Gulf Coast RTC Study. To clarify, the below summaries refer to the primary data sources for the .TRAIN file, but this

⁵ *Id.* at 12, 13 & n.20 (citing November 19, 2021 Letter from Matthew J. Warren to Kali N. Bracey, but failing to engage with Mr. Warren’s explanation that the development of an RTC .TRAIN file is an *iterative process* that “requires . . . condens[ing] down several months of train data into two weeks of train data that best represents normal operations on a given route for the purpose of train simulation”).

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is not an exhaustive list of every source of information relied upon. Rather, these summaries are meant to explain the content of the data sources that were used (and oftentimes, misused) by Messrs. Crowley and Fapp when criticizing the Model inputs. Table 1 shows which data source(s) are used to develop certain key fields in a CSXT .TRAIN file. This is a non-exhaustive list of .TRAIN file fields.

Table 1 – Select .TRAIN File Fields

.TRAIN File Field	Data Sources
“Departure” (Departure Time)	Train Profile Data OS Data Dispatch Data Field Personnel
“Dwell” (Dwell Time)	Train Profile Data OS Data Dispatch Data Field Personnel
“Head End Node” (Routing)	OS Data Dispatch Data Field Personnel
“Feet, Tons” (Train Length and Tonnage)	Train Profile Data Field Personnel

Table 2 describes two additional inputs or activities that are not specific fields in the .TRAIN file, but are derived from these data sources, and relevant to developing the .TRAIN file and implicated by the Crowley & Fapp V.S.

Table 2 – Additional Relevant Inputs or Activities

Input/Activity	Data Sources
Total Modeled Volume (trains and non-trains such as blocks of cars, hi-rails, etc.)	OS Data Dispatch Data Field Personnel
Pick ups/Set Offs/Switching	Train Profile Data Dispatch Data Field Personnel

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Input/Activity	Data Sources
Crew Change Locations	Train Profile Data OS Data Field Personnel

Two points of clarification bear mentioning before we describe the relevant CSXT data sources. *First*, CSXT provided the RTC Modelers with an existing .TRAIN file for the study corridor as well as the relevant data sources. The RTC Modelers then used the existing CSXT .TRAIN file and all relevant data sources from CSXT as well as relevant data from NSR (discussed further below) to develop a joint .TRAIN file for the study corridor, which was included in the 2021 Gulf Coast RTC Study workpapers. The .TRAIN file in the workpapers reflects the RTC Modelers' independent analysis of the CSXT data sources provided.

Second, with respect to the CSXT .TRAIN file provided to the RTC Modelers, CSXT maintains .TRAIN files in the regular course of business. Creating a .TRAIN file is no easy task at CSXT because of the vast amount of data used and the significant time required to construct such a file. For this reason, CSXT maintains .TRAIN files for certain parts of the network, particularly in areas that are part of core routes, as such areas are frequently evaluated. Once a .TRAIN file has been created, it is maintained, or regularly updated, in the ordinary course of business to be able to complete future modeling exercises expeditiously. These .TRAIN files must be accurate because CSXT uses them to inform a variety of business decisions involving possible infrastructure investments or operational changes such as improving network performance, supporting volume growth, evaluating crew change locations, and testing directional running. Stated another way, CSXT has every incentive to develop accurate, representative .TRAIN files to support its business. There is thus no incentive to develop an artificially inflated .TRAIN file

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for purposes of this litigation, as Messrs. Crowley and Fapp wrongly suggest,⁶ because such a .TRAIN file would be useless if not incredibly damaging to CSXT if used in other areas of its business. In short, such files were not “manufactured” to be used once (in this proceeding). They were from the inventory regularly maintained by CSXT.

1. Train Profile Data

Train Profile Data, or TM2 Data, contains both scheduled and actual information concerning where and when trains originate, terminate, and perform crew changes; where and when trains perform pick-ups, set-offs, and switching activities; dwell times for each train, train lengths, and train tonnages.⁷ This is the least granular of the .TRAIN file data sources provided by CSXT as it plans high-level activity along a route and is not designed to reflect detailed train movements. For example, the Train Profile Data may state that a crew change occurs at Mobile, but it does not state exactly where and on what track that crew change occurs. Experts familiar with Train Profile Data know that it does not contain yard jobs, bridge tender movements (operated under EC-1 authorities), the engine swap (light engine) moves at Montgomery, or blocks of railcars, and that it lacks some information about foreign and local trains necessary to accurately model their movements. For foreign trains, the Train Profile Data does not reflect cross-traffic movements or fine movement details for trains traversing the Mobile terminal, and often lacks train size. For local trains, the Train Profile Data lacks fine movement details while trains are working with customers (*e.g.*, pulling forward and shoving

⁶ See, *e.g.*, *Id.* at 34 (accusing the RTC Modelers of “detach[ing the] model from the real-world data” and “inflat[ing] the number and frequency of the trains involved”).

⁷ See, *e.g.*, 2021 Gulf Coast RTC Model, Workpaper “Train Profile Data UPDATED.xlsx.”

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in) and is not a reliable source for train size at the level of granularity that is required for modeling.

Messrs. Crowley and Fapp's claim that the 2019 Base Case modeled 257% more trains than appear in the train data sources for a peak 2-week period is extremely inaccurate and the product of misuse of the Train Profile Data.⁸ As experts, Messrs. Crowley and Fapp should know that yard trains are not captured in this data, nor bridge tenders, blocks of railcars, or engine swaps. They should also appreciate that Train Profile Data is not a reliable source for foreign or local train volumes. Had Messrs. Crowley and Fapp used correctly the appropriate data sources provided in the workpapers (OS Data, Dispatch Data, and NSR train narratives), they would have calculated that the 2021 Gulf Coast RTC Model was within 2.5% of the actual volumes in the peak period.⁹

2. OS Data

Another data source used in developing a CSXT .TRAIN file is called On Station Data, or OS Data. OS Data can also be described as TM6 or Control Point Data. A control point is a location on the track where a train may continue moving straight along its present course or diverge onto another track or route that is dispatcher controlled through switches and signals. By way of example, each end of a siding constitutes a separate control point. OS Data for train movements shows trains, time stamps, and direction for each control point. OS Data does not capture blocks of railcars, engine swaps, or bridge tender movements, which operate under

⁸ See Crowley & Fapp V.S. at 3 ¶ 3(a), 14–15.

⁹ See Rebuttal Verified Statement of Charles H. Banks and Larry R. Guthrie, Appendix A – 2021 New Orleans – Mobile Gulf Coast Passenger Service RTC Modeling Rebuttal Report (“2021 RTC Rebuttal Report”) at 14–21 (§ 3.1) (finding that Messrs. Crowley and Fapp used an incorrect data source, misidentified the peak period, and failed to consider trains that do not appear in the data sources).

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EC-1 authorities (or track warrants), and OS Data only captures yard jobs and foreign trains (*e.g.*, TASD trains) in instances where their movements occur through a control point and the movement is reported correctly (otherwise the movement will not be reported or will be reported incorrectly). In addition, yard trains and foreign trains will sometimes reuse the same train symbol more than once a day, rendering the train counts in the OS Data for these train types unreliable.

3. Dispatch Data

Dispatch Data is collected directly from the Computer-Aided Dispatch system, or CAD. Dispatch Data depicts CSXT trains and time stamps at each signal block when each train first hits the circuit. Dispatch Data, therefore, provides more granular level detail regarding train movements than OS data and is a source for train movements. However, this information does not contain bridge tender movements (operated under EC-1 authorities), blocks of railcars (these are not trains), or engine swaps, and Dispatch Data has limited movement information for yard and foreign trains (*e.g.*, cross-traffic is not captured in the system, most yard tracks are not in the CAD system). While train size is a field in this data set, Dispatch Data is not a reliable source for train length because it depicts zero (0) loads, empties, and tons, as well as a length of 9,999 feet until a train consist is received from the Management Information System (CSX backend) or the dispatcher manually updates these fields. Therefore, the train size in this Dispatch Data may not match actuals. And just as with OS Data, yard trains and foreign trains may reuse the same symbol more than once a day, rendering the unique train counts in Dispatch Data for these train types unreliable.

4. Information From Field Personnel

It is often difficult to capture precise movements from the above data sources with respect to trains operating within and in the vicinity of terminals and at

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customer locations. There are numerous reasons for this difficulty. For example, the data may not accurately capture how a local train works at a customer location (*e.g.*, arrives at customer facility, pulls forward, shoves back into facility with part of train hanging out on the mainline) or activities such as picking up, setting out, and switching railcars.¹⁰ Additionally, the above data sources may not accurately reflect typical operations over an extended period of time due to track complexity, variability in day-to-day activity, and granularity of the data (compared to the level of granularity needed for the RTC model). For these reasons, CSXT confers with field personnel to confirm the accuracy of all trains included in the model, as well as blocks of railcars, engine swaps, hi-rail movements, yard trains, and foreign trains. Field personnel thoroughly review operational assumptions and provide clarifications, inputs, and modifications to improve the accuracy of the model including, but not limited to, detail about train movements and sizes. And field personnel serve as the primary source for yard and foreign trains as well as hi-rail movements and engine swaps in the .TRAIN file.

Messrs. Crowley and Fapp claim that train volumes were overstated by 257% in the 2021 Gulf Coast RTC Model. To reach this conclusion, they inexplicably based their analysis on an incomplete version of the CSXT Train Profile Data that was missing hundreds of trains rather than using the Train Profile Data UPDATED.xlsx file that was provided to them in addition to the NSR train narratives.¹¹ Even if they had used the full Train Profile data that had been

¹⁰ Some of these movements may require a conductor to disembark the train and throw a switch manually. This often requires the conductor to walk some distance from the locomotive to the switch and CSXT regularly models in RTC the conductor's walking speed (in steel-toed boots) at 2 miles per hour as it is often on uneven ballast. Theodore Industrial Park is an example where this activity occurs.

¹¹ See Crowley & Fapp V.S. at 14–17. To reach this conclusion, I (Hannah Rosse) took the following steps: (1) reviewed the “Analysis” tab of Crowley & Fapp

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provided to them, as stated above, the CSXT Train Profile Data is not the correct data source to use for train volumes. A cross reference of the OS Data or the Dispatch Data would have revealed many instances where these other sources captured train movements that the Train Profile Data did not. To illustrate this point, I (Hannah Rosse) provide the following example.

Example: Messrs. Crowley and Fapp claim that {{Redacted}} was overstated in the 2021 Gulf Coast RTC Model by an additional {{Redacted}} because it was missing from their incomplete data set. But had Messrs. Crowley and Fapp used the “Train Profile Data UPDATED.xlsx” data source that was provided, or simply crossed referenced the OS Data and Dispatch Data, they would have found the train in all three data sources. Using the Train Profile Data, the {{Redacted}} train operated {{Redacted}} times during the peak period; using the OS Data it operated {{Redacted}} times; and using the Dispatch Data it operated {{Redacted}} times.¹² The RTC model only operated this train {{Redacted}} times, so the model actually *understated* the {{Redacted}}. This same error is repeated for numerous train profiles causing them to miss hundreds of CSXT trains in their analysis.

Workpaper “RTC Train Counts – 2019 P.xlsx”; (2) traced the formulas for CSXT counts to tab “Pivot 3 – CSX and NS,” which identified the source for those counts as Crowley & Fapp Workpaper “CSX and NS Combined Train Analysis.xlsx”; (3) opened Crowley & Fapp Workpaper “CSX and NS Combined Train Analysis.xlsx,” determined the “Pivot 3” tab matched the same pasted values, and observed that the pivot table identified the data source as the “Data” tab; and (4) reviewed the “Data” tab of the “CSX and NS Combined Train Analysis.xlsx” and recognized as the Train Profile Data based upon the column names and granularity of the data.

¹² See 2021 Gulf Coast RTC Model Workpapers “DispatchData.xlsx”; “OS Data.xlsx”; and “Train Profile Data.xlsx.”

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Also, for the trains that were in that incomplete CSXT Train Profile data set, Messrs. Crowley and Fapp counted the number of rows in the data set.¹³ One can only assume that Messrs. Crowley and Fapp did not review the contents of that incomplete data set because doing so would have revealed that while some rows do represent different trains, many rows are actually meaningful events for the same train such that counting each row would potentially result in counting the same train multiple times a day.

To illustrate this, we will examine a train as it appears in the data sources. The { ^{Redacted} } is a second shift T ASD train profile. In the CSXT Train Profile Data, most of the time only one milepost {{^{Redacted}}} for train activity is provided (sometimes milepost { ^{Redacted} } is also provided) and no train size information is provided, which is not sufficient for modeling purposes. A modeler has no idea where this train came from, where it is going to, the route it takes, or the train size. Looking into the OS Data, a modeler is still only provided with primarily one OS point {{ **Redacted** }}, sometimes two { **Redacted** }}. This is still insufficient movement information for modeling purposes because the RTC model is created at a much more granular level. A review of the Dispatch Data shows 10 distinct “CP/Track” (Control Point/Track) combinations, providing a much better picture of the precise movements in the Mobile area that a RTC modeler can use for .TRAIN file development. Once the train is developed in the model, the modeler would then validate its movements with field personnel and make any necessary corrections to where the train turned around and its normal train size.

¹³ See Crowley & Fapp V.S., workpaper “CSX and NS Combined Train Analysis.xlsx,” tab “Pivot 3” (counting the number of rows from the “Data” tab).

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B. Development of a NSR .TRAIN File

NSR did not provide the RTC Modelers with an existing .TRAIN file for the study corridor as such a .TRAIN file did not already exist. Instead, NSR provided the relevant data so the RTC Modelers could produce a .TRAIN file of NSR trains. As with CSXT, the data necessary to develop a .TRAIN file is pulled from several data sources. Below is a description of the primary data sources used to develop a .TRAIN file, but this list is not all-inclusive. Additional data sources may be used for inputs and validation of the data pulled from the databases.

.TRAIN Input	Data Source(s)
<u>Scheduled Departure:</u> For freight, this is usually only input for the initial route node – on-network time – to indicate when the train will appear in the model.	Field Research OPD Teradata SCHED UTCS Data
<u>Route Node:</u> Used to code on-network location and all activity locations – crew swap, fueling, work events, etc.	Field Research OPD Teradata SCHED UTCS Data
<u>Minimum Dwell Time:</u> The amount of time the train is scheduled to stop in the model to perform and activity.	Field Research OPD Teradata SCHED UTCS Data
<u>Trailing Departing Consist:</u> Defines the railcar makeup of the train (<i>e.g.</i> , loads, empties, tonnage, length) at each activity location.	Field Research Teradata SCHED UTCS data
<u>Crew #:</u> Indicates a scheduled crew change activity.	Field Research OPD Teradata SCHED
<u>Departing Locomotive Units:</u> Refers to engine consist. Defines the number and type of engines assigned to the train at each activity location, also indicates whether the engine is working, in-tow (working but not used for power), or not working.	Field Research UTCS data

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.TRAIN Input	Data Source(s)
<u>Train Symbol:</u> Indicates the name of the train in the model.	Field Research RTC Modeler (If a symbol does not exist in the data for a train, the RTC Modeler will assign a symbol. Examples of this include blocks of cars, hi-rail movements, split trains, yard moves, and foreign trains.) OPD Teradata SCHED UTCS data
<u>Frequency:</u> Indicates the days of the week the train will operate.	Field Research OPD Teradata SCHED UTCS Data

1. OPD Data

Operating Plan Developer, or OPD, is the system NSR uses to develop a train plan. OPD Data contains the train symbols scheduled to run, the detailed schedule and routing, anticipated train consists, and days of operation for the scheduled trains. The detailed schedule includes information for train events such as origin, destination, crew changes, fueling events, pick-ups/set-outs, and the location and dwell times at each scheduled event. This OPD Data is not all inclusive, as it includes only scheduled trains (intermodal, merchandise, automotive), and generally does not include data for yard jobs, local trains, foreign train moves, bulk commodities, or work (maintenance) trains.

2. Teradata Data

OPD Data is supplemented with Teradata Data from the defined study timeframe and network limits. Teradata is the database system that contains data for trains that moved on the network. This data includes train symbols, routes, and timestamps by Operating Station, or OS (also known as Control Point), locations and actual train consists. Any train symbol that moves within the defined study timeframe and network limits is included in this data.

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While Teradata is a reliable source of train movement data to populate the .TRAIN file, there are instances where Teradata information must be supplemented and cross referenced with other data sources to ensure accuracy and a full accounting of movements in the .TRAIN file. Particularly related to movements in the vicinity of rail terminals, train symbols may not populate in Teradata for headroom and other movements in/out of a yard, resulting in the movement being recorded with a generic, autogenerated symbol in Teradata. When these headroom and other movements are related to trains that ultimately depart and are assigned a correct symbol in the dispatching system, Teradata may record the two related movements as unique, unrelated trains. In these instances where Teradata displays multiple distinct movement records for the same train, the movements are manually linked in the .TRAIN file to ensure an accurate accounting of train movements in the model.

3. UTCS Data

NSR also uses Unified Train Control System, or UTCS Data to develop a .TRAIN file. UTCS is NSR's computer-aided dispatch system. UTCS Data includes much of the same information found in the Teradata Data, such as train symbols, routes, timestamps by Operating Station, and actual train consists (breakdown of railcars by loads, empties, tonnage, and length). UTCS Data also includes GPS movements and timestamps, locomotive consists (breakdown of engines by type, quantity and location on the train), the direction of a train's movement, and the track designation for a movement.

4. Proprietary Tool and Information From Field Personnel

NSR has a proprietary tool that utilizes the three data sets described above—OPD Data, Teradata Data, UTCS Data—to produce an Excel workbook that

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contains a preliminary list of train symbols, schedules, routings, dwell times, and consists as a starting point to create a .TRAIN file.

The information gathered from these three data sources does not provide the detail necessary to translate work events into a .TRAIN file. A simple example of such a work event is a crew change. The data pulled from these sources will show that hypothetical train “B” re-crews at Meridian and is scheduled to take 60 minutes for the event. Meridian may encompass 5 miles of track in the RTC modeled network, and the RTC modeler will need to know exactly where in that 5 miles the train will stop to perform the crew change event. In addition, scheduled dwell for train B may not depict actual operations as train B may be scheduled to dwell for 60 minutes to re-crew, but the event may, in reality, only take 20 minutes. This information must be gathered from the field to give context and clarity to the data contained in the databases so that train movements and events may be more accurately reflected in the RTC model.

NSR’s RTC modelers conduct interviews with field personnel from various internal departments including the Network Operating Center (dispatch operations) and transportation operations (yardmaster/trainmaster). As necessary, the RTC modeler may sit with the dispatcher or review dispatch playback history to create a narrative that describes how each train moves once on the study network. This research is imperative to understand the nuances of train movement and to properly code the .TRAIN file for trains working in terminals, at customer locations, performing interchange operations, arriving or departing a yard, local train movements, yard operations, and foreign train movements.

IV. FIELD INPUT IS ESPECIALLY RELEVANT FOR CERTAIN CATEGORIES OF “TRAINS” IN THE RTC MODEL.

Some of the “trains” that are built into an RTC model come from the narratives developed during field research and not from the data pulled from the

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databases. We emphasize that the addition of these categories of trains and non-train movements in the Model renders the Model more accurate and comparable to real-life operations, as established by the RTC Modelers in their rebuttal of Messrs. Crowley and Fapp's false claim that the Model contains 257% more trains than actually operate.¹⁴ Some of these trains and non-train movements are described in further detail below. These categories are generally applicable to CSXT and NSR.

Local Trains. While train data may exist for the local trains in the various databases, that data is not granular enough to accurately depict how local trains move. In the case of local trains, building the trains in the model relies heavily on narrative data from field personnel and not as much on information from train data sources. A substantial amount of information about these trains is coded based largely on input from field personnel including: when these trains depart; where they work; how they work; how long they work; and train and engine consist information as the trains depart each yard and at each work event.

Of particular importance is how local trains work. Train data from the various sources described above may show that hypothetical local train "C" makes a pick-up at an industry on their route, but it is the input from the field that will describe how they work. For example, field personnel would be able to describe local train C's detailed work as follows: Local train C pulls up to the switch and cuts away its power, leaving a block of railcars on the siding. Local train C then pulls to clear the switch and shoves into the industry with its power to pick up the industry's railcars. Local train C then pulls back out of the industry track to clear the switch, and then shoves back to the block of railcars remaining on the siding to couple up (put the two pieces of the train together). Finally, local train C cuts away with its power again and runs around the train—a move that utilizes the mainline

¹⁴ See 2021 RTC Rebuttal Report at 14–21 (§ 3.1).

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to place the power on the opposite end of the train—and then proceeds back to the yard.

Yard Moves. Depending on the complexity of the RTC model, and to ensure that yard moves in the model are built to appropriately block the yard and/or mainline as the train would in actual operations, the RTC modeler may create several individual trains to represent one train's moves that are needed to serve the yard. Since these moves are often not captured accurately in the data, how, where, when, and the number of yard moves that happen in the RTC model are based on observations and field input.

Split Train Moves. Based on input from the field, a single train may be coded in the RTC model as two (or more) trains. Yard moves are a good example of this, but there are other circumstances where this may occur. For example, a local train may leave the limits of the RTC network to work and then return to the network later in the simulation. The RTC modeler may code this as Train A to represent the local heading out to do their work and Train B to represent the local returning to the yard. Another common example is during a train's arrival at a yard. The inbound train has railcars for the yard, and railcars for interchange elsewhere. The train arrives at the yard as Train A, leaving a block of cars on the mainline. Once Train A has yarded the train, Train B will come out of the yard and pick up the block of railcars designated for interchange and continue that segment of the train to its destination.

Blocks of Railcars. A block of railcars is not a train and would not show up in the data pulled from the various databases described above. Blocks of railcars that occupy the mainline need to be coded into the model to accurately represent the track capacity they consume. Each block of railcars in the model will show up as a "train" in the .TRAIN file.

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Hi-Rail Moves. Hi-rail moves are highway vehicles that set on the track to traverse the rail. Hi-rails are not trains and therefore would not show up in the data pulled from the train databases. Hi-rail moves are used for various reasons, and based on field input, one or more may need to be coded into the model. For example, bridge tenders often use hi-rail moves at the beginning and end of each shift. Each hi-rail move would be coded as a train in the RTC model.

V. NSR PROVIDED THE RTC MODELERS WITH ACCURATE AND RELIABLE FOREIGN TRAIN MOVEMENT DATA.

In the November 3 Verified Statement, I (Holly Sinkkanen) explained that NSR “provided a file that documented one week of observed foreign train movements on the line, including on-network times, routing, and dwell.”¹⁵ This information was incorporated into the .TRAIN file created by the RTC Modelers. Messrs. Crowley and Fapp object to this foreign train data on the grounds that there are no source documents for the data, there are no calculations explaining the average and median on-network times, and the field observations are inconsistent with other available data.¹⁶ All of these criticisms miss the mark.

I conducted field research regarding the New Orleans terminal area in connection with the unfinished 2020 RTC Study performed by HDR Engineering. As part of that field research, during the first week of February 2020, I investigated train moves in the New Orleans terminal by reviewing dispatch playback and documenting the actual train movements in the terminal area for local trains, foreign or interchange trains, and yard trains over a 6-day period¹⁷ as their

¹⁵ CSXT/NSR Opening Evidence, Exhibit 3 – Verified Statement of Hannah Rosse and Holly Sinkkanen at 5 (“Rosse & Sinkkanen V.S.”).

¹⁶ Crowley & Fapp V.S. at 31–32.

¹⁷ UTCS stores a rolling 7-day historical dispatch database for review.

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movements tend to be less accurate in the data sources described above. I used my observations as well as discussions with Network Operating Center and Transportation Operations personnel to produce the narrative of train operations that is captured in workpaper “Gulf Coast Simulation NS Train Data.pdf” in this proceeding. This narrative was provided to HDR in connection with the 2020 RTC Study along with workpaper “Gulf Coast Simulation NS Train Data.xlsx,” which contained the train movements from the database.

During development and validation of the .TRAIN file for the 2020 RTC Study, NSR provided additional information to HDR on the foreign or interchange train movements between East Bridge Junction and CSXT to facilitate a better understanding of those train movements. I disclosed to HDR that I had documented a week of actual train movements in the New Orleans terminal area as part of the process to develop the narrative of train movements that is now workpaper “Gulf Coast Simulation NS Train Data.pdf” and that I would segregate the observed foreign or interchange trains from the documentation. The information was provided in an email, which later became the “Observed Foreign Moves.docx” workpaper provided to the RTC Modelers, and included my documented observed foreign movements and a summary of the foreign or interchange train movement data provided in the “Gulf Coast Simulation NS Train Data.xlsx” file. The summary data was split into two categories (eastbound and westbound) and included a pivot table and average and median on-network times for the foreign or interchange trains to illustrate when the trains were moving throughout the day and week.

Messrs. Crowley and Fapp claim that the train movements in the “Observed Foreign Moves.docx” workpaper were “inconsistent” with the data provided in the “Gulf Coast Simulation NS Train Data.xlsx.”¹⁸ Yet as just explained, my field

¹⁸ Crowley & Fapp V.S. at 31.

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research took place outside of the Fall 2019 study period because of the limited 7 days' worth of data that is available on dispatch playback. Therefore, the movements in the document I provided would likely be at least somewhat "inconsistent" with the study period data, but this is not the product of poor modeling.

When evaluating the 2021 Gulf Coast RTC Model, Messrs. Crowley and Fapp possessed all of the source documents and underlying information that NSR used to develop the tables depicting eastbound and westbound foreign trains in the New Orleans terminal area.¹⁹ Messrs. Crowley and Fapp were free to create pivot tables to evaluate the data and confirm the accuracy of the eastbound and westbound tables, just as NSR did to create them in the first instance. The fact that they chose not to does not render NSR's data inaccurate, unsupported, or unverified, and casts serious doubt on the reliability of Messrs. Crowley and Fapp's observations.

VI. THE FUTURE GROWTH PROJECTIONS PROVIDED BY CSXT AND NSR REPRESENT REASONABLE ANALYSES BASED ON THE BEST AVAILABLE DATA AND ARE CONSERVATIVE IN NATURE.

Messrs. Crowley and Fapp attempt to discredit CSXT and NSR's future train growth projections first by claiming that the data is "unsupported" and then by asserting that an annual growth rate of less than 1.5% is an overstatement.²⁰ As with the rest of the Model's inputs critiqued by Messrs. Crowley and Fapp, there are logical explanations for the projected growth data.

¹⁹ See 2021 Gulf Coast RTC Model, Workpaper "Gulf Coast Simulation NS Train Data.xlsx" and "Observed Foreign Moves.docx."

²⁰ Crowley & Fapp V.S. at 28–30.

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A. CSXT's Projected Growth Projections

CSXT's future growth projections were developed in connection with the unfinished 2020 RTC Study performed by HDR Engineering. CSXT, NSR, and Amtrak agreed that the 2019 Base Case should be based on train data from Fall 2019. After that decision was made, CSXT pulled current train size data in early 2020 from the most recent Train Profile Data then available. These then-current train sizes served as the baseline for future growth calculations. As with many aspects of RTC modeling, projecting future growth in freight traffic is an iterative process that requires the railroads to use their best business judgment. For CSXT, in some cases, "current" train lengths were rounded for simplicity. For example, CSXT rounded local trains that operate closer to Montgomery up or down to 1,000 feet. In other cases, the average size from early 2020 Train Profile Data was used. Train sizes for foreign trains (denoted with a "Z") are not always reliable or available in the data sources, so CSXT relied on general lengths provided to us by field personnel. Local train sizes (denoted by an "M") are sometimes missing due to the design of the data sources. When that occurred, CSXT relied on lengths provided by field personnel.

As I (Hannah Rosse) explained in the November 3 Verified Statement, CSXT engaged with customers along the study corridor to obtain their forecasted freight service needs.²¹ CSXT's internal commercial department then reviewed those projections and adjusted them as needed to reflect CSXT's business judgment. If CSXT believed a particular customer's predictions were unlikely to materialize or were not supported by trends in recent traffic, a more conservative growth projection was selected. In the case of road trains (denoted by a "Q"), the trains were grown to a maximum threshold to absorb the projected growth over 20 years. This

²¹ Rosse & Sinkkanen V.S. at 11.

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explains the six (6) trains that Messrs. Crowley and Fapp claim lacked future growth calculations, five of which projected future train length at {{Redacted}}.²² The sixth train had projected growth of { Redacted}}.²³

Lastly, had the forecasted train lengths for these six trains been calculated by applying the projected growth rate to the current train sizes found in the “Train Profile Data UPDATED.xlsx” file, the forecasted train lengths would have been, on average, within { Redacted}} of the values in the “Current Avg.” column of “Copy of UpdatedTrainCombineWithNotes.xlsx,” which was provided in discovery and is included in the workpapers.”²⁴

B. NSR’s Projected Growth Projections

NSR provided projected future growth in terms of train starts per segment as requested by Amtrak in the previous RTC Study Agreement.²⁵ To determine the data provided in the train start growth per segment chart, NSR used internal forecasting methodology to determine what the carload growth would be over the next 20 years. The carload growth was then translated into train start growth per segment by our Network Planning and Optimization (“NPO”) group. I (Holly Sinkkanen) then worked with our NPO group to determine how the train start growth would translate into our current train plan (we determined potential train routes and schedules), and then those train routes and schedules were provided to the RTC Modelers. I then worked with the RTC Modelers to make sure that the

²² See Workpaper “Copy of UpdatedTrainCombineWithNotes.xlsx,” “Volume Growth” Tab, Cells J112, J115, J116, J120, and J121 (produced in discovery as CSX_AmtrakGC_0007473).

²³ *Id.*, “Volume Growth” Tab, Cell J114.

²⁴ See *supra* n.24, CSX_AmtrakGC_0007473.

²⁵ See RTC Study Agreement (Jan. 24, 2020), at 7, 12 (attached as Exhibit E to CSXT and NSR’s Motion to Dismiss Amtrak’s Application (filed Apr. 5, 2021)).

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growth trains fit into the current train plan, and were adjusted as needed. Messrs. Crowley and Fapp provide no justification for why NSR would need to describe when the trains will grow. Both the 2020 RTC Model conducted by HDR and the 2021 Gulf Coast RTC Model entered into evidence in this proceeding include a base case and a 20-year future base case. There is no logical reason that NSR would need to provide what the projected traffic will be in years 2, 12, or 19 because only the base year and year 20 are consequential.

Messrs. Crowley and Fapp disingenuously claim that NSR provided inconsistent documentation to support the train growth projections. Specifically, they assert that one document projects NSR will add three multilevel (automotive) trains per week, and the second document projects NSR will add only one per week.²⁶ Yet Crowley and Fapp conveniently fail to mention that the RTC Modelers clearly utilized the lesser growth rate of one additional multilevel train per week in the 2021 Gulf Coast RTC Model. During validation of the Model, I verified growth inputs with our NPO team and they indicated that the projected increase in automotive traffic should be reduced. The second document reflects this updated projection.²⁷

C. CSXT and NSR's Growth Forecasts Are More Conservative Than Those of Independent and External Sources.

The Crowley & Fapp V.S. incorrectly suggests that CSXT and NSR's internal growth forecasts are unsupported or comparable to any external, independent sources.²⁸ Yet as with the rest of their critiques of the 2021 Gulf Coast RTC Model,

²⁶ Crowley & Fapp V.S. at 29.

²⁷ *Compare* 2021 Gulf Coast RTC Model, Workpaper "Gulf Coast Simulation NS Growth Forecast.pdf." (original) *with* Workpaper "NS Growth.docx" (updated).

²⁸ Crowley & Fapp V.S. at 29–30.

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Messrs. Crowley and Fapp struggle to properly interpret data sources. They point to Energy Information Administration (“EIA”) data which projects an annual growth rate of approximately 0.7% per year through 2039.²⁹ But as the RTC Modelers explain in their 2021 RTC Rebuttal Report, projected annual growth rates are heavily skewed by the sharp decrease in bulk traffic anticipated over the next 20 years.³⁰ Bulk traffic consists in large part of coal traffic. On the Gulf Coast portion of CSXT’s network, coal trains operate only between Montgomery and Mobile. The vast majority of freight traffic operating between New Orleans and Mobile—Amtrak’s proposed passenger route—are merchandise trains, which include the local trains.³¹ The Freight Analysis Framework’s (“FAF”) overall projections align with those of EIA (0.74% overall), but the FAF projected growth rate for merchandise traffic specifically over the next 20 years is 1.9% annually.³² When CSXT and NSR’s existing traffic makeup is properly compared against the projected merchandise traffic growth rate, the less than 1.5% growth rate implemented in the 2021 Gulf Coast RTC Model is conservative and in line with industry experts.³³

²⁹ *Id.* at 30.

³⁰ 2021 RTC Rebuttal Report at 20–21 (§ 3.1.8).

³¹ *Id.* at 21.

³² *Id.*

³³ See Ian Jefferies, “A bright future for U.S. rail freight,” GLOBAL RAILWAY REVIEW, (Nov. 11, 2020), <https://www.globalrailwayreview.com/article/112775/bright-future-u-s-rail-freight/> (“The industry has long been preparing for a future in which freight demand will rise by nearly 40 per cent over the next 20 years – investing in technology, streamlining operations and modernising services to serve the diverse customers at the heart of the industrial and consumer economies.”).

VII. PERCENTAGE CHANGE IS THE PROPER WAY TO PRESENT RTC PERFORMANCE METRICS.

The Crowley & Fapp V.S. appears to criticize the use of RTC Performance Metrics to summarize the Model's results.³⁴ Messrs. Crowley and Fapp take particular offense at the reporting of key RTC Performance Metrics such as train speed and delay minutes per 100 train miles in the form of percentage change rather than in say, miles per hour. The problem with evaluating RTC output metrics rather than percentage changes between the modeled cases is that RTC output metrics may not align with actuals, thereby offering a poor barometer of train performance. This misalignment between RTC output metrics and actuals can occur for a variety of reasons.

A primary reason is that RTC is able to make "riskier" dispatching decisions because it has a degree of omniscient future knowledge of train movements that human dispatchers understandably lack. In other words, RTC can predict randomized bridge openings and their exact durations, train meets, and other conflicts with far more precision and react to those events much quicker than a human dispatcher. RTC also operates under perfect weather conditions with no unforeseen mechanical failures or derailments. And RTC can go back in time and change dispatching decisions it made to optimize the network's performance. These features of RTC do not render it any less effective or useful for modeling dynamic rail corridors. But for these reasons, comparing the Model's performance to real-world operations (actuals) through RTC outputs is not a 1-to-1 comparison. However, the modeled Base Case metrics provide a calibrated baseline of performance for other modeled scenarios to be compared against. The magnitude of the change in performance (described as % change) between the cases is the best

³⁴ Crowley & Fapp V.S. at 10–11.

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way to interpret the results and drive decision-making. To that end, CSXT and NSR evaluate solutions by computing the % change in metrics between scenarios or cases in the ordinary course of business. And of course, displaying RTC results in percentage change, or “deltas,” also renders the data more consumable for non-RTC users and makes it easier to compare different line segments.

VIII. MESSRS. CROWLEY AND FAPP MISUNDERSTAND STANDARD RAILROAD OPERATIONS PERTAINING TO CUSTOMER SERVICE AND MAINTENANCE-OF-WAY WORK.

We also wish to address several of Messrs. Crowley and Fapp’s criticisms leveled at how the 2021 Gulf Coast RTC Model handled standard railroading practices: how local trains serve customers and routine maintenance-of-way work.

First, Messrs. Crowley and Fapp argue that the RTC Modelers “more often than not . . . opted to dwell trains on the main line to conduct operations, even when there is an available siding, industry, or yard directly adjacent to the train.”³⁵ The RTC Modelers respond to this criticism more fully in their 2021 RTC Rebuttal Report,³⁶ but we would note that not all local trains conduct work on industry track when serving customers. For example, sometimes the contractual agreement governing service prohibits CSXT or NSR trains from operating on industry track for economic, safety, or other reasons. At other times, the industry or yard may not have the requisite capacity for the local or yard train to completely operate or dwell off the mainline. And even when the local trains are able to conduct work on industry tracks, parts of the train will sometimes remain on the mainline. The nature of local train work is customer-specific and infrastructure-specific.

³⁵ *Id.* at 54.

³⁶ 2021 RTC Rebuttal Report at 31–33 (§ 4.2).

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Second, Messrs. Crowley and Fapp make much hay about how the RTC Modelers designed .PERMIT files to allow only passenger trains to operate through maintenance-of-way track outages but not freight trains, thereby inflating delay statistics.³⁷ They claim that “emergency maintenance” outages for “infrastructure failures” such as “a broken switch or a broken rail” “do not happen frequently” and thus, the RTC Modelers over-modeled 91 maintenance-of-way outages over the 14-day simulation period.³⁸ But Messrs. Crowley and Fapp misunderstand the nature of these maintenance-of-way outages. An RTC modeler does not account for emergency infrastructure failures in the model. These outages represent regular maintenance activities that are performed on a daily basis throughout a rail network and includes a variety of tasks of varying time intensity such as tamping, spot tie replacements, welding, and spot undercutting. The manner in which these maintenance-of-way movements were modeled were agreed upon by the Clean Team in terms of frequency, duration, and speed. The Clean Team reached this modeling consensus based upon information provided by each railroad’s engineering and operations field personnel as well as our collective experience at CSXT, NSR, and as consultants.

IX. CSXT DID NOT REDACT THE ALMONASTER AVENUE BRIDGE DAILY SHIFT REPORTS.

Messrs. Crowley and Fapp assert without evidence that CSXT “redacted the details of the trains moving over the [Almonaster] bridge” in the daily shift reports.³⁹ This is not true. As Messrs. Crowley and Fapp note, the Almonaster

³⁷ Crowley & Fapp V.S. at 47–48.

³⁸ *Id.* at 38–39, 49.

³⁹ *Id.* at 23.

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Avenue Bridge is owned, staffed, and operated by the Port of New Orleans.⁴⁰ CSXT obtained these daily shift reports for the 2020 RTC Study performed by HDR pursuant to a confidentiality agreement—which is why these reports remain designated Confidential—and the Port of New Orleans only ever provided redacted copies of the reports to CSXT. Notably, Amtrak never requested unredacted copies of these daily shift reports or inquired as to the reason for the redactions.

X. CONCLUSION

Messrs. Crowley and Fapp inexplicably disregard the great lengths NSR and CSXT undertook to validate the foreign train data in the Model. They state that “the RTC output is only as accurate as the inputs used in the model” and that “if the Base Case inputs are not accurate, the entire exercise is flawed and the results unreliable.”⁴¹ We wholly agree with this statement and that is exactly why we took extra measures to ensure that the inputs in the 2021 Gulf Coast RTC Model were as accurate a representation of CSXT and NSR operations as possible. Multiple times during the modeling process, the RTC Modelers reviewed inputs with each railroad and the modeler in connection with each railroad’s respective portions of the network to ensure accuracy. Once the 2019 Base Case inputs were complete, each railroad conducted internal validation of the models regarding their respective portions. CSXT and NSR then took an additional step and created a “Clean Team” comprised of a small subset of the larger teams for each railroad to review and validate the 2019 Base Case as a combined network. Multiple meetings and dozens of hours were spent validating assumptions and inputs in the Model to ensure that the 2019 Base Case was an accurate representation of real-world operations.

⁴⁰ *Id.*

⁴¹ *Id.* at 9.

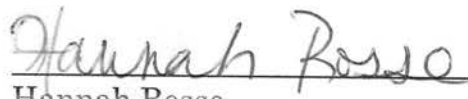
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We, Hannah Rosse and Holly Sinkkanen, stand by the quality of the 2021 Gulf Coast RTC Model. Together with our colleagues at CSXT and NSR and the RTC Modelers, we worked diligently to collect and supply the RTC Modelers with accurate and detailed data from a broad swath of sources and then spent months synthesizing those sources to develop a clear picture of typical Gulf Coast rail operations. For whatever reason, it is clear that Messrs. Crowley and Fapp did not put the same level of care and effort into evaluating the inputs and assumptions to offer a fair and reasonable critique of the Model's quality. Because their criticisms of the inputs do not pass muster, the 2021 Gulf Coast RTC Model's outputs should be relied upon in rendering a decision in this proceeding.

VERIFICATION

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

Executed on this 23rd day of December 2021.


Hannah Rosse

VERIFICATION

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

Executed on this 23rd day of December 2021.

Holly Sinkkanen
Holly Sinkkanen

Exhibit 3

Email Marked as Confidential by Amtrak

Exhibit 4

Email Marked as Confidential by Amtrak

Exhibit 5

File Marked as Confidential by Amtrak

Exhibit 6

Email Marked as Confidential by Amtrak

Exhibit 7

Email Marked as Confidential by Amtrak