

BEFORE THE  
SURFACE TRANSPORTATION BOARD

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STB Finance Docket No. 36500

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ENTERED  
Office of Proceedings  
March 28, 2022  
Part of  
Public Record

CANADIAN PACIFIC RAILWAY LIMITED; CANADIAN PACIFIC RAILWAY COMPANY; SOO LINE RAILROAD COMPANY; CENTRAL MAINE & QUEBEC RAILWAY US INC.; DAKOTA, MINNESOTA & EASTERN RAILROAD CORPORATION; AND DELAWARE & HUDSON RAILWAY COMPANY, INC. – CONTROL – KANSAS CITY SOUTHERN, THE KANSAS CITY SOUTHERN RAILWAY COMPANY, GATEWAY EASTERN RAILWAY COMPANY, AND THE TEXAS MEXICAN RAILWAY COMPANY

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CN REPLY TO APPLICANTS' RESPONSE TO DECISION NO. 16

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Sean Finn  
Olivier Chouc  
CN  
935 de La Gauchetière  
Street West,  
16th Floor  
Montreal, QC H3B 2M9  
CANADA

Kathryn J. Gainey  
CN  
601 Pennsylvania Ave,  
NW  
Suite 500, North  
Building  
Washington, DC 20004  
(202) 347-7840  
Kathryn.gainey@cn.ca

Raymond A. Atkins  
Terence M. Hynes  
Matthew J. Warren  
Sidley Austin LLP  
1501 K Street, N.W.  
Washington, DC 20005  
(202) 736-8000  
ratkins@sidley.com

*Counsel for Canadian National Railway Company, Grand Trunk Corporation, and  
CN's Rail Operating Subsidiaries*

Dated: March 28, 2022

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In *Decision No. 16* in this proceeding, the Board noted the “apparent inconsistency” between the segment-specific line density data in Exhibit 14 to the CP/KCS control Application (the “Exhibit 14 Density Data”) and the density data in a “Master Segment Table” that CP submitted to the Board’s Office of Environmental Analysis (“OEA”) just one day before the Application was filed (the “OEA Density Data”). The Board directed Applicants to explain this discrepancy, and “to indicate which *2019 baseline data* should be used in analyzing the environmental and transportation impacts of the Transaction.”<sup>1</sup>

As explained below, Applicants’ March 21 response confirms that there is only one set of full calendar year 2019 baseline data before the Board—the Exhibit 14 Density Data that was created in the normal course of business. Applicants publicly explain for the first time that they have not used that full year 2019 Exhibit 14 Density Data for *anything* in their Application or in their responses to OEA’s requests for environmental information. Instead, Applicants relied exclusively on the OEA Density Data both in their Operating Plan and their environmental responses. Despite numerous representations that their density data was for the 2019 base year, however, Applicants now disclose that, in reality, the OEA Density Data is primarily derived from carload data in a *single* month (October) in a *different* year (2020). A subset of unit train data was taken from *other* months in 2019. Such a mash up of fragmented data from different years is plainly not the “full calendar year” for the 2019 base year required by the Board’s

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<sup>1</sup> *Decision No. 16* at 3 (emphasis added).

2000 regulations.<sup>2</sup> Applicants should not be permitted to substitute the contrived and inaccurate OEA Density Data for the full year 2019 Exhibit 14 Density Data that they presented in their Application.

## BACKGROUND

The Board plainly – and understandably – believed that Applicants had presented information in both the Exhibit 14 Density Data and the OEA Density Data for a *base year of 2019*. That is what Applicants have consistently represented to the Board and to the stakeholders, and indeed continue to represent today.

- In their Amended Notice of Intent to File Application submitted in September, Applicants specified that they “will use *the year 2019 as the base year* for purposes of the impact analyses to be included with the Application (which remains *the last full year* unaffected by the COVID pandemic for which data are available) . . . .”<sup>3</sup> Applicants made the same representation in their original Notice of Intent filed in March.<sup>4</sup>
- In *Decision No. 3*, the Board adopted that choice to use 2019 as the base year for the impact analysis in this proceeding, as contemplated by the relevant regulation.<sup>5</sup>
- In submitting the OEA Density Data to the OEA on October 28<sup>th</sup>, Applicants explained that their transaction-related growth analyses “set

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<sup>2</sup> 49 C.F.R. § 1180.8(a)(5) (2000).

<sup>3</sup> See *Canadian Pacific Railway Ltd.—Control—Kansas City Southern, et al.*, STB Docket No. FD 36500, Amended Notice of Intent to File Application for Approval of Transaction Subject to 49 U.S.C. §§ 11323-25 (filed Sept. 15, 2021) at 3 (emphasis added).

<sup>4</sup> See *Canadian Pacific Railway Ltd.—Control—Kansas City Southern, et al.*, STB Docket No. FD 36500, Notice of Intent to File Application for Approval of Transaction Subject to 49 U.S.C. §§ 11323-25 (filed Mar. 22, 2021) at 1.

<sup>5</sup> See *Canadian Pacific Railway Ltd., et al.—Control—Kansas City Southern, et al.*, STB Docket No. FD 36500 (STB served April 21, 2021) at 3; 49 C.F.R. § 1180.4(b)(2)(ii) (2000).

2019—the last pre-pandemic year—as a starting point.”<sup>6</sup> And they were repeatedly explicit in representing that the “Master Segment Table” showed baseline traffic for 2019.<sup>7</sup> This is plainly the Board’s understanding of that submission.<sup>8</sup>

- A subsequent letter from Applicants to OEA similarly reiterated that “[a]s it did in response to Information Request No. 1, CP is providing three data sets: *actual numbers from 2019 (the last pre-pandemic year)*...”<sup>9</sup>
- Later, Applicants purported to “correct” CN’s assessment of anticipated traffic changes on the KCS Springfield Line through a table that substituted OEA Density Data for Exhibit 14 Density Data and labeled the OEA Density Data as reflecting “2019 ‘Base Plan’ Gross Tons”.<sup>10</sup>
- In their most recent filing, Applicants represent “all comparisons between pre-Transaction (base year 2019) traffic and post-Transaction traffic levels should begin with the *2019 ‘Base’ data* reflected both in the Master Segment Table provided to OEA [*i.e.*, the OEA Density Data] and in the workpapers that accompanied the Application (hereinafter the ‘Operating Plan Base Densities’) ....”<sup>11</sup>

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<sup>6</sup> See Letter dated October 28, 2021 from Applicants to Danielle Gosselin, FD 36500, at 2.

<sup>7</sup> *Id.* at 2 (“More information, *including 2019 baseline traffic*, appears in the master segment table.”) (emphasis added); *id.* at 2 (“The *2019 baseline traffic* and other information appears in the master segment table.”) (emphasis added); *id.* at 6 (“Like the other tables CP and KCS are providing, *these tables show 2019 traffic*....”) (emphasis added).

<sup>8</sup> *Decision No. 16* at 2 (“CP’s submission includes a ‘Master Segment Table,’ which contains, among other things, 2019 baseline GT/M data for CP and KCS lines.”).

<sup>9</sup> See Letter dated December 20, 2021 from Applicants to Danielle Gosselin, FD 36500, at 2 (emphasis added).

<sup>10</sup> See *Canadian Pacific Railway Ltd.—Control—Kansas City Southern, et al.*, STB Docket No. FD 36500, Applicants’ Reply to Canadian National’s Description of Anticipated Responsive Application (filed Jan. 28, 2022) at 9, Table 1.

<sup>11</sup> See *Canadian Pacific Railway Ltd.—Control—Kansas City Southern, et al.*, STB Docket No. FD 36500, Applicants’ Response to Decision No. 16 (filed Mar. 21, 2022) at 2.

- Applicants' proposed "Supplement" to the Exhibit 14 traffic density information designates the OEA Density Data Operating Plan Base Densities as the "Operating Plan Base (2019)".<sup>12</sup>
- Applicants also present a new "Summary of Pertinent Density Data" which they represent as showing "in Column (1), the *2019 Operating plan Base Density* (as previously reported in the Master Segment Table and the Density Data Workpaper)." Column (1) of that Summary is, correspondingly, titled "2019 Base MGTs".<sup>13</sup>

All comments on the Application and requests for conditions were due on February 28, 2022.<sup>14</sup> CN submitted its Comments and Requests for Conditions, including a Responsive Application seeking divestiture of the Springfield Line to CN, which relied on the more accurate and reliable Exhibit 14 Density Data.

Six online public scoping meetings were held during the scoping period for the Board's environmental review. Comments on scoping were due on January 3, 2022, and the OEA issued its Final Scope of Study on February 18, 2022, with the plan to publish the Draft Environmental Impact Statement in the spring. The Board's *Decision No. 16* has suspended the procedural schedule pending further order of the Board while the Board addresses the two inconsistent sets of density data submitted by Applicants in the case.

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<sup>12</sup> *Id.*, Appendix A.

<sup>13</sup> *Id.* at 3 and Appendix B (emphasis added).

<sup>14</sup> Pursuant to Decision No. 15, served February 25, 2022, the time for the Commuter Rail Division of the Regional Transportation Authority (Metra) to file comments was extended to March 15, 2022.

## LEGAL STANDARD

As part of its review to determine whether to approve Applicants' major merger, the Board analyzes the projected transportation and environmental impacts of the merger. A key element in this analysis is density data, which enables the Board to assess the impacts that the proposed merger would have on existing volumes on particular line segments. The Board's 2000 regulations require Applicants to submit a "full calendar year" of density data for the base year (here, 2019).<sup>15</sup> The Board's regulations also state that the Operating Plan should include "the anticipated traffic density and general categories of traffic (including numbers of trains) on all main and secondary lines in the system."<sup>16</sup>

Accurate base year density information, along with base year trains per day data, are also the foundation for the Board's public study of the anticipated environmental impacts of the proposed merger, so that the Board may determine if the relevant thresholds will be triggered, including merger-related increases in trains per day, rail traffic measured in gross ton miles annually, or yard activity, and the public may comment on the potential impacts.<sup>17</sup> In this case, the OEA is preparing an Environmental Impact Statement. National Environmental Policy Act (NEPA) regulations impose an obligation to "ensure the professional integrity,

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<sup>15</sup> 49 C.F.R. § 1180.8(a)(5)(2000) ("Data shown in the density chart shall be for the latest available full calendar year preceding the filing of the application.").

<sup>16</sup> 49 C.F.R. 1180.8(a)(1) (2000).

<sup>17</sup> *See, e.g.*, 49 C.F.R. § 1105.7(e)(5)(i)(A) & (e)(5)(ii)(A) (requiring data on expected increase in rail traffic, measured by gross ton miles).

including scientific integrity, of the discussions and analyses in environmental documents” and to utilize “reliable existing data and resources.”<sup>18</sup> This requirement exists to advance NEPA’s purpose to “ensure informed decision making by Federal agencies.”<sup>19</sup>

## ARGUMENT

### I. APPLICANTS’ CONTRIVED OEA DENSITY DATA ARE NOT FOR FULL CALENDAR YEAR AND NOT FOR 2019 AND NEITHER ARE THEIR OEA TRAINS PER DAY DATA.

In their March 21 response, Applicants attempt to leave the impression that the OEA Density Data (and, in turn, the Operating Plan Base Densities that form the basis of the Applicants’ entire Operating Plan) reflect traffic density for the base year of 2019. But that is simply not true. As Applicants eventually admit on page 9 of their filing, the OEA Density Data is *not* a full calendar year of 2019 traffic data, but rather a constructed data set based on a *single month* from a *different year* – October of 2020. Almost as an afterthought, Applicants explain that in reality they “built the Base Operating Plan on . . . a *representative ‘peak’ period of traffic data from October 2020.*”<sup>20</sup> Applicants’ highly-confidential workpapers shed further light on this remarkable choice, which Applicants made even though comparable data for 2019 was available: {{

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<sup>18</sup> 40 C.F.R. § 1502.23; *Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 361 (1989).

<sup>19</sup> See 40 C.F.R. § 1500.1(b).

<sup>20</sup> Applicants’ Response to Decision No. 16 at 9 (emphasis added).

<sup>21</sup> See CPKC WP-HC-Traffic File – Methodology, at 3 (emphasis added).



Thus, the OEA Density Data – and Applicants’ entire Operating Plan – are based on carload and intermodal traffic volumes for a single month in 2020, rather than CP’s and KCS’s actual full year 2019 traffic.<sup>22</sup> To make matters worse, Applicants used *different* months to develop their Base Year Operating Plan for unit train (as opposed to carload) traffic data – October 2019 for CP and a different, unidentified month for KCS – although Applicants have nowhere addressed or acknowledged this in their pleadings at the Board nor in their response to the Board’s *Decision No. 16*.<sup>23</sup> And Applicants constructed their Base Year Operating Plan using the blocking and train service plans in effect on CP and KCS during yet *another* time period – the 1st Quarter of 2021.<sup>24</sup> The result is a contrived set of data from multiple inconsistent and unrepresentative periods that is utterly at odds with Applicants’ repeated representations to the Board that the Base Year for their Operating Plan would be 2019.

Applicants took a similar approach in contriving the base year trains per day numbers submitted to OEA for each line segment (“OEA Trains Per Day Data”). Applicants labeled their OEA Trains Per Day Data for CP and KCS line segments as “base” for 2019.<sup>25</sup> However, those numbers were again constructed on the basis of traffic data from various different one-month periods in 2020 and 2019 and

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<sup>22</sup> See CN Comments at 24-25; Elphick/Orr Deposition at 157:13 – 157:21.

<sup>23</sup> See Second Verified Statement of Carl Van Dyke attached as Exhibit 1 (“Second Van Dyke Verified Statement”) at 4-5.

<sup>24</sup> See Applicants’ Response to Decision No. 16 at 9 (“Applicants built the Base Operating Plan on KCS’s early 2021 operational design ....”).

<sup>25</sup> See EI-31353 (Applicants’ submission of “base” trains per day).

operating plan data from the 1<sup>st</sup> Quarter of 2021.<sup>26</sup> Whatever trains are included in the OEA Trains Per Day Data, it does not reflect daily trains from the 2019 base year.

Applicants now try to claim that their Application “spells out” these methodological choices, citing solely to a single sentence in a footnote that appears in the seventy-fifth paragraph of their Operating Plan, 283 pages into Volume 2 of the Application.<sup>27</sup> Here is what that sentence says:

Because of changes in KCS’s train plan from 2019 to 2020, particularly within Mexico, we made use of KCS traffic flow data for the peak month of October 2020 to provide a better match between the train plan design and the way the traffic actually flowed over the network.<sup>28</sup>

From this, interested parties were apparently supposed to conclude that all of Applicants’ representations that their traffic density data represented a base year of 2019 were false, and that Applicants were relying on a contrived set of traffic density data primarily derived from a seemingly random individual month in a wholly different year. Applicants’ current assertions conflict with the explanation in the Operating Plan where Applicants explicitly claimed that the Exhibit 14 Density Data was a guide to assessing projected changes to traffic density.<sup>29</sup>

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<sup>26</sup> Second Van Dyke Verified Statement at 10-11.

<sup>27</sup> Applicants’ Response to Decision No. 16 at 9 (citing Application, Exhibit 13 at ¶ 75 n.4 (Vol. 2 at 2-283)).

<sup>28</sup> See STB Finance Docket 36500, *Canadian Pacific Railway, et. al.—Control—Kansas City Southern, et al.*, Application (filed Oct. 29, 2021) at Vol. 2, p. 2-283 n.4.

<sup>29</sup> See Application Vol. 2 at 308 (“The Traffic Density Charts contained in Exhibit 14 show the projected changes in train volumes, gross ton-miles, train miles and traffic density on the network.”).

Against all of this, Applicants' current "regret that the Application did not state this more clearly" is an understatement of considerable proportion.<sup>30</sup> And it does nothing to solve the problem that the OEA Density Data submitted by Applicants is not full calendar year data for the base year 2019. Indeed, as Applicants concede, the only full calendar year data for the base year 2019, which was generated in the normal course of business, is the Exhibit 14 Density Data.

**II. APPLICANTS' CONTRIVED DENSITY DATA SUBMITTED TO THE BOARD'S ENVIRONMENTAL OFFICE AND USED IN THEIR OPERATING PLAN ARE FATALLY FLAWED.**

The Second Van Dyke Verified Statement attached as Exhibit 1 shows definitively that Applicants' OEA Density Data are not an accurate or reliable source for segment-specific line density values for the base year of 2019 that could be used to assess the transportation or environmental impacts of the proposed merger. As that statement explains, for a variety of reasons Applicants' traffic volumes during 2020 decidedly are *not* representative of their pre-COVID (2019) traffic and operations.<sup>31</sup>

Nevertheless, Applicants now double down on their fatally flawed Operating Plan methodologies. They urge the Board to base its analysis (and OEA's environmental review) of the proposed control transaction on OEA Density Data generated using those same methodologies, rather than the Exhibit 14 Density Data that accurately reflect CP's and KCS's 2019 real world full-year traffic and

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<sup>30</sup> Applicants' Response to Decision No. 16 at 3.

<sup>31</sup> See Second Van Dyke Verified Statement at 4-6. See also CN Comments, First Van Dyke Verified Statement, Sections 5.2, 5.3.1, 6.3.1.

operations.<sup>32</sup> Applicants offer several reasons why the OEA Density Data should be preferred. All lack merit.

First, Applicants suggest that the OEA Density Data are superior because those density values “exclude locomotive tons, whereas the CP, KCS and KCSM 2019 figures include that tonnage.”<sup>33</sup> However, like all Class I carriers, CP and KCS regularly report their U.S. system densities on both a “total gross tons” (with locomotives) and “trailing tons” (without locomotives) basis. Those density data can be found in the annual Analysis of Class I Railroads published by the Association of American Railroads (the “Annual Class I Analysis”). The Second Van Dyke Verified Statement sets forth the line density data reported by CP and KCS (with and without locomotive tons) for the Base Year (2019) as published in the Annual Class I Analysis.<sup>34</sup> As shown there, locomotive tons represented 7.4% of total gross ton miles for KCS in the U.S., and 5.6% of total gross ton miles for CP’s U.S. operations, during 2019.<sup>35</sup> As Mr. Van Dyke testifies, with this data, which are generated

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<sup>32</sup> Applicants acknowledge that the 2019 density figures developed in the ordinary course by CP and KCS were “appropriately included . . . in Exhibit 14.” Applicants’ Response at 4.

<sup>33</sup> Applicants’ Response at 7, ¶ 12.

<sup>34</sup> Second Van Dyke Verified Statement at 14-15; see Association of American Railroads, Analysis of Class I Railroads, 2019 (lines 700-704).

<sup>35</sup> *Id.*

annually in the normal course of business, Applicants readily could have developed consistent full-year 2019 density values for CP and KCS.<sup>36</sup>

Second, Applicants purported to validate the OEA Density Data by “calibrat[ing] the modeled GTMs [Gross Ton Miles] for CP and KCS/KCSM [generated by their Operating Plan methodologies] to the system-wide GTMs actually moved on those railroads in 2019.”<sup>37</sup> While Applicants portray this “calibration” as a statistical demonstration that the OEA Density Data accurately estimate Applicants’ 2019 segment-specific density values, that exercise is essentially meaningless. In reality, Applicants’ “calibration” consisted of nothing more than arbitrarily increasing (for CP and KCS) or decreasing (for KCSM) the *aggregate system-wide GTMs* generated by their Operating Plan by a series of factors designed to make the OEA Density Data as a whole “match” each Applicant carrier’s actual 2019 *aggregate, system-wide GTMs*. Rather than applying a consistent adjustment to the historic density values for each carrier, Applicants jerry-rigged the result by utilizing different factors to ensure that the OEA Density Data matched each railroad’s actual 2019 *system-wide density figures*.<sup>38</sup>

As Mr. Van Dyke explains, while system-wide data such as train-miles and crew starts are useful for certain purposes (*e.g.* costing), the Board’s evaluation of

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<sup>36</sup> While Applicants express certain other concerns regarding the quality of the KCS density data, they identify no such concerns with respect to the CP density values. Second Van Dyke Verified Statement at 14.

<sup>37</sup> Applicants’ Response at 9, ¶ 16.

<sup>38</sup> See Second Van Dyke Verified Statement at 6-7.

critical issues, including the feasibility of the Operating Plan and the need for additional track capacity to maintain fluid operations, and OEA's analysis of the environmental impacts of the proposed merger, all require *accurate segment-specific line density data*. Applicants' result-oriented attempt to make the OEA Density Data (in part from a single month in 2020) appear consistent, on an aggregate basis, with the CP, KCS and KCSM aggregate 2019 density values, does nothing to reconcile the massive disconnect between the OEA Density Data and Applicants' actual Base Year line densities on a line segment basis.

As *Decision No. 16* observed, that disconnect is, in many instances, substantial. For example, the Board compared the 2019 density for KCS's Kansas City – Slater, MO segment in Exhibit 14 generated by Applicants in the normal course of business (10.376 million average GTM/Mile) with the density for that segment in the OEA Density Data (5.83 million GTM/Mile, with the OEA Density Data only 56% of the tons reflected in the Exhibit 14 Density Data). Mr. Van Dyke benchmarked the OEA Density Data against Applicants' real world 2019 densities across the eight line segments that make up CP's Ottumwa – Davenport line, eight line segments constituting KCS's Springfield Line, 16 line segments included in KCS's main line between Kansas City, MO and Laredo, TX, and the two segments of KCS's Shreveport – Wylie, TX line. *In every case, Mr. Van Dyke identified inconsistency between the OEA Density Data and the Exhibit 14 full-year 2019 data.* The differences were both positive and negative, and were as great as 58.6% on the CP line, 99% on the Springfield Line, 38% on the Kansas City-Laredo line and 35%

on the Shreveport – Wylie line.<sup>39</sup> Mr. Van Dyke compared the 2019 density for KCS’s Godfrey to East St. Louis, IL segment in Exhibit 14 (5.10 million average GTM/mile, after adjusting for locomotive tons) with the density for that segment in the OEA Density Data (7.77 million GTM/mile), with the OEA Density Data tons 52% higher than the Exhibit 14 Density Data.<sup>40</sup> Mr. Van Dyke’s analysis provides incontrovertible proof that the OEA Density Data do not accurately reflect the actual 2019 segment-specific line densities across virtually the entire CP and KCS US networks. This is not a surprise given Applicants’ concession that the OEA Density Data is not a full calendar year of 2019 data and instead is constructed based primarily on a single month from October 2020.

Finally, the methodological choices made by Applicants further undermine the validity of both their Operating Plan and the OEA Density Data. Applicants intentionally omitted from their Base Year Operating Plan any train in their MultiRail model that did not traverse at least 25 percent of the stations on a subdivision.<sup>41</sup> This methodological step rendered incomplete both the trains per day and the corresponding line densities in the Operating Plan. Because the OEA Density Data are the density values “generated as part of the Operating Plan work” (Applicants’ Response at 7, ¶ 11), the OEA Density Data are likewise incorrect.

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<sup>39</sup> See Second Van Dyke Verified Statement at 15-24.

<sup>40</sup> See *id.* at 18.

<sup>41</sup> See First Van Dyke Verified Statement at 24-25. See also FD 36500 – Workpaper – HC – Trains Per Day – Methodology.pdf (“The train must pass by at least 25% of the subdivision’s segment stations in order to be counted on it.”)

Applicants' claim that the Operating Plan "assign[ed] GTMs based on the number of miles that a gross ton is moved across the segment" (Applicants' Response at 7, ¶ 13) is simply not true. Applicants' Operating Plan methodology applied an "all or nothing" rule that included any train (and the associated tons) that traversed more than 25% of the stations on a subdivision, and excluded entirely any train (and associated tons) that did not.<sup>42</sup>

Applicants made the decision to designate 2019 as the Base Year for purposes of this proceeding, stating that "[2019] remains the last full year unaffected by the COVID pandemic for which data are available."<sup>43</sup> In *Decision No. 3*, the Board adopted that choice.<sup>44</sup> Having made that choice, Applicants must present an Operating Plan and segment-specific line density data that accurately reflect CP's and KCS's actual 2019 traffic and operations, both in their Operating Plan and submissions to the OEA for environmental review. For the reasons discussed above and in the Van Dyke Verified Statements, the OEA Density Data are utterly inconsistent with Applicants' historic real world experience during their chosen 2019 Base Year. By contrast, the Exhibit 14 Density Data represent the full-year 2019 segment-specific densities compiled by CP and KCS in the normal course of business. Accordingly, the Board should use the Exhibit 14 Density Data in its

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<sup>42</sup> See Second Van Dyke Verified Statement at 13.

<sup>43</sup> See *Canadian Pacific Railway Ltd.—Control—Kansas City Southern, et al.*, STB Docket No. FD 36500, Amended Notice of Intent to File Application for Approval of Transaction Subject to 49 U.S.C. §§ 11323-25 (filed Sept. 15, 2021) at 3.

<sup>44</sup> See *Canadian Pacific Railway Ltd., et al.—Control—Kansas City Southern, et al.*, STB Docket No. FD 36500 (STB served April 21, 2021) at 3.



evaluation of the likely operational and environmental impacts of the proposed CPKC merger.

The OEA Density Data does not conform to the Board's requirements of a full calendar year of base year density data. Nor does the OEA Trains Per Day Data represent actual daily train counts for the 2019 base. Fundamentally, Applicants do not address the consequences to those stakeholders who would not have had access to the highly confidential workpapers that begin to reveal these realities. Such stakeholders could not know or understand Applicants' methodology choices, including that (1) the Operating Plan was based on the OEA Density Data and not the Exhibit 14 Density Data, and (2) that neither the OEA Density Data nor the OEA Trains Per Day Data reflect 2019 base year data. Detailed disclosure, review and comment would be needed to understand the consequences of Applicants' failure to use 2019 base data for OEA Density Data and OEA Trains Per Day Data, in both the transportation and environmental aspects of this proceeding.

### CONCLUSION

Applicants' OEA Density Data does not provide an adequate basis to assess the transportation or the environmental impacts of the proposed merger. The Exhibit 14 Density Data does include a full calendar year of data for the 2019 base year, but the Applicants did not use it in their Operating Plan or their submissions to the Board's environmental office. Applicants should not be permitted to substitute contrived and inaccurate OEA Density Data from different time periods that do not match the base year for the full year 2019 Exhibit 14 Density Data in

their Application. Doing so would conflict with the requirement in the Board's regulation that the operating plan be based on a "full calendar year" of density data for the 2019 base year and would jeopardize the foundation of any transaction or environmental review that purported to be based upon such inaccurate information.

Respectfully submitted,

Sean Finn  
Olivier Chouc  
CN  
935 de La Gauchetière Street West,  
16th Floor  
Montreal, QC H3B 2M9  
CANADA

Kathryn J. Gainey  
CN  
601 Pennsylvania Ave, NW  
Suite 500, North Building  
Washington, DC 20004  
kathryn.gainey@cn.ca

/s/ Raymond A. Atkins  
Raymond A. Atkins  
Terence M. Hynes  
Matthew J. Warren  
Sidley Austin LLP  
1501 K Street, N.W.  
Washington, DC 20005  
(202) 736-8000  
ratkins@sidley.com

*Counsel for Canadian National Railway Company, Grand Trunk Corporation, and  
CN's Rail Operating Subsidiaries*

Dated: March 28, 2022

**CERTIFICATE OF SERVICE**

I hereby certify that on this 28th day of March 2022, a copy of the foregoing CN Reply to Applicants' Response to Decision No. 16 was served by first class mail or email on the service list for Finance Docket No. 36500.

/s/ Matthew J. Warren  
Matthew J. Warren

# **Exhibit 1**

**Second Verified Statement of  
Carl Van Dyke**

**BEFORE THE  
SURFACE TRANSPORTATION BOARD**

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**FINANCE DOCKET NO. 36500**

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**CANADIAN PACIFIC RAILWAY LIMITED; CANADIAN PACIFIC RAILWAY  
COMPANY; SOO LINE RAILROAD COMPANY; CENTRAL MAINE & QUEBEC  
RAILWAY US INC.; DAKOTA, MINNESOTA & EASTERN RAILROAD  
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CONTROL – KANSAS CITY SOUTHERN, THE KANSAS CITY SOUTHERN  
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**CN REPLY TO APPLICANTS' RESPONSE TO DECISION NO. 16**

**PUBLIC VERSION**

**Second Verified Statement of Carl Van Dyke**

**March 28, 2022**

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  - 3.4 Applicants’ Base Year tonnage values as reported to the OEA cannot be relied upon, as demonstrated by the benchmarking of selected values against the original 2019 values from Exhibit 14 and selected other data sources. ....14

## 1. Qualifications

My name is Carl Van Dyke. I am a Senior Advisor to and a Partner Emeritus of Oliver Wyman, a global general management consulting firm with more than 60 offices in 31 countries. My office address is One University Square Drive, Suite 100, Princeton, NJ 08540. I have been engaged in the design, development, and application of software tools to model, evaluate, and improve the operations of railroads for more than 40 years. I previously sponsored a verified statement filed with CN's February 28, 2022 Comments which provides further details of my qualifications and resume.<sup>1</sup>

## 2. Assignment and Summary of Findings

I have been asked to review Applicants'<sup>2</sup> response to the Board's *Decision No. 16*, which directed Applicants to address the "apparent inconsistency" between 2019 density figures in Exhibit 14 of the Application (hereinafter the "Exhibit 14 Density Data") and the "baseline" density data provided in the "Master Segment Table" submitted to the Board's Office of Environmental Analysis (OEA) on October 28, 2021.<sup>3</sup>

Specifically, Applicants propose to use the line density values submitted to the OEA and in the supporting work papers (hereinafter the "OEA Density Data") in lieu of the values published in Exhibit 14 to the Application. Based on my review, I conclude that the Applicants' use of the

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<sup>1</sup> STB Finance Docket No. 36500, CN's Comments on Application and Request for Conditions, February 22, 2022 (CN-13), Exhibit 2, Verified Statement of Carl Van Dyke – hereinafter "Van Dyke First Verified Statement."

<sup>2</sup> Applicants are Canadian Pacific Railway Limited, Canadian Pacific Railway Company, and their US rail carrier subsidiaries Soo Line Railroad Company, Central Maine & Quebec Railway US Inc., Dakota, Minnesota & Eastern Railroad Corporation, and Delaware and Hudson Railway Company, Inc. (collectively "CP" or "Canadian Pacific Applicants") and Kansas City Southern and its US rail carrier subsidiaries The Kansas City Southern Railway Company, Gateway Eastern Railway Company, and The Texas Mexican Railway Company (collectively "KCS" or "Kansas City Southern Applicants").

<sup>3</sup> See STB Finance Docket No. 36500, EI-31353, October 28, 2021.

OEA Density Data will not result in an accurate representation of either the Base Year 2019 or Year 3 post-transaction density values.<sup>4</sup>

In essence, Applicants propose to replace the historic Base Year values that they developed in the normal course of business with questionable “2019 baseline” data derived through a fundamentally flawed modeling exercise. Use of this questionable “base year” data from the OEA submission, in combination with obviously flawed “post-transaction” line density values, would result in the use of segment-specific line densities that are inaccurate and misleading. The fundamental problems with the Applicants’ use of the OEA Density Data include the following:

- **Non-representative traffic** from a combination of single month snapshots from multiple years were used to create Base Year 2019 tonnages in the OEA Density Data. It is difficult to conceive how this could produce accurate full-year 2019 tonnages for individual line segments on the CP and KCS networks.
- **Use of “calibration” does not cure underlying methodological flaws.** Just because Applicants forced the aggregate numbers to match their target 2019 gross-ton mile (GTM) values through a “calibration” process does not make the OEA Density Data values correct for individual line segments on the CP and KCS networks. And for environmental assessment, capital planning, capacity analysis, and labor impact analysis, it is the segment-specific values that matter.
- **Fractured modeling process:** The OEA Density Data tonnages are not the outputs of a coherent MultiRail-based process as implied by Applicants, but instead come from a fractured and highly complex process that used values from a variety of independent sources, altered with various “calibration” factors, making it impossible to produce reliable, consistent results.
- **Benchmarking the OEA Density Data reveals widespread inconsistencies with Applicants’ real world 2019 density values,** directly demonstrating that the values Applicants proposed to use are not representative of actual full year 2019 tonnages on a segment-specific level.

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<sup>4</sup> See STB Finance Docket No. 36500, Decision No. 16, March 16, 2022.



- **Because the OEA Base Year 2019 values are unreliable, and due to methodological errors, the projections of post-transaction tonnages are also invalid and cannot be relied upon.** I demonstrate the flaws in the post-transaction tonnages in my first verified statement.<sup>5</sup>

### **3. Applicants' Use of OEA Density Data Does Not Provide an Accurate Representation of Base Year or Year 3 Density Values.**

#### **3.1 Arbitrary "2019 baseline" traffic data used by Applicants does not correspond with Applicants' actual full-year 2019 traffic and is not a representative starting point for the Application**

Instead of using data from the agreed 2019 base year for this transaction, Applicants utilized a complex mix of data sources, including October 2020 data for non-unit train traffic (i.e., carload and intermodal) and two different one-month samples for unit train traffic (October 2019 for CP and an unspecified month for KCS/KCSM). In my Verified Statement of February 28, 2022, included as part of CN's Comments on the Application, I demonstrated that October 2020 is not a representative period for non-unit train traffic,<sup>6</sup> and that October 2019 is not a representative period for CP unit trains.<sup>7</sup> While I could not evaluate whether Applicants selected a representative month for KCS/KCSM unit trains because Applicants did not disclose what month they used, I do demonstrate in Section 3.4 below that the KCS unit trains do not accurately represent the 2019 unit traffic in at least two specific instances, likely causing the KCS mainline segment densities to be too low by millions of tons in the OEA Base Values. Specific examples cited in my original Verified Statement, and Section 3.4 of this verified statement are summarized in Exhibit 3-1 below.

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<sup>5</sup> Van Dyke First Verified Statement, Sections 5.1 and 6.1.

<sup>6</sup> Van Dyke First Verified Statement, Sections 5.2 and 6.3.1.

<sup>7</sup> Van Dyke First Verified Statement, Section 5.3.1.

**Exhibit 3-1: Examples of Impacts from Applicants using non-representative traffic data**

Traffic Type	Description	Impact
<b>Intermodal</b>	Due to a blockade by striking teachers, the Port of Lazaro Cardenas was effectively closed during October 2020	Applicants base period is missing about {{ }} annual loaded northbound container moves, which would cause on the order of {{ }} million annual gross tons to not be included in the OEA Density Data <sup>8</sup>
<b>Carload</b>	Fewer boxcar loadings on KCS/KCSM in October 2020 (when annualized) than observed for full year 2019	11% under-representation of loaded boxcar moves <sup>9</sup>
<b>Automotive</b>	Fewer multilevel loadings on KCS/KCSM in October 2020 (when annualized) than observed for full year 2019	13% under-representation of loaded multilevel moves <sup>10</sup>
<b>Automotive</b>	O-D patterns for multilevel traffic in October 2020 do not correspond to full year 2019 traffic patterns	Gains and losses of thousands of cars per year at an O-D by O-D level <sup>11</sup>
<b>Unit Train</b>	Virtually no unit crude oil trains moved between Alberta and Louisiana/Texas during October 2019	Instead of the 2019 average of {{ }} oil trains/month on the Davenport-Ottumwa line, the OEA Base Values only reflect about {{ }} oil trains/month, causing over {{ }} million annual gross tons not to be included in the OEA Density Data for this line. <sup>12</sup>
<b>Unit Train</b>	Virtually no unit ( {{ }} ) trains moved between {{ }} and Mexico in the KCS unit train "snapshot" and were thus not represented in the OEA Base Values.	Caused on the order of { {{ }} } million annual gross tons not to be included in the OEA Density Data on the Springfield line, and possibly on the entire route from {{ }} to Laredo, TX and beyond. <sup>13</sup>

There is no evidence that Applicants’ use of these inappropriate October 2020 and October 2019 traffic sources yields a set of values that fairly represent actual tonnages for the full 2019 Base Year for individual line segments of CP or KCS. A far more appropriate choice would be to use actual full year 2019 traffic flows, which were available to Applicants when they prepared their Operating Plan for the merger. The use of non-representative traffic data for the Base Year could have severe consequences on the alignment of the operating plan to the base period and

<sup>8</sup> Van Dyke First Verified Statement, Section 5.2.  
<sup>9</sup> Van Dyke First Verified Statement, Section 6.3.1.  
<sup>10</sup> Van Dyke First Verified Statement, Section 6.3.1.  
<sup>11</sup> Van Dyke First Verified Statement, Section 6.3.1.  
<sup>12</sup> Van Dyke First Verified Statement, Section 5.3.1.  
<sup>13</sup> See Section 3.4.2 below.

will result in invalid segment-specific metrics when compared to actual 2019 values, affecting the Board's review of both the transportation impacts and environmental impacts of the merger.

### **3.2 Applicants' attempt to "calibrate" aggregate GTM values does not remedy the methodological flaws in their modeling process and could even aggravate the magnitude of those errors.**

Operating metrics play different roles in assessing a transaction. Some values are appropriately viewed at an aggregate level, such as train-miles, crew starts, or GTMs, when those values are used at a system level for purposes such as costing. However, when assessing labor impacts, capital requirements, or environmental impacts by location, these metrics must be examined on a location-specific level, typically by individual line segment.

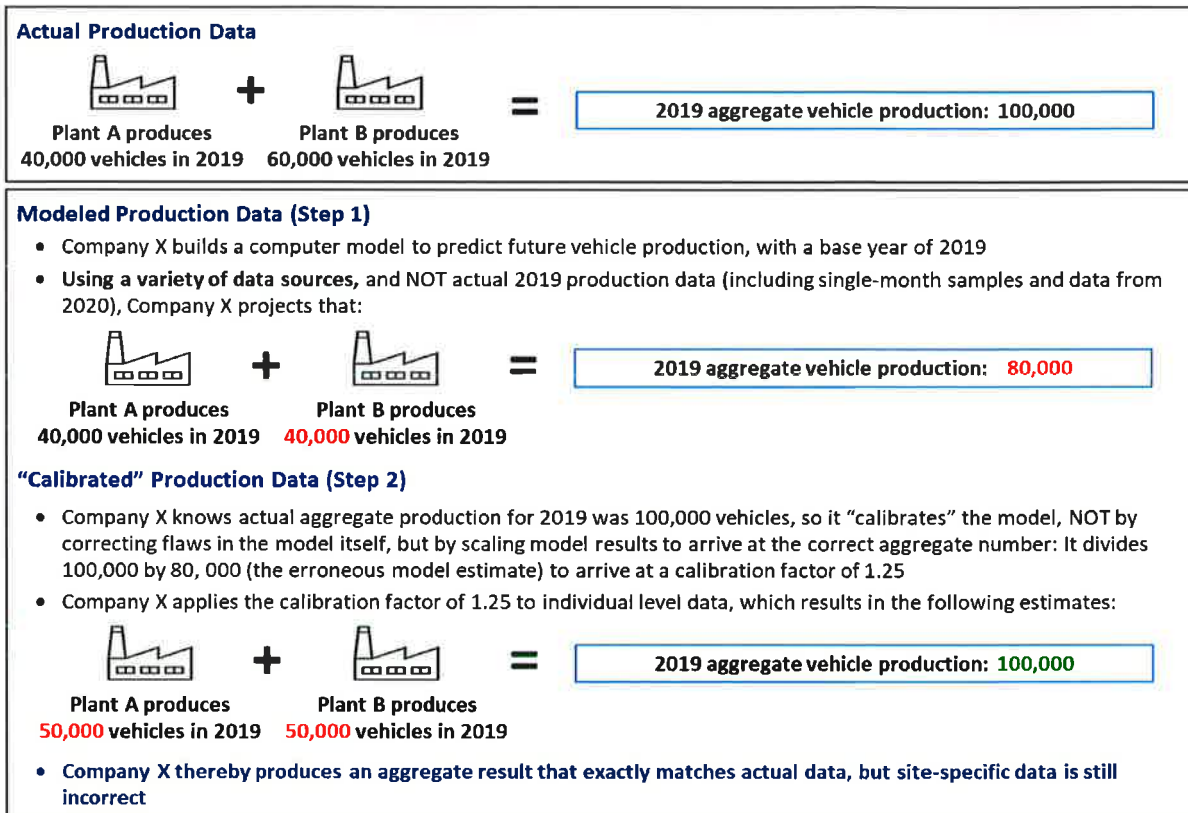
Applicants in their response to *Decision No. 16* tout that the **aggregate** GTM values in the OEA Density Data match historic values exactly, and that only "very minor calibration" adjustments had to be made to achieve that result.<sup>14</sup> This included increasing base tonnage values by a "minor" 10.2 percent for KCS lines and 4.2 percent for CP lines; and reducing base tonnage values by a "minor" 18.2 percent on KCSM lines.

While the "calibration" exercise undertaken by Applicants mathematically guaranteed that the aggregate GTM values would match, this approach did nothing to prove the accuracy of values at the segment-specific level. To the contrary, Applicants' modeling process resulted in highly inaccurate OEA Base Year and post-transaction comparisons at a segment-by-segment level – and no amount of "calibration" can correct for that fact. To better understand this, consider the simple hypothetical example provided in Exhibit 3-2.

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<sup>14</sup> See STB Finance Docket No. 36500, Applicants' Response to Decision No. 16, pp. 9-10, ¶¶15-17; the "very minor calibration" comment appears at ¶16.

Exhibit 3-2: Example of distortions caused by using an “aggregate” calibration approach in modeling



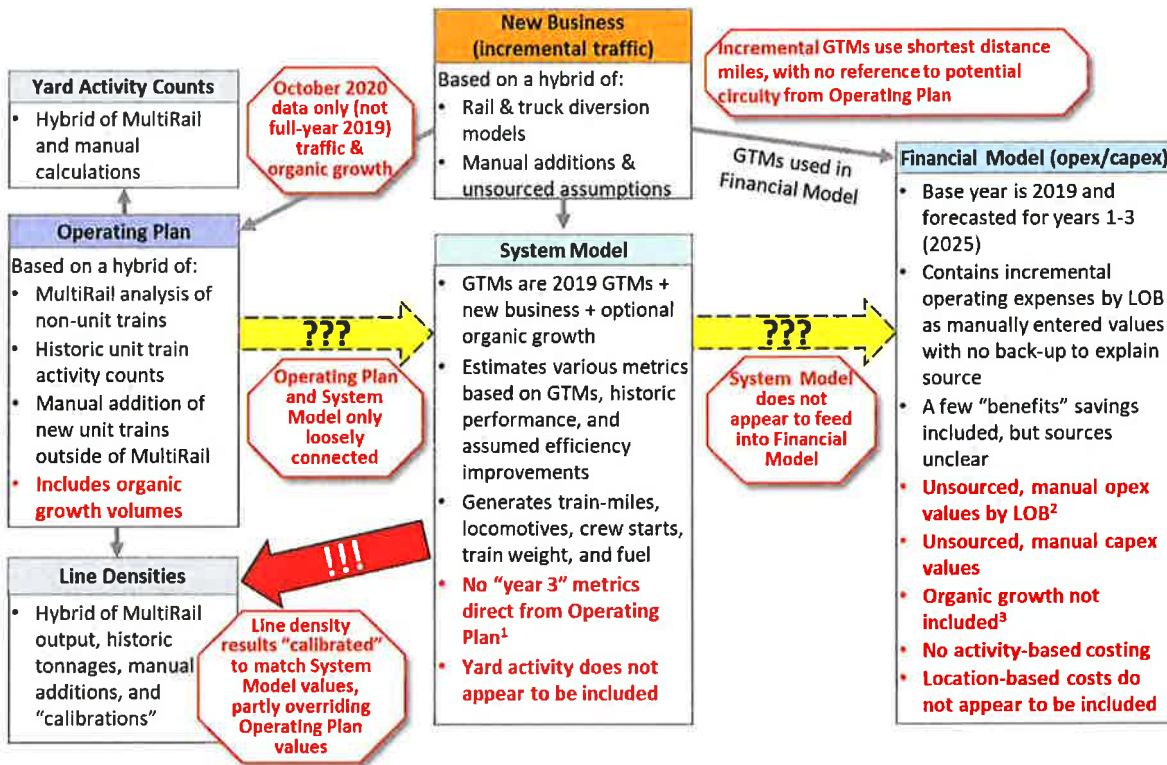
Far from “correcting” for the use of a flawed modeling process and inappropriate traffic data in the Application, the use of an aggregate calibration factor constitutes an additional threat to the integrity of tonnage values and invalidates the assessment of segment-specific impacts.

**3.3 Applicants’ OEA Density Data is not the output of a sound MultiRail analysis but instead is the result of a complex, fractured, and fundamentally flawed approach.**

Applicants used a complex, fractured, and fundamentally flawed approach to develop their Operating Plan and the various operating metrics. The many flaws in Applicants’ methodology are discussed in detail in my original Verified Statement included in CN’s Comments on the

Application.<sup>15</sup> As a reminder of the Applicants’ approach, Exhibit 3-3 below depicts the logic (or illogic) flow employed by Applicants.

**Exhibit 3-3: Depiction of the Applicants’ Modeling Process<sup>16</sup>**



Applicants insist in their response to *Decision No. 16* that the OEA Density Data values were derived from a MultiRail analysis.<sup>17</sup> But that is simply not the case. The tonnage values used by Applicants for their OEA Density Data submissions are not the result of a well-structured MultiRail analysis but instead were manufactured through a complicated process based on numerous separate data sources and "calibrations" that yielded highly suspect results.<sup>18</sup> The changing of base values from historic CP, KCS, and KCSM actual 2019 values to the "constructed" OEA Density Data does nothing to remedy this fundamentally flawed process.

<sup>15</sup> Van Dyke First Verified Statement, Section 4.4.

<sup>16</sup> Van Dyke First Verified Statement, Exhibit 4-1.

<sup>17</sup> See STB Finance Docket No. 36500, Applicants’ Response to Decision No. 16, pp. 5-6, ¶¶8-9.

<sup>18</sup> See Van Dyke First Verified Statement, Sections 4.1 and 4.3.

Based on an analysis of the Applicants' work papers related to the estimation of line densities, I developed Exhibit 3-4, which attempts to distill the disjointed, illogical process followed by Applicants in generating the OEA Density Data for the base period.<sup>19</sup> Exhibit 3-4 takes four sample line segments and walks through the complex process that Applicants used to derive gross tons per mile for each segment. Exhibit 3-4 then compares these OEA Density Data calculations with those in the original Exhibit 14 Density Data. As Exhibit 3-4 shows, there are significant and varying fluctuations between the actual data that Applicants first presented in Exhibit 14 and the OEA Density Data that they now assert is a proper substitute for actual full year 2019 densities.

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<sup>19</sup> See CP-KCS work papers: FD 36500 – Work Paper – HC – Gross Ton Miles, Train Miles, Train Weights and MGT - Methodology.pdf and FD 36500 – Work Paper – HC – Trains Per Day and Gross Ton Miles - Working Copy with Haz Breakdown.xlsx; see also Van Dyke First Verified Statement, Sections 4.1 and 4.3.

**Exhibit 3-4: Applicants’ Computation of “2019 Base Tonnage” by Line Segment for OEA Density Data Environmental Filing <sup>20</sup>**

Step	Description	Sample Values			
		Roodhouse- Godfrey, IL	Roodhouse- Murrayville, IL	Ottumwa, IA- Laredo, MO	Water Works- Nahant, IA
1	Obtain “base” daily non-unit (i.e., carload and intermodal) train count from MultiRail for trains traversing line segment touching at least 25% of the locations along line segment (not distance based) – train plan created to match to non-representative October 2020 traffic based on adaptation of Q1 2021 operating plan <sup>21</sup>	{ }	{ }	{ }	{ }
2	Obtain “base” daily unit train count based on the observed unit trains operated over each line segment using a one-month time period (October 2019 for CP, unknown for KCS). Adjustments for unit trains traversing only part of line segment are unknown. October 2019 known to under-represent oil trains on Iowa line for full year, and grain on Springfield line. <sup>22</sup>	{ }	{ }	{ }	{ }
3	Compute total base trains per day by summing unit and non-unit train counts	1.52	0.56	3.17	7.97
4	Obtain the historic average train weight by line segment for 2019 – sourcing unknown – obtained from external look-up – incorporates train mix? <i>Not taken from MultiRail</i>	{ }	{ }	{ }	{ }
5	Obtain segment distance (miles)	40	10.3	61.2	4.5
6	Compute “uncalibrated” 2019 daily gross ton miles using formula: [Total trains per day] x [Segment Distance] x [Historic 2019 train weight]	{ }	{ }	{ }	{ }
7	Determine the total GTMs from step 6 for each railroad (CP, KCS, KCSM) by summing across all line segments, and compare to “official” 2019 GTM value for each railroad and determine a “calibration factor” that will cause the individual values to sum to the overall “official” value	{ }	{ }	{ }	{ }
8	Adjust the GTM values from step 6 by the calibration factor in step 7 to compute a “final” daily “calibrated” GTM base value for “2019”	121,601	710	1,739,105	189,410
9	<b>Compute annual gross tons per mile for the line by multiplying step 8 value by 365 and dividing by the line segment length (OEA Density Data)</b>	<b>1,109,610</b>	<b>25,166</b>	<b>10,372,112</b>	<b>15,363,226</b>
10	<i>As a point of comparison, these are the 2019 gross tonnage values as published in Exhibit 14 Density Data of Application (differences exceed the 7.4% of tonnage related to locomotives on KCS and 5.6% on CP)</i>	3,157,000	3,090,000	12,234,000	18,524,000

<sup>20</sup> Based on an analysis of the work paper: FD36500 – Work Paper – HC – Trains per Day and Gross Ton Miles – Working Copy with Haz Breakdown.xlsx (“Summary Sheet” tab).

<sup>21</sup> See Van Dyke First Verified Statement, Sections 4.2 and 5.3.

<sup>22</sup> See Van Dyke First Verified Statement, Section 5.3.1 on oil trains; Section 3.4.2 below for grain trains.

Initially, it is important to note that the base trains per day numbers in Steps 1-3 of Exhibit 3-4, upon which the tonnages are based, were constructed by Applicants in a manner that is highly unlikely to represent the actual number of trains operated on each line segment in 2019. These are the same numbers that Applicants used for their base year trains per day data submitted to the STB's Office of Environmental Analysis for every line segment, and they do not reflect actual train counts from the 2019 base year. For the manifest and intermodal trains, the train count is taken from MultiRail, where the inputs to the process were traffic from October 2020, and trains from Q1 of 2021.<sup>23</sup> On the unit train side, a single one-month sample of unit trains was used, which we show was non-representative. See Sections 3.1 and 3.4 of this verified statement for examples of issues with the unit train sampling employed by CP-KCS.

For the manifest trains, it is my understanding that the Applicants adjusted their Q1 2021 operating plan to match the observed traffic volumes from October 2020, which as discussed in Section 3.1 above was not representative of the full year 2019 traffic. In theory the use of the Q1 2021 operating plan was to avoid taking credit for "efficiency gains" that will have taken place between 2019 and the approval of the merger. However, how this in any way corresponds to the Base Year 2019 actual train operations is completely unclear. Furthermore, some unknown number of trains were excluded from these counts due to CP-KCS's "25 percent rule" (discussed further below).

At a minimum, because Applicants constructed trains per day numbers using snapshots from 2019, 2020, and 2021, it is clear that the "base year" trains per day numbers submitted to the STB's OEA do not reflect actual 2019 base year data.

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<sup>23</sup> See Van Dyke First Verified Statement, Section 5.3.



These non-representative train counts were then multiplied by 2019 “historic average train weights,” to obtain to total tons on each line segment.<sup>24</sup> To the best of my knowledge, CP-KCS does not provide any information on how these train weights were produced, and why there is any reason to believe they are accurate. As one can clearly see in Exhibit 3-4 above from the example in Step 4 for the Roodhouse-Murrayville segment, where the average total train weight is a mere 112 tons, at least some of these values obviously lack credibility. See also the discussion in Section 3.4.4 below for another example of questionable train weights.

Ultimately, Exhibit 3-4 does not provide any confidence that Applicants have created base period density data that fairly represent full year 2019 values. It also raises the obvious question: *Why go through all the steps described above to create what Applicants claim is an Operating Plan that “very accurately reflected the actual GTMs moved in 2019”<sup>25</sup> when actual 2019 values were readily available for the Applicants to use?*

As the developer of MultiRail, I am keenly aware that MultiRail is capable of generating line density values directly. If the user enters an appropriate body of traffic, including gross tons, MultiRail will generate an estimate of tonnage by line segment based on that data. In doing so, the operating plan is taken fully into account, and there is no need to do complicated external mathematics to convert train counts and historic average weight into tonnage numbers (as described in Exhibit 3-4). If Applicants had simply used the correct traffic (full year 2019) and included the unit trains and traffic in MultiRail, none of these complex calculations would have been necessary. And ultimately the complex set of calculations used by CP-KCS produced

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<sup>24</sup> Weights are obtained from an unsourced look-up in FD36500 – Work Paper – HC – Trains per Day and Gross Ton Miles – Working Copy with Haz Breakdown.xlsx (“Summary Sheet” tab), while the discussion of them being in \_FD 36500 – Work Paper – HC – Gross Ton Miles, Train Miles, Train Weights and MGT - Methodology.pdf implies they are a derived value (which is not the case in the Excel spreadsheet).

<sup>25</sup> STB Finance Docket No. 36500, Applicants’ Response to Decision No. 16, p. 9, ¶16.

different segment tonnage values in line 9 of the above table compared to the actual, historic Base Year 2019 values (line 10) on a segment-by-segment basis. Even if the historic tonnage values for 2019 are “corrected” by taking the weight of locomotives into account,<sup>26</sup> the differences between modeled and actual values continue to be substantial.

Applicants claim that the discrepancy between the historic KCS traffic values they presented in the Exhibit 14 Density Data and their OEA Density Data calculations was attributable to a methodological difference: “The Operating Plan Base and Year 3 Densities assign GTMs based on the number of miles that a gross ton is moved across the segment, whereas for KCS’s and KCSM’s 2019 figures any tons touching the segment were treated as if they traversed the entire segment, resulting in considerably higher GTMs per mile in the KCS and KCSM 2019 Exhibit 14 density figures for many segments.”<sup>27</sup> But there is nothing in the Applicants’ methodology to indicate the OEA Density Data represent a pro rata approach to tonnage allocation. As demonstrated in Exhibit 3-4, Applicants counted each train as either traversing the entire line segment or excluded the train entirely if the train traversed less than 25 percent of the stations on a line segment. (My original verified statement included in CN’s Comments on the Application provides further details on this issue and the resulting distortion of Operating Plan metrics.)<sup>28</sup> Never do Applicants in their filing identify any instance where a train that traversed only part of a line segment was counted on a pro-rata basis.

The fractured and complex process detailed in Exhibit 3-4, which used a mishmash of data sources, calibrations, and questionable assumptions, provides no credible support for the notion

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<sup>26</sup> STB Finance Docket No. 36500, Applicants’ Response to Decision No. 16, which states at p. 7, ¶12: “The Operating Plan Base and Year 3 Densities exclude locomotive tons, whereas the CP, KCS, and KCSM 2019 figures (i.e., the 2019 Exhibit 14 Densities) include that tonnage.”

<sup>27</sup> STB Finance Docket No. 36500, Applicants’ Response to Decision No. 16, p. 7, ¶13.

<sup>28</sup> Van Dyke First Verified Statement, Section 4.3.3.

that OEA Density Data values produced through this process fairly represent full year 2019 tonnage values by line segment.

**3.4 Applicants' Base Year tonnage values as reported to the OEA cannot be relied upon, as demonstrated by the benchmarking of selected values against the original 2019 values from Exhibit 14 and selected other data sources.**

As demonstrated above, Applicants' flawed process provides no reason to believe that the OEA Density Data accurately represent actual 2019 densities. To confirm this, I carried out a benchmarking exercise to compare the OEA Density Data with the actual 2019 values generated in the normal course of business.

I began with the 2019 segment-specific density data presented in Exhibit 14. While Applicants have suggested that the KCS tonnage values in Exhibit 14 may contain inaccuracies,<sup>29</sup> they raise no such issues with respect to CP values, except for the inclusion of locomotives. But the inclusion of locomotive GTMs is an easy fix. GTMs with and without locomotives for KCS, CP, and the other Class I railroads are available in the annual Analysis of Class I Railroads (lines 700 through 704), albeit for US traffic only (see Exhibit 3-5). This data source shows that locomotives represented 5.6% of overall GTMs for the US operations of CP and 7.4% of GTMs for the US operations of KCS in 2019. Based on the knowledge that 5.6 percent of GTMs on CP's US lines are related to locomotives, taking 94.4 percent of the 2019 tonnage values for the CP lines, as listed in the original Exhibit 14, would produce an accurate estimate of GTMs without locomotives for CP.

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<sup>29</sup> STB Finance Docket No. 36500, Applicants' Response to Decision No. 16, p. 7, ¶¶13 and 14.

**Exhibit 3-5: Gross-ton-miles by railroad for 2019 from R-1 reports (U.S. lines only) <sup>30</sup>**

LINE ITEM	CSX	NS	CNGT	BNSF	KCS	CPSL	UP
700. Locomotives	28,856,795	30,429,239	7,763,728	109,762,761	4,928,962	4,198,385	72,880,060
701. Cars, Contents and Cabooses	386,301,629	369,908,032	126,171,491	1,158,585,109	61,737,927	70,743,019	836,209,187
702. Passenger Trains, Cars and Contents	0	0	0	0	0	0	0
703. Non-Revenue	2,120,408	2,810,057	1,209,914	11,191,234	32,507	428,316	10,406,772
<b>704. Total Gross Ton-Miles</b>	<b>417,278,832</b>	<b>403,147,328</b>	<b>135,145,133</b>	<b>1,279,539,104</b>	<b>66,699,396</b>	<b>75,369,720</b>	<b>919,496,019</b>
Percent of GTMs Due to Locomotives	6.9%	7.5%	5.7%	8.6%	7.4%	5.6%	7.9%

A similar adjustment of 7.4% percent of tonnage values in the original 2019 Exhibit 14 for KCS would address the locomotive issue there as well. However, I note that Applicants have alleged that there are other errors in the KCS Exhibit 14 tonnage measures. I therefore used MultiRail to estimate 2019 tonnage using full year 2019 traffic for the Springfield line as a cross-check. We also examined the sample unit train file that CP-KCS used to identify the base period unit trains for KCS,<sup>31</sup> as well as the full year 2019 waybill file<sup>32</sup> as additional ways to cross-check the OEA Density Data. The four examples described below show that Applicants’ “constructed” OEA line segment density values make no sense, and in fact are under reporting the base period values by millions of tons per year for many key line segments.

**3.4.1 Example 1: Benchmarking of the CP line through Ottumwa and Davenport**

An examination of the CP line through Ottumwa and Davenport (and associated feeder lines) reveals significant differences between the adjusted base year values published in the Application and the values in the OEA Density Data.

<sup>30</sup> Analysis of Class I Railroads, published by the Association of American Railroads (AAR).

<sup>31</sup> CP-KCS work paper: FD 36500 - Work Paper - HC - KCS KCSM Bulk Train Cars Per Day by Subdivision.xlsx.

<sup>32</sup> 100% CP-KCS Waybill data “FD 36500 – Work Paper – HC 2019\_CONSOLIDATED\_CPKCS\_DATA\_MASTER.txt” from CP-KCS work papers.

The original tonnage map for the Ottumwa-Davenport line published in the Application is shown in Exhibit 3-6 below, and my benchmarking of the OEA Density Data for these lines is presented in Exhibit 3-7.

Exhibit 3-6: 2019 tonnage map for Ottumwa-Davenport line as published in the Application<sup>33</sup>



Exhibit 3-7: Benchmarking of selected CP line segments, Ottumwa-Davenport and feeder lines<sup>34</sup>  
Millions of annual gross tons

Line Segment	Segment Miles	Adjusted Exhibit 14 Tonnage (94%)	OEA Base Year Tonnage <sup>35</sup>	Tonnage Difference	Percent Diff.
Marquette-Sabula	98.0	20.00	29.18	9.18	45.9%
Davis Jct.-Sabula	61.5	9.82	15.57	5.75	58.6%
Nahant-Muscatine	24.6	14.02	13.32	-0.70	-5.0%
Muscatine-Ottumwa	82.5	16.06	14.78	-1.28	-8.0%
Ottumwa-MO/IA Laredo	61.2	11.51	10.37	-1.14	-9.9%
MO/IA Laredo-Laredo	41.1	11.46	10.37	-1.09	-9.5%
Laredo-Polo <sup>36</sup>	n/a	11.46	12.37	0.91	7.9%
Polo-Airline Jct.	42.1	11.22	10.49	-0.73	-6.5%

<sup>33</sup> CP-KCS Application, Volume 2, Exhibit 14 traffic density maps, pp. 508, 510.

<sup>34</sup> Oliver Wyman analysis.

<sup>35</sup> See STB Finance Docket No. 36500, EI-31353, October 28, 2021.

<sup>36</sup> Appears to be trackage rights on Union Pacific, and therefore omitted from some tables.

The benchmarking reveals consistent *underreporting* in the OEA Density Data for most of the Ottumwa line (in the range of 5-10 percent), and huge *overreporting* of tonnages, in the neighborhood of 50 percent, for the Marquette and Davis Junction lines that feed into the Ottumwa line. Unless Applicants assert that there are large errors (beyond the inclusion of locomotives) in the historic tonnage values CP generates in the normal course of business, it is clear that the OEA Density Data are not representative of actual 2019 tonnages on CP.

Rather than simply replacing the base period values with questionable ones derived from a flawed modeling process, a better approach would have been to use the actual full year 2019 CP tonnage values for the Base Year and then develop Year 3 values by adding the incremental changes from modeling to those values.

#### **3.4.2 Example 2: Springfield Line benchmarking**

As part of CN's Responsive Application seeking divestiture of the Springfield Line, I undertook extensive analysis of this line, including using MultiRail to develop an operating plan and to assess line densities. The results of the Springfield Line analysis from a "base year" tonnage perspective is presented in Exhibit 3-8.

**Exhibit 3-8: Benchmarking of KCS Springfield Line segments**  
 Millions of annual gross tons

Subdivision Start	Subdivision End	Original Exhibit 14 2019 Tonnage <sup>37</sup>	Adjusted Exhibit 14 Tonnage (93%)	OEA Base Year Tonnage <sup>38</sup>	MultiRail Estimated Trailing Tonnage <sup>39</sup>	Adjusted Exhibit 14 vs. OEA Percent Difference	Adjusted Exhibit 14 vs. MultiRail Percent Difference
Airline Jct. MO	Slater MO	10.38	9.65	5.83	{{ }}	-40%	{ }
Slater MO	Mexico MO	8.81	8.19	3.71	{{ }}	-55%	{ }
Mexico MO	Roodhouse IL	6.66	6.19	3.39	{{ }}	-45%	{ }
Roodhouse IL	Godfrey IL	3.82	3.55	1.11	{{ }}	-69%	{ }
Godfrey IL	East St. Louis	5.48	5.10	7.77	{{ }}	52%	{ }
Roodhouse IL	Murrayville IL	3.09	2.87	0.03	{{ }}	-99%	{ }
Murrayville IL	Jacksonville IL	3.05	2.84	0.43	{{ }}	-85%	{ }
Murrayville IL	Springfield IL	0.04	0.04	0.03	{{ }}	-37%	{ }

The differences between the original Exhibit 14 values and the OEA Density Data for the Base Year on the Springfield Line are so extreme that it is simply not possible to give any credibility to the OEA Density Data, unless one concludes that the tonnage values that KCS collected for 2019 in its normal course of business had no connection to reality. While my MultiRail analysis also exhibited differences against the original Exhibit 14 values, the broad indicators are that based on full year 2019 traffic data used in MultiRail, the Exhibit 14 values are far closer to reality than the ones in the OEA submission.

As a further cross-check, I investigated what traffic the full year, 2019 waybills showed as originating or terminating in the Jacksonville, IL area. What was found is that {{ }} loads, and {{ }} empties originated or terminated at Jacksonville in 2019 based on the full year waybill data supplied by CP-KCS.<sup>40</sup> This traffic was almost all grain traffic to/from Mexico. In

<sup>37</sup> CP-KCS Application Volume 2, Exhibit 14, page 461.

<sup>38</sup> See STB Finance Docket No. 36500, EI-31353, October 28, 2021.

<sup>39</sup> See work papers for this statement: HC – Springfield Line Tonnage Estimation Using MultiRail Methodology.pdf and HC – MultiRail Line Density Tonnage for Springfield Line.xlsx.

<sup>40</sup> 100% CP-KCS Waybill data “FD 36500 – Work Paper – HC 2019\_CONSOLIDATED\_CPKCS\_DATA\_MASTER.txt” from CP-KCS work papers.

total this represents approximately {{ }} million tons per year. Of this volume, approximately {{ }} million gross tons per year are going to/from Mexico via Laredo.

The CP-KCS work papers indicate that the unit grain trains on the Jacksonville subdivision average {{ }} cars/train, and that there were a total of {{ }} trains in the sample month, which equates to {{ }} trains/day or {{ }} trains per year.<sup>41</sup> However, the work paper upon which the OEA Density Data are based never lists more than {{ }} unit trains per day for any line segment east of Slater.<sup>42</sup> Based on the approximately {{ }} loaded and empty grain moves into and out of Jacksonville during 2019, applying the {{ }} cars/train value yields a traffic driven estimate of {{ }} trains/year, or {{ }} trains per month, or {{ }} unit trains/day, quite a bit higher than {{ }} unit trains/day used in the OEA Density Data.

Clearly, there was a total failure to capture the accurate volumes on the OEA Density Data for these line segments, likely caused by the use of unrepresentative, single month snapshots of the unit trains, possibly compounded by other errors. It is interesting to note that if this Jacksonville data is missing from the entire routing from Jacksonville to Kansas City, adding it in would bring the OEA numbers much closer to the historic data. Furthermore, based on the waybill data, much of this traffic travels all of the way to Mexico, and thus this missing {{ }} gross tons of traffic would impact the entire KCS mainline from Kansas City to Laredo (and beyond).

### 3.4.3 Example 3: KCS mainline benchmarking

A side-by-side comparison of the 2019 tonnages published in the original Exhibit 14 Density Data to the values that Applicants now propose to use from their OEA Density Data

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<sup>41</sup> See CP-KCS work paper: FD 36500 - Work Paper - HC - KCS KCSM Bulk Train Cars Per Day by Subdivision.xlsx.

<sup>42</sup> See CP-KCS work paper: FD36500 – Work Paper – HC – Trains per Day and Gross Ton Miles – Working Copy with Haz Breakdown.xlsx (“Summary Sheet” tab).



submission for the KCS mainline from Kansas City to Laredo demonstrates variances that are too extreme to be credibly explained as a result of differences in the methodologies used by KCS and CP in developing line densities in the normal course of business. Exhibit 3-9 below provides a summary view of the KCS mainline values.

**Exhibit 3-9: Comparison of historic 2019 tonnage from the original Exhibit 14 to the Applicants' proposed OEA Density Data for KCS mainline**  
Millions of annual gross tons

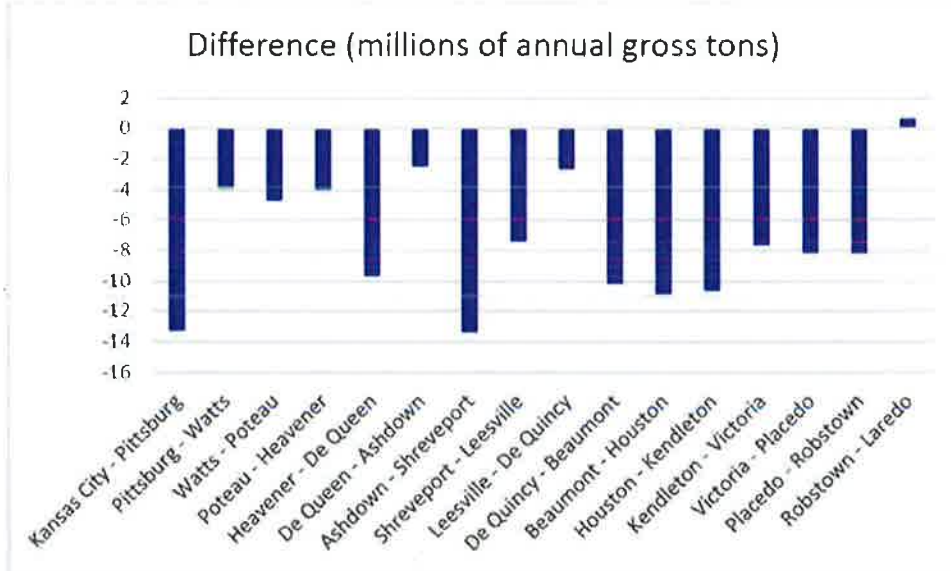
Segment	Historic 2019 Tonnage <sup>43</sup>	OEA Base Year Tonnage <sup>44</sup>	Tonnage Difference	Percent Difference
Kansas City - Pittsburg	51.3	38.0	-13.3	-26%
Pittsburg - Watts	40.8	36.9	-3.9	-9%
Watts - Poteau	38.2	33.5	-4.7	-12%
Poteau - Heavener	38.9	34.9	-4.0	-10%
Heavener - De Queen	42.0	32.4	-9.7	-23%
De Queen - Ashdown	43.0	40.5	-2.5	-6%
Ashdown - Shreveport	45.8	32.4	-13.4	-29%
Shreveport - Leesville	33.7	26.2	-7.4	-22%
Leesville - De Quincy	30.1	27.4	-2.7	-9%
De Quincy - Beaumont	33.2	23.1	-10.2	-31%
Beaumont - Houston	30.2	19.3	-10.9	-36%
Houston - Kendleton	28.3	17.7	-10.6	-38%
Kendleton - Victoria	26.0	18.4	-7.6	-29%
Victoria - Placedo	25.8	17.7	-8.2	-32%
Placedo - Robstown	25.8	17.7	-8.2	-32%
Robstown - Laredo	37.3	38.0	0.6	2%

The charts depicted in Exhibits 3-10 and 3-11 provide a graphical view of the differences in terms of both absolute values and percentages.

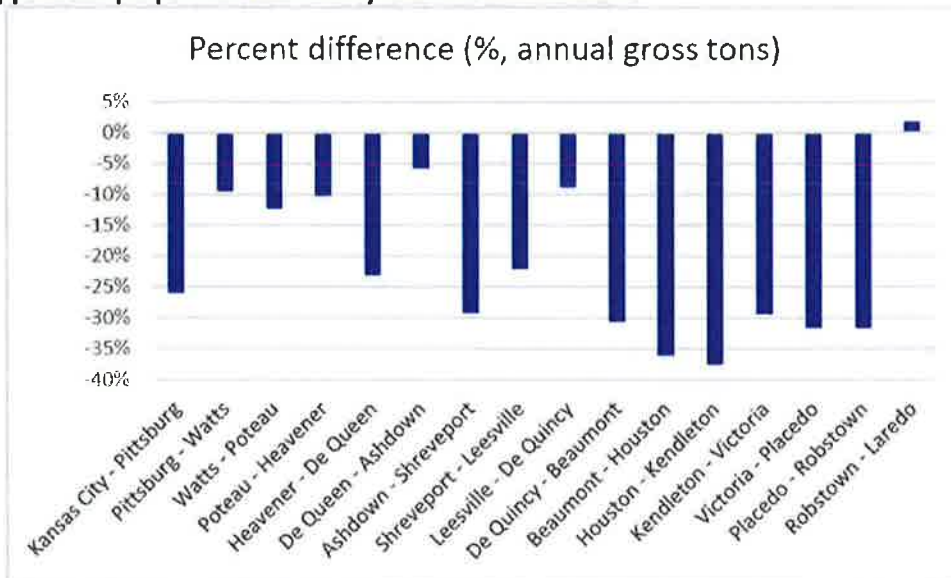
<sup>43</sup> CP-KCS Application Volume 2, Exhibit 14 traffic density map, p. 512.

<sup>44</sup> See STB Finance Docket No. 36500, EI-31353, October 28, 2021.

**Exhibit 3-10: Tonnage differences between historic 2019 tonnage from the original Exhibit 14 Density Data to the Applicants’ proposed OEA Density Data for KCS mainline**  
Millions of annual gross tons



**Exhibit 3-11: Percentage differences in historic 2019 tonnage from the original Exhibit 14 Density Data versus the Applicants’ proposed OEA Density Data for KCS mainline**



As one examines these differences, we can see a logical and consistent progression in the historic tonnages, with significant changes at Shreveport (where traffic likely disperses in many directions), and Robstown-Laredo, where interchange traffic bound to Mexico comes onto KCS.

In the base OEA Density Data we see a significant number of line segments that vary by more than 30% from the actual historic values. It is hard to believe that the KCS “normal course of business” numbers are so faulty as to result in errors of this magnitude.

It is also curious that the segments from De Quincy through Robstown in particular are massively lower in the OEA Density Data. Unlike the Meridian line, the historic 2019 values have a measured and consistent pattern to them, so it does not appear credible that the differences relative to the OEA Density Data numbers could be explained by the historic numbers overcounting traffic that moved over only a portion of each and every one of these segments, or issues of misallocation of traffic between segments. Certainly, the inclusion or exclusion of locomotives cannot explain a 30% difference in tonnage, when we know that locomotives represent approximately 7.4% of the overall GTMs on KCS. However, cumulative errors due to the use of non-representative traffic, such as the examples discussed in Section 3.3.2 above, and 3.3.4 below could yield consistent under reporting of tonnages (and train counts) of the sort demonstrated herein.

**3.4.4 Example 4: Shreveport—Wylie benchmarking**

Like the KCS mainline, the line from Shreveport to Wylie presents another set of questionable values. Below is a comparison of the original 2019 Exhibit 14 Density Data values to the OEA Density Data Base Year values.

**Exhibit 3-12: Comparison of historic 2019 tonnage from the original Exhibit 14 to the Applicants’ proposed OEA Density Data for Shreveport to Wylie line segments**  
Millions of annual gross tons

Segment	Historic 2019 Tonnage <sup>45</sup>	OEA Base Year Tonnage <sup>46</sup>	Tonnage Difference	Percent Difference
Shreveport – Greenville	22.6	14.8	-7.8	-35%
Greenville - Wylie	17.7	15.9	-1.8	-10%

<sup>45</sup> Application Volume 2, Exhibit 14 traffic density map, p. 512.

<sup>46</sup> See STB Finance Docket No. 36500. EI-31353. October 28, 2021.

Of note in the above is not only the large 35% difference in tonnage on the Shreveport – Greenville segment, but the change in tonnage between the segments. In the historic 2019 data, the tonnage dropped by 4.9 million tons on the Greenville-Wylie segment relative to the Shreveport-Greenville segment, while in the OEA data we instead see an *increase* of 1.1 million tons.

An examination of the 2019 full year waybill data reveals that there is a major consumer of {{ }} at {{ }}, which is roughly at the {{ }} of the Shreveport – Greenville line segment.<sup>47</sup> According to the 2019 waybill data, this customer received {{ }} loaded {{ }} shipments, and dispatched {{ }} empty {{ }} cars. If we assume {{ }} tons/car for the loads, and {{ }} tons/car for the empties, this equates to {{ }} million gross tons per year. All of this traffic arrived at {{ }} from Kansas City via Shreveport and is likely a main driver for the historic drop in tonnage on this line as one moves west from Shreveport to Greenville to Wylie.

At an average of {{ }} cars per train,<sup>48</sup> this volume represents {{ }} trains per year (both loaded and empty combined), or {{ }} trains/month, or {{ }} trains/day. A review of the KCS “snapshot” of unit trains used for the CP-KCS base year operations shows the Greenville subdivision having only {{ }} unit trains during the sample month that was used by CP-KCS, or {{ }} unit trains/day.<sup>49</sup> However, the work paper upon which the OEA Density Data is based<sup>50</sup> shows {{ }} unit trains/day. While still a {{ }}% under count, it is

<sup>47</sup> See 100% CP-KCS Waybill data “FD 36500 – Work Paper – HC 2019\_CONSOLIDATED\_CPKCS\_DATA\_MASTER.txt” from CP-KCS work papers.

<sup>48</sup> Based on the entries for Greenville subdivision in the work paper: FD 36500 - Work Paper - HC - KCS KCSM Bulk Train Cars Per Day by Subdivision.xlsx.

<sup>49</sup> See FD 36500 - Work Paper - HC - KCS KCSM Bulk Train Cars Per Day by Subdivision.xlsx.

<sup>50</sup> See CP-KCS work paper: FD36500 – Work Paper – HC – Trains per Day and Gross Ton Miles – Working Copy with Haz Breakdown.xlsx (“Summary Sheet” tab).

at least closer to the historic values. That being said, this same spreadsheet lists the average train weight for both the Shreveport – Greenville and the Greenville – Wylie segments at {{ }} tons. The average loaded {{ }} train would be about {{ }} tons ({{ }} cars at {{ }} tons/car), and an empty train would be about {{ }} tons ({{ }} cars at {{ }} tons/car), for an average unit {{ }} train weight of {{ }} tons. With these heavy trains not traversing the Greenville – Wylie segment, it is simply not possible for both of these segments to have the same average, historic train weight. Thus, the use of the same weight for both segments is likely another cause for errors in the OEA Density Data.

While I will not speculate on the reasons why the OEA Density Data show an increase in tonnage as one moves from Shreveport to Wylie, versus a decrease in the historic data, I observe that this {{ }} has sufficient volume to explain almost the entire decrease shown in the historic data. Once again, I believe this clearly demonstrates the flaws in the OEA data, and why it is a poor substitute for the actual 2019 density data. Furthermore, given that this missing traffic uses the KCS mainline from Kansas City, it is quite likely this under reporting also impacted the tonnage values all the way from Shreveport to Kansas City.

**VERIFICATION**

I, Carl Van Dyke, 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 28th day of March, 2022.

  
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Carl Van Dyke