

EXHIBIT C

Verified Statement of Thomas D. Crowley and Robert D. Mulholland

BEFORE THE
SURFACE TRANSPORTATION BOARD

DOCKET NO. FD 36500

CANADIAN PACIFIC RAILWAY LIMITED; CANADIAN PACIFIC RAILWAY
COMPANY; SOO LINE RAILROAD COMPANY; CENTRAL MAINE & QUEBEC
RAILWAY US INC.; DAKOTA, MINNESOTA & EASTER 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

VERIFIED STATEMENT

of

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President

and

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Senior Vice President

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ECONOMIC CONSULTANTS

On Behalf Of

**THE COMMUTER RAIL DIVISION OF THE
REGIONAL TRANSPORTATION AUTHORITY AND NORTHEAST
ILLINOIS REGIONAL COMMUTER RAILROAD CORPORATION
(METRA)**

Dated: March 15, 2022

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I. INTRODUCTION

We are Thomas D. Crowley and Robert D. Mulholland, President and a Senior Vice President, respectively, of L. E. Peabody & Associates, Inc. L. E. Peabody & Associates, Inc. is an Economic Consulting Firm that specializes in addressing economic, transportation, marketing, financial, accounting and fuel supply matters. We spent most of our consulting careers of over 50 and 25 years, respectively, evaluating railroad operations, capacity, costs and profitability and pricing issues for shippers, producers, railroads and government agencies. Our credentials are included as Exhibit No. 1 and Exhibit No. 2 to this Verified Statement (“VS”).

Counsel for The Commuter Rail Division of the Regional Transportation Authority and Northeast Illinois Regional Commuter Railroad Corporation (“Metra”) asked us to evaluate certain aspects of the Merger Application filed at the Surface Transportation Board (“STB”) by the Canadian Pacific Railway Company (“CP”) and the Kansas City Southern Railway (“KCS”) (jointly “CP/KCS” or “Applicants”) and their respective affiliates.¹

Specifically, we were asked to: (1) review and analyze the Merger Application to understand and assess whether CP/KCS properly evaluated the potential impacts of the proposed transaction on Metra’s service and lines; and (2) to conduct an independent analysis, using industry standard modeling techniques, to evaluate the impact of the proposed transaction on Metra’s service and lines, and to identify remedial measures that may be needed to ensure Metra’s service does not deteriorate as a result of the proposed increase in CP freight traffic volumes over Metra’s lines.

¹ STB Docket No. FD 36500, *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*, filed October 29, 2021 (“Merger Application”).

Below we provide a background of the lines under study and CP/KCS' claims regarding the impacts of the transaction, our methodology for evaluating those claims, our findings based on our evaluation, the results of our own independent modeling exercise using Berkeley Simulation Software's Rail Traffic Controller ("RTC") modeling software, and a summary of the implications, including support for conditions to be imposed on the proposed transaction in order to mitigate harmful interference with Metra's service due to the impact of the proposed transaction.

II. SUMMARY OF FINDINGS

Metra's Milwaukee District ("MD") lines are located on one of CP's busiest rail segments. Well over 100 trains operate over Metra's MD lines every day, including Metra commuter passenger trains, Amtrak intercity passenger trains, CP freight trains, and foreign carrier freight trains.

CP/KCS plan to significantly increase the number of daily freight trains operating over Metra's MD lines following the proposed merger. Most notably, they plan to add eight (8) new daily line-haul intermodal and manifest trains serving Bensenville Yard on Metra's Milwaukee District West ("MD-W") line. CP/KCS also project that they will add roughly one unit train per day (on average) to both the MD-W line and the Milwaukee District North ("MD-N") line. The number of trains CP/KCS plan to add to Metra's MD lines is not the only thing that causes operating challenges. The size of the proposed train additions compounds the problem exponentially. Many of the 10 new daily trains CP/KCS plan to add will be exceptionally long, and all eight (8) of the new intermodal and manifest trains will operate into and out of CP's Bensenville Yard, which is located on Metra's MD-W line. Bensenville is already one of the busiest yards on CP's system. Yarding long trains at Bensenville is difficult because the trains exceed the length of the receiving tracks, which requires the CP train crews to break up the trains on arrival. This operation entails throwing a series of yard switches, and sometimes the tail end of an arriving train will remain on—and block—the mainline tracks while the train crew performs the required switching. Often when this happens, Metra's trains get delayed. Introducing multiple additional long trains every day will result in more conflicts in the Bensenville Yard, and it will increase the frequency and/or duration of delays to Metra's trains resulting from blocked mainline tracks.

The following summarizes our findings based on our review of the Merger Application.

1. The proposed CP/KCS network is hourglass shaped. A single line from Shreveport, LA to Sabula Jct., IA, will join the expansive KCS system on the south to the expansive CP system on the north. All north-south traffic will have to be funneled through this line segment. North of Sabula Jct., there are two (2) routing options to access CP's vast northern footprint: (1) over the Marquette Subdivision, which is largely single-tracked and contains timber bridges and other dated structures; or (2) over Metra's MD lines. Because the Marquette Subdivision will be incapable of accommodating CP/KCS' planned volume of post-merger traffic, Metra's MD lines will become the only alternative for moving the significantly increased freight flows that CP/KCS project.
2. Despite CP/KCS' plan to increase the volume of scheduled CP intermodal and manifest trains moving into and out of Bensenville by roughly 50 percent, their operating plan does not add any local trains shuttling blocks of cars between Bensenville and other Chicagoland yards operated by other carriers. Rather, CP/KCS claim, without support, that the local trains currently operating out of Bensenville will be able to handle the additional volume. By ignoring the need for additional local trains, CP/KCS understated the true increase in freight train interference on Metra's lines.
3. CP/KCS failed to demonstrate that the Bensenville Yard will be able to accommodate the additional car handling and blocking activities that will be required following the merger.
4. CP/KCS downplay the impact its planned freight train additions will have on Metra's operations. They claim that there is (or will be) ample capacity to accommodate their proposed increase in freight train volume. However, their claim is unsupported. CP/KCS performed no rail simulations to demonstrate the feasibility of their proposed operating plan, even though a late production of documents in response to Metra's requests for production demonstrates that CP performs rail simulation analyses in the normal course of business. Rather, they made some calculations based on their expected freight train volumes, train speeds for select trains, and length and location of sidings on their mainline track segments. As a result of these calculations, CP/KCS identified locations where they plan to add sidings and other improvements that they claim will resolve any possible capacity issues and accommodate their proposed operations while causing no negative impacts to Metra's service.
5. CP/KCS' capacity analyses did not consider any passenger train volumes or schedules.
6. Train event data provided by CP show that it routinely operates extra trains over Metra's MD lines. As the name implies, extra trains are required when the volume of traffic moving in a lane with scheduled service exceeds the capacity of

the trains that are scheduled to operate in that lane. When this happens, CP will dispatch two (2) trains rather than the one train included in the daily schedule for that route.

7. The CP train event data shows that CP trains traversing Metra's MD lines, particularly trains that originate on other parts of CP's network and arrive in Bensenville, routinely operate behind schedule. The combination of significant volumes of extra trains and trains operating behind schedule demonstrates that real world operations seldom align perfectly with an operating plan. CP train event data also shows that CP freight trains frequently operate on Metra's MD lines during Metra Commuter Peak Periods.
8. The provided CP train event data does not contain data for the many foreign trains that traverse Metra's lines on a daily basis. With only minor exceptions, the descriptions of Chicago operations included in the CP/KCS operating plan are vague and unhelpful with respect to determining the schedules and operations of foreign trains serving Bensenville. Because CP/KCS failed to disclose the significant volume of foreign trains moving over Metra's line segments, their claims regarding available capacity are unsupported.
9. CP's use of Metra's MD line during Metra commuter Peak Periods increased since CP's relatively recent adoption of Precision Scheduled Railroading ("PSR"). Incidents of CP freight train interference on Metra's lines have risen significantly as a result of CP dispatchers implementing directives calling for strict schedule adherence for CP freight trains. The new intermodal and manifest trains that CP/KCS plan to add are high priority freight trains that CP will make every effort to operate on schedule. This will increase the likelihood of conflicts between CP dispatching protocols and Metra schedule adherence.

Because the analyses included in the workpapers supporting the CP/KCS operating plan fail to measure the impact of their proposed operations on Metra's trains, we performed a series of train simulations using the RTC modeling software that the STB used to evaluate operating plans in other proceedings. A summary of the key findings related to our RTC analyses follows.

10. The CP/KCS Operating Plan fails because projected volumes will exceed capacity, even after all of CP/KCS' planned infrastructure expansion projects are completed.
11. Our RTC simulations revealed that CP/KCS' proposed infrastructure additions to the Marquette Subdivision will be woefully insufficient to accommodate the projected increase in train volume moving over that line. The Marquette Subdivision is the middle segment of the only CP/KCS route between St. Paul and Kansas City that avoids Chicago. Although the sidings CP/KCS plan to add to

the Marquette Subdivision are long enough to accommodate the projected unit trains, they are not long enough to accommodate the long intermodal/manifest trains CP/KCS will operate. The topography along the Marquette Subdivision will make it extremely difficult for CP/KCS to make the additional infrastructure investment that would be required to accommodate its planned volume increases on that line.

12. Absent the addition of significantly more infrastructure than CP/KCS plan to add to the Marquette Subdivision (which would be very difficult given the topography on that line segment), CP/KCS will have no choice but to reroute trains from the Marquette Subdivision over the only alternate route, which is via Chicago over Metra's MD lines. Our RTC simulations demonstrate that the alternate Chicago route (over Metra's lines) cannot easily absorb diverted Marquette traffic.
13. The projected volume of trains moving over the MD lines, including the rerouted Marquette trains that are inevitable, will cause reduced train performance for both Metra and CP without additional changes.
14. CP's proposed volume increase cannot be accommodated on Metra's lines as they currently exist and CP has not proposed any infrastructure additions on Metra's lines that would allow for their proposed volume increase while maintaining Metra's current level of service. At Metra's request, we tested the impact of several capacity improvements and found that they would moderate but not eliminate entirely the service level deterioration that is sure to result from the introduction of increased freight train volumes over Metra's lines following the proposed merger.
15. Our future scenario RTC simulations reflect the expected increase in Metra train volumes. Metra voluntarily reduced its train frequency on its MD lines following the onset of Covid in 2020, which freed up some capacity on the lines. However, Metra intends to return to its pre-Covid train volume in the near future. CP/KCS' claim that there is sufficient capacity for their planned freight volume increases, but rail line capacity on Metra's MD lines is not the exclusive property of CP/KCS.
16. Shared use of rail infrastructure will inevitably result in conflicts between freight and passenger operations. CP train dispatchers implement the dispatching protocols that are developed by CP management. Logic dictates that CP management's focus is primarily on its core operations, i.e., moving freight trains. CP/KCS' desire to significantly increase freight volumes over Metra's lines must be weighed against Metra's need to provide high-quality and expanded service to its customers.

III. BACKGROUND

Metra is the public agency responsible for operating commuter rail service in the Chicagoland area. Among the lines that it operates over are the MD-N line between Chicago Union Station (“CUS”) and Fox Lake, IL, and the MD-W line between CUS and Big Timber, IL (collectively the MD lines). Metra’s North Central Service (“NCS”) also operates over the MD-W line between CUS and Tower B12 at Franklin Park.

Metra acquired these lines following the bankruptcy of the Chicago, Milwaukee, St. Paul and Pacific Railroad Company in the 1980’s. Exhibit No. 3 contains several schematics of Metra and surrounding rail lines including: Metra’s MD lines (page 1); a schematic showing how the Metra lines fit into CP’s freight network (page 2); a schematic showing the CP Subdivision naming conventions for Metra’s track segments and the surrounding CP lines (page 3); a schematic showing Metra’s MD and Connecting Lines with Additional Required Infrastructure (page 4); and a schematic showing CP and Metra Future Case with CP/KCS and Amtrak Planned Infrastructure Expansion (page 5).

Metra acquired the MD lines subject to a 99-year trackage agreement with a predecessor freight railroad to CP, under which dispatching authority was granted to that railroad. Since acquiring a controlling interest in the predecessor railroad, CP has operated over and dispatched the MD lines. CP refers to the Metra-owned MD-W line as the Elgin Subdivision (between Randall Road and Tower A5), and the Metra-owned MD-N line as the Fox Lake Subdivision (between Fox Lake and Rondout) and the C&M Subdivision (between Rondout and CUS).

In 1993, Metra assumed responsibility for the maintenance of these rail lines and modified the trackage agreement to make clear that: (a) CP must recognize the priority of commuter service operations during certain “peak periods” on weekday mornings and evenings and may not interfere

with such trains; and (b) CP is prohibited from making operational changes that unreasonably disrupt or delay non-peak period trains. The 1993 amendment also provided that CP must utilize reasonable operating rules, and that CP may not unreasonably withhold consent to Metra's written requests for schedule changes.

IV. CP/KCS' ASSERTIONS REGARDING IMPACTS ON METRA'S SERVICE AND LINES FROM THE TRANSACTION

In the verified statements and related documents supporting the Merger Application, CP/KCS state that “CP is keenly aware of the importance to U.S. transportation policy of fostering an expanded network of efficient rail passenger servicers. CP/KCS will help achieve that goal.”² CP/KCS also state that “CP has been a good partner to the passenger service operators that use our lines in the United States and Canada,” and that they “have enabled Metra to achieve greater than 94 percent on-time performance on our lines, providing safe and reliable service to Metra customers in reaching their destinations.”³

A. METRA TRAIN DELAY REPORTING IN CONTEXT

The 94 percent on-time statistic cited by CP/KCS here is misleading for a number of reasons. First, 94 percent represents the portion of Metra trains that did not have a *reportable* delay, and only delays over five (5) minutes are considered reportable.⁴ In other words, any Metra train that arrived between one and five (5) minutes late is considered “on-time” for purposes of developing this performance metric. This five (5) minute grace window is referred to as “Tolerance.”

Second, it is standard practice to add additional time in Metra's schedules at the end of the schedule, just before the final destination. This extra time is referred to as “Rubber” in the schedule. With this in place, a train that is delayed en route can potentially still arrive at the final station on time (or at least within the 5-minute Tolerance window). As a result, if a train is delayed, passengers travelling to intermediate stations may arrive late, even if the train arrives at its final

² See, Merger Application, APP Vol. 1, pp. 172-174, Creel V.S. ¶¶ 41-45.

³ *Id.*

⁴ See, Oppenheim V.S. ¶ 24. See also Metra, On-Time Performance Reports, <https://metra.com/time-performance-reports> (visited Feb. 16, 2022).

station within the Tolerance window where it would be considered on-time. For example, few passengers on westward trains going to Fox Lake on the MD-N ride all the way to Fox Lake. If a delay occurs early in the route, passengers travelling to stations including Glenview, Northbrook, Deerfield, and Lake Forest – intermediate stations where many people customarily disembark – may be late getting to their station(s) even if the train ultimately gets to Fox Lake within the Tolerance window.

Third, it is a regular practice to include “Construction Schedules” for most midday trains during Construction season, from April through November. When a Construction Schedule is in place, the arrival time at final destination is generally restated to 10 minutes later than the standard scheduled time. Therefore, for more than half of the year, train arrivals at the final destination station can be as much as 15 minutes late (five (5) minutes of Tolerance plus 10 minutes of Construction Schedule time) and still be considered on time for reporting purposes.⁵

B. LACK OF ANALYSIS OF IMPACT ON METRA OPERATIONS

CP/KCS make a number of additional assertions regarding the lack of impact of their proposed merger on Metra’s service in the documents supporting their Merger Application, including the following:

The CP/KCS Transaction will not result in any detrimental impact on Amtrak or commuter operations. To the contrary, it should foster expansion in passenger operations on the CP/KCS system.⁶

The Transaction is projected to increase freight traffic by 7.1 trains per day on the western 24.2 miles of [the MD-W] line, between Almora and CP’s Bensenville Yard. However, there is ample capacity for these additional train frequencies. The [MD-W Line] is double track, with triple track east of Bensenville Yard, and train slot capacity is not a concern given the low

⁵ See, Oppenheim V.S. ¶ 24.

⁶ See, Merger Application, APP Vol. 2, p. 317, Operating Plan ¶ 164.

current freight train frequencies and the ample infrastructure. Metra service will not be adversely affected.⁷

CP/KCS' lack of concern regarding train slot capacity is evidenced by its failure to study the impact of its proposed train additions over Metra-owned track. However, train slot capacity is a major concern to Metra. Metra's trains are routinely delayed by CP freight trains even with current freight train volume. CP/KCS' claims regarding ample capacity are wholly unsupported. Because CP/KCS' workpapers are devoid of analyses supporting its assertions, we conducted an assessment of the impact of the proposed transaction on Metra's service.

C. CAPACITY OWNERSHIP

In response to interrogatory requests from Metra, CP again asserted that interference with Metra's service was not a concern:

Based on CP's expertise and analysis of capacity, the existing infrastructure on this segment of track [Elgin Subdivision] has ample capacity to accommodate the Transaction-related increase in trains without adversely affecting Metra's operations.⁸

Although CP/KCS assert that ample capacity exists to accommodate increased freight train volumes over Metra-owned lines, they also imply that there is no room for additional Metra trains on those lines absent capacity expansion.

Applicants believe that the Transaction will have no effect on Metra's ability to expand its commuter service in the Chicago area. For example, the Transaction will not constrain Metra's ability to add capacity supporting additional service through the construction of rail trackage and facilities and the acquisition of real estate.⁹

It is important to note that Metra significantly reduced its service frequency over the MD lines shortly after the onset of the Covid pandemic in 2020. Specifically, Metra was operating 900

⁷ See, Merger Application, APP Vol. 2, p. 322, Operating Plan ¶¶ 184-185.

⁸ See, Response to Metra's 1st Set of Interrogatories, Interrogatory Nos. 8 and 9, pp. 16-18.

⁹ See, Response to Metra's 1st Set of Interrogatories, Interrogatory No. 14, pp. 23-24.

trains per week (including equipment repositioning runs) before Covid, and is currently running 595 trains per week (including equipment repositioning runs), a reduction of 305 trains, or 34 percent.¹⁰ This Metra service reduction freed up significant line capacity that CP/KCS now seem to claim as theirs exclusively. This is wrong. Much of the capacity that CP/KCS claim is now available to be filled with CP freight trains was directly created by Metra's voluntary, and temporary, scaling back of its operations. CP/KCS cannot wish away Metra's contractual rights to revert to its pre-Covid service frequency.

CP's position that additional Metra service will require additional infrastructure is in keeping with CP/KCS' stance regarding Amtrak trains. During these proceedings, CP/KCS and Amtrak announced a settlement agreement under which Amtrak will support the Application and, in exchange, CP will agree to add trains on Amtrak's Hiawatha route, which runs in part over Metra's MD-N line. On February 2, 2022, Amtrak filed a notice in this proceeding stating that it had come to terms with CP/KCS regarding the expansion of Hiawatha service.¹¹ The agreement, which was appended to the Amtrak filing, includes a list of capacity expansion projects that will be required to be completed prior to the commencement of expanded Amtrak service.¹²

D. PRECISION SCHEDULED RAILROADING

Over the past few years, CP has been aggressively implementing an operating practice called PSR.¹³ As the name implies, PSR relies on strict adherence to departure schedules and

¹⁰ See, workpaper "Metra Train Consist Data_RTC Inputs_Future_02222022.xlsx" at tab "ID Comp."

¹¹ See, STB Docket No. FD 36500, *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*, filed February 2, 2022 ("Amtrak-CP/KCS Agreement") pp. 1-2.

¹² *Id.*, Exhibit A.

¹³ See, e.g., *Canadian Pacific puts faith in PSR and employees* - FreightWaves.

point-to-point delivery methods to achieve high operating efficiency and low operating ratios. This operating environment puts pressure on CP dispatchers to take measures that ensure CP's freight trains run on time, including prioritizing certain CP freight trains over other trains, including passenger trains, which are supposed to receive top dispatching priority.

Since CP began implementing PSR, Metra has noticed a significant increase in CP freight train interference resulting from changes in CP dispatching practices, and Metra has documented instances in which senior CP management has been directly involved in the prioritization of freight operations over Metra's lines.¹⁴

E. THE PROPOSED MERGED NETWORK

The proposed CP/KCS network is hourglass shaped. CP is an expansive (coast-to-coast) network in the northern part of North America, and KCS is a coast-to-coast network in the southern part of North America. In the proposed merged network, there is a single line from Shreveport, LA to Sabula Jct., IA, that joins the two (2) parts. North of Sabula Jct., there are two (2) routing options to access CP's vast northern footprint: (1) over the Marquette Subdivision, which is largely single-tracked and contains timber bridges¹⁵ and other dated structures; or (2) over the CP Chicago Subdivision and thence over Metra's heavily trafficked MD lines. If one of these two (2) routing alternatives becomes congested, the other becomes the only alternative for moving the massive volume of international freight flows that CP/KCS project will result from the proposed merger.

CP's C&M, Watertown and Tomah Subdivisions connect the northern end of the Marquette Subdivision to the northern end of Metra's MD lines. CP/KCS plan to significantly increase freight train volume over both of the routes described above. Neither can accommodate the

¹⁴ See, Verified Statement of Greg J.M. Godfrey, p. 2, ¶¶ 7 and 8.

¹⁵ See, Merger Application, APP Vol. 2, p. 332, Operating Plan ¶ 215.

projected freight flows in their current form. The Marquette Subdivision is simply incapable of accommodating the projected volumes, even with the capital expansion projects planned by CP/KCS. CP/KCS will have no alternative but to reroute trains over Metra's MD lines.

Metra's service levels will deteriorate even with train volumes CP/KCS project over Metra's lines. If Metra's lines must also absorb traffic that CP/KCS claim will flow over their inadequate Marquette Subdivision, Metra's service levels will only worsen.

V. METHODOLOGY

To assess the impact of the proposed transaction on Metra's lines over which CP operates and dispatches and test the assertions CP makes regarding that impact, we reviewed the CP/KCS Operating Plan and supporting workpapers and documentation provided along with the Merger Application and in subsequent requests to CP/KCS. We then analyzed existing conditions based on a review of historical data supplied by both Metra and CP (the latter through discovery requests). Finally, we independently developed a RTC model to evaluate existing and projected traffic flows on Metra's lines as a result of the proposed transaction.

Key inputs to our analysis provided by Metra include train consist, route and schedule data, and detailed track and structures data, as well as delay data and related correspondence for the six (6) year period between January 11, 2016 and January 10, 2022.

Through discovery requests, CP/KCS provided nearly 36 months of CP train event and train delay data, dating back to 2019, for trains traversing Metra's MD-W and MD-N rail lines and other Subdivisions proximate to Metra's lines. In addition to the train event and train delay data, CP/KCS provided detailed routing, schedule, and loading and unloading data for local and line-haul freight trains operating over its system both historically and in the future scenario discussed in the Application. CP/KCS also provided detailed track and structures data for the relevant line segments it owns and operates that were critical inputs to our RTC modeling exercise.

CP/KCS workpapers also include analyses conducted to reach the conclusions regarding the impact of the proposed transaction. These workpapers included capacity analyses of individual line segments on the CP system and files containing details regarding the existing and proposed operating plan, including blocking and scheduling practices.

Notably, CP/KCS provided no RTC or similar modeling analysis in support of the Merger Application, and stated in response to interrogatories that they had conducted no RTC or similar modeling on the Elgin or C&M Subdivisions or the adjacent Tomah, Watertown, Chicago and Marquette Subdivisions since 2017. Subsequently, and only after Metra filed a motion to compel production, CP/KCS provided documents related to 39 RTC simulations it conducted between 2014 and 2018, some of which included evaluations of Metra's MD-N line (which CP refers to as its C&M Subdivision), and nearly all of which included evaluations of the Marquette and adjacent Subdivisions identified above. Some of the provided RTC simulations included track for the Tomah, Watertown and Chicago subdivisions, but no trains traversing them.

Our findings regarding our analyses are detailed in the remainder of this Verified Statement.

VI. PROPOSED MERGER VOLUME INCREASES IN CONTEXT

The train volumes presented by CP/KCS give the false impression that its lines into Chicago are lightly traveled. They are not. As shown in Table 1 below, CP/KCS' presentation implies that a couple dozen trains traverse Metra's MD lines on a daily basis, and concludes that there is ample capacity for several more trains.

Table 1 CP/KCS Presentation of Train Volumes on <u>Metra Milwaukee District Lines</u>			
<u>Subdivision (Metra Line)</u>	<u>Current Trains Per Day</u>	<u>Future Trains Per Day</u>	<u>Change 1/</u>
(1)	(2)	(3)	(4)
1. Elgin (MD-W)	16.3	23.4	7.1
2. C&M (MD-N)	11.1	12.0	0.9
3. Fox Lake (MD-N)	0.0	0.0	0.0
Source: CP/KCS Operating Plan Appendix A (APP Vol. 2, pp. 364-367).			
1/ Column (3) – Column (2).			

In reality, well over 100 trains traverse Metra's MD lines on a daily basis, and the volume causes both Metra and CP to incur multiple train delays daily. The pre- and post-merger train counts cited by the Applicants represent only a small fraction of the trains that traverse those lines. In fact, all of the train count statistics presented by CP/KCS reflect only line-haul freight trains. They exclude many other critical classes of both freight and passenger traffic. In addition, the line-haul train counts are sometimes understated and/or inconsistent throughout the narrative and supporting workpapers, as discussed below.

A. MISSTATED PROJECTED LINE-HAUL TRAIN COUNTS

As shown in Table 1 above, the operating plan states that CP/KCS intend to add 7.1 additional line-haul freight trains per day over Metra's MD-W line following the merger.

Specifically, “[t]he Transaction is projected to increase freight traffic by 7.1 trains per day on the western 24.2 miles of [the MD-W] line, between Almora and CP’s Bensenville Yard.”¹⁶

However, the 7.1 daily CP freight train statistic cited by CP/KCS is misleading for two (2) reasons. First, the cited number is based on the portion of the Elgin Subdivision east of Bensenville. CP/KCS project a greater increase in line-haul freight trains on the longer portion of the Elgin Subdivision west of Bensenville. Second, CP/KCS exclude local freight trains from the total. East of Bensenville, local trains make up nearly half of the total freight trains operating on the line.

Table 2 below shows the current and projected freight trains per day by category for the Elgin Subdivision east and west of Bensenville.

Table 2 <u>Elgin Subdivision Change in CP Freight Train Count</u>			
<u>Item</u>	<u>Current CP Trains</u>	<u>Projected CP Trains</u>	<u>Change 1/</u>
(1)	(2)	(3)	(4)
A. <u>East of Bensenville</u>			
1. Line-Haul IM and Manifest	{{ }}	{{ }}	6.00
2. Line-Haul Unit	{{ }}	{{ }}	<u>1.10</u>
3. Subtotal included by CP/KCS	16.28	23.38	7.10
4. Local Freight	{{ }}	{{ }}	<u>0.43</u>
5. Actual Total Freight	{{ }}	{{ }}	7.53
B. <u>West of Bensenville</u>			
1. Line-Haul IM and Manifest	{{ }}	{{ }}	8.00
2. Line-Haul Unit	{{ }}	{{ }}	<u>0.21</u>
3. Subtotal included by CP/KCS	{{ }}	{{ }}	8.21
4. Local Freight	{{ }}	{{ }}	<u>0.00</u>
5. Actual Total Freight	{{ }}	{{ }}	8.21
Source: workbook “Elgin Actual Growth.xlsx.”			
1/ Column (3) – Column (2).			

¹⁶ See, Merger Application, APP Vol. 2, p. 322, Operating Plan ¶¶ 184-185.

As shown in Table 2 above, while CP/KCS plan to add six (6) line-haul intermodal and manifest trains per day east of Bensenville (Line A.1., Column (4)), they plan to add eight (8) line-haul intermodal and manifest trains per day west of Bensenville (Line B.1., Column (4)), i.e., a {{ }} percent increase over the current volume of {{ }} such trains per day (Line B.1., Column (2)). This is because CP/KCS plan to replace Trains 140 and 141, which currently run into and out of Bensenville from/to the east, with Trains 170 and 171, which will extend their operations beyond Bensenville yard over the western portion of the Elgin Subdivision, and over the Chicago and Davenport Subdivisions (and beyond) to points south on the KCS network. In total, CP/KCS plan to add 7.53 total freight trains per day east of Bensenville (Line A.5., Column (4)), and they plan to add 8.21 total freight trains per day west of Bensenville (Line B.5., Column (4)). Their cited total of 7.1 trains per day for the entire Elgin Subdivision is shown at Line A.3., Column (4). Most of the new trains will move into and out of Bensenville Yard, which is adjacent to and accessed via Metra's MD-W line, and some will move over connecting tracks onto other carriers' rail systems in the Chicago Terminal area.

With respect to Metra's MD-N line, CP/KCS state in their narrative that there will be no increase in freight trains on the C&M Subdivision, i.e., the southern portion of the Metra-owned MD-N Line. Specifically:

183. Metra operates 18 trains per weekday and nine trains per weekend day in each direction between Rondout and Fox Lake, and 64 trains per weekday and 20 trains per day on weekends between Rondout and Chicago Union Station. The Transaction is not expected to generate additional freight traffic on this segment, and as a result there will be no impact on Metra operations.¹⁷

¹⁷ See, Merger Application, APP Vol. 2, pp. 321-322, Operating Plan ¶¶ 182-183.

Although the CP/KCS operating plan narrative states that it does not plan to operate additional freight trains over Metra's MD-N line, its Appendices and supporting workpapers demonstrate otherwise. Specifically, as shown above in Table 1, the Appendices and workpapers supporting the CP/KCS Application state that CP/KCS plan to add an average of 0.9 additional line-haul freight trains per day to the C&M Subdivision.¹⁸ CP/KCS' operating plan narrative does not project additional regularly scheduled line-haul freight trains, i.e., so-called "operating plan trains," but they project an increase in unit train traffic over the Metra route.

**B. COMPLETE OMISSION OF ALL
PASSENGER SERVICE AND OTHER
CLASSES OF FREIGHT TRAINS**

1. Passenger Trains

Although CP/KCS acknowledge Metra's daily train volumes, which they estimate to be 90 trains per day over the MD-W and MD-N lines in their narrative,¹⁹ the pre-merger and post-merger train counts identified in the Operating Plan workpapers and other materials supporting the CP/KCS merger exclude Metra passenger trains. Specifically:

1. The pre-merger and post-merger train counts over the Fox Lake Subdivision show zero total trains per day;
2. The pre-merger and post-merger train counts over the C&M Subdivision show 11.1 and 12.0 total trains per day, respectively, but these reflect only long-haul freight trains; and
3. The pre-merger and post-merger train counts over the Elgin Subdivision show 16.3 and 23.4 total trains per day, respectively, but these reflect only long-haul freight trains, and, as discussed above, are based only on the portion of the Elgin Subdivision east of Bensenville.

¹⁸ See, Merger Application, APP Vol. 2, p. 365, Operating Plan Appendix A: Trains per day by Subdivision.

¹⁹ See, Merger Application, APP Vol. 1, p. 172, Creel V.S. ¶ 42, and Merger Application, APP Vol. 2, pp. 321-322, Operating Plan ¶ 182. Even this passing mention of Metra's trains understates the volumes because it relies on the reduced COVID schedule implemented in 2020.

As a result, the daily train volumes CP/KCS include in their Operating Plan and supporting analyses over Metra territory equal 27.4 (pre-merger)²⁰ and 35.4 (post-merger).²¹ Metra is currently operating 595 trains per week, i.e., a simple average of 85 trains per day, with weekday totals above that average and weekend totals below it. Adding the daily average of 85 regularly scheduled Metra trains to the train counts presented by CP/KCS would restate them to 112.4 (pre-merger)²² and 120.4 (post-merger),²³ a three- to four-fold increase.

CP/KCS' failure to account for Metra train volumes in their analysis of the impact of the proposed operating plan over Metra's track results in a gross understatement of actual train volumes. Moreover, when Metra returns to its historical (pre-Covid) service frequency from the reduced Covid schedule of trains it is currently operating, as it is contractually permitted to do, its train counts will increase from the current, historically low levels.

As with Metra's trains, CP/KCS also fail to take into account Amtrak trains operating over Metra's and CP's tracks. CP/KCS' Operating Plan acknowledges that, "the C&M subdivision accommodates CP's freight operations as well as a total of eight Amtrak train pairs per day."²⁴ Adding these eight (8) train pairs (16 trains per day) to the daily train counts presented by CP/KCS, along with the 85 Metra trains per day CP/KCS excluded, results in a pre-merger daily train count of 128.4²⁵ and a post-merger daily train count of 136.4.²⁶ In addition, the Amtrak-CP/KCS Agreement allows Amtrak to introduce additional daily trains in Hiawatha service.²⁷ CP/KCS have not submitted either a revised operating plan or any other information that would explain how

²⁰ $0.0 + 11.1 + 16.3 = 27.4$.

²¹ $0.0 + 12.0 + 23.4 = 35.4$.

²² $27.4 + 85 = 112.4$.

²³ $35.4 + 85 = 120.4$.

²⁴ See, Merger Application, APP Vol. 2, p. 268, Operating Plan ¶ 21.

²⁵ $27.4 + 85 + 16 = 128.4$.

²⁶ $35.4 + 85 + 16 = 136.4$.

²⁷ See, Amtrak-CP/KCS Agreement.

the new Amtrak trains will impact operations on Metra's MD-N line, just as the Operating Plan includes no discussion of the expanded commuter operations that Metra has requested.

2. Local, Foreign and Other Freight Trains

Deeper analysis reveals significant additional problems with the CP/KCS daily train counts. The unit trains included in CP/KCS' totals are daily averages that smooth out seasonal peaks. Unlike the scheduled merchandise trains, these unit train volumes will not be spread out evenly throughout the year. Rather, they will ebb and flow with seasonal and market-based changes in demand. For example, increased volumes of unit grain trains move after harvest time. As a result, relatively high volume "peak" freight periods for unit train commodities can overwhelm the existing system. CP/KCS do not address this problem.

As discussed above, review of the workpapers supporting CP/KCS' Application and the nearly three (3) years of train event data provided in response to Metra's requests for production reveals that CP also excluded many classes of freight traffic from the daily train count totals it presented to the STB. CP/KCS' estimates of existing and projected train volumes include only regularly scheduled line-haul merchandise trains and unit trains. They do not include CP local trains, yard trains, and work trains, or any foreign freight trains. The CP train event and train route data provided in response to Metra's document requests identify significant numbers of daily yard and local trains operating all over the CP/KCS system, including on Metra-owned line segments. Table 2 above shows the daily volume of local freight trains operating on Metra's lines that CP/KCS failed to acknowledge in their pre- and post-merger train counts (see, Table 2, Line A.4).

With just a few exceptions, foreign trains do not appear in either the provided train counts or the provided train event data. For example, the CP/KCS Operating Plan states that both NS and UP regularly provide "direct service into Bensenville" via the Belt Railway Company of Chicago

(“BRC”) and the Indiana Harbor Beltway Company (“IHB”) tracks, respectively.²⁸ However, the train event data did not include any foreign trains moving over the BRC and IHB connecting tracks onto Metra’s MD-W line, i.e., the Elgin Subdivision, into Bensenville.

We reviewed freight activity logs Metra keeps in the normal course of business for the week that we modeled in the RTC (April 16, 2021 through April 22, 2021), and determined that 96 foreign freight trains operated over Metra’s MD lines during that week (many into and out of CP’s busy Bensenville Yard), and none of them were included in the CP train event data.²⁹ This equates to 13.7 trains per day, on average, that are unaccounted for in CP/KCS’ train volumes. Exhibit No. 4 to this VS identifies all of the foreign freight trains that operated over Metra’s lines during the week of April 16, 2021 through April 22, 2021 for which CP/KCS provided no train event data.

C. CUMULATIVE UNDERCOUNTING OF PASSENGER AND FREIGHT TRAINS

Table 3 below summarizes the results of our analysis of all train traffic moving over Metra’s MD lines and other proximate rail lines in comparison to CP/KCS’ claimed “current” train volumes.

²⁸ See, Merger Application, APP Vol. 2, p. 270, Operating Plan ¶ 27.

²⁹ Notably, this includes Wisconsin & Southern Railroad trains T001, T002, and T004 (see lines 34-37 on Exhibit No. 4). These trains operate nightly over Metra’s territory between Fox Lake and Cragin Jct. (on the way to/from BRC’s Clearing Yard). As with the other trains shown in Exhibit No. 4, they are not included in the provided CP train event data. Their absence is particularly relevant because these trains operate over the Fox Lake Subdivision (part of Metra’s MD-N line), which CP/KCS claim hosts no freight traffic, either before or after the merger (daily train volumes of zero).

Table 3
Identification of Trains Considered and Ignored by CP/KCS

Subdivision (Metra Line)	CP/KCS "Current" Line-Haul Trains per Day by Subdivision 1/	Average Daily 2021 Trains Excluded from CP/KCS Analysis			Total All Trains 5/
		Metra 2/	Amtrak 3/	CP Local Freight 4/	
(1)	(2)	(3)	(4)	(5)	(6)
1. Elgin (MD-W)	16.3	52.4	0.0	{{ }}	{{ }}
2. C&M (MD-N)	11.1	32.6	16.0	{{ }}	{{ }}
3. Fox Lake (MD-N)	0.0	32.6	0.0	{{ }}	{{ }}

1/ See, CP/KCS Operating Plan Exhibit A.

2/ Workpaper "RTC Train Development_Metra Trains_Post COVID_Metra CP Stations.xlsx" at tab "Unique RTC Trains."

3/ Merger Application, APP Vol. 2, p. 268, Operating Plan ¶ 21.

4/ CP/KCS workpaper "2.1.1.11.1.5-FD 36500 - Work Paper - HC - TPD Export - Density -29 Sept 2021.xlsx."

5/ Sum of Columns (2) through (4). This total does not include the 13.7 daily foreign trains observed during the modeled week of April 16, 2021 through April 22, 2021.

As shown in Table 3, Column (2) above, the train volumes identified in the CP/KCS operating plan reflect only the scheduled line-haul and average daily unscheduled unit trains moving over the lines. Columns (3) through (5) show the significant volumes of additional freight and passenger train traffic that also move over these line segments on a daily basis, that CP/KCS failed to consider. Traffic on MD-W and MD-N is more than 500% greater than CP/KCS represent.³⁰ This does not even consider the dozen or so daily foreign trains that move over Metra's MD lines according to the one week of Metra activity logs we evaluated (our historical RTC simulation period).

³⁰ {{ }} on the MD-W line.

D. IMPACT OF ACTUAL TOTAL TRAIN VOLUMES ON METRA OPERATIONS

When considering the total volume moving over Metra's lines rather than the grossly understated line-haul freight train totals presented by CP/KCS, Metra's operational challenges are easily understandable.

1. Metra Commuter Peak Period Operations

As confirmed by CP's train event data, CP often runs its own trains over Metra-owned lines during designated commuter Peak Periods, during which CP has acknowledged that it is contractually required to prioritize Metra service. Table 4 below shows the number and percentage of CP freight trains operating during Metra weekday Peak Periods in 2021, according to CP's event data.

Table 4 <u>CP Freight Trains Reporting Arrivals/Departures During Metra Commuter Peak Periods</u> (January 1 through December 14, 2021)			
Train Group	Total CP Freight Trains Operating over Metra Milwaukee District Lines	CP Freight Trains Reporting Arrival / Departure Event During Metra Weekday Peak Periods	Percent of CP Freight Trains Reporting Arrival/Departure Event During Metra Peak Period
(1)	(2)	(3)	(4)
1. Manifest/Intermodal	{{ }}	{{ }}	8%
2. Local Freight	{{ }}	{{ }}	10%
3. Bulk Unit	{{ }}	{{ }}	<u>13%</u>
4. Total CP Freight	{{ }}	{{ }}	9%
Source: Exhibit No. 5.			

As shown in Table 4 above, CP routinely uses designated commuter Peak Period track capacity to operate CP freight trains. As shown on Line 3, Column (4), unscheduled unit trains

operate over the Metra lines during Metra commuter Peak Periods with the greatest regularity (13 percent of the time). This is not surprising, as CP dispatchers must fit them in whenever they happen to arrive. Exhibit No. 5 contains a breakdown of Peak Period incursions by CP train symbol.

2. Freight Interference on Metra Lines

Data provided by Metra confirm that CP's operational and dispatching practices cause significant delays and interference with Metra's service on a regular basis. This is not only to peak Metra service, which CP is required to prioritize, but also with non-peak service, with which CP is prohibited from interfering.

Based on its own delay data, Metra estimates that between January 2016 and October 2021, passengers accrued over 52,000 hours of delay as a result of freight interference on Metra's MD-N and MD-W lines, with an average of 40 passenger delay hours per delay event.³¹ Metra's data and documentation also indicated that CP operations and dispatching caused not just delays to Metra trains, but that CP's practice of dispatching Metra and freight trains on tracks other than the ones normally used resulted in obstructing passengers at stations, requiring passengers to cross rail tracks or circumnavigate slow or idling freight trains.³² Despite years of Metra engagement with CP to alleviate CP's negative impact on Metra's service, freight traffic continues to regularly impede Metra's trains.

The continual interference of CP freight trains with Metra Peak Period trains, in particular, indicates that even with baseline freight train volumes, CP cannot keep its trains from interfering with Metra's commuter Peak Period operations. As discussed below in Section VII, CP's capacity

³¹ Maertins V.S. ¶ 7.

³² Oppenheim V.S. ¶¶ 39-43.

analysis failed to account for Metra commuter Peak Periods, rendering CP/KCS' claims regarding its ability to add more trains without negatively affecting Metra operations unsupported. Adding multiple, long CP freight trains to the Metra-owned line segments will only increase the likelihood and frequency of freight train incursion into Metra commuter windows.

Despite the problems with the CP/KCS train count data, even if taken at face value, CP/KCS' projections indicate increased interference with Metra's service. Most of the 8.2 daily trains CP/KCS plan to add to the Elgin Subdivision, i.e., the Metra-owned MD-W Line, will be routed into/out of CP's Bensenville Yard, one of the busiest yards on CP's system.

Many of the line-haul intermodal and merchandise trains that CP/KCS operate into and out of Bensenville are exceptionally long, i.e., they are regularly over two (2) miles long and sometimes over 13,000 feet (2.5 miles). The proposed additions will also be long trains. Yarding long trains at Bensenville is difficult because the trains exceed the length of the receiving tracks, which requires the CP train crews to pull the head end all the way (or nearly all the way) through the yard and break up the trains on arrival. This operation entails throwing a series of yard switches, and sometimes causes the tail end of arriving trains to hang out and block the mainline track while the train crew performs the required switching. Often when this happens, Metra's trains get delayed and/or rerouted to the opposite mainline track.³³

There are no sidings on the MD-W Line, and few on CP's adjoining Chicago Subdivision that are long enough to hold the daily intermodal and manifest trains that CP/KCS propose to add. CP/KCS propose adding one new 12,000-foot-long siding on the Chicago Subdivision, west of the

³³ Oppenheim V.S. ¶¶ 36-38.

MD-W line,³⁴ but the CP event data shows that CP line-haul merchandise trains regularly exceed 12,000 feet.³⁵

On the C&M Subdivision, i.e., Metra-owned MD-N Line, CP/KCS project an increase of 0.9 trains per day. However, as discussed below in Section VIII, traffic congestion on the Marquette Subdivision (where CP/KCS plan to add an average of 6.6 daily line-haul freight trains) will also lead to train diversions causing higher train volume on both of Metra's MD lines.

CP/KCS identify several capacity-expansion projects that are required to move the projected volume increases over the Marquette Subdivision and they include a construction schedule for those projects that makes it clear that their proposed remedy will take years to implement. As discussed in Section VIII, our analysis demonstrates that the Marquette Subdivision will be operating well over capacity following the merger, even after CP/KCS proposed infrastructure has been added. As a result, CP/KCS will be forced to reroute traffic via Chicago, i.e., over Metra's MD lines.

We accounted for CP/KCS' failure to acknowledge the Marquette Subdivision (and other) capacity limitations in our RTC modeling exercise by performing analyses in which we removed trains from the simulation until the RTC model was able to successfully dispatch the remaining trains. We had to remove more than one train per day in order for the RTC simulation to run to completion.³⁶ The results of our analysis are discussed in Section VIII below.

3. Future Local Train Operations

CP/KCS' presentation of its approach to evaluating changes in local train service is telling:

³⁴ See, CP/KCS opening workpaper "2.1.33-FD 36500 – Work Paper – HC – Capacity-Methodology.pdf," ("Capacity Methodology") p. 7.

³⁵ See, workpaper "Train actuals 2019 to current - Actual vs Plan.xlsx" at "Bensenville >12K Feet" showing {{ }} line-haul freight trains at Bensenville or Bensenville IMS recording a total length greater than 12,000 feet between January 1, 2019 and December 14, 2021.

³⁶ See, Exhibit 10b, footnote 1 for specific trains disabled in the RTC simulation.

The majority of yards on the combined network will see only minor increases in the volume of cars processed or number of blocks made even with the anticipate [sic] traffic increases. Most CP/KCS system yards will continue to operate at volume levels similar to those operated today.³⁷

The problem for Metra is that Bensenville is a notable exception to this general rule. Although CP/KCS acknowledge that “Chicago remains vulnerable to disruptions that can create chokepoints for multiple carriers,” they claim that “the impact of the Transaction will be minimal” at Chicago. They further claim that the “only effects will arise from changes in traffic volumes... in and out of CP’s terminals (Bensenville and Schiller Park) on the northwest edge of Chicago using CP’s underutilized Elgin Subdivision.”³⁸

As discussed above in Section VI, CP/KCS’ characterization of the Elgin Subdivision as “underutilized” is a blatant misrepresentation of the facts. What CP/KCS refer to as the Elgin Subdivision is Metra’s busy MD-W line. Moreover, CP/KCS’ description of the movements into/out of Bensenville “on the edge of town” neglects to consider the local train operations that are required to move freight between CP’s Bensenville and Schiller Yards and other major yards in the Chicago Terminal.

The Merger Application Appendix I indicates that following the proposed merger, eight (8) new high-priority intermodal/manifest CP/KCS trains will serve Bensenville every day, moving 32 new blocks of cars to/from Chicago, as follows:

1. 162 – Bensenville IMS to Wylie Daily
 - 1.1. Bensenville IMS to Wylie block
 - 1.2. St. John to IFG IMS block (from Schiller, 143)
 - 1.3. Bensenville to Shreveport manifest block
2. 163 – Wylie to Bensenville IMS Daily

³⁷ See, Merger Application, APP Vol. 2, p. 305, Appendix I.

³⁸ *Id.*, pp. 312-313.

- 2.1. Wylie to Bensenville IMS block
- 2.2. Wylie to Vaughan IMS block (to Schiller, 142)
- 2.3. IFG to St. John IMS block (to Schiller, 142)
- 3. 170 – Lazaro Cardenas to Toronto Daily (Replaces 140 from Bensenville to Toronto)
 - 3.1. Puerto Mexico to Bensenville IMS block
 - 3.2. Silao to Detroit IMS block (to Schiller, 142)
 - 3.3. Interpuerto to Vaughan IMS block (to Schiller, 142)
 - 3.4. Rojas to Bensenville IMS block
 - 3.5. Rojas to Detroit IMS block (to Schiller, 142)
 - 3.6. Salinas Victoria to Detroit IMS block (to Schiller, 142)
 - 3.7. IFG to St. John IMS block (to Schiller, 142)
- 4. 171 – Toronto to Lazaro Cardenas Daily (Replaces 141 from Toronto to Bensenville)
 - 4.1. Bensenville to Puerta Mexico IMS block
 - 4.2. Detroit to Salinas Victoria block (from Schiller, 143/G34)
 - 4.3. Detroit to Rojas block (from Schiller, 143/G34)
 - 4.4. Detroit to Silao IMS block (from Schiller, 143/G34)
- 5. 174 – Bensenville IMS to Interpuerto Daily
 - 5.1. Bensenville to Sanchez manifest block
 - 5.2. Bensenville to Monterrey manifest block
 - 5.3. Bensenville to San Luis Potosi manifest block
 - 5.4. Bensenville IMS to Laredo block
 - 5.5. Bensenville IMS to Interpuerto block
 - 5.6. Bensenville IMS to Pantaco block
- 6. 175 – Interpuerto to Bensenville IMS Daily
 - 6.1. Interpuerto to Bensenville IMS block
 - 6.2. Pantaco to Bensenville IMS block
 - 6.3. Sanchez to Schiller Auto block
 - 6.4. Sanchez to Bensenville manifest block
- 7. 176 – Bensenville IMS to Lazaro Cardenas Daily
 - 7.1. Bensenville IMS to Encantada block
 - 7.2. Bensenville IMS to Lazaro Cardenas IMS block
- 8. 177 – Lazaro Cardenas to Bensenville IMS Daily

- 8.1. Lazaro Cardenas to Bensenville IMS block
- 8.2. Encantada to Bensenville IMS block
- 8.3. Salinas Victoria to Bensenville IMS block³⁹

The additional eight (8) daily trains operating into and out of Bensenville represent an increase of {{ }} percent compared to 2021.⁴⁰ According to the list above (from the Merger Application Appendix I):

- Bensenville IMS will handle 15 new intermodal blocks daily (build seven (7) and receive eight (8));
- Bensenville Yard will handle five (5) new manifest blocks daily (build four (4) and receive one (1)); and
- Bensenville will also handle 12 new blocks daily that must be transferred to/from Schiller Park (forward eight (8) and receive four (4)).

Despite stated plans to introduce eight (8) new daily intermodal trains to Bensenville and 32 mostly new blocks of cars, CP's operating plan includes no provision for expanded local train service into/out of Bensenville yard. Rather, CP states:

The growth plan as presently constituted is able to provide effective service to the combined network traffic using the same local service designs that CP and KCS operate today. As CP/KC integrates its two networks, in-depth reviews of local service levels may reveal opportunities to adjust local assignments to provide further improvements in the service provided to customers. CP plans to approach this process – referred to as “white-boarding” – on a customer-specific basis to design services that consider end-to-end customer transit time along with the service timing and frequency that meets customer's needs.⁴¹

CP/KCS should have conducted “in-depth reviews” of local service before the merger. Their promise to adjust local assignments through “white-boarding” at some later date is not a plan. CP/KCS claim that:

³⁹ *Id.*, pp. 440-441. It is unclear why these new blocks of cars are listed in Appendix I but not in Appendix F.

⁴⁰ See, workpaper “Growth Plan Trains w 2021 Route Delays and Consist_RTC Trains_02222022.xlsx” at tab “ROSTER.”

⁴¹ See, Merger Application, APP Vol. 2, p. 304, Appendix I.

[M]ost of these cars will be classified for movement beyond Chicago to other parts of the CP/KCS system... there will be no material impact on the transfer operations in Chicago terminal or yard processing demands at other carriers' facilities across the terminal, and no impact on terminal congestion.⁴²

Although the 11 blocks of cars Bensenville will build will, in fact, move to other parts of the CP/KCS system, the nine (9) blocks it receives from KCS and KCSM and the 12 blocks it transfers to/from Schiller Park (21 total daily blocks) will need to move through the Chicago terminal. CP/KCS state:

Some of this new traffic will continue east of Bensenville/Schiller Park via CP's operating rights on NS and haulage rights on CSX. But that traffic will not burden the Chicago terminal, as it will bypass Chicago interchanges by routing via the IHB and BRC through routes on existing train services.⁴³

This is wishful thinking. The transfer of cars between Schiller Park and Bensenville requires movement over a short section of Metra's MD-W line. The trains routed via IHB and BRC also must traverse Metra's MD-W line between Bensenville and the turnouts for those track segments (Tower B12 and Cragin Jct., respectively), as shown on Exhibit No. 3, page 1.

As shown in Exhibit No. 5, the local trains that are scheduled to operate once daily out of Bensenville to move all of the existing blocks of traffic over these routes already operate an extra train on a regular basis. Specifically, CP operated {{ }} G45 trains, {{ }} G52 trains, {{ }} G41 trains, {{ }} G57 trains, and {{ }} G59 trains in the 348 days between January 1, 2021 and December 14, 2021.

All five (5) of these local trains shuttle blocks of cars between Bensenville and other yards in the Chicago terminal over the BRC and IHB tracks on a more than daily basis with the current volume of traffic. CP/KCS' statements that Bensenville will be tasked with building new blocks

⁴² *Id.*, p. 315.

⁴³ *Id.*

of merchandise cars following the merger, and that “Bensenville will also face additional demand from anticipated growth in automotive and intermodal traffic,”⁴⁴ cannot be squared with their insistence that “there will be no material impact on the transfer operations in Chicago terminal or yard processing demands at other carriers’ facilities across the terminal.” CP/KCS made no showing that Bensenville Yard will be able to handle its expanded post-merger role. Their only accommodation for the significant increase in Bensenville traffic volume is an already planned yard expansion and “support” from “CP’s nearby Schiller Park intermodal terminal and other CP facilities so as to avoid overloading Bensenville.”

Increasing the Bensenville volume by the amount contemplated by CP/KCS will not just increase Bensenville yard activity – it will undoubtedly increase the demand for local yard transfer service into and out of Bensenville. As a result, CP/KCS’ claims regarding the number of trains it will have to add to Metra’s operating territory in order to accommodate Bensenville’s expanded role are understated. The local trains currently operating into and out of Bensenville are already long and heavy trains, so adding cars to them will not be a realistic option. The only possible solution will be to add more “extra” local trains serving Bensenville over Metra’s MD-W line every day.

Although we modeled the existing local train operations in the Future Case RTC simulations, we believe this understates the future train volumes operating from Bensenville. As a result, future freight train interference is underrepresented in our RTC modeling.

⁴⁴ *Id.*, p. 306.

E. CP TRAIN DELAYS ARE ALREADY SIGNIFICANT

We reviewed 35 months of train delay data provided by CP for trains traversing the rail lines we modeled, including Metra's MD-W and MD-N lines. This data reveals that CP itself experiences significant delays, both on Metra's MD-N and MD-W lines as well as neighboring CP Subdivisions whose operations could be expected to impact Metra's lines.

The CP data show that over the period from January 1, 2019 through December 14, 2021, CP incurred {{ }} delays ({{ }} per day, on average) on the Elgin Subdivision, accounting for {{ }} delay minutes ({{ }} delay minutes per day, on average), over Metra's MD-W line.⁴⁵ There were also {{ }} delays ({{ }} per day, on average) on the C&M Subdivision (which includes Metra's MD-N line), accounting for {{ }} delay minutes ({{ }} delay minutes per day, on average), and another {{ }} delays ({{ }} per day, on average) on the adjacent C&M West Subdivision, accounting for {{ }} delay minutes ({{ }} delay minutes per day, on average).⁴⁶ Obviously, there were many days on which the actual daily number of delays and delay minutes exceeded these averages.

In addition, there were {{ }} delays on the Marquette Subdivision, accounting for 505,531 delay minutes. This equates to {{ }} delays and {{ }} minutes ({{ }} hours) of train delay per day, on average.⁴⁷ CP/KCS plan to add significant train volumes to the Marquette Subdivision, and when they encounter delays over that route, as our modeling demonstrates will happen frequently CP/KCS will likely explore alternate routes for those trains, including the route over Metra's MD lines.

⁴⁵ See, Exhibit No. 6, Line 5.

⁴⁶ *Id.*, Lines 1 and 2.

⁴⁷ As noted above, Metra is concerned with the possibility that the Marquette Subdivision will not be able to accommodate the projected increase in traffic, which could result in diversions over Metra's MD line. See, Exhibit No. 6, Line 6.

Exhibit No. 6 shows a breakdown of the delays reported in CP's train delay data for: (1) the critical line segments it uses to access the Chicago Terminal (the C&M, C&M West, Elgin, and Chicago Subdivisions and connections to BRC and IHB track); (2) the route CP proposes to use to avoid Chicago (Marquette Subdivision); and (3) the alternate route CP would use if the Marquette Subdivision proves unable to accommodate the significant increase in train volumes CP/KCS project (the Watertown, Tomah, Tomah West, and River Subdivisions). In total, there were {{ }} delays ({{ }} per day, on average), accounting for {{ }} delay minutes ({{ }} delay minutes, or {{ }} hours of train delays per day, on average) during the January 1, 2019 through December 14, 2021 time period.

VII. CP/KCS' METHODS FOR ASSESSING EXISTING AND PROJECTED RAIL LINE AND YARD CAPACITY ARE GROSSLY INADEQUATE

CP/KCS used a planning tool called MultiRail to develop its railcar blocking and train operating plans. After developing the operating plan, CP/KCS used a mathematical capacity analysis framework to determine where capacity expansion projects will be required to accommodate the projected increase in traffic. The capacity analyses and operating plan details supplied by CP/KCS are insufficient for purposes of demonstrating that the proposed merger will have no impact on Metra's service.

A. MULTIRAIL-BASED OPERATING PLANS MUST BE EVALUATED THROUGH MODELING

In the CP/KCS Operating Plan, CP explains that "MultiRail was used as the primary tool to design efficient blocking and train service for an integrated CP/KCS system" and describes MultiRail as "a standard software application for railway operating plan development with a long history of intensive use at CP and other railroads."⁴⁸

What CP does not state is that MultiRail is used most often and most effectively as a scoping tool, not a modeling tool. For example, MultiRail is not, by itself, able to confirm the ability of a yard to process the train service plan it develops. As UP, in its Petition to Reject the Application as Incomplete, aptly states:

Applicants say "MultiRail was used as the primary tool to design efficient blocking and train service for an integrated CP/KCS system." But MultiRail does not take existing or projected traffic flows and spit out efficient blocking and train plans. MultiRail analyzes outcomes that would be produced when blocking and train service plans are changed. For example, MultiRail will show how many cars would move through yards if blocking patterns or train services are changed. However, MultiRail does not show whether a yard has the capacity to process those cars or build the designated blocks-that determination requires an analysis of a yard's physical structure

⁴⁸ See, Merger Application, APP Vol. 2, p. 280, Operating Plan ¶ 66.

and car dwell times. Applicant's Operating Plan does not address those details.⁴⁵

⁴⁵ Applicants merely assert that "[t]he number of blocks was set taking into consideration the capacity of each yard (*i.e.*, the number and length of classification tracks in the yard." *Id.*, p. 28; *See also id.*, p. 43 ("The total number of blocks a given yard can build daily is a function of the number of classification tracks in the yard, the length of each track, and the number of times per day the traffic is pulled from the tracks and departed."))⁴⁹

MultiRail does not determine what is actually feasible. Most significantly for the purposes of this transaction, it does not fill the role that RTC modeling plays in determining capacity.

In Docket No. NOR 42125, the STB stated that:

MultiRail is used to help develop a comprehensive blocking and train service plan, which then establishes the requirements for the network of yards and other facilities necessary to serve the selected traffic. But it does not replace the Board's traditional RTC simulation that must still be run to confirm the feasibility of the operating plan developed.⁵⁰

Significantly, the STB understood that MultiRail will model traffic flows only based on user-defined operational inputs and constraints and does not show whether the physical infrastructure can support these flows.

One way to quantify the difference between MultiRail plans and real-world train operations is to compare the planned train starts to historical train movements. For example, CP trains 286 and 287 are bidirectional trains that are scheduled to provide daily service between Chicago and St. Paul. However, although the operating plan calls for one train per day in each direction, CP operated {{ }} regularly scheduled 286 trains, plus {{ }} extra 286 trains between January 1, 2021 and December 14, 2021. CP also operated {{ }} regularly scheduled 287 trains, plus {{ }} extra 287 trains between January 1, 2021 and December 14, 2021.⁵¹ These {{ }} extra

⁴⁹ See, UP Petition to Reject, pp. 11-12.

⁵⁰ See, STB Docket No. NOR 42125, *E. I. DuPont de Nemours and Company v. Norfolk Southern Railway Company*, decided March 21, 2014 p. 41. See also, STB Docket No. 42130, *SunBelt Chlor Alkali Partnership v. Norfolk Southern Railway Company*, decided June 18, 2014 p. 17.

⁵¹ See, worksheet "Train Actuals 2019 to Current – Actual vs Plan.xlsx" at tab "CM-E 21 Unique Trains."

trains⁵² are not reflected in the operating plan. In total, CP operated {{ }} regularly scheduled operating plan trains, plus {{ }} extra manifest and intermodal trains over Metra's MD lines between January 1, 2021 and December 14, 2021.⁵³

Similarly, local train G45 is scheduled to provide once-daily service between CP's Bensenville Yard and BRC's Clearing Yard. CP operated {{ }} regularly scheduled G45 trains, plus {{ }} extra G45 trains between January 1, 2021 and December 14, 2021 over this busy route.⁵⁴ In total, CP operated {{ }} regularly scheduled local trains, plus {{ }} extra local trains over Metra's MD lines between January 1, 2021 and December 14, 2021.⁵⁵ Exhibit No. 5 contains a summary of the regularly scheduled and extra trains that operated over Metra's lines in 2021.

We also evaluated the scheduled and actual timestamps reported in the train event data for operating plan trains to determine the extent to which CP trains operate on schedule. Returning to trains 286 and 287 in the example above, train 287, which operates from Bensenville to St. Paul, operated on schedule (on average) on Metra's lines throughout 2021. However, train 286, which operates from St. Paul to Bensenville, operated {{ }} minutes behind schedule (on average) on Metra's lines throughout 2021.⁵⁶ Although these trains generally left St. Paul on schedule, they were consistently and significantly behind schedule when they arrived on Metra's lines. Exhibit No. 5 includes a summary of the schedule adherence for regularly scheduled and extra trains that operated over Metra's lines in 2021.

⁵² {{ }}.

⁵³ See, Exhibit 5, Line 58.

⁵⁴ *Id.*, Line 21.

⁵⁵ *Id.*, Line 59.

⁵⁶ See, workbook "Train Actuals 2019 to Current – Actual vs Plan.xlsx" at tab "CM-E 21 Unique Trains."

The differences in both the number of trains operating and the times at which they operate compared to the plan underscore the importance of conducting RTC modeling to evaluate the current and proposed operations. Although MultiRail is a good tool for scoping an operating plan, it simply does not demonstrate that the operating plan is feasible.

**B. THE SPREADSHEET-BASED
CAPACITY MODELING
CALCULATIONS CP/KCS USED ARE
INADEQUATE**

CP/KCS explained that they modeled subdivision capacity based upon a simple mathematical formula that is based on the estimated time it takes for two (2) trains moving in opposite directions to traverse the longest segment between sidings on the subdivision.⁵⁷ CP/KCS use this time estimate to calculate the maximum number of trains that can operate over a “single-main bi-directional section” of track within a 24 hour period.⁵⁸ This theoretical maximum capacity for a section of rail line is calculated using the following four (4) primary inputs:

1. The number of minutes in a day (1,440);
2. The average northbound train run time in minutes operating on the section;⁵⁹
3. The average southbound train run time in minutes operating on the section; and
4. An assumed “meet factor” in minutes required for the trains to clear into sidings.

Specifically, CP/KCS calculate a line segment’s theoretical maximum capacity in trains per day (“TPD”) by dividing the number of minutes in a day (1,440) by the sum of the average northbound train run time for a group of selected trains, the average southbound train run time for a group of selected trains, and an assumed meet time at the end of the studied track section

⁵⁷ See, Merger Application, APP Vol. 2, p. 340, Operating Plan ¶ 237.

⁵⁸ See, Capacity Methodology p. 2.

⁵⁹ CP/KCS use the terms “Northbound” and “Southbound” to denote trains operating in opposite directions on the same section of track regardless of the actual geographical orientation of a line segment. We adopt CP/KCS’ nomenclature here for consistency.

multiplied by two (2).⁶⁰ CP/KCS then multiply the theoretical maximum TPD by 65 percent to determine what they call “sustainable capacity,” or the maximum TPD that avoids significant train delays, avoids congestion and reduces blocked crossing times.⁶¹ CP/KCS offer no source for the 65 percent factor, and make no demonstration that it actually ensures the avoidance of train delays, congestion, or crossings. It appears to be more of a rule of thumb than an actual measure of performance.

CP/KCS assert that their modeling of capacity using this strictly mathematical approach allows them “sufficient flexibility to manage engineering work blocks, unplanned outages and other impacts that can create surges in traffic and congestion in each subdivision.”⁶²

As a threshold matter, CP/KCS’ capacity analysis of the Elgin Subdivision did not take into consideration Metra’s priority use of Metra’s line segments during commuter Peak Periods as defined in the CP trackage rights agreement. CP/KCS’ mathematical capacity model implicitly assumes that Metra’s lines are available to host freight traffic 24 hours per day as shown by the inclusion of the 1,440 minutes included in the equation.⁶³ To calculate the capacity available to freight traffic on the CP Elgin Subdivision, the 1,440 minutes included in CP/KCS’ formula would need to be reduced to reflect the time periods during which Metra trains have priority use of Metra’s track.

Regardless of this formulaic error, CP/KCS’ claim that the MD-W line has ample capacity to handle additional freight traffic without impairing Metra’s operations is based on the purely mathematical calculation of the estimated sustainable capacity on the line. The STB long ago

⁶⁰ Maximum capacity = 1,440 minutes in a day ÷ [(Average northbound run time + Average southbound run time + Meet Factor) x 2]. See, Capacity Methodology p. 3.

⁶¹ See, Capacity Methodology p. 3.

⁶² See, Merger Application, APP Vol. 2, p. 340, Operating Plan ¶ 238.

⁶³ See, Capacity Methodology p. 2

moved away from using purely mathematical calculations to determine track capacity and operating requirements, and has instead adopted the more sophisticated approach of rail traffic simulation to determine a rail line's capacity.

**1. The STB No Longer Relies Upon
Simple Mathematical Calculations of
Operations**

CP/KCS relied upon their simple mathematical capacity calculation to conclude that Metra's rail lines, over which CP and Metra operate, have sufficient capacity to accommodate the forecasted additional freight traffic without impacting Metra's passenger trains. There is nothing wrong with simple mathematical models, *per se*, as they are commonly used in different fields, including engineering and economics, to identify potential problem areas within a system. In other words, they are used as scoping tools to identify areas for further study by more sophisticated approaches. Relying upon simple mathematical models that use a small number of broad inputs for assessments beyond initial scoping can lead to erroneous conclusions due to a lack of specificity within the model. This is exactly what has happened with CP/KCS' conclusions about the capacity for additional traffic on Metra's lines.

For example, in *FMC Wyoming Corporation and FMC Corporation*, the shipper calculated the stand-alone railroad's ("SARR") locomotive capacity requirements using a simple mathematical model that took into consideration average train transit times, average number of locomotives on a train, the number of hours in a year and an availability factor in the FMC case.⁶⁴

⁶⁴ See, STB Docket No. 42022, *FMC Wyoming Corporation and FMC Corporation v. Union Pacific Railroad Company*, served May 12, 2000 ("FMC") p. 150. The fact that this portion of the FMC decision addresses locomotive capacity requirements and not rail line capacity does not diminish the point that using simple mathematical models can lead to incorrect conclusions. Determining the number of locomotives required to operate a railroad is just a different type of capacity problem customarily incurred by railroads. In addition, the broad average transit time and locomotive requirements used by FMC are very similar to the broad average run times and meet factors used by CP/KCS in their capacity model.

The STB rejected the shipper's simple mathematical calculation of locomotive capacity requirements because the inputs were based on broad averages and assumptions. The STB determined that FMC's mathematical model did not take into consideration a number of factors that influenced locomotive capacity including, but not limited to, peak operating periods, changes in demand by commodity, and changing train sizes.⁶⁵

CP/KCS' simple mathematical rail capacity model relies upon similar broad inputs and assumptions that the STB rejected in its *FMC* decision. The CP/KCS model assumes that all trains operating over a line segment will travel at the same speed, but CP's own timetables show that this is not the case. CP's timetables show that, in most cases, passenger trains operate at different speeds than freight trains on the Elgin Subdivision and that some freight trains operate at different speeds than other freight trains.⁶⁶ In addition, while the CP methodology attempts to differentiate between trains operating on a segment by using more than one observation, it does not require that the train speeds reflect all train types operating over a segment.⁶⁷ CP also did not provide any support for the train speeds it included in its capacity calculations, even though its own process states all train speed calculations should be noted and included in the capacity model spreadsheet.⁶⁸

The CP/KCS simple mathematical capacity model also assumes average meet factors will be the same for all trains. However, the time it takes trains to clear into sidings is impacted by numerous factors including train length, train weight, and turnout type and configuration that are not included in the CP/KCS model. The CP/KCS model is based on such broad inputs and

⁶⁵ See, FMC p. 152.

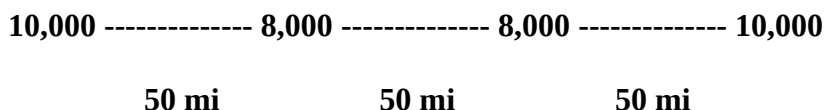
⁶⁶ See, CP US East & US West Timetable No. 2, effective at 0001 March 25, 2021. CP/KCS workpaper "10.4.1-CP-P-0003522.pdf" p. 69.

⁶⁷ See, Capacity Methodology p. 3, "[c]omplete [the train observations] with multiple trains/locomotives so that calculations are not being made from a signal train."

⁶⁸ See, Capacity Methodology p. 3, "[r]ecord [the train time] in the excel spreadsheet that contains the siding segment."

assumptions as to provide nothing but the most basic indication of a line's actual sustainable capacity.

In addition, CP/KCS' capacity analysis is a function of the length of sidings at the endpoints of studied segments and size of trains operating over those segments. Specifically, if the segment of track being evaluated has an 8,000-foot siding at either end, all trains included in the analysis must be shorter than 8,000 feet in order for the evaluation to be valid, because the evaluation rests on the presumption that the train can be moved off the mainline when it reaches the segment end. If the length of studied trains exceeds the length of available sidings for a given segment, the segment needs to be redefined (extended) until each end has a siding long enough to accommodate train meets/passes. For example, assume a 150-mile line segment has a 10,000-foot siding at either end, and two 8,000-foot sidings spaced equally between them, as shown below.



If the trains being studied are all under 8,000 feet in length, there are four (4) locations available for train meets, and each of the three 50-mile subsegments can be evaluated individually. However, if the trains being studied are all over 8,000 feet in length, there are only two (2) locations available for train meets (the short intermediate sidings cannot be used), and the entire 150-mile line segment must be evaluated as a single entity.

CP/KCS workpapers show that they considered at least two (2) different train length scenarios in their evaluation, and they produced very different results. Specifically, CP's workpapers include a tab called "CP Runtimes" and a tab called "CP Runtimes 10k ft length." Tab "CP Runtimes" evaluates each siding-to-siding sub segment regardless of siding length. Based on

these parameters, the Chicago Subdivision is assumed to have excess capacity on each of the five (5) subsegments from end-to-end to accommodate the projected train count. However, tab “CP Runtimes 10k ft length” evaluates longer segments that can accommodate a 10,000-foot train at either end. Based on these parameters, the Chicago Subdivision is assumed to have excess capacity on the 19.5-mile western leg between Plum and Kittredge, but not enough capacity on the eastern leg between Kittredge and Randall Road.⁶⁹

Many of the line-haul merchandise trains that currently traverse Metra’s MD lines and trains that CP/KCS plan to add are exceptionally long – sometimes over 13,000 feet. Unless the CP/KCS capacity analysis was configured to accommodate 13,000+ foot trains, it is not applicable to the trains CP/KCS intend to add to their combined system. There is no evidence that CP/KCS performed a capacity analysis sensitivity based on 13,000-foot trains, like those that routinely operate over Metra’s MD lines.

Recognizing the limitations simple mathematical models have in identifying railroad capacity issues, the STB now relies upon and endorses more sophisticated train simulation models to evaluate rail line capacity. In its decision in STB Docket No. 42057, the STB noted the existence of several rail simulation tools, including the RTC model, to evaluate rail line capacity.⁷⁰ The RTC model has since become the dominant rail simulation model used by parties in proceedings before the STB.⁷¹ Users adopted the RTC model because it provides greater levels of granularity for evaluating capacity requirements than simple mathematical models.

⁶⁹ See, CP/KCS workpaper “10.5.22-CP-HC-00006490.xlsx.”

⁷⁰ See, *Public Service Company Of Colorado d/b/a Xcel Energy v. The Burlington Northern and Santa Fe Railway Company*, served June 8, 2004 (“Xcel”) pp. 26-27.

⁷¹ See, for example, Xcel p. 27; STB Docket No. 42071, *Otter Tail Power Company v. BNSF Railway Company*, served January 27, 2006 (“Otter Tail”) p. 18; STB Docket No. 42088, *Western Fuels Association, Inc. and Basin Electric Power Cooperative v. BNSF Railway Company*, served February 18, 2009 (“WFA/Basin”) p. 16; and Docket No. NOR 42125, *E.I. DuPont De Nemours and Company v. Norfolk Southern Railway Company*, served

In fact, the STB utilized the greater accuracy and accountability of rail simulations as compared to simple mathematical calculations in its evaluation of the Canadian National Railway Company's ("CN") acquisition of the Elgin, Joliet and Eastern Railway Company ("EJ&E").⁷² To evaluate CN's proposed operation of the former EJ&E lines after CN's acquisition and construction of proposed additional infrastructure, the STB's Section of Environmental Analysis ("SEA")⁷³ undertook independent analyses of the maximum capacity of the EJ&E's rail lines. The SEA first conducted a qualitative analysis of the potential constraints on the EJ&E lines and determined that some lines could be close to capacity.⁷⁴ The SEA next undertook a mathematical analysis of certain sections of the EJE's rail line using a Line Occupancy Indexes ("LOI") approach. The LOI approach consists of dividing a rail line into segments of like capacity, applying to each segment a maximum practical capacity based on its number of main tracks and other characteristics, and comparing that capacity to the proposed capacity. The ratio between the practical capacity and the proposed capacity is the LOI, and is expressed as a percentage, e.g., an LOI of 50 implies that the rail line segment is hosting 50 percent of its maximum practical train capacity.⁷⁵ The STB noted that, while the LOI approach helped to identify certain segments of the EJE that were approaching practical capacity, it needed greater accuracy on the rail line capacity in order to make a final determination about the rail line capacities.

March 24, 2014 ("DuPont") p. 36. Outside of maximum reasonable rate proceedings before the STB, parties have used the RTC model to test rail line capacity in Docket No. FD 36496, *Application of The National Railroad Passenger Corp. Under 49 U.S.C. § 24308(E) – CSX Transportation, Inc. And Norfolk Southern Corporation*, filed March 16, 2021 ("Amtrak Gulf Coast Service") and Docket No. NOR 42104, *Entergy Arkansas, Inc. & Entergy Services, Inc. v. Union Pacific Railroad Company, Missouri & Northern Arkansas Railroad Company, Inc., & BNSF Railway Company*, served November 26, 2012 ("Entergy").

⁷² See, STB Finance Docket No. 35087, *Canadian National Railway Company and Grand Trunk Corporation – Control – EJ&E West Company* ("CN/EJ&E").

⁷³ The STB has since changed SEA's name to the Office of Environmental Analysis.

⁷⁴ See, CN/EJE Draft Environmental Impact Statement, Attachment B4, Page 3.

⁷⁵ See, CN/EJE Draft Environmental Impact Statement, Attachment B4, p. 4. The STB also noted that the LOI approach was very similar to the Grid Analysis undertaken by CN in its application.

Based on the results of the LOI, SEA confirmed the conclusions from the bottleneck analysis and also determined that it needed to evaluate the capacity of the EJ&E rail line using a more robust and sophisticated modeling tool called a Rail Traffic Controller (RTC).⁷⁶

The SEA ran the RTC under several different scenarios addressing different operating assumptions made by CN after its acquisition of the EJ&E. The RTC modeling performed by the SEA allowed the STB to identify that the EJ&E rail line would be operated at or very near to capacity, and that there was little, if any, room for growth in the anticipated daily train volumes.⁷⁷

2. Simple Mathematical Models Do Not Capture the Nuances of Capacity on Double and Triple-Track Rail Lines

Even if the STB were still relying upon purely mathematical methods to study rail line capacity, CP/KCS' calculations of rail capacity use a model that is not well suited to evaluating rail segments with multiple main line tracks. CP/KCS used their simple mathematical capacity model to calculate the estimated capacity of the Elgin Subdivision in 2017.⁷⁸ The model is designed to estimate the capacity of single-track rail lines, but the Elgin Subdivision uses double and triple-track along its length. Calculating the sustainable capacity of a rail line segment with double and triple track, such as CP's Elgin Subdivision, is not as straightforward as determining the capacity of a single-track rail line.

A 2014 study undertaken by the National Cooperative Highway Research Program under the auspices of the Transportation Research Board ("TRB") reviewed strictly mathematical models to determine rail line capacity, and these model's limitations.⁷⁹ The TRB Report found that, while

⁷⁶ See, CN/EJE Draft Environmental Impact Statement, Attachment B4, pp. 3-4.

⁷⁷ See, CN/EJE Draft Environmental Impact Statement, Attachment B4, p. 23.

⁷⁸ See, CP/KCS workpaper "Elgin Sub (July 2017).xlsx." CP/KCS did not provide a capacity calculation for the C&M Subdivision in their workpapers.

⁷⁹ See, "Capacity Modeling Guidebook for Shared-Use Passenger and Freight Rail Operations," NCHRP Report 773, Transportation Research Board, 2014 ("TRB Report"). The TRB undertook the study to provide state

estimating the capacity of a single-line track is relatively straightforward using a simple mathematical model, the calculation of capacity on double and triple-track line segments is more nuanced.

The TRB Report called its single-track capacity analysis a Grid Time Analysis, and described the analysis as follows:

The theoretical capacity to handle traffic on single track is dictated by the time it takes a train to travel the distance between two sidings and clear the way for an opposing train. The time a train takes to traverse the single track section and be in the clear for the opposing movement is called the one-way grid time. The grid time varies as a function of the spacing between sidings and the average of train speeds in each direction. The single track segment on which the trains take the highest amount of time dictates how many trains can traverse a line in a day. This segment defines the capacity over the line as the number of trains that can be handled daily.

The TRB's Grid Time Analysis is essentially the same as the CP/KCS' capacity model and is mathematically equivalent to CP/KCS' capacity model formula. The TRB noted that the theoretical capacity on double and triple-track rail lines is extremely high because trains can fleet behind one another, unimpeded by opposing traffic and limited only by the train speed and by the spacing between trains provided by the signal system. The theoretical capacity may appear to be extremely high. The TRB found in practice, however, numerous other factors combine to reduce the effective capacity of multiple track segments. The most important ones are traffic mix (trains with different speeds, characteristics and customer requirements); track outages for repairs and maintenance; spacing between block signals and interlockings; and queuing at entrances of terminals and junctions.⁸⁰

departments of transportation with technical guidance to aid in their understanding of the methods host railroads use to calibrate and apply capacity models to determine if adequate capacity exists to support new or increased passenger rail service,

⁸⁰ See, TRB Report pp. 29-30.

Several of these capacity constraining factors are present on the Metra MD lines over which Metra and CP operate. CP/KCS' workpapers show that a varied mix of freight train types operate on the Elgin Subdivision, including unit trains, line-haul manifest, intermodal, and automotive trains, and local trains. More importantly, the train figures for the Elgin Subdivision included in the CP/KCS' workpapers do not include Metra or Amtrak passenger trains. The presence of significant passenger train volumes in the mix of traffic moving over this line make the capacity issue even more complex, given passenger train's contractual priority and significantly different operating characteristics of all the train types that actually use the line segments being studied. CP/KCS' omission of these trains from the calculations shows both CP's persistent attitude of diminishing the attention these trains require under the current agreement and the inadequacy of the analyses that they performed.

The Elgin Subdivision also is the location of CP's Bensenville Yard. The Bensenville Yard is CP's only main yard in the Chicago Terminal area and is one of the busiest yards on the CP network.⁸¹ The Bensenville Yard sees a wide range of train types moving into, out of, and through the yard including yard, local, manifest, bulk, and intermodal trains.⁸² Congestion within the busy Bensenville Yard often causes delays on the Elgin Subdivision main line where entering trains block mainline tracks, which reduces the capacity of the line.

⁸¹ See, Verified Statement of James D. Clements in STB Docket No. 36075, *The Illinois State Toll Highway Authority – Petition for Declaratory Order*, filed February 23, 2017 p. 5.

⁸² See, Verified Statement of Thomas C. Albanese in STB Docket No. 36075, *The Illinois State Toll Highway Authority – Petition for Declaratory Order*, filed February 23, 2017 pp. 2-6.

3. Applicants Omit Delay Factors and Foreign Railroad Conflicts from Their Capacity Analysis

CP/KCS' simple mathematical capacity model calculations are based on the speed at which unimpeded trains move between sidings. This model does not consider upstream and downstream events that cause trains to sit idle in yards, sidings and sometimes on mainline tracks. In fact, CP/KCS make no mention of delays in their capacity analysis, and their capacity model appears to factor out any delays a train may incur while operating over the studied segments. Even more concerning is CP/KCS' failure to consider the impact of other railroads' operations, both on jointly operated track segments and on downstream, offline track segments owned by foreign carriers, on CP's operations.

The Chicago Terminal is the predominant interchange terminal in North America. In their description of CP's current Chicago operations, CP/KCS state the following:

Between 75 and 80 percent of CP carloads passing through Chicago either originate or terminate on another railroad. With the majority of rail yards in the region lying to the south of downtown Chicago, much of CP's interchange volumes depart CP's network to connect with yards further south, sharing the same highly trafficked corridors as other Class I carriers.⁸³

This raises a critical point that CP/KCS ignore entirely in their proclamations regarding the existence of sufficient capacity. Even if CP/KCS demonstrated that the line segments they dispatch, including Metra's MD-W and MD-N lines, have sufficient capacity (which they failed to demonstrate), CP/KCS made no effort to ascertain whether connecting railroads can accommodate their proposed increase in interline traffic.

⁸³ See, Merger Application, APP Vol. 2, p. 269, Operating Plan ¶ 27.

CP provided train delay data for select subdivisions in response to Metra's requests for production in this proceeding. The CP delay data attributes a significant portion of the train delays that CP incurred over the critical line segments for which it provided data to interference from other carriers' equipment and operations during the January 1, 2019 through December 14, 2021 time period.

As shown on Exhibit No. 7, CP attributed {{ }} delays ({{ }} per day, on average), accounting for {{ }} million delay minutes ({{ }} hours⁸⁴ of train delays per day, on average), to other railroads' operations and/or equipment. This means that CP identified other carriers as a cause for more than a third⁸⁵ of CP train delays and total delay time CP trains accrued on these line segments. Specifically, these are train delays that CP attributed to IHB, BRC, NS, CSXT, BNSF, UP, CN, Amtrak, and Metra.

CP/KCS apparently presume that the additional volume they plan to add will not impact the operations of the carriers with whom they interchange traffic and/or share trackage, and will not be impacted by delays on those other carriers' lines. However, as documented in their own delay data, the current volume of traffic moving over these critical line segments already causes substantial delays to CP (and Metra). Moreover, although we do not have the delay data of the connecting carriers to evaluate, the train conflicts recorded in CP's train delay data obviously cause delays on all of the other systems as well.

CP/KCS workpapers provided in this proceeding indicate that CP annually interchanges {{ }} railcars with CSXT; {{ }} railcars with NS; {{ }} railcars with UP; {{ }} railcars with BNSF; {{ }} railcars with CN; and {{ }} railcars with

⁸⁴ 1,299.5 daily delay minutes ÷ 24 hours per day. See, Exhibit No. 7, Line 7, Column (12).

⁸⁵ {{ }}. See, Exhibit No. 6 and Exhibit No. 7.

various other Chicago area terminal short line and regional railroads.⁸⁶ CP/KCS made no effort to study the impact on these connecting carriers' systems.

In most capacity models, train delay times are normally considered either implicitly or explicitly in determining train capacity. In rail simulation models, such as the RTC, train delays are explicitly considered either as a result of the rail simulation as trains encounter other trains or as direct inputs for such things as maintenance delays or bridge openings. In less sophisticated models, such as the simple mathematical capacity model used by CP/KCS, delays can be implicitly accounted for by including delay times in the development of average train speeds or transit times.

However, the operating instructions for the CP/KCS mathematical model explicitly exclude delay times in considering line capacity. CP/KCS capacity methodology states that when selecting trains to include in the calculation of transit time inputs to the capacity model, "[r]eview the event recorder speed to determine if the train stopped between sidings and was moving at track speed and discount the time or use another download."⁸⁷ In other words, CP/KCS' capacity methodology calls for excluding trains that were stopped and delayed while moving over the subject line segment, and including only trains that were not delayed. This traffic selection rule explicitly overstates the capacity on the line segment.

4. Applicants Perform RTC Rail Simulations in the Normal Course of Business

In response to Metra's requests for production, CP/KCS belatedly provided a series of 39 separate RTC rail simulations that it performed between 2014 and 2018 to evaluate operating

⁸⁶ See, workpaper "2.1.2.2.1-FD 36500 -Work Paper- Interchange Data (Chicago Interchange by Carrier).xlsx." CP/KCS' workpaper indicates in some cases a Chicago terminal railroad such as the BRC or the IHB interchanged the railcar with another Class I railroad besides CP. In those cases, the railcar was counted as interchanged with the Class I railroad and not the terminal carrier.

⁸⁷ See, Capacity Methodology p. 2.

scenarios on many of the same subdivisions that we modeled in our evaluation of the proposed merger. These simulations were provided in usable format just days before the February 28, 2022 deadline for filing comments in this proceeding. We reviewed the provided simulations and determined that CP considered Metra's operations in only one of the 39 modeling scenarios that it provided. We also determined that only 10 of the 39 provided RTC simulations ran to completion and two (2) of the 10 completed runs contained fatal errors. This could indicate that CP was exploring potential operating solutions for the capacity-constrained Marquette Subdivision.

VIII. RTC TRAIN SIMULATION

Because CP's capacity analysis regarding the proposed transaction was insufficient, we conducted the analyses required to quantify the impact of the anticipated increase in CP/KCS train volumes on Metra train operations, and to identify the modifications to infrastructure and operating practices required to prevent service deterioration for Metra and its customers. To do this we ran a series of simulations. We used RTC model for this exercise, which is the STB's preferred model for demonstrating the validity of proposed operating plans and developing operating statistics in stand-alone maximum reasonable rate cases.⁸⁸

Our RTC analysis evaluates and quantifies both the current operations (based on current track and structures and actual 2021 train volumes ("Base Case")), as well as the proposed future operations (based on proposed additions to track and structures and projected train volume increases ("Future Case")).⁸⁹ These before and after scenarios allow us to measure the impact of CP's proposed increase in train volumes on train performance, while accounting for changes in infrastructure. Comparing the pre-merger and the post-merger scenarios reveals the change in Metra service levels that will result from the proposed merger. Exhibit No. 8 contains a detailed outline showing the data sources and processes that we used to develop inputs to and run the RTC simulations.

⁸⁸ CP/KCS' failure to perform an RTC-based modeling exercise to demonstrate the feasibility of its proposed operating plan would constitute a critical flaw in an operating plan posited for a hypothetical Stand-Alone Railroad ("SARR") in a maximum reasonable rate proceeding before the STB. In fact, the STB would not accept a MultiRail-based operating plan in a rate case without an accompanying RTC model demonstrating that the posited operating plan was feasible. Nor would the STB accept an operating plan that excluded an entire class of trains (in this case Metra trains) from its operating plan and accompanying simulation. Clearly such an exercise is equally applicable when the proposed operations are for a real-world railroad, not a hypothetical railroad as in a maximum reasonable rate case.

⁸⁹ Future operations exclude significant volumes of traffic of foreign freight trains from other carriers that were not included in the train event data provided by CP in discovery.

This approach is consistent with the TRB Report's findings for testing the effect of adding trains over a corridor of mix-used rail traffic. The TRB Report noted:

That is, RTC is run first with the base case or existing train pattern operating over the corridor. The base case includes all current freight traffic, mixed freight and passenger trains, and local freights. Subsequent simulation runs test the effects to the overall operations under increased traffic patterns (viz., planned freight traffic growth and introduction of passenger traffic). This testing allows for the determination of operational effects that occur to existing freight traffic, while prioritizing passenger trains.⁹⁰

We follow the approach advocated by the TRB Report as discussed below.

A. RTC MODELING OF THE BASE CASE

In the first step in our RTC analysis, we entered detailed track and structures data into the RTC model using geospatial and other electronic and hard-copy location and infrastructure data provided by both CP (for CP-owned line segments and yards) and Metra (for Metra-owned line segments). The electronic track charts and related materials for CP-owned segments were provided in response to Metra's requests for production.⁹¹ Our simulation covered the portions of CP's and Metra's rail lines shown in Exhibit No. 3, which includes, but is not limited to, the MD-N and MD-W lines. In addition, we developed and included track and structures data for the short UP line segment between Tower A20 on Metra's MD-N line and the connection with CP at Bryn Mawr, which is north of Metra's MD-W line and Bensenville Yard, because a significant number of CP trains routed to Bensenville from Milwaukee follow this route via CP trackage rights.

Next, we developed a base period train list using a combination of data sources. For CP freight trains, we used historical CP train event data, CP Local Operating Plans ("LOP") detailing the routes and customers served by CP local trains, CP car events showing time stamps for actual

⁹⁰ See, TRB Report p. 37.

⁹¹ See, Metra's First Set of Discovery Requests No. 2.

placement and release of railcars at customer facilities, i.e., loading and unloading data, and additional information CP provided in response to Metra's requests for production and interrogatories. For Metra and Amtrak trains, we used Metra train schedules and Amtrak train schedules for trains that were operating in the base period. CP's train event data was missing data for foreign freight trains. We conservatively added two (2) daily foreign freight trains in the form of daily round trip local trains, one UP train operating between Proviso Yard and Bensenville Yard over the IHB, and one NS train operating between Calumet Yard and Bensenville Yard over the BRC, in accordance with CP/KCS' description of its Chicago interchange operations:

CP delivers manifest and intermodal traffic directly into NS' Calumet Yard via BRC and into UP's Proviso Yard via IHB. Both railways reciprocate with direct service into Bensenville.⁹²

Metra provided freight activity logs which confirmed that several additional foreign trains operated over Metra's lines into Bensenville on a daily basis during the modeled week. Exhibit No. 4 contains a list of the foreign trains logged by Metra during the week of April 16, 2021 through April 22, 2021. However, CP/KCS provided no train event data for any of these trains and with the exception of one daily NS and one daily UP train, they provided no description of their operations in the Operating Plan. The Exhibit No. 4 train list includes, but is not limited to, foreign trains which perform daily reverse moves adjacent to Bensenville Yard, i.e., stopping on the mainline in order to reverse direction.⁹³ As a result of CP/KCS' failure to provide any event data for foreign trains, our simulations include fewer freight trains than operate in the real world, and fewer disruptive operations such as the reverse moves described above, so they reflect notably less freight train interference than Metra trains actually encounter.

⁹² See, Merger Application, APP Vol. 2, p. 270, Operating Plan ¶ 27.

⁹³ See, Trains T001, T002, and T004 on Exhibit No. 4, Lines 44-46.

In fact, this is just one of many assumptions and inputs to our RTC simulations that are extremely favorable to CP/KCS, all of which result in overstated train performance (in both the pre-merger and post-merger evaluations). Exhibit No. 9 lists many of the conservative assumptions we made in our RTC modeling that are favorable to CP/KCS.

The Base Case train list includes the actual historical trains that operated over the modeled track during the week of April 16, 2021 through April 22, 2021, plus a two-day warm up period, and a one-day cool down period.⁹⁴ The warm-up and cool-down periods are required to ensure the simulated rail network is fully populated with trains both before and after the observed statistical period. This prevents trains that are dispatched early (or late) in the peak week from entering a system that is unrealistically void of traffic. This is the standard procedure used by parties in STB maximum reasonable rate cases.

We selected the modeling week after reviewing the train event data for January 2019 through December 14, 2021 that CP provided in response to Metra's requests for production. We observed that train volumes were higher in 2019 and 2020 than in 2021, and determined that this change was attributable to several factors. First, CP's roster of scheduled merchandise, intermodal, and automotive trains, i.e., operating plan trains, has changed since 2019. This is consistent with CP's implementation of PSR. Second, there has been a notable decline in unit crude train and unit coal train volumes over the studied routes since 2019 and 2020. Upon review of these trends, we selected the relatively lower-volume 2021 as the base year because it accurately reflects current train operations.

After restricting our modeling period to 2021, we identified a week in which train volumes were higher than average to ensure we observed and accounted for the volume peaks that arise in

⁹⁴ See, Exhibit No. 10a.

the normal course of business as a result of seasonal traffic ebb and flow. This is consistent with the RTC modeling parameters the STB requires in maximum reasonable rate cases.⁹⁵ However, we were careful to avoid selecting a week in which anomalous events caused unusual volumes and/or train delays.

We used the provided CP train event and train delay data in conjunction with historical weather data from the National Weather Service⁹⁶ to ensure we did not select a week in which anomalous weather events caused unusual delays during our base period. Specifically, we rejected the high-volume week of February 17, 2021 through 23, 2021 because record-setting heavy snow fell in the Chicago area in the preceding three (3) weeks, which led to unusually high volumes and congested corridors.⁹⁷ Similarly, we rejected the high-volume week of March 26, 2021 through April 1, 2021 because BNSF⁹⁸ and UP⁹⁹ noted heavy snowfall in Wyoming and Colorado from March 15, 2021 through 17, 2021 that may have caused cascading delays into Chicago through the month of March. By selecting a peak period in the middle of April 2021, we eliminated the need to reduce speed limits for much of the modeled network where speed limit exceptions are enforced in below-freezing weather.

We also conducted a review of non-weather events that may have contributed to an anomalous week. For example, we rejected the high-volume week of August 18, 2021 through August 24, 2021 because multiple press releases indicated that cascading delays from the Suez

⁹⁵ See, STB Docket No. 42088, *Western Fuels Association, Inc., And Basin Electric Power Cooperative v. BNSF Railway Company*, decided September 7, 2007, and STB Docket No. 42071 *Otter Tail Power Company v. BNSF Railway Company*, decided January 25, 2006.

⁹⁶ See, www.weather.gov.

⁹⁷ See, February 14-16, 2021: *Heavy Snowfall in Northeast Illinois and Northwest Indiana* (weather.gov).

⁹⁸ See, Intermodal Network Update for Friday, March 19, 2021 *Customer Notifications BNSF*.

⁹⁹ See, e.g., UP: All Customer News.

Canal backup reached Chicago in July,¹⁰⁰ in addition to localized flooding and wind damage reported in the Chicago area on August 24.¹⁰¹

After identifying the modeling week, the next step in our analysis was to review and incorporate the historical maintenance outages, slow orders, and delays caused by draw bridge interference, and track or equipment failures on the modeled segments that occurred during the base period. We used delay data provided by both CP and Metra to identify the timing and location of these events. For example, CP Delay data reported a {{ }}-minute delay at Bensenville to train {{ }} on {{ }} at {{ }} with the following note:

{{

}}.

Next, we reviewed historical loading and unloading data and local train operating schedules for the base period that were provided by CP to ensure that our modeling exercise properly reflected the timing and location of industry switching performed by local train crews at shipper facilities located on or adjacent to Metra operating territory and the CP territory included in our modeling exercise. This ensures that we modeled industry switching operations only when industry gates were open.

With all of the base period modeling inputs described above, we performed our initial simulation.¹⁰² To evaluate the results of the simulation, we developed four (4) primary metrics for each class of train, including Metra trains. These metrics are: (1) average train speed; (2) delay

¹⁰⁰ See, e.g., *Supply-Chain Backlogs Turn Chicago Into New Chokepoint* - WSJ.

¹⁰¹ See, August 24, 2021: *Thunderstorms Produce Wind Damage and Localized Flooding in Northern Illinois* (weather.gov).

¹⁰² We conservatively modeled the entire network without signals, which the RTC model will dispatch similar to a fully PTC equipped network. This assumption results in more fluid modeled operations than a conventionally signaled system.

percentage; (3) delay per 100 train miles; and (4) total delay hours. Each of these metrics is further explained below.

1. Average train speed calculates the simple average of all train speeds within a train category taking into consideration all delays.
2. Delay percentage is the delay time represented as a percent of total transit time and is a valuable indicator of congestion on the modeled network, where a delay of 10 minutes is less significant for a 10-hour movement than it is for a one-hour movement.
3. Delay per 100 train miles measures delays on a normalized basis taking into consideration the impact on long-haul through trains and short distance local trains.
4. Total delay hours provide an indicator of increased congestion across all train types.

These metrics are common and recognized approaches to analyzing the results of rail simulations.¹⁰³

Table 5 below shows the average train speeds, delay percentages, delay per 100 train miles and total delay hours for the RTC Base Case, separated by train type for the entire simulated network. A complete list of trains included in our Base Case scenario is included Exhibit No. 10a.

¹⁰³ See, TRB Report pp. 54-56.

<u>Train Group</u>	<u>Average Speed (MPH)</u>	<u>Delay Percent 1/</u>	<u>Delay Per 100 Train- Miles (Minutes)</u>	<u>Total Delay (Hours)</u>
(1)	(2)	(3)	(4)	(5)
1. Metra	31.52	0.56%	1.06	3.6
2. Amtrak	57.68	2.66%	2.70	2.9
3. Unit Train	25.32	28.18%	52.67	132.3
4. Local	17.89	26.99%	70.41	59.2
5. Operating Plan	21.82	17.74%	41.44	139.1
6. Other	<u>25.88</u>	<u>38.85%</u>	<u>64.87</u>	<u>4.9</u>
7. Total	26.18	15.33%	30.46	341.9

Source: workpaper "Summary Tables for Successful RTC Cases.xlsx."
1/ Delay Percent = 100 x True delay ÷ Total elapsed ideal seed run time.

Table 5 includes statistics for all trains operating over the simulated network for all subdivisions included in the RTC model. The Base Case simulation shows 3.6 hours of delay for Metra trains,¹⁰⁴ even though the RTC includes a pronounced disparity in priority between Metra's trains and CP's freight trains that is not always enforced by CP dispatchers in real-world operations.¹⁰⁵ Metra's observed interference from CP freight trains is reduced in the model by the hierarchical dispatching protocols programmed into RTC, which largely prevent this interference in the Base Case, and completely prevent this interference when rush-hour restrictions are applied to CP's freight (discussed further below). Despite the disparity in priority between Metra's passenger trains and CP's freight trains, we observed several instances where the dispatch plan generated by the RTC resulted in Metra trains being delayed by CP trains, including one instance

¹⁰⁴ See, Table 5, Line 1, Column (5).

¹⁰⁵ Specifically, in the Base Case simulation, Metra trains are coded with an "Rank 1 - Elite" priority with a minimum priority level of 9000, where the priority level for CP's trains are "Rank 6 - High Priority" with minimum priority levels ranging from 2500 to 5000. These settings ensure that Metra's trains always receive dispatching priority in the simulation.

where three (3) Metra trains were delayed simultaneously near Metra's Chicago Street Station behind one of CP's Manifest trains.¹⁰⁶

Separating the above statistics by train type and CP subdivision shows that the delays are not evenly distributed across the network.

Table 6 <u>Base Case RTC Results for Marquette Subdivision and All Other Subdivisions</u>				
Train Group	Average Speed (MPH)	Delay Percent 1/	Delay Per 100 Train- Miles (Minutes)	Total Delay (Hours)
(1)	(2)	(3)	(4)	(5)
Marquette Subdivision				
1. Metra	xxx	xxx	xxx	xxx
2. Amtrak	xxx	xxx	xxx	xxx
3. Unit Train	22.43	40.31%	76.84	73.4
4. Local	15.18	29.52%	90.11	27.3
5. Operating Plan	17.17	30.21%	81.05	31.2
6. Other	<u>25.43</u>	<u>41.28%</u>	<u>68.93</u>	<u>3.2</u>
7. Total	19.47	35.03%	79.96	135.1
All Other Subdivisions				
8. Metra	31.52	0.56%	1.06	3.6
9. Amtrak	57.68	2.66%	2.70	2.9
10. Unit Train	26.98	20.50%	37.84	58.9
11. Local	20.33	25.14%	59.29	31.8
12. Operating Plan	22.61	15.85%	36.31	107.9
13. Other	<u>26.62</u>	<u>34.96%</u>	<u>58.40</u>	<u>1.7</u>
14. Total	27.89	11.21%	21.69	206.8
Source: workpaper "Summary Tables for Successful RTC Cases.xlsx." 1/ Delay Percent = 100 x True delay ÷ Total elapsed ideal seed run time.				

As shown in Table 6 above, the majority of the delays in the RTC Base Case, as represented by the Delay Percent and Delay Per 100 Train-Miles, stem from CP's operations along the Marquette Subdivision. In fact, we were forced to move trains off the Marquette Subdivision onto the Mason City Subdivision (at Marquette) to accommodate train meet/pass events in the RTC

¹⁰⁶ See, workpaper "CP TRAIN DELAYING 3 METRA TRAIN.jpg."

model. Review of the RTC simulations provided by CP that included the Marquette Subdivision reveals that in CP's simulations, long trains that could not be sided were held on the Marquette mainline.¹⁰⁷ As discussed in Section VI above, the Marquette Subdivision is presently at or near capacity, and CP/KCS' proposed addition of significantly more trains along this section of the merged railroads' network will only lead to increased future delays along the Marquette Subdivision's lines, and adjoining subdivision lines, even with the planned capacity expansion.

1. Base Case Sensitivity Analysis – Commuter Rush Hour Restrictions

In our Base Case scenario, we dispatched CP freight trains based on the first departure/arrival times reported at stations on the portions of the CP network we modeled, as included in the provided CP train event data, for all CP freight trains. This ensured that we obtained an accurate representation of CP's current day-to-day operations. After completing the Base Case analysis, we attempted to test a scenario in which CP trains were forced to observe the commuter peak periods, i.e., rush hour, specified in the 1993 Supplemental Agreement between Metra and CP. However, after imposing the restrictions on CP freight trains in the commuter peak periods, the RTC simulation would not run to completion. This explains why CP's dispatchers are forced to move CP freight trains during the commuter peak periods in the real world. CP's dispatching incentives are at odds with Metra's.

B. RTC MODELING OF THE POSITED FUTURE CASE

After we ran our Base Case simulation, we added merger-related growth trains to the Base Case train list to reflect the freight train volume increase projected by CP/KCS. We started by adding the new scheduled intercity freight trains (operating plan trains) identified by CP/KCS in

¹⁰⁷ See, workpaper "CP RTC 181102 No YL Train N475GT8500-02 ML Switching Work.jpg"

Appendix G to the Operating Plan, based on the projected train routes and schedules¹⁰⁸ that were provided in response to Metra's requests for production.¹⁰⁹ Train size, i.e., trailing length and weight, for growth intermodal and manifest trains reflect the train sizes of corresponding historical 2021 trains that traversed the line segments over which CP/KCS project train volume increases. In other words, we conservatively assumed future intermodal and manifest trains will not grow in size, but instead remain at current train sizes.

Next, we added unit trains in accordance with CP/KCS' projected average daily increase in unit train volumes by line segment.¹¹⁰ This approach is conservative because it does not reflect the seasonal peaking by commodity observed in the historical 2019-2021 train event data provided by CP/KCS. Specifically, we distributed CP/KCS' projected growth unit train volume evenly across the 10-day modeling period, which reduces the likelihood of conflicts resulting from unit train bunching that is inevitable in the real world.

Growth unit trains were assumed to have the same consists as historical 2021 trains and were routed according to the routes of unit trains that traversed the modeled route segments in 2021.¹¹¹ Because the growth trains we added have identical train consists to historical 2021 unit trains that traversed the line segments over which CP/KCS project volume increases, we ensured that the modeled growth trains could be sided where CP historically sided unit trains over the modeled routes.

¹⁰⁸ See, CP/KCS workpaper "Growth Plan Trains.xlsx" and "Growth Trains_Tomah_River_WaterTown.xlsx."

¹⁰⁹ See, CP/KCS workpaper "10.5.10-CP-HC-00006478.xlsx" (produced to Metra as "Growth Plan Trains.xlsx" and CP/KCS workpaper "10.5.5.7- CP-HC-00014410.xlsx" (produced to Metra as "Growth Trains_Tomah_River_WaterTown.xlsx").

¹¹⁰ See, workpaper "Growth Plan Trains w 2021 Route Delays and Consist_RTC Trains_02222022.xlsx" at tab "UNIT."

¹¹¹ See, workpaper "Growth Plan Trains w 2021 Route Delays and Consist_RTC Trains_02222022.xlsx" at tab "RTC Inputs_Growth Unit."

As discussed in Section VI above, CP/KCS failed to add the expanded local train services into and out of Bensenville Yard that are likely to result from its significant increase in planned Bensenville manifest and intermodal train volumes and the resulting increase in demand for transfer service to/from foreign yards for the purpose of interchanging traffic with other carriers. In our Future Case scenario, we assumed there would be no change in the frequency of local train service into/out of Bensenville, in accordance with CP/KCS Operating Plan. However, we believe this is an unrealistic future scenario, and it understates freight train interference Metra is likely to incur in the post-merger environment.

As with our Base Case, the Future Case is also missing several daily foreign trains for which CP provided no train event data, which again results in underrepresentation of freight train interference.

After updating the CP train list to reflect projected future operations, we updated the Amtrak train list to reflect the expanded Amtrak Service included in the Amtrak-CP/KCS Agreement.¹¹²

Finally, we expanded the Metra train list to reflect a volume level slightly below the 2019, pre-Covid, Metra train service frequency in order to evaluate the combined operations reflective of Metra's eventual return to a full complement of trains, which it has the contractual right to do. Metra operated 900 trains per week in 2019. In our Future Case scenario, we operated 865 Metra trains, i.e., 35 fewer trains per week than the number Metra operated in 2019. Trains that Metra removed in the Covid-era were assumed to resume operations on their 2019 schedule in the RTC Future Case, unless the 2019 schedule interferes with the operations of a current Metra train. The complete list of trains modeled in our Future Case scenario is included in Exhibit No. 10b.

¹¹² See, Amtrak-CP/KCS Agreement") pp. 1-3.

The next step in our analysis involved adding track and structures to the Base Case model to reflect the capacity expansion projects planned by CP/KCS. Specifically, CP/KCS state that they will add one new siding to the Chicago Subdivision, three (3) new sidings to the Marquette Subdivision, and signal improvements to the Marquette Subdivision.¹¹³ Although the planned capacity expansion will occur over several years, we modeled only the “after” scenario. We did not model intermediate scenarios in which the improvements were only partially complete.

We also added the performance gains delivered by the track and structures identified in the Amtrak-CP/KCS Agreement as requirements for expanded Amtrak service to the model,¹¹⁴ as well as the improvements Amtrak publicly identified as necessary to accommodate the new daily Twin Cities-Milwaukee-Chicago (“TCMC”) service between St. Paul and Chicago. This ensures that the additional capacity Amtrak and CP/KCS agree is required to accommodate the increased Amtrak service was modeled.

After making the adjustments discussed above, we dispatched the RTC model and found that the simulation was unable to determine a viable dispatch plan.¹¹⁵ In other words, RTC could not find a resolution that would accommodate the number of trains expected to operate over the simulated network even with the additional infrastructure added to the system. Not finding a resolution is not a failure of the RTC program, but rather an indication that changes are required to the modeled infrastructure and/or the trains included in the simulation.

We determined that the majority of unresolvable train conflicts were occurring on the Marquette Subdivision. In particular, the extremely long manifest/intermodal trains, which

¹¹³ See, CP/KCS Operating Plan at APP Vol. 2, p. 460, Appendix R. As explained above, we did not include signals in our RTC models, so signaling improvements were also omitted.

¹¹⁴ The Amtrak filing is included in our workpapers supporting this Verified Statement as workpaper “2022.02.02 Amtrak-CP Settlement Agreement, STB FD 36500.pdf.”

¹¹⁵ See, workpaper “METRA - FUTURE CASE_V14X REVISED ALL Trains Enabled FAILURE.zip.”

CP/KCS plan to double following the merger, often could not be successfully dispatched.¹¹⁶ The train event data provided by CP in discovery indicates that these trains perform work at various locations on the Marquette Subdivision and often exceed 10,000 feet in length. However, the locations where this work is being performed do not have enough track to accommodate these extra-long trains.

We also observed that these inefficient operations were modeled in CP's own RTC simulations.¹¹⁷ In the future scenarios, we left the dispatching protocols set similar to the Base Case such that CP trains could be moved off of the Marquette Subdivision and onto the Mason City Subdivision to accommodate train meet/pass events at Marquette, and with unit train volume growth evenly distributed across the modeled period.

Since the Future Case RTC simulation could not determine a successful dispatch plan given the operating conditions and additional infrastructure, we attempted lifting the dwell restrictions on all of the sidings in the Marquette Subdivision to allow CP freight trains to dwell indefinitely on these sidings, if necessary, including the three (3) new long sidings proposed by CP. We found that even when CP trains were allowed to dwell indefinitely on Marquette sidings, the RTC could not determine a viable dispatch plan for this volume of traffic.¹¹⁸

1. Future Case Sensitivity Analysis - Evaluation of Reduced Traffic Volumes

Because we could not get the Future Case to run to completion in the RTC model (even with all of CP/KCS' proposed expansion projects completed), we removed trains from the

¹¹⁶ According to the proposed operating plan schedule, many of these trains perform pick-ups and set-outs at Marquette, Dubuque, and Kains. See, CP/KCS workpaper "Growth Plan Trains.xlsx." Filter for "TRN_SYMBOL_I" = 260 or 261, and "WORK_S" <> "N."

¹¹⁷ See, workpaper "CP RTC 181102 No YL Train N475GT8500-02 ML Switching Work.jpg."

¹¹⁸ See, workpaper "METRA - FUTURE CASE_V14X REVISED ALL Trains ENabled Sit Limits.zip."

simulation one by one until all remaining trains could be dispatched. This was done by running the simulation until the RTC model identified trains involved in unresolvable tangles, then removing the first train identified in the tangles and subsequently running the simulation again. This process was repeated until we achieved a successful dispatch. In total, we removed 13 trains (more than one train per day, on average) before the simulation would run to completion. These 13 trains represent 474.5 excess trains annually beyond the available capacity of the proposed future network,¹¹⁹ even given our highly conservative modeling assumptions. After removing these trains from the simulation, the RTC was able to develop a viable dispatch plan, although the impact on train performance was substantial. Once the RTC was able to determine a viable dispatch plan, we observed that all three (3) of the new sidings proposed by CP/KCS on the Marquette Subdivision were used heavily in the model.¹²⁰ This demonstrates that this proposed new infrastructure was being utilized frequently by the RTC model, but the three (3) new sidings were not sufficient to handle the proposed additional volume.

Table 7 below compares the Base Case metrics to the Future Case metrics after the removal of 13 CP trains required to successfully dispatch an RTC simulation.

¹¹⁹ Thirteen (13) trains over a 10-day modeling period. $365 \text{ days per year} \div 10 \text{ days modeled} \times 13 \text{ trains over capacity in the model period} = 474.5 \text{ trains over capacity per year}$.

¹²⁰ See, workpapers “CP Marquette Added 10K Siding MP 24.jpg,” “CP Marquette Added 12K Siding MP 72.jpg,” and “CP Marquette Added 10K Siding MP 155.jpg.”

Table 7
**Base Case and Future Case with
Removal of Over-capacity Trains RTC Results**

Train Group	Average Speed (MPH)	Delay Percent 1/	Delay Per 100 Train- Miles (Minutes)	Total Delay (Hours)
(1)	(2)	(3)	(4)	(5)
Base Case				
1. Metra	31.52	0.56%	1.06	3.6
2. Amtrak	57.68	2.66%	2.70	2.9
3. Unit Train	25.32	28.18%	52.67	132.3
4. Local	17.89	26.99%	70.41	59.2
5. Operating Plan	21.82	17.74%	41.44	139.1
6. Other	<u>25.88</u>	<u>38.85%</u>	<u>64.87</u>	<u>4.9</u>
7. Total	26.18	15.33%	30.46	341.9
Future Case with Removal of Select Trains				
8. Metra	30.83	2.84%	5.37	25.0
9. Amtrak	55.44	7.67%	7.71	22.8
10. Unit Train	20.84	51.68%	98.05	349.6
11. Local	12.68	75.28%	196.94	168.5
12. Operating Plan	18.97	42.33%	94.06	444.9
13. Other	<u>19.83</u>	<u>81.15%</u>	<u>135.52</u>	<u>10.1</u>
14. Total	24.27	32.49%	60.63	1,021.0

Source: workbook "Summary Tables for Successful RTC Cases.xlsx."

1/ Delay Percent = 100 x True delay ÷ Total elapsed ideal seed run time.

As shown in Table 7 above, while the Future Case ran to completion after reducing future train volumes, we found a decline in average train speeds across all train types and increases in delay percentages, delay per 100 train-miles and aggregate delay hours. This indicates that even with fewer trains than CP/KCS and Amtrak propose to add, service will significantly decline for Metra and all other train operators.

In the Future Case, even with the benefit of the new infrastructure proposed by Amtrak, and the new infrastructure proposed by CP/KCS, Metra trains incurred 25.0 hours of delay over the course of the week, which is an increase of 594 percent compared to the Base Case delay of

3.6 hours.¹²¹ Metra also saw a 405 percent increase in delay per 100 train miles.¹²² These results show that the combined proposed infrastructure expansion is insufficient to accommodate CP's future traffic without adversely affecting Metra's operations, even after reducing the proposed annual CP/KCS volume by 474.5 trains

Based on Metra's past experience, we understand that CP sometimes reroutes trains over Metra's MD lines when the Marquette Subdivision is over capacity. The posited CP/KCS network cannot accommodate its proposed operating plan. In the post-merger scenario, CP/KCS will be operating over Metra's lines with no excess capacity.

C. IDENTIFICATION OF REQUIRED INFRASTRUCTURE EXPANSION

Metra's current service levels will deteriorate in the Future Case even taking CP's and Amtrak's proposed infrastructure into consideration, and even with fewer trains than CP/KCS plan to force through the system. At Metra's request, we developed a scenario to evaluate the impact of additional infrastructure expansion projects to determine their impact on Metra's future service levels.

Specifically, our analysis involved eight (8) additional infrastructure expansion projects on the MD-W line, and three (3) additional infrastructure expansion projects on the MD-N line.

The eight (8) additional infrastructure expansion projects on the MD-W are:

1. Addition of receiving tracks at Bensenville Yard equal to the maximum length of incoming trains;
2. Addition of receiving tracks at Galewood Yard equal to the maximum length of incoming trains;
3. Addition of new powered cross-overs at Bartlett and Itasca;

¹²¹ $25.0 \div 3.6 - 1 \times 100 = 594\%$.

¹²² $5.37 \div 1.06 - 1 \times 100 = 405\%$.

4. Addition of two (2) new mainline tracks between Tower B12 and Tower B17;
5. Separation of the CP and Metra Milwaukee West tracks and construction of a fly-over from south of Tower A5 to northerly dedicated west bound Metra track;
6. Reduction of the curves at Tower A5 to allow increased speeds from 10 MPH to 25 MPH;
7. Addition of a new southeasterly wye leg at Cragin Junction to direct CP traffic south onto BRC without a reverse move; and
8. Addition of two new mainline tracks between Tower A5 and Tower B12.

The three (3) additional infrastructure expansion projects on the MD-N are:

1. Addition of new universal cross-overs at Lake Forest and Glenview;
2. Addition of a new third main line between Rondout and Tower A20; and
3. Addition of a new connection at Tower A20 to allow CP trains to exit the Metra mainline before entering UP territory.

Table 8 below compares the Base Case metrics to the Future Case metrics¹²³ with the addition of the infrastructure identified above to Metra's MD lines.

¹²³ We still had to remove 12 trains (mostly on the Marquette Subdivision) for the RTC simulation to run with the expanded infrastructure on Metra's Milwaukee District lines.

Table 8
**Base Case and Future Case with Over-capacity Trains Removed and
Additional Milwaukee District Infrastructure RTC Results**

Train Group	Average Speed (MPH)	Delay Percent 1/	Delay Per 100 Train- Miles (Minutes)	Total Delay (Hours)
(1)	(2)	(3)	(4)	(5)
Base Case				
1. Metra	31.52	0.56%	1.06	3.6
2. Amtrak	57.68	2.66%	2.70	2.9
3. Unit Train	25.32	28.18%	52.67	132.3
4. Local	17.89	26.99%	70.41	59.2
5. Operating Plan	21.82	17.74%	41.44	139.1
6. Other	<u>25.88</u>	<u>38.85%</u>	<u>64.87</u>	<u>4.9</u>
7. Total	26.18	15.33%	30.46	341.9
Future Case with Select Trains Removed and Additional Milwaukee District Infrastructure				
8. Metra	31.13	1.91%	3.62	16.9
9. Amtrak	56.20	6.22%	6.25	18.5
10. Unit Train	21.97	47.55%	90.06	343.4
11. Local	13.65	57.85%	161.69	140.1
12. Operating Plan	19.41	32.09%	75.11	347.5
13. Other	<u>23.10</u>	<u>55.55%</u>	<u>92.77</u>	<u>6.9</u>
14. Total	24.80	26.97%	51.39	873.4

Source: workpaper "Summary Tables for Successful RTC Cases.xlsx."

1/ Delay Percent = $100 \times \text{True delay} \div \text{Total elapsed ideal seed run time}$.

As shown in Table 8 above, after making these infrastructure additions on Metra's MD lines, our Future Case RTC simulation showed improved performance, but still did not return Metra's service to current baseline levels.

IX. OTHER CONCERNS

Metra's top priority is to provide safe and reliable service to its customers. As we demonstrated above, Metra's rail lines, as they currently exist, cannot accommodate CP's planned volume increase. Even if CP/KCS reduced their planned volume increase, it cannot be accommodated without a significant reduction in Metra train performance. Our RTC analysis shows that the proposed CP/KCS operating plan is not workable.

However, even if CP were able to make significant additional capital investment and dispatching adjustments to ensure Metra's trains run on schedule, there would still be greater throughput over Metra's lines. This increased throughput has the potential to create a new and different set of problems for the people who live in communities along the route, many of whom are Metra's riders. We did not evaluate the economic or safety impacts of increased freight throughput on the communities Metra serves.

Metra is also concerned that the resolution to the current dispute between CP and CN regarding the possible relocation of CP-CN interchanges from BRC's Clearing Yard to Spaulding Yard in Bartlett, IL (west of Bensenville) or to CN's Kirk Yard in Gary, IN (southeast of Bensenville) may impact the operation of freight trains on Metra's lines. If the CP-CN interchange moves to Spaulding, Kirk, or elsewhere in the Chicago terminal, this could add or change some CP local train assignments operating out of Bensenville, which has the potential to disrupt Metra service.

VERIFICATIONS

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


Thomas D. Crowley

Executed on 3/15/22

* * *

I, Robert D. Mulholland, verify under penalty of perjury that I have read this Verified Statement on behalf of Metra, that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.


Robert D. Mulholland

Executed on 3/15/2022

LIST OF EXHIBITS

Exhibit No.	Exhibit Description
(1)	(2)
1	Statement of Qualifications of Thomas D. Crowley
2	Statement of Qualifications of Robert D. Mulholland
3	Schematics of Select Metra and CP Rail Lines
4	Review of Metra Provided Freight Train ID's not included in CP Train Event Data
5	Summary of CP Freight Trains Operating Over Metra's Milwaukee District Lines (January 1 through December 14, 2021)
6	Summary of CP Train Delays Incurred on Select Subdivisions, January 1, 2019 through December 14, 2021
7	Summary of CP Delays Attributed to Other Carriers' Operations, January 1, 2019 through December 14, 2021
8	RTC Modeling Inputs and Procedures
9	RTC Simulation Assumptions and Inputs that are Favorable to CP/KCS
10a	Summary of Trains Modeled in Base Case RTC
10b	Summary of Trains Modeled in Future Case RTC

EXHIBIT C-1

Thomas D. Crowley Qualifications

My name is Thomas D. Crowley. I am an economist and President of the economic consulting firm of L. E. Peabody & Associates, Inc. The firm's offices are located at 1501 Duke Street, Suite 200, Alexandria, Virginia 22314, 760 E. Pusch View Lane, Suite 150, Tucson, Arizona 85737, and 7 Horicon Avenue, Glens Falls, New York 12801.

I am a graduate of the University of Maine from which I obtained a Bachelor of Science degree in Economics. I have also taken graduate courses in transportation at George Washington University in Washington, D.C. I spent three years in the United States Army and since February 1971 have been employed by L. E. Peabody & Associates, Inc.

I am a member of the American Economic Association, the Transportation Research Forum, and the American Railway Engineering and Maintenance-of-Way Association.

The firm of L. E. Peabody & Associates, Inc. specializes in analyzing matters related to the rail transportation of all commodities. As a result of my extensive economic consulting practice since 1971 and my participation in maximum-rate, rail merger, service disputes and rule-making proceedings before various government and private governing bodies, I have become thoroughly familiar with the rail carriers and the traffic they move over the major rail routes in the United States. This familiarity extends to subjects of railroad service, costs and profitability, cost of capital, railroad capacity, railroad traffic prioritization and the structure and operation of the various contracts and tariffs that historically have governed the movement of traffic by rail.

As an economic consultant, I have organized and directed economic studies and prepared reports for railroads, freight forwarders and other carriers, for shippers, for associations and for state governments and other public bodies dealing with transportation and related economic

problems. Examples of studies I have participated in include organizing and directing traffic, operational and cost analyses in connection with single car and multiple car movements, unit train operations for coal, grain, oil and other commodities, freight forwarder facilities, TOFC/COFC rail facilities, divisions of through rail rates, operating commuter passenger service, and other studies dealing with markets and the transportation by different modes of various commodities from both eastern and western origins to various destinations in the United States. The nature of these studies enabled me to become familiar with the operating practices and accounting procedures utilized by railroads in the normal course of business.

Additionally, I have inspected and studied both railroad terminal and line-haul facilities used in handling various commodities. These operational reviews and studies were used as a basis for the determination of the traffic and operating characteristics for specific movements of numerous commodities handled by rail.

I have frequently been called upon to develop and coordinate economic and operational studies relative to the rail transportation of various commodities. My responsibilities in these undertakings included the analyses of rail routes, rail operations and an assessment of the relative efficiency and costs of railroad operations over those routes. I have also analyzed and made recommendations regarding the acquisition of railcars according to the specific needs of various shippers. The results of these analyses have been employed in order to assist shippers in the development and negotiation of rail transportation contracts which optimize operational efficiency and cost effectiveness.

I have developed property and business valuations of privately held freight and passenger railroads for use in regulatory, litigation and commercial settings. These valuation assignments

required me to develop company and/or industry specific costs of debt, preferred equity and common equity, as well as target and actual capital structures. I am also well acquainted with and have used the commonly accepted models for determining a company's cost of common equity, including the Discounted Cash Flow Model ("DCF"), Capital Asset Pricing Model ("CAPM"), and the Farma-French Three Factor Model.

Moreover, I have developed numerous variable cost calculations utilizing the various formulas employed by the Interstate Commerce Commission ("ICC") and the Surface Transportation Board ("STB") for the development of variable costs for common carriers, with particular emphasis on the basis and use of the Uniform Railroad Costing System ("URCS") and its predecessor, Rail Form A. I have utilized URCS/Rail form A costing principles since the beginning of my career with L. E. Peabody & Associates Inc. in 1971.

I have frequently presented both oral and written testimony before the ICC, STB, Federal Railroad Administration, Federal Energy Regulatory Commission, Railroad Accounting Principles Board, Postal Rate Commission and numerous state regulatory commissions, federal courts and state courts. This testimony was generally related to the development of variable cost of service calculations, rail traffic and operating patterns, fuel supply economics, contract interpretations, economic principles concerning the maximum level of rates, implementation of maximum rate principles, and calculation of reparations or damages, including interest. I presented testimony before the Congress of the United States, Committee on Transportation and Infrastructure on the status of rail competition in the western United States. I have also presented expert testimony in a number of court and arbitration proceedings concerning the level

of rates, rate adjustment procedures, service, capacity, costing, rail operating procedures and other economic components of specific contracts.

Since the implementation of the *Staggers Rail Act of 1980*, which clarified that rail carriers could enter into transportation contracts with shippers, I have been actively involved in negotiating transportation contracts on behalf of shippers. Specifically, I have advised shippers concerning transportation rates based on market conditions and carrier competition, movement specific service commitments, specific cost-based rate adjustment provisions, contract reopeners that recognize changes in productivity and cost-based ancillary charges.

I have developed different economic analyses regarding rail transportation matters for over sixty (60) electric utility companies located in all parts of the United States, and for major associations, including American Chemistry Council, American Paper Institute, American Petroleum Institute, Chemical Manufacturers Association, the Chlorine Institute, Coal Exporters Association, Edison Electric Institute, the Fertilizer Institute, Mail Order Association of America, National Coal Association, National Grain and Feed Association, National Industrial Transportation League, North America Freight Car Association and Western Coal Traffic League. In addition, I have assisted numerous government agencies, major industries and major railroad companies in solving various transportation-related problems.

In the two Western rail mergers that resulted in the creation of the present BNSF Railway Company and Union Pacific Railroad Company and in the acquisition of Conrail by Norfolk Southern Railway Company and CSX Transportation, Inc., I reviewed the railroads' applications including their supporting traffic, cost and operating data and provided detailed evidence supporting requests for conditions designed to maintain the competitive rail environment that

existed before the proposed mergers and acquisition. In these proceedings, I represented shipper interests, including plastic, chemical, coal, paper and steel shippers.

I have participated in various proceedings involved with the division of through rail rates. For example, I participated in ICC Docket No. 35585, *Akron, Canton & Youngstown Railroad Company, et al. v. Aberdeen and Rockfish Railroad Company, et al.* which was a complaint filed by the northern and mid-western rail lines to change the primary north-south divisions. I was personally involved in all traffic, operating and cost aspects of this proceeding on behalf of the northern and mid-western rail lines. I was the lead witness on behalf of the Long Island Rail Road in ICC Docket No. 36874, *Notice of Intent to File Division Complaint by the Long Island Rail Road Company.*

EXHIBIT C-2

Robert D. Mulholland Qualifications

My name is Robert D. Mulholland. I am an economist and a Senior Vice President of the economic consulting firm of L. E. Peabody & Associates, Inc. The firm's offices are located at: 1501 Duke Street, Suite 200, Alexandria, Virginia 22314; 760 E. Pusch View Lane, Suite 150, Tucson, Arizona 85737; and 7 Horicon Avenue, Glens Falls, New York 12801.

I am a graduate of George Mason University's School of Public Policy, from which I obtained a Master's degree in Transportation Policy, Operations & Logistics, and Bowdoin College, from which I obtained a Bachelor of Arts degree in Government and Legal Studies. I have been employed by L. E. Peabody & Associates, Inc. since 2008 and from 1995 to 2004. From 2004 to 2006, I was the staff economist for the Office of Freight Management and Operations of the Federal Highway Administration ("FHWA") of the United States Department of Transportation ("USDOT"). From 2006 to 2008, I worked for ICF International as a consultant in the transportation group.

L. E. Peabody & Associates, Inc. specializes in analyzing matters related to the rail transportation of all commodities. As a result of my extensive consulting experience since 1995 and my participation in and support of maximum-rate, rail merger, service dispute, reasonable practices, and rule-making proceedings before various government bodies, I have become thoroughly familiar with the major freight and passenger rail carriers in the United States. This familiarity extends to subjects of railroad costs and revenues, service, maintenance, operations, capacity, traffic prioritization, and contract and tariff terms that govern the movement of commodities by rail.

As a consultant, I have directed and conducted economic and operations studies and prepared reports for passenger and freight carriers, shippers, federal agencies, the United States

Congress, associations, and other public bodies dealing with transportation and related economic issues. Examples of studies I have participated in include organizing and directing rail facilities analyses, quantifying the impact of service disruptions for shippers, evaluation of traffic and operating factors in connection with single and multiple car movements and unit train operations for various commodities, rate and revenue division analyses, and other studies dealing with transportation markets for many commodities over various surface modes throughout the United States. Through these studies I have become familiar with railroad costing and operating practices.

I have inspected and studied railroad terminal facilities used in handling various commodities to collect data that were used as a basis for the determination of traffic and operating characteristics for specific movements handled by rail. I have conducted field studies of short line rail systems and rail spurs, and industry-owned rail facilities, and developed reports assessing their capacity to accommodate various projected operating scenarios and traffic levels.

I have developed operational and economic studies relative to the rail transportation of coal, chemicals, intermodal traffic, and other commodities on behalf of shippers, including analyses of the relative efficiency and costs of railroad operations over multiple routes. The results of these analyses have been used to assist shippers in the development and negotiation of rail transportation contracts that optimize operational efficiency and cost effectiveness.

I have presented written testimony before the STB related to the development of evidence including rail traffic volume and revenue forecasts, cross-over traffic revenue divisions, and train operations in several maximum reasonable rate proceedings on behalf of coal and chemicals

shippers, and the development of evidence including rail fuel consumption and cost determinations in an unreasonable practice proceeding.

I have supported the negotiation of transportation contracts between shippers and railroads. Specifically, I have conducted studies concerning transportation rates based on market conditions and carrier competition, movement specific service commitments, and specific cost-based rate adjustment provisions. I have developed numerous variable cost calculations utilizing the various formulas employed by the Surface Transportation Board (“STB”) for the development of variable costs for common carriers, with particular emphasis on the basis and use of the Uniform Railroad Costing System (“URCS”). I have utilized URCS costing principles since the beginning of my career with L. E. Peabody & Associates Inc. in 1995.

I have conducted different economic analyses regarding rail transportation matters for dozens of electric utility companies located in all parts of the United States, and for major associations, including the Chlorine Institute, the American Chemistry Council, the Chemical Manufacturers Association, the National Industrial Transportation League, and the Western Coal Traffic League. In addition, I have assisted numerous government agencies in analyzing and solving various transportation-related problems.

In the Western rail merger that resulted in the creation of the present Union Pacific Railroad Company, I reviewed the railroads’ applications including their supporting traffic, cost and operating data and developed detailed evidence supporting requests for conditions designed to maintain the competitive rail environment that existed before the proposed merger.

While employed at FHWA, I was a member of the USDOT inter-agency working group that drafted the National Freight Policy. In addition, I served on the USDOT Freight Gateway

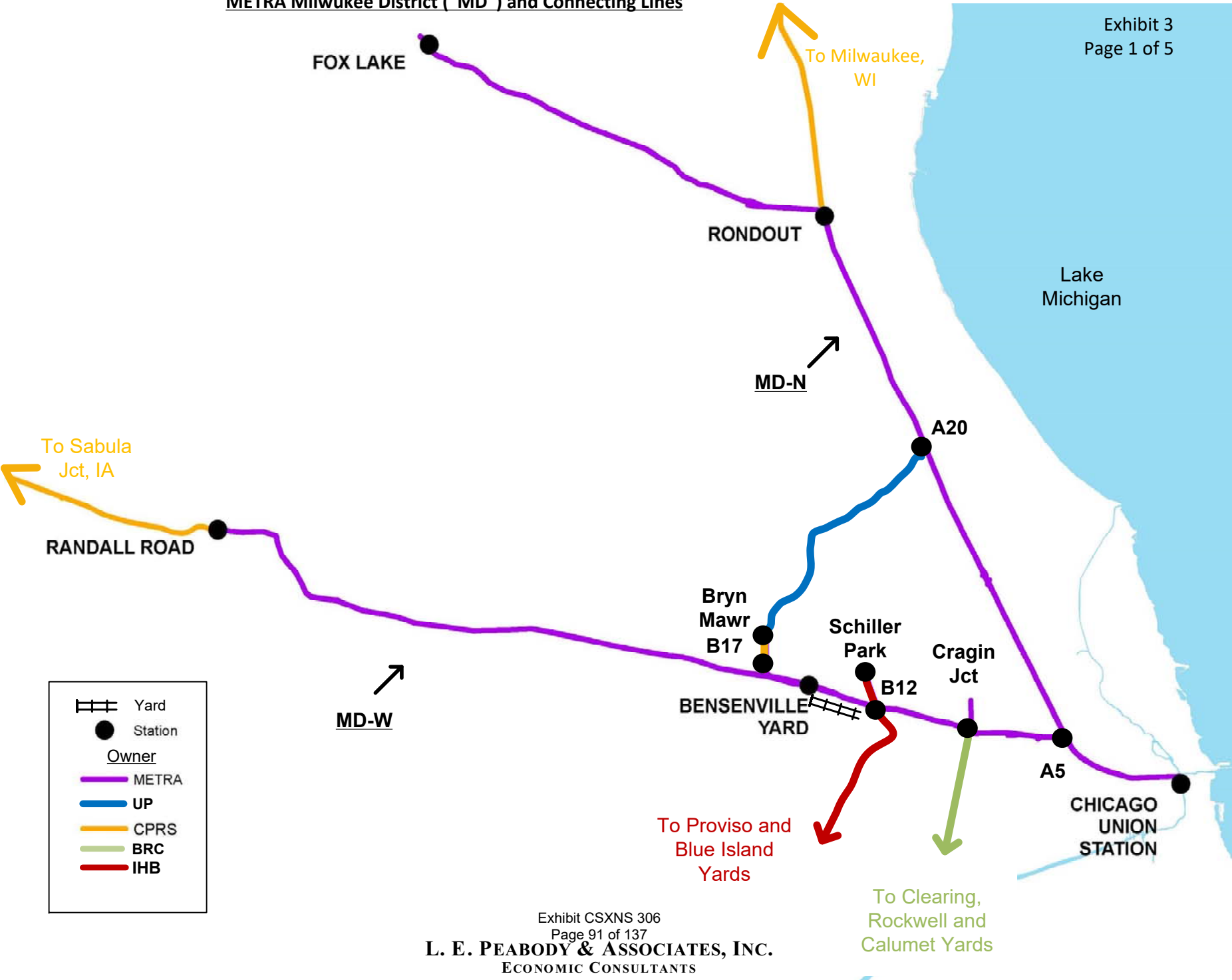
Team, a group headed by the Undersecretary for Policy and composed of one representative from each of the surface modal agencies.

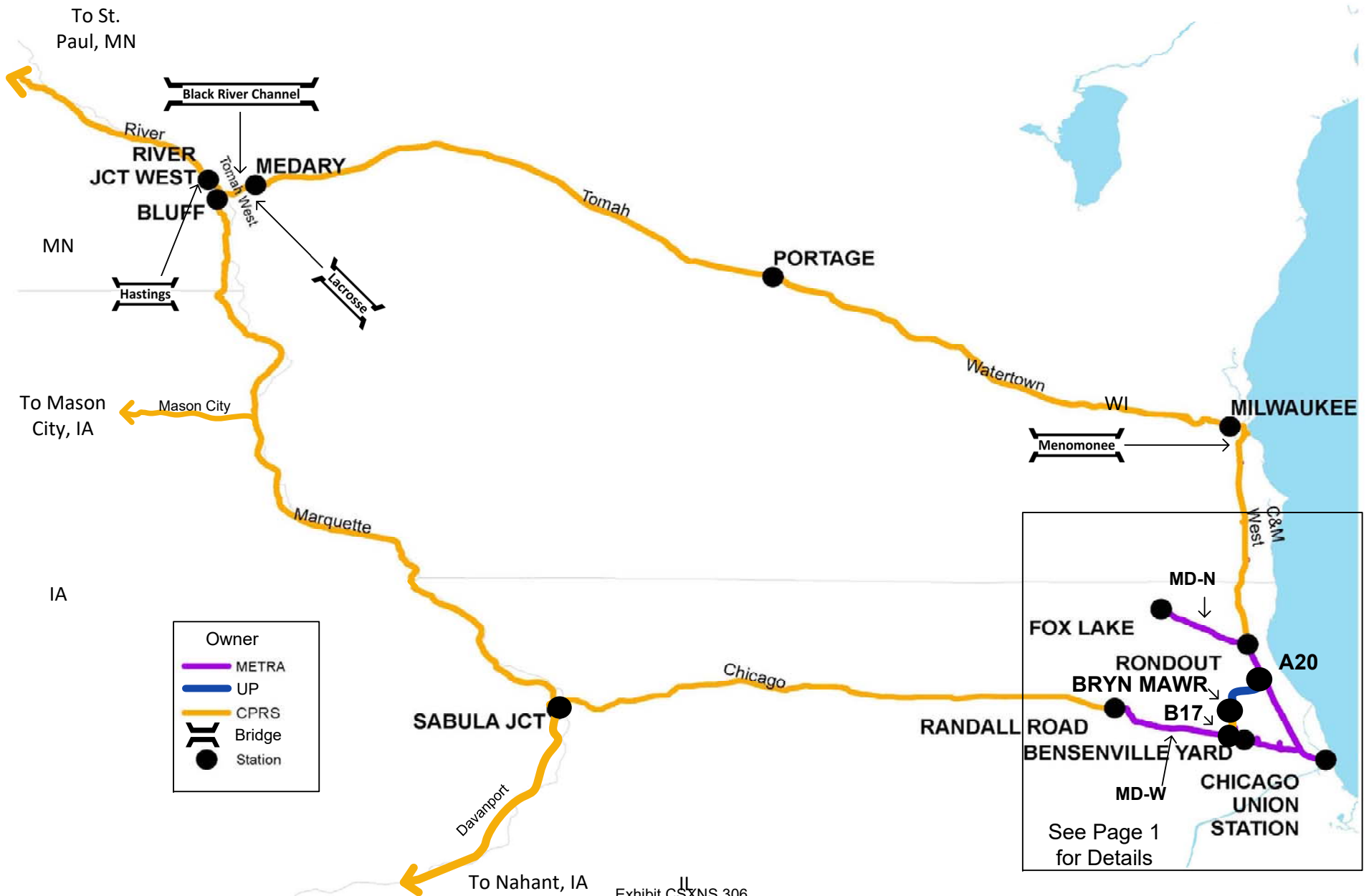
While employed at ICF International, I directed and conducted numerous analyses of the rail and trucking industries for federal transportation agencies including the Federal Railroad Administration ("FRA"), the Federal Motor Carrier Safety Administration ("FMCSA"), and the FHWA, including analyses of the current rail and trucking industries and forecasts of future trends in both industries.

EXHIBIT C-3

Schematics of Select Metra and CP Rail Lines

METRA Milwaukee District ("MD") and Connecting Lines





CPRS Subdivisions

Exhibit 3
Page 3 of 5

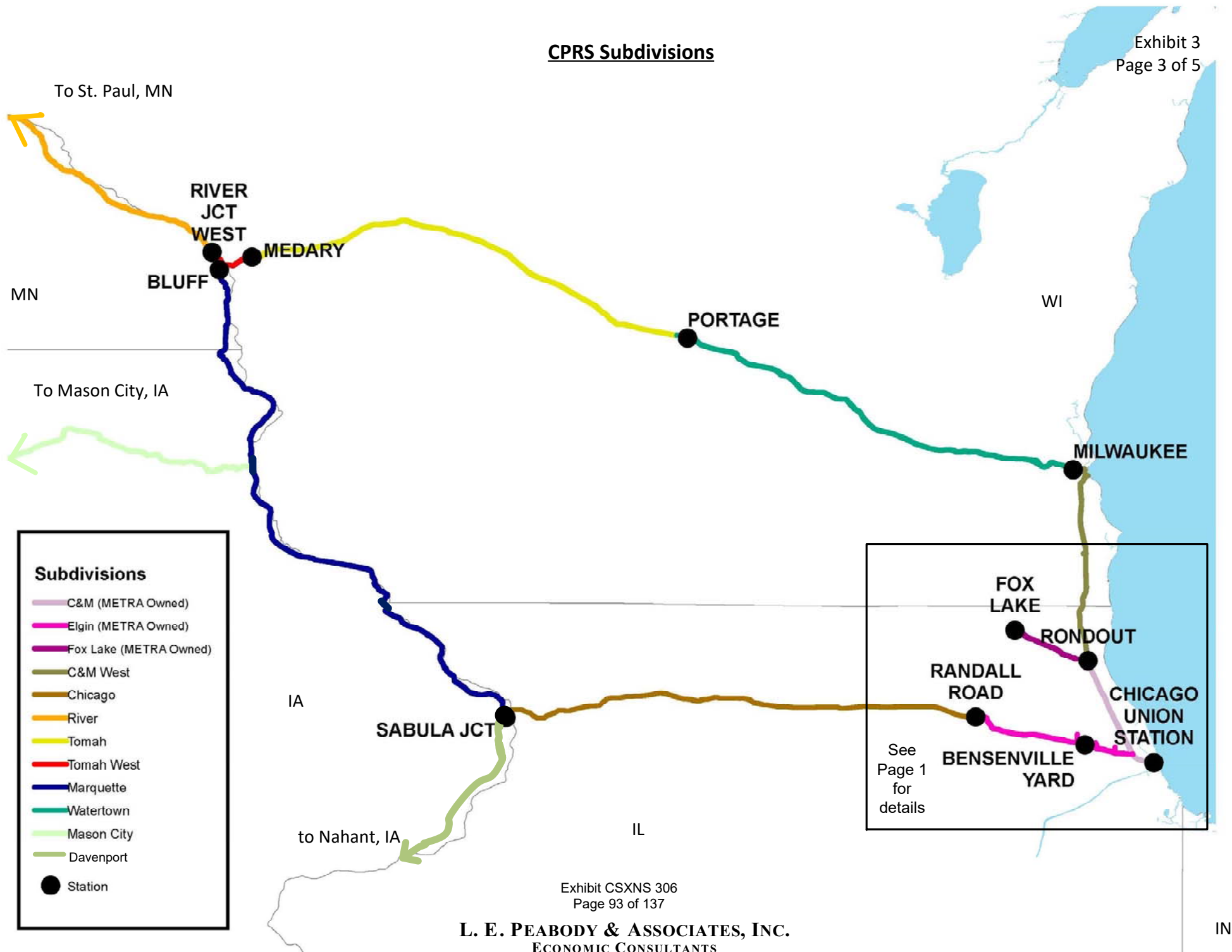


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METRA Milwaukee District ("MD") and Connecting Lines with Additional Required Infrastructure

Exhibit 3
Page 4 of 5

- Additional Required Infrastructure Expansion
- ① Adding/extending receiving tracks
 - ② Adding crossovers
 - ③ Adding mainline track
 - ④ Separating track/construct fly-over
 - ⑤ Reduce curves
 - ⑥ Add wye
 - ⑦ New connecting track

To Sabula
Jct, IA

RANDALL ROAD

FOX LAKE

To Milwaukee,
WI

RONDOUT

MD-N

⑦ A20

Lake Michigan

MD-W

Bryn Mawr
B17

Schiller
Park B12

Cragin
Jct

BENSENVILLE
YARD

⑥ A5

CHICAGO
UNION
STATION

To Proviso and
Blue Island
Yards

To Clearing,
Rockwell and
Calumet Yards

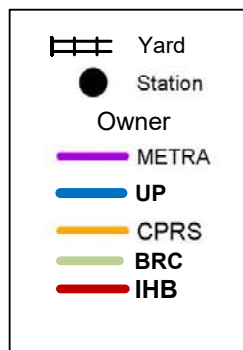


Exhibit CSXNS 306
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L. E. PEABODY & ASSOCIATES, INC.
ECONOMIC CONSULTANTS

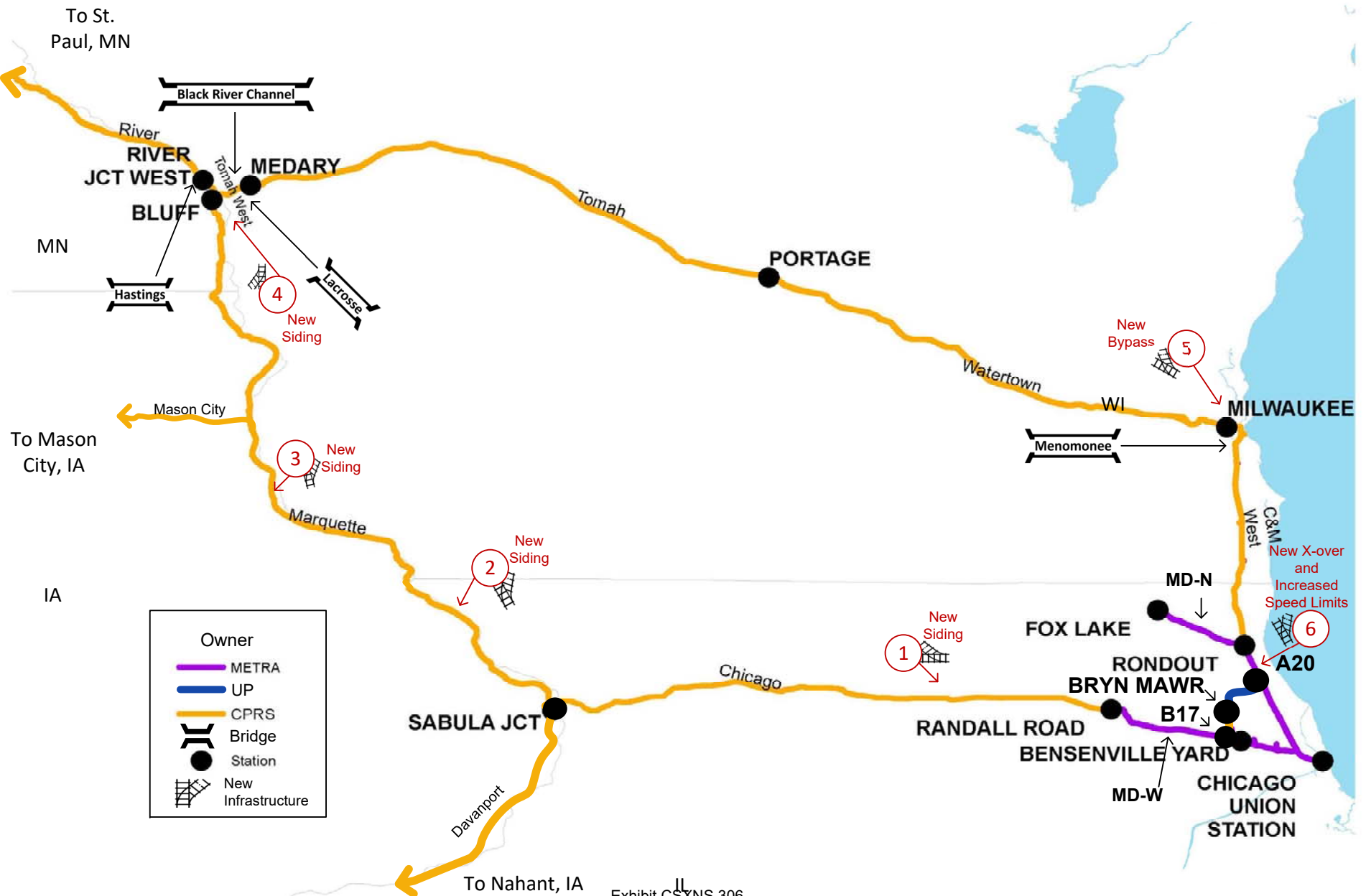


EXHIBIT C-4

Review of Metra Provided Freight Train ID's not included in CP Train Event Data

Review of Metra Provided Freight Train ID's not included in CP Train Event Data

Handwritten		Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Trains	Trains	Included in ISAs Provided by CP
Handwritten	Engine	4/16/2021	4/17/2021	4/18/2021	4/19/2021	4/20/2021	4/21/2021	4/22/2021	in 7 days	Per Day	
Train ID	Prefix	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
1.	NIRC	5009	3/		E	W/E			2	0.29	
2.	LoPC2+20PCS	--	3/		W				1	0.14	
3.	T001x	--	3/		W				1	0.14	
4.	TK Chevez	--	3/	E					1	0.14	
5.	TK Insp	(CN)	3/	E			W	E	3	0.43	
6.	61P	BN	3/	W					1	0.14	
7.	K422	BNSF	3/					W	1	0.14	
8.	5708	CN	3/					E	1	0.14	
9.	A446	CN	3/				E		1	0.14	
10.	B790	CN	3/	E	W		E		3	0.43	
11.	B790 (2nd of day)	CN	3/				E		1	0.14	
12.	CNLITE	CN	3/	W					1	0.14	
13.	L709	CN	3/			W		W/E	2	0.29	L5219 and L5209 listed in ISA Number: 380000-103-105 CN and CPRS
14.	L791	CN	3/			W	W/E	W	3	0.43	L5219 and L5209 listed in ISA Number: 380000-103-105 CN and CPRS
15.	X346	CN	3/				E		1	0.14	
16.	24R	CP	1/		W				1	0.14	
17.	BP11	CP	1/	W	W	W			3	0.43	
18.	BR2	CP	1/				E		1	0.14	
19.	IM1	CP	1/	W			W/E	W/E	3	0.43	
20.	IM2	CP	1/	W	W	W/E	W/E	W	6	0.86	
21.	Q165	CP	1/	W	W	W	W	W	5	0.71	Q165 listed in ISA Number: 380000-064-105 CSXT and CPRS
22.	K442	CSXT	3/	W					1	0.14	
23.	K814	CSXT	3/			W			1	0.14	
24.	K854	CSXT	3/				W		1	0.14	
25.	K884	CSXT	3/				W		1	0.14	
26.	X346	CSXT	3/		E				1	0.14	
27.	L501	GTW	3/	W/E			W/E		2	0.29	
28.	R904	IC	3/		E				1	0.14	
29.	BP2	IHB	3/	W	E	W	W/E	W/E	5	0.71	BP2 listed in ISA Number: 380000-105-357 IHB and CPRS
30.	GA3	IHB	3/				W/E		1	0.14	
31.	GP4	IHB	3/				W	E	2	0.29	
32.	TML	insp(CN)	3/	W					1	0.14	
33.	A446	KCS	3/				E		1	0.14	
34.	RTA107	METX	3/				W		1	0.14	
35.	17V	NS	2/	W	W		W	W	6	0.86	17V listed in ISA Number: 380000-105-555 NS and CPRS
36.	67X	NS	3/				W	W	2	0.29	
37.	S009	NS	3/			W			1	0.14	
38.	RC SCU9	SCU	3/	W					1	0.14	
39.	Sain 2	Sperry	3/		W/E				1	0.14	
40.	A446	UP	3/		E	E	E		3	0.43	
41.	GA6	UP	3/				W/E		1	0.14	
42.	K635	UP	3/					W	1	0.14	
43.	YPRCP	UP	2/	W/E	W/E	W/E	W	W	7	1.00	YPRCP listed in ISA Number: 381248-105-802-GM UP and CPRS
44.	T001	WAMX	3/	W/E	W/E	W/E	W/E	W/E	7	1.00	
45.	T002	WAMX	3/			W/E			1	0.14	
46.	T004	WAMX	3/	W/E	W/E		W/E	W/E	4	0.57	
47.	Total								96	13.7	

1/ Appears to be a CP train, Train ID does not appear in provided CP train data.

2/ Train modeled in RTC as foreign train based on Operating Plan description

3/ Appears to be a foreign train, Train ID does not appear in provided CP train data.

EXHIBIT C-5

Summary of CP Freight Trains Operating Over Metra's Milwaukee District Lines (January 1 through December 14, 2021)

EXHIBIT C-6

Summary of CP Train Delays Incurred on Select Subdivisions, January 1, 2019 through December 14, 2021

EXHIBIT C-7

Summary of CP Delays Attributed to Other Carriers' Operations, January 1, 2019 through December 14, 2021

EXHIBIT C-8

RTC Modeling Inputs and Procedures

- A. Time Period:
 - 1. Peak Week of the 2021 Base Year defined as the rolling 7-day period with the greatest cumulative train count on Metra-owned Track
 - a. Unless the National Weather Service database reported unusual weather or
 - b. There were unusual track outages or operating circumstances based on a review of industry news
 - c. April 16-22, 2021
 - 2. Plus 2 warm-up days and 1 cool down day
 - a. April 14-23, 2021
- B. Subdivisions Modeled in RTC:
 - 1. Metra Lines
 - a. Elgin (MD-West) (A5 to Randall Rd, IL)
 - b. Fox Lake (MD-North from Fox Lake to Rondout, IL)
 - c. C&M (MD-North from Rondout to CUS)
 - 2. CP Lines
 - a. C&M West (Rondout to Milwaukee, WI)
 - b. Watertown (Milwaukee to Portage, WI)
 - c. Tomah (Portage to Lacrosse, WI)
 - d. Tomah West (Lacrosse to River Jct West, MN)
 - e. Marquette (River Jct West to Sabula, IA)
 - f. Chicago (Sabula to Randall Rd)
 - g. MTP BRC Leads (Cragin Jct)
 - h. MTP IHB Leads (Tower B12)
 - i. Tower 17 to Bryn Mawr
 - 3. UP Lines
 - a. Milwaukee (Bryn Mawr to Tower A20)
- C. Trains Modeled, listed by dispatching priority:
 - 1. Developed from Train Schedules
 - a. Metra Trains
 - b. Amtrak Trains
 - 2. Developed from CP Train Event data, CP “Growth Plan” schedule, CP Local Operating Plan (LOP), CP Loading/Unloading data, and CP/KCS Operating Plan descriptions
 - a. CP Merchandise Trains (Intermodal, Auto, Manifest)
 - b. CP Unit Trains
 - c. Foreign Trains (included only UP and NS trains serving Bensenville)
 - d. CP Local Freight Trains
 - e. CP Work Trains
- D. RTC network (infrastructure) development

1. Metra-owned Milwaukee District track segments
 - a. Track segments and sidings
 - b. Crossover/turnouts
 - c. Speed Limits
 - d. Grade and Curve data
 - e. Yard Configurations
 - f. Road Crossings
 - g. Latitude/Longitude
 - h. Amtrak additions/improvements on Metra territory
 - i. February 2 CP-Amtrak Agreement Appendix A and B improvements (Future Case)
 - i. Metra proposed additions/improvements on Metra territory
 - i. Receiving tracks at Bensenville and Galewood Yards equal to CP max train lengths.
 - ii. Crossovers at Itasca, Bartlett, Lake Forest, and Glenview
 - iii. Mainline track from A5-B17 and A20 to Rondout
 - iv. Flyover and reduce curves at A5
 - v. Wye at Cragin Jct.
 - vi. Connecting tracks at A20
2. CP-owned track segments
 - a. Track segments and sidings
 - b. Crossover/turnouts
 - c. Signals
 - d. Speed Limits
 - e. Grade and Curve data
 - f. Yard Configurations Road Crossings
 - g. Latitude/Longitude
 - h. Amtrak additions/improvements on CP territory (Future Case)
 - i. CP-Amtrak Agreement Filed February 2, 2022 - Appendix A/B improvements
 - i. CP/KCS planned infrastructure additions/improvements (Future Case)
 - i. Marquette Subdivision, 3 new sidings
 - ii. Chicago Subdivision, 1 new siding
3. UP-owned track between Tower A20 and Bryn Mawr
 - a. Publicly Available UP timetables
 - b. Google Earth satellite imagery

E. Metra Train Modeling Procedures

1. MD-W Line
 - a. Outbound (Westbound)
 - i. Locomotive pulling (except double headers)

- ii. Loading/Unloading: 1 Main platforms
 - b. Inbound (Eastbound)
 - i. Locomotive pushing (except doubleheaders)
 - ii. Loading/Unloading:
 - 1. 2 Main platforms from Randall Road to Franklin Park
 - 2. 3 Main platforms from River Grove to Grand/Cicero
 - 3. 2 Main/3 Main platform at Western
 - c. CUS Platforms:
 - i. Base Case
 - 1. Platforms 5, 7, 9, 11 and 13.
 - ii. Future Case
 - 1. Platforms 5, 7, 9, 11 and 13.
 - d. Trainsets in Service:
 - i. Base Case
 - 1. 9 weekday, 4 Saturday, 2 Sunday
 - ii. Future Case
 - 1. 10 weekday, 4 Saturday, 2 Sunday
 - e. Overnight trainset tie-up locations:
 - i. Elgin Coach Yard (between National Street Station and Coach Street Station): 9 sets, 1 is a doubleheader.
2. MD-N Line
- a. Outbound (Northbound)
 - i. Locomotive pulling (except doubleheaders)
 - ii. Loading/Unloading: 1 Main track platforms
 - b. Inbound (Southbound):
 - i. Loading/Unloading:
 - 1. 1 Main platforms from Fox Lake to Rondout
 - a. Grayslake: both directions use both Main track and siding as needed
 - 2. 2 Main platforms from Rondout to Healy
 - 3. 2 Main/3 Main platform Western
 - c. CUS Platforms:
 - i. Base Case
 - 1. Platforms 5, 7, 9, 11, 13 and 15.
 - ii. Future Case
 - 1. Platforms 1, 5, 7, 9, 11, 13 and 15
 - d. Trainsets in Service:
 - i. Base Case
 - 1. MD-N: 8 weekday, 3 weekend
 - 2. NCS: 4 weekday, 0 weekend
 - ii. Future Case

1. MD-N: 11 weekday, 3 weekend
 2. NCS: 5 weekday, 0 weekend
 - e. Overnight trainset tie-up locations:
 - i. Fox Lake (Yard between Sayton Road and Grand Avenue): 8 sets, 1 is a doubleheader.
 - ii. Antioch (offline, North Central Service): 4 sets.
 - iii. Western Ave Coach Yard: 1 set.
 3. Train schedules and platform dwell:
 - a. All scheduled times are departure times except at destination (where it is arrival time).
 - b. Metra trains do not leave the platform ahead of schedule.
 - c. Metra does not specify a minimum dwell time at Metra platforms if the trains are running on or behind schedule.
 - i. Minimum of 30 second platform dwell was used in RTC
 4. Train consist data:
 - a. Train consist data (locomotive number and type, car number and type, trailing length, trailing weight) provided by Metra.
- F. Amtrak Train Modeling Procedures
1. Hiawatha Service (bidirectional between CUS and Milwaukee)
 - a. Base Case
 - i. 6 trains per day (3 pairs per day operating during the modeling week – temporarily reduced schedule). Note: 7 pairs (14 trains) operated for much of 2021
 - b. Future Case
 - i. 20 trains per day based on Amtrak-CP Agreement filed with the STB on February 2, 2022 (10 pairs per day).
 - ii. Extension of 2 trains per day Twin Cities-Milwaukee-Chicago (TCMC) extended route based on Amtrak-CP Agreement filed with the STB on February 2, 2022.
 2. Empire Builder Service (bidirectional between CUS and Seattle)
 - a. Base Case
 - i. 2 trains per day (1 each direction)
 - b. Future Case
 - i. 2 trains per day (1 each direction)
 3. Train Schedules and platform dwell
 - a. Publicly available Current/Historical schedules used
 - b. Future Train Schedules listed on publicly available Amtrak presentations and filings were used when current schedules were not available
 4. Train Consist data

- a. CP train event data contains NULL values in trailing length and weight data fields for Amtrak trains.
 - b. Amtrak consist data developed from Request for passenger rail bonding/Amtrak Station Program and Planning guidelines/Rider details shared in train magazines
- G. CP Freight Train Modeling Procedures
 - 1. Base Period Trains developed primarily from 2021 CP Train Event data
 - a. Consist data
 - i. Locomotive count reported in train event data by location.
 - ii. Predominant locomotive type by train group provided by CP in response to document production request and follow-up questions. Length on locomotives estimated based on predominant type provided by CP.
 - iii. Locomotive type for select local trains included in Local Operating Plan data.
 - iv. Loaded and empty car count, train length, and train weight data included in CP train event data by location.
 - b. Route and event data
 - i. Train departure and dwell times included in CP train event data by location.
 - a) Dwell times reflect actual historical times for intermediate switching, crew changes, inspections
 - ii. Terminal switching data (railcar actual placement and release from industry times) for individual carloads handled by local and select unit trains included in CP loading and unloading data.
 - iii. Local train general routes included in Local Operating Plan data.
 - iv. Operating Plan and Local train routes included in Growth Plan Train data.
 - 2. Future Period Trains developed from base period train list, with additions/adjustments
 - c. Consist data
 - i. Trains operating in both base period and future period – use base period stats.
 - ii. New line-haul operating plan (IM/Auto/Manifest) trains operating in future period only:
 - a) Use historical consist data for trains being replaced where available
 - 1) Use 2021 140/141 consist data as surrogate for future 170/171 replacement trains.
 - 2) Use 2021 474/475 consist data as surrogate for future 260/261 replacement trains.
 - iii. New unit trains operating in future period only:

- a) Identify and replicate historical (2021) unit trains that traverse segments over which CP/KCS have projected unit train growth.
 - d. Route and event data
 - i. Trains operating in both base period and future period – use base period timestamps.
 - ii. New line-haul operating plan (IM/Auto/Manifest) trains operating in future period only:
 - a) Use departure time included in Growth Plan with adjustments to reflect 2021 average deviation from schedule.
 - b) Use dwell times for intermediate events (intermediate switching, crew changes, inspections) included in Growth Plan.
 - iii. New unit trains operating in future period only:
 - a) Slot in based on available time slots observed in 2021 train event data.
 - b) Distribute growth unit trains evenly across model period (i.e., avoid bunching).
- H. Bensenville yarding
 - 1. Trains entering yard
 - a. Long trains require special handling
 - i. Long CP trains entering Bensenville foul yard and mainline switches at Bensenville until train can be split.
 - 2. Trains exiting yard
 - a. Long trains require special handling
 - i. Long CP trains exiting Bensenville yard briefly foul mainline and yard switches.
- I. Operating Restrictions
 - 1. Track work/Slow Orders/Drawbridge operation
 - a. CP Train Delays that occurred in the base period and reported a variance code beginning with “E” (Engineering) were replicated in the RTC model
 - i. For example, the CP delay data indicates that {{

}}

 This slow order was coded into the RTC model.
 - 2. Metra Commuter Peak Periods
 - a. Commuter Peak Period curfews were based on the restrictions outlined in page 13-15 of Metra’s 5-27-1993 Supplemental Agreement with CP.¹

¹ See, CP/KCS workpaper “8.3.33-CP-HC-00008983.pdf.”

- b. In the Base Case scenario sensitivity analysis, we restricted CP freight trains from operating over Metra's lines during the contractual Peak Periods.
 - i. For example, the CP train event data indicates that {{
}} This operation was allowed to occur at this time in our primary base case model, but the train was held at Bensenville until the commuter peak period expired at [7:45] in our sensitivity analysis.

EXHIBIT C-9

RTC Simulation Assumptions and Inputs that are Favorable to CP/KCS

Our RTC simulations demonstrate that CP/KCS' proposed operating plan fails. In developing the inputs and parameters to our RTC simulations, we made several assumptions that are extremely favorable to CP/KCS, and the RTC simulation still failed to successfully dispatch all simulated trains with CP/KCS' planned infrastructure expansion and projected traffic levels. A summary of assumptions favorable to CP/KCS follows:

1. We excluded several foreign trains per day (in both the base case and future case) because CP failed to provide train event data for foreign trains;
2. We included very few light engine moves for freight operations in our simulations;
3. We assumed the Mason City Subdivision (branch line off the Marquette Subdivision) would be clear to accommodate Marquette Subdivision train meets (in both the Base Case and Future Case) for some CP trains performing work at Marquette;
4. We allowed a conservative 30-minute dwell cap on all at-grade road crossings;
5. We tested multiple simulations where trains were allowed to dwell indefinitely on at-grade crossings on the Marquette Subdivision;
6. We assumed intermodal/auto/manifest train length and trailing weight would not increase in the future case;
7. We assumed local train length and trailing weight would not increase in the Future Case;
8. We assumed no increase in local train frequency in the Future Case;
9. We assumed local bulk/unit train length and trailing weight would not increase in the Future Case;
10. We assumed unit train growth would be distributed evenly among the 10-days in the modeling period, which avoids the bunching that is inevitable in the real world;
11. We modeled the entire system as unsignaled, which produces a similar result to a system equipped completely with PTC, aiding in dispatching efficiency compared to other signal systems;¹
12. We assumed no interference from UP freight trains on the UP line segment CP operates over via trackage rights between Tower A20 and Bryn Mawr;

¹ In a real-world scenario, train signals will prevent dangerous activity and train collisions on the network. In a simulation such as the RTC, train collisions are not possible and coding the network with signals only serves to hold trains further back and/or delay them further than a scenario where RTC can dispatch trains fluidly without consideration for signal aspects or locations.

13. We modeled a period with no adverse weather conditions, allowing for higher speed limits in most subdivisions and better track adhesion over the entire network;
14. We coded Metra trains with Elite priority and CP's trains with High Priority, which largely prevents CP freight trains from interfering with Metra trains;
15. We assumed no additional interference for CP manifest/intermodal trains entering/exiting Bensenville Yard in the Future Case, despite CP/KCS' planned significant increase in cars handled at Bensenville following the merger; and
16. We adjusted the dispatch logic settings for all scenarios to the maximum permissible "*conflict resolution difficulty threshold for terminating dispatch*," i.e., the RTC model will keep attempting to find a viable dispatch plan for the scenario until the maximum threshold is reached before it results in failure.

EXHIBIT C-10a

Summary of Trains Modeled in Base Case RTC

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EXHIBIT C-10b

Summary of Trains Modeled in Future Case RTC

