









## 2.2.1 Changes in Rail Operations

The Applicants filed their Operating Plan with the Board as part of their application on October 29, 2021. The Operating Plan describes how the Applicants expect the integrated CPKC system would operate, including the projected future rail traffic on the rail lines in the combined system, expected changes in activities at intermodal facilities, and planned capital improvements to support projected increases in rail traffic. In addition, the application included verified statements from several industry experts in which they presented benefits of the Proposed Acquisition, analyzed the market, and described the approach to the logistics associated with the Proposed Acquisition. The Applicants presented environmental and cost benefits, reviewed changes to labor force needs, identified opportunities for rail-to-rail and truck-to-rail diversions, and described the financial terms of the Proposed Acquisition.

On March 16, 2022, the Board issued a decision that directed the Applicants to explain an apparent inconsistency between data submitted in their Operating Plan and information that the Applicants provided to OEA as part of the environmental review process. By decision issued on April 27, 2022, the Board directed the Applicants to amend their application to address the data inconsistency and the Applicants submitted an amended Operating Plan on May 13, 2022.

Both the original Operating Plan and the Amended Operating Plan can be accessed on the Board's website at [www.stb.gov](http://www.stb.gov) by conducting a search for Filings under Docket No. FD 36500.

If the Board authorizes the Proposed Acquisition, the Applicants project that rail traffic would increase on certain rail line segments throughout the combined network. Rail line segments are the portions of rail lines that run between two terminals or junction points. Increases in rail traffic on rail line segments would range from zero to more than 14 additional trains per day, on average. The largest increase would occur on the CP mainline between Sabula, Iowa, and Kansas City, Missouri, which would experience an increase of approximately 14.4 additional trains per day, on average (see **Table 2.2-1**). Increased rail traffic has the potential to result in environmental impacts related to noise and vibration, air quality, freight and passenger rail safety, grade crossing safety and delay, passenger rail transportation, and hazardous material transportation.

**Table 2.2-1. Segments that Meet or Exceed Thresholds for Environmental Analysis<sup>1</sup>**

Segment Number	From	To	Railroad	Segment Length (Miles)	Current Trains per Day	2027 No Acquisition Trains Per Day	2027 With Acquisition Trains Per Day	Acquisition-Related Growth	Attainment Status
76	Sabula Drawbridge, Iowa	Lake, Illinois	CP	0.7	5.91	6.12	14.12	8.00	Attainment
77	Davis Junction, Illinois	Sabula Drawbridge, Iowa	CP	61.5	6.35	6.56	14.56	8.00	Attainment
78	Randall Road, Illinois	Davis Junction, Illinois	CP	38.7	2.93	3.15	11.15	8.00	Attainment
81	Bensenville Metra, Illinois	Randall Road, Illinois	CP	23.0	3.20	3.41	11.41	8.00	Nonattainment
82	Bensenville Metra, Illinois	Tower B12, Illinois	CP	4.6	29.42	30.52	36.95	6.43	Nonattainment
95	Sabula, Iowa	Clinton, Iowa	CP	17.5	10.00	10.73	25.14	14.41	Attainment
96	Clinton, Iowa	Water Works, Iowa	CP	33.2	7.97	8.26	22.67	14.41	Attainment
97	Water Works, Iowa	Nahant, Iowa	CP	4.5	7.97	8.26	22.67	14.41	Attainment
99	Nahant, Iowa	Muscatine, Iowa	CP	24.6	6.09	6.38	20.78	14.40	Attainment
100	Muscatine, Iowa	Ottumwa, Iowa	CP	82.5	4.30	4.80	19.21	14.41	Attainment/ Nonattainment <sup>2</sup>
102	Ottumwa, Iowa	MO/IA-Laredo, Missouri	CP	61.2	3.17	3.41	17.81	14.40	Attainment
103	MO/IA-Laredo, Missouri	Laredo, Missouri	CP	41.1	3.17	3.41	17.81	14.40	Attainment
104	Laredo, Missouri	Polo, Missouri	CP	51.6	3.74	3.98	18.38	14.40	Attainment
105	Polo, Missouri	Airline JCT, Missouri	CP	42.1	3.62	3.83	18.24	14.41	Attainment/ Nonattainment
118	Kansas City, Missouri	Pittsburg, Kansas	KCS	124.5	15.14	17.57	30.41	12.84	Attainment/ Nonattainment
129	Pittsburg, Kansas	Watts, Oklahoma	KCS	107.8	14.14	16.17	28.57	12.40	Attainment
130	Watts, Oklahoma	Poteau, Oklahoma	KCS	90.4	12.29	14.15	26.56	12.41	Attainment
131	Poteau, Oklahoma	Heavener, Oklahoma	KCS	11.6	12.77	14.59	26.99	12.40	Attainment

**Table 2.2-1. Segments that Meet or Exceed Thresholds for Environmental Analysis<sup>1</sup>**

Segment Number	From	To	Railroad	Segment Length (Miles)	Current Trains per Day	2027 No Acquisition Trains Per Day	2027 With Acquisition Trains Per Day	Acquisition-Related Growth	Attainment Status
133	Heavener, Oklahoma	De Queen, Arkansas	KCS	94.6	11.96	13.78	26.18	12.40	Attainment
134	De Queen, Arkansas	Ashdown, Arkansas	KCS	37.1	14.48	16.26	28.67	12.41	Attainment
135	Ashdown, Arkansas	Shreveport, Louisiana	KCS	83.2	11.99	13.49	25.89	12.40	Attainment
136	Shreveport, Louisiana	Frierson, Louisiana	KCS	21.8	23.74	25.05	36.02	10.97	Attainment
140	Metro, Texas	Alliance, Texas	KCS	22.0	0.83	0.89	0.89	0.00	Nonattainment
141	Metro, Texas	Renner, Texas	KCS	45.0	1.13	1.19	1.19	0.00	Nonattainment
142	Renner, Texas	Wylie, Texas	KCS	9.1	1.27	1.33	1.33	0.00	Nonattainment
145	Shreveport, Louisiana	Leesville, Louisiana	KCS	91.4	10.01	10.71	21.55	10.84	Attainment
146	Leesville, Louisiana	De Quincy, Louisiana	KCS	50.6	10.31	10.98	21.82	10.84	Attainment
147	De Quincy, Louisiana	Beaumont, Texas	KCS	47.0	8.67	9.32	20.29	10.97	Attainment
148	Beaumont, Texas	Port Arthur, Texas	KCS	20.1	5.19	5.21	8.86	3.65	Attainment
149	Beaumont, Texas	Rosenberg, Texas	UP <sup>3</sup>	120.0	8.47	9.25	16.82	7.57	Attainment/ Nonattainment
152	Rosenberg, Texas	Kendleton, Texas	KCS	12.2	8.39	9.14	17.46	8.32	Nonattainment
153	Kendleton, Texas	Victoria, Texas	KCS	74.8	8.70	9.69	18.01	8.32	Attainment/ Nonattainment
154	Victoria, Texas	Placedo, Texas (UP)	UP <sup>1</sup>	12.8	7.94	8.75	17.07	8.32	Attainment
155	Placedo, Texas (UP)	Robstown, Texas	UP <sup>1</sup>	82.8	7.94	8.75	17.07	8.32	Attainment
157	Robstown, Texas	Laredo, Texas	KCS	144.0	13.55	14.77	22.80	8.03	Attainment

<sup>1</sup> This table does not include all segments that would experience an increase in the transportation of hazardous material. See *Section 3.1, Freight and Passenger Rail Safety* for a discussion of hazardous materials in transportation.

<sup>2</sup> Attainment/Nonattainment indicates segment includes both.

<sup>3</sup> KCS operates on the UP rail lines via trackage rights.

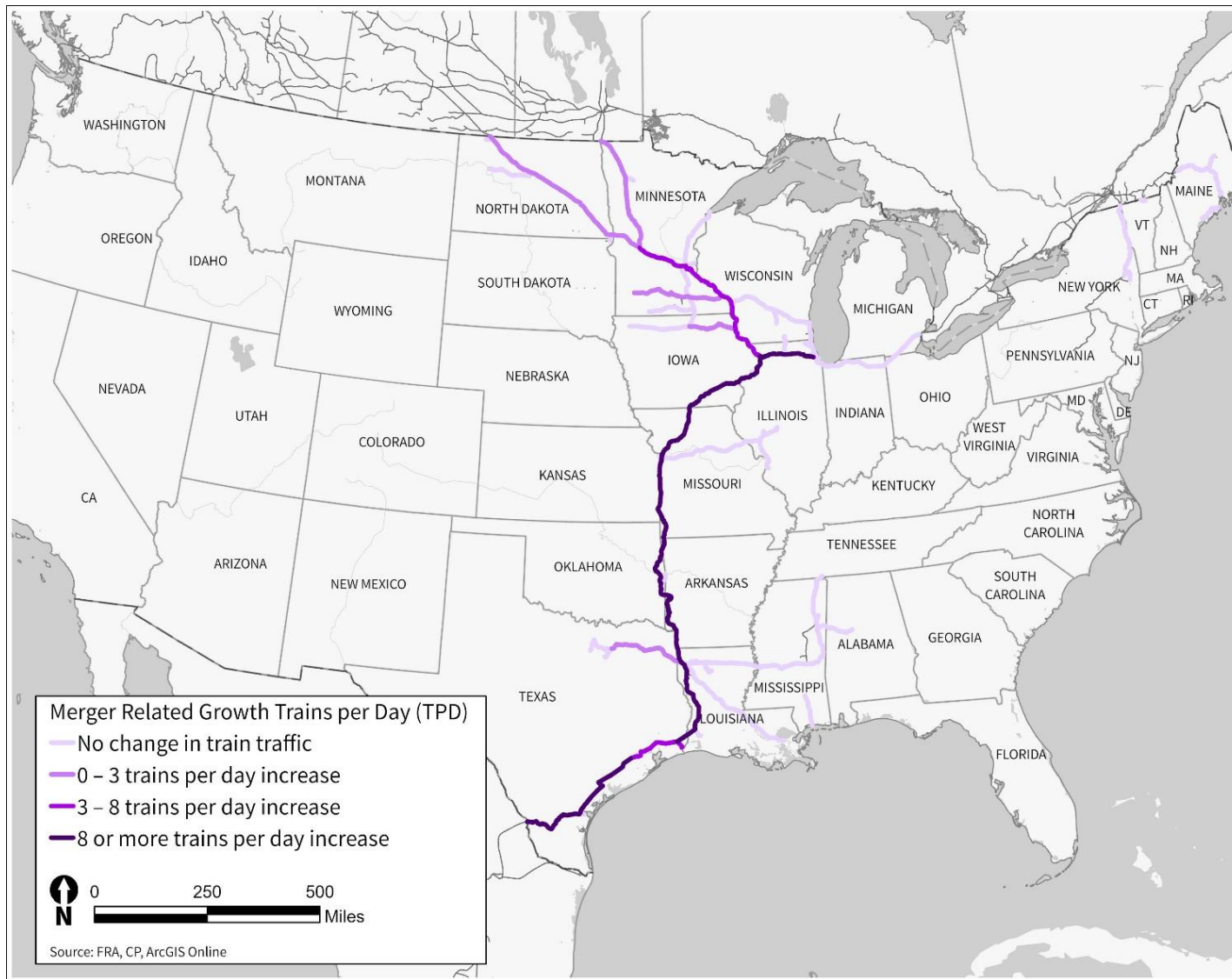
## 2.2.2 Impacts from Increased Rail Traffic

The Board's regulations at 49 C.F.R. § 1105.7(e) establish thresholds for environmental review of Board actions that result in increased rail traffic, including acquisitions requiring Board authority. The threshold for assessing environmental impacts from increased rail traffic is generally an increase in rail traffic of at least 100 percent (measured in gross ton miles annually) or an increase of at least eight trains per day, as set forth at 49 C.F.R. § 1105.7(e)(5)(i)(a). For air quality impacts, rail lines located in areas classified as being in nonattainment for the National Ambient Air Quality Standards under the Clean Air Act are also assessed if they would experience an increase in rail traffic of at least 50 percent (measured in gross ton miles annually) or an increase of at least three trains per day, pursuant to 49 C.F.R. § 1105.7(e)(5)(ii)(a). Although the thresholds contained in 49 C.F.R. § 1105.7(e)(5) refer specifically to air quality and noise impacts, OEA has determined that these thresholds should also apply to freight rail safety and grade crossing safety and delay.

OEA reviewed 178 rail line segments in the combined CPKC network (**Figure 2.2-1**) in the U.S., which are identified in a master segment table and figures in **Appendix C**. Of these segments, the projected increase in rail traffic would exceed the thresholds for environmental review on a total of 14 segments on the CP mainline (approximately 486.6 miles of rail lines) and a total of 21 segments of the KCS mainline (approximately 1,302.8 miles of rail lines, including rail lines over which KCS has trackage rights). These rail line segments are located in Illinois, Iowa, Missouri, Kansas, Oklahoma, Arkansas, Louisiana, and Texas. Therefore, this EIS includes analyses of environmental impacts along those 35 rail line segments.



**Figure 2.2-1. Acquisition-Related Traffic Growth**



### 2.2.3 Impacts related to Hazardous Material Transportation

In railroad acquisition cases, OEA assesses potential impacts from increased transportation of hazardous materials on rail lines. Consistent with previous acquisition cases, OEA assessed impacts related to the transportation of hazardous materials on all rail lines where the amount of hazardous material transported would increase as a result of the Proposed Acquisition. Increases in the amount of hazardous material transported would occur on 141 of the 178 rail segments (approximately 5,802 miles of rail lines) included in the master segment table in **Appendix C**. Those rail lines are located in Arkansas, Iowa, Illinois, Kansas, Oklahoma, Louisiana, Michigan, Minnesota, Missouri, North Dakota, New York, Ohio, South Dakota, Tennessee, Texas, and Wisconsin. *Chapter 3, Section 3.1, Freight and Passenger Rail Safety* presents the results of OEA's analysis of impacts related to the transportation of hazardous materials.

### 2.2.4 Impacts related to Passenger Rail Safety

In railroad acquisition cases, OEA assesses potential impacts from increased freight rail traffic on passenger rail safety. Consistent with previous acquisition cases, OEA applied a threshold to identify rail lines that warranted analysis of potential impacts on passenger rail safety. That threshold is a projected increase of one or more freight trains per day on a rail line that is currently used for passenger rail transportation. OEA identified a total of nine rail segments (approximately 374 miles of rail lines, including rail lines over which the Applicants have trackage rights) in Illinois, Minnesota, Iowa, Louisiana, and Texas, where the Proposed Acquisition would result in new freight rail traffic that would meet or exceed the threshold for analysis of passenger rail safety. *Chapter 3, Section 3.1, Freight and Passenger Rail Safety* identifies these segments and presents the results of OEA's analysis of impacts on passenger rail safety.

### 2.2.5 Changes in Rail Yard Activity

The Proposed Acquisition would result in changes in activities at rail yards, which could result in environmental impacts, including noise impacts and air quality impacts. Rail yards are areas containing complex systems of tracks, switches, and crossings. Most rail yard activities involve switching and storing individual rail cars and blocks of rail cars. Other activities include locomotive maintenance and fueling as well as freight car inspection, cleaning, and repair. The threshold for assessing environmental impacts at rail yards is an increase in rail yard activity of at least 100 percent (measured by carload activity, or the number of rail cars processed) for rail yards in attainment areas, as set forth at 49 C.F.R. § 1105.7(e)(5)(i)(b). For rail yards in nonattainment areas, the threshold for assessing air quality impacts is an increase in rail yard activity of at least 20 percent (measured by carload activity), pursuant to 49 C.F.R. § 1105.7(e)(5)(ii)(b). If the Board authorizes the Proposed Acquisition, rail yard activity would exceed the thresholds at four

rail yards, as shown in **Figure 2.2-2** and **Table 2.2-2**.<sup>5</sup> Therefore, this EIS includes analyses of environmental impacts at those four rail yards.

**Table 2.2-2. Rail Yards that Meet or Exceed the Board’s Thresholds for Environmental Analysis**

Facility	County	Location	Attainment Status	Rail Cars Handled per Day			
				Pre-Acquisition	Post-Acquisition	Increase	Percent Change
Detroit Container Terminal	Wayne	Michigan	Nonattainment	33.2	56.5	23.2	70%
Schiller Park Yard	Cook	Illinois	Nonattainment	74.0	150.6	76.5	103.4%
Bensenville Yard	Cook	Illinois	Nonattainment	1439.9	1807.6	367.7	25.5%
Wylie Rail Yard	Collin	Texas	Nonattainment	329.6	466.5	137.0	41.6%

<sup>5</sup> The Wood River rail yard is located in a nonattainment area and has estimated carload activity increases that exceed 20 percent. However, CP expects that the Wood River rail yard would only process 0.8 cars per day under the No-Action Alternative and 1.0 car per day under the Proposed Acquisition. Since the increase in car activity is only 0.2 cars per day, the additional activity would have negligible effects on the environment. Therefore, OEA has not included the Wood River rail yard in the environmental analyses described in this ~~Draft~~-EIS.

**Figure 2.2-2. Rail Yards and Intermodal Facilities that Meet or Exceed the Board's Thresholds for Environmental Analysis**



## 2.2.6 Changes in Intermodal Facility Activity

The Proposed Acquisition would result in changes in activities at intermodal facilities, which has the potential to result in environmental impacts, including impacts associated with increased traffic on local roads. Intermodal facilities are sites where trains, trucks, and ships transfer trailers and containers. Intermodal facilities include railroad track, lifting equipment, paved and unpaved areas, and a control point to transfer (receive, load, unload, and dispatch) trailers and containers between rail and other modes of transportation. The Board’s threshold for environmental analysis at intermodal facilities is an average increase in truck traffic of more than 10 percent of the average daily traffic or 50 vehicles per day on a given road segment, pursuant to 49 C.F.R. § 1105.7(e)(5)(i)(c). Projected truck traffic would exceed the threshold at six intermodal facilities (**Table 2.2-3** and **Figure 2.2-2**). Therefore, this ~~Draft~~ EIS includes analyses of environmental impacts at those six intermodal facilities.

**Table 2.2-3. Intermodal Facilities that Meet or Exceed the Board’s Threshold for Environmental Analysis**

Facility	County	Location	Attainment Status	Trucks per Day			
				Pre-Acquisition	Post-Acquisition	Increase	Percent Change
Bensenville IMS	Cook	Illinois	Nonattainment	383	698	315	82%
Detroit Con Terminal	Wayne	Michigan	Nonattainment	141	228	87	62%
Minneapolis IMS	Hennepin	Minnesota	Attainment	279	332	53	19%
Schiller East IMS	Cook	Illinois	Nonattainment	190	324	134	70%
International Freight Gateway	Jackson	Missouri	Attainment	51	104	53	104%
Wylie	Collin	Texas	Nonattainment	326	474	148	45%

## 2.2.7 Planned Capital Improvements

If the Board authorizes the Proposed Acquisition, the Applicants plan to make 25 capital improvements within the existing rail ROW to support the projected increase in rail traffic. The planned capital improvements would include extending 13 existing passing sidings, adding 10 new passing sidings, adding approximately four miles of double track in Blue Valley near Kansas City, Missouri, and approximately five miles of facility working track adjacent to the International Freight Gateway intermodal terminal near Kansas City. Sidings are low-speed sections of track alongside the main rail line often used as passing lanes. Double tracks are two parallel main tracks. Industry tracks are a type of switching track or series of tracks that serve the needs of a commercial industry or other railroad (49 C.F.R. § 218.93). The Applicants would build the planned capital improvements as needed based on increasing rail traffic and intend to do so during the first three years following authorization of the Proposed Acquisition.

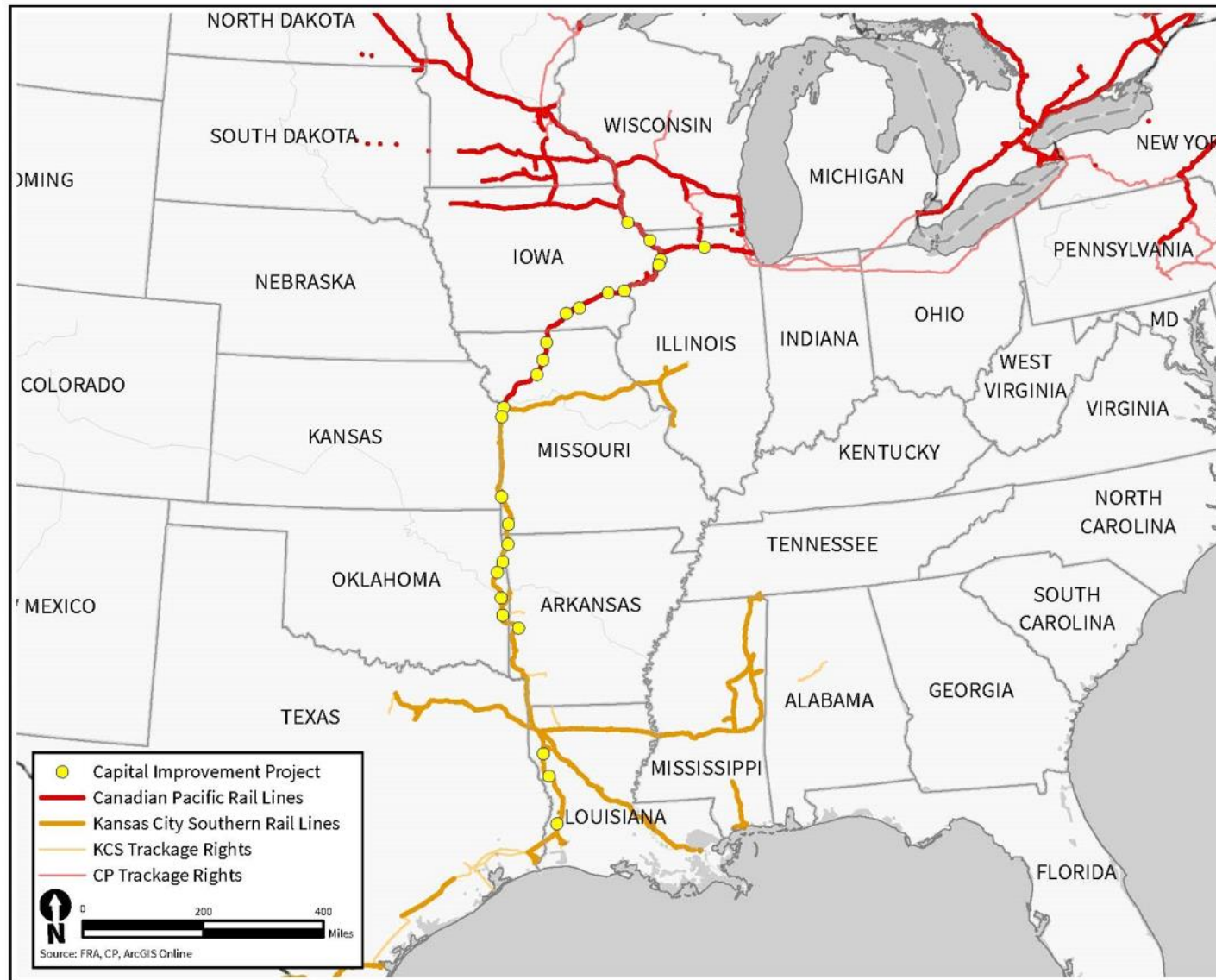
Railroads have the right to increase efficiency by improving their rail lines and rerouting their traffic without seeking authority from the Board. Therefore, railroad capital improvements that are designed to improve operational efficiency (such as sidings, double

tracking, and industry track) typically do not require Board authorization or environmental review by OEA. Where, as here, planned capital improvements are related to a proposed merger or acquisition requiring Board approval, OEA considers, as appropriate, the potential environmental impacts from such planned capital improvements on a case-by-case basis. In this case, the Applicants have stated that the planned capital improvements are necessary to accommodate the projected increase in rail traffic and have sufficiently developed the engineering and design of the planned capital improvements to support an environmental review. Further, the Applicants have identified the location and general layout of these 25 planned capital improvements in sufficient detail to support an environmental review. Therefore, OEA has assessed the potential impacts of the planned capital improvements as part of this EIS. **Figure 2.2-3** below presents an overview map of planned capital improvement locations. *Section D-1* in **Appendix D** shows the individual capital improvement locations in the U.S. in the context of the proposed rail system. **Table 2.2-4** provides a list of all 25 planned capital improvements, the types of improvements, and their locations.

**Table 2.2-4. Planned Capital Improvements**

<b>Capital Improvement</b>	<b>County</b>	<b>State</b>	<b>Type</b>	<b>Size (Miles)</b>
MP 71 (Turkey River)	Clayton	Iowa	New Siding	2.70
MP 24 (Bellevue)	Jackson	Iowa	New Siding	2.07
MP 75 (Monroe)	Ogle	Illinois	New Siding	2.53
Deer Creek	Clinton	Iowa	Siding Extension	1.18
Camanche	Clinton	Iowa	Siding Extension	0.66
Letts	Louisa	Iowa	Siding Extension	0.34
MP 255 (Washington)	Washington	Iowa	New Siding	2.16
Ottumwa	Wapello	Iowa	Siding Extension	0.56
Moravia	Monroe	Iowa	New Siding	2.15
Newtown	Sullivan	Missouri	Siding Extension	0.55
Laredo	Grundy	Missouri	Siding Extension	0.68
MP 431 (Dawn)	Livingston	Missouri	New Siding	2.15
Blue Valley	Jackson	Missouri	Double Track	2.25
Grandview/IFG	Jackson/Cass	Missouri	Industry Track	2.36
Asbury	Jasper	Missouri	Siding Extension	1.10
MP 186	McDonald	Missouri	New Siding	2.03
Gentry	Benton	Arkansas	Siding Extension	2.02
MP 247 (Baron)	Adair	Oklahoma	New Siding	2.22
Cave Springs	Adair	Oklahoma	Siding Extension	1.10
Spiro	Le Flore	Oklahoma	Siding Extension	0.82
Heavener	Le Flore	Oklahoma	New Siding	2.49
MP 377 (Mena)	Polk	Arkansas	New Siding	2.04
Mansfield	De Soto	Louisiana	Siding Extension	1.67
Loring	Sabine	Louisiana	Siding Extension	1.18
Singer	Beauregard	Louisiana	Siding Extension	1.84

Figure 2.2-3. Planned Capital Improvement Locations





## 2.3 Alternatives to the Proposed Acquisition

In its evaluation of the Proposed Acquisition in this EIS, OEA considered both the Proposed Acquisition and the No-Action Alternative.

### 2.3.1 No-Action Alternative

Under the No-Action Alternative, the Board would not approve the Proposed Acquisition, and the projected changes in rail operations, rail yard activity, and intermodal facility activity would not occur. Rail traffic on rail lines and activities at rail yards and intermodal facilities could change to support regular railroad operations or as a result of changing market conditions, such as general economic growth, but would not change as a result of the Proposed Acquisition. In the master segment table and figures in **Appendix C**, the traffic levels for the No-Action Alternative are based on the Applicants' forecasts for organic growth, i.e., the growth that could occur in the absence of the Proposed Acquisition. Similarly, the Applicants would not build the 25 planned capital improvements under the No-Action Alternative. However, the Applicants could add sidings, extend sidings, or add additional track in the future to support rail operations, without seeking Board authority.

[The No-Action Alternative includes several planned rail improvement projects that are scheduled to be completed regardless of the approval of the Proposed Acquisition. Importantly, the Applicants have indicated that Bensenville Yard in Bensenville, Illinois, is being reconfigured as part of the development of the Illinois Tollway's Elgin O'Hare Western Access Project. This reconfiguration will involve lengthening the Bensenville Yard receiving tracks to allow switching and staging of longer trains within the yard. This should reduce the need for trains to stop on the mainline as long trains are broken into smaller blocks of cars. The planned reconfiguration of the Bensenville Yard and other planned improvements on CP and KCS rail lines would proceed regardless of whether the Board authorizes the Proposed Acquisition.](#)

Under the No-Action Alternative, none of the anticipated adverse or beneficial environmental impacts of the Proposed Acquisition would occur.

### 2.3.2 Capital Improvement Locations

During the public comment period for the scoping process, the U.S. Environmental Protection Agency (EPA) recommended that the EIS assess alternatives for sidings, double tracking, and other new infrastructure components. OEA notes that potential locations for siding extensions, new sidings, and other planned capital improvements along the combined CPKC system are limited. The locations of the 13 planned siding extensions are determined by the locations of the existing sidings that would be extended, so no alternative locations can be considered. OEA understands that the locations of the 10 planned new sidings are based on the Applicants' system-wide requirements, including the need for sidings to be placed at regular intervals along the mainline. The start and end points of new sidings are also constrained by site-specific conditions, such as the curvature of the existing mainline. For example, the start and end points for passing sidings are generally placed on straight

sections of track for operational reasons. OEA understands that the planned double tracking and the planned facility working track are intended to serve site-specific operational needs and could not be constructed in other locations to serve those needs. Further, because the planned capital improvements would be constructed as needed based on increasing rail traffic, the final engineering and design of these improvements has not been completed to allow for comparison of alternatives that would differ in terms of final engineering and design (such as the final placement of switches or the locations of construction laydown areas).

Although OEA did not conduct a detailed analysis of alternative locations or designs of the planned capital improvements for the reasons discussed above, OEA did consider refinements developed by CP to the conceptual locations and designs of the planned capital improvements that would avoid potentially significant impacts. As originally described by the Applicants, the planned second track at Blue Valley would have potentially involved altering a historic arch bridge over Blue Parkway in Kansas City. The Applicants revised the conceptual design for the planned double tracking so that the planned double tracking would not result in any impacts on the historic bridge. Following scoping, the Applicants also revised the conceptual locations of the planned siding extension near Asbury, Missouri; the planned new siding at MP 75 near Monroe Center, Illinois; the planned siding extension near Ottumwa, Iowa; the planned new siding near Moravia, Iowa; the planned new siding at MP 24 near Bellevue, Iowa; and the planned siding extension near Loring, Louisiana so as to avoid crossing public or private roads and impacts that could be associated with such crossings.

## 2.4 Comparison of Alternatives

The Council on Environmental Quality regulations for implementing NEPA require agencies to consider the potential environmental impacts of the reasonable and feasible alternatives. To define the issues and provide a clear basis for choice among alternatives (40 C.F.R. § 1502.14), the following narrative and **Table 2.4-1** at the end of this chapter compare the environmental impacts of the Proposed Acquisition and the No-Action Alternative based on the information and analyses presented in *Chapter 3, Affected Environment and Environmental Consequences*.

If the Board authorizes the Proposed Acquisition, average daily rail traffic would increase on certain rail lines within the integrated CPKC system. Under the No-Action Alternative, the Board would not approve the Proposed Acquisition, and the potential impacts would not occur. However, the Applicants expect that both the CP and KCS networks would experience organic growth in rail traffic under the No-Action Alternative because of changing market conditions, such as general economic growth.

OEA analyzed potential impacts from increases in traffic on freight and passenger rail safety, grade crossing safety and delay, truck-to-rail diversion and intermodal facility traffic, noise and vibration, air quality and climate change, energy transport and consumption, cultural resources, hazardous material release sites, biological resources, water resources,

and Environmental Justice (EJ). OEA also evaluated the potential for cumulative impacts when considering other reasonably foreseeable actions and projects.

With the exception of noise impacts, OEA's analysis found that the impacts of the Proposed Acquisition would be negligible, minor, or not adverse. OEA also found that the Applicants' proposed voluntary mitigation measures and OEA's additional recommended mitigation measures would minimize those impacts. The Proposed Acquisition, however, would result in adverse noise impacts at noise-sensitive receptors (receptors), such as residences, schools, hospitals, nursing homes, and places of worship at locations along the combined CPKC network. Based on past practice and the Board's environmental regulations at 49 C.F.R. § 1105.7(e)(6), an adverse noise impact occurs when a receptor would experience an increase in noise level of 3 A-weighted decibels (dBA) or more as result of increased rail traffic and reach an average higher day-night average noise level (Ldn) of 65 dBA or higher.<sup>6</sup> Compared to the No-Action Alternative, the Proposed Acquisition would adversely affect a total of 6,307 receptors. OEA does not expect that the Proposed Acquisition would cause individual trains to become substantially louder or to become audible in places where they are not currently. However, the projected increase in rail traffic from the Proposed Acquisition would make rail-related noise more frequent, which would result in a higher Ldn at the affected receptors. OEA's EJ analysis found that adverse noise impacts would not be borne disproportionately by EJ populations.

The Applicants have proposed voluntary mitigation measures to minimize noise and vibration impacts. OEA is recommending some mitigation to further reduce noise and vibration impacts. Even if the Board imposes these mitigation measures, however, OEA expects that the Proposed Acquisition would result in unavoidable adverse noise impacts.

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<sup>6</sup> Although the regulations at 49 C.F.R. § 1105.7(e)(6) indicate that either an increase of 3 dBA or an increase to an Ldn of 65 dBA would be an adverse impact, research indicates that both of these conditions must be met or exceeded to cause an adverse noise impact from rail operations to occur (Surface Transportation Board 1998, Coate 1999).

**Table 2.4-1. Comparison of Alternatives**

Resource and Impact	No-Action Alternative	Proposed Acquisition
<b>Freight Rail Safety</b>		
Accident/incident rates per million-train-miles (2027 forecast; systemwide) <sup>1</sup>	CP: 1.44 KCS: 3.35	1.44
Accident/incident rates per million-train-miles (2027 forecast; mainline) <sup>2</sup>	CP: 0.74 KCS: 1.25	0.74
<b>Impact Conclusion:</b> Under the Proposed Acquisition, the number of accidents/incidents would remain low on all affected rail line segments, and would decrease on some segments. Under the No-Action Alternative, the Applicants expect that both the CP and the KCS networks would experience organic growth in rail traffic. The incident rates on KCS and CP respectively would continue to decline if safety trends continue.		
<sup>1</sup> Systemwide analysis includes accidents/incidents along rail segments and within rail yards and intermodal facilities.		
<sup>2</sup> Mainline analysis was based on rail segments only, and the numbers shown here are averages among segments of varying lengths.		
<b>Hazardous Material Transportation</b>		
Mainline releases per year	10.36	12.88
Rail yards releases per year	23.50	24.99
<b>Impact Conclusion:</b> Increases in hazardous material carloads under the Proposed Acquisition would cause slight changes in the number of annual releases. However, the risk of a release occurring on any specific rail line segment would continue to be low regardless of whether or not the Board authorizes the Proposed Acquisition. <a href="#"><u>In general, OEA expects that a release of hazardous materials would involve a relatively short duration exposure and would be contained quickly.</u></a>		
<b>Passenger Rail Safety</b>		
Total predicted collisions per 100 years	0.9839	1.904
<b>Impact Conclusion:</b> The probability of a collision between a freight train and a passenger train occurring on any of the affected rail line segments would be very low under either the Proposed Acquisition or the No-Action Alternative.		
<b>Grade Crossing Safety</b>		
Total predicted number of vehicle crashes per year	<del>19.1</del> <u>25.5</u>	<del>24.9</del> <u>31.7</u>
Total predicted number of pedestrian crashes per year	<del>1.7</del> <u>2.3</u>	<del>2.2</del> <u>2.9</u>

**Table 2.4-1. Comparison of Alternatives**

Resource and Impact	No-Action Alternative	Proposed Acquisition
<p><b>Impact Conclusion:</b> Across all <del>1,134</del> <u>1,270</u> roadway/rail at-grade crossings (grade crossings) in the study area <a href="#">that met the criteria for safety analysis</a>, OEA projects that approximately <del>24.9</del> <u>31.7</u> crashes involving trains and motor vehicles would occur under the Proposed Acquisition per year, compared to <del>19.1</del> <u>25.5</u> crashes per year under the No-Action Alternative. The projected increase of approximately <del>5.8</del> <u>6.2</u> additional vehicle crashes per year would be offset by a decreased number of crashes at grade crossings on rail lines outside of the combined CPKC network due to the diversion of rail traffic from those rail lines to CPKC. Across all <del>1,134</del> <u>1,270</u> grade crossings in the study area <a href="#">that met the criteria for safety analysis</a>, the total predicted number of train-pedestrian crashes would be <del>2.2</del> <u>2.9</u> crashes per year under the Proposed Acquisition, compared to <del>1.7</del> <u>2.3</u> crashes per year under the No-Action Alternative, which is a difference of <del>0.6</del> <u>0.5</u> crashes per year.</p>		
<p><b>Grade Crossing Delay</b></p>		
Number of grade crossings experiencing increased delay	N/A	5
Affected crossings by Level Of Service (LOS)	LOS A: <del>260</del> <u>257</u> LOS B: <del>13</del> <u>15</u> LOS C: 2 LOS D: 1 LOS F: 1	LOS A: 255 LOS B: <del>18</del> <u>17</u> LOS C: 2 LOS D: 1 LOS E: 1
<p><b>Impact Conclusion for LOS:</b> <del>Five</del> <u>Four</u> grade crossings would experience a decrease in the LOS from LOS A to LOS B. Because LOS B corresponds to stable flow, OEA concludes that the Proposed Acquisition would result in minor adverse delay impacts at these grade crossings. Delay at grade crossings would increase under the No-Action Alternative as a result of increased rail and road traffic due to organic growth.</p>		
<p><b>Impact Conclusion for Emergency Vehicle Delay:</b> Under the Proposed Acquisition study area, 28 grade crossings are on designated emergency routes. All designated emergency routes have available alternate routes with an average distance of 2.1 miles. Emergency vehicle delay would increase under the No-Action Alternative as a result of increased rail and road traffic due to organic growth. <a href="#">Additionally, OEA analyzed 751 grade crossings in greater detail for potential impacts on emergency response vehicles. Of those 751 grade crossings, 640 have an alternate route and most alternative routes would be less than 10 miles long. There are 73 grade crossings with no possible alternative route because they are located on or provide access to dead-end streets and 37 grade crossings where the only alternative route involves another grade crossing that could be blocked by the same train.</a></p>		
<p><b>Impact Conclusion for Planned Capital Improvements:</b> The Proposed Acquisition would result in delay impacts at 18 grade crossings where the Applicants intend to add a new passing siding or extend an existing siding. Among these, seven have the potential to completely isolate residences, businesses, or other buildings if the Applicants do not develop alternate access routes during final engineering and design. Under the No-Action Alternative the Applicants would not build the planned capital improvements. CP and KCS could also make capital improvements along their respective rail lines in the future without seeking Board authority if needed to support rail operations.</p>		
<p><b>Truck-to-Rail Diversions</b></p>		
Projected change in truck traffic on U.S. highways annually	N/A	-64,018

**Table 2.4-1. Comparison of Alternatives**

Resource and Impact	No-Action Alternative	Proposed Acquisition
<p><b>Impact Conclusion:</b> The Proposed Acquisition would result in the diversion of trucks from highways, which could provide some benefits to the highway system. Under the No-Action Alternative, the Proposed Acquisition would not cause the diversion of freight from truck transportation to rail transportation.</p>		
<p><b>Intermodal Facility Traffic</b></p>		
<p>Capacity of roadways near intermodal facilities</p>	<p>Increased truck traffic would cause three roadway segments near intermodal facilities in the study area to exceed roadway capacity. The v/c ratio<sup>1</sup> would increase from less than 1.0 to more than 1.0.</p>	<p>No additional roadway segments near intermodal facilities would exceed roadway capacity beyond the three segments which exceed 1.0 under the No-Action Alternative. The v/c ratio on roadways near intermodal facilities would increase by less than 0.0045 over the No-Action Alternative due to the Proposed Acquisition.</p>
<p><b>Impact Conclusion:</b> Under the Proposed Acquisition, there would be negligible potential increase in number of trucks on roadways near the six intermodal facilities. Under the No-Action Alternative, truck traffic would increase due to economic growth.</p>		
<p><sup>1</sup> The v/c ratio, also referred to as degree of saturation, represents the sufficiency of an intersection to accommodate the vehicular demand (FHWA 2013). A v/c ratio over 1.0 represents a roadway where the calculated volumes exceed the assigned capacity.</p>		
<p><b>Noise and Vibration</b></p>		
<p>Number of receptors adversely affected</p>	<p>N/A</p>	<p>6,307</p>
<p><b>Impact Conclusion:</b> The Proposed Acquisition would adversely affect receptors where noise levels would exceed 65 dBA (Ldn) and would increase by 3 dBA or more. There would be a total of 6,307 receptors adversely affected. <a href="#">The Proposed Acquisition would also cause the vibration annoyance threshold to be exceeded at 439 receptors in the study area.</a></p>		
<p><b>Air Quality and Climate Change</b></p>		
<p><b>Impact Conclusion:</b> Because the Proposed Acquisition would likely result in the diversion of freight from truck transportation to rail transportation and from other rail lines, OEA expects that the Proposed Acquisition would not increase air emissions (including greenhouse gas emissions), and could result in a decrease in emissions, when measured at the system-wide or national scale. OEA's analysis shows that the projected increase in rail traffic would result in NO<sub>x</sub> emissions in excess of EPA's <i>de minimis</i> thresholds in three nonattainment areas for ozone <a href="#">and one maintenance area for ozone.</a> <a href="#">Following issuance of the Draft EIS, EPA reclassified the Houston-Galveston-Brazoria Ozone Nonattainment Area and the Dallas-Fort Worth Ozone Nonattainment Area from 'Serious' to 'Severe' nonattainment. As a result, Proposed Acquisition-related NO<sub>x</sub> emissions would exceed the revised <i>de minimis</i> threshold in the Dallas-Fort Worth Ozone Nonattainment Area, in addition to the Houston-Galveston-Brazoria Ozone Nonattainment Area, the</a></p>		

**Table 2.4-1. Comparison of Alternatives**

Resource and Impact	No-Action Alternative	Proposed Acquisition
<p><a href="#">Chicago Ozone Nonattainment Area, and the Beaumont-Port Arthur Ozone Maintenance Area</a>. However, the estimated NO<sub>x</sub> emissions from rail operations related to the Proposed Acquisition would be less than 1 percent of the total applicable emissions budget for mobile sources in each ozone nonattainment area. OEA expects that emissions related to projected increases in rail traffic on rail lines and projected increases in activities at rail yards and intermodal facilities may be offset by decreased emissions elsewhere.</p>		
<p><b>Energy</b></p>		
<p><b>Impact Conclusion:</b> The Proposed Acquisition would not adversely affect the transportation of energy commodities or energy efficiency. The fuel savings related to truck-to-rail diversions (8.1 million gallons) would outweigh the increase in fuel usage at intermodal facilities (110,785 gallons) as well as fuel consumed during wait times at grade crossings (12,118 gallons). OEA did not include rail-to-rail diversions in the overall fuel consumption analysis because the increase in fuel consumption on the CPKC rail lines would likely be offset by a decrease in fuel consumption on the rail lines of competing railroads.</p>		
<p><b>Cultural Resources</b></p>		
<p>Archaeological site impacts</p>	<p>None; however, in the absence of the Proposed Acquisition, CP or KCS could make capital improvements along their rail lines in the future without seeking Board authority.</p>	<p>Although two National Register-eligible archaeological sites, 34AD283 and 34AD286, are located within the APE at one capital improvement location, the Applicants have clarified that the planned siding would be located within the current limits of the rail line footprint (railroad ballast and berm) in the areas adjacent to 34AD283 and 34AD286 and that no construction activities would take place within the limits of the sites.</p>
<p>Historic resources physical impacts</p>	<p>None; however, in the absence of the Proposed Acquisition, CP or KCS could make capital improvements along their rail lines in the future without seeking Board authority.</p>	<p>The Proposed Acquisition would affect <a href="#">9-8</a> eligible rail line segments due to the addition of the planned capital improvements; however, these effects would not be adverse.</p>
<p>Historic resources adverse visual impacts</p>	<p>None; however, in the absence of the Proposed Acquisition, CP or KCS could make capital improvements along their rail lines in the future without seeking Board authority.</p>	<p>The Proposed Acquisition would affect <a href="#">98</a> eligible rail line segments and <a href="#">7-5</a> above-ground historic resources due to the additional of the planned capital</p>

**Table 2.4-1. Comparison of Alternatives**

Resource and Impact	No-Action Alternative	Proposed Acquisition
		improvements; however, these effects would not be adverse.
<p><b>Impact Conclusion:</b> The Proposed Acquisition would not adversely affect any archaeological or historic resources. <a href="#">All of the appropriate SHPOs, THPOs, and other consulting parties have concurred with OEA that the Proposed Acquisition would not adversely affect historic properties within the APE.</a></p>		
<p><b>Hazardous Material Release Sites</b></p>		
Capital improvement locations with potential hazardous material site impacts	None	4
<p><b>Impact Conclusion:</b> Based on conceptual designs, the Camanche (Iowa), Ottumwa (Iowa), Blue Valley (Missouri), and Asbury (Missouri) capital improvement locations have the potential to encounter residual hazardous materials during ground disturbing activities.</p>		
<p><b>Biological Resources</b></p>		
Endangered Species Act – Listed Species	None; however, in the absence of the Proposed Acquisition, CP or KCS could make capital improvements along their rail lines in the future without seeking Board authority.	OEA consulted with USFWS and determined that impacts to the Indiana bat, northern long-eared, and Ozark big-eared bats are “may affect, not likely to adversely affect.” The Missouri, <a href="#">Oklahoma</a> , Illinois-Iowa, and Arkansas USFWS offices subsequently concurred with OEA’s determination. <a href="#">OEA also determined that the Proposed Acquisition would not be likely to adversely affect the tri-colored bat.</a>
<p><b>Impact Conclusion:</b> The Proposed Acquisition <i>may affect, but is not likely adversely affect</i> the federally endangered Indiana bat, the federally proposed endangered northern long-eared bat, and the federally endangered Ozark big-eared bat. <a href="#">The Proposed Acquisition would also not be likely to adversely affect the federally proposed endangered tri-colored bat.</a> Impacts on other biological resources would be negligible.</p>		



**Table 2.4-1. Comparison of Alternatives**

Resource and Impact	No-Action Alternative	Proposed Acquisition
<b>Water Resources</b>		
Surface Water and Wetlands	None; however, in the absence of the Proposed Acquisition, CP or KCS could make capital improvements along their rail lines in the future without seeking Board authority.	Potential to impact a total of approximately 1.5 acres of streams and 15.94 acres wetlands due to fill, new track ballast, replacing or adding culverts, and extending or adding bridge piers.
<b>Impact Conclusion:</b> The Proposed Acquisition would have minimal impacts to wetlands and streams due to site work and construction, including the placement of fill material or conveyance structures.		
<b>EJ</b>		
Disproportionately high adverse impact on minority population	No	No
Disproportionately high adverse impact on low-income population	No	No
Percentage of adversely affected receptors in EJ populations census block groups	N/A	28%
Percentage of adversely affected receptors in non-EJ populations census block groups	N/A	72%
<b>Impact Conclusion:</b> The Proposed Acquisition does not have the potential to result in disproportionately high and adverse human health or environmental impacts on minority or low-income populations.		
<b>Cumulative Impacts</b>		
Passenger Rail Safety	No	Cumulative impacts on the probability of rail collisions would increase slightly on segments where the Illinois Department of Transportation proposes new intercity passenger rail service and where Amtrak plans additional service between River Junction and St. Paul, MN; however, the probability of rail collisions involving passenger and freight trains is very low.

**Table 2.4-1. Comparison of Alternatives**

<b>Resource and Impact</b>	<b>No-Action Alternative</b>	<b>Proposed Acquisition</b>
Grade Crossing Safety and Delay	No	Cumulative impacts would result from an increase in the number of crashes at certain grade crossings, and cumulative impacts would result in a slight increase in grade crossing delay at certain grade crossings. However, OEA expects that the amount of delay at crossings on other railroads in the U.S. and on roadways could decrease as the result of the diversion of trucks to rail and the diversion of rail traffic from other railroads to the combined CPKC network.
Air Quality	No	Cumulative impacts would result in a slight increase of emissions from the four proposed Amtrak trains; however, it would be less than 1 percent of the emissions budget for the Chicago Ozone Nonattainment Area.
Noise	No	No
Environmental Justice	No	No
Biological Resources	No	Two proposed electrical transmission line projects could potentially overlap geographically with one or more of the planned capital improvements within the rail ROW. If this were to occur, then cumulative impacts on biological resources could result, but OEA expects that these cumulative impacts would be minor.
Water Resources	No	Cumulative impacts on wetlands could result from the SGGR Transmission Line Project at the MP 71 (Turkey River) capital improvement in Iowa. The impacts would

**Table 2.4-1. Comparison of Alternatives**

Resource and Impact	No-Action Alternative	Proposed Acquisition
		be temporary because the SGGR project is a buried electric cable.
<p><b>Impact Conclusion:</b> Cumulative impacts are possible for rail safety, grade crossing safety, grade crossing delay, air quality, and water resources. There would be no cumulative impacts under the No-Action Alternative.</p>		