

## Chapter 2

# Proposed Action and Alternatives

This chapter details the existing rail systems in the Study Area and describes the Proposed Action and the alternatives that SEA has considered in depth in its environmental analysis. This chapter also identifies and briefly discusses other alternatives considered for, but eliminated from, detailed analysis because they would not be reasonable and feasible alternatives to the Proposed Action. Lastly, this chapter includes an overview table comparing the environmental impacts of the Proposed Action and the alternatives.

## 2.1 Existing Rail Systems

To put the Proposed Action in context, the following sections describe the Chicago, Illinois, regional rail system, the CN and EJ&E rail systems, and the passenger and commuter rail system in the Chicago metropolitan area.

### 2.1.1 Chicago Regional Rail System

Railroad construction in Chicago, began in 1848, and by 1900 more than two dozen rail lines extended outward from Chicago in all directions. By 1950, 21 railroad companies operated 37 long-distance rail lines (Conzen 2005).

Chicago is now the busiest rail freight gateway in the United States. Six Class I (large) railroad systems converge on Chicago from all directions—BNSF, CN, CPR, CSX, NS, and UP. By agreement, a seventh Class I railroad (KCS) operates on the Iowa, Chicago & Eastern Railroad (IC&E) rail line to approach Chicago from the west (see Figure 2.1-1, Chicago Regional Rail System below). These railroads exchange freight with various other modes of transportation in Chicago.

Numerous smaller regional and switching railroads also operate within the Chicago metropolitan area. These railroads exchange freight between the long-distance railroads, transport freight short distances within the Chicago Terminal District, and transport freight to and from industries in the Chicago metropolitan area. Class I railroads use these regional and switching railroads, including the EJ&E rail system, through agreements granting trackage rights and haulage rights.

The nation's freight rail network has become increasingly dependent on Chicago because of the city's location and the opportunities for interchanging rail traffic among the Class I railroads, coupled with the recent growth in the intermodal freight industry (transferring freight between rail and truck). In addition, the railroad restructuring and mergers that took place in the last half of the 20<sup>th</sup> century firmly cemented Chicago's role as the nation's rail gateway. However, these same mergers and restructuring, while improving freight rail commerce and efficiency outside the Chicago metropolitan area, did not address the issue of rail congestion within the Chicago metropolitan area.

#### What are trackage rights?

Trackage rights are the right (or combination of rights) of one railroad to operate over the designated trackage of another railroad.

#### What are haulage rights?

Haulage rights are the right (or combination of rights) of one railroad to have its trains operated by another railroad over the designated trackage of that railroad.



Currently, substantial rail traffic delays occur through the Chicago Terminal District, resulting in rail trips that typically take an average of 30 hours (Chicago Metropolis 2020 2004). Delays result from high demand on the existing rail lines, high demand for use of rail yards, and heavy rail and road traffic at highway/rail at-grade crossings, as discussed in the following paragraphs.

More than 1,400 trains per day move through the Chicago Terminal District on Class I, regional, and switching rail lines. The owners of these rail lines often share their rail lines with other railroads by means of trackage and haulage rights. In some cases, there is joint ownership of these rail lines; for example, BNSF, CN, and UP jointly own the 1.6-mile-long St. Charles Air Line (the Air Line), located south of Chicago's central business district. The Air Line runs west, parallel to 16<sup>th</sup> Street (see Figure 1.2-1, Major Routes Used by CN Through Chicago, in Chapter 1), crosses the Metra Rock Island main line, and then proceeds west over the South Branch of the Chicago River. CN uses the Air Line to connect its Freeport and Chicago subdivisions, and Amtrak uses it for trains destined for locations south of Chicago (see Section 2.1.4, Passenger and Commuter Rail System, below). Passenger railroads operating in the Chicago metropolitan area (Amtrak, Metra, and NICTD) also have trackage rights to operate their trains on many of the area's freight rail lines (see Section 2.1.4, Passenger and Commuter Rail System, below). The sharing of freight trackage with passenger trains can substantially curtail freight movement during and between peak commuting hours, while Amtrak and Metra are occupying key rail lines and connections (Chicago Metropolis 2020 2004).

All six Class I railroads and several regional railroads in Chicago use the BRC Clearing Yard, located just south of Midway Airport between Chicago and Bedford Park, Illinois. The BRC Clearing Yard processes about 8,400 rail cars per day (BRC 2007). The IHB rail yards at Blue Island (located in Blue Island, Illinois) and Gibson (located in Hammond, Indiana) are also in high demand by all Class I and several regional railroads (IHB 2007). Sixteen railroads use the IHB Blue Island Yard, including BNSF, CN, CP, and CSX, and Gibson Yard is one of the largest automobile-switching yards in the United States, transporting automotive products on BNSF and UP trains (IHB 2007; CREATE 2005).

Another cause of delays within the Chicago Terminal District is inadequate rail infrastructure, including rail connections that require railroads to operate their trains at low speeds and a large number of at-grade crossings (132 rail/rail and 3,180 highway/rail at-grade crossings in the Chicago Terminal District) (CREATE 2007; FRA 2008a). The congestion at these highway/rail at-grade crossings is caused by heavy rail and road traffic. The 30 most frequently used highway/rail at-grade crossings in the Chicago Terminal District, together, cause nearly 4,000 hours of motorist delays each weekday (Chicago Metropolis 2020 2004).

## **2.1.2 CN Rail System**

CN has an extensive rail network of approximately 20,300 route miles of track, stretching from the Pacific coast to the Atlantic coast in Canada and to the Gulf of Mexico in the United States (CN 2007). CN rail lines pass through 16 states in the United States and eight provinces in Canada (see Figure 2.1-2, CN Rail System, below).

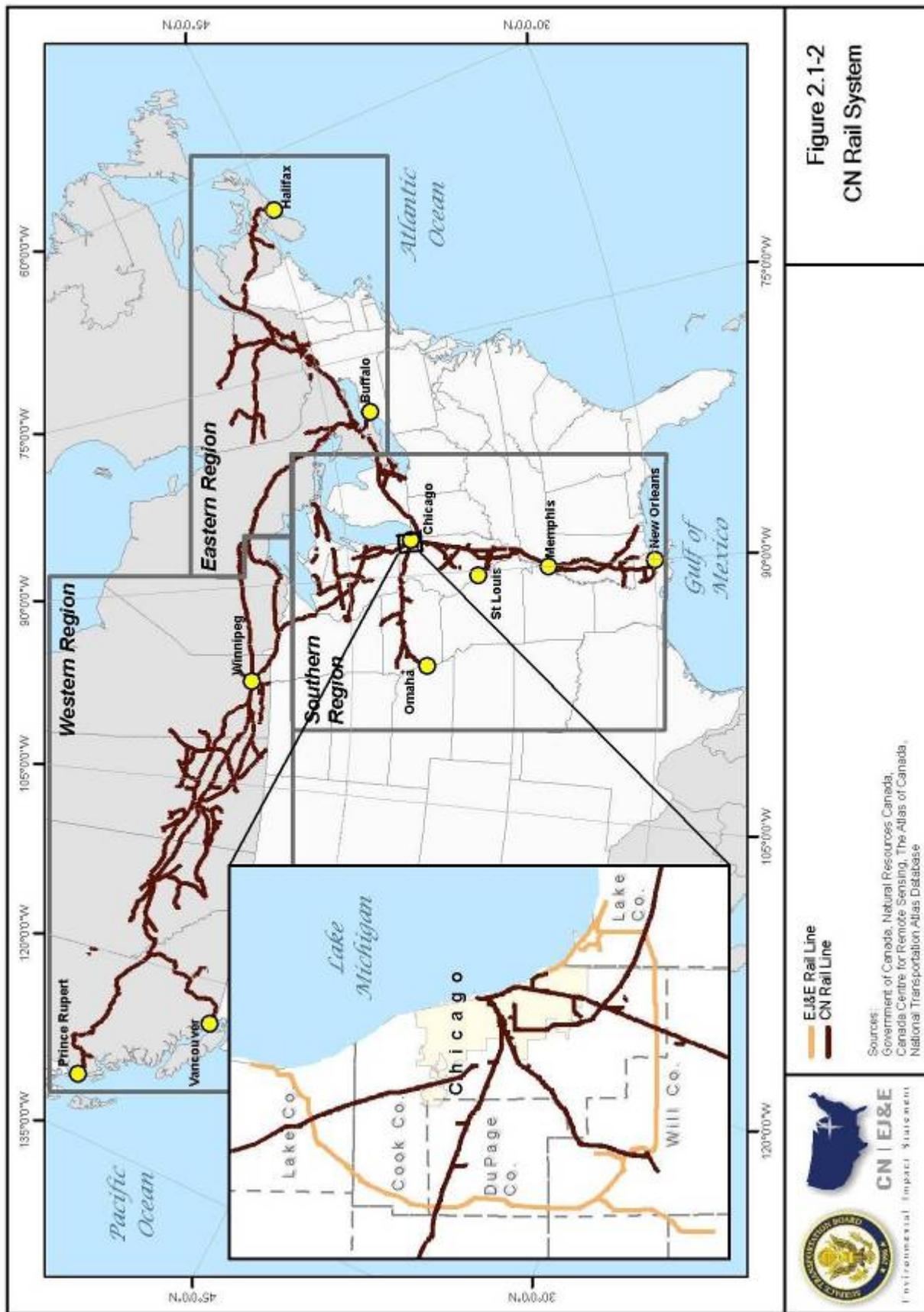


Figure 2.1-2  
CN Rail System

CN's principal routes run as follows:

- East and west between Halifax, Nova Scotia; and Vancouver and Prince Rupert, British Columbia; serving every major metropolitan area in Canada
- Between Buffalo, New York; and Chicago, Illinois
- Between Winnipeg, Manitoba; and Chicago
- North and south between Chicago and the Gulf of Mexico, reaching every major metropolitan area on the Mississippi River, including St. Louis, Missouri; Memphis, Tennessee; and New Orleans, Louisiana
- East and west between Chicago and Omaha, Nebraska

CN transports a wide variety of goods from and to diverse origins and destinations, with no one commodity group accounting for more than 24 percent of CN's freight revenue (CN 2007). CN transports a broad range of bulk products (such as forest products, grain and fertilizers, petroleum and chemicals, and metals and minerals) as well as intermodal containers of materials that are handled by rail and truck. Approximately 87 percent of the traffic moving along its network originates with CN; other railroads generate the remaining traffic through trackage and haulage rights.

CN has three operating regions. The Eastern and Western regions encompass most of Canada. The Southern Region extends from Ranier, Minnesota, to Chicago and south to New Orleans; from Minneapolis/St. Paul, Minnesota, to Sault Ste. Marie, Ontario; and from Sioux City, Iowa, and Omaha to Port Huron and Detroit, Michigan. CN's Southern Region contains approximately 7,400 route miles of track (CN 2008b) and allows CN to interchange traffic with KCS at Jackson, Mississippi, as part of a marketing alliance that provides CN customers with access to Mexico and the southwestern United States.

Within the Southern Region, there are four CN lines (divisions), including the Chicago and Michigan Divisions. The Chicago Division covers an area west from Griffith, Indiana, through Chicago to the Illinois-Wisconsin border and west to Omaha. Within the Chicago Division, CN operates 12 subdivisions; five of these subdivisions (Waukesha, Freeport, Joliet, Chicago, and Elsdon) provide access to Chicago. The Michigan Division covers an area east from Griffith through Port Huron and south to Toledo, Ohio. Within the Michigan Division, CN operates the South Bend Subdivision. The South Bend Subdivision becomes the Elsdon Subdivision west of Griffith. Table 2-1, below, lists these five CN subdivisions, the termini (that is, the ends of CN's rail line ownership, often indicated by rail station name), the connections to other rail lines, and the number of rail/rail at-grade crossings inside the EJ&E arc. See Figure 2.1-3, Rail Station Locations, on the page following Table 2-1, below, for the termini.

**What is a rail station?**

A rail station is a place designated by name in the railroad timetable.

**What is the EJ&E arc?**

The EJ&E main line extends in an arc around Chicago. The area inside the EJ&E arc includes the portions of Lake, Cook, DuPage, and Will counties in Illinois and Lake County in Indiana located within the arc formed by the EJ&E main line between Waukegan, Illinois; Joliet, Illinois; and Gary, Indiana.

<b>Subdivision</b>	<b>Direction and Destination</b>	<b>Termini</b>	<b>Connection</b>	<b>Rail/Rail At-Grade Crossings<sup>a</sup></b>
Waukesha	North to Minneapolis/St. Paul, Minnesota; and Winnipeg, Manitoba	Forest Park <sup>b</sup> (near River Forest, Illinois)	BRC and IHB to Elsdon or Chicago Subdivision	3
Freeport	West to Omaha, Nebraska	16 <sup>th</sup> Street <sup>b</sup> (Air Line) (located in Chicago)	Chicago Subdivision	6
Joliet	Southwest to Plaines <sup>b</sup> (near Joliet, Illinois)	Bridgeport <sup>b</sup> (located in Chicago)	Freeport Subdivision	5
Chicago	South to Memphis, Tennessee; and New Orleans, Louisiana	16 <sup>th</sup> Street <sup>b</sup> (Air Line)	Freeport Subdivision or BRC and IHB to Waukesha Subdivision	2
Elsdon/South Bend	East to Detroit/Port Huron, Michigan; and Toronto, Ontario	Railport <sup>b</sup> (43 <sup>rd</sup> Street Yard)	BRC and IHB to Freeport or Waukesha Subdivision	7

Sources: Applicants (2007a), STB Finance Docket No. 35087, Canadian National Railway Company and Grand Trunk Corporation—Control—EJ&E West Company, Railroad Control Application, October 30, 2007; Applicants (2008a), letter from Paul A. Cunningham, Counsel for Canadian National Railway Company and Grand Trunk Corporation, Harkins Cunningham LLP, to Victoria J. Rutson, Chief, Section of Environmental Analysis, Surface Transportation Board, in response to the Board’s Information Request dated December 18, 2007, Exhibit C (CN timetables), January 28, 2008.

**Notes:**

- <sup>a</sup> Inside the EJ&E arc; these numbers do not include the crossings with the EJ&E rail line, which are at grade on the Waukesha and Elsdon/South Bend subdivisions and grade separated on the Freeport, Joliet, and Chicago subdivisions.
- <sup>b</sup> Name of the station.

The five subdivisions that give CN access to Chicago, Illinois, consist of about 150 miles of rail, primarily double track (that is, a second mainline track that is immediately adjacent to the existing track), inside the EJ&E arc. Most of the Waukesha Subdivision is double track, less than one-half of the Freeport Subdivision is double track, all of the Joliet and Chicago subdivisions are double track, and most of the Elsdon Subdivision is double track.

Currently, most CN freight cannot be moved through the Chicago metropolitan area on CN rail lines without the use of other railroads. The Waukesha Subdivision terminates before joining another CN subdivision. The Air Line connects the Freeport and Chicago subdivisions at 16<sup>th</sup> Street in Chicago. The Joliet Subdivision joins the Freeport Subdivision about 2 miles west of the Air Line. The Elsdon Subdivision connects with the Chicago Subdivision at Harvey, Illinois, but continues north and terminates before connecting with any other CN rail line. At the present time, CN uses trackage and haulage rights to connect the Waukesha, Chicago, and Elsdon subdivisions.

About three-fourths of all CN traffic between Winnipeg; Toronto, Ontario; and Memphis passes through the Chicago Terminal District (CN 2007). CN trains traveling through the Chicago Terminal District on CN rail lines en route to other destinations in the United States and Canada must use regional and switching railroads to connect with other CN rail lines. Most of the CN trains and freight tonnage move on the Waukesha, Chicago, and Elsdon subdivisions (Applicants 2007a). Trains traveling on these CN subdivisions rely on trackage rights over either the BRC or IHB rail lines to connect with other CN subdivisions. Figure 2.1-3 shows the location of rail stations on the EJ&E and CN rail lines. Table 2-2, that follows, presents the number of trains per day currently traveling on CN’s subdivisions in the Chicago Terminal District.



Table 2-2. Freight Train Traffic on CN Subdivisions in the Chicago Terminal District (2007)		
From Station	To Station	Trains per Day <sup>a</sup>
<b>Waukesha Subdivision</b>		
Leighton (near Mundelein, Illinois)	Schiller Park (near Schiller Park, Illinois)	19.1
Schiller Park	Tower B12 (near Franklin Park, Illinois)	19.3
Tower B12	Forest Park (near River Forest, Illinois)	5.4
Forest Park	Madison Street (near River Forest, Illinois)	5.4
<b>Freeport Subdivision</b>		
Munger (near Wayne, Illinois)	Broadview (near Broadview, Illinois)	3.0
Broadview	Hawthorne (near Cicero, Illinois)	4.4
Hawthorne	Belt Crossing (near Cicero, Illinois)	4.5
Belt Crossing	Bridgeport (in Chicago)	2.5
Bridgeport	16 <sup>th</sup> Street (in Chicago)	4.6
<b>Joliet Subdivision</b>		
Joliet (near Joliet, Illinois)	Argo (near Summit, Illinois)	1.8
Argo	Glenn Yard (in Chicago)	5.8
Glenn Yard	Bridgeport	2.1
<b>Chicago Subdivision</b>		
Matteson (near Matteson, Illinois)	Markham (near Harvey, Illinois)	12.6
Markham	Harvey/CN Junction (near Harvey, Illinois)	21.1
Harvey/CN Junction	94 <sup>th</sup> Street (in Chicago)	8.4
94 <sup>th</sup> Street	16 <sup>th</sup> Street (in Chicago)	6.4
<b>Elsdon Subdivision</b>		
Griffith (near Griffith, Indiana)	Thornton Junction (near South Holland, Illinois)	22.1
Thornton Junction	Harvey/CN Junction (near Harvey, Illinois)	19.5
Harvey/CN Junction	Blue Island (near Blue Island, Illinois)	14.9
Blue Island	Hayford (in Chicago)	3.4

Source: Applicants (2007a), STB Finance Docket No. 35087, Canadian National Railway Company and Grand Trunk Corporation—Control—EJ&E West Company, Railroad Control Application, October 30, 2007.

Note:

<sup>a</sup> Yearly total divided by 365 days.

#### What is classification?

Classification is the sorting and assembling rail cars in station or delivery order for making up or breaking up trains. Rail cars are sorted and assembled by their destination.

#### What is switching?

Switching is the activity of moving cars from one track to another in a yard.

CN operates three major yards in the Chicago Terminal District (see Figure 1.2-2, Yard Locations, in Chapter 1). Hawthorne Yard (near Cicero, Illinois) on the Freeport Subdivision and Glenn Yard (in Chicago) on the Joliet Subdivision are solely classification yards; Markham Yard (in Harvey, Illinois, and extending into Homewood, Illinois) on the Chicago Subdivision performs intermodal and classification functions. The Chicago CargoFlo facility (located immediately adjacent to Markham Yard) provides transloading services (direct transfer of bulk materials from train to truck) for the plastics industry in Chicago (CN 2008c). CN uses its Schiller Park Yard (near O'Hare International Airport on the Waukesha Subdivision) for crew changes and for staging trains for the BRC Clearing Yard, which provides for rail car switching and movement of trains between the Waukesha, Chicago, and Elsdon subdivisions (Applicants 2007a). CN also operates several other small yards in the Chicago Terminal District, primarily to serve industrial areas.

CN has extensive locomotive and rail car maintenance, repair, and servicing facilities. In the United States, heavy locomotive repair work occurs primarily at Markham Yard in Homewood, Illinois, and heavy rail car repair work occurs primarily in Centralia, Illinois, and Fond du Lac, Wisconsin.

CN trains operating in the Chicago Terminal District currently experience the greatest amount of delay on the Waukesha Subdivision at holding points between Franklin Park and Buffalo Grove, Illinois, as well as on the Elsdon Subdivision at holding points between Blue Island, Illinois, and Griffith, Indiana (Applicants 2008b). Trains are held at these locations while they wait to access other rail lines. For example, a CN train moving southward on the Waukesha Subdivision traveling toward the Elsdon Subdivision is held in the vicinity of Schiller Park, Illinois, awaiting its turn to enter IHB tracks. When cleared to proceed, the train enters the IHB tracks but advances only as far as Rose station (near Melrose Park, Illinois), where it remains until receiving clearance to proceed to Broadview station (near Broadview, Illinois). The CN train is then held and cleared at four more stations until moving onto the Elsdon Subdivision (Applicants 2008b).

CN trains using the BRC Clearing Yard must wait their turn to access the yard. The BRC Clearing Yard handles about 630 CN rail cars (15 percent of CN rail cars moving through the Chicago Terminal District) each day (Applicants 2008b).

### **2.1.3 EJ&E Rail System**

EJ&E is a Class II (smaller) railroad operating in Lake, Cook, DuPage, Will, Kendall, and Grundy counties in northeast Illinois and Lake County in Indiana. The railroad dates from the late 1880s. For the purpose of constructing a new railroad westward from the Indiana state line, through Joliet and Aurora, Illinois, to the banks of the Mississippi River opposite Dubuque, Iowa, the Joliet, Aurora and Northern Railway incorporated on April 30, 1884. Two years later, operations began between Joliet and Aurora. In October 1888, EJ&E purchased the completed portions of the Joliet, Aurora and Northern Railway. On January 1, 1889, EJ&E began its own operations on those portions of track. Through a series of mergers and acquisitions, EJ&E was operating from Waukegan, Illinois, to McCool, Indiana (just east of Griffith), by 1891. Construction in and around Gary, Indiana, to South Chicago, Illinois, continued through the end of the 19<sup>th</sup> century. U.S. Steel purchased EJ&E and operated the rail line from 1901 to 1988. In the mid 1960's the EJ&E rail line was handling approximately 40,000 rail cars per month and approximately 58 trains per day were moving into and out of Kirk Yard. EJ&E then became part of Transtar, Inc., a U.S. Steel subsidiary (EJ&E 2008a). Thus, this proposal would not bring a new rail line to the Chicago metropolitan area. Rather, the communities along the EJ&E rail line, for the most part, have developed around the existing rail line.

EJ&E operates on slightly more than 200 track miles, extending from Waukegan, Illinois, southward to Joliet, then in an easterly direction to Gary, and then northwest to South Chicago along Lake Michigan (see Figure 2.1-1, Chicago Regional Rail System, above). The EJ&E arc around Chicago consists of two subdivisions (partially with double track) and eight branch lines (all single track). The double track extends from Crest Hill, Illinois (designated as Turner by the Applicants), to about 1 mile east of East Joliet Yard (near Joliet, Illinois), then for about 2 miles in the vicinity of Frankfort, Illinois, and then from Matteson, Illinois, to Kirk Yard in Gary, Indiana. There are also numerous sidings and lead tracks along the EJ&E rail line to serve industrial areas on the route. Table 2-3, below, indicates the length of the main line, double track, and branch lines.

<p><b>What is a branch line?</b> A branch line is a rail line which serves one or more rail station(s) beyond the junction of the main line or another branch line.</p>
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<b>Track<sup>a</sup></b>	<b>Miles</b>
<b>Main Line</b>	
Western Subdivision—from Joliet to Walker, Illinois, and northward to Waukegan, Illinois	74.6
Eastern Subdivision—from Gary to Griffith, Indiana, and westward to Joliet	45.4
Subtotal, main line	120.0
<b>Second Mainline Track (double track)</b>	
26.8	
<b>Branch Lines</b>	
Illinois River Line—from the Western Subdivision (at Walker) to near Morris, Illinois	20.4
Phoenix Lead—from Joliet to the south	1.1
Paul Ales Branch—from the Western Subdivision (at Joliet) to Romeoville, Illinois	6.0
Downtown Track (H Yard)—adjacent to East Joliet Yard (near Joliet)	1.4
Hammond Branch—from the Whiting Branch to Hammond, Indiana	1.0
Whiting Branch—from northern Gary, northwest to Whiting, Indiana	5.2
City Track—from Kirk Yard to Miller, Indiana	6.6
Lake Front Line—along Lake Michigan, from Gary to South Chicago, Illinois	12.2
Subtotal, branch lines	53.9
<b>Total</b>	<b>200.7</b>

Source: Applicants (2008c), letter from Paul A. Cunningham, Counsel for Canadian National Railway Company and Grand Trunk Corporation, Harkins Cunningham LLP, to Victoria J. Rutson, Chief, Section of Environmental Analysis, Surface Transportation Board, in response to the Board's Information Request dated December 18, 2007, Exhibit A (EJ&E track charts and timetables), January 28, 2008.

Note:

<sup>a</sup> This table does not include sidings or lead track into industrial areas.

EJ&E has the following interchange partners (railroads that transfer rail cars from one rail line to another) (EJ&E 2007):

- Six Class I freight railroads (BNSF, CN, CP, CSX, NS, and UP)
- Three regional railroads (CSS, IAIS, and IC&E)
- Five switching railroads (BOCT, BRC, Chicago Rail Link [CRL], IHB, and South Chicago and Indiana Harbor Railway Company [SCIH]), which place the EJ&E rail cars in designated positions, usually for loading and unloading purposes

The EJ&E rail line intersects CN rail lines at five points outside Chicago; two of the crossings are at grade and three are grade separated. Table 2-4, below, lists these crossing locations and types.

<b>Crossing<sup>a</sup> (Location)</b>	<b>CN Subdivision</b>	<b>Type of Crossing</b>
Leithton (near Mundelein, Illinois)	Waukesha	At grade
Munger (near Wayne, Illinois)	Freeport	Grade separated
Joliet (near Joliet, Illinois)	Joliet	Grade separated
Matteson (near Matteson, Illinois)	Chicago	Grade separated
Griffith (near Griffith, Indiana)	Elsdon/South Bend	At grade

Source: Applicants (2007a), STB Finance Docket No. 35087, Canadian National Railway Company and Grand Trunk Corporation—Control—EJ&E West Company, Railroad Control Application, October 30, 2007.

Note:

<sup>a</sup> By station name.

EJ&E operates three main yards (see Figure 1.2-2, Yard Locations, in Chapter 1) (Applicants 2007a):

- Kirk Yard—a major automated classification yard in Gary, Indiana, which contains locomotive maintenance and repair facilities as well as rail car maintenance and repair facilities
- East Joliet Yard—a major switching yard, which serves primarily as rail car storage and contains locomotive maintenance and repair facilities as well as rail car maintenance and repair facilities
- Whiting Yard—a small industrial support yard near Whiting, Indiana, which provides EJ&E with the flexibility to serve nearby customers

EJ&E also operates smaller yards that service industrial areas such as Gary Works, in Gary, Indiana.

The EJ&E rail line serves approximately 100 customers and is an important supply line for North American steel, chemical, and petrochemical manufacturers and distributors as well as for Chicago-area utilities and others (EJ&E 2006). In addition, the EJ&E rail line serves food wholesalers and distributors, paper product and paint manufacturers, hospital suppliers, and construction material manufacturers and distributors (EJ&E 2006).

EJ&E rail traffic is heaviest from West Chicago, Illinois, to Rock Island Junction (near Joliet, Illinois) and from Matteson, Illinois, to Gary, Indiana. Table 2-5, below, details EJ&E train traffic. See Figure 2.1-3, above, for the rail station locations.

<b>Table 2-5. Freight Train Traffic on the EJ&amp;E Rail Line (2007)</b>		
<b>From Station</b>	<b>To Station</b>	<b>Trains per Day</b>
<b>Western Subdivision</b>		
Rondout (near Green Oaks, Illinois)	Leithton (near Mundelein, Illinois)	3.2
Leithton	Spaulding (near Elgin, Illinois)	5.3
Spaulding	Munger (near Wayne, Illinois)	5.5
Munger	West Chicago (near West Chicago, Illinois)	4.4
West Chicago	East Siding (near Eola, Illinois)	10.7
East Siding	Walker (near Plainfield, Illinois)	15.7
Walker	Bridge Junction (near Crest Hill, Illinois)	18.5
Bridge Junction	Rock Island Junction (near Joliet, Illinois)	18.5
<b>Eastern Subdivision</b>		
Rock Island Junction	Matteson (near Matteson, Illinois)	6.4
Matteson	Chicago Heights (near Chicago Heights, Illinois)	8.6
Chicago Heights	Griffith (near Griffith, Indiana)	10.2
Griffith	Van Loon (near Gary, Indiana)	7.6
Van Loon	Ivanhoe (near Gary, Indiana)	9.7
Ivanhoe	Cavanaugh (near Gary, Indiana)	9.8
Cavanaugh	Gary (near Gary, Indiana)	11.8
Gary	Indiana Harbor (near East Chicago, Indiana)	3.5
Indiana Harbor	Hammond (near Hammond, Indiana)	1.8
Hammond	South Chicago (in Chicago)	0.9

Source: Applicants (2007a), STB Finance Docket No. 35087, Canadian National Railway Company and Grand Trunk Corporation—Control—EJ&E West Company, Railroad Control Application, October 30, 2007.

Three EJ&E local trains, typically comprising one or two locomotives and 30 to 100 rail cars, originate daily from Kirk Yard: two travel between Kirk Yard and Matteson, Illinois, setting out and/or picking up rail cars at Van Loon (near Gary), Griffith, Chicago Heights and/or Matteson, Illinois; and the third train operates on the Whiting Branch, providing rail service to local shippers. Several local trains operate daily from East Joliet Yard: one performs daily switching assignments (that is, placing rail cars for loading or unloading and then retrieving the loaded or empty rail car once the process has been completed) between Waukegan and West Chicago; three provide rail service to various industries on the Illinois River Line; and another train performs switching assignments between Joliet and West Chicago.

## **2.1.4 Passenger and Commuter Rail System**

Passenger and commuter rail service in the Chicago metropolitan area is provided by Amtrak, Metra, and NICTD. Rail lines used by all three intersect with CN and EJ&E rail lines at various points. The sections below describe passenger and commuter service in the Chicago metropolitan area and the interactions between Amtrak, Metra, and NICTD with the CN and EJ&E rail lines.

### **2.1.4.1 Amtrak**

Amtrak provides passenger service in the Chicago metropolitan area on rail lines owned by Amtrak and on rail lines owned by Class I railroads (BNSF, CN, and NS) and Metra (see Figure 2.1-4, Passenger and Commuter Rail System, below). Amtrak operates six trains per day on CN's Chicago Subdivision (Amtrak 2008b). Amtrak served more than two million intercity passengers traveling to or from Chicago in 2002 and currently operates about 78 trains per day (CREATE 2005; Amtrak 2008c).

Only CN and Amtrak regularly operate trains on the Air Line (Applicants 2007a). BNSF recently filed a petition with the Board for authority to discontinue trackage rights on the portion of CN's rail line that provides access to the Air Line (Board 2008a). Amtrak operates six daily trains that use the Air Line to access Chicago's Union Station from CN's Chicago Subdivision. Amtrak's *City of New Orleans* train operates a daily round trip between New Orleans, Louisiana and Chicago, and its *Illini* and *Saluki* trains each operate a twice-daily round trip between Chicago and Champaign/Carbondale, Illinois (Amtrak 2008c).

Amtrak crosses CN's rail lines in six places within the Chicago metropolitan area. At-grade crossings occur at four locations in Chicago, and two grade-separated crossings occur at Berwyn and Harvey, Illinois (Applicants 2008a). Amtrak operates on CN's Chicago Subdivision as described above and on a portion of CN's Elsdon Subdivision (from Harvey to Munster, Indiana) (Amtrak 2008b).



**Figure 2.1-4**  
**Passenger and**  
**Commuter Rail**  
**System**

### 2.1.4.2 Metra

Metra provides commuter service on 565 miles of track, on 11 separate rail lines, in the Chicago metropolitan area (RTA 2006) (see Figure 2.1-4, Passenger and Commuter Rail System, above). Although Metra operates its trains on its own rail lines, it also has trackage rights on freight rail lines (Metra 2007a). Metra operates 720 trains per day and serves 239 local rail stations in more than 100 communities (Metra 2008a). Its trains run frequently during rush hour and every hour during off-peak times. Metra's ridership, which was 81 million passengers in 2006, is projected to total 82 million in 2007 (Metra 2007a). Today, Metra is responsible for approximately one-half of all commuter trips from the suburbs to downtown Chicago (Metra 2007a). Table 2-6, below, lists the operating characteristics of the 11 Metra-operated rail lines.

Line Name	Termini		Route Miles	Trains <sup>a</sup>	Passenger Trips <sup>a</sup>
	Outer Reach	Chicago			
UP North	Kenosha, Wisconsin	Ogilvie Station	51.6	70	31,800
Milwaukee District North	Fox Lake, Illinois	Union Station	49.5	60	22,600
North Central Service	Antioch, Illinois	Union Station	52.8	22	4,500
UP Northwest	Harvard, Illinois; McHenry, Illinois	Ogilvie Station	63.1	65	40,700
Milwaukee District West	Elgin, Illinois	Union Station	39.8	58	21,700
UP West	Elburn, Illinois	Ogilvie Station	43.6	59	29,800
BNSF Railway	Aurora, Illinois	Union Station	37.5	94	60,400
Heritage Corridor	Joliet, Illinois	Union Station	37.2	6	2,900
SouthWest Service	Manhattan, Illinois	Union Station	40.8	30	9,000
Rock Island District	Joliet, Illinois	LaSalle Street Station	46.8	68	36,700
Electric District	University Park, Illinois; Blue Island, Illinois; South Chicago, Illinois	Millennium Station	40.6	188	44,600
<b>Totals</b>			<b>503.3</b>	<b>720</b>	<b>304,700</b>

Source: Metra (2007b), Metra Quick Facts, Retrieved on January 31, 2008, [http://www.metrail.com/Newsroom/quick\\_facts.html](http://www.metrail.com/Newsroom/quick_facts.html), 2007.

Note:

<sup>a</sup> Per weekday. Not all Metra trains travel the entire distance between the termini.

Currently, Metra has trackage rights for its North Central Service and Heritage Corridor on CN's Waukesha and Joliet subdivisions, respectively. Metra's Electric District operates on a separate rail line in the corridor of CN's Chicago Subdivision. Metra also operates in partnership with NICTD, which runs 41 trains per day from South Bend, Indiana, to Millennium Station in Chicago (NICTD 2007a).

The EJ&E rail line crosses several corridors that Metra owns or on which Metra has trackage rights. Grade-separated crossings occur at Eola, East Bridge Junction, Brisbane, and Matteson in Illinois. At-grade crossings occur at Rondout, Leithton, Barrington, Spaulding, West Chicago, and Rock Island Junction in Illinois. In addition, CN rail lines cross Metra lines in eight locations within the Chicago metropolitan area. At-grade crossings occur at Des Plaines, Franklin Park, Chicago, Bartlett, Joliet, and Blue Island in Illinois, and a grade-separated crossing occurs in Elmhurst, Illinois (Applicants 2008c). Metra operates on CN's Waukesha Subdivision from Mundelein to Franklin

Park, Illinois, and shares CN's Chicago Subdivision from Harvey, Illinois, to Munster, Indiana (Metra 2006a).

Metra is studying the feasibility of a commuter rail service on the proposed Suburban Transit Access Route (STAR) Line. This proposed rail line would run north from Joliet to Hoffman Estates, Illinois, then east along Interstate 90 to O'Hare International Airport, alongside approximately 36 miles of existing EJ&E rail line (see Figure 2.1-4, Passenger and Commuter Rail System, above). Metra's plans for the STAR Line would include using the existing EJ&E corridor for commuter rail operations (Metra 2007c).

Metra is also planning to extend service from downtown Chicago to the vicinity of Chicago Heights, Illinois via commuter rail (Metra 2006b). Metra's proposed SouthEast Service would use an existing UP rail line and would potentially cross CN's Chicago and Elsdon/South Bend subdivisions and EJ&E's eastern subdivision at Chicago Heights.

In addition, Metra is planning to expand service on two existing routes, UP Northwest and UP West. Metra's proposed upgrade of the UP Northwest line, which crosses the EJ&E rail line at Barrington, Illinois, would add three stations and seven commuter trains to this rail line (Metra 2007d). Metra's proposed upgrade of the UP West line, which crosses the EJ&E rail line at West Chicago, would add an as yet undetermined number of trains in the morning peak hours (Metra 2007e).

### 2.1.4.3 NICTD

NICTD owns and operates the South Shore Line, which provides commuter rail service from South Bend, Indiana, to Kensington, Illinois. The South Shore Line uses a portion of Metra's Electric District to provide access from Kensington to Millennium Station in downtown Chicago. NICTD operates 41 weekday trains (20 westbound and 21 eastbound) (NICTD 2007a). In 2007, NICTD operated nearly 13,000 trains, with a ridership of over 4.2 million passengers (NICTD 2007b). NICTD crosses CN's Chicago Subdivision at Kensington Station in Chicago and crosses EJ&E's Eastern Subdivision at Gary, Indiana.

NICTD is conducting a study to potentially expand commuter service from Valparaiso and Lowell, Indiana, to Chicago. Three of the alternatives would consist of expanded passenger rail service on Chicago Fort Wayne and Eastern, CN, CSX, and NS rail lines. The expanded service would begin with eight to 10 trains daily. The number of trains operating on each rail line would be adjusted according to passenger demand. The fourth alternative would utilize bus service to transport passengers to the nearest South Shore Line station, where they would transfer to existing rail service (NICTD 2006).

## 2.2 Proposed Action

The Applicants are seeking the Board's authorization under 49 USC 11323-11325 to acquire control of EJ&E's land, rail, and related assets west of the centerline of Buchanan Street in Gary, Indiana, along with the Dixie and hump leads located east of Buchanan Street (Applicants 2007a). East of the centerline of Buchanan Street, EJ&E would retain all of its land, rail, and related assets (with the exception of the real property and related fixtures associated with the Dixie and hump leads) and would change its name to Gary Railway Company. U.S. Steel would continue to own and operate Gary Railway Company.

#### What are the Dixie and hump leads?

Leads (or lead track) are trackage connecting a rail yard or an intermodal hub with the main line. The Dixie and hump leads are two lead tracks providing access to Kirk Yard in Gary, Indiana.

Under the Proposed Action, the Applicants would shift the majority of its rail traffic from CN's five subdivisions in Chicago onto the EJ&E rail line. The Applicants would also connect the five CN subdivisions that now converge in Chicago, improve existing connections, and add capacity to the EJ&E rail line. According to the Application, the Proposed Action would provide CN with a continuous route around Chicago and would improve CN rail traffic in the Chicago metropolitan area (see Section 2.2.1, Proposed Changes in Rail Line Operations, below).

The Applicants propose to invest approximately \$100 million in capital improvements, including construction activities related to operational efficiency at six locations and installing 19 miles of double track. The new double track would be constructed in five areas within or near existing EJ&E rail line right-of-way (ROW) (see Section 2.2.2, Proposed New Construction, below).

The Applicants propose to upgrade and increase activity at Kirk and East Joliet yards. CN intends to reduce switching that now occurs at CN's Glenn, Hawthorne, Schiller Park, and Markham yards and the BRC Clearing Yard (see Section 2.2.3, Proposed Changes in Yard Operations, below).

The Applicants do not anticipate abandoning any rail lines as part of the Proposed Action (see Section 2.2.4, Other Related Actions, below).

As part of its environmental review responsibilities, SEA must analyze potential changes resulting from the Proposed Action and must identify potential environmental effects that those changes would cause. However, railroads have the flexibility to operate via their most efficient routings so as to meet the needs of their shippers. Existing railroads ordinarily can make improvements to their rail lines or rail facilities, add additional trackage to better serve their shippers, and reroute, increase, or decrease their level of operations on particular lines without Board approval or an environmental review. Therefore, in railroad acquisition cases, SEA generally only performs environmental impact analyses for the impacts expected from traffic changes that would not occur but for the approval of the Proposed Action within a reasonably foreseeable time frame.

Construction activities that are designed to improve operational efficiency do not require prior Board approval unless the construction would enable the railroad to penetrate or invade a new market. Even if such construction activities do not require separate Board authorization, SEA addresses the potential environmental effects of the proposed construction in the environmental review process for a proposed acquisition if the construction would not take place but for the approval of the proposed acquisition of control (Board 2008b).

## **2.2.1 Proposed Changes in Rail Line Operations**

Under the Proposed Action, CN would re-route its trains traveling through the Chicago metropolitan area to the EJ&E rail line. The following paragraphs discuss the proposed changes in train traffic volume and the planned phased integration of the rail traffic levels described in the Applicants' Operating Plan, which is based on 2006 EJ&E and CN train traffic levels, and additional rail traffic that CN believes can be reasonably predicted (Applicants 2007a).

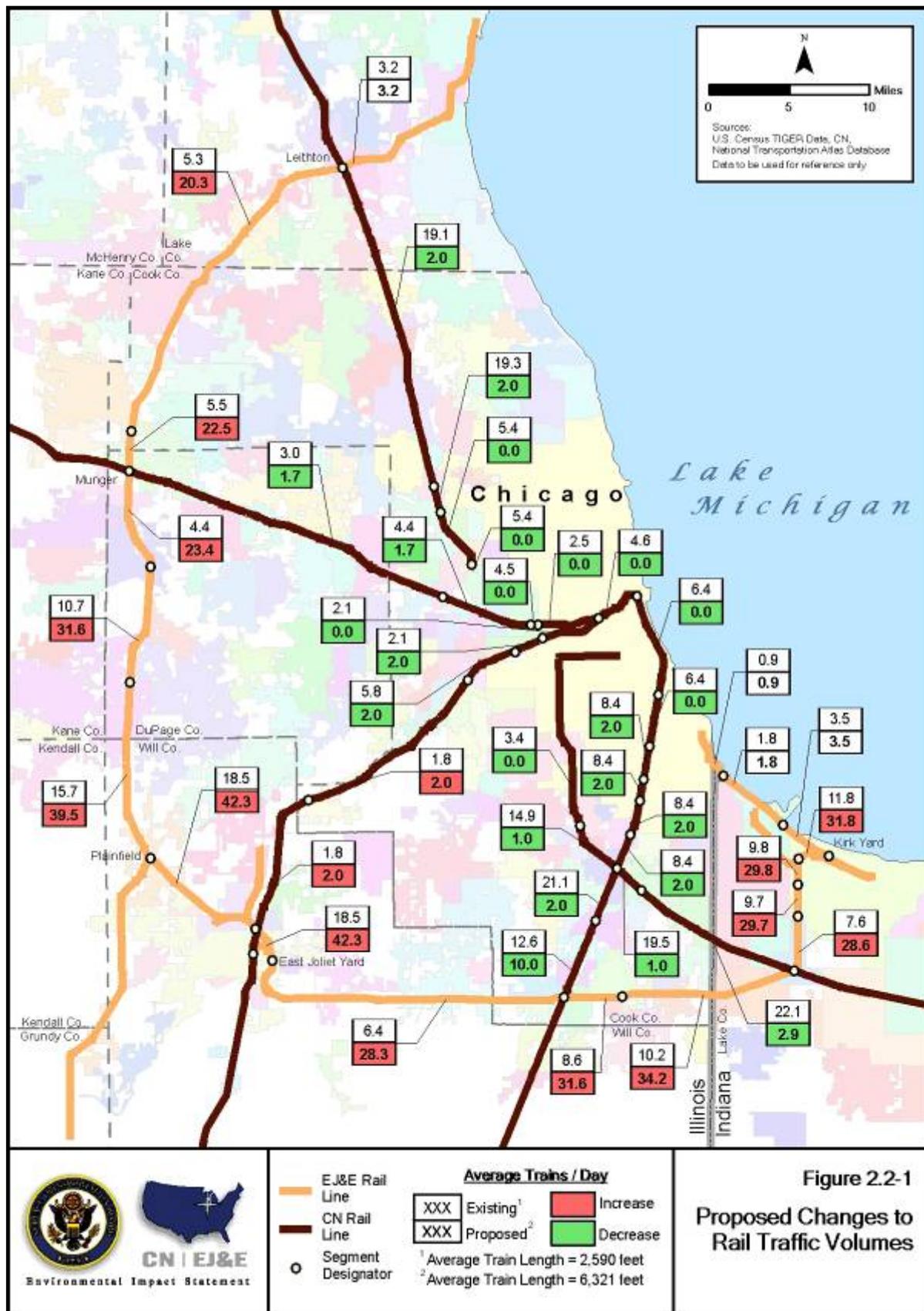
### ***2.2.1.1 Proposed Changes in Train Traffic Volume***

Instead of continuing to move its trains into and out of Chicago, CN would shift its trains from its five subdivisions in Chicago metropolitan area to the EJ&E rail line on the outskirts of Chicago if the Proposed Action is authorized and implemented (Applicants 2007a).

With the proposed operational changes, the Applicants anticipate that the number of trains on most of CN's rail lines inside the EJ&E arc would decrease as the number of trains on the EJ&E rail line increases, potentially benefiting Chicago by reducing freight train congestion within the Chicago Terminal District (Applicants 2007a). Figure 2.2-1, Proposed Changes to Rail Traffic Volumes, below, shows the number of trains presently operated on EJ&E rail line segments that would be affected as well as the number of trains CN would operate on those rail line segments under the Proposed Action. In general, traffic on the EJ&E rail line would increase by approximately 15 freight trains per day from Leithton (near Mundelein, Illinois) to West Chicago and by an average of 15 to 24 freight trains per day from West Chicago to Gary. The Applicants anticipate changes in train routing and traffic to be implemented over a period of three years should the Proposed Action be approved and implemented. See Table 2-7, following Figure 2.2-1, below, for the proposed changes in train traffic volumes on individual EJ&E rail line segments. See Figure 2.1-3, above, for the rail station locations.

The Applicants state that re-routing CN trains onto the EJ&E rail line would free up capacity on CN's Waukesha, Freeport, Joliet, Chicago, and Elsdon subdivisions inside the EJ&E arc (see Figure 2.2-1, Proposed Changes to Rail Traffic Volumes, below, and Table 2-8, Proposed Changes in Train Traffic Volume on CN Rail Lines, following Figure 2.2-1 and Table 2-7, below). For example, on CN's Waukesha Subdivision, the rail line segment between Leithton and Schiller Park currently averages 19.1 freight trains per day. Train traffic on this subdivision would decrease to an average of 2.0 freight trains per day after the re-routing of trains as a result of the Proposed Action. Similarly, on CN's Elsdon Subdivision, the rail line segment between Griffith and Thornton Junction (near South Holland, Illinois) currently has an average of 22.1 freight trains per day. The Applicants project a reduction to 2.9 trains per day if the Proposed Action is approved and implemented (Applicants 2008d). The Applicants anticipate these changes in train routing and traffic to be implemented over a period of three years should the Proposed Action be approved and implemented.

Further, the Applicants state that the proposed operational changes on the CN rail lines that would occur under the Proposed Action would reduce congestion on both the BRC and IHB rail lines that bisect densely populated neighborhoods in and around Chicago (Applicants 2007a). Although the Applicants do not provide data on specific train volumes, decreased use of the BRC Clearing Yard as a result of the Proposed Action (as described in Section 2.2.3, Proposed Changes in Yard Operations, below) would reduce traffic on the BRC rail lines.



<b>Table 2-7. Proposed Changes in Train Traffic Volume on the EJ&amp;E Rail Line</b>				
<b>From Station</b>	<b>To Station</b>	<b>Existing No. of Trains</b>	<b>Anticipated Change</b>	<b>Projected Total</b>
<b>Western Subdivision</b>				
Rondout (near Green Oaks, Illinois)	Leithton (near Mundelein, Illinois)	3.2	0.0	3.2
Leithton	Spaulding (near Elgin, Illinois)	5.3	15.0	20.3
Spaulding	Munger (near Wayne, Illinois)	5.5	17.0	22.5
Munger	West Chicago (near West Chicago, Illinois)	4.4	19.0	23.4
West Chicago	East Siding (near Eola, Illinois)	10.7	20.9	31.6
East Siding	Walker (near Plainfield, Illinois)	15.7	23.8	39.5
Walker	Bridge Junction (near Crest Hill, Illinois)	18.5	23.8	42.3
Bridge Junction	Rock Island Junction (near Joliet, Illinois)	18.5	23.8	42.3
<b>Eastern Subdivision</b>				
Rock Island Junction	Matteson (near Matteson, Illinois)	6.4	21.9	28.3
Matteson	Chicago Heights (near Chicago Heights, Illinois)	8.6	23.0	31.6
Chicago Heights	Griffith (near Griffith, Indiana)	10.2	23.9	34.2
Griffith	Van Loon (near Gary, Indiana)	7.6	21.0	28.6
Van Loon	Ivanhoe (near Gary, Indiana)	9.7	20.0	29.7
Ivanhoe	Cavanaugh (near Gary, Indiana)	9.8	20.0	29.8
Cavanaugh	Gary (near Gary, Indiana)	11.8	20.0	31.8
Gary	Indiana Harbor (near East Chicago, Indiana)	3.5	0.0	3.5
Indiana Harbor	Hammond (near Hammond, Indiana)	1.8	0.0	1.8
Hammond	South Chicago (in Chicago)	0.9	0.0	0.9

Source: Applicants (2007a), STB Finance Docket No. 35087, Canadian National Railway Company and Grand Trunk Corporation—Control—EJ&E West Company, Railroad Control Application, October 30, 2007.

<b>Table 2-8. Proposed Changes in Train Traffic Volume on CN Rail Lines</b>				
<b>From Station</b>	<b>To Station</b>	<b>Existing No. of Trains</b>	<b>Anticipated Change<sup>a</sup></b>	<b>Projected Total</b>
<b>Waukesha Subdivision</b>				
Leithton (near Mundelein, Illinois)	Schiller Park (near Schiller Park, Illinois)	19.1	(17.1)	2.0
Schiller Park	Tower B12 (near Franklin Park, Illinois)	19.3	(17.3)	2.0
Tower B12	Forest Park (near River Forest, Illinois)	5.4	(5.4)	0.0
Forest Park	Madison Street (near River Forest, Illinois)	5.4	(5.4)	0.0
<b>Freeport Subdivision</b>				
Munger (Wayne, Illinois)	Broadview (near Broadview, Illinois)	3.0	(1.3)	1.7
Broadview	Hawthorne (near Cicero, Illinois)	4.4	(2.7)	1.7
Hawthorne	Belt Crossing (near Cicero, Illinois)	4.5	(4.5)	0.0
Belt Crossing	Bridgeport (in Chicago)	2.5	(2.5)	0.0
Bridgeport	16 <sup>th</sup> Street (in Chicago)	4.6	(4.6)	0.0
<b>Joliet Subdivision</b>				
Joliet (near Joliet, Illinois)	Argo (near Summit, Illinois)	1.8	0.2	2.0
Argo	Glenn Yard (in Chicago)	5.8	(3.8)	2.0
Glenn Yard	Lemoyne (in Chicago)	2.1	(0.1)	2.0
Lemoyne	Bridgeport (in Chicago)	2.1	(2.1)	0.0
<b>Chicago Subdivision</b>				
Matteson (near Matteson, Illinois)	Markham (near Harvey, Illinois)	12.6	(2.6)	10.0
Markham	Harvey/CN Junction (near Harvey, Illinois)	21.1	(19.1)	2.0
Harvey/CN Junction	Riverdale (near Riverdale, Illinois)	8.4	(6.4)	2.0
Riverdale	94 <sup>th</sup> Street (in Chicago)	8.4	(6.4)	2.0
94 <sup>th</sup> Street	67 <sup>th</sup> Street (in Chicago)	6.4	(6.4)	0.0
67 <sup>th</sup> Street	16 <sup>th</sup> Street (in Chicago)	6.4	(6.4)	0.0
<b>Elsdon Subdivision</b>				
Griffith (near Griffith, Indiana)	Thornton Junction (near South Holland, Illinois)	22.1	(19.2)	2.9
Thornton Junction	Harvey/CN Junction	19.5	(18.5)	1.0
Harvey/CN Junction	Blue Island (near Blue Island, Illinois)	14.9	(13.9)	1.0
Blue Island	Hayford (in Chicago)	3.4	(3.4)	0.0

Source: Applicants (2007a), STB Finance Docket No. 35087, Canadian National Railway Company and Grand Trunk Corporation—Control—EJ&E West Company, Railroad Control Application, October 30, 2007.

Note:

<sup>a</sup> Numbers enclosed in parentheses denote a negative change.

### ***2.2.1.2 Discussion of Reasonableness of Applicants' Operating Plan***

Applicants submitted an Operating Plan with their application. A number of commenters raised concerns that the train traffic numbers in the Operating Plan are too low for use in preparing this Draft EIS. In response, SEA performed a detailed independent evaluation of the Applicants' train traffic data. As discussed in more detail in Chapter 4 and Appendix B, SEA assessed the traffic projections in the Applicants' Operating Plan using three approaches.

#### ***Review of Applicants' Operating Plan***

First, SEA carefully conducted an independent review of all of the rail traffic projection data furnished by CN in the Application including the Operation Plan (Applicants 2007a), and assessed standard railroad industry information sources such as Federal Railroad Administration (FRA) publications and maps to determine if the Applicants' rail traffic projections are reasonable. As part of SEA's analysis, SEA conducted interviews with CN and EJ&E operating personnel, and made a number of site visits to the area. From review of the Application, SEA obtained relevant data such as the speed of train movements over the highway/rail at-grade crossings, train length, and the number of locomotives per train (horsepower-per-ton ratio) that CN proposes for its operations under the Proposed Action (Applicants 2007a). In interviews with CN and EJ&E personnel, SEA focused on understanding how the Applicants prepared their Operating Plan, CN's interaction with other railroads, and CN's fundamental operating philosophy. This was important because interaction with other railroads occurs at interlockings (that is, a junction where trains change from one track to another) located at Barrington, Spaulding, West Chicago, Rock Island Junction, and Chicago Heights, Illinois, and Griffith, Indiana. Certain of these locations are also used as interchanges of trains and freight cars between railroads. SEA's site visits included on railroad ROW inspection of the EJ&E rail system.

On March 25, 2008, SEA requested the Applicants supplement the information provided in the Application with their best estimate of the reasonably foreseeable train traffic that would occur should the Board approve the Proposed Action. The Applicants provided a response on April 21, 2008, and a supplemental response on May 15, 2008, arguing that SEA should use the rail traffic projections in the Operating Plan for the Draft EIS. SEA's information request and applicants' response are included in Appendix Q. In general, the Applicants described the existing regulatory environment under which railroads currently operate, and they included an analysis of CN's and EJ&E's ability to move much of the same traffic projected in their Operating Plan today using trackage rights agreements without the Board's approval of the Proposed Action. The Applicants noted that, unlike some previous control proceedings that have come before the Board, CN is not seeking control of the EJ&E rail lines to acquire EJ&E rail traffic that it would not otherwise be able to serve, but primarily is seeking the acquisition and control authority to serve its existing rail traffic more efficiently. The Applicants also discussed the real world challenges associated with forecasting rail volumes beyond three to five years and explained that the number of trains reflected in the Operating Plan likely overstates the number of trains that would operate on the EJ&E rail line as a result of the Proposed Action. SEA evaluated the information provided by the Applicants in its responses as well as the comments related to train volumes submitted during the scoping period. Neither the comments received to date nor SEA's independent analysis show that better or more reliable information on the Applicants' proposed train numbers than the information provided in the Operating Plan is available.

### *Evaluation of EJ&E Rail Line Capacity*

Second, SEA conducted an independent evaluation of CN's proposed operation of the EJ&E rail line using three separate approaches. SEA performed a so-called constraint analysis, which was a qualitative evaluation of rail line capacity in which SEA considered one segment of the EJ&E rail line and evaluated how several different factors would affect the segment capacity. Because SEA's constraint analysis predicted that there could be some concerns related to adequate capacity (and hence the capacity of the entire EJ&E rail line), SEA conducted a Line Occupancy Index (LOI) analysis, which was a numeric, rather than qualitative, evaluation of the capacity of the largest portion of the EJ&E rail line (see Section 2.2.1.3, below, for a discussion of these two analyses, as well as Chapter 4, Section 4.1, Rail Operations, and Appendix B, Rail Operations Analysis, for further detail). Finally, SEA used the Rail Traffic Controller (RTC) model, an industry-standard dispatching model, to analyze the Proposed Action (see Chapter 4, Section 4.1, and Appendix B for further detail on the RTC model). As discussed below, all this analysis confirms that CN's train traffic numbers in the Operating Plan are reasonable.

### *Economic Forecasts of Potential Train Traffic Growth*

Third, because of the resurging growth of the rail industry in recent years and its importance to the national economy, SEA examined the Applicants' Operating Plan by comparing the projected train volumes in it to other current economic forecasts of freight rail traffic (see Chapter 4, Section 4.1, Rail Operations, for further detail). Using this approach, SEA evaluated the reasonableness of the Applicants' projected volumes in light of national growth trends.

With respect to the analysis, it is important to recognize the challenges of forecasting future rail volumes. The amount of rail traffic that actually moves over a particular rail line depends on shipper demand. CN operates in a competitive environment: CN competes with other railroads for certain shipping needs, and the entire rail industry competes with various other modes of transportation (trucks, barges, and pipelines) to satisfy the nation's freight transportation needs. In the long term, USDOT expects demand for freight rail transportation to increase. Historically, freight rail volume growth has generally matched the nation's gross domestic product (GDP) growth, which has historically averaged about 2 percent. However, applying a forecasted growth rate at the national level is far different than forecasting the specific level of activity on an individual rail line. CN proposes that EJ&E rail line would be one part of a much larger rail system. Moreover, CN itself is now, and under the Proposed Action would remain, but one part of the nation's rail system.

It is also important to note that railroads have several different approaches to responding to increased demand. First, railroads have historically increased the load or weight that an individual rail car can carry. The freight railroads are currently in the process of transitioning from a loaded rail car weighing 286,000 pounds to a loaded rail car weighing 315,000 pounds. Second, railroads are developing technologies that could allow for an increase in the number of rail cars per train. In other words, a two percent increase in freight on a particular rail line would not necessarily equate to a 2 percent increase in the number of freight trains, because some, if not all of that increase could be met by increasing the number of cars, and the weight that individual cars can carry on existing trains.

### 2.2.1.3 Assessment of a Maximum Capacity Analysis of the EJ&E Rail Line

During the scoping period, EPA and other commenters suggested that SEA analyze maximum capacity on the EJ&E rail line. The following sections summarize information on the environmental analysis that SEA performed in response to these requests and present SEA's conclusion that CN's ability to expand capacity significantly beyond that projected in the Applicants' Operating Plan, as a result of the Proposed Action, would be constrained by various bottlenecks on the EJ&E rail line. Chapter 4, Section 4.1, Rail Operations, contains an expanded discussion, and Appendix B contains the detailed analysis.

#### *Requests for a Maximum Capacity Analysis*

EPA, Barrington Area Council of Governments (BACOG), and other commenters suggested that SEA's analysis include all of the capacity that would be created by the Proposed Action, including the proposed new connections and double track discussed in Section 2.2.2, below. According to these commenters, this analysis would be useful in that it would provide an estimate of the upper limit of train traffic that could be handled on the EJ&E rail line.

NEPA does not require a "worst case analysis," which is essentially what an assessment of maximum capacity would be (see *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 [1989]). Moreover, looking at the maximum capacity of a rail line differs from the approach that SEA has followed previously. Nevertheless, given EPA's, BACOG's, and the other commenters' suggestions, questions that commenters have raised regarding the Applicants' train estimates, the difficulty of forecasting future train traffic on a particular rail line, and the unique circumstances presented by train traffic in the Chicago metropolitan area, SEA determined that a maximum capacity analysis should be performed in this case to provide an estimate of the potential upper limit of train traffic on the EJ&E rail line. SEA further determined that it could use this analysis as a basis for comparing and verifying the train traffic levels in the Applicants' Operating Plan.

#### *Issues Related to Estimating a Rail Line Segment's Capacity*

Estimating a rail line segment's capacity is not an exact science. It requires the use of complex modeling simulation software, such as the RTC model, coupled with experience. Many railroads, as well as agencies that would like to add passenger trains to a freight rail network, use dispatch simulation software to determine how a rail system would function if a certain number of trains were added to the existing traffic flow. SEA performed the RTC model, described below. In this manner, the railroad or SEA can test improvements to its infrastructure using the proposed traffic volumes to assess the performance levels of the future rail system without first making these improvements.

Factors that contribute to rail line capacity include:

- Number of mainline tracks
- Length and location of passing sidings
- Customers served from the main line
- Trains entering and departing the main line
- Rail/rail at-grade crossing interlockings
- Interchange activities
- Track speed
- Curves
- Condition of the track
- Signal system
- Location of control points
- Length of trains

- Speed differentials between trains
- Maintenance activities
- Method of granting movement authorities
- Permanent speed restrictions
- Crew change locations
- Weather
- Grade

Because estimating capacity is an inexact science and it depends on so many variables, SEA decided that the most reasonable way to proceed here would be to perform a constraint analysis, an LOI analysis, and an RTC model.

#### *Rationale for Performing a Constraint Analysis*

A constraint analysis is based on determining the location of any bottlenecks (that is, points or areas of congestion where traffic levels could not be expanded beyond a certain point). Should the Proposed Action be approved and implemented, the EJ&E rail line would become a link within CN's much larger transcontinental system. The maximum number of trains that could flow through this link in the system would be limited by individual constraints (bottlenecks) along the EJ&E rail line. Therefore, SEA determined that a constraint analysis would be the appropriate method for evaluating the potential capacity of the proposed EJ&E rail system. As discussed in more detail in Appendix B, SEA's analysis involved looking at several segments of the EJ&E rail line and the issues that impact the amount of rail traffic that each rail line segment can handle in order to determine the appropriate bottleneck (or bottlenecks) to focus on in detail.

#### *Location of the Bottlenecks to Be Studied*

For the constraint analysis, SEA obtained an understanding of CN's operational methodology by inspecting the EJ&E rail line, reviewing track charts and timetables, reviewing the Applicants' Operating Plan and the plans for the proposed improvements, and discussing proposed operations with CN personnel. Based on traffic flow, operational issues, and physical constraints, SEA decided to focus on an 11-mile segment of the EJ&E rail line between Walker (near Plainfield, Illinois) and Rock Island Junction (near Joliet, Illinois), near the Des Plaines River Bridge (Bridge 198 located near milepost 1.7 on EJ&E's Western Subdivision). Although this segment is not the only bottleneck on the EJ&E rail line, SEA chose it to evaluate in detail because this 11-mile rail line segment has several operational issues that would constrain rail system capacity along the entire EJ&E rail line whether or not the Proposed Action is approved and implemented. The constraints along this rail line segment include the following:

- Des Plaines River Bridge – The raising and lowering of the bridge varies seasonally and is dependent on flow and schedule of waterway traffic, which takes priority over rail traffic.
- East Joliet Yard – The movement of trains through the yard is restricted by speed and availability of through-tracks, as well as the increase in switch trains that CN projects would occur under the Proposed Action.
- Multiple train management systems – Three separate train management systems (Centralized Traffic Control, Track Warrant Control, and Yard Limits) used in this 11-mile rail line segment affect the fluid movement of trains.
- Coal train operations – The EJ&E rail line tracks in the Joliet area are in use a minimum of 10 percent of the time for coal train movement, which limits the ability to add rail traffic on this portion of the EJ&E rail line.

- BNSF intermodal trains – BNSF operates and would continue to operate six to seven intermodal trains per day from Eola, Illinois to Joliet, thus limiting the amount of CN trains that could use the EJ&E rail line.
- Local rail-served industries at Walker – Mainline capacity is reduced by the switching for these industries that takes place on the EJ&E rail line at Walker (near Plainfield, Illinois).
- Manual switch on the Illinois River Line – On the single track between Walker and Turner, the switch requires trains to stop and manually reset the switch, which acts as a train traffic constraint.
- Rock Island Junction with Metra – The Metra-controlled interlocking (MP 0.7) would allow only minimal switch activity at the south end of East Joliet Yard.
- Lack of suitable train-parking locations east of East Joliet Yard – There is a lack of suitable train-staging locations that could accommodate trains up to 10,000 feet.

#### *Methodology for the Constraint Analysis*

To perform the constraint analysis and further test the assumptions in the Applicants' Operating Plan, SEA calculated the Line Occupancy Index (LOI) for of the entire the EJ&E rail line. This analysis calculates the amount of time (or capacity of the line) that the passage of each train would consume as it passes through a particular rail line segment of the EJ&E rail line. Chapter 4, Section 4.1, Rail Operations, and Appendix B present the detailed analysis and data.

#### *Conclusions from the Constraint and Line Occupancy Index Analyses*

As discussed in detail in Chapter 4, Section 4.1, Rail Operations, and Appendix B, Rail Operations Analysis, the constraint and LOI analyses show that should the Board approve the Proposed Action and the Applicants implement their Operating Plan, the Applicants would be operating at or very close to capacity in the West Chicago area, near Walker, at the Des Plaines River Bridge, and within East Joliet Yard. Therefore, the EJ&E rail line capacity and the train traffic levels proposed by the Applicants are essentially the same. In these circumstances SEA determined that the evaluation of the operations proposed in the Operating Plan under the Proposed Action represents or is close to the maximum capacity of the EJ&E rail line or the rail traffic levels that would move on the line if CN takes full advantage of the potential transportation benefits it would gain under the Proposed Action. Accordingly, SEA determined that the Applicants' Operating Plan presents a reasonable basis on which to conduct environmental impact analyses for this EIS.

#### *Conclusions from the Rail Traffic Controller Model*

SEA used the RTC model to analyze the capacity of the EJ&E rail line. The RTC Model is an industry-standard dispatching model that evaluates the ability of trains to operate on the physical plant of the EJ&E rail line (that is, the horizontal and vertical alignment, as well as the locations of highway/rail at-grade crossings, interlockings, and turnouts). The output of the RTC model is a delay ratio, which indicate whether the rail system is overloaded with trains, or that trains are of excess length or insufficient horsepower for the rail system, or all three of these. The RTC model analysis conducted by SEA confirms that the Applicants would operate on the EJ&E rail line at or very near to capacity. Based on this analysis, SEA would not expect any substantial growth in the projected rail traffic volumes beyond the Applicants' Operating Plan (see Chapter 4, Section 4.1, Rail Operations, and Appendix B, Rail Operations Analysis, for further detail). The RTC Model confirms SEA's determination that the Applicants' Operating Plan presents a reasonable basis on which to conduct environmental impact analyses for this EIS.

#### **2.2.1.4 Planned Phased Integration of Applicants' Operating Plan**

If the Proposed Action is approved and implemented, the Applicants' Operating Plan shows that they intend to pursue phased integration of their plans for the EJ&E rail line, bringing specific trains onto the EJ&E rail line in three successive phases, as follows (Applicants 2007a):

- Phase 1 (beginning the first day of implementation of the Proposed Action)
  - Service on EJ&E's Western Subdivision between Waukegan and Leithton, Illinois River Line, Whiting Branch, and Lake Front Line (see Table 2-3, EJ&E Track Miles, above, for a description of the main line and branch lines) would not change, nor would local rail service.
  - Where direct connections between CN and EJ&E rail lines already exist, CN would re-route trains traveling between CN rail lines onto EJ&E's Western and Eastern subdivisions.
  - CN would begin operating four switch trains at Kirk Yard (in Gary, Indiana)—two inbound and two outbound.
- Phase 2 (includes the first full construction season)
  - Service on EJ&E's Western Subdivision between Waukegan and Leithton, Illinois River Line, and Whiting Branch (see Table 2-3, EJ&E Track Miles, above, for a description of the main line and branch lines) would not change, nor would local rail service.
  - CN would construct new rail line connections at Griffith, Indiana, Ivanhoe, Indiana, and Kirk Yard (see Section 2.2.2, Proposed New Construction, below).
  - CN would begin installing double track at Leithton (near Mundelein, Illinois), East Siding (near Eola, Illinois), and Frankfort, Illinois (see Section 2.2.2.2, Double Track, below).
  - CN would re-route trains from its rail lines onto EJ&E's Western and Eastern subdivisions after completing the necessary construction activities at Griffith, Ivanhoe, and Kirk Yard and installing double track at Leithton, East Siding, and Frankfort.
  - An improved connection and hence better service between CN and NS rail lines would become available (through Kirk Yard).
  - CN would add a total of two additional switch trains at Kirk Yard and two additional switch trains at East Joliet Yard (in Joliet, Illinois)—one inbound and one outbound at each yard.
- Phase 3 (includes the second full construction season)
  - Service on EJ&E's Western Subdivision between Waukegan and Leithton, Illinois River Line, and Whiting Branch (see Table 2-3, EJ&E Track Miles, above, for a description of the main line and branch lines) would not change.
  - CN would construct new rail line connections at Munger (near Wayne, Illinois), Joliet, and Matteson (see Section 2.2.2.1, Rail Connections, below).
  - CN would complete installing double track at Leithton, East Siding, and Frankfort (see Section 2.2.2.2, Double Track, below).
  - CN would fully implement the proposals in the Operating Plan and would re-route CN trains onto EJ&E's Western and Eastern subdivisions in accordance with the Operating Plan.

- Longer trains would operate on EJ&E's Lake Front Line (along Lake Michigan from Gary, Indiana, to South Chicago, Illinois) to accommodate additional interchange traffic.
- CN trains would no longer use the Air Line in the Chicago metropolitan area.

It is important to note that although the Applicants propose phased implementation of the Proposed Action, this Draft EIS presents the analysis of the potential environmental effects that would occur after full implementation of the Proposed Action (that is, following Phase 3), should the Board grant the Applicants' proposal, rather than addressing the potential environmental effects of interim Phases 1 and 2. Analyzing the potential environmental effects after full implementation of the Proposed Action represents the maximum potential effects on the environment.

#### ***2.2.1.5 Time Frame for Train Traffic Projections***

During scoping, many commenters suggested that the Applicants' three-year forecasting period was too short and suggested that SEA assess time horizons of 15 or 20 years or more in the Draft EIS. In the Final Scope of Study for the EIS, SEA determined that the time horizons suggested by the commenters are too long to produce reliable information and that the 15-year or more time horizons would far exceed any time horizons used in prior Board proceedings. At the same time, the Final Scope of Study indicated that SEA intended to use year 2015 projections to analyze the potential effects of increased train traffic because it was not clear that the three-year projections in the Application would provide enough years of data to ensure thorough consideration of potential traffic increases that would result from the Proposed Action. SEA also noted that it had submitted information requests asking the Applicants for additional information on reasonably foreseeable volumes of traffic that the Applicants anticipate moving onto the EJ&E rail line as a result of the Proposed Action.

As previously noted, the Applicants responded to SEA's information requests on April 21, 2008 and May 15, 2008, explaining that, in CN's view, the traffic levels reflected in the Applicants' Operating Plan (taking into account a three-year implementation time line and assuming, without any special study, a pro forma 2 percent annual growth rate for EJ&E's existing traffic) provide the most sound basis available for analyzing the environmental impacts of potential traffic increases that would result from the Proposed Action (see SEA's information request, and Applicants' response in Appendix Q). The Applicants also stated that the use of a three-year time horizon was consistent with the Board's practice in other acquisition cases. The Applicants pointed out that forecast accuracy in general decreases rapidly as the forecast horizon grows. According to the Applicants, any attempt to predict rail traffic more than a few years into the future, especially over individual rail line segments, would be inaccurate and arbitrary because of the need not only to estimate volumes of likely future rail traffic, but also to deal with a number of issues that are difficult to predict in advance, such as routing, modal shifts, overall economic growth, growth in the industries in question, and energy prices. The Applicants contended that any additional study of traffic projections beyond that, in the end, would be of limited value in providing more accurate information on traffic flows than was already available.

Based on further analysis presented above and in Chapter 4, Section 4.1, Rail Operations, including SEA's constraint analysis and careful review, SEA has concluded that the train traffic forecast presented in the Applicants' Operating Plan is reasonable and represents the best information available. As discussed in Sections 2.2.1.2 and 2.2.1.3, above, SEA has independently assessed the Applicants' rail traffic projections and evaluated the EJ&E rail line capacity based on its constraint analysis, LOI evaluation, and use of the RTC model. SEA has determined that the Applicants propose to operate at or close to capacity on the EJ&E rail line. Thus, there would be no point in undertaking an additional study to make 2015 traffic projections, because the capacity analysis indicates that the train traffic levels in the Applicants' Operating Plan are reasonable and are unlikely to be exceeded before 2015. As a part of its analysis, SEA looked at rail freight demand and determined that the train

traffic estimates in the Applicants' Operating Plan fall within the reasonable range of future train traffic. SEA also considered potential national rail freight trends to determine if there are any reasonably foreseeable rail shipping patterns that SEA should factor into its evaluation and SEA took into account the myriad of factors that can affect demand for rail traffic on a particular line and the difficulty of making projections into the future. Based on all its analysis, SEA concluded that the train traffic in the Applicants' Operating Plan is a reasonable projection of 2015 train traffic levels. As a result, SEA determined that the estimates of future train traffic provided in the Applicants' Operating Plan are appropriate to use as the 2015 estimate of train traffic on the affected rail line segments.

## **2.2.2 Proposed New Construction**

The Applicants intend to use the surplus capacity available on the EJ&E rail line and at the EJ&E yards and also propose approximately \$100 million in capital improvements to accommodate the new rail traffic on the EJ&E line that would result from the Proposed Action. The proposed capital improvements include construction activities related to short new connecting tracks at six locations on the EJ&E rail line to provide CN with the ability to route its trains more efficiently over the EJ&E rail line and to use the EJ&E line to interchange more efficiently with other carriers. In addition, the Applicants would add capacity to the EJ&E line by installing approximately 19 miles of double track (Applicants 2007a).

### **2.2.2.1 Rail Connections**

The Applicants propose to construct connecting tracks at a total of six locations either where CN rail lines intersect the EJ&E line (Munger [near Wayne, Illinois], Joliet [in Illinois], Matteson [in Illinois], and Griffith [in Indiana]) or, as in the case of Ivanhoe (in Indiana) and Kirk Yard (in Gary, Indiana), where they would allow for connection with another rail carrier's rail lines (Applicants 2007a and 2008e). The Applicants have not finalized their proposed design of the six connections, but, to the extent practicable, they intend to stay within the current EJ&E ROW.

The proposed rail connections do not require the Board's authorization prior to construction under 49 USC 10901 (Board 2008b). However, this Draft EIS considers the six proposed connections and reasonable and feasible alternatives (including No-Build Alternatives) as part of the environmental review because they would not occur but for the Proposed Action. To assess potential environmental effects of the connections and their alternative configurations, SEA relied on the Applicants' preliminary plans and on a reasonable estimate of the potential area of ground disturbance (this area is labeled as construction limits on the figures presented in Section 2.4, Rail Connection Alternatives, below). The construction limits noted on each figure are approximate; if the Proposed Action is approved and implemented, the Applicants may revise the construction limits after they have finalized the design of the proposed connections and completed any necessary land acquisition.

**What are construction limits?**

Construction limits are the physical limits of all disturbance due to construction and construction-related activities.

As discussed in Section 2.4, below, SEA has developed alternative configurations for some connections; the public has also proposed alternatives. Section 2.4 also describes the No-Build Alternatives, the Applicants' proposed connections, and alternative configurations of the Applicants' proposed connections that would be reasonable and feasible.

### **2.2.2.2 Double Track**

The Applicants propose to install double track along 19 miles of the EJ&E line (Applicants 2007a and 2008e). Construction of the double track would occur within or near the existing EJ&E ROW at five locations (see Figure 2.2-2, Proposed Double Track Locations, below). Railroads may add trackage within their existing ROW at any time to better serve their customers without prior Board approval. SEA did not analyze alternatives to the proposed locations for the construction of double track because the double track would be needed at specific points to provide additional capacity that would be required to implement Applicants' Operating Plan and because, in some cases, the Applicants' proposed double track would simply connect existing sidings.

However, EPA requested that SEA evaluate extending the length of the proposed double track sections in order to better accommodate the longer trains that the Applicants propose to operate (EPA 2008a). EPA indicated that it was concerned about the potential for longer trains to block highway/rail at-grade crossings. In response, SEA has evaluated the proposed double track locations, and potential suitable train holding locations (that is, locations where a train could be held without blocking a highway/rail at-grade crossing on the EJ&E rail line). On March 7, 2008, SEA requested that the Applicants provide information concerning the suitable holding locations, which the Applicants provided on March 26, 2008 (see Appendix Q). In addition to the information provided by the Applicants, SEA conducted a hi-rail inspection, made several site visits, and reviewed the track charts, aerial mappings, and other off-site information to independently assess the potential suitable train staging locations (where trains are temporarily held stationary by the train dispatcher to avoid blocking grade crossings and overtaking rail system congestion areas). SEA concluded that the train-holding locations proposed by the Applicants would be adequate to handle the train traffic in the Applicants' Operating Plan. In addition, SEA determined that the limiting factor for identifying suitable train-holding locations would be the location of existing highway/rail at-grade crossings, and not the locations of the double track segments themselves. For all these reasons, SEA concluded that there would be no point in assessing any alternative locations for double track.

However, the double track locations are part of the environmental review because they would not occur but for the Proposed Action. Therefore, this Draft EIS does include the potential environmental effects and appropriate analysis of the proposed double track. In undertaking this analysis, SEA relied on the Applicants' preliminary plans for where construction of potential double track would be appropriate and a reasonable estimate of the construction limits. The construction limits noted on each figure below, are approximate; if the Proposed Action is approved and implemented, the limits may be modified after the Applicants have finalized the design of the proposed double track locations. The following sections describe the proposed double track from north to south and counterclockwise around the EJ&E rail line, starting at Leithton (near Mundelein, Illinois) and ending at Frankfort, Illinois.



*Leithton, Illinois, and Diamond Lake Road to Gilmer Road*

Under the Proposed Action the Applicants would increase the number of trains on EJ&E's Western Subdivision at Mundelein (designated as Leithton by the Applicants). To provide additional capacity, the Applicants would install double track at two locations (see Figure 2.2-3, Proposed Double Track—Leithton, and Figure 2.2-4, Proposed Double Track—Diamond Lake Road to Gilmer Road, below):

- At Mundelein (Leithton), in the northwest quadrant of the existing wye-shaped track connecting CN's Waukesha Subdivision with EJ&E's Western Subdivision—0.3 mile of double track would be added, beginning at the existing siding on CN's Waukesha Subdivision (50 feet south of Allanson Road) and continuing around the curve and ending 1,000 feet east of Lake Street (MP 61.1)
- From Diamond Lake Road to Gilmer Road—2.3 miles of double track would be added from 1,100 feet east of Diamond Lake Road (MP 59.3) to 50 feet east of Gilmer Road (MP 57.0) on EJ&E's Western Subdivision

**What is a quadrant?**

A quadrant is any of the four quarters into which an area is divided by two rail lines that intersect each other at right angles.

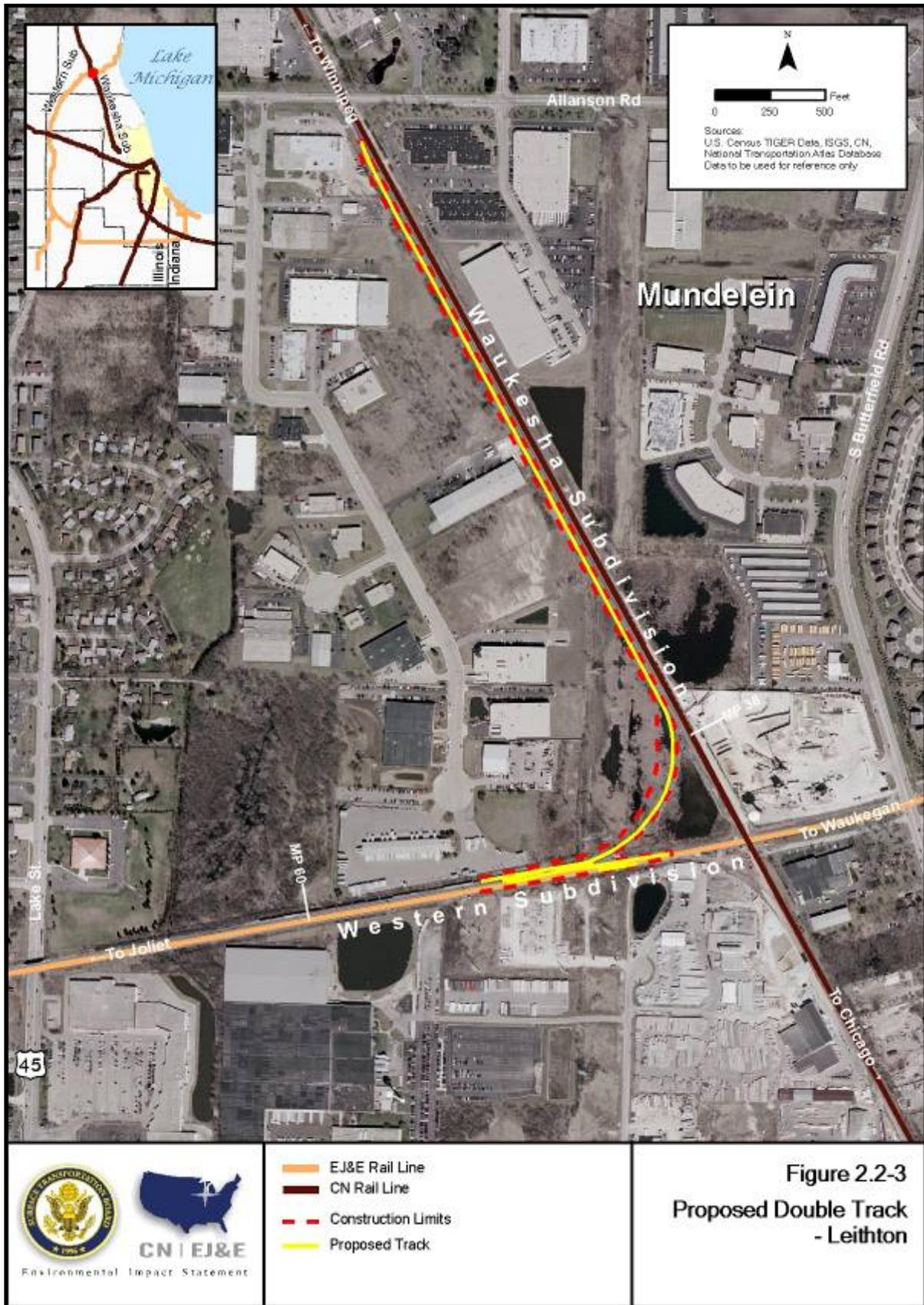
*East Siding to Walker, Illinois*

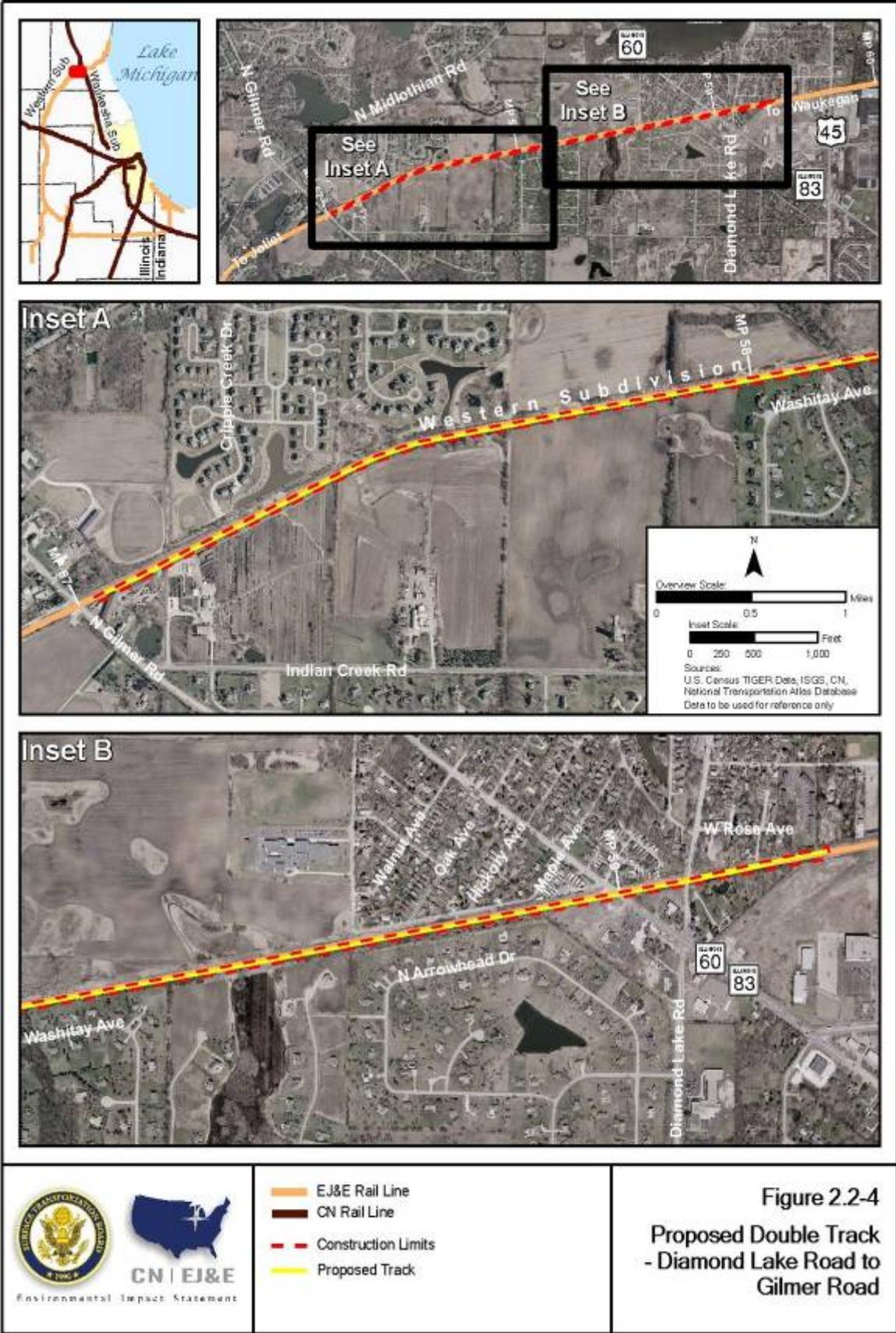
Should the Proposed Action, be approved and implemented, approximately 40 trains per day (consisting of BNSF, CN, and UP traffic) would use EJ&E's Western Subdivision between Eola, Illinois (designated as East Siding by the Applicants) and Plainfield, Illinois (designated as Walker by the Applicants). To connect existing sections of sidings or industrial mainline track, the Applicants would install double track in two locations (see Figure 2.2-5, Proposed Double Track—East Siding to Walker, below):

- From East Siding to West Wolfs Road in Naperville, Illinois—4.6 miles of double track would be added from East Siding (MP 20.7) to 450 feet south of West Wolfs Road (MP 16.1)
- From Normantown to Walker, Illinois —2.3 miles of double track would be added from 450 feet north of 111<sup>th</sup> Street (MP 14.7) to 650 feet south of 127<sup>th</sup> Street (MP 12.4)

*East Joliet to Frankfort, Illinois*

The Applicants have proposed to install double track between the east side of Joliet and Frankfort, Illinois, on EJ&E's Eastern Subdivision. The 9.8 miles of double track would start at the existing double track (MP 1.8) in Joliet and would end at the existing siding (MP 11.6) at Frankfort (see Figure 2.2-6, Proposed Double Track—East Joliet to Frankfort, below).





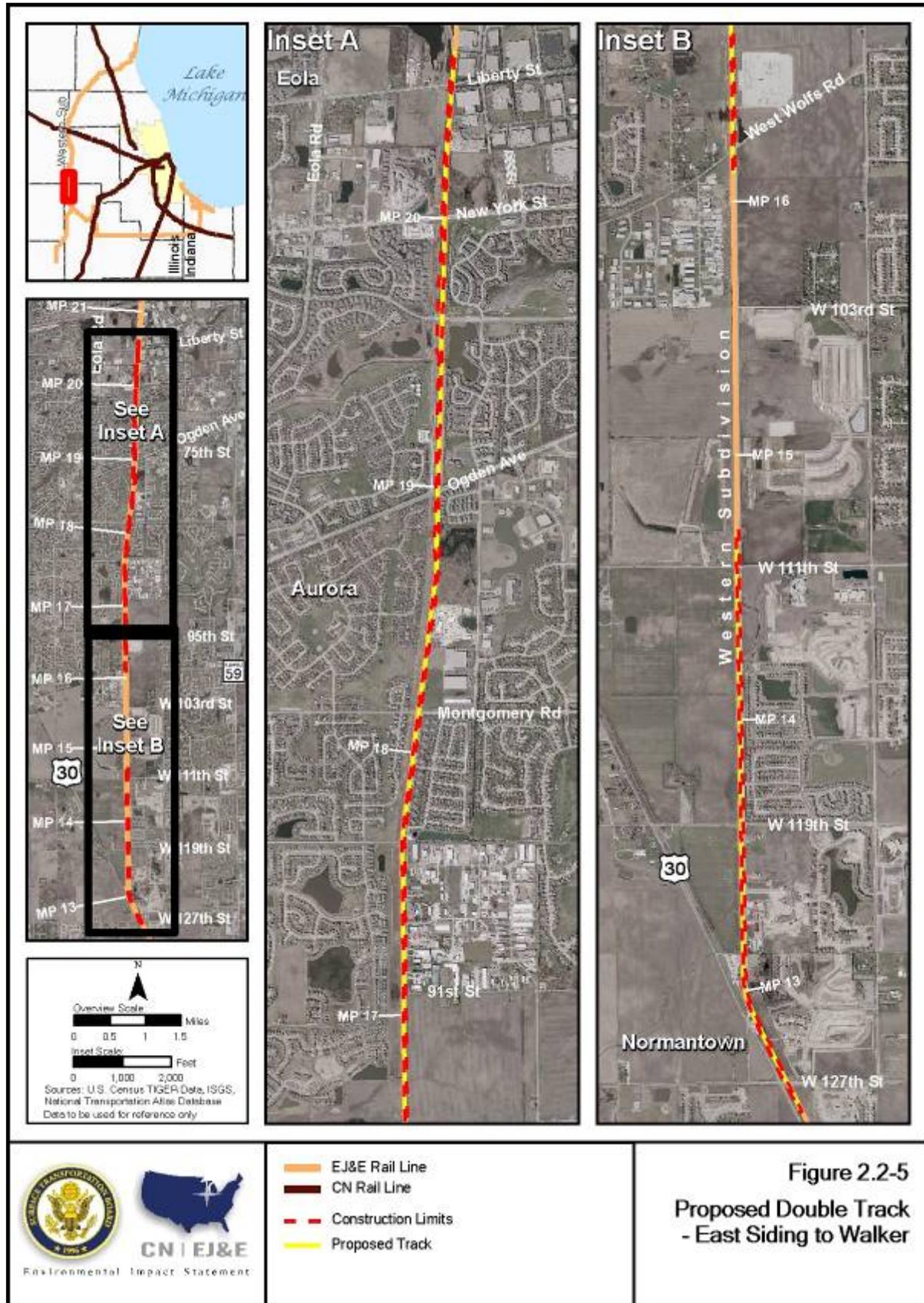
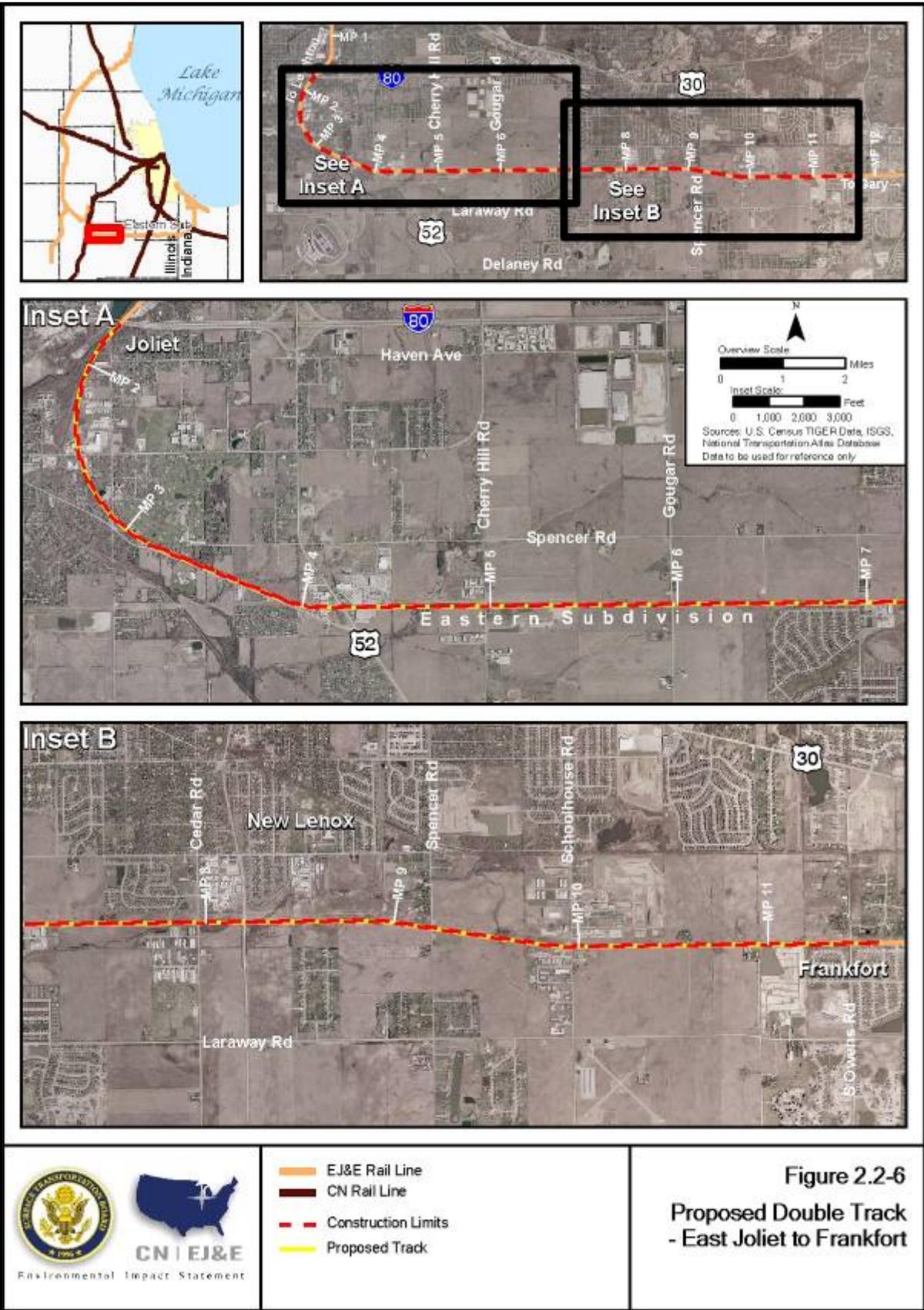


Figure 2.2-5  
Proposed Double Track  
- East Siding to Walker



## **2.2.3 Proposed Changes in Yard Operations**

### ***2.2.3.1 Rail Car Classification and Switching***

If the Proposed Action is approved and implemented, the Applicants would increase the use of both Kirk Yard (in Gary, Indiana) and East Joliet Yard (in Joliet) for rail car classification as well as for train assembly and disassembly. The Applicants state that they would assess the existing capabilities of both yards and ensure that the yards could accommodate the additional car-handling activities they propose at both yards (Applicants 2007a).

The Applicants propose to upgrade and expand Kirk Yard to meet CN's requirements for its use and would change the operating processes at the yard. According to Applicants, within 3 years of the approval of the Proposed Action, Kirk Yard would have to be able to reliably classify more rail cars per day than it handled at its peak 30 years ago. At that time, the yard classified 2,000 rail cars per day, and 4,000 rail cars per day moved in and out of the yard. CN's preliminary studies, which use 2006 data, indicate that CN could add as many as 1,355 rail car handlings to Kirk Yard, increasing the daily total of rail cars classified from the current 685 to as many as 2,039 (Applicants 2007a). See Figure 2.2-7, Kirk Yard, below, for the current configuration of the yard.

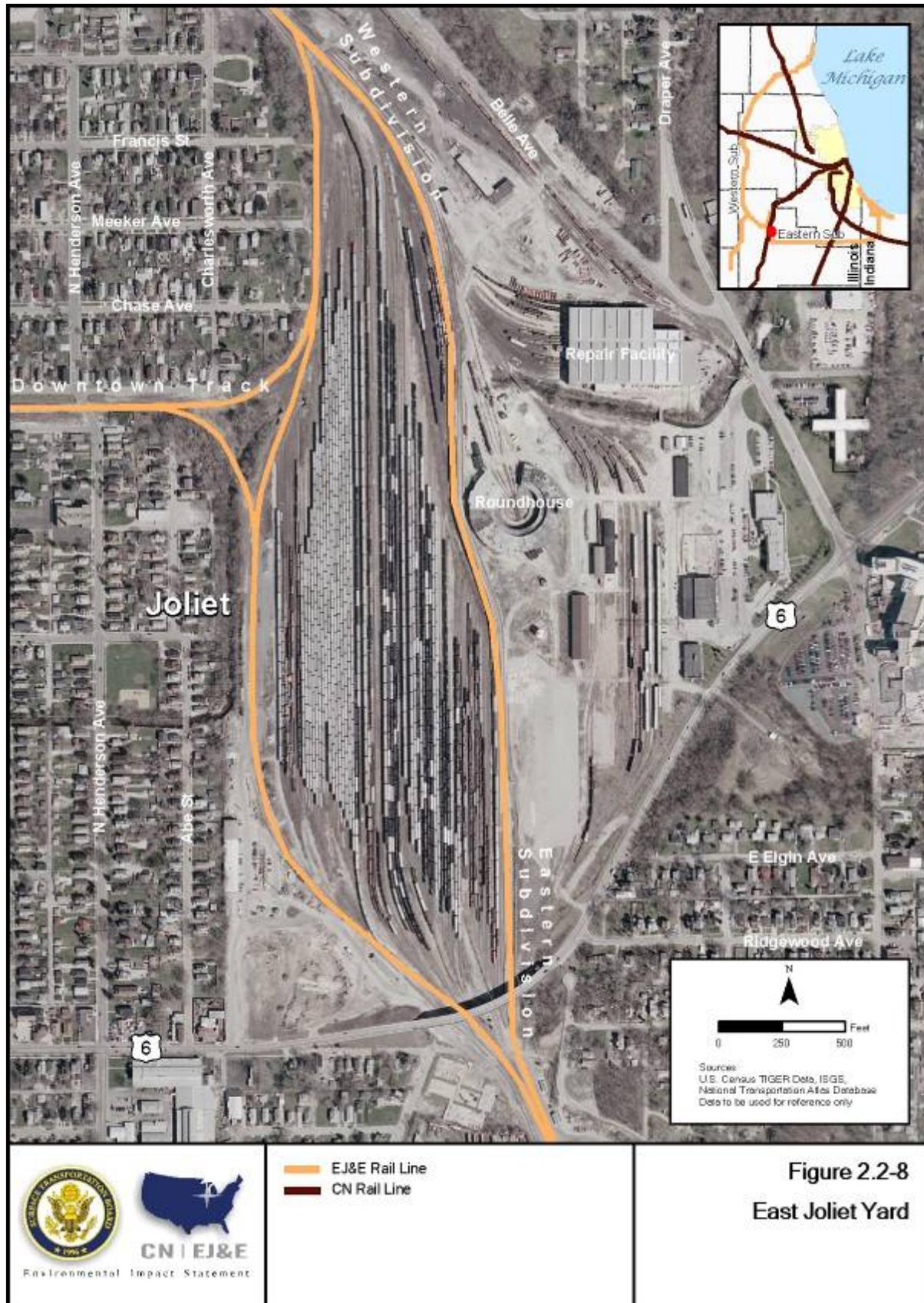
The Applicants also propose to upgrade East Joliet Yard as appropriate to accommodate increased yard activity, but would not be able to expand the size of the yard because it is landlocked (Applicants 2007a). The Applicants state that CN would reestablish East Joliet Yard as a switching and blockswap facility. With 75 tracks and space for 2,360 rail cars currently, the yard primarily serves the purpose of rail car storage (see Figure 2.2-8, East Joliet Yard, below, for the current configuration of the yard). If the Proposed Action is approved and implemented, CN would eventually add 709 daily car handlings to the 500 rail cars currently switched at East Joliet Yard. The yard would handle rail cars en route to and from the BRC, Chicago, Central & Pacific Railroad Company (CCP), and IC&E rail lines as well as Glenn and Hawthorne yards. In addition, East Joliet Yard would handle BNSF and CP blocked rail cars as well as trains from Salem, Illinois, via CN's Waukesha Subdivision; from CN's Joliet Subdivision; and from points as far south as Memphis and as far north as Winnipeg (Applicants 2007a).

**What is a switching and blockswap facility?**

A switching and blockswap facility is used to switch rail cars (five to 10 at a time) and assemble groups of "blocked" rail cars (25 to 100) in proper sequence routed for a common destination.

To relocate rail car classification to Kirk and East Joliet yards and to achieve the projected workload levels at those yards, CN and its Interchange partners (BNSF, CSX, NS, UP) would have to negotiate changes to existing Chicago-area interchange arrangements. According to the Application, the relocation of rail car classification to Kirk and East Joliet yards would make it possible to reduce the rail car switching activity that now occurs at CN's Glenn (in Chicago), Hawthorne (near Cicero, Illinois), Schiller Park (near O'Hare International Airport), and Markham (near Homewood, Illinois) yards and at the BRC Clearing Yard (near Chicago and Bedford Park, Illinois). Those yards would continue to handle local industry rail cars. Glenn Yard would serve the nearby industrial areas instead of continuing to serve as a classification yard. Markham Yard would continue to handle intermodal rail cars (Applicants 2007a).





### **2.2.3.2 Locomotive Repair**

EJ&E currently performs locomotive maintenance, repair, and servicing at Kirk and East Joliet yards. CN anticipates only minor changes in the operation of the locomotive repair facilities at Kirk Yard as a result of the Proposed Action and would continue to repair and service CN and EJ&E locomotives at Kirk Yard. At East Joliet Yard, however, CN does not foresee continued use of the repair facility under the Proposed Action and considers continued use of the roundhouse for locomotive maintenance or repair unlikely because of its deteriorating condition (Applicants 2007a).

CN operates the Woodcrest Locomotive Repair Facility in Homewood, Illinois. With the proposed re-routing of through-trains from CN's Chicago Subdivision onto the EJ&E arc should the Proposed Action be approved and implemented, fewer trains would be available to transport locomotives to Homewood. Therefore, CN could potentially relocate its heavy locomotive repair work to another facility or facilities, whose location is as yet undetermined, if the Proposed Action is approved and implemented (Applicants 2007a).

### **2.2.3.3 Rail Car Repair**

CN performs major rail car repair at facilities in Centralia, Illinois, and Fond du Lac, Wisconsin, and EJ&E performs rail car repair at Kirk Yard (in Gary, Indiana) and East Joliet Yard (in Joliet, Illinois). The Applicants foresee using Kirk Yard for minor equipment repair work, train yard repair work, and rail car inspections on rail cars belonging to both CN and Gary Railway Company.<sup>1</sup> The Applicants do not anticipate using the rail car repair facilities at East Joliet Yard but would continue to use the facilities in Centralia and Fond du Lac at current levels under the Proposed Action (Applicants 2007a).

## **2.2.4 Other Related Actions**

The Proposed Action includes other related actions, such as trackage rights (use of another railroad's line). The Applicants filed the following requests for trackage rights authority from the Board in the following subdockets in this proceeding (Applicants 2007a):

- In Subdockets Nos. 2 through 5, the Applicants' operating subsidiaries (CCP, Grand Trunk Western Railroad [GTW], Illinois Central Railroad Company [IC], and Wisconsin Central Ltd. [WCL]) seek trackage rights to operate over the EJ&E rail line. The Applicants propose that EJ&E would grant each subsidiary trackage rights over the EJ&E rail line from Waukegan, Illinois (MP 74.6) to Gary, Indiana (MP 45.4), including all trackage west of the centerline of Buchanan Street in Gary and the trackage associated with the Dixie and hump leads located east of Buchanan Street.
- In Subdockets Nos. 6 and 7, the Applicants seek authority for EJ&E to acquire trackage rights over CCP and IC rail lines. CCP intends to grant EJ&E trackage rights over its rail line between Munger (MP 35.7) and Belt Crossing, Illinois (MP 8.3). IC intends to grant EJ&E trackage rights over its rail line between Riverdale (designated as Highlawn by the Applicants) (MP 17.9) and University Park (MP 31.4), Illinois as well as between Joliet (MP 36.7) and Lemoyne (in Chicago) (MP 7.9), Illinois.

The Applicants propose to structure the EJ&E company as part of CN's Chicago Division, which is within CN's Southern Region, headquartered in Homewood. CN expects eventually to relocate EJ&E's crew management and train-dispatching facilities to Homewood (Applicants 2007a).

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<sup>1</sup> As stated in Chapter 1, EJ&E would retain its land, rail, and related assets east of the centerline of Buchanan Street in Gary. If the Proposed Action is approved and implemented, EJ&E would, however, change its name to Gary Railway Company.

Other projects proposed by the Applicants involve operational improvements. The Applicants plan to upgrade signals by increasing the use of mechanization in maintenance-of-way and signal work on the EJ&E rail line. In addition, the Applicants would acquire 228 EJ&E flatcars and 38 EJ&E locomotives (Applicants 2007a).

The Applicants do not plan to abandon any rail lines as a part of the Proposed Action. While the Applicants intend to re-route all of their trains currently operating over the Air Line in downtown Chicago should the Proposed Action be approved and implemented, the Air Line is jointly owned by BNSF, CN, and UP and is used by other entities, such as Amtrak. Any formal abandonment of the Air Line would require prior approval from the Board under 49 USC 10903 or 49 USC 10502 (Applicants 2007a).

## **2.3 Alternatives to the Proposed Action**

The CEQ regulations implementing NEPA require analysis of reasonable alternatives to a proposed action to provide “a clear basis for choice among options by the decisionmaker and the public” (40 CFR 1502.14). The Applicants state that the purposes of the Proposed Action are:

- To improve the Applicants’ operations in and beyond the Chicago area by providing CN with a continuous rail route around Chicago, under CN’s ownership, that would connect the five CN rail lines radiating from Chicago.
- To make EJ&E’s Kirk Yard in Gary, Indiana, as well as smaller facilities at Joliet, Illinois and Whiting, Indiana, available to the Applicants, thus enabling them to consolidate car classification work at Kirk Yard and East Joliet Yard and to reduce the use of the BRC Clearing Yard (near Chicago and Bedford Park, Illinois)..
- To enable the CN system to benefit from an important supply line provided by the EJ&E rail line for North American steel, chemical, and petrochemical industries, as well as for Chicago-area utilities and others, thereby allowing the Applicants to develop closer and more extensive relationships with companies in and serving those industries.

Based on these stated purposes, SEA determined that the alternatives that would be considered include approval of the Proposed Action, approval of the No-Action Alternative (that is, disapproving the Proposed Action in whole), or approval of the Proposed Action with conditions, including environmental conditions. In addition, this EIS considers the potential environmental effects of alternative locations or configurations for six proposed new connections that would not be built but for the Proposed Action.<sup>2</sup>

Some commenters suggested that this EIS should include CREATE or certain non-EJ&E rail corridors as alternatives for the Proposed Action. However, evaluation of CREATE or non-EJ&E rail corridors as alternatives to the Proposed Action would not be appropriate because they would not meet the stated purposes of and need for the Proposed Action (see Section 2.5, Alternatives Eliminated from Detailed Study, below).

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<sup>2</sup> While the proposed connections do not require prior authorization from the Board (49 USC 10906) because they would not enable CN to penetrate or invade new markets, they are still subject to the Board’s jurisdiction (49 USC 10501[b]) and are part of this environmental review because they would not occur but for the Proposed Action.

As the courts have repeatedly found, under NEPA, the Board need only consider “reasonable, feasible alternatives.”<sup>3</sup> Alternatives that do not advance the purpose of the Proposed Action are not considered reasonable or appropriate.<sup>4</sup>

In short, it would be inappropriate to evaluate these non-EJ&E rail alternatives because these routes would not advance the stated purposes of CN’s proposal. The non-EJ&E rail alternatives do not provide a reasonable alternative to CN’s proposal to provide CN with a continuous route around Chicago by connecting five existing CN rail lines and improving the operations of CN’s rail system. In addition, CREATE, even if fully funded and implemented, would not give CN access to Kirk Yard and other existing yards in the Chicago metropolitan area and would compromise the Applicants’ ability to serve industries in the Chicago metropolitan area as efficiently as possible.

### 2.3.1 No-Action Alternative

Under the No-Action Alternative, the Applicants would not acquire control of EJ&E’s land, rail, and related assets. Instead, the Applicants would do the following:

- Continue to make connecting movements through the Chicago Terminal District in the same manner as the movements now occur.
- Not operate CN trains on the EJ&E rail line except for the CN rail traffic that can be handled through CN’s existing trackage rights on the EJ&E rail line.
- Not construct the proposed connections or double track, discussed above.
- Continue to use CN’s Glenn, Hawthorne, Schiller Park, and Markham yards and the BRC Clearing Yard for rail car classification instead of adding rail car classification to Kirk Yard or East Joliet Yard and reestablishing East Joliet Yard as a switching and blockswap facility.
- Continue to use the Air Line in Chicago.

### 2.3.2 Approval with Conditions Alternative

An alternative to the Proposed Action is to approve the Proposed Action with conditions, including environmental mitigation measures designed to eliminate or minimize potential environmental effects. The Board has broad authority to impose conditions in railroad control transactions under 49 USC 11324(c). However, the Board’s power to impose conditions is not limitless: there must be a sufficient nexus between the condition imposed and the transaction before the agency, and the condition imposed must be reasonable. The Board does not impose mitigation conditions to remedy pre-existing conditions.

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<sup>3</sup> *Mid States Coalition for Progress v. STB*, 345 F.3d 520, 546 (8th Cir. 2003); *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 195 (D.C. Cir. 1991) (citing *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 551 (1978)).

<sup>4</sup> See *Native Ecosystems Council v. USFS*, 428 F.3d 1233, 1246-47 (9th Cir. 2005) (the “range of alternatives that must be considered in the EIS need not extend beyond those reasonably related to the purposes of the project”); *Simmons v. Army Corps of Engineers*, 120 F.3d 664, 669 (7th Cir. 1997) (because “identifying, assessing and comparing alternatives costs time and money,” an agency need not consider “every conceivable alternative,” but should “focus its energies only on the potentially feasible, not the unworkable”). Accord *Mayo Foundation v. STB*, 472 F.3d 545, 550 (8th Cir. 2006); *Environmental Law and Policy Center v. NRC*, 470 F.3d 676, 683 (7th Cir. 2006).

## **2.4 Rail Connection Alternatives**

SEA independently investigated and examined the Applicants' six proposed rail connections to determine if alternative locations or configurations for the proposed connection would meet the purpose of and need for the Proposed Action while minimizing environmental effects. The construction of the proposed connections does not require prior authority from the Board under 49 USC 10901 (Board 2008b); however, SEA has included the proposed connections in the environmental review because they would not occur but for the Proposed Action. In their comments on the Draft Scope of Study, EPA suggested that SEA evaluate potential alternative configurations to the Applicants' proposed connections that would allow for higher train speeds through the connections. EPA suggested looking at modifications, such as increasing the curve radii to allow for greater track speeds (EPA 2008a). For each connection, SEA has considered the Applicants' proposed connections, a No-Build Alternative, and alternative configurations proposed by EPA and others or developed by SEA, where appropriate. The following sections describe the alternatives considered by the Board from north to south and counterclockwise around the EJ&E rail line, starting at Munger (near Wayne, Illinois) and ending at Kirk Yard (in Gary, Indiana). Figure 2.4-1, below, illustrates a typical track cross-section for single and double track main tracks that would be used for a connecting track.

### **2.4.1 Munger, Illinois**

#### ***2.4.1.1 No-Build at Munger***

Under the No-Build Alternative at Munger, CN would not construct a connection in the southwest quadrant, as described by the Applicants. According to the Application, even without the Applicants' Proposed Munger Connection, CN would still be able to move trains from its Freeport Subdivision to EJ&E's Western Subdivision; however, the existing connection would require a reverse movement and could block several roadways. For example, a CN train moving eastward toward Chicago on CN's Freeport Subdivision would travel under the grade-separated crossing of the EJ&E rail line at Munger. After the end of the train has passed the switch leading to the existing connection in the northeast quadrant, the train crew would stop to reset the switch manually. While the train was stopped, it could temporarily block the highway/rail at-grade crossings at Munger Road and at Illinois Route 59 (Sutton Road). The train would then use a reverse movement to back onto the connecting track until the train was fully on the EJ&E rail line. This movement would block the at-grade crossings at Illinois Route 29 (Stearns Road) and potentially at West Bartlett Road. Once both the switch on CN's Freeport Subdivision and the switch on EJ&E's Western Subdivision were reset, the train would continue southward on the EJ&E rail line (Applicants 2008f).

#### ***2.4.1.2 Applicants' Proposed Munger Connection***

The Applicants propose to construct a 2,020-foot connection in the southwest quadrant of the existing grade-separated crossing between CN's Freeport Subdivision and EJ&E's Western Subdivision (near MP 35.2) east of Wayne (designated as Munger by the Applicants) (see Figure 2.4-2, Proposed Munger Connection, below). At the existing intersection, there is a grade-separated crossing between the CN rail line and the EJ&E rail line. CN currently has trackage rights on EJ&E's Western Subdivision north of the intersection.





The Applicants' Proposed Munger Connection would allow the following CN train movements:

- Inbound trains (coming from the west) could go from CN's Freeport Subdivision southward onto the EJ&E rail line.
- Outbound trains could go from the EJ&E rail line onto CN's Freeport Subdivision en route to Rockford, Illinois, and destinations in Iowa and Nebraska.
- Inbound trains from Midwest origins such as Dubuque, Iowa or Omaha, Nebraska could go directly to Kirk Yard for classification.
- Reverse movements of the aforementioned movements could be accommodated.

The Applicants' Proposed Munger Connection, presented in an amendment to the Application (Applicants 2008g), would allow CN to stay within the EJ&E and Commonwealth Edison Company (ComEd) ROW and differs slightly from the original connection proposed in the Application (see Section 2.4.1.3, Munger Alternative—Original Proposal, below) (Applicants 2007a). The Applicants would construct a tighter curve and retaining walls to keep the proposed track within the EJ&E and ComEd ROW and to avoid Pratt's Wayne Woods Forest Preserve land (see Figure 2.4-2, Proposed Munger Connection, above, and Figure 2.4-3, Cross Section of the Proposed Munger Connection, below). However, this tighter configuration would restrict all trains using the connection to a speed of 10 miles per hour (mph). Slowing trains to 10 mph would increase the delay at several highway/rail at-grade crossings and would decrease capacity on the EJ&E rail line.

### ***2.4.1.3 Munger Alternative—Original Proposal***

Originally, the Applicants proposed to construct a 2,230-foot connection in the southwest quadrant of the existing grade-separated crossing between CN's Freeport Subdivision and EJ&E's Western Subdivision (near MP 35.2) east of Wayne (designated as Munger by the Applicants) (see Figure 2.4-4, Munger Alternative—Original Proposal, below). The construction of this proposed configuration would allow the same CN train movements described in Section 2.4.1.2, Applicants' Proposed Munger Connection, above; however, it would require the acquisition of approximately 1 acre of land from Pratt's Wayne Woods Forest Preserve (Applicants 2007a). For this reason, the Applicants proposed a new preferred alternative (Applicants 2008g), discussed in Section 2.4.1.2, above. As previously noted, EPA recommended investigating alternatives with higher curve radii that would allow faster speeds. The advantage of the Original Proposal is that trains could operate at 25 mph over the proposed connection, reducing the potential delay at highway/rail at-grade crossings. In addition, trains could move onto and off of the EJ&E rail line more quickly, enhancing capacity and efficiency of the EJ&E rail line.

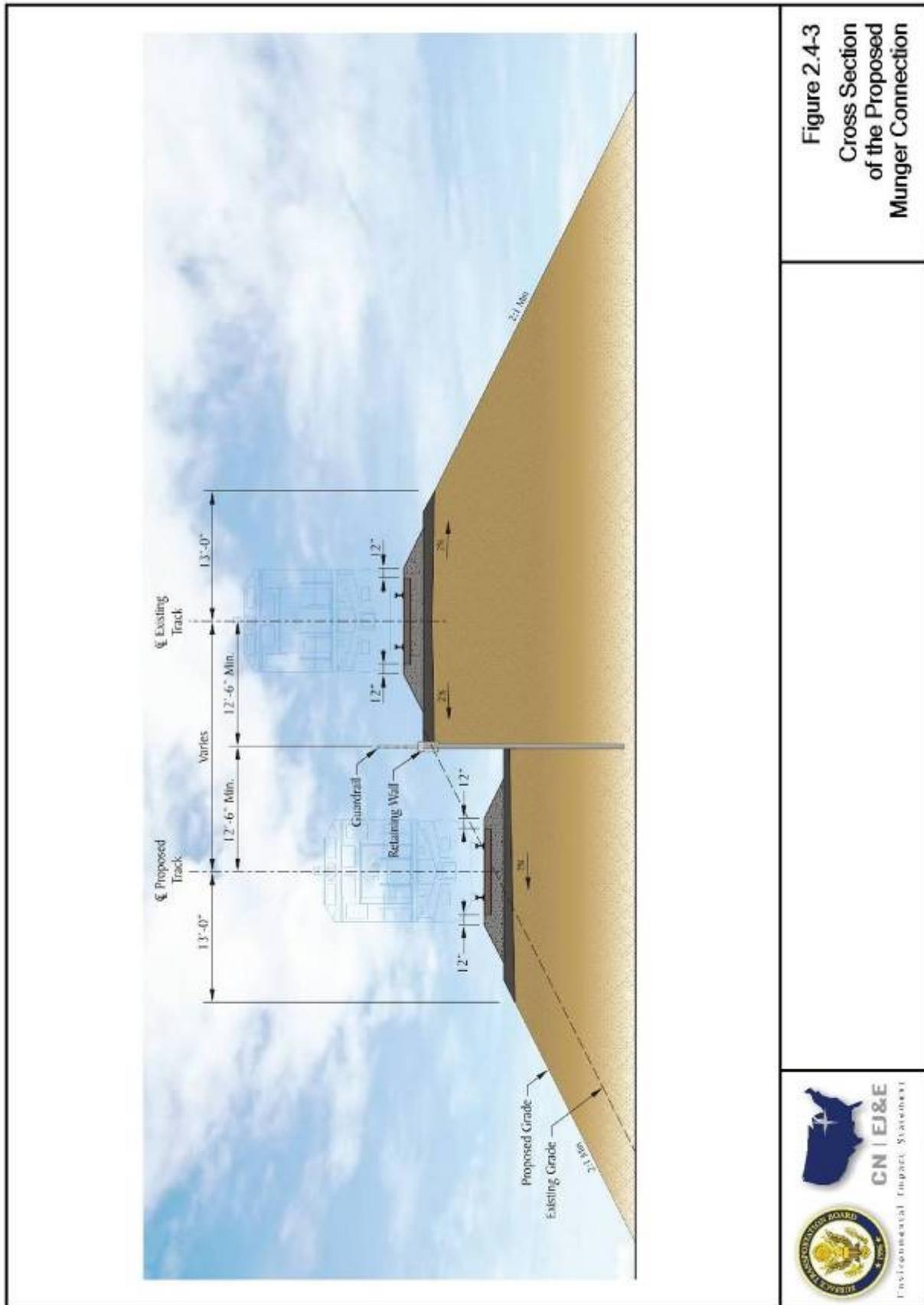


Figure 2.4-3  
Cross Section  
of the Proposed  
Munger Connection





#### **2.4.1.4 Munger Alternative—UP Connection**

As proposed in the Application, the connection between CN's Freeport Subdivision and EJ&E's Western Subdivision would have required the acquisition of approximately 1 acre of land from Pratt's Wayne Woods Forest Preserve. To potentially avoid this land, the Forest Preserve District of DuPage County (FPDDC) put forth an alternative to the Applicants' Proposed Munger Connection, which is proposed to be sited in the southwest quadrant. Under the Munger Alternative-UP Connection, the Applicants would construct a connection to the existing UP Belvidere Subdivision from CN's Freeport Subdivision (near Illinois Route 25), approximately 2.5 miles west of a existing connection of the CN and EJ&E rail lines at Munger (see Figure 2.4-5 below). Then, assuming CN could enter into a trackage rights agreement with UP, CN trains would use the UP rail line from this new connection southward approximately 4 miles, until reaching the location where UP and EJ&E

**What is a crossover?**

A crossover consists of two turnouts that form a continuous passage between two nearby and generally parallel tracks.

tracks are parallel and separated by approximately 150 feet. At this location (near the intersection of Powis Road and Illinois Route 64 [North Road]), CN would construct a new crossover that would allow its trains to access EJ&E's Western Subdivision (see Figure 2.4-5, Munger Alternative—UP Connection, below).

The UP Connection alternative would allow the CN rail line to connect with the EJ&E rail line without disrupting Pratt's Wayne Woods Forest Preserve land and would allow the same CN train movements described in Section 2.4.1.2, Applicants' Proposed Munger Connection, above. However, it would require the construction of two connections and a trackage rights agreement between UP and CN (FPDDC 2008a). While the current operating speed on the UP rail line is unknown, the UP rail line appears capable of supporting train operating speeds in the range of 25 to 40 mph. Thus, the Applicants could likely construct the connections between the UP rail line and CN's Freeport Subdivision and between the UP rail line and the EJ&E rail line to accommodate train speeds of 25 mph. The advantage of this configuration is that trains could quickly move onto and off of the EJ&E rail line, enhancing mainline capacity and minimizing delays at highway/rail at-grade crossings. The disadvantage of this configuration is that the spacing of the highway/rail at-grade crossings on UP's Belvidere Subdivision would limit a train to less than 7,000 feet long. The distance between Dunham Road and Army Trail Road is approximately 7,100 feet, and the distance between Powis Road and Army Trail Road is approximately 6,900 feet.

#### **2.4.1.5 Munger Alternative—Former Rail Corridor**

SEA has considered an alternative using the former Chicago, Aurora & Elgin Railroad Company corridor that has since been converted to the Illinois Prairie Path multi-use trail (see Figure 2.4-6, Munger Alternative—Former Rail Corridor, below). The trail bridges CN's Freeport Subdivision just west of the Applicants' Proposed Munger Connection and crosses the EJ&E rail line at grade south of Army Trail Road. This alternative would require construction of 2.46 miles of new track within the corridor, as well as two new connections. SEA does not consider this to be a reasonable alternative because of the construction cost and the availability of other Munger alternatives that would have fewer potential environmental effects.

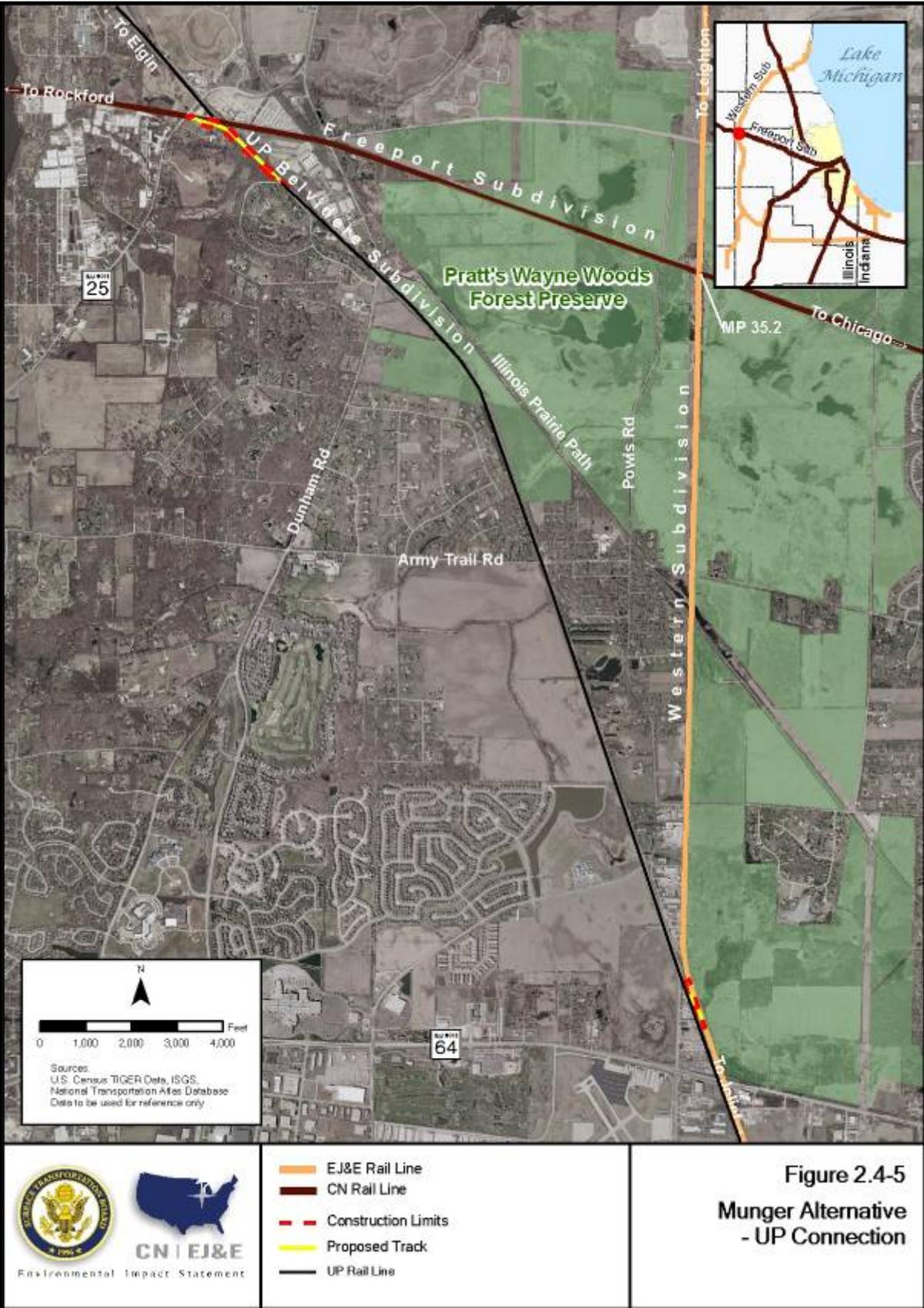
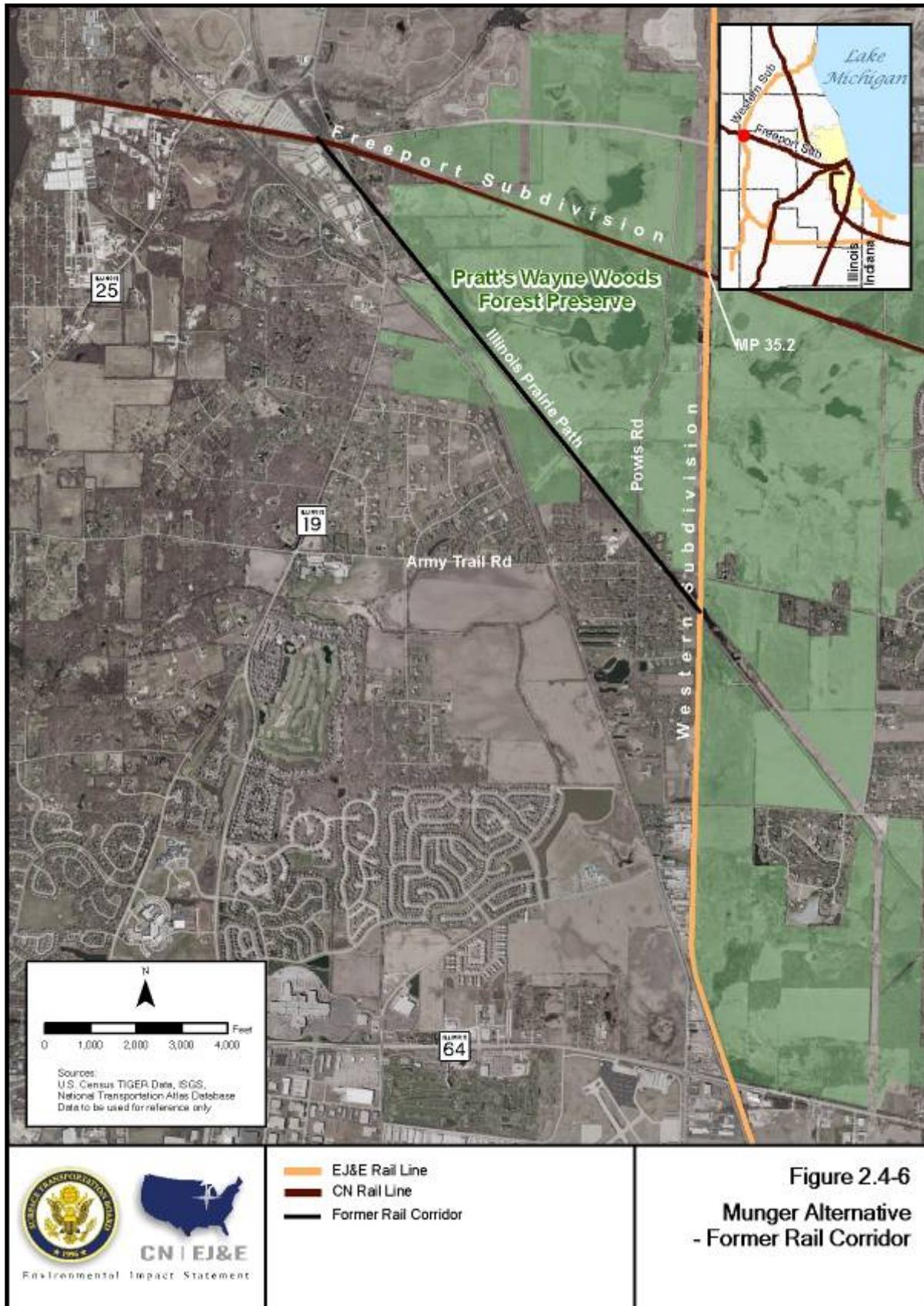


Figure 2.4-5  
Munger Alternative  
- UP Connection



### **2.4.1.6 *Munger Alternative—Northwest Quadrant***

SEA also considered an alternative that would avoid the wooded portion of Pratt's Wayne Woods Forest Preserve but that would allow an efficient 25 mph connection between CN's Freeport Subdivision and EJ&E's Western Subdivision. This alternative would allow the same CN train movements described in Section 2.4.1.2, Applicants' Proposed Munger Connection, above. Under this alternative, the 2,300-foot connection would begin just north of EJ&E's grade-separated crossing on CN's Freeport Subdivision in the northwest quadrant of the intersection (see Figure 2.4-7, Munger Alternative—Northwest Quadrant, below). Constructing this alternative in the northwest quadrant would minimize impacts on the developed camping and recreational areas at Pratt's Wayne Woods Forest Preserve; however, this connection would still be located within the preserve and would require preserve land. This alternative would also require an additional road crossing at Powis Road. As previously noted, EPA recommended investigating alternatives with higher curve radii that allow faster speeds. The advantage of this configuration is that trains could quickly move onto and off of the EJ&E rail line, enhancing mainline capacity and minimizing delays at highway/rail at-grade crossings.

## **2.4.2 Joliet, Illinois**

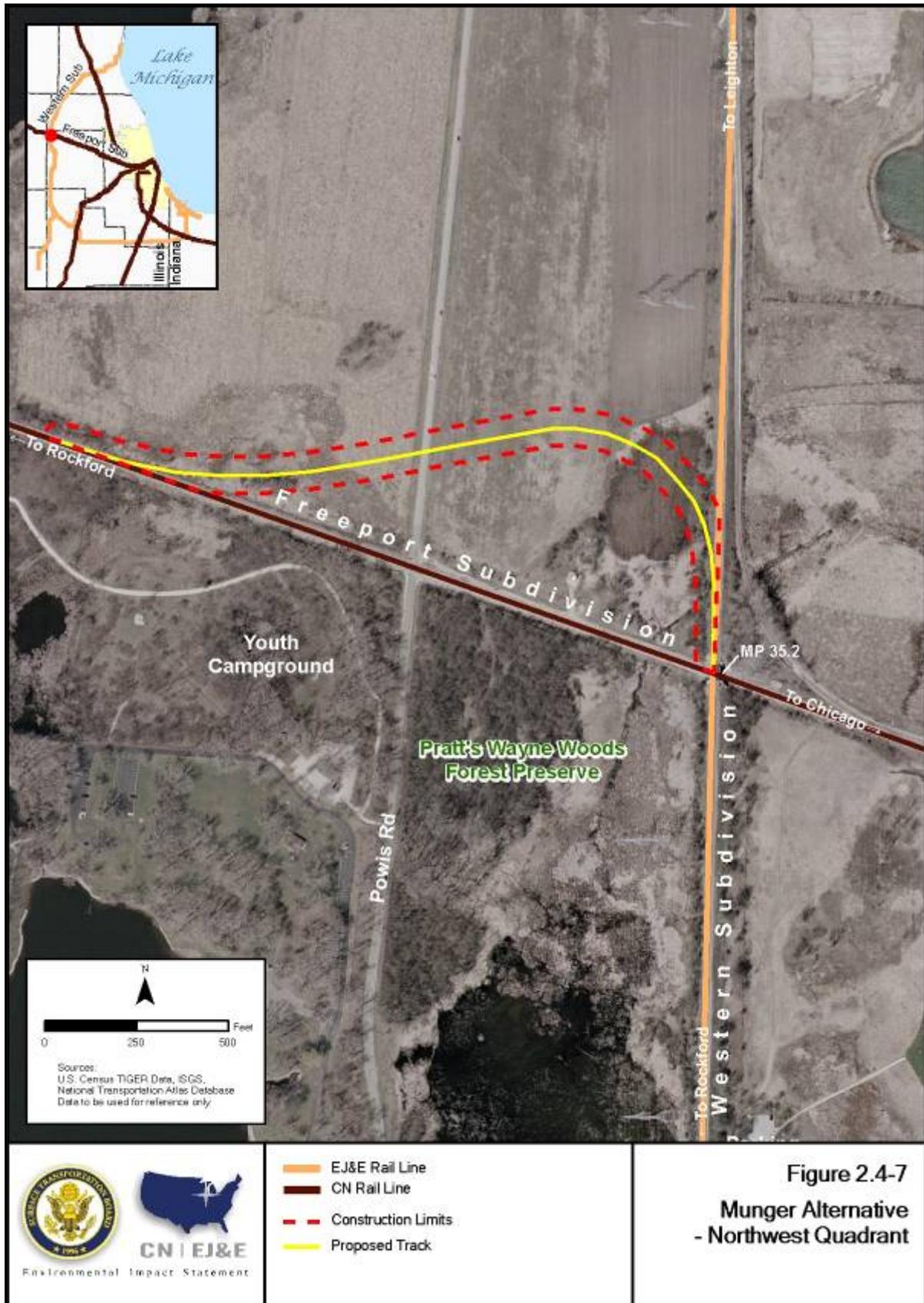
### **2.4.2.1 *No-Build at Joliet***

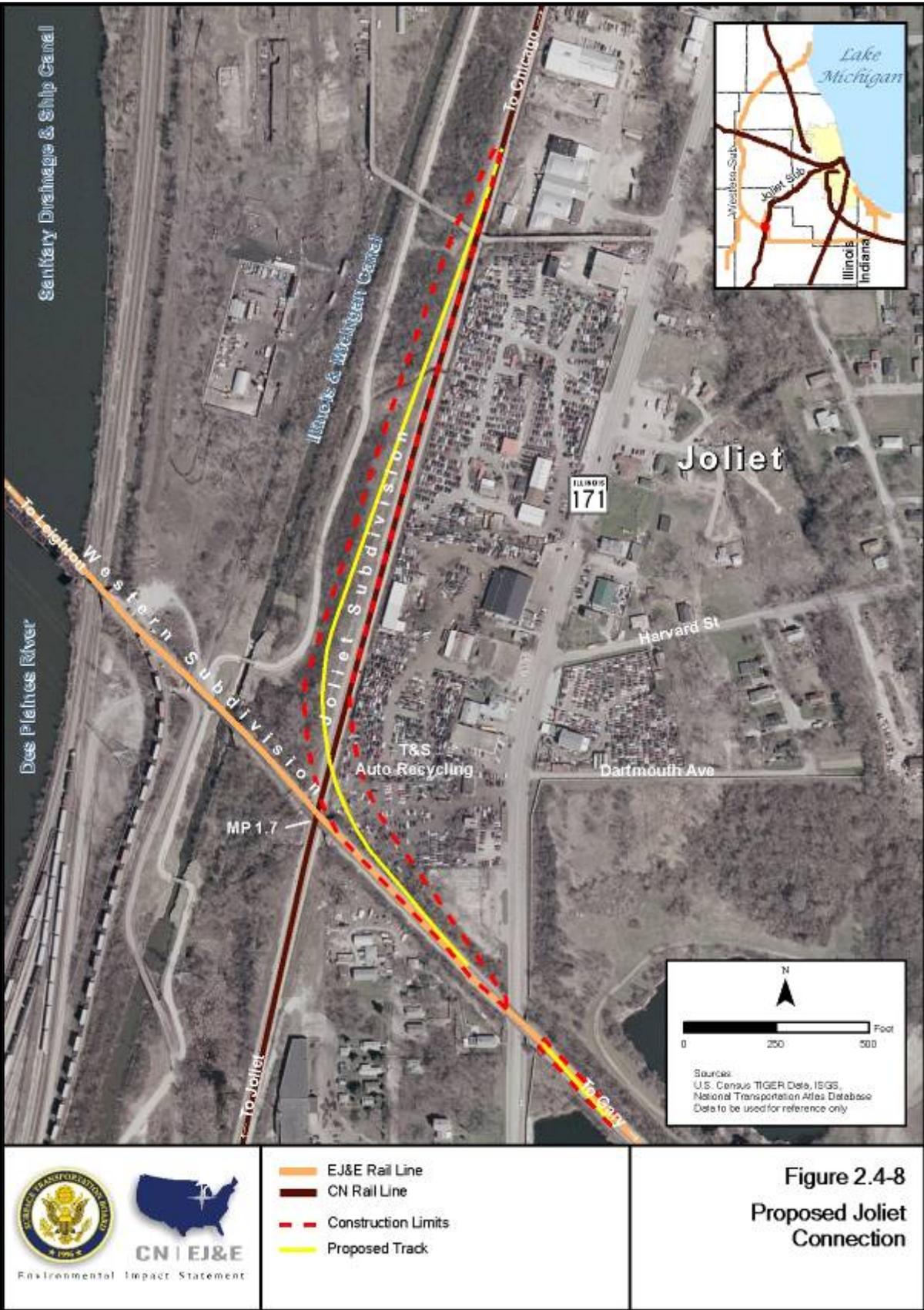
Under the No-Build Alternative at Joliet, CN would not construct a connection in the northwest and northeast quadrants of the existing grade-separated crossing. Instead, CN could move rail traffic between Glenn Yard and East Joliet yard (Joliet, Illinois) through an existing connection on a UP rail line by means of trackage rights (Applicants 2008f). This existing connection would use EJ&E's Downtown Track (from East Joliet Yard to an existing connection with UP) that crosses numerous highways at grade in East Joliet.

### **2.4.2.2 *Applicants' Proposed Joliet Connection***

The Applicants propose to construct a 2,430-foot connection near the existing grade-separated crossing between CN's Joliet Subdivision and EJ&E's Western Subdivision in Joliet (near MP 1.7) (see Figure 2.4-8, Proposed Joliet Connection, below). At the existing intersection, the EJ&E rail line, on which CN has trackage rights, bridges the CN rail line. As stated above, one of the purposes of the Proposed Action is to consolidate yard operations in Kirk and East Joliet yards. The Applicants' Proposed Joliet Connection would allow CN trains to access East Joliet Yard on EJ&E's Eastern Subdivision from CN's Joliet Subdivision, which connects to CN's Glenn Yard approximately 25 miles to the northeast in Chicago, Illinois.

The proposed connection would start in the northwest quadrant of the intersection of the CN and EJ&E rail lines, parallel the CN rail line and the Illinois and Michigan Canal (I&M Canal), cross over the CN rail line on an elevated structure, and connect with the EJ&E rail line in the northeast quadrant. This connection would require a rail/rail grade-separated crossing over the CN rail line (Applicants 2008b). The Applicants' Proposed Joliet Connection is a modification of the one originally proposed in the Application. The connection first described in the Application proposed to have the entire connection in the northeast quadrant of the intersection of the CN and EJ&E rail lines (see Section 2.4.2.3, Joliet Alternative—Original Proposal, below). The Applicants developed this alternative when it was realized that U.S. Steel owned the property just west of CN's Joliet Subdivision and that this parcel would be suitable for the proposed connection. Additionally, the Applicants' Proposed Joliet Connection would avoid T&S Auto Recycling and potential hazardous waste concerns. However, this alternative could affect existing trails along the I&M Canal.





### **2.4.2.3 Joliet Alternative—Original Proposal**

SEA also considered the Joliet Alternative—Original Proposal (the connection the Applicants originally proposed in the Application) as an alternative to the Applicants' Proposed Joliet Connection. Under the Original Proposal alternative, CN would construct this connection entirely within the northeast quadrant of the intersection of the CN and EJ&E rail lines. The 2,430-foot connection would begin at CN's Joliet Subdivision, travel through T&S Auto Recycling, and connect with EJ&E's Western Subdivision just west of the existing EJ&E bridge over Illinois Route 171 (see Figure 2.4-9, Joliet Alternative—Original Proposal, below) (Applicants 2008b). This configuration would allow the same CN train movements described in Section 2.4.2.2, Applicants' Proposed Joliet Connection, above, but would avoid the construction of a bridge over CN's Joliet Subdivision and encroaching on the trail system near the I&M Canal. However, this alternative would require the acquisition of potentially contaminated land.

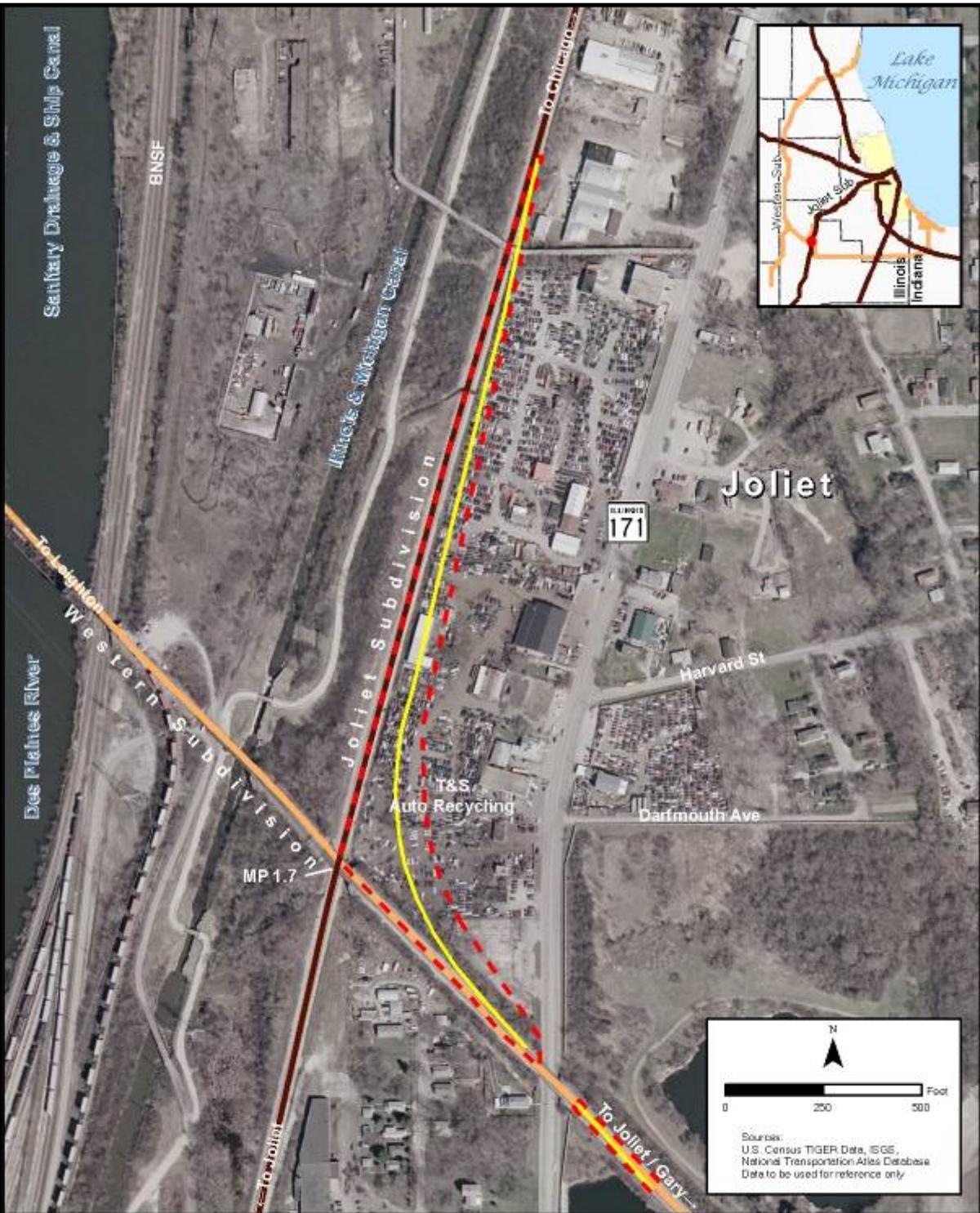
## **2.4.3 Matteson, Illinois**

### **2.4.3.1 No-Build at Matteson**

Under the No-Build Alternative at Matteson, the Applicants would not construct a connection in the northeast quadrant of the existing grade-separated crossing at the intersection of the CN and EJ&E rail lines nor a universal crossover west of the rail/rail grade-separated crossing. Rather, movements at this intersection would continue to occur as follows:

- A westward-moving train on EJ&E's Eastern Subdivision could use the existing connection in the southeast quadrant of the intersection to move onto CN's Chicago Subdivision and head south.
- A southward-moving train on CN's Chicago Subdivision could gain access to the EJ&E rail line by first pulling past the EJ&E rail line on the existing grade-separated crossing until it was south of the EJ&E rail line. Then the train would back down the existing connection into a small industrial yard located on the south side of the EJ&E rail line. The train could then proceed west on the EJ&E rail line once all switches were reset. To proceed east, it would be necessary to detach the locomotives and take them to the east end of the train.
- An eastward-moving train on the EJ&E rail line could gain access to CN's Chicago Subdivision by reversing the movement described above (that is, by pulling past the intersection, backing into the existing connection, and then moving north on the CN rail line). To move south, it would be necessary to detach the locomotives and take them to the south end of the train.

Because no yard currently exists at Matteson on CN's Chicago Subdivision, it would be necessary to configure trains in a small industrial yard located on the south side of the EJ&E rail line should the Proposed Action be approved and implemented without the proposed construction of the new connection at Matteson (Applicants 2008f).



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CN | EJ&E

- EJ&E Rail Line
- CN Rail Line
- Construction Limits
- Proposed Track

**Figure 2.4-9**  
**Joliet Alternative**  
**- Original Proposal**

### **2.4.3.2 Applicants' Proposed Matteson Connection**

The Applicants propose to construct a 7,190-foot connection in the northeast quadrant of the existing rail/rail grade-separated crossing between CN's Chicago Subdivision and EJ&E's Eastern Subdivision (near MP 21.5) in Matteson (see Figure 2.4-10, Proposed Matteson Connection, below). This configuration would restrict all trains using the connection to a speed of 15 mph. At the existing intersection, the CN and Metra (Electric District) rail lines bridge the EJ&E line, on which CN currently has trackage rights. The Applicants' Proposed Matteson Connection, consisting of two wye-shaped connections, would serve the following purposes:

- Allow forward train movement in all directions (without requiring the train to back up).
- Facilitate train movement onto CN's Chicago Subdivision enabling trains to reach Markham Yard to the north and to reach Memphis, Tennessee and New Orleans, Louisiana to the south.
- Provide intermodal trains on EJ&E's Eastern Subdivision access to CN's intermodal facility at Markham Yard.

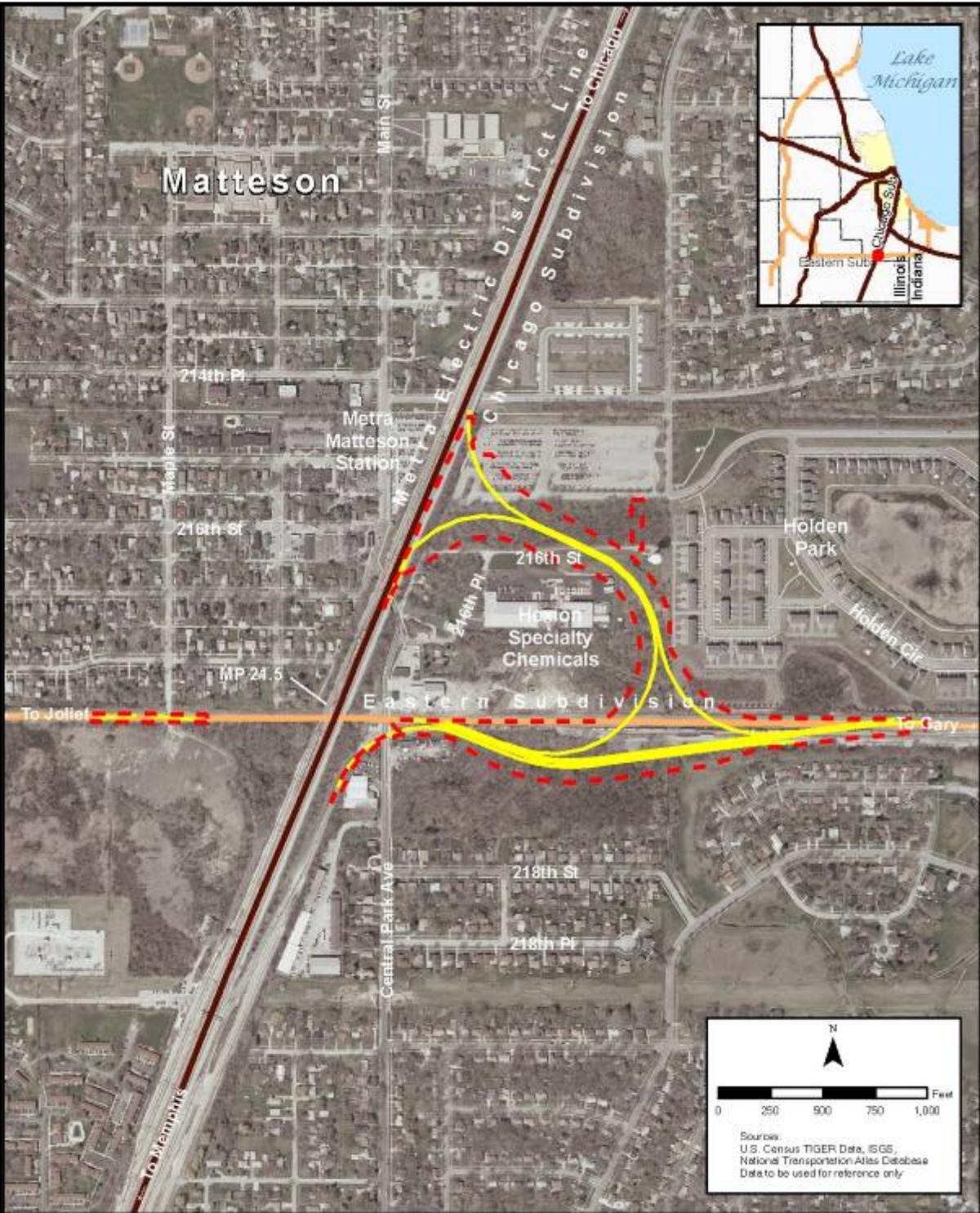
In addition, the Applicants propose to install a universal crossover (that is, the location on a double track where trains can change from one track to another in all directions) just west of the existing rail/rail grade-separated crossing to enable its trains to switch from one EJ&E rail line track to another.

Because the connection would limit train speed to 15 mph, the Applicants' Proposed Matteson Connection could delay traffic at Cicero and Western avenues. In addition, this connection could affect the Holden Park residential neighborhood and Metra's parking lot.

### **2.4.3.3 Matteson Alternative—Northeast and Southwest Quadrants**

SEA considered another build alternative to the Applicants' Proposed Matteson Connection. In the northeast quadrant of the intersection of CN's Chicago Subdivision and EJ&E's Eastern Subdivision, this alternative, designed to allow trains to operate at 25 mph over the connection, would be a 4,290-foot, wye-shaped connection that would reduce potential effects on the Holden Park residential neighborhood in Matteson, Illinois. To minimize the number of movements required as trains pass through this connection, there would also be a second connection in the southwest quadrant of the intersection. This connection would require construction of a tunnel or bridge under CN's Chicago Subdivision and Metra's Electric District. Additionally, there would be two crossovers, both west and east of the intersection (see Figure 2.4-11, Matteson Alternative—NE & SW Quadrants, below).

This configuration would allow the same CN train movements described in Section 2.4.3.2, Applicants' Proposed Matteson Connection, above, but would avoid the relocation of the EJ&E rail line east of the intersection in order to accommodate the restrictive wye-shaped curves. As indicated above, EPA recommended investigating alternatives with higher curve radii that would allow faster speeds. Higher operating speeds at this connection, compared to the Applicants' proposed connection, would reduce vehicle delay at Cicero Avenue, Western Avenue, and Main Street. However, this connection would still directly impact Metra's parking lot.



-  EJ&E Rail Line
-  CN Rail Line
-  Construction Limits
-  Proposed Track

**Figure 2.4-10**  
**Proposed**  
**Matteson Connection**



#### **2.4.3.4 Matteson Alternative—Southwest Quadrant**

SEA also considered a second build alternative, which would provide for construction of a 950-foot, wye-shaped connection and crossover in the southwest quadrant of the intersection of the CN and EJ&E rail lines. This alternative would require construction of a tunnel or bridge under CN's Chicago Subdivision and Metra's Electric District. The crossover would be west of the new wye-shaped connection on EJ&E's Eastern Subdivision (see Figure 2.4-12, Matteson Alternative—Southwest Quadrant, below) (Applicants 2008b). The Applicants originally considered the Southwest Quadrant configuration but ultimately settled on the Applicants' Proposed Matteson Connection described in Section 2.4.3.2, above. One advantage of the Matteson Alternative-Southwest Quadrant is that the configuration would provide direct forward movement between CN's Chicago Subdivision and EJ&E's Eastern Subdivision west of Matteson en route to the connections at Joliet, Illinois, and Leighton (near Mundelein, Illinois). The configuration would also minimize disruption to the Holden Park neighborhood. This configuration would also allow trains to operate at 25 mph over the connection. However, the Southwest Quadrant configuration would not allow for direct forward movement between CN's Chicago Subdivision and EJ&E's Eastern Subdivision east of Matteson. Also, construction of a tunnel or bridge would disrupt service to CN's Chicago Subdivision and Metra's Electric District.

#### **2.4.4 Griffith, Indiana**

##### **2.4.4.1 No-Build at Griffith**

At Griffith, the only alternative to Applicants' proposed connection is the No-Build Alternative, under which CN would not construct a connection and crossovers in the northeast quadrant at the existing intersection. Without the construction of the Applicant's Proposed Griffith Connection (described in Section 2.4.4.2, below), trains traveling westward on CN's South Bend Subdivision would be able to access Kirk Yard, but only with additional movements that would require reconfiguring each train for a movement into Kirk Yard. To move onto the EJ&E rail line west of Broad Street en route to Kirk Yard, a CN train moving westward on the CN rail line would use the existing wye-shaped connection and would move into EJ&E's Griffith Yard. CN would then remove the locomotive from the west end of the train and attach it to the east end of the train to pull the train to Kirk Yard (Applicants 2008f).

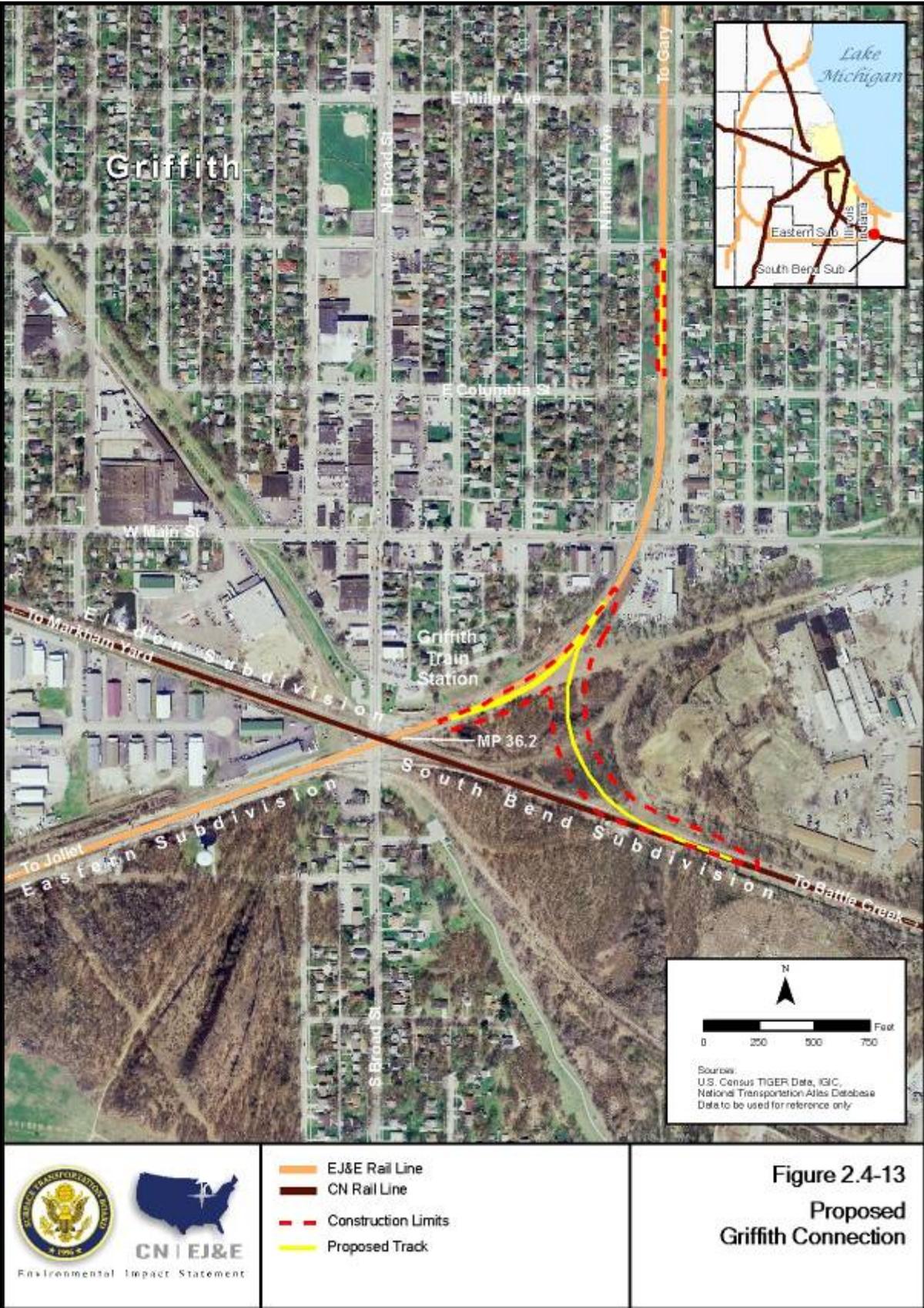
##### **2.4.4.2 Applicants' Proposed Griffith Connection**

The Applicants propose to construct a 2,200-foot connection and a universal crossover in the northeast quadrant of the existing crossing between CN's South Bend Subdivision (east of Griffith) and EJ&E's Eastern Subdivision (near MP 36.2) in Griffith (see Figure 2.4-13, Proposed Griffith Connection, below). Currently, CN has trackage rights on the EJ&E line southwest of that intersection. The universal crossover would be located north of East Main Street and south of East Lake Street. This connection would enable trains to move from CN's South Bend Subdivision directly into Kirk Yard. Trains already switched at Kirk Yard and heading for destinations in Michigan and Canada could move directly onto CN's South Bend Subdivision as a result of the proposed connection. The Applicants' Proposed Griffith Connection would provide a direct forward movement between CN's South Bend Subdivision and EJ&E's Eastern Subdivision east of Griffith en route to Kirk Yard (in Gary, Indiana). This configuration would allow trains to operate at 25 mph over the connection. The Applicants' Proposed Griffith Connection, as provided by CN in their Application, constitutes a practical and economical configuration. No other alternative configuration has been identified that would provide comparable railroad operating benefits.



- EJ&E Rail Line
- CN Rail Line
- - - Construction Limits
- Proposed Track

**Figure 2.4-12**  
**Matteson Alternative**  
**- NE & SW Quadrants**



## **2.4.5 Ivanhoe, Indiana**

### ***2.4.5.1 No-Build at Ivanhoe***

At Ivanhoe, the only alternative to Applicants' proposed connection is the No-Build Alternative, under which CN would not construct a connection and crossovers in the southeast quadrant at the existing intersection. Without a new connection, CN trains would not be able to access the CSX Porter Branch. A northward-moving train on EJ&E's Eastern Subdivision would continue north into Kirk Yard (Applicants 2008f). Interchange between the CN and/or the EJ&E and CSX rail lines would occur as it does currently (that is, via a connection to CSX's Pine Yard located just west of Kirk Yard).

### ***2.4.5.2 Applicants' Proposed Ivanhoe Connection***

The Applicants propose to construct a 1,600-foot connection and a crossover in the southeast quadrant of the existing crossing between EJ&E's Eastern Subdivision and CSX's Porter Branch (near MP 41.8 below) in Gary (designated as Ivanhoe by the Applicants) (see Figure 2.4-14, Proposed Ivanhoe Connection). NS has trackage rights on the Porter Branch. This proposed connection would allow trains a direct forward movement between EJ&E's Eastern Subdivision (heading north) and CSX's Porter Branch (heading east) and in the reverse direction. CSX's Porter Branch connects with CN rail lines at Willow Creek Junction in Portage, Indiana, and with NS rail lines in Porter, Indiana. The Applicants' Proposed Ivanhoe Connection would provide the Applicants with a more efficient interchange of rail cars between the CN and CSX rail lines. No alternative location for the construction that would provide similar benefits has been identified.

## **2.4.6 Kirk Yard, Gary, Indiana**

### ***2.4.6.1 No-Build at Kirk Yard***

At Kirk Yard, the only reasonable and feasible alternative to the Applicants' Proposed Kirk Yard Connection that has been identified is the No-Build Alternative, under which CN would not construct a crossover to NS's Chicago Line. CN would continue to use the existing EJ&E/NS interchange at Pine Yard, located at the west end of Kirk Yard and would not fully benefit from the changes in operations Applicants propose for Kirk Yard.(Applicants 2008f).

### ***2.4.6.2 Applicants' Proposed Kirk Yard Connection***

The Applicants propose to construct a 2,540-foot crossover to NS's Chicago Line west of Buchanan Street at the east end of Kirk Yard (near MP 47.2) (see Figure 2.4-15, Proposed Kirk Yard Connection, below). The existing interchange between the EJ&E and NS rail lines is at Pine Yard, which is near the west end of Kirk Yard and is 2.25 miles west of Buchanan Street. The proposed connection would improve the existing situation at this interchange, where NS trains currently can only back into the Pine Yard tracks from the west to pick up rail cars and deliver them to the EJ&E rail line. The Applicants' Proposed Kirk Yard Connection would provide a direct forward movement between NS's Chicago Line and Kirk Yard. The crossover would allow CN and NS trains to arrive at and depart from Kirk Yard and to interchange with EJ&E's Eastern Subdivision more efficiently. The construction limits would extend for a distance of 1,600 feet west of the Buchanan Street underpass between the EJ&E Dixie lead and the NS rail line.

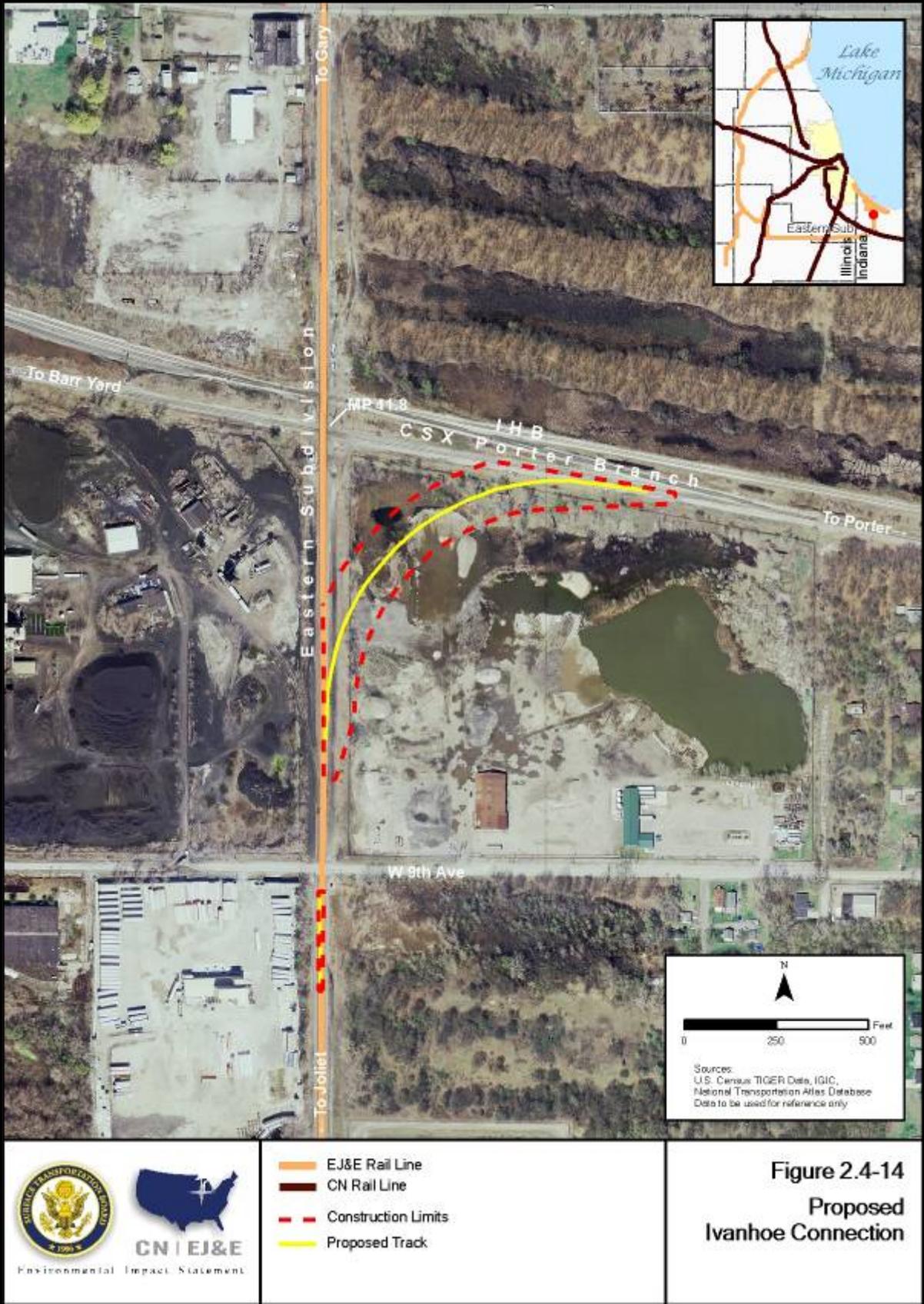


Figure 2.4-14  
Proposed  
Ivanhoe Connection



## 2.5 Alternatives Eliminated from Detailed Study

This section describes other alternatives to the Proposed Action that were proposed by commenters and that SEA has eliminated from detailed consideration in this Draft EIS. SEA either deemed them to be unreasonable or infeasible because they would not meet the Applicants' purposes of seeking to acquire control of the EJ&E rail assets, as discussed in Chapter 1. In accordance with CEQ's regulations implementing NEPA (40 CFR 1502.14), this section sets out SEA's rationale for elimination of the alternatives from further consideration and detailed environmental review.

### 2.5.1 Expanded Trackage Rights

During the scoping period, several commenters suggested that expanded trackage rights on the EJ&E rail line could be an alternative to the Proposed Action. Specifically, the commenters note that, if EJ&E were to grant expanded trackage rights to CN, the result would be to allow CN to increase its operations on the EJ&E line. However, expanded trackage rights are not a reasonable and feasible alternative because it fails to meet the purpose of and need for the Proposed Action. Additional trackage rights would not provide CN with the control over the EJ&E rail line that it is seeking through the Proposed Action. Expanded trackage rights also would not allow CN to control and increase its use of Kirk and East Joliet yards or to decrease the use of CN's Glenn, Hawthorne, and Markham yards and the BRC Clearing Yard, and CN would not be able to consolidate rail car classification activities at Kirk Yard.

In short, as the Applicants have explained (Applicants 2007a):

- An independently-owned EJ&E would have no incentive to invest the significant capital required for the capacity and connection improvements that would provide CN with a continuous rail route around Chicago and that would connect the five CN rail lines radiating from Chicago, Illinois.
- Expanded trackage rights would not give CN control of Kirk Yard.
- Separate ownership of the EJ&E rail system would not ensure coordinated operations over both CN and EJ&E rail lines to maximize overall efficiency in the interest of customers using both railroads.

For these reasons, expanded trackage rights are not a reasonable and feasible alternative to the Proposed Action.

### 2.5.2 CREATE Program

"The CREATE Program is a . . . partnership" to implement "critically needed improvements to increase the efficiency of the region's rail infrastructure and the quality of life of Chicago-area residents" (CREATE 2008a). BNSF, CN, CPR, CSX, NS, and UP; Metra; the Illinois Department of Transportation (IDOT); and the Chicago Department of Transportation (CDOT), with encouragement from the Board, began the CREATE Program to address Chicago-area rail congestion caused by the existing demand for freight and passenger rail traffic. During the scoping period, several commenters suggested evaluation of a fully funded CREATE Program as an alternative to the Proposed Action (Village of Barrington 2008).

The intent of the CREATE Program is to restructure, modernize, and expand the freight and passenger rail facilities and highway grade separations in the Chicago metropolitan area while reducing the environmental and social effects of rail operations on the general public (CREATE 2005). Specifically, a purpose of the CREATE Program is to improve the fluidity and velocity of freight rail traffic in and through the Chicago metropolitan area while minimizing or eliminating

interference with passenger trains. Many of the physical improvements to the rail network in the Chicago metropolitan area that have been suggested as part of the CREATE Program would serve to grade separate locations where passenger and freight traffic might otherwise conflict. Additionally, the program would enable the creation of 17,000 jobs and would help retain \$2 billion in annual economic production that could potentially be lost if existing rail capacity and infrastructure issues in the Chicago metropolitan area are not addressed.

The CREATE Program would include the development of five rail transportation corridors: the Central Corridor, Beltway Corridor, Western Avenue Corridor, and East-West Corridor for freight transportation; and the Passenger Express Corridor, which would handle primarily commuter and interstate passenger traffic (see Figure 2.5-1, CREATE Corridors, below).

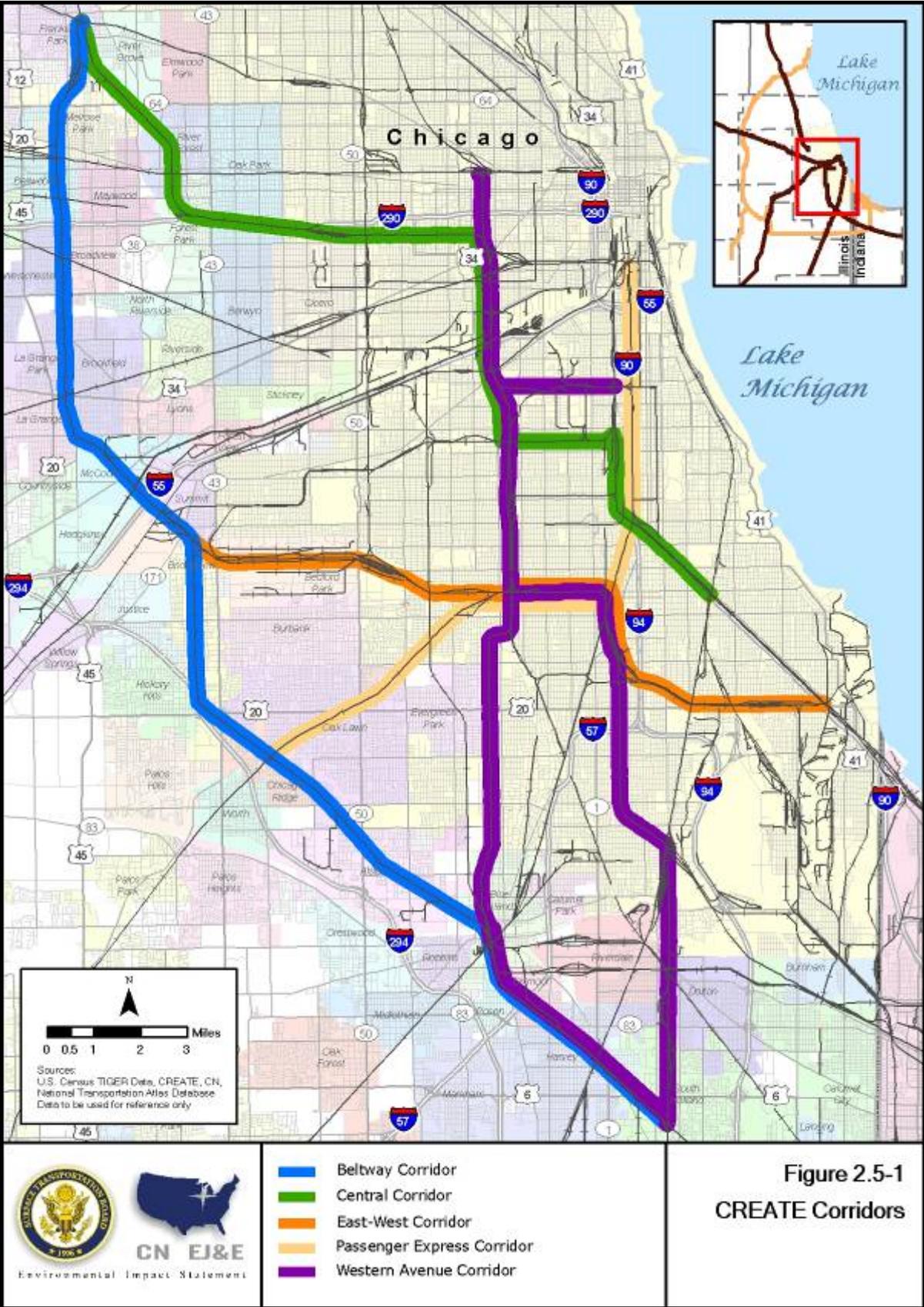
The approximately 78 projects identified within these corridors include the following:

- Twenty-five new roadway overpasses or underpasses at locations where automobile and pedestrian traffic currently crosses railroad tracks at grade level
- Six new rail overpasses or underpasses to separate passenger and freight train tracks
- Viaduct improvements
- Grade crossing safety enhancements
- Extensive upgrades of tracks, switches, and signal systems

The CREATE Program would also include certain improvements, such as grade separation projects, on existing rail lines outside of the corridors. Thirty-two of these projects have been proposed to be in design or under construction by 2009, and six of these projects were to be under construction in the first half of 2008 (CREATE 2008b). The CREATE Program includes 12 CN projects: three each on the Central, Beltway, Western Avenue, and Passenger Express corridors (CREATE 2005).

Despite, any improvements to the transportation system that would result from the CREATE Program the Program would not meet the purpose of and need for the Proposed Action (see Chapter 1, Section 1.3, Purpose and Need) for the following reasons:

- 1) It would only partially satisfy the first purpose of the Proposed Action, to provide CN with a continuous rail route around Chicago under CN ownership, because:
  - a. The CREATE Program would not give CN ownership of a continuous rail route around Chicago.
  - b. The extent to which and the date by which the CREATE Program would actually alleviate a portion of the existing traffic congestion within the Chicago metropolitan area is unclear, as Congress provided significantly lower funding in the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA –LU) legislation than advocated by proponents of the CREATE Program. The funding that has been provided would enable only partial implementation of the CREATE Program in upcoming years and the extent to which and the date by which the remaining funding that would be needed would be available is unknown. One specific project, not yet funded, is the proposed Central Corridor route through Chicago, which would allow traffic on the Air Line to be re-routed.
  - c. The CREATE Program would not facilitate overall congestion-reducing objectives at the same rate as the Proposed Action.



- 2) The CREATE Program would not satisfy the second purpose of the Proposed Action, to make EJ&E's Kirk, East Joliet, and Whiting yards available to the Applicants. The program does not include plans for the Applicants' acquisition of existing EJ&E yards in the Chicago metropolitan area. Because EJ&E's Kirk Yard, as well as smaller facilities in Joliet, Illinois, and Whiting, Indiana would not become available to CN, the CREATE Program would not permit CN to consolidate rail car classification work at these facilities. Consequently, CN would have to continue to use the BRC Clearing Yard, which experiences heavy use by most Class I freight railroads in Chicago and is already the source of delay to CN trains.
- 3) The CREATE Program would not satisfy the third purpose of the Proposed Action, allowing CN to benefit from an important supply line provided by EJ&E line for North American steel, chemical, and petrochemical industries, as well as for Chicago-area utilities and others. Without the proposed EJ&E acquisition, the Applicants would not be able to own this important line, which bypasses the congested Chicago Terminal District. This would compromise CN's capacity to serve North American steel, chemical, and petrochemical industries, as well as Chicago-area utilities, as efficiently as possible.

Given that the CREATE Program could only partially satisfy the first purpose of the Proposed Action and could not satisfy the second and third purposes of the Proposed Action, SEA does not consider the Program to be a reasonable alternative to the Proposed Action and has eliminated it from detailed study.

### **2.5.3 Acquisition of a Different Rail Line**

During the scoping period, members of the public suggested that the Applicants consider the acquisition of a different rail line. The commenters also suggested reconfiguring the Proposed Action so that the Applicants might acquire or use trackage rights on the BOCT, BRC, and/or IHB rail lines within the Chicago metropolitan area.

Restructuring the Proposed Action in this manner would not satisfy the purpose of and need for the Proposed Action for the following reasons:

- This approach would essentially be maintaining the status quo. The BOCT, BRC, and IHB rail lines are the current routes for CN trains.
- BOCT is a subsidiary of CSX and presumably could not be acquired by CN.
- Several railroads currently use the BRC and IHB rail lines, which are owned by multiple carriers, so that the increased capacity and flexibility that CN anticipates that it would gain as a result of the Proposed Action would be unlikely.
- Acquisition of one or both of these rail lines would not give CN the right to make full use of the EJ&E line, which would result from the Proposed Action.
- The Applicants would not gain access to Kirk Yard, one of the Proposed Action's primary purposes.

For these reasons, SEA does not consider acquisition of a different rail line to be a reasonable and feasible alternative and has eliminated this suggested approach from detailed study.

## **2.5.4 Construction of a Bypass**

During the scoping period, members of the public suggested that the Applicants construct or re-route trains to a bypass “outside of the EJ&E [main] Line in Northern Illinois, well outside the greater Chicago metropolitan area” as an alternative to the Proposed Action (Village of Barrington 2008).

Restructuring the Proposed Action in this manner would not satisfy the purpose of and need for the Proposed Action for the following reasons:

- The Applicants would not gain access to Kirk Yard, one of the Proposed Action’s primary purposes.
- A bypass would be far more expensive in terms of land acquisition and rail construction. It would add route miles instead of using available, currently underutilized route miles.
- A bypass would not avoid or minimize potential environmental effects. Rather, a bypass would only serve to move environmental effects from the EJ&E rail line to the area around the bypass. Moreover, bypass construction would directly affect more land than the area around the EJ&E rail line because ROW for the bypass would need to be acquired. Therefore, a bypass would be more environmentally damaging than the Proposed Action, which would largely involve use of existing railroad ROW and rail yards.

For these reasons, SEA does not consider construction of a bypass to be a reasonable and feasible alternative and has eliminated it from detailed study.

## **2.6 Comments Requesting Mitigating Conditions**

SEA received comments requesting or otherwise raising issues related to mitigation conditions from a wide variety of parties, including private citizens, elected officials, communities, and agencies. SEA is considering these comments, as appropriate, in Chapter 3, Affected Environment; Chapter 4, Environmental Consequences; and Chapter 6, Mitigation. SEA recommends preliminary environmental mitigation measures in the Draft EIS (see Chapter 6, Mitigation). Based on public comment and agency input on the mitigation recommended in this Draft EIS, SEA may retain the proposed environmental mitigation measures from the Draft EIS, eliminate some of the mitigation proposed in the Draft EIS, or modify or add to the mitigation SEA is preliminarily recommending here. SEA will make its final recommendations on environmental mitigation to the Board in the Final EIS. The Board then will make its final decision regarding the Proposed Action and any conditions, including environmental conditions it might impose. In making its decision, the Board will consider the Draft EIS, the Final EIS, public and agency comments, and SEA’s final environmental mitigation recommendations.

## **2.7 Comparison of Environmental Impacts of the Proposed Action and Alternatives**

The CEQ regulations for implementing NEPA state that agencies should present the environmental impacts of the Proposed Action and the alternatives in comparative form to better define issues and provide a clear basis for choice among options by the decisionmakers and the public (40 CFR 1502.14). As discussed above, the alternatives SEA has reviewed and investigated in this case include the Proposed Action, the No-Action Alternative, and authorizing the Proposed Action with conditions, including environmental conditions. To allow for a comparison of the Proposed Action and the No-Action Alternative, this section compares the environmental impacts of the Proposed Action and the No-Action Alternative based on the detailed information of the affected

environment and the detailed analysis of potential environmental effects, as presented in Chapter 3, Affected Environment; and Chapter 4, Environmental Consequences. Table 2-9, below, provides a summary of the comparison. It should be noted that the following comparison of the Proposed Action and the No-Action Alternative does not include any environmental mitigation. As discussed in Chapter 6, Mitigation, in any decision authorizing the Proposed Action, the Board may impose mitigation to eliminate or minimize to the extent possible some of the potential adverse effects of the Proposed Action.

In addition, SEA reviewed and investigated a number of alternatives and No-Build Alternatives for each of the six proposed connections. Table 2-10 through Table 2-15, below, summarize the potential environmental effects of the proposed connections and alternative configurations. Table 2-16, below, summarizes the potential environmental effects from the double track construction.

**Table 2-9. Summary of Potential Environmental Impacts Due to Changes in Rail Operations**

Resource Category	No-Action Alternative	Proposed Action
<b>Rail Operations</b>		
Freight Rail Operations	The No-Action Alternative would not affect freight rail operations.	The Applicants' train traffic projections are reasonable and are not likely to be exceeded by 2015. .
Commuter Capacity and Passenger Rail Service	The No-Action Alternative would not affect existing commuter passenger rail service.	The Proposed Action would not adversely affect existing and proposed Metra trains at the four locations that were evaluated. The Proposed Action would not adversely affect potential implementation of the proposed STAR Line service on the EJ&E rail line. The Proposed Action would not adversely affect Metra's proposed SouthEast Service at the Chicago Heights interlocking. The Proposed Action would not adversely affect existing NICTD commuter trains.
Intercity Passenger Rail Service	The No-Action Alternative would not affect existing intercity passenger rail service.	The Proposed Action would not adversely affect existing Amtrak service that operates on CN's Joliet and Chicago subdivisions. The Proposed Action would not adversely affect Amtrak trains at the Dyer interlocking. The Proposed Action would not adversely affect Amtrak trains near Rondout, Illinois.
<b>Safety</b>		
Freight Rail Safety	The No-Action Alternative would not affect freight rail safety.	The Proposed Action may cause a potential increase in train accidents along the EJ&E rail line and yard accidents at EJ&E yards. The Proposed Action may cause a potential decrease in train accidents along the CN rail lines and yard accidents at CN yards. The overall increase in rail/rail at-grade crossing exposure due to the Proposed Action would be minimal.
Vehicle Safety	The No-Action Alternative would result in 11 predicted annual accidents on the EJ&E and CN rail lines. The No-Action Alternative would result in four highway/rail at-grade crossings with a predicted high accident frequency. The No-Action Alternative would result in one highway/rail at-grade crossing that exceeds exposure criteria.	The Proposed Action would cause a net decrease of predicted annual accidents on the CN and EJ&E rail lines. The Proposed Action would result in four highway/rail at-grade crossings with a predicted high accident frequency. The Proposed Action would result in four highway/rail at-grade crossings that exceed the exposure criteria.

**Table 2-9. Summary of Potential Environmental Impacts Due to Changes in Rail Operations**

Resource Category	No-Action Alternative	Proposed Action
Passenger Rail Safety	The No-Action Alternative would not change the likelihood of passenger rail accidents.	The Proposed Action would have no effect on passenger rail safety along the EJ&E rail line. The Proposed Action would improve passenger rail safety along the CN rail lines due to decreased freight traffic.
Quiet Zones	The No-Action Alternative would not affect the existing quiet zones.	The Proposed Action would cause one quiet zone in Barrington, Illinois, to fall out of compliance.
Hazardous Materials Transportation Safety	The No-Action Alternative would result in the same frequency of releases of hazardous materials.	The Proposed Action would cause an increase in the likelihood of release of hazardous materials along the EJ&E rail line and a potential increase of derailments of cars carrying hazardous materials at Kirk and East Joliet yards. The likelihood of a release would remain remote. The Proposed Action would cause a decrease in the likelihood of release of hazardous materials along the CN rail lines and a potential decrease of derailments of cars carrying hazardous materials at Markham, Glenn, and Hawthorne yards.
Pedestrian /Bicycle Safety	The No-Action Alternative would not affect pedestrian or bicyclist safety.	The Proposed Action would potentially increase the risk at pedestrian crossings on the EJ&E rail line and decrease the risk at pedestrian crossings on CN rail lines.
<b>Transportation Systems</b>		
Regional and Local Highway Systems	The No-Action Alternative would not affect regional and local highway systems. However, under the No-Action Alternative, the roadway LOS would decrease, the queue length would increase, and cut-through traffic could increase as regional traffic volumes increase.	The Proposed Action would “substantially affect” 15 highway/rail at-grade crossings.
Intermodal Facilities	The No-Action Alternative would not affect intermodal facilities.	The Proposed Action would not affect intermodal facilities.
Emergency Response	The No-Action Alternative would not affect existing emergency service response. An increase in delay would result from increased vehicle traffic.	Eleven fire and emergency medical service providers near the EJ&E rail line would experience potentially substantial effects as a result of the Proposed Action.

Table 2-9. Summary of Potential Environmental Impacts Due to Changes in Rail Operations

Resource Category	No-Action Alternative	Proposed Action
Navigation	The No-Action Alternative would not affect navigation of waterways or rail operations in the vicinity of a bridge.	The Proposed Action would not affect the navigation at and operations of the EJ&E bridge over the Des Plaines River located at Lockport (river mile 290.1), and would not affect navigation on any other navigable waterways or rail operations on any other bridges.
Airports	The No-Action Alternative would not affect operations of Gary/Chicago International Airport or the proposed airport expansion.	The Proposed Action would have no effect on the Gary/Chicago International Airport or the proposed airport expansion.
<b>Hazardous Waste Sites</b>		
Effects on Hazardous Waste Sites	The No-Action Alternative would not affect hazardous waste sites.	The Proposed Action would not affect hazardous waste sites. However, soils contaminated with hazardous materials could be encountered during construction of the proposed connections.
<b>Land Use</b>		
Current or Future Land Use Patterns	The No-Action Alternative would not affect land use.	The Proposed Action would not directly affect land use. Inconsistent with Barrington Area Council of Governments' (BACOG) plans for the rail line.
Development and Development Trends	The No-Action Alternative would not affect development patterns.	The Proposed Action would not affect development patterns.
Zoning	The No-Action Alternative would not affect zoning.	The Proposed Action would not affect zoning.
Prime Farmland	The No-Action Alternative would not affect prime farmland.	The Proposed Action would not affect prime farmland.
Public Lands	The No-Action Alternative would not affect public lands.	The Proposed Action would contribute to proximity effects on public lands.
Trails, Greenways, Scenic Corridors	The No-Action Alternative would not affect trails, greenways, or scenic corridors.	The Proposed Action has the potential to affect 14 trails, greenways, or scenic corridors due to increased noise levels and delay at pedestrian/rail at-grade crossings.
Local parks	The No-Action Alternative would not affect local parks.	The Proposed Action has the potential to affect 23 existing or planned local parks due to increased noise levels and delay at pedestrian/rail at-grade crossings.
Land and Water Conservation Fund Properties	The No-Action Alternative would not affect Land and Water Conservation Fund properties.	The Proposed Action has the potential to affect four properties due to increased noise levels and delay at pedestrian/rail at-grade crossings.
Coastal Zone Management Areas	The No-Action Alternative would not affect coastal zone management areas.	The Proposed Action would not affect coastal zone management areas.

**Table 2-9. Summary of Potential Environmental Impacts Due to Changes in Rail Operations**

Resource Category	No-Action Alternative	Proposed Action
<b>Socioeconomics</b>		
Population and Demographics	The No-Action Alternative would have no affect on population and demographics. Population and demographics would change only according to current local, regional, and national dynamics.	The Proposed Action would not affect population or demographics. CN layoffs would not have a noticeable effect on jobs or demographics.
Economic Effects	The No-Action Alternative would have no economic effects. The economy would change only according to current local, regional, and national dynamics.	The Proposed Action would have a minor, adverse effect on the economy or economic climate of the Chicago metropolitan area. The Proposed Action would have a minor effect on overall impacts on labor income. The Proposed Action would cause no measurable effects on unemployment rates in Illinois and Indiana.
Fiscal Effects	The No-Action Alternative would have no fiscal effects, such as property taxes and property values. The fiscal outlook would change only according to current local, regional, and national dynamics.	The Proposed Action would cause minor fiscal effects on communities in the Chicago metropolitan area. While there may be adverse effects on individual property owners adjacent or near the EJ&E rail line, the Proposed Action would not affect overall property values within the Study Area
Housing	The No-Action Alternative would have no affect on housing. The housing market would change only according to current local, regional, and national dynamics.	The Proposed Action would not affect the availability of housing or rates of affordable housing.
Communities and Community Cohesion	The No-Action Alternative would have no affect on communities and community cohesion. Community cohesion would change only according to current local, regional, and national dynamics.	The Proposed Action is expected to have a minimal effect on community cohesion.
Travel Patterns/Accessibility/Travel Times	The No-Action Alternative would have no affect on travel patterns, accessibility, and travel times. Travel would change only according to current local, regional, and national dynamics.	The Proposed Action would cause minor changes in travel patterns, accessibility, and travel times in communities along the EJ&E rail line, due to the increased frequency of trains.
Community Facilities and Public Services	The No-Action Alternative would not affect community facilities and public services. These benefits would change only according to current local, regional, and national dynamics.	The Proposed Action would minimally affect parks and schools because the EJ&E is an existing rail line and residents have, at least partially, adapted their travel patterns to train traffic. The Proposed Action may affect school districts and private schools that are located within 0.25 mile of a highway/rail at-grade crossing to the potential for an increase in school bus delays.

Table 2-9. Summary of Potential Environmental Impacts Due to Changes in Rail Operations

Resource Category	No-Action Alternative	Proposed Action
<b>Environmental Justice<sup>a</sup></b>		
Minority Populations along the EJ&E Rail Line	Under the No-Action Alternative, impacts on minority populations along the EJ&E rail line would be the same as those experienced under existing conditions.	Under the Proposed Action, minority populations along the EJ&E rail line would not experience disproportionate impacts from safety and delay at highway/rail at-grade crossings, but would experience high and adverse impacts due to train noise.
Low-Income Populations along the EJ&E Rail Line	Under the No-Action Alternative, impacts on low-income populations along the EJ&E line would be the same as those experienced under existing conditions.	Under the Proposed Action, low-income populations along the EJ&E rail line would not experience disproportionate impacts from safety and delay at highway/rail at-grade crossings, but would experience high and adverse impacts due to train noise.
Minority and Low-Income Populations along the CN Rail Lines	Under the No-Action Alternative, the number of trains would decrease along the CN rail lines as described in the Application. Minority and low-income populations along the CN rail lines in Chicago metropolitan area would benefit from decreasing train traffic.	Under the Proposed Action, the environmental justice communities traversed by or adjacent to these rail segments would experience beneficial impacts related to hazardous materials transport, safety and delay at highway/rail at-grade crossings, and train noise from the decreased train traffic on the CN rail lines.
<b>Energy</b>		
Transportation of Energy Resources and Recyclable Commodities	The No-Action Alternative would not affect the transported amounts of energy resources or recyclable commodities.	The Proposed Action would not affect the transported amounts of energy resources or recyclable commodities.
Energy Use and Energy Efficiency Caused by Operational Changes	The No-Action Alternative would not affect the energy use and energy efficiency.	The Proposed Action would increase energy use, compared with the No-Action Alternative, due to longer routes. Under the Proposed Action, the efficiency of the system is improved despite the increase in energy usage.
Energy Use by Vehicle Idle	The No-Action Alternative would not affect energy use caused by motor vehicle idle at highway/rail at-grade crossings.	Fuel and energy use for 2015 increases under the Proposed Action compared with the No-Action Alternative because of the re-routing of longer CN trains to a longer route, which has more public at-grade crossings than the current CN rail lines.
Change in Energy Use Caused by Truck-to-Rail Diversions	The No-Action Alternative would not cause any change in energy use due to growth in freight transport, change in freight transport, or diversions to truck.	The Proposed Action would not cause any change in energy use due to growth in freight transport, change in freight transport, or diversions to truck.

**Table 2-9. Summary of Potential Environmental Impacts Due to Changes in Rail Operations**

<b>Resource Category</b>	<b>No-Action Alternative</b>	<b>Proposed Action</b>
Net Change in Energy Use	The No-Action Alternative was used as a basis to compare the effects of the Proposed Action.	The Proposed Action would cause a net increase of less than 10% of current energy use under the No-Action Alternative.
<b>Air Quality and Climate</b>		
Air Emissions from Operations	The No-Action Alternative would not increase emissions from operations.	Emissions for 2015 would increase for the Proposed Action compared with the No-Action Alternative, because of an increase in fuel use due to the longer routes taken under the Proposed Action.
Air Emissions from Vehicle Idle	The No-Action Alternative would not increase emissions from vehicle idle.	Vehicle delay emissions for 2015 would increase for the Proposed Action compared with No-Action Alternative, because of the re-routing of longer CN trains to a longer route, which has more public at-grade crossings than the current CN rail lines.
Air Emissions from Truck-to-Rail Diversions	The No-Action Alternative would not affect air emissions from truck-to-rail diversions.	The Proposed Action would not affect air emissions from truck-to-rail diversions.
Net Change in Air Emissions	The No-Action Alternative was used as a basis to compare the effects of the Proposed Action.	The Proposed Action would not cause operational air emissions to exceed the General Conformity thresholds.
Transportation of Ozone-Depleting Materials	The No-Action Alternative would not affect the transportation of ozone-depleting materials.	The Proposed Action would not affect the amounts of ozone-depleting materials being transported; however, the route of these materials may change in the Chicago metropolitan area.
Hot-Spot Analyses	The No-Action Alternative would not affect air quality, air toxics, or nonattainment areas.	The Proposed Action would not adversely affect air quality as a result of CO emissions from motor vehicles delayed at highway/rail at-grade crossings. The Proposed Action would cause a negligible effect on MSAT emissions and localized cancer risks. The Proposed Action would not adversely affect NAAQS attainment due to rail yard operational changes.
Net Change in Air Emissions Compared with State Implementation Plans	The No-Action Alternative would not adversely affect ozone NAAQS attainment.	The Proposed Action would not adversely affect ozone NAAQS attainment.
Urban Heat Island (UHI)	The No-Action Alternative would not affect the local UHI.	The Proposed Action would not have any discernable effect on the local UHI.
Global Climate Change	The No-Action Alternative would not affect manmade global climate change.	The Proposed Action would not affect manmade global climate change.

Table 2-9. Summary of Potential Environmental Impacts Due to Changes in Rail Operations

Resource Category	No-Action Alternative	Proposed Action
<b>Noise and Vibration</b>		
Noise	The No-Action Alternative would not affect noise levels in the Study Area.	The Proposed Action would cause a net increase of 258 noise-sensitive receptors that are predicted to experience an Ldn of 65 dBA or greater. SEA does not consider the overall increase as an adverse effect. The Proposed Action would adversely affect 1,559 noise-sensitive receptors within the 70 dBA Ldn contour on the EJ&E rail line. The CN rail lines would have a reduction in noise-sensitive receptors due to reduced average daily train traffic.
Vibration	The No-Action Alternative would not affect vibration levels in the Study Area.	Under the Proposed Action, maximum vibration levels from train traffic are expected to be the same as the levels from existing train traffic. The number of trains per day would be greater under the Proposed Action; therefore, the vibration events would occur more frequently. The Proposed Action would not cause vibration that could cause damage to Prestwick Dam in Frankfort, Illinois.
<b>Biological Resources<sup>b</sup></b>		
Plant Communities	The No-Action Alternative would not change effects on plant communities.	The Proposed Action would not affect plant communities.
Wildlife	The No-Action Alternative would not change effects on wildlife.	The Proposed Action would not affect wildlife.
Federal, State, or Local Conservation and Natural Areas	The No-Action Alternative would not change effects on Federal, state, and local conservation and natural areas.	The Proposed Action would not affect conservation and natural areas.
Federally-Listed Threatened and Endangered Species	The No-Action Alternative would not change effects on Federally-listed threatened and endangered species.	With the appropriate mitigation, the Proposed Action is not likely to adversely affect the Hine's emerald dragonfly. The Proposed Action is not likely to adversely affect the Karner blue butterfly.

**Table 2-9. Summary of Potential Environmental Impacts Due to Changes in Rail Operations**

Resource Category	No-Action Alternative	Proposed Action
State-Listed Threatened and Endangered Species	The No-Action Alternative would not change effects on state-listed threatened and endangered species.	State-listed species along the EJ&E rail line may have individual effects due to train collisions or increased noise. The proposed relocation of rail traffic from the existing CN rail line within the Hoosier Prairie Area to the EJ&E rail line near the edge of the Hoosier Prairie Area would result in a beneficial effect on dune invertebrate species.
<b>Water Resources</b>		
Groundwater	Under the No-Action Alternative, groundwater could be affected where there is a risk of hazardous substance spills during normal operation of the existing EJ&E and CN rail lines.	Under the Proposed Action, groundwater could be affected where there is a risk of hazardous substance spills during normal operation of the existing EJ&E rail lines. One non-community, public supply well in Plainfield, Illinois has potential to be affected by a surface spill.
Floodplains and Streams	Under the No-Action Alternative, existing rail hydraulic structures would not be altered. There would be no change in flood water surface elevations or floodplain impacts or surface water drainage patterns.	The Proposed Action would have no affect on floodplains or streams.
Surface Water Quality	Under the No-Action Alternative, there would be no changes in existing surface water quality conditions.	The Proposed Action and the No-Action Alternative would have the same operational and maintenance effects.
Wetlands	The No-Action Alternative would not affect wetlands as rail operations would remain the same.	The Proposed Action would not affect wetlands, as no changes in drainage patterns would occur.
<b>Cultural Resources</b>		
Historic Properties (National Register of Historic Places [NRHP]-Listed or -Eligible Cultural Resources)	The No-Action Alternative would not affect any NRHP-listed or NRHP-eligible cultural resources.	Noise and vibration experienced under the Proposed Action would not adversely affect any NRHP-listed or NRHP-eligible cultural resources.

Notes:

- <sup>a</sup> The governing regulation for environmental justice analysis, Executive Order 12898, uses the term “disproportionately high and adverse impacts” to refer to potential effects on environmental justice populations. Therefore, this section refers to impacts rather than effects.
- <sup>b</sup> The wording used in this section is required by Section 7 of the Endangered Species Act of 1973 (16 USC 1531 et seq.) for quantifying potential effects on listed species.

Table 2-10. Summary of Potential Environmental Impacts - Munger Connection

Resource Category	No-Action at Munger	Proposed Munger Connection	Munger Alternative Configurations		
			Original Proposal	UP Connection	Northwest Quadrant
<b>Rail Operations</b>					
Freight Rail Operations	Would not affect rail operations.	Would have minor effects on rail operations and train speeds.	Would have minor effects on rail operations and train speeds.	Would have minor effects on rail operations and train speeds.	Would have minor effects on rail operations and train speeds.
<b>Safety</b>					
Freight Rail Safety	Would not affect freight rail safety.				
Vehicle Safety	Would not affect vehicle safety.				
Passenger Rail Safety	Would not affect passenger rail safety.				
Quiet Zones	Would not affect quiet zones.				
Hazardous Materials Transportation Safety	Would not affect hazardous materials transportation.				
Pedestrian/Bicycle Safety	Would not affect pedestrian and bicycle safety.				
<b>Transportation Systems</b>					
Regional and Local Highway Systems	Would not affect regional and local highway systems.	Would not affect regional and local highway systems.	Would not affect regional and local highway systems.	Would not affect regional and local highway systems.	Would not affect regional and local highway systems.
Emergency Response	Would not affect existing emergency service response.	Would affect existing emergency service response.			
Navigation	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.

**Table 2-10. Summary of Potential Environmental Impacts - Munger Connection**

Resource Category	No-Action at Munger	Proposed Munger Connection	Munger Alternative Configurations		
			Original Proposal	UP Connection	Northwest Quadrant
Airports	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.
<b>Hazardous Waste Sites<sup>a</sup></b>					
Effects on Hazardous Waste Sites	Would not affect hazardous waste sites.	Low risk of encountering hazardous materials.	Low risk of encountering hazardous materials.	High risk of encountering hazardous materials.	Low risk of encountering hazardous materials.
<b>Land Use</b>					
Current or Future Land Use Patterns	Would not affect land use patterns because no construction or acquisition of new ROW would occur.	Would not affect land use patterns since construction would occur on lands primarily identified for transportation and utility uses.	Would affect land use patterns because the connection would be constructed on 0.69 acre of forest preserve property.	Would affect land use patterns because 2.86 acres of open space land and 0.58 acres of residential land would be acquired to construct this connection.	Would affect land use patterns because 2.37 acres of open space land would be acquired to construct this connection.
Development and Development Trends	Would not affect development and development trends because no construction or acquisition of new ROW would occur.	Would not affect development and development trends.	Would not affect development and development trends.	Would not affect development and development trends.	Would not affect development and development trends.
Consistency with Land Use Plans	Would be consistent with the existing land use plans.	Would be consistent with the existing land use plans.	Would not be consistent with the existing land use plans because it would require construction on forest preserve land designated as open space and for recreational uses.	Would not be consistent with the existing land use plans because it would occur on lands designated as agricultural.	Would not be consistent with the existing land use plans because it would require construction on forest preserve land designated as open space and for recreational uses.

Table 2-10. Summary of Potential Environmental Impacts - Munger Connection

Resource Category	No-Action at Munger	Proposed Munger Connection	Munger Alternative Configurations		
			Original Proposal	UP Connection	Northwest Quadrant
Zoning	Would be consistent with current zoning.	Would not affect current zoning, because it is not within Bartlett, Illinois, zoning limits.	Would not affect current zoning, because it is not within Bartlett, Illinois, zoning limits.	Would be consistent with current zoning in West Chicago, Illinois, but not with current zoning in Kane County (zoned farmland).	Would not be consistent with current zoning in Bartlett, Illinois, current zoning and may require a zoning amendment.
Prime Farmland	Would not affect prime farmland.	Would not affect prime farmland.	Would not affect prime farmland.	Would affect prime farmland.	Would not affect prime farmland.
Public Lands	Would not affect public lands.	Would not affect public lands.	Would affect Pratt's Wayne Woods Forest Preserve.	Would not affect public lands.	Would affect Pratt's Wayne Woods Forest Preserve.
Trails, Greenways, Scenic Corridors	Would not affect trails, greenways, or scenic corridors	Would affect the proposed greenway adjacent to the EJ&E rail line.	Would affect the proposed greenway adjacent to the EJ&E rail line.	Would affect the proposed greenway adjacent to the EJ&E rail line.	Would affect the proposed greenway adjacent to the EJ&E rail line.
Local Parks or Land and Water Conservation Properties	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.
Coastal Management Zone	Would not affect a coastal management zone.	Would not affect a coastal management zone.	Would not affect a coastal management zone.	Would not affect a coastal management zone.	Would not affect a coastal management zone.
<b>Socioeconomics</b>					
Population and Demographics	Would not affect population or demographics.	Would not affect population or demographics.	Would not affect population or demographics.	Would not affect population or demographics.	Would not affect population or demographics.
Economic Effects	Would not increase employment, the gross regional product, or income in Illinois or Indiana.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.

**Table 2-10. Summary of Potential Environmental Impacts - Munger Connection**

Resource Category	No-Action at Munger	Proposed Munger Connection	Munger Alternative Configurations		
			Original Proposal	UP Connection	Northwest Quadrant
Fiscal Effects	Would not affect property or other taxes.	Would not affect tax base or local property taxes.	Would not affect tax base or local property taxes.	Would not affect tax base or local property taxes. Would construct new rail line close to residences.	Would not affect tax base or local property taxes.
Housing	Would not affect housing availability.	Would not affect housing availability.	Would not affect housing availability.	Would not affect housing availability.	Would not affect housing availability.
Communities and Community Cohesion	Would not affect community cohesion.	Would not affect community cohesion.	Would not affect community cohesion.	Would not affect community cohesion.	Would not affect community cohesion.
Travel Patterns/ Accessibility/ Travel Times	Would not affect travel patterns, accessibility, or travel times.	Would induce temporary construction effects, but would not affect travel patterns long-term.	Would induce temporary construction effects, but would not affect travel patterns long-term.	Would induce temporary construction effects, but would not affect travel patterns long-term.	Would induce temporary construction effects, but would not affect travel patterns long-term.
Community Facilities and Public Services	Would not affect community facilities or public services.	Would be within a 1.5-mile radius of three schools and parks. Would induce temporary construction effects on public services.	Would be within a 1.5-mile radius of three schools and parks. Would induce temporary construction effects on public services.	Would be within a 1.5-mile radius of 18 schools and parks. Would induce temporary construction effects on public services.	Would be within a 1.5-mile radius of three schools and parks. Would induce temporary construction effects on public services.
<b>Environmental Justice<sup>b</sup></b>					
Construction Effects on Minority and Low-Income Populations	Would not displace any residences or businesses because no construction or acquisition of additional ROW would occur; therefore, no high and adverse impacts would result.	Would not displace any residences or businesses; therefore, no high and adverse impacts would result.	Would not displace any residences or businesses; therefore, no high and adverse impacts would result.	Would not displace any residences or businesses; therefore, no high and adverse impacts would result.	Would not displace any residences or businesses; therefore, no high and adverse impacts would result.

Table 2-10. Summary of Potential Environmental Impacts - Munger Connection

Resource Category	No-Action at Munger	Proposed Munger Connection	Munger Alternative Configurations		
			Original Proposal	UP Connection	Northwest Quadrant
<b>Energy</b>					
Energy Use from Construction	Would not use energy.	Quantities of energy used would be small and effects would be minimal.	Quantities of energy used would be small and effects would be minimal.	Quantities of energy used would be small and effects would be minimal.	Quantities of energy used would be small and effects would be minimal.
<b>Air Quality and Climate</b>					
Construction-Related Air Emissions	Would not cause construction-related emissions.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.
<b>Noise</b>					
Wheel Squeal	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E, CN, and UP rail lines.	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.
Construction-Related Noise	Would not cause construction-related noise.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.

**Table 2-10. Summary of Potential Environmental Impacts - Munger Connection**

Resource Category	No-Action at Munger	Proposed Munger Connection	Munger Alternative Configurations		
			Original Proposal	UP Connection	Northwest Quadrant
Construction-Related Vibration	Would not cause construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.
<b>Biological Resources</b>					
Plant Communities	No effect.	Would impact railroad embankment and 0.7 acres of Powis Marsh; would not impact Pratt's Wayne Woods Forest Preserve.	Would impact railroad embankment and 1.9 acres of Powis Marsh and 1.0 acres of Pratt's Wayne Woods Forest Preserve.	Would impact 1.9 acres of Brewster Creek Marsh and 5.9 acres Western Prairie and Wayne Meadow, and railroad embankment.	Would impact 2.8 acres of Pratt's Wayne Woods Forest Preserve, 0.9 acres of wetlands, and railroad embankment.
Wildlife	No effect.	Would result in increased noise and indirect loss of habitat, potentially decreasing the breeding activity of marsh birds.	No effect.	No effect.	No effect.
Federal, State or Local Conservation and Natural Areas	No effect.	Would affect Pratt's Wayne Woods Forest Preserve.	No effect.	No effect.	Would affect Pratt's Wayne Woods Forest Preserve.
Federally-Listed Threatened and Endangered Species	No effect.	No effect.	No effect.	No effect.	No effect.
State-Listed Threatened and Endangered Species	No effect.	Minor effects on marsh and wetland reptile species.	Minor effects on marsh and wetland reptile species.	Minor effects on marsh and wetland reptile species.	Minor effects on marsh and wetland reptile species.

Table 2-10. Summary of Potential Environmental Impacts - Munger Connection

Resource Category	No-Action at Munger	Proposed Munger Connection	Munger Alternative Configurations		
			Original Proposal	UP Connection	Northwest Quadrant
<b>Water Resources</b>					
Groundwater	Would not affect groundwater.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.
Floodplains and Streams	Would not affect floodplains and streams.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.
Surface Water Quality	Would not affect surface water quality.	Would not affect surface water quality, if the Applicants obtain the proper permits and use Best Management Practices (BMPs).	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.
Wetlands	Would not affect wetlands.	Would directly affect 2.48 acres of wetlands.	Would directly affect 4.80 acres of wetlands.	Would directly affect 2.20 acres of wetlands.	Would directly affect 2.45 acres of wetlands.
<b>Cultural Resources</b>					
Historic Properties (NRHP-Listed or -Eligible Cultural Resources)	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.

## Notes:

- <sup>a</sup> A low, medium, and high ranking are assigned to provide a relative likelihood of encountering contaminated materials in proposed construction areas along the rail line.
- <sup>b</sup> The governing regulation for environmental justice analysis, Executive Order 12898, uses the term “disproportionately high and adverse impacts” to refer to potential effects on environmental justice populations. Therefore, this section refers to impacts rather than effects.

<b>Table 2-11. Summary of Potential Environmental Impacts - Joliet Connection</b>			
<b>Resource Category</b>	<b>No-Action at Joliet</b>	<b>Proposed Joliet Connection</b>	<b>Joliet Alternative - Original Proposal</b>
<b>Rail Operations</b>			
Freight Rail Operations	Would not affect rail operations.	Would have minor effects on rail operations and train speeds.	Would have minor effects on rail operations and train speeds.
<b>Safety</b>			
Freight Rail Safety	Would not affect freight rail safety.	Would not affect freight rail safety.	Would not affect freight rail safety.
Vehicle Safety	Would not affect vehicle safety.	Would not affect vehicle safety.	Would not affect vehicle safety.
Passenger Rail Safety	Would not affect passenger rail safety.	Would not affect passenger rail safety.	Would not affect passenger rail safety.
Quiet Zones	Would not affect quiet zones.	Would not affect quiet zones.	Would not affect quiet zones.
Hazardous Materials Transportation Safety	Would not affect hazardous materials transport.	Would not affect hazardous materials transport.	Would not affect hazardous materials transport.
Pedestrian/Bicycle Safety	Would not affect pedestrian or bicycle safety.	Would not affect pedestrian or bicycle safety.	Would not affect pedestrian or bicycle safety.
<b>Transportation Systems</b>			
Regional and Local Highway Systems	Would not affect regional and local highway systems.	Would not affect regional and local highway systems.	Would not affect regional and local highway systems.
Emergency Response	Would not affect existing emergency service response.	Would not affect existing emergency service response.	Would not affect existing emergency service response.
Navigation	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.
Airports	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.
<b>Hazardous Waste Sites<sup>a</sup></b>			
Effects on Hazardous Waste Sites	Would not affect hazardous waste sites.	High risk of encountering hazardous materials.	High risk of encountering hazardous materials.
<b>Land Use</b>			
Current or Future Land Use Patterns	Would not affect land use patterns.	Would affect land use, but not land use patterns	Would affect land use, but not land use patterns.
Development and Development Trends	Would not affect development and development trends because no construction or acquisition of new ROW would occur.	Would not affect development and development trends.	Would not affect development and development trends.
Consistency with Land Use Plans	Would be consistent with land use plans.	Would be consistent with land use plans.	Would be consistent with land use plans.

<b>Table 2-11. Summary of Potential Environmental Impacts - Joliet Connection</b>			
<b>Resource Category</b>	<b>No-Action at Joliet</b>	<b>Proposed Joliet Connection</b>	<b>Joliet Alternative - Original Proposal</b>
Zoning	Would be consistent with current zoning.	Would not affect zoning in the vicinity because the new ROW is not currently zoned.	Would not affect zoning in the vicinity because the new ROW is not currently zoned.
Prime Farmland	Would not affect prime farmland.	Would not affect prime farmland.	Would not affect prime farmland.
Public Lands	Would not affect public lands.	Would not affect public lands.	Would not affect public lands.
Trails, Greenways, Scenic Corridors	Would not affect trails, greenways, or scenic corridors.	Would not directly affect the Illinois and Michigan (I&M) Canal Trail.	Would not directly affect the I&M Canal Trail.
Local Parks or Land and Water Conservation Properties	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.
Coastal Management Zone	Would not affect a coastal management zone.	Would not affect a coastal management zone.	Would not affect a coastal management zone.
<b>Socioeconomics</b>			
Population and Demographics	Would not affect population or demographics.	Would not affect population or demographics.	Would not affect population or demographics.
Economic Effects	Would not increase employment, the gross regional product, or income in Illinois or Indiana.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.
Fiscal Effects	Would not affect property or other taxes.	Would not affect tax base or local property taxes.	Would result in minor reduction in local property tax revenue.
Housing	Would not affect housing availability.	Would not affect housing availability.	Would not affect housing availability.
Communities and Community Cohesion	Would not affect community cohesion.	Would not affect community cohesion.	Would not affect community cohesion.
Travel Patterns/ Accessibility/ Travel Times	Would not affect travel patterns, accessibility, or travel times.	Would induce temporary construction effects, but would not affect travel patterns long-term.	Would induce temporary construction effects, but would not affect travel patterns long-term.
Community Facilities and Public Services	Would not affect community facilities or public services.	Would be within a 1.5-mile radius of 24 schools and parks. Would induce temporary construction effects on public services.	Would be within a 1.5-mile radius of 24 schools and parks. Would induce temporary construction effects on public services.
<b>Environmental Justice<sup>b</sup></b>			
Construction Effects on Minority and Low-Income Populations	Would not displace any residences or businesses because no construction or acquisition of additional ROW would occur; therefore, no high and adverse impacts would result.	Would not displace any residences or businesses; therefore, no high and adverse impacts would result.	Would not displace any residences; therefore, no high and adverse impacts would result.

<b>Table 2-11. Summary of Potential Environmental Impacts - Joliet Connection</b>			
<b>Resource Category</b>	<b>No-Action at Joliet</b>	<b>Proposed Joliet Connection</b>	<b>Joliet Alternative - Original Proposal</b>
<b>Energy</b>			
Energy Use from Construction	No energy would be used.	Quantities of energy used would be small and effects would be minimal.	Quantities of energy used would be small and effects would be minimal.
<b>Air Quality and Climate</b>			
Construction-Related Air Emissions	Would not cause construction-related emissions.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.
<b>Noise</b>			
Wheel Squeal	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.
Construction-Related Noise	Would not cause construction-related noise.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.
Construction-Related Vibration	Would not cause construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.
<b>Biological Resources</b>			
Plant Communities	No effect.	Would affect railroad embankment and immature forest.	No effect on plant communities - construction would occur on industrial land.
Wildlife	No effect.	No effect.	No effect.
Federal, State or Local Conservation and Natural Areas	No effect.	No effect.	No effect.
Federally-Listed Threatened and Endangered Species	No effect.	No effect.	No effect.
State-Listed Threatened and Endangered Species	No effect.	No effect.	No effect.

<b>Resource Category</b>	<b>No-Action at Joliet</b>	<b>Proposed Joliet Connection</b>	<b>Joliet Alternative - Original Proposal</b>
<b>Water Resources</b>			
Groundwater	Would not affect groundwater.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.
Floodplains and Streams	Would not affect floodplains and streams.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.
Surface Water Quality	Would not affect surface water quality.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.
Wetlands	Would not affect wetlands.	Would not affect wetlands.	Would not affect wetlands.
<b>Cultural Resources</b>			
Historic Properties (NRHP-Listed or -Eligible Cultural Resources)	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not adversely affect NRHP-listed or NRHP-eligible cultural resources (that is, the NRHP-listed I&M Canal and the NRHP-eligible bridges).	Would not adversely affect NRHP-listed or NRHP-eligible cultural resources (that is, the NRHP-listed I&M Canal and the NRHP-eligible bridges).

## Notes:

- <sup>a</sup> A low, medium, and high ranking are assigned to provide a relative likelihood of encountering contaminated materials in proposed construction areas along the rail line.
- <sup>b</sup> The governing regulation for environmental justice analysis, Executive Order 12898, uses the term “disproportionately high and adverse impacts” to refer to potential effects on environmental justice populations. Therefore, this section refers to impacts rather than effects.

<b>Table 2-12. Summary of Potential Environmental Impacts - Matteson Connection</b>				
<b>Resource Category</b>	<b>No-Action at Matteson</b>	<b>Proposed Matteson Connection</b>	<b>Matteson Alternative Configurations</b>	
			<b>Northeast and Southwest Quadrants</b>	<b>Southwest Quadrant</b>
<b>Rail Operations</b>				
Freight Rail Operations	Would not affect rail operations.	Would have a large number of trains moving through the connection and would lower train speeds at the highway/rail at-grade crossing on Main Street.	Would have a large number of trains moving through the connection and would lower train speeds at the highway/rail at-grade crossing on Main Street.	Would have a large number of trains moving through the connection and would lower train speeds at the highway/rail at-grade crossing on Main Street.
<b>Safety</b>				
Freight Rail Safety	Would not affect freight rail safety.	Would not affect freight rail safety.	Would not affect freight rail safety.	Would not affect freight rail safety.
Vehicle Safety	Would not affect vehicle safety.	Would not affect vehicle safety.	Would not affect vehicle safety.	Would not affect vehicle safety.
Passenger Rail Safety	Would not affect passenger rail safety.	Would not affect passenger rail safety.	Would not affect passenger rail safety.	Would not affect passenger rail safety.
Quiet Zones	Would not affect quiet zones.	Would not affect quiet zones.	Would not affect quiet zones.	Would not affect quiet zones.
Hazardous Materials Transportation Safety	Would not affect hazardous materials transport.	Would not affect hazardous materials transport.	Would not affect hazardous materials transport.	Would not affect hazardous materials transport.
Pedestrian/Bicycle Safety	Would not affect pedestrian and bicycle safety.	Would not affect pedestrian and bicycle safety.	Would not affect pedestrian and bicycle safety.	Would not affect pedestrian and bicycle safety.
<b>Transportation Systems</b>				
Regional and Local Highway Systems	Would not affect regional and local highway systems.	Would affect regional and local highway systems.	Would affect regional and local highway systems.	Would affect regional and local highway systems.
Emergency Response	Would not affect existing emergency service response.	Would affect existing emergency service response.	Would affect existing emergency service response.	Would not affect existing emergency service response.
Navigation	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.
Airports	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.

<b>Table 2-12. Summary of Potential Environmental Impacts - Matteson Connection</b>				
<b>Resource Category</b>	<b>No-Action at Matteson</b>	<b>Proposed Matteson Connection</b>	<b>Matteson Alternative Configurations</b>	
			<b>Northeast and Southwest Quadrants</b>	<b>Southwest Quadrant</b>
<b>Hazardous Waste Sites<sup>a</sup></b>				
Effects on Hazardous Waste Sites	Would not affect hazardous waste sites.	High risk of encountering hazardous materials.	High risk of encountering hazardous materials.	High risk of encountering hazardous materials.
<b>Land Use</b>				
Current or Future Land Use Patterns	Would not affect land use patterns.	Would affect land use patterns.	Would affect land use patterns.	Would not affect land use patterns.
Development and Development Trends	Would not affect development and development trends because no construction or acquisition of new ROW would occur.	Would not affect development and development trends.	Would not affect development and development trends.	Would not affect development and development trends.
Consistency with Land Use Plans	Would be consistent with the existing land use plan.	Would not be consistent with existing Matteson and Park Forest, Illinois land use plans.	Would not be consistent with existing Matteson land use plan.	Would be consistent with existing Matteson land use plan.
Zoning	Would be consistent with current zoning.	Would not be consistent with current zoning in Matteson and Park Forest, Illinois, and may require a zoning amendment.	Would be consistent with current zoning in Matteson.	Would be consistent with current zoning in Matteson.
Prime Farmland	Would not affect prime farmland.	Would not affect prime farmland.	Would not affect prime farmland.	Would not affect prime farmland.
Public Lands	Would not affect public lands.	Would not affect public lands.	Would not affect public lands.	Would not affect public lands.
Trails, Greenways, Scenic Corridors	Would not affect trails, greenways, or scenic corridors.	Would potentially affect Old Plank Road Trail.	Would potentially affect Old Plank Road Trail.	Would not affect Old Plank Road Trail.
Local Parks or Land and Water Conservation Properties	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.
Coastal Management Zone	Would not affect a coastal management zone.	Would not affect a coastal management zone.	Would not affect a coastal management zone.	Would not affect a coastal management zone.

<b>Table 2-12. Summary of Potential Environmental Impacts - Matteson Connection</b>				
<b>Resource Category</b>	<b>No-Action at Matteson</b>	<b>Proposed Matteson Connection</b>	<b>Matteson Alternative Configurations</b>	
			<b>Northeast and Southwest Quadrants</b>	<b>Southwest Quadrant</b>
<b>Socioeconomics</b>				
Population and Demographics	Would not affect population or demographics.	Would not affect population or demographics.	Would not affect population or demographics.	Would not affect population or demographics.
Economic Effects	Would not increase employment, the gross regional product, or income in Illinois or Indiana.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.
Fiscal Effects	Would not affect property or other taxes.	Would reduce local property taxes by approximately \$50,000. Would construct new rail line close to residences.	Would reduce local property taxes by approximately \$57,000. Would construct new rail line close to residences.	Would not affect tax base or local property taxes. Would construct new rail line close to residences.
Housing	Would not affect housing availability.	Would not affect housing availability.	Would not affect housing availability.	Would not affect housing availability.
Communities and Community Cohesion	Would not affect community cohesion.	Would not affect community cohesion.	Would not affect community cohesion.	Would not affect community cohesion.
Travel Patterns/ Accessibility/ Travel Times	Would not affect travel patterns, accessibility, or travel times.	Would induce temporary construction effects, but would not affect travel patterns long-term.	Would induce temporary construction effects, but would not affect travel patterns long-term.	Would induce temporary construction effects, but would not affect travel patterns long-term.
Community Facilities and Public Services	Would not affect community facilities or public services.	Would be within a 1.5-mile radius of 47 schools and parks. Would induce temporary construction effects on public services.	Would be within a 1.5-mile radius of 47 schools and parks. Would induce temporary construction effects on public services.	Would be within a 1.5-mile radius of 47 schools and parks. Would induce temporary construction effects on public services.

<b>Table 2-12. Summary of Potential Environmental Impacts - Matteson Connection</b>				
<b>Resource Category</b>	<b>No-Action at Matteson</b>	<b>Proposed Matteson Connection</b>	<b>Matteson Alternative Configurations</b>	
			<b>Northeast and Southwest Quadrants</b>	<b>Southwest Quadrant</b>
<b>Environmental Justice<sup>b</sup></b>				
Construction Effects on Minority and Low-Income Populations	Would not displace any residences or businesses because no construction or acquisition of additional ROW would occur; therefore, no high and adverse impacts would result.	Would not displace any residences; therefore, no high and adverse impacts would result.	Would not displace any residences; therefore, no high and adverse impacts would result.	Would not displace any residences; therefore, no high and adverse impacts would result.
<b>Energy</b>				
Energy Use from Construction	No energy used.	Quantities of energy used would be small and effects would be minimal.	Quantities of energy used would be small and effects would be minimal.	Quantities of energy used would be small and effects would be minimal.
<b>Air Quality and Climate</b>				
Construction-Related Air Emissions	Would not cause construction-related emissions.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.
<b>Noise</b>				
Wheel Squeal	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.	Would affect 423 noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.	Would affect 212 noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.	Would affect 142 noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.
Construction-Related Noise	Would not cause construction-related noise.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.

<b>Table 2-12. Summary of Potential Environmental Impacts - Matteson Connection</b>				
<b>Resource Category</b>	<b>No-Action at Matteson</b>	<b>Proposed Matteson Connection</b>	<b>Matteson Alternative Configurations</b>	
			<b>Northeast and Southwest Quadrants</b>	<b>Southwest Quadrant</b>
Construction-Related Vibration	Would not cause construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.
<b>Biological Resources</b>				
Plant Communities	No effect.	Would affect pavement, railroad land, immature upland forest and wet forest.	Would affect developed land, immature forest, and a ditched tributary of creek.	Would affect pavement, railroad land, immature upland forest and wet forest.
Wildlife	No effect.	No effect.	No effect.	No effect.
Federal, State or Local Conservation and Natural Areas	No effect.	No effect.	No effect.	No effect.
Federally-Listed Threatened and Endangered Species	No effect.	No effect.	No effect.	No effect.
State-Listed Threatened and Endangered Species	No effect.	Potential effect on wetlands species.	Potential effect on wetlands species.	Potential effect on wetlands species.
<b>Water Resources</b>				
Groundwater	Would not affect groundwater.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.
Floodplains and Streams	Would not affect floodplains and streams.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.

Resource Category	No-Action at Matteson	Proposed Matteson Connection	Matteson Alternative Configurations	
			Northeast and Southwest Quadrants	Southwest Quadrant
Surface Water Quality	Would not affect surface water quality.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.
Wetlands	Would not affect wetlands.	Would directly affect 3.62 acres of wetlands.	Would directly affect 0.21 acre of wetlands.	Would not affect wetlands.
<b>Cultural Resources</b>				
Historic Properties (NRHP-Listed or -Eligible Cultural Resources)	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.

## Notes:

- <sup>a</sup> A low, medium, and high ranking are assigned to provide a relative likelihood of encountering contaminated materials in proposed construction areas along the rail line.
- <sup>b</sup> The governing regulation for environmental justice analysis, Executive Order 12898, uses the term “disproportionately high and adverse impacts” to refer to potential effects on environmental justice populations. Therefore, this section refers to impacts rather than effects.

<b>Table 2-13. Summary of Potential Environmental Impacts - Griffith Connection</b>		
<b>Resource Category</b>	<b>No-Action at Griffith</b>	<b>Proposed Griffith Connection</b>
<b>Rail Operations</b>		
Freight Rail Operations	Would not affect rail operations.	Would have a large number of trains moving through the connection, but would not affect train speeds at highway/rail at-grade crossings.
<b>Safety</b>		
Freight Rail Safety	Would not affect freight rail safety.	Would not affect freight rail safety.
Vehicle Safety	Would not affect vehicle safety.	Would not affect vehicle safety.
Passenger Rail Safety	Would not affect passenger rail safety.	Would not affect passenger rail safety.
Quiet Zones	Would not affect quiet zones.	Would not affect quiet zones.
Hazardous Materials Transportation Safety	Would not affect hazardous materials transport.	Would not affect hazardous materials transport.
Pedestrian/Bicycle Safety	Would not affect pedestrian and bicycle safety.	Would not affect pedestrian and bicycle safety.
<b>Transportation Systems</b>		
Regional and Local Highway Systems	Would not affect regional and local highway systems.	Would not affect regional and local highway systems.
Emergency Response	Would not affect existing emergency service response.	Would not affect existing emergency service response.
Navigation	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.
Airports	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.
<b>Hazardous Waste Sites<sup>a</sup></b>		
Effects on Hazardous Waste Sites	Would not affect hazardous waste sites.	High risk of encountering hazardous materials.
<b>Land Use</b>		
Current or Future Land Use Patterns	Would not affect land use patterns.	Would not affect land use patterns.
Development and Development Trends	Would not affect development and development trends because no construction or acquisition of new ROW would occur.	Would not affect development and development trends.
Consistency with Land Use Plans	Would be consistent with the existing land use plan.	Would be consistent with Griffith's existing land use plan.
Zoning	Would be consistent with current zoning.	Would be consistent with Griffith's current zoning.
Prime Farmland	Would not affect prime farmland.	Would not affect prime farmland.
Public Lands	Would not affect public lands.	Would not affect public lands.
Trails, Greenways, Scenic Corridors	Would not affect trails, greenways, or scenic corridors.	Would affect the Erie Lackawanna/Veterans Memorial Trail.
Local Parks or Land and Water Conservation Properties	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.
Coastal Management Zone	Would not affect a coastal management zone.	Would potentially affect Indiana's Lake Michigan Coastal Program.

<b>Table 2-13. Summary of Potential Environmental Impacts - Griffith Connection</b>		
<b>Resource Category</b>	<b>No-Action at Griffith</b>	<b>Proposed Griffith Connection</b>
<b>Socioeconomics</b>		
Population and Demographics	Would not affect population or demographics.	Would not affect population or demographics.
Economic Effects	Would not increase employment, the gross regional product, or income in Illinois or Indiana.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.
Fiscal Effects	Would not affect property or other taxes.	Would not affect property or other taxes.
Housing	Would not affect housing availability.	Would not affect housing availability.
Communities and Community Cohesion	Would not affect community cohesion.	Would not affect community cohesion.
Travel Patterns/ Accessibility/ Travel Times	Would not affect travel patterns, accessibility, or travel times.	Would induce temporary construction effects, but would not affect travel patterns long-term.
Community Facilities and Public Services	Would not affect community facilities or public services.	Would be within a 1.5-mile radius of 15 schools and parks. Would induce temporary construction effects on public services.
<b>Environmental Justice<sup>b</sup></b>		
Construction Effects on Minority and Low-Income Populations	Would not displace any residences or businesses because no construction or acquisition of additional ROW would occur; therefore, no high and adverse impacts would result.	Would not displace any residences or businesses; therefore, no high and adverse impacts would result.
<b>Energy</b>		
Energy Use from Construction	No energy would be used.	Quantities of energy used would be small and effects would be minimal.
<b>Air Quality and Climate</b>		
Construction-Related Air Emissions	Would not cause construction-related emissions.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.
<b>Noise</b>		
Wheel Squeal	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.	Would affect 229 noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E and CN rail lines.
Construction Noise	Would not cause construction-related noise.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.
Vibration Sensitive Receptors	Would not cause construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.

<b>Table 2-13. Summary of Potential Environmental Impacts - Griffith Connection</b>		
<b>Resource Category</b>	<b>No-Action at Griffith</b>	<b>Proposed Griffith Connection</b>
<b>Biological Resources</b>		
Plant Communities	No effect.	Would affect railroad embankment and small remnants of natural communities (prairie, forest, and wetland).
Wildlife	No effect.	No effect.
Federal, State or Local Conservation and Natural Areas	No effect.	No effect.
Federally-Listed Threatened and Endangered Species	No effect.	No effect.
State-Listed Threatened and Endangered Species	No effect.	Potential effect on wetlands and wet forest species.
<b>Water Resources</b>		
Groundwater	Would not affect groundwater.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.
Floodplains and Streams	Would not affect floodplains and streams.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.
Surface Water Quality	Would not affect surface water quality.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.
Wetlands	Would not affect wetlands.	Would directly affect 0.77 acre of wetlands.
<b>Cultural Resources</b>		
Historic Properties (NRHP-Listed or -Eligible Cultural Resources)	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.

**Notes:**

- <sup>a</sup> A low, medium, and high ranking are assigned to provide a relative likelihood of encountering contaminated materials in proposed construction areas along the rail line.
- <sup>b</sup> The governing regulation for environmental justice analysis, Executive Order 12898, uses the term “disproportionately high and adverse impacts” to refer to potential effects on environmental justice populations. Therefore, this section refers to impacts rather than effects.

<b>Table 2-14. Summary of Potential Environmental Impacts - Ivanhoe Connection</b>		
<b>Resource Category</b>	<b>No-Action at Ivanhoe</b>	<b>Proposed Ivanhoe Connection</b>
<b>Rail Operations</b>		
Freight Rail Operations	Would not affect rail operations.	Would have minor effects on rail operations and train speeds.
<b>Safety</b>		
Freight Rail Safety	Would not affect freight rail safety.	Would not affect freight rail safety.
Vehicle Safety	Would not affect vehicle safety.	Would not affect vehicle safety.
Passenger Rail Safety	Would not affect passenger rail safety.	Would not affect passenger rail safety.
Quiet Zones	Would not affect quiet zones.	Would not affect quiet zones.
Hazardous Materials Transportation Safety	Would not affect hazardous materials transport.	Would not affect hazardous materials transport.
Pedestrian/Bicycle Safety	Would not affect pedestrian and bicycle safety.	Would not affect pedestrian and bicycle safety.
<b>Transportation Systems</b>		
Regional and Local Highway Systems	Would not affect regional and local highway systems.	Would not affect regional and local highway systems.
Emergency Response	Would not affect existing emergency service response.	Would not affect existing emergency service response.
Navigation	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.
Airports	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.
<b>Hazardous Waste Sites<sup>a</sup></b>		
Effects on Hazardous Waste Sites	Would not affect hazardous waste sites.	High risk of encountering hazardous materials.
<b>Land Use</b>		
Current or Future Land Use Patterns	Would not affect land use patterns.	Would not affect land use patterns.
Development and Development Trends	Would not affect development and development trends because no construction or acquisition of new ROW would occur.	Would not affect development and development trends.
Consistency with Land Use Plans	Would be consistent with the existing land use plan.	Would be consistent with the existing land use plan.
Zoning	Would be consistent with current zoning.	Would be consistent with current zoning in Gary, Indiana.
Prime Farmland	Would not affect prime farmland.	Would not affect prime farmland.
Public Lands	Would not affect public lands.	Would not affect public lands.
Trails, Greenways, Scenic Corridors	Would not affect trails, greenways, or scenic corridors.	Would not affect trails, greenways, or scenic corridors.
Local Parks or Land and Water Conservation Properties	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.
Coastal Management Zone	Would not affect a coastal management zone.	Would affect Indiana's Lake Michigan Coastal Program.

<b>Table 2-14. Summary of Potential Environmental Impacts - Ivanhoe Connection</b>		
<b>Resource Category</b>	<b>No-Action at Ivanhoe</b>	<b>Proposed Ivanhoe Connection</b>
<b>Socioeconomics</b>		
Population and Demographics	Would not affect population or demographics.	Would not affect population or demographics.
Economic Effects	Would not increase employment, the gross regional product, or income in Illinois or Indiana.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.
Fiscal Effects	Would not affect property or other taxes.	Would not affect property or other taxes.
Housing	Would not affect housing availability.	Would not affect housing availability.
Communities and Community Cohesion	Would not affect community cohesion.	Would not affect community cohesion.
Travel Patterns/ Accessibility/ Travel Times	Would not affect travel patterns, accessibility, or travel times.	Would induce temporary construction effects, but would not affect travel patterns long-term.
Community Facilities and Public Services	Would not affect community facilities or public services.	Would be within a 1.5-mile radius of 17 schools and parks. Would induce temporary construction effects on public services.
<b>Environmental Justice<sup>b</sup></b>		
Construction Effects on Minority and Low-Income Populations	Would not displace any residences or businesses because no construction or acquisition of additional ROW would occur; therefore, no high and adverse impacts would result.	Would not displace any residences or businesses; therefore, no high and adverse impacts would result.
<b>Energy</b>		
Energy Use from Construction	No energy would be used.	Quantities of energy used would be small and effects would be minimal
<b>Air Quality and Climate</b>		
Construction-Related Air Emissions	Would not cause construction-related emissions.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.
<b>Noise</b>		
Wheel Squeal	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E rail line.	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E rail line.
Construction-Related Noise	Would not cause construction-related noise.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.
Construction-Related Vibration	Would not cause construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.

<b>Table 2-14. Summary of Potential Environmental Impacts - Ivanhoe Connection</b>		
<b>Resource Category</b>	<b>No-Action at Ivanhoe</b>	<b>Proposed Ivanhoe Connection</b>
<b>Biological Resources</b>		
Plant Communities	No effect.	Would affect highly altered land.
Wildlife	No effect.	No effect.
Federal, State or Local Conservation and Natural Areas	No effect.	No effect.
Federally-Listed Threatened and Endangered Species	No effect.	No effect with restoration of dune and swamp habitat.
State-Listed Threatened and Endangered Species	No effect.	Potential effect on wetlands and dry woodlands species.
<b>Water Resources</b>		
Groundwater	Would not affect groundwater.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.
Floodplains and Streams	Would not affect floodplains and streams.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.
Surface Water Quality	Would not affect surface water quality.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.
Wetlands	Would not affect wetlands.	Would not affect wetlands.
<b>Cultural Resources</b>		
Historic Properties (NRHP-Listed or -Eligible Cultural Resources)	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.

## Notes:

- <sup>a</sup> A low, medium, and high ranking are assigned to provide a relative likelihood of encountering contaminated materials in proposed construction areas along the rail line.
- <sup>b</sup> The governing regulation for environmental justice analysis, Executive Order 12898, uses the term "disproportionately high and adverse impacts" to refer to potential effects on environmental justice populations. Therefore, this section refers to impacts rather than effects.

<b>Table 2-15. Summary of Potential Environmental Impacts - Kirk Yard Connection</b>		
<b>Resource Category</b>	<b>No-Action at Kirk Yard</b>	<b>Proposed Kirk Yard Connection</b>
<b>Rail Operations</b>		
Freight Rail Operations	Would not affect rail operations.	Would have minor effects on rail operations and train speeds.
<b>Safety</b>		
Freight Rail Safety	Would not affect freight rail safety.	Would not affect freight rail safety.
Vehicle Safety	Would not affect vehicle safety.	Would not affect vehicle safety.
Passenger Rail Safety	Would not affect passenger rail safety.	Would not affect passenger rail safety.
Quiet Zones	Would not affect quiet zones.	Would not affect quiet zones.
Hazardous Materials Transportation Safety	Would not affect hazardous materials transport.	Would not affect hazardous materials transport.
Pedestrian/Bicycle Safety	Would not affect pedestrian and bicycle safety.	Would not affect pedestrian and bicycle safety.
<b>Transportation Systems</b>		
Regional and Local Highway Systems	Would not affect regional and local highway systems.	Would not affect regional and local highway systems.
Emergency Response	Would not affect existing emergency service response.	Would not affect existing emergency service response.
Navigation	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.
Airports	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.
<b>Hazardous Waste Sites<sup>a</sup></b>		
Effect on Hazardous Waste Sites	Would not affect hazardous waste sites.	High risk of encountering hazardous materials.
<b>Land Use</b>		
Current or Future Land Use Patterns	Would not affect land use patterns.	Would not affect land use patterns.
Development and Development Trends	Would not affect development and development trends because no construction or acquisition of new ROW would occur.	Would not affect development and development trends.
Consistency with Land Use Plans	Would be consistent with existing land use plans.	Would be consistent with existing land use plans.
Zoning	Would be consistent with current zoning.	Would not affect current zoning in Gary, Indiana.
Prime Farmland	Would not affect prime farmland.	Would not affect prime farmland.
Public Lands	Would not affect public lands.	Would not affect public lands.
Trails, Greenways, Scenic Corridors	Would not affect trails, greenways, or scenic corridors.	Would not affect trails, greenways, or scenic corridors.
Local Parks or Land and Water Conservation Properties	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.
Coastal Management Zone	Would not affect a coastal management zone.	Would affect Indiana's Lake Michigan Coastal Program.

<b>Table 2-15. Summary of Potential Environmental Impacts - Kirk Yard Connection</b>		
<b>Resource Category</b>	<b>No-Action at Kirk Yard</b>	<b>Proposed Kirk Yard Connection</b>
<b>Socioeconomics</b>		
Population and Demographics	Would not affect population or demographics.	Would not affect population or demographics.
Economic Effects	Would not increase employment, the gross regional product, or income in Illinois or Indiana.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.
Fiscal Effects	Would not affect property or other taxes.	Would not affect property or other taxes.
Housing	Would not affect housing availability.	Would not affect housing availability.
Communities and Community Cohesion	Would not affect community cohesion.	Would not affect community cohesion.
Travel Patterns/ Accessibility/ Travel Times	Would not affect travel patterns, accessibility, or travel times.	Would induce temporary construction effects, but would not affect travel patterns long-term.
Community Facilities and Public Services	Would not affect community facilities or public services.	Would be within a 1.5-mile radius of 26 schools and parks. Would induce temporary construction effects on public services.
<b>Environmental Justice<sup>b</sup></b>		
Construction Effects on Minority and Low-Income Populations	Would not displace any residences or businesses because no construction or acquisition of additional ROW would occur; therefore, no high and adverse impacts would result.	Would not displace any residences or businesses; therefore, no high and adverse impacts would result.
<b>Energy</b>		
Energy Use from Construction	No energy would be used.	Quantities of energy used would be small and effects would be minimal
<b>Air Quality and Climate</b>		
Construction-Related Air Emissions	Would not cause construction-related emissions.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.
<b>Noise</b>		
Wheel Squeal	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E rail line.	Would not affect any noise-sensitive receptors inside the 65 dBA Ldn contour along the EJ&E rail line.
Construction-Related Noise	Would not cause construction-related noise.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.
Construction-Related Vibration	Would not cause construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.

<b>Table 2-15. Summary of Potential Environmental Impacts - Kirk Yard Connection</b>		
<b>Resource Category</b>	<b>No-Action at Kirk Yard</b>	<b>Proposed Kirk Yard Connection</b>
<b>Biological Resources</b>		
Plant Communities	No effect.	Would impact highly disturbed land and remnant prairie.
Wildlife	No effect.	No effect.
Federal, State or Local Conservation and Natural Areas	No effect.	No effect.
Federally-Listed Threatened and Endangered Species	No effect.	No effect.
State-Listed Threatened and Endangered Species	No effect.	Potential effect on wetlands and prairie species.
<b>Water Resources</b>		
Groundwater	Would not affect groundwater.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.
Floodplains and Streams	Would not affect floodplains and streams.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.
Surface Water Quality	Would not affect surface water quality.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.
Wetlands	Would not affect wetlands.	Would not affect wetlands.
<b>Cultural Resources</b>		
Historic Properties (NRHP-Listed or -Eligible Cultural Resources)	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.

Notes:

- <sup>a</sup> A low, medium, and high ranking are assigned to provide a relative likelihood of encountering contaminated materials in proposed construction areas along the rail line.
- <sup>b</sup> The governing regulation for environmental justice analysis, Executive Order 12898, uses the term “disproportionately high and adverse impacts” to refer to potential effects on environmental justice populations. Therefore, this section refers to impacts rather than effects.

<b>Table 2-16. Summary of Potential Environmental Impacts - Double Track</b>				
<b>Resource Category</b>	<b>Leithton</b>	<b>Diamond Lake Road to Gilmer Road</b>	<b>East Siding to Walker (2 Locations)</b>	<b>East Joliet to Frankfort</b>
<b>Rail Operations</b>				
Freight Rail Operations	Would decrease the average train speed at Allanson Road in Mundelein, Illinois, due to increased number of trains.	Would decrease the average train speed at Allanson Road in Mundelein, Illinois, due to increased number of trains.	Would allow trains up to 8,200 feet in length to be staged between Plainfield and Aurora, Illinois. However, these trains could not be staged and remain intact without blocking one or more highway/rail at-grade crossings.	Would allow trains up to 10,800 feet in length to be staged near Frankfort, Illinois.
<b>Safety</b>				
Freight Rail Safety	Would not affect freight rail safety.	Would not affect freight rail safety.	Would not affect freight rail safety.	Would not affect freight rail safety.
Vehicle Safety	Would not affect vehicle safety.	Would not affect vehicle safety.	Would not affect vehicle safety.	Would not affect vehicle safety.
Passenger Rail Safety	Would not affect passenger rail safety.	Would not affect passenger rail safety.	Would not affect passenger rail safety.	Would not affect passenger rail safety.
Quiet Zones	Would not affect quiet zones.	Would not affect quiet zones.	Would not affect quiet zones.	Would not affect quiet zones.
Hazardous Materials Transportation Safety	Would not affect hazardous materials transport.	Would not affect hazardous materials transport.	Would not affect hazardous materials transport.	Would not affect hazardous materials transport.
Pedestrian/Bicycle Safety	Would not affect pedestrian and bicycle safety.	Would not affect pedestrian and bicycle safety.	Would not affect pedestrian and bicycle safety.	Would not affect pedestrian and bicycle safety.
<b>Transportation Systems</b>				
Regional and Local Highway Systems	Would not affect regional and local highway systems.	Would not affect regional and local highway systems.	Would not affect regional and local highway systems.	Would not affect regional and local highway systems.
Emergency Response	Would not affect existing emergency service response.	Would not affect existing emergency service response.	Would not affect existing emergency service response.	Would not affect existing emergency service response.
Navigation	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.	Would not affect bridge or rail operations at navigable waterway crossings.
Airports	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.	Would not affect airport operations or plans for expansion.

<b>Table 2-16. Summary of Potential Environmental Impacts - Double Track</b>				
<b>Resource Category</b>	<b>Leithton</b>	<b>Diamond Lake Road to Gilmer Road</b>	<b>East Siding to Walker (2 Locations)</b>	<b>East Joliet to Frankfort</b>
<b>Hazardous Waste Sites<sup>a</sup></b>				
Effects on Hazardous Waste Sites	Would not affect hazardous waste sites.	Would not affect hazardous waste sites.	Would not affect hazardous waste sites.	Would not affect hazardous waste sites.
<b>Land Use</b>				
Current or Future Land Use Patterns	Would not affect land use patterns.	Would not affect land use patterns.	Would not affect land use patterns.	Would not affect land use patterns.
Development and Development Trends	Would not affect development and development trends.	Would not affect development and development trends because no construction or acquisition of new ROW would occur.	Would not affect development and development trends because no construction or acquisition of new ROW would occur.	Would not affect development and development trends because no construction or acquisition of new ROW would occur.
Consistency with Land Use Plans	Would be consistent with existing land use plans.	Would be consistent with existing land use plans.	Would be consistent with existing land use plans.	Would be consistent with existing land use plans.
Zoning	Would be consistent with current zoning.	Would be consistent with current zoning.	Would not affect current zoning.	Would not affect current zoning.
Prime Farmland	Would not affect prime farmland.	Would not affect prime farmland.	Would not affect prime farmland.	Would not affect prime farmland.
Public Lands	Would not affect public lands.	Would not affect public lands.	Would not affect public lands.	Would not affect public lands.
Trails, Greenways, Scenic Corridors	Would affect the EJ&E Corridor.	Would affect the EJ&E Corridor, IL 53 Corridor Bike Trail, and Gilmer Road Scenic Corridor.	Would affect 75 <sup>th</sup> Street and Oswego Road bikeway corridor, EJ&E Corridor, and Lincoln Highway Corridor.	Would affect the Wabash Corridor.
Local Parks or Land and Water Conservation Properties	Would not affect local parks or Land and Water Conservation properties.	Would not affect local parks or Land and Water Conservation properties.	Would affect nine local parks (proximity impacts during construction), but no Land and Water Conservation properties.	Would affect one local park (proximity impacts during construction) but no Land and Water Conservation properties.
Coastal Management Zone	Would not affect a coastal management zone.	Would not affect a coastal management zone.	Would not affect a coastal management zone.	Would not affect a coastal management zone.
<b>Socioeconomics</b>				
Population and Demographics	Would not affect population or demographics.	Would not affect population or demographics.	Would not affect population or demographics.	Would not affect population or demographics.

<b>Table 2-16. Summary of Potential Environmental Impacts - Double Track</b>				
<b>Resource Category</b>	<b>Leithton</b>	<b>Diamond Lake Road to Gilmer Road</b>	<b>East Siding to Walker (2 Locations)</b>	<b>East Joliet to Frankfort</b>
Economic Effects	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.	Would have a minor, short-term effect on the local economy. Would not affect labor income or unemployment rates.
Fiscal Effects	Would not affect property or other taxes.			
Housing	Would not affect housing availability.			
Communities and Community Cohesion	Would not affect community cohesion.			
Travel Patterns/ Accessibility/ Travel Times	Would induce temporary construction effects, but would not affect travel patterns long-term.	Would induce temporary construction effects, but would not affect travel patterns long-term.	Would induce temporary construction effects, but would not affect travel patterns long-term.	Would induce temporary construction effects, but would not affect travel patterns long-term.
Community Facilities and Public Services	Would induce temporary construction effects on public services.	Would induce temporary construction effects on public services.	Would induce temporary construction effects on public services.	Would induce temporary construction effects on public services.
<b>Environmental Justice<sup>b</sup></b>				
Construction Effects on Minority and Low-Income Populations	Would not displace any residences or businesses; therefore, no high and adverse impacts would result.	Would not displace any residences or businesses; therefore, no high and adverse impacts would result.	Would not displace any residences or businesses; therefore, no high and adverse impacts would result.	Would not displace any residences or businesses; therefore, no high and adverse impacts would result.
<b>Energy</b>				
Energy Use from Construction	No energy would be used.	Quantities of energy used would be small and effects would be minimal.	Quantities of energy used would be small and effects would be minimal.	Quantities of energy used would be small and effects would be minimal.

<b>Table 2-16. Summary of Potential Environmental Impacts - Double Track</b>				
<b>Resource Category</b>	<b>Leithton</b>	<b>Diamond Lake Road to Gilmer Road</b>	<b>East Siding to Walker (2 Locations)</b>	<b>East Joliet to Frankfort</b>
<b>Air Quality and Climate</b>				
Construction-Related Air Emissions	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.	Construction exhaust emissions would decline over a period of three years, given reductions in locomotive emissions and implementation of stringent fuel standards.
<b>Noise</b>				
Wheel Squeal	Would affect 34 noise-sensitive receptors along the EJ&E rail line.	Leithton is the only double track that would be constructed on a curve; therefore, SEA did not evaluate the other double track segments for noise effects from wheel squeal.	Leithton is the only double track that would be constructed on a curve; therefore, SEA did not evaluate the other double track segments for noise effects from wheel squeal.	Leithton is the only double track that would be constructed on a curve; therefore, SEA did not evaluate the other double track segments for noise effects from wheel squeal.
Idling Locomotives	Would not cause any new noise-sensitive receptors inside the 65 dBA Ldn contour, and no additional noise effects associated with idling locomotives.	Would not cause any new noise-sensitive receptors inside the 65 dBA Ldn contour, and no additional noise effects associated with idling locomotives.	Would not cause any new noise-sensitive receptors inside the 65 dBA Ldn contour, and no additional noise effects associated with idling locomotives.	Would not cause any new noise-sensitive receptors inside the 65 dBA Ldn contour, and no additional noise effects associated with idling locomotives.
Construction-Related Noise	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.	Effects from construction activities would vary based on timing, location, duration, and complexity of the project.

<b>Table 2-16. Summary of Potential Environmental Impacts - Double Track</b>				
<b>Resource Category</b>	<b>Leithton</b>	<b>Diamond Lake Road to Gilmer Road</b>	<b>East Siding to Walker (2 Locations)</b>	<b>East Joliet to Frankfort</b>
Construction-Related Vibration	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.	Detailed construction plans were not available; therefore, SEA is unable to perform a thorough assessment of construction-induced vibration.
<b>Biological Resources</b>				
Plant Communities	Would affect railroad embankment, wetland, and woody growth areas.	Would affect railroad embankment, immature forest, and woody growth areas.	Would affect railroad embankment, immature forest, and woody growth areas.	Would affect railroad embankment, immature forest, woody growth, and grass areas.
Wildlife	No effect.	No effect.	No effect.	No effect.
Federal, State or Local Conservation and Natural Areas	No effect.	No effect.	No effect.	No effect.
Federally-Listed Threatened and Endangered Species	No effect.	No effect.	No effect.	No effect.
State-Listed Threatened and Endangered Species	Potential effects on marsh bird species.	Potential effects on wetland plant and marsh bird species.	Potential effects on prairie plant and marsh bird species.	Potential effects on marsh bird species.
<b>Water Resources</b>				
Groundwater	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.	Would not affect groundwater if permitting for construction dewatering is in place, and if hazardous materials spills are contained.
Floodplains and Streams	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.	Would not affect floodplains and streams if the Applicants properly analyze, design, and permit culvert and bridge structures.

<b>Table 2-16. Summary of Potential Environmental Impacts - Double Track</b>				
<b>Resource Category</b>	<b>Leithton</b>	<b>Diamond Lake Road to Gilmer Road</b>	<b>East Siding to Walker (2 Locations)</b>	<b>East Joliet to Frankfort</b>
Surface Water Quality	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.	Would not affect surface water quality, if the Applicants obtain the proper permits and use BMPs.
Wetlands	Would affect 2.44 acres of wetlands.	Would affect 2.87 acres of wetlands.	Would affect 1.92 acres of wetlands.	Would affect 1.41 acres of wetlands.
<b>Cultural Resources</b>				
Historic Properties (NRHP-Listed or -Eligible Cultural Resources)	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.	Would not affect any NRHP-listed or NRHP-eligible cultural resources.

Notes:

- <sup>a</sup> A low, medium, and high ranking are assigned to provide a relative likelihood of encountering contaminated materials in proposed construction areas along the rail line.
- <sup>b</sup> The governing regulation for environmental justice analysis, Executive Order 12898, uses the term “disproportionately high and adverse impacts” to refer to potential effects on environmental justice populations. Therefore, this section refers to impacts rather than effects.