3.2 Safety

This section describes the existing efforts within the Study Area to maintain a safe environment for freight rail, passenger rail, and hazardous materials transportation; vehicle safety at rail crossings; and pedestrian and bicycle safety at rail crossings.

3.2.1 Freight Rail Safety

3.2.1.1 Freight Rail Safety Requirements, Track Condition, and Speed

The Federal Railroad Administration (FRA) has primary authority over railroad safety. FRA's regulations, which apply to all railroads, govern most aspects of railroad safety, including rail operations, track, and signaling, as well as rolling stock, such as locomotives and freight cars (49 CFR 200-299). The states also have an important role in freight rail safety, especially at highway/rail at-grade crossings. Other groups that establish standards and practices for the industry include the Association of American Railroads (AAR), the American Short Line and Regional Railroad Association (ASLRRA), and the American Railway Engineering and Maintenance-of-Way Association (AREMA).

FRA regulations specify minimum safety requirements for rolling stock, track, signals, and operating practices. The Pipeline and Hazardous Material Safety Administration (PHMSA) is responsible for the safe transportation, including security, of hazardous materials. FRA's safety requirements address the design and inspection of railroad cars, tracks, and signal systems. Under FRA's rules, train crews are required to follow safe and appropriate operating rules. The railroads and FRA conduct unannounced testing of crews to see if they are following the applicable operating rules. FRA regulations require that railroads inspect freight cars when they are placed in a train and that they inspect tracks and signals periodically.

Railroad inspection records are reviewed by FRA for accuracy and thoroughness and are verified during inspections. Each railroad's operating rules must comply with FRA requirements and are reviewed by FRA inspectors. PHMSA enforces U.S. Department of Transportation (USDOT) regulations that require shippers to transport hazardous materials in rail cars designed for that purpose (49 CFR 171-180).

FRA's Track Safety Standards (49 CFR 213) are based on classifications of track that determine maximum operating speed limits, inspection frequencies, and standards of maintenance, among other issues. Higher track classes (Class 5 is the highest) require more stringent maintenance standards to support higher allowable maximum operating speed.

The railroads set their desired operating speeds for segments of track through timetables or train orders, and are required to maintain those track segments according to FRA geometric and structural standards. For example, lines that are maintained to Class 3 standards allow a maximum operating speed of 40 mph for freight trains and require track segments to be inspected at least weekly to verify that they meet FRA regulations. Neither the number of daily trains nor the commodities carried are a factor in establishing the classification of the track.

Both CN and EJ&E maintain their rail lines to comply with FRA's Track Safety Standards (49 CFR 213). FRA's classifications for tracks include six categories as shown in Table 3.2-1, below. These classifications determine maximum operating speed limits, inspection frequencies, maintenance tolerances, record keeping, and other requirements. Table 3.2-1, below, shows the relationship between FRA track classification and maximum allowable operating speed.

Table 3.2-1. FRA Track Safety Classifications		
Classification of Track	Maximum Allowable Operating Speed (MPH)	
	Freight Trains	Passenger Trains
Excepted track	10	NA
Class 1 track	10	15
Class 2 track	25	30
Class 3 track	40	60
Class 4 track	60	80
Class 5 track	80	90

Source: 49 CFR 213.9, Classes of track: operating speed limits.

Both EJ&E and CN rail lines generally are classified as FRA Class 4 and are maintained and inspected to comply with these standards.

Table 3.2-2, below, lists the current maximum allowable timetable speeds for affected CN and EJ&E rail lines. Maximum speeds allowed are not always the same for an entire subdivision. Both permanent and temporary speed restrictions are in effect at some locations due to track curvature, crossing diamonds, grade crossings, and other physical or operating conditions.

Table 3.2-2. Maximum Allowable Speeds			
Carrier	Operating Unit	Maximum Allowable Timetable Speeds (mph)	
		Freight	Passenger
EJ&E	Western Division	45	-
EJ&E	Eastern Division	45	-
CN	Waukesha Subdivision	60	60
CN	Freeport Subdivision	50	50
CN	Joliet Subdivision	40	79 (60 Intermodal)
CN	Chicago Subdivision	60	79
CN	Elsdon Subdivision	60	-

Sources: 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.
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.

In general, the EJ&E rail line consists of heavy weight (131 pounds per yard or heavier), continuously welded rail on hardwood timber crossties and ballast consisting of crushed rock ballast or slag. The structure conforms to industry standards. The 2.2-mile track through the East Joliet Yard consists of medium weight (112 pound to 121 pound) continuously welded rail on hardwood timber crossties and ballast consisting of crushed rock or slag. Bridges and structures are constructed and maintained to the same requirements. The rail, track, and structures conform to industry standards for heavy freight traffic.

EJ&E's ROW predominantly consists of a 100-foot-wide rail corridor with one or more tracks located in the center portion of the property. A 100-foot-wide property, with tracks in the center, typically provides sufficient width for construction of additional tracks, accommodation of utilities, drainage, and a safety buffer. Many railroads in urban areas have, over the course of time, sold off or leased property that reduced the width of the original rail corridor. EJ&E has, generally, maintained a full, 100-foot-wide corridor.

Train derailments on railroad lines are not common. When derailments do occur, in most cases the derailed cars remain within 25 feet of the centerline of the track. For that reason, most railroads require crash wall protection for bridge piers and other sensitive structures that are located within 25 feet of the centerline of the nearest track. Structures outside of this zone are not considered prone to severe impacts during a derailment. The portion of the ROW that is outside this 25-foot area provides an additional buffer for safety. Existence of a 100-foot ROW reduces the potential for impacts during any derailment.

3.2.1.2 Rail/Rail Crossings

Locations where two railroad lines cross each other at-grade are discussed relative to rail operations in Section 3.1.2, Current Freight Rail Operations, above. At these locations, the rails physically cross each other at the same elevation. Trains on only one route can pass through these rail/rail crossing locations at any given time. Tables in Section 3.1.2 list the affected rail/rail crossing locations on CN and EJ&E rail lines. Some of these crossings involve freight trains as well as Metra, NICTD, and Amtrak passenger trains.

Movements at most rail/rail crossings are governed by train control signals from a train dispatcher or operator responsible for all train movement at the given location. Generally, one railroad controls train movements at a rail/rail crossing location. The controlling railroad has the authority to determine which train movement will have priority. When the train control signals are sent for movement on one route, stop signals are displayed in order to halt a train on the other route.

Some rail/rail crossings have automatic interlocking controls. At these locations, a train dispatcher or operator does not control train movements. When a train approaches an automatic interlocking, the physical presence of the train will activate the signals that govern the crossings. A train receives a signal to proceed across the rail/rail crossing if there is no train on the route being crossed. If there is already a train on the route being crossed, the automatic stop signal orders a halt.

3.2.1.3 Train Accidents

This section discusses the accident statistics for the major U.S. railroads, followed by a discussion of accident statistics for CN and EJ&E specifically. FRA collects accident statistics for all railroads operating within the U.S. (including CN rail lines within the U.S.). FRA uses the term "accident" or "incident" to refer to events that must be reported by the railroads. Reportable accidents or incidents include fatalities, injuries, illnesses, collisions, derailments, and accidents or incidents involving the operation of on-track equipment causing damage above an established threshold ($8,500 for 2008); and impacts between railroad on-track equipment and highway users at crossings. FRA further categorizes accidents and incidents depending on whether casualties occurred and whether movement of on-track equipment (for example, locomotives and railcars) was involved in the event (FRA 2008b).

The Board classifies railroads into one of three categories based on revenues, with Class I the highest revenue classification. Table 3.2-3, below, shows the national accident statistics, years 2003 through 2007, for U.S. Class I railroads (which includes CN) and Class II railroads (which includes EJ&E) as compared with CN and EJ&E individual statistics. Accidents involve on-track rail equipment with monetary damage above defined thresholds.

The table indicates CN accidents rates range from slightly below to slightly above average for each year. EJ&E accident rates are substantially above average, the table, however, does not indicate the location, cause, or severity of accidents above the minimum damage threshold.

Table 3.2-3. National Railroad Accident Statistics

Railroad	FRA Reportable Accident Rates per Million Ton Miles					
	2003	2004	2005	2006	2007	Average
Average for all Class I railroads	4.1	4.4	4.1	3.6	3.2	3.9
CN	4.9	4.1	3.0	4.6	4.4	4.2
Average for all Class II railroads	5.4	5.8	5.0	4.3	4.2	4.9
EJ&E	13.5	24.4	22.2	10.5	20.5	18.2

Source: FRA (2008c), *Federal Railroad Administration, Office of Safety Analysis*, retrieved on June 13, 2008, http://safetydata.fra.dot.gov/OfficeofSafety/.

3.2.2 Passenger Rail Safety

Freight trains operate on certain of the CN rail lines along with passenger and commuter trains, as shown in Table 3.2-4, below. No passenger or commuter trains operate on the EJ&E rail line

Table 3.2-4. Shared Lines for Passenger/Commuter Service and Freight

Passenger/Commuter Service	Passenger Trains per Day	Affected Subdivision
Amtrak	6	CN Chicago, St. Charles Air Line
Amtrak	10	CN Joliet and Freeport
Amtrak	2	CN Elsdon
Metra	6	CN Joliet and Freeport
Metra	22	CN Waukesha

A dispatcher controls the movement of both passenger trains and freight trains on the same track or tracks. Redundant safeguards are in place to avoid conflicting movements that could result in a collision. Nevertheless, the risk does exist for accidents to occur that could impact the safety of passengers aboard trains or train crews. Potential risks include two types of accidents: either a collision of two trains on the same track, or a derailed train on one track being struck by a moving train on the adjacent track. All such accidents are reported to FRA, who has jurisdiction over safety and maintains a database of such accidents.

FRA reportable accidents that involve passenger trains are rare. Nationwide, the number of accidents that involved a passenger train averaged 146 per year between the years 2003 and 2007. This represented a frequency rate of one accident per 1.46 million train miles (FRA 2008c). SEA looked specifically at the two passenger railroads that operated upon the rail line segments. Table 3.2-5, below, shows the number and frequency of FRA reportable accidents for both Metra and Amtrak trains for the most recent 5-year period. Metra's accident rates are below national averages.

Table 3.2-5. FRA Reportable Accidents per Million Passenger Train Miles						
	Metra Trains					
	2003	2004	2005	2006	2007	Avg.
Million Passenger Train Miles (MPTM)	8.806	9.181	9.240	9.551	9.599	9.275
Accidents	3	3	4	1	5	3.2
Accidents/MPTM	0.34068	0.32676	0.43290	0.10470	0.52089	0.34500
MPTM/Accident	2.94	3.06	2.31	9.55	1.92	2.90
	Amtrak Trains					
	2003	2004	2005	2006	2007	Avg.
MPTM	39.519	39.247	37.856	38.165	39.547	38.867
Accidents	57	58	60	55	53	56.6
Accidents/MPTM	1.44234	1.47782	1.58495	1.44111	1.34018	1.45626
MPTM/Accidents	0.69	0.68	0.63	0.69	0.75	0.69

Source: FRA (2008c), *Federal Railroad Administration, Office of Safety Analysis*, retrieved on June 13, 2008, http://safetydata.fra.dot.gov/OfficeofSafety/.

3.2.3 Hazardous Materials Transportation Safety

3.2.3.1 Regulatory Background

Several Federal agencies have established requirements for the transportation of hazardous materials on rail lines, including procedures for planning for transportation incidents (releases) and responding to them. These agencies include the U.S. Department of Transportation (USDOT), the U.S. Environmental Protection Agency (EPA), and the Occupational Safety and Health Administration (OSHA). USDOT establishes requirements for shipping and packaging of containers holding hazardous materials, as well as for the dissemination of information after an emergency. USDOT also sets out the training standards for people carrying out these duties. FRA has authority to ensure the safe movement of rail traffic. Regulatory and enforcement powers of FRA are found at 49 CFR 200-240.

What is a hazardous material?
A hazardous material is a solid, liquid, or gas transported by a railroad that requires emergency response to protect the public or the environment if released.

USDOT's PHMSA established design standards and requirements, found in 49 CFR 171 and 179, for rail cars used for the transportation of hazardous materials. These regulations require facilities that build, repair, or ensure the structural integrity of rail cars to develop and implement a quality assurance program and to inspect and test rail cars frequently, including inspections before travel. The standards require rail cars used for transportation of highly hazardous materials to be equipped, as appropriate, with thermal protection systems (which protect a rail car and its contents from exposure to nearby fires) and head protection elements (devices that limit the potential for puncturing the end of a car in an accident). It also requires that protective coatings be used on insulated tank cars. PHMSA also addresses specifications for puncture resistance of rail cars used for certain highly hazardous materials, including materials that are poisonous or toxic if inhaled (toxic inhalation hazard compounds [TIH]). Such specifications also apply to any material determined by EPA to pose health and environmental risks.

USDOT regulates the transportation of hazardous materials through controls and practices. It focuses on the source of the risk, regulating the types of containers that contain hazardous materials, such as rail cars, and the way these containers are managed. It also oversees signaling, train control, and track safety. The objective is to maximize safety and minimize risks to human health and the environment generally. Thus, Federal regulations do not include requirements for buffer corridors or safe distances along rail lines with respect to particular types of structures, such as residences, schools, or hospitals. In practice, hazardous materials are routinely transported along rail lines and highways across the U.S., through areas with many types of land uses, including industrial, commercial, and residential, as well as through environmentally sensitive regions.

Effective June 1, 2008, the USDOT's Interim Final Rule on Enhancing Rail Transportation Safety and Security for Hazardous Material Shipments took effect (FR 2008a). These rules are intended to ensure that railroads use routes with the fewest overall safety and security risks to transport security-sensitive hazardous materials. The rule applies to bulk shipments of poison inhalation hazard materials such as chlorine and anhydrous ammonia, single carloads with more than 5,000 pounds of certain explosive materials, and shipment of certain high-level radioactive materials.

The USDOT has released the *2008 Emergency Response Guidebook*, which standardizes response procedures for hazardous materials/dangerous goods incidents in the U.S., Canada, and Mexico (USDOT 2008). USDOT's goal is to place a copy of the guidebook in each emergency service vehicle nationwide, and 11 million copies have been distributed to the emergency response community (PHMSA 2008).

Freight railroads have established recommended operating practices for the transportation of hazardous materials pursuant to AAR Circular No. OT-55-I (AAR 2006a). Among the operating practices is the designation of "key trains" and "key routes." A key train is any train with either 1) five or more tank car loads of TIH; 2) twenty or more car loads with a combination of TIH and other referenced chemicals; or 3) one or more carloads of radioactive material. A key route is a route with annual volumes of either 10,000 car loads of hazardous materials or 4,000 car loads of TIH and other referenced materials. Key trains and key routes must meet safety requirements defined in Circular No. OT-55-I.

EPA regulations address spill prevention and cleanup. Most EPA regulations address fixed facilities rather than transport activities. EPA regulations in 40 CFR 263, Standards applicable to transporters of hazardous waste, however, specify immediate response actions, discharge cleanup, and other requirements for transporters of hazardous waste. Finally, OSHA regulations in 29 CFR 1910.120, hazardous waste operations and emergency response, specify emergency response and cleanup operations for releases of hazardous substances and substantial threats of such releases.

3.2.3.2 Existing Hazardous Materials–Rail Traffic

As described in Appendix C, SEA obtained information from CN on existing rail traffic along the rail segments in the Study Area that carry hazardous materials. To assess the current conditions in the Study Area, SEA used information provided by CN regarding hazardous materials traffic along EJ&E's system, information provided by CN regarding the average amount of hazardous materials transported on CN trains in the Chicago area, information from EJ&E's website, and information provided by CN regarding hazardous materials shipped via rail in the area. Table 3.2-6, below, lists current EJ&E customers that may transport hazardous materials, and the station nearest the customers.

Table 3.2-6. 2006 EJ&E Rail Traffic from Users or Generators of Hazardous Materials		
Nearest Station	**Customer Name**	**Business**
Illinois		
North Chicago	EMCO Chemical Distributors, Inc.	Chemical Distributor
Lake Zurich	Tredegar Film	Plastic Pellets and Film
West Chicago	Tronox, LLC (Kerr-McGee)	Environmental Remediation
Plainfield	Entec Polymers, LLC Henkel Adhesives	Plastics Transload/Distribution Adhesives
Lockport	Toyal America, Inc.	Aluminum Powders
Beven	Equistar Chemicals LP	Plastic Transloading
Divine	Reichold Chemicals, Inc. Technical Propellants	Aerosol Propellants Aerosol Propellants
East Morris	Akzo Nobel Chemical, Inc. Equistar Chemicals, LP	Industrial Chemicals Industrial Chemicals & Plastics
Joliet	DeSoto, LLC INEOS Silicas Americas, LLC Phibrotech Seeler Industries/Three rivers Terminal	Detergents, Waxes, and Polishes Industrial Detergents/Chemicals Chemicals Processing Chemicals
via CSXT Switch	Ecolab Flint Hills Resources, LP	Industrial Detergents Industrial Chemicals & Plastics
Frankfort	Pactiv Corporation	Plastic Products
Matteson	Ace Hardware	Paint Manufacturer
Chicago Heights	Innophos, Inc. (Rhodia) Nufarm Riverdale Chemical Co.	Chemicals Chemicals
Indiana		
Griffith	American Chemical Services, Inc.	Chemicals
Gary	Brandenburg Industrial Services Co. Clarence Foundation (Clark Road) Centennial Steel, Inc. Industrial Steel Construction Metal Processing Corp. EMDE Northwest Iron Tube City, Inc. United States Steel Corp. Gary Works	Demolition Slag Processing/Scrap Distribution Steel Processor & Warehouse Steel Preparation Steel Processor Coil Processing Scrap Processor Scrap Processor Fully Integrated Steel Mill
Indiana Harbor	Mittal Steel USA (Ispat Inland Plant 2) Levy Slag at Mittal Steel USA (ISG)	Fully Integrated Steel Mill Slag Processing
East Chicago	Kemira Water Solutions Mittal Steel USA (ISG) Metal Management (Omnisource) Northern Indiana Dock Co. Pollution Control Industries Safety-Kleen United States Gypsum Company USS East Chicago Pickel Line	Chemical Processing Coil Processing Scrap Yard Dock Storage & Scrap Waste Products Petroleum Recycler Gypsum Products Steel Pickling
Whiting	BP (formerly BP Amoco)	Petroleum Products

Source: EJ&E, 2006, "EJ&E Circular No. 100-K, Alphabetical List of Industries and Location," *Elgin, Joliet & Eastern Railway Co.*, retrieved on March 10, 2008, http://www.tstarinc.com/eje/eje2/industries-alphabetical.htm.

Hazardous materials currently transported by CN are presented in Appendix C.

Materials transported by rail to and from the facilities along EJ&E's system are primarily non-hazardous materials such as coal, grain, and steel products. Some hazardous materials, however, are also transported along these lines. Table 3.2-7 and Table 3.2-8, below, provide a summary of the current number of carloads shipped on the CN and EJ&E systems.

Table 3.2-7. Hazardous Materials Transported on EJ&E Rail Line Segments in 2006

Segment Number	From Station	To Station	Average Cars (per Day)
Illinois			
15	Rondout	Leithton	9.4
14	Leithton	Spaulding	18.1
13	Spaulding	Munger	29.0
12	Munger	West Chicago	21.1
11	West Chicago	East Siding	30.7
10	East Siding	Walker	43.4
9	Walker	Bridge Junction	48.9
8	Bridge Junction	Rock Island Junction	48.9
7	Rock Island Junction	Matteson	49.0
6	Matteson	Chicago Heights	78.7
Illinois and Indiana			
5	Chicago Heights	Griffith	71.6
-2	Hammond	South Chicago	0
Indiana			
4	Griffith	Van Loon	44.7
3	Van Loon	Ivanhoe	45.5
2	Ivanhoe	Cavanaugh	45.5
1	Cavanaugh	Gary	52.5
0	Gary	Indiana Harbor	0
-1	Indiana Harbor	Hammond	0

Source: Applicants (2008d), letter from Paul A. Cunningham, Counsel for Canadian National Railway Company and Grand Trunk Corporation, Harkins Cunningham LLP, to The Honorable Vernon A. Williams, Secretary, Surface Transportation Board, regarding corrections and clarifications to the Railroad Control Application, January 3, 2008.

Table 3.2-8. Hazardous Materials Transported by CN on CN Rail Lines in the Study Area in 2006				
Segment Number	**From Station**	**To Station**	**Cars per Day**	**Tons per Day**
Illinois				
1	Matteson	Markham	191.2	16,212
2	Markham	Harvey	249.1	20,287
3	Harvey	Riverdale	94.4	6,970
4	Riverdale	Wildwood	82.0	6,013
5	Wildwood	Kensington	82.0	6,013
6	Kensington	94th Street	77.0	6,565
7	94th Street	67th Street	76.0	6,488
8	67th Street	16th Street	76.0	6,488
9	16th Street	Bridgeport	67.9	5,751
10	Bridgeport	Belt Crossing	62.0	4,992
11	Belt Crossing	Hawthorne	84.0	6,788
12	Hawthorne	Broadview	71.5	5,792
13	Broadview	Munger	61.1	4,981
14	Bridgeport	Lemoyne	59.4	4,165
15	Lemoyne	Glenn Yard	90.6	6,452
16	Glenn Yard	Argo	139.6	11,126
17	Argo	Lemont	71.9	5,661
18	Lemont	Joliet	39.0	3,029
19	Madison Street	Forest Park	76.8	6,414
20	Forest Park	Tower B12	76.8	6,414
21	Tower B12	Schiller Park	157.0	12,843
22	Schiller Park	Leithton	156.8	12,796
24	Thornton Junction	CN Junction	272.9	23,296
25	CN Junction	Blue Island	160.2	13,269
26	Blue Island	Hayford	38.8	3,204
Indiana and Illinois				
23	Griffith	Thornton Junction	280.6	23,875

Source: Applicants (2008d), letter from Paul A. Cunningham, Counsel for Canadian National Railway Company and Grand Trunk Corporation, Harkins Cunningham LLP, to The Honorable Vernon A. Williams, Secretary, Surface Transportation Board, regarding corrections and clarifications to the Railroad Control Application, January 3, 2008.

A table summarizing the products carried by CN (according to the Standard Transportation Commodity Code [STCC]) is provided in Appendix C. Current national data suggest that less than 10 percent of all carloads contain hazardous materials on a ton-mile basis (AAR 2006b). Percentages of carloads carrying hazardous materials versus total carload per rail segment are shown on Table 3.2-9 and Table 3.2-10, below. The information indicates that approximately 7 percent of carloads on the EJ&E rail line and 13 percent of the carloads on the CN rail line currently transport hazardous materials.

Table 3.2-9. Comparison of Total Carloads vs. Hazardous Materials Carloads, EJ&E Rail Line Segments

EJ&E Segment Number	Existing		
	Total Daily Carloads	Daily Hazardous Materials Carloads	Percent Hazardous Materials Carloads
Illinois			
15	384.0	9.4	2.5
14	270.3	18.1	6.7
13	308.0	29.0	9.4
12	184.8	21.1	11.4
11	749.0	30.7	4.1
10	1,130.4	43.4	3.8
9	1,165.5	48.9	4.2
8	943.5	48.9	5.2
7	448.0	49.0	10.9
6	567.6	78.7	13.9
Illinois and Indiana			
5	612.0	71.6	11.7
-2	108.0	0	0
Indiana			
4	380.0	44.7	11.8
3	552.9	45.5	8.2
2	558.6	45.5	8.1
1	579.4	52.5	9.1
0	420.0	0	0
-1	216.0	0	0
			Average 6.7

Source: Applicants (2008i), 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, February 12, 2008.

Table 3.2-10. Comparison of Total Carloads vs. Hazardous Materials Carloads, CN Rail Line Segments			
CN Segment Number	Existing		
	Total Daily Carloads	Daily Hazardous Materials Carloads	Percent Hazardous Materials Carloads
Illinois			
1	1,536	191.2	12.5
2	2,532	249. 1	9.8
3	1,008	94.4	9.4
4	1,008	82.0	8.1
5	1,008	82.0	8.1
6	1,008	77.0	7.6
7	768	76.0	9.9
8	768	76.0	9.9
9	552	67.9	12.3
10	300	62.0	20.7
11	540	84.2	15.6
12	528	71.5	13.5
13	360	61.2	17.0
14	252	59.4	23.6
15	252	90.6	36.0
16	696	139.6	20.1
17	180	71.9	39.9
18	180	39.0	21.7
19	648	76.8	11.9
20	648	76.8	11.9
21	2,316	157.0	6.8
22	2,292	156.8	6.8
24	2,340	272.9	11.7
Illinois and Indiana			
23	2,652	280.6	10.6
			Average 13.2

Source: Applicants (2008i), 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, February 12, 2008.

Appendix C presents SEA's summary of traffic and safety issues involving the transport of hazardous materials along the relevant rail lines in the Study Area. This information includes data provided by CN and EJ&E. It also includes assumptions developed by SEA to augment the information provided by the railroads. Appendix C presents a detailed description of the method and the equations used by SEA to calculate these parameters. Appendix C also presents the underlying assumptions used by SEA, and information about the hazardous materials considered in the analysis.

3.2.3.3 Existing Emergency Management Capabilities

SEA has focused not only on hazardous material transportation, but also on emergency response capabilities to address a transportation incident (hazardous materials release). Passed in October 1986, the Emergency Planning and Community Right-to-Know Act (EPCRA), also known as the Superfund Amendments and Reauthorization Act (SARA) Title III, makes the management of emergencies associated with hazardous materials in the U.S. a local responsibility (42 USC 116). It requires local agencies to develop Emergency Response Plans (ERPs) for responding to emergencies resulting from a hazardous materials/dangerous goods release. EPCRA also mandates the establishment of Local Emergency Planning Committees (LEPCs). LEPCs are typically composed of concerned citizens and officials from local governments, law enforcement, fire and emergency medical services, hospitals, schools, civic and environmental groups, business and industrial facilities, and the news media. Several LEPCs exist in the Study Area, and are listed in Appendix C.

As part of their ongoing responsibilities, LEPCs help ensure that localities are prepared for a hazardous materials incident by:

- Conducting annual exercises
- Developing, reviewing, and updating a local ERP annually
- Identifying and addressing training needs
- Evaluating emergency response capabilities
- Reviewing Federal, state, and local response plans to coordinate with the LEPC planning process

The objective of the local ERPs is to protect the public in hazardous materials/dangerous goods emergencies. Such plans generally include procedures to warn and, if necessary, evacuate the public. The plans also provide a guide to coordinating with local agencies and industries and providing citizens and local governments with information about the release of hazardous materials in their communities. It also includes procedures to report to the public on the annual releases of toxic chemicals into the air, water, and soil.

In the event of a transportation incident (hazardous materials release) on a rail line or at a yard, a variety of emergency response resources are available. These include Federal, state, and local agencies, as well as railroad companies; and shippers or manufacturers of the hazardous materials. Local agencies such as fire departments and other emergency management teams are typically responsible for incident command, assessment, response, and protective actions for the general population. Railroad companies and shippers coordinate with these local agencies and provide specialized expertise on the handling of specific chemicals and the equipment (such as the rail cars). Emergency contact information for the communities potentially affected by the Proposed Action is presented in Appendix C.

Guidelines established by nationally recognized bodies (such as USEPA, PHMSA, OSHA, and USDOT) assist emergency response service organizations. For transportation incidents, detailed procedures are found in the *2008 Emergency Response Guidebook* (USDOT 2008). These procedures typically define two types of recommended safe distances as a radial distance from the site of the transportation incident (release) or fire (namely, the "initial isolation distance" and the "protective action distance"). These distances depend on a number of factors specific to the each incident. Some of these include the actual or potential release size and duration, daytime or nighttime, the surrounding population, and the weather conditions at the time of the incident. These protective distances and areas provide guidance on locations that should be evacuated. The determination also

helps serve as the basis for other precautions, such as shelter-in-place (specifically, staying indoors), that might be followed in the event of a spill or release.

The *2008 Emergency Response Guidebook* provides detailed procedures for small spills (200 liters or less for liquids and 300 liters or less for solids spilled in water) and for large spills. Safe distances can range from 100 feet to over 7 miles, depending on circumstances (USDOT 2008). Hazardous materials currently transported by CN are presented in Appendix C.

3.2.3.4 Emergency Management Capabilities of the Railroads

Major railroads, including CN, incorporate hazardous materials response capabilities into their incident preparedness plans, which are applicable to all railroads operating in the U.S. In addition to national emergency response teams, major railroads have regional "strike teams" that can be deployed on short notice to provide specialized technical expertise at an incident site. The railroads also maintain numerous pre-approved contracts with firms that can provide a wide range of quick-response services, including environmental monitoring, emergency management, heavy equipment rental and operation, and natural resource assessments (a list of CN approved contractors is provided in Appendix C). At major fixed facilities (such as large rail yards), individual response plans are prepared and drills are conducted to ensure the effectiveness of planned responses. The railroads and chemical companies also have several joint programs such as the Transportation Community Awareness and Emergency Response® program (TRANSCAER), which is related to the American Chemistry Council's Responsible Care® program. TRANSCAER is a nationwide effort of the railroads and the chemical industry to assist communities in developing and evaluating emergency response plans (TRANSCAER 2008).

In the Applicants' draft Safety Integration Plan, submitted to FRA and the Board on December 28, 2007, pursuant to the Board and FRA regulations at 49 CFR 1106, CN describes its policies and procedures for managing hazardous materials (Applicants 2007b). Another section of the draft Safety Integration Plan describes EJ&E's policies and procedures. These safety policies and procedures are summarized below, and included in Appendix D.

CN currently handles more than 972,000 cars containing dangerous goods each year system-wide. To ensure safe handling and regulatory compliance on both sides of the international border, CN has a system director of dangerous goods, system manager of dangerous goods, coordinator of dangerous goods, and two senior managers of dangerous goods, as well as 11 dangerous goods officers in the regions. These specialists work very closely with all CN customers, shippers, railway associations, and regulators to ensure the safe transportation of dangerous goods by rail. In addition, CN has 48 dangerous goods responders, 16 in the U.S. and 32 in Canada, who are trained for emergency response across its system (Applicants 2007b).

Because chemicals make up a large portion of CN's U.S. traffic, hazardous materials' training is a high priority. Such training is provided to all employees covered by USDOT's hazardous materials regulations including train crews, dispatchers, engineering maintenance of way employees, mechanical employees, and waybill personnel. Training subjects include hazardous materials general awareness and familiarization, function-specific duties, and safety policies. Employees are tested on the subjects covered in the class. Retraining is done on a three-year cycle (Applicants 2007b).

Specialized training and medical surveillance is given to "incident responders," based on OSHA regulations (29 CFR 1910.120) and National Fire Protection Association (NFPA) Standard 472 (NFPA 2002). CN also provides hazardous material and security plan training for all employees involved in transport of hazardous materials (Applicants 2007b).

CN's U.S. Operations Operating Manual includes special hazardous materials instructions covering CN's entire U.S. operation. CN has a comprehensive compliance audit program for transportation of dangerous goods and hazardous materials. The audit program encompasses Canadian, U.S., and international hazardous materials regulations, company policies, and best management practices. Audits include review of documentation, the use of placards, switching and humping activities, marshaling, inspections, emergency response, and training (Applicants 2007b).

CN has a system-wide plan for handling emergencies. The CN ERP sets out the framework and identifies the procedures and responsibilities in place for safe and efficient emergency response to all accidents or incidents. It is reviewed annually. SEA reviewed the ERP as part of its analysis. CN response personnel are trained on the ERP process. External responders also attend these training sessions. Local ERPs for individual yards and other facilities are specific to the facility and identify roles and responsibilities, locations of supplies, access routes, emergency meeting points, civilian agency contacts, notification requirements, and methods for warning employees of emergency conditions. Drills and exercises are conducted at least annually to evaluate the effectiveness of each local plan (Applicants 2007b).

CN's Rail Transportation Centers (RTCs) play an important role in the emergency response process. Local operations are handled out of CN's Homewood RTC, which manages train movements and, in the event of an emergency, can locate and transmit emergency information to the site using advanced communication and computer systems. The RTCs also handle notification to local emergency response agencies (police, fire, and emergency medical technicians), CN dangerous goods officers, the American Chemistry Council's Chemical Transportation Emergency Center (CHEMTREC, a 24-hour hazardous materials communications service), and appropriate regulatory agencies (Applicants 2007b).

A recent addition to CN's Emergency Response capabilities is its contract with the Center for Toxicology and Environmental Health (CTEH), a U.S.-based consulting firm, which provides high quality emergency response and environmental services for releases of hazardous materials or other environmental contaminants. The contract includes toxicological, environmental and human health consulting services, emergency preparedness and planning, onsite emergency meteorological monitoring, air modeling, and on-site air sampling and analysis (using the Safer Star computer model) to support decision-making by CN's on-site personnel. CTEH also assists CN personnel by providing technical liaison with emergency response personnel, local health care providers, local community leaders, and Federal, state, and local governmental and regulatory agencies (Applicants 2007b).

CN's Service Reliability Strategy (SRS) system is designed to support all aspects of hazardous materials shipment transportation and documentation. CN's customer service center uses SRS to prepare waybills from shipper bills of lading. These may be in the form of an electronic data interchange document or a fax. SRS keeps a record of car inventory by track and train to provide the standing order listing of cars, which includes the required hazardous materials description from waybills. Train crews use these documents to switch cars to tracks for destination and to have a listing of shipments in their trains (Applicants 2007b).

As each train list is initially generated, SRS checks for proper in-train placement of the hazardous materials shipments. If a condition appears to be contrary to regulatory requirements, a warning is given and corrective action is taken. Train lists also include automatically generated emergency response information, which is available through an SRS inquiry, for each hazardous material in the train (Applicants 2007b).

CN participates in Operation Respond in the U.S. and Canada. As part of its involvement, CN assisted in the purchase and set-up of Operation Respond Emergency Information System (OREIS) software for a number of local emergency management agencies. Operation Respond is a non-profit organization aimed at improving information available to first responders (for instance, police, fire, and rescue personnel) at hazardous materials and passenger train incidents. One of its primary goals is national distribution of the OREIS software that connects police and fire departments with the databases of railroads and motor carriers, so that first responders can quickly obtain accurate information on the cargo contents (Applicants 2007b).

CN is active in the TRANSCAER program, an information-training program for communities where dangerous goods are transported. CN participates with the chemical industry in information sessions for community leaders and responders regarding emergency procedures in incidents involving dangerous goods. CN employees conduct the training at the AAR emergency response training center. CN also maintains a list of LEPCs along its system and assists in emergency response planning and exercises. As part of its community-training program, CN set up a special "CN 911" hazardous materials training tank car (Applicants 2007b).

CN also actively participates in the chemical industry's Responsible Care® Program. Through Responsible Care®, member and partner companies are committed to supporting a continuing effort to improve the industry's responsible management of chemicals, including community outreach and emergency response (Applicants 2007b).

REACT is a new CN emergency response outreach program designed to enhance preparedness and foster partnerships with the response community. REACT has three phases (Applicants 2007b):

- Phase I identifies rural responders along the CN system and includes them in online training for responding to incidents involving dangerous goods. This training can be taken by the responder where most convenient (for example, at home, at the local library, or at the fire station training room). Once training is begun, the responder is able to stop and resume the program when convenient.
- Phase II requires responders to assemble at a hub site for two days to participate in the hands-on portion of the training. Completion of this phase means responders qualify for the awareness and operations hazardous materials responder levels. Responders can then seek certification from their applicable governmental authorities.
- Phase III involves responders taking CN's railroad emergency response course from a CN dangerous goods officer at one of the previously mentioned hub sites. The course takes two days.

EJ&E also developed its Emergency Action Plan, which details procedures for a hazardous materials release. SEA reviewed this plan as part of its analysis. The Plan lays out roles and responsibilities in the event of a hazardous materials incident and contains detailed information for initial response, sustained actions, termination, and follow-up actions. CN has distributed it to operations managers at Kirk Yard, Whiting Yard, and Joliet Yard. All maintenance departments, as well as the train dispatcher's office in Joliet, have current copies of the Plan (Applicants 2007b).

Under the Plan, employees who learn of a hazardous materials release, including workers on trains, must immediately notify the dispatcher, who will then notify the operations supervisor on duty or the area supervisor. The train dispatcher's office becomes the initial communication center between all involved personnel and will notify emergency response team members. The railroad's operations managers are EJ&E's emergency response coordinators and act in an initial leadership role unless fire, police, or Federal agencies assume the role of first responders (Applicants 2007b).

EJ&E uses its railcar management system for handling hazardous car documents and movements. Hazardous shipment waybills are electronically transmitted with connecting carriers. Electronically received hazardous shipment waybills are printed and inspected for errors in identification of Standard Transportation Commodity Code (STCC) or car type (tank or hopper). EJ&E personnel are responsible for all hazardous materials paperwork processing and maintaining current car status. Conductors at all locations receive hazardous materials paperwork for hazardous car movements (Applicants 2007b).

Every three years, all hazardous materials employees receive hazardous materials training consisting of lectures and open discussion in a classroom using resources in EJ&E's Operating Rule Book, the Code of Federal Regulations, and EJ&E's Emergency Action Plan (Applicants 2007b).

3.2.4 Vehicle Crossing Safety

3.2.4.1 Highway/Rail Crossings

There are two kinds of highway/rail crossings. Where the roadway crosses the track at the same elevation, this is called an "at-grade" crossing. Where a roadway passes over the tracks via an "overpass" bridge structure, or the roadway passes beneath the tracks via an "underpass" bridge structure, these crossings are referred to as "grade separated."

The Federal Highway Administration (FHWA) and FRA have regulatory jurisdiction over safety at crossings, pursuant to the Highway Safety Act of 1966 (HSA) (23 USC 401 et seq.). The HSA governs the distribution of funds to states aimed at eliminating hazards at highway/rail at-grade crossings. USDOT has issued regulations that address crossing safety and provides funding for the installation and improvement of warning devices through the states. In addition to federal oversight and funding, states also monitor crossings and, in many cases, designate funding to complement the federal funds.

Jurisdiction over highway/rail at-grade crossings falls primarily to the states. This authority is set forth in the *Railroad-Highway Grade Crossing Handbook* (FHWA 2007a). Each state is required to periodically inspect highway/rail at-grade crossings and to determine the adequacy of warning devices at each location, as well as to order safety improvements. USDOT oversees and approves the state determinations.

All warning devices installed at crossings must comply with FHWA's *Manual on Uniform Traffic Control Devices* (MUTCD) (23 CFR 646.214[b][1]). The MUTCD provides standards for the types of warning devices that must be installed at all highway/rail at-grade crossings (FHWA 2007b). FRA issued regulations under its railroad safety authority that impose minimum standards for highway/rail at-grade crossings (49 CFR 234-236). FRA maintains information for each highway/rail at-grade crossing based on information provided by the states and the railroads. FRA and FHWA coordinate research efforts related to highway/rail at-grade crossing accidents and provide guidance and solutions to problems.

All EJ&E and CN highway/rail crossings have a unique DOT/FRA identification number which defines the location and the name of the railroad and roadway. FRA established and maintains a centralized database that provides specific information regarding each of these crossings. Crossings are subdivided into public, private, and public pedestrian crossings. FRA maintains an inventory of private crossings, but neither the states nor FRA regulate them. These crossings are established to provide access across the tracks by a private land owner, an industry, or some other non-public entity. By definition, these crossings do not have publicly maintained roadways on both sides of the track. These crossings exist by private agreement between the private land owner and the railroad. Public pedestrian crossings are crossings such as trails and bike paths, which are open to the public, but not to vehicular traffic.

Table 3.2-11, below, summarizes all affected CN and EJ&E crossings, including locations where operations are not projected to change, to facilitate the analysis of system safety. Section 3.3.1, Regional and Local Highway Systems, below, addresses highway/rail at-grade crossings where operations are projected to change.

Table 3.2-11. Rail Crossings by Category

	At-Grade				Grade Separated				
	Public Crossing	Private Crossing	Ped.	Subtotal	Public Crossing	Private Crossing	Ped.	Subtotal	Total
EJ&E	176	67	7	**250**	67	7	5	**79**	**329**
CN	155	12	6	**173**	216	6	7	**229**	**402**
Total	331	79	13	**423**	283	13	12	**308**	**731**

Source: FRA (2008c), *Federal Railroad Administration Office of Safety Analysis*, retrieved on June 13, 2008, http://safetydata.fra.dot.gov/OfficeofSafety/.

The at-grade crossings are further categorized as follows:

- **EJ&E main tracks between Leithton and Kirk Yard.** Rail crossings along 102 miles of the existing EJ&E main track would bear more train traffic under the Applicants' operating plan. Of these crossings, 99 are classified as public, 15 are private, and six are pedestrian. Some are low-traffic roads with passive warning devices, while others are major arterial roadways with advanced active warning devices, such as automatic gates. These segments would see an increase in the number of trains averaging 15 to 24 trains per day.
- **CN main tracks inside the EJ&E arc.** CN rail line segments that are within the EJ&E arc would generally experience a reduction in train traffic of up to 19 fewer trains per day as a result of the Proposed Action.
- **CN main tracks immediately outside of the EJ&E arc.** CN has five rail lines that serve as entrance and exit points for CN trains that cross EJ&E rail lines between Leithton and Kirk Yard. These rail line segments would experience a change in the efficiency and speed of trains as a result of the Proposed Action. The distance of potential impact along these rail line segments is limited to the distance that trains would be accelerating or decelerating as necessary to operate through the connections.
- **EJ&E tracks other than the main line tracks.** This group of tracks includes existing EJ&E spur tracks, industrial tracks, and locations where no changes in train traffic are projected as a result of the Proposed Action.

SEA reviewed the existing safety conditions for the potentially affected EJ&E and CN rail line segments using the following data sources:

- FRA's grade crossing database and Web Accident Prediction System (WBAPS)
- CN information on train traffic
- Illinois Commerce Commission data
- Current average daily traffic (ADT) information from roadway authorities in Illinois and Indiana
- Field verification of crossings along EJ&E segments

The roadways within the project area include interstate highways, toll roads, US highways, streets, public access roads, and private roads. A complete list of the crossings is included in Appendix C.

The crossings are listed by rail line segment on the EJ&E and CN rail lines respectively. Crossings include public at-grade, public grade separated, private at-grade, private grade separated, pedestrian/trail at-grade, and pedestrian grade-separated crossings. In addition, tables in Appendix C summarize the predicted accident frequency for each crossing under existing conditions.

3.2.4.2 Quiet Zones

What is a quiet zone?
A quiet zone is an area along a rail line where crossing safety has been improved so that trains are no longer required by FRA to sound their horns at crossings.

This section describes the existing safety conditions for Quiet Zones where locomotive horns do not need to be sounded. Requirements for the establishment of Quiet Zones are included in 49 CFR 222 and 229. Chicago metropolitan area highway/rail at-grade crossings where the railroad was excused from sounding locomotive horns by the ICC, and where the railroad did not sound the horns as of December 18, 2003, are not subject to these regulations.

Railroads are required by FRA to sound locomotive horns at highway/rail at-grade crossings unless a Quiet Zone has been established. The railroads are not required by FRA to sound horns at pedestrian at-grade crossings. If pedestrian at-grade crossings are included in prospective Quiet Zones, pedestrian crossing safety must also be improved.

Under FRA regulations, public authorities (communities) may establish Quiet Zones consistent with FRA regulations. A public authority is the public entity responsible for traffic control at highway/rail or pedestrian at-grade crossings. In order to establish a Quiet Zone, communities must equip crossings with supplementary safety measures and/or evaluate risk to overcome the decrease in safety created by silencing the train horns. The safety measures must meet FRA requirements as specified in 49 CFR 222.35.

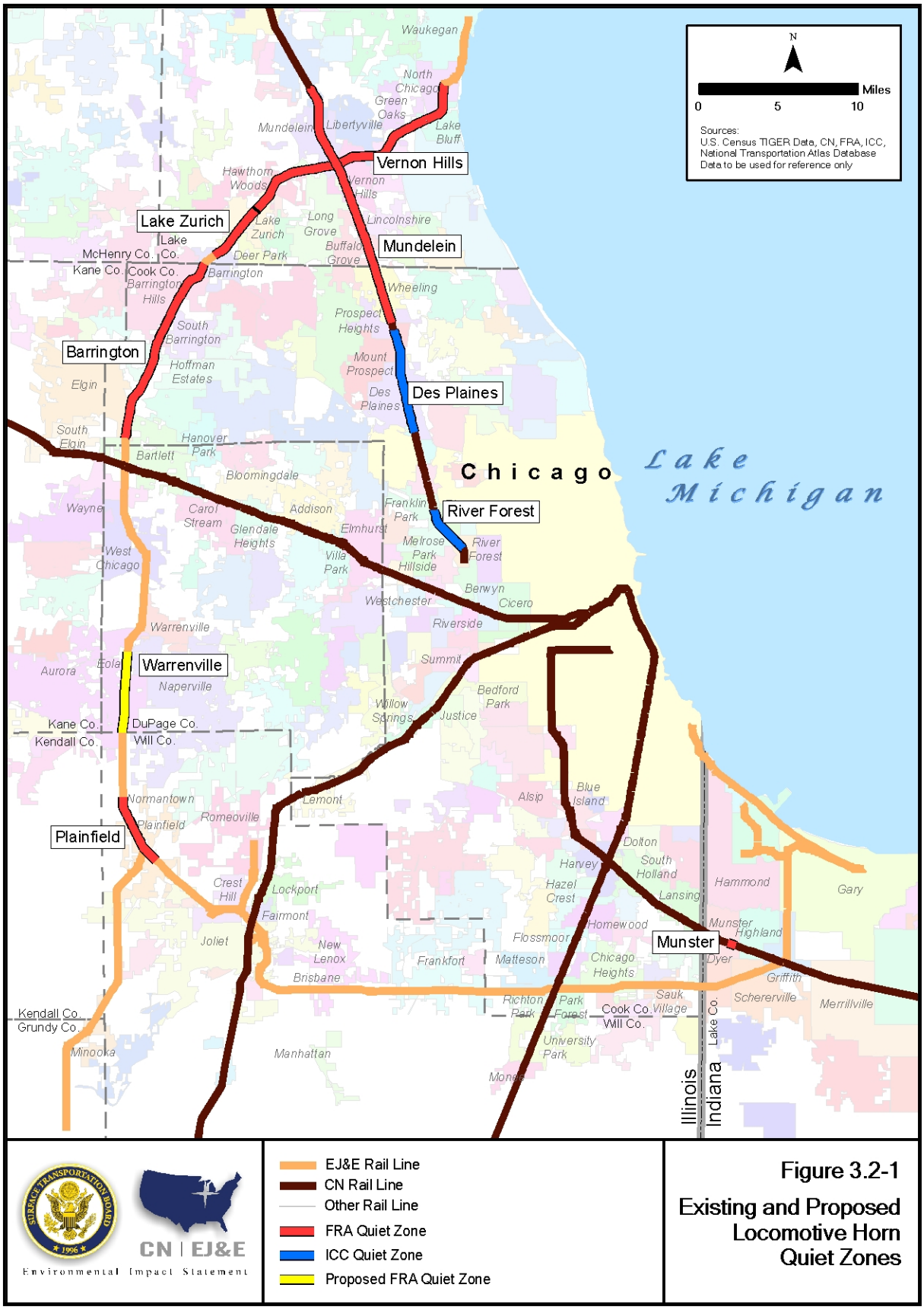
The EJ&E and CN rail lines include nine established Quiet Zones and one proposed zone in the establishment process as shown in Table 3.2-12, below. Four of the existing Quiet Zones are located on the EJ&E rail line. The zone currently in the establishment process is also on the EJ&E rail line. Three of the remaining four established Quiet Zones are on CN's Waukesha Subdivision, and one is on CN's Elsdon Subdivision. Appendix C contains tables that describe each Quiet Zone in detail. Figure 3.2-1, following Table 3.2-12, shows the locations of the Quiet Zones.

To accurately establish the characteristics of the existing Quiet Zones and the components used to evaluate the crossings that make up each zone, SEA investigated the following sources:

- FRA's Final Rule on the Use of Locomotive Horns at Highway-Rail Grade Crossings (FRA 2008d) and other information available to the public on FRA's website at http://www.fra.dot.gov/
- CN information on train traffic
- Illinois Commerce Commission data
- Current ADT information from roadway authorities in Illinois and Indiana
- Aerial photography
- Field verification of crossings along EJ&E segments
- Telephone and email communications with FRA

Table 3.2-12. Existing and Proposed Quiet Zones on the EJ&E and CN Rail Lines			
Quiet Zone	**Segments Involved[a]**	**Begin Milepost**	**End Milepost**
Vernon Hills, IL	EJ&E 14 to EJ&E 16	53.44	69.75
Lake Zurich, IL	EJ&E 14	50.10	53.44
Barrington, IL	EJ&E 13 to EJ&E 14	36.95	49.30
Warrenville, IL (proposed)	EJ&E 10 to EJ&E 11	17.17	22.80
Plainfield, IL	EJ&E 9 to EJ&E 10	9.00	13.59
Munster, IN	CN 29	32.25	32.75
River Forest, IL	CN 20	12.10	15.22
Des Plaines, IL	CN 22	20.28	26.86
Mundelein, IL	CN 22 to CN 29	32.37	42.38

Note:
[a] The segment description indicates that the zone exists within these segments. See Figure 3.2-1, below.


N
Miles
0
5
10
Sources:
U.S. Census TIGER Data, CN, FRA, ICC,
National Transportation Atlas Database
Data to be used for reference only
Waukegan
North Chicago
Green Oaks
Mundelein
Libertyville
Lake Bluff
Vernon Hills
Hawthorn Woods
Lake Zurich
Lake Zurich
Long Grove
Lincolnshire
Mundelein
Buffalo Grove
Deer Park
Barrington
Barrington Hills
Wheeling
Prospect Heights
South Barrington
Barrington
Hoffman Estates
Mount Prospect
Elgin
Des Plaines
Des Plaines
South Elgin
Hanover Park
Bartlett
Bloomingdale
Chicago
Lake Michigan
Wayne
Carol Stream
Addison
Franklin Park
River Forest
Glendale Heights
Elmhurst
Melrose Park
River Forest
West Chicago
Villa Park
Hillside
Berwyn
Cicero
Westchester
Riverside
Warrenville
Warrenville
Aurora
Eola
Naperville
Summit
Bedford Park
Willow Springs
Justice
Kane Co.
Kendall Co.
DuPage Co.
Will Co.
Normantown
Lemont
Alsip
Blue Island
Romeoville
Plainfield
Plainfield
Dolton
South Holland
Harvey
Hazel Crest
Hammond
Gary
Crest Hill
Lockport
Lansing
Fairmont
Homewood
Munster
Highland
Joliet
Flossmoor
Munster
New Lenox
Frankfort
Matteson
Chicago Heights
Dyer
Brisbane
Griffith
Richton Park
Park Forest
Sauk Village
Schererville
Merrillville
Cook Co.
Will Co.
Kendall Co.
Grundy Co.
Lake Co.
Minooka
Manhattan
University Park
Illinois
Indiana
EJ&E Rail Line
CN Rail Line
Other Rail Line
FRA Quiet Zone
ICC Quiet Zone
Proposed FRA Quiet Zone
CN | EJ&E
Environmental Impact Statement
Figure 3.2-1
Existing and Proposed Locomotive Horn Quiet Zones

3.2.5 Pedestrian/Bicycle Crossing Safety

Pedestrians, bicyclists, and other non-motorized travelers regularly cross the EJ&E and CN rail lines. These non-motorized users are hereafter collectively referred to as pedestrians. There is a distinction between officially sanctioned pedestrian crossings located on public rights of way, and unofficial crossings. Only officially sanctioned crossings are addressed in this analysis. A complete list of these crossings is included in Appendix C. Unofficial crossings occur at locations where individuals are trespassing onto and across railroad rights-of-way.

The most common type of pedestrian crossing is a sidewalk that is located immediately adjacent to and alongside existing streets or roadways that cross the track. Each of these crossings includes warning devices that provide pedestrian users a visible indication of the presence of a railroad track and trains. Those crossings that include active warning devices provide an audible indicator (a bell) signifying the approach of a train, and a visual indicator (flashing lights and/or automatic gate arms). Where there are high levels of pedestrian traffic, multiple tracks, or where unusual circumstances exist, additional signs or devices may be employed to provide warning to pedestrians. These may include: automatic pedestrian gates, pedestrian flashing lights, special signing, walkway markings, tactile strips, channelization devices, and fencing. In addition, the walkway or trail may be reconfigured in the area near the rail to alter the angle at which pedestrians cross the track. In some situations, the crossing may be grade separated on either a bridge that passes over the tracks or tunnels beneath the tracks. These devices are regulated by the Illinois Commerce Commission (ICC) in Illinois, and the Public Service Commission (PSC) in Indiana.

In addition to pedestrian crossings that are immediately adjacent to vehicular crossings, there are locations on the EJ&E and CN rail lines where pedestrian crossings exist on their own dedicated path (i.e., not along a roadway). These are identified as public pedestrian crossings; there are three at-grade crossings and three grade-separated crossings along the EJ&E rail lines and three along the CN rail lines, as shown in Table 3.2-13, below. These pedestrian crossings are for non-motorized use only, and are primarily recreational. These crossings are also included within the ICC and PSC's jurisdiction. Use of warning devices and signage at pedestrian crossings varies depending on the specific use and characteristics of the crossing, but must be consistent with the guidelines for the use of active and passive devices for non-motorist signals and crossings as found in the MUTCD (FHWA 2007b).

Both the Illinois and Indiana Department of Natural Resources maintain a listing of public trails within their respective states. A number of these trails cross either, or both, the EJ&E and CN rail lines. These locations include both pedestrian use only crossings, and pedestrian crossings located immediately adjacent to public streets or roadways used by vehicular traffic. A complete list of crossings is included in Appendix C.

Table 3.2-13. Pedestrian Crossing Inventory									
USDOT Crossing Number	**Name**	**Milepost**	**Subdivision**	**County**	**Type[a]**	**Warning Device Trail[b]**	**Warning Device Road-way[b]**	**Trail Proximity to Roadway Crossing**	**Roadway**
EJ&E Pedestrian Crossing Inventory									
260584L	Lockport Rd. Trail	9.00	Western	Will, IL	AG	X-Bucks	FLS w G	YES	Lockport Rd.
260935H	Ogden Ave.	19.02	Western	DuPage, IL	AG	CFLS w G	CFLS w G	YES	Ogden Ave.
260902V	Wabaunsee Trail	19.37	Western	DuPage, IL	GS	GS	GS	YES	McCoy Dr.
260805L	Ill Prairie Path - Aurora Spur	22.65	Western	DuPage, IL	AG	X-Bucks	N/A	NO	N/A
260804E	Ill Prairie Path - Batavia Spur	23.02	Western	DuPage, IL	AG	X-Bucks	N/A	NO	N/A
260550S	Fermi Lab Trail	25.63	Western	DuPage, IL	AG	None	FLS w G	YES	Batavia Rd.
260901N	Ill Prairie Path- Geneva Spur	29.63	Western	DuPage, IL	GS	GS	N/A	NO	N/A
260538K	West Chicago Bike Path	30.24	Western	DuPage, IL	AG	X-Bucks	FLS w G	YES	Hawthorne Lane
260803X	Ill Prairie Path	33.70	Western	DuPage, IL	AG	X-Bucks	N/A	NO	N/A
260810H	Pratt's Woods Forest Trail	34.83	Western	DuPage, IL	GS	GS	N/A	NO	N/A
260532U	W. Bartlett Rd. Path	36.95	Western	Cook, IL	AG	FLS w G	FLS w G	YES	W Bartlett Rd.
260525J	Streamwood Route	41.90	Western	Cook, IL	AG	FLS w G	FLS w G	YES	Shoe Factory Rd.
260516K	Dundee Ave Corridor	49.30	Western	Cook, IL	AG	FLS	CFLS w G	YES	Lake Cook Rd. / Main St.
260513P	Lake Zurich Road Corridor	50.40	Western	Lake, IL	AG	FLS w G	FLS w G	YES	Lake Zurich Rd.
260490K	Libertyville Bike Path	62.20	Western	Lake, IL	AG	CFLS w G	CFLS w G	YES	S. Milwaukee Ave.
260852U	Des Plains River Trail	63.87	Western	Lake, IL	AG	X-Bucks	X-Bucks	YES	Old School Rd.
260811P	North Shore Bike Path	65.70	Western	Lake, IL	GS	GS	N/A	NO	N/A
260473U	Robert McClory Bike Path	69.75	Western	Lake, IL	AG	CFLS w G	CFLS w G	YES	MLK Jr. Dr.

Table 3.2-13. Pedestrian Crossing Inventory									
USDOT Crossing Number	**Name**	**Milepost**	**Subdivision**	**County**	**Type[a]**	**Warning Device Trail[b]**	**Warning Device Road-way[b]**	**Trail Proximity to Roadway Crossing**	**Roadway**
260601A	Old Plank Rd. Trail	0.95	Eastern	Will, IL	AG	X-Bucks	FLS w G	YES	E Washington St.
260639W	Thornton Creek Trail	24.63	Eastern	Cook, IL	AG	FLS w G	FLS w G	YES	Euclid Ave.
260667A	Little Calumet River Trail	38.34	Eastern	Lake, IN	GS	GS	GS	YES	E Ridge Rd.
260698Y	Calumet Park South	1.83	Lakefront	Cook, IL	GS	GS	GS	YES	E 95th St.
260698Y	Calumet Park North	1.83	Lakefront	Cook, IL	GS	GS	GS	YES	E 95th St.
260695D	I & M Canal Path	2.46	Lakefront	Cook, IL	GS	GS	GS	YES	E 100th St.
260925C	Whiting Beach Trail	4.07	Lakefront	Lake, IN	GS	GS	GS	YES	Casino Center Dr.
CN Pedestrian Crossing Inventory									
689627S	Des Plaines River Trail	12.39	Waukesha	Cook, IL	AG	X-Bucks	CFLS w G	YES	Thatcher Ave.
689689P	Wheeling Bike Path	30.06	Waukesha	Cook, IL	AG	FLS	CFLS w G	YES	Dundee Rd. (ILL 22)
694865V	Buffalo Grove Bike System	32.37	Waukesha	Lake, IL	AG	FLS	CFLS w G	YES	Deerfield Rd. / Busch Pkwy.
689694L	Buffalo Grove Bike System	34.82	Waukesha	Lake, IL	AG	FLS	FLS w G	YES	N Buffalo Grove Rd.
689694L	Buffalo Grove Bike System	34.82	Waukesha	Lake, IL	AG	FLS	FLS w G	YES	N Buffalo Grove Rd.
689703H	Northshore Bike Trail	39.80	Waukesha	Lake, IL	AG	CFLS w G	CFLS w G	YES	E Hawley St..
289783Y	Wabash Lane	1.80	Freeport	Cook, IL	GS	GS	GS	YES	Wabash Ave.
289790J	Canal Lane	2.80	Freeport	Cook, IL	GS	GS	GS	YES	Canal Ave.
289805W	Boulevard Route	5.50	Freeport	Cook, IL	GS	GS	GS	YES	Western Ave.
289852E	Ill Prairie Path - Main Branch	19.65	Freeport	DuPage, IL	AG	X-Bucks	N/A	NO	N/A
911764J	Woodlawn Dr. Bike Path	31.17	Freeport	DuPage, IL	AG	None	CFLS w G	YES	County Farm Rd.
289896E	West Branch Trail (Stuckman Blvd. Bike Path)	32.10	Freeport	DuPage, IL	GS	GS	GS	YES	Schick Rd.

Table 3.2-13. Pedestrian Crossing Inventory									
USDOT Crossing Number	Name	Milepost	Subdivision	County	Type[a]	Warning Device Trail[b]	Warning Device Road-way[b]	Trail Proximity to Roadway Crossing	Roadway
289899A	South Bartlett Path	33.05	Freeport	DuPage, IL	GS	GS	GS	YES	S Bartlett Rd.
	Ill Prairie Path - Elgin Branch	37.60	Freeport	Kane, IL	GS	GS	N/A	NO	N/A
289907P	Fox River Trail	39.10	Freeport	Kane, IL	GS	GS	GS	YES	ILL 31
289703D	Boulevard Route	5.05	Joliet	Cook, IL	GS	GS	GS	YES	Western Ave.
004340A	Centennial Trail	17.34	Joliet	Cook, IL	GS	GS	GS	YES	Willow Springs Rd.
840410S	Lockport Historical Trail (Joliet Heritage Trail)	33.70	Joliet	Will, IL	AG	FLS	N/A	NO	N/A
289524M	Boulevard Route	7.88	Chicago	Cook, IL	GS	GS	GS	YES	E. 63rd St.
289576E	South Chicago Ave. Lane	9.30	Chicago	Cook, IL	GS	GS	GS	YES	S. Chicago Ave.
289635E	Harvey Blvd System	19.50	Chicago	Cook, IL	GS	GS	GS	YES	Halsted St. (ILL 1)
289646S	Harvey Blvd. System	20.60	Chicago	Cook, IL	GS	GS	GS	YES	US Hwy 6
289675C	Olympic Fields Bike Route	27.65	Chicago	Cook, IL	GS	GS	GS	YES	US Hwy 30
289678X	Woodward Ave Extension Trail	29.30	Chicago	Cook, IL	GS	GS	GS	YES	Sauk Tr.
283126F	Western Ave Lane /Boulevard Rt.	7.06	Elsdon	Cook, IL	GS	GS	GS	YES	Western Ave.
283169F	Harvey Blvd. System	22.00	Elsdon	Cook, IL	AG	CFLS w G	CFLS w G	YES	Sibley Blvd. (ILL 83)
283171G	Harvard Greenway Path	22.64	Elsdon	Cook, IL	AG	FLS	FLS w G	YES	150th St.
283173V	Harvard Greenway Path	22.95	Elsdon	Cook, IL	AG	CFLS w G	CFLS w G	YES	Broadway
283174C	Harvey Blvd. System	23.13	Elsdon	Cook, IL	AG	FLS	CFLS w G	YES	Park Ave.

Table 3.2-13. Pedestrian Crossing Inventory									
USDOT Crossing Number	Name	Milepost	Subdivision	County	Type[a]	Warning Device Trail[b]	Warning Device Road-way[b]	Trail Proximity to Roadway Crossing	Roadway
283177X	Harvey Blvd. System	23.52	Elsdon	Cook, IL	AG	FLS	CFLS w G	YES	Halsted St. (ILL 1)
283181M	State Street Bike Path	24.88	Elsdon	Cook, IL	GS	GS	GS	YES	State St.
283186W	Lancing Route	27.49	Elsdon	Cook, IL	AG	FLS w G	FLS w G	YES	Volbrecht Rd.
283188K	Lancing Route	27.74	Elsdon	Cook, IL	AG	FLS w G	FLS w G	YES	Thornton Rd.
283191T	Lancing Route	29.42	Elsdon	Cook, IL	AG	FLS w G	FLS w G	YES	186th St.
283193G	Lancing Route	29.80	Elsdon	Cook, IL	AG	FLS	FLS w G	YES	Burnham Ave.
283201W	Griffith Bike Trail	36.09	Elsdon	Lake, IN	AG	FLS w G	FLS w G	YES	Broad St.

Notes:

[a] AG = At-Grade
GS = Grade Separated

[b] GS = Grade Separated
FLS = Flashing Light Signals
CFLS = Cantilevered Flashing Light Signals
FLS w G = Flashing Light Signals with half roadway gates
CFLS w G = Cantilevered Flashing Light Signals with half roadway gates

This page left intentionally blank.