NORTHERN INDIANA PASSENGER RAIL CORRIDOR

EXISTING CONDITIONS REPORT

Chicago, Ft. Wayne & Eastern Railroad – Fort Wayne Line
Tolleston (Gary, IN) to Lima, OH

Prepared for the City of Fort Wayne, IN

June 2016

Final Report

HNTB

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1. INTRODUCTION

This report summarizes available data describing the existing conditions of a proposed passenger rail route on an existing railroad between Gary, IN (Tolleston) and Lima, OH, known as the "Fort Wayne Line". The City of Fort Wayne, IN contracted with HNTB Corporation to collect the data described in Appendix E, which also indicates whether the data was obtained and where that data can be found within this report. Data summarized in this report was obtained from publicly available and field observations conducted between May 24-26, 2016.

The Fort Wayne Line is owned by CSX Transportation (CSX) who has leased the railroad to the Chicago, Ft. Wayne & Eastern Railroad[1] (CFE) since 2004. The CFE currently operates the railroad and Norfolk Southern (NS) owns trackage rights. This data has been assembled to support the future development of a Tier 1 Environmental Impact Statement (EIS) for the entire Northern Indiana Passenger Rail Corridor between Chicago Union Station and Fort Wayne, IN, with potential future continuation of service to Columbus, OH (See Figure 1).

Data from the Chicago-Detroit/Pontiac Passenger Rail Corridor Program Tier 1 EIS can be used to supplement the data collected in this report for the segment of corridor west of Tolleston to Chicago Union Station. Section 1.2 provides additional information on work completed for the Chicago-Detroit/Pontiac Corridor. Additional analysis of the Fort Wayne Line between Lima and Columbus, OH to the east would be completed under a separate study to fully document the existing conditions of the entire Northern Indiana Passenger Rail Corridor.

1.1 Northern Indiana Passenger Rail Corridor Description

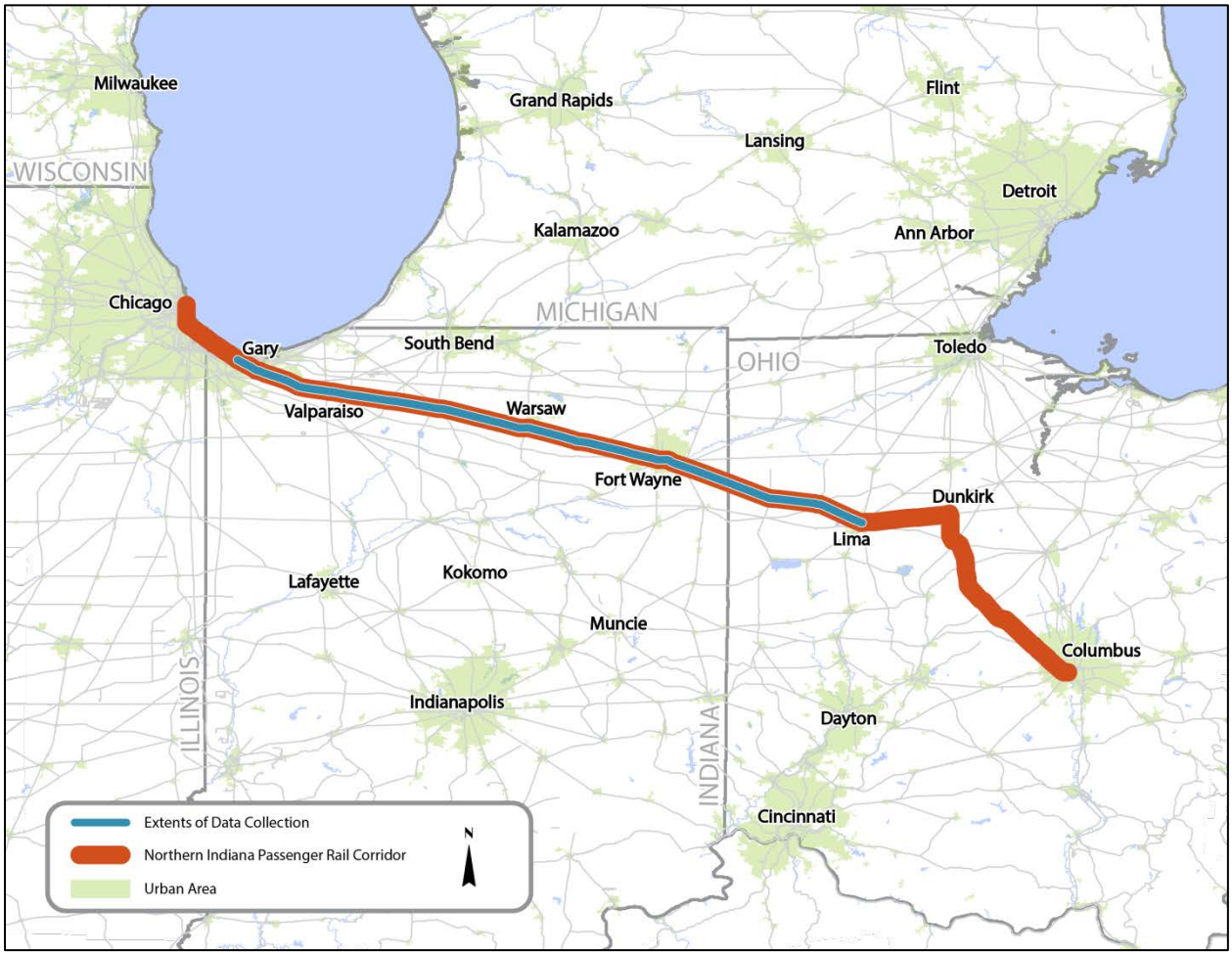
The Northern Indiana Passenger Rail Corridor spans from Chicago to Columbus, OH, as shown in Figure 1. It has been assumed that the Northern Indiana Passenger Rail Corridor would use the route proposed by the Midwest Regional Rail Initiative (MWRRI)[2] between Chicago Union Station and a neighborhood known as Tolleston[3] in southern Gary, IN. Beyond Tolleston, the MWRRI study identifies a route through Fort Wayne, IN that leads to Toledo and Cleveland, OH. However, a more recent study commissioned by the Northeast Indiana Passenger Rail Association[4] identifies a new route through Fort Wayne, IN that leads to Columbus, OH. This route to Columbus has become the desired route for the Northern Indiana Passenger Rail Corridor and is studied in this existing conditions report.

Trains would utilize the existing Amtrak route on the NS Chicago Line from Chicago Union Station to Gary, IN, where it would transfer to the Fort Wayne Line and head towards Tolleston.

[1] The Chicago, Ft. Wayne & Eastern is a local railroad that is owned by parent company Genesee & Wyoming. CFE was originally owned by RailAmerica, whose purchase by Genesee & Wyoming was granted by the Surface Transportation Board in December 2012.
[2] Midwest State Departments of Transportation. *Midwest Regional Rail Initiative Project Notebook.* June 2004.
[3] Tolleston is a known railroad place where the Fort Wayne Line crosses the CSX Porter Subdivision and Indiana Harbor Belt in Gary, IN. Tolleston gets its name from the Tolleston neighborhood of Gary, which was formerly a township until it was annexed by the City of Gary in 1910.
[4] Northeast Indiana Passenger Rail Association. *Northern Indiana/Ohio Passenger Rail Corridor Feasibility Study and Business Plan.* December 2012.

From Tolleston, the route would continue on the Fort Wayne Line through Fort Wayne, IN and Lima, OH, to Dunkirk, OH. Continuing south to Columbus, OH, the route would travel on the CSX Toledo Branch and Scottslawn Subdivisions.

Figure 1: Northern Indiana Passenger Rail Corridor



1.2 Previous Work Completed between Chicago Union Station and Tolleston

The route between Chicago Union Station and Tolleston that is identified by the MWRRI is also one of four routes evaluated in the Chicago-Detroit/Pontiac Passenger Rail Corridor Program Tier 1 Draft EIS published in September 2014. During the analysis of potential alternatives for the Chicago-Detroit/Pontiac Passenger Rail Corridor Program, substantial research was conducted on all potential routes that could utilize existing or abandoned railroads in the "South of the Lake"[5]. A summary of the South of the Lake route alternatives analysis can be found in

[5] The "South of the Lake" describes the extensive railroad network that is located south of Lake Michigan between Chicago and Porter, IN, including the section between Chicago Union Station and Tolleston.

the Chicago-Detroit/Pontiac Passenger Rail Corridor Program Tier 1 Draft EIS under Appendix A.[6]

The Chicago-Detroit/Pontiac Passenger Rail Corridor Program Final Tier 1 EIS and Record of Decision are expected to be published in 2016, and will disclose the South of the Lake passenger rail route that is preferred by the Federal Railroad Administration (FRA) and the states of Indiana, Illinois, and Michigan. If FRA and the states select a preferred alternative to implement the service, the project would be advanced to the next stages of planning, design, and construction depending on available funding. The South of the Lake improvements associated with the selection of a preferred Chicago-Detroit/Pontiac Corridor will be critical and beneficial to the implementation of the Northern Indiana Passenger Rail Corridor.

Regardless of the route selection, no South of the Lake route under consideration precludes the opportunity for the Northern Indiana Passenger Rail Corridor to connect to the South of the Lake passenger rail route near Gary, IN. The selection of the South of the Lake route is predicated on the goal of providing access to Chicago Union Station on a double-track passenger railroad that can accommodate all passenger service east of Chicago as planned in the MWRRI.

1.3 Tolleston to Lima

From Tolleston (Gary, IN) to Lima, OH, the Northern Indiana Passenger Rail Corridor would travel on the Fort Wayne Line through Valparaiso, Warsaw, and Fort Wayne, IN and on to Lima, OH.

Standard railroad data was collected from publicly available sources to better understand freight train operations on the Fort Wayne Line between Tolleston and Lima, OH. The data provides information on existing track conditions, freight operations, and safety conditions. Specifically, research summarized in this report focused on the following items:

Existing Track Conditions

- Physical track condition
- Track geometry
- Signalization
- Track repair history and recent upgrades
- Publicly identified future projects

Existing Freight Operations

- Train counts and operations
- Freight tonnage
- Commodities

[6] Michigan Department of Transportation. *Chicago-Detroit/Pontiac Passenger Rail Corridor Program Tier 1 Draft EIS, Appendix A: Level 1 Alternatives Screening Summaries.* September 2014. Accessed May 2016. http://greatlakesrail.org/~grtlakes/index.php/site/tier1-draft-eis.

Corridor Safety

- Highway-rail crossings and warning systems
- Train derailments and accidents

1.3.1 Fort Wayne Line History

The Fort Wayne Line is the former Pennsylvania Railroad's mainline between Chicago and Pittsburgh, PA, and eventually New York City as it became Penn Central Transportation Company. Since the bankruptcy of Penn Central in 1976, the Fort Wayne Line has transferred ownership multiple times. At the time of bankruptcy, the Consolidated Rail Corporation (Conrail) inherited the Fort Wayne Line as part of the Railroad Revitalization and Regulatory Reform Act of 1976, which Congress passed in response to the imminent collapse of freight and passenger rail traffic in the Midwest and Northeast United States as a result of multiple railroad bankruptcies.

By 1984, the once double-tracked railroad between Tolleston and Lima, OH had been incrementally downgraded to a single-track railroad under Conrail ownership. Choosing to focus their investments on other parallel routes in the area, the Fort Wayne Line deteriorated to the point where Amtrak could no longer serve Fort Wayne, IN or Lima, OH. Once Amtrak discontinued operations in 1990, Conrail removed the signal system. In certain areas along the route, train speeds dropped from 70 mph to 10 mph due to declining investment and maintenance.

In 1994, NS purchased the Fort Wayne Line from Gary to Warsaw, IN, along with trackage rights between Warsaw and Fort Wayne, IN. The transaction provided NS an alternate route to Chicago that eased congestion on their Chicago District. NS substantially invested in the Fort Wayne Line for the first time since the 1970's by improving track conditions and adding new connections at Fort Wayne, Argo, Plymouth, and Valparaiso, IN.

NS turned over its ownership of the Fort Wayne Line between Gary and Warsaw to CSX as part of the NS and CSX shared acquisition and restructuring of Conrail that was completed in 1999. The deal gave CSX full ownership of the Fort Wayne Line west of Crestline, OH. However, NS maintained trackage rights over the Fort Wayne Line in this area. In 2004, the CFE signed a 20-year lease with CSX to operate on the Fort Wayne Line between Tolleston and Crestline, OH.

Today, the Fort Wayne Line is only used for freight rail service. The CFE is the current operator of the line, however NS dispatches the railroad and continues to maintain trackage rights despite CSX's ownership of the Fort Wayne Line. The CFE is also responsible for maintaining the tracks and highway-rail crossings, including the associated rail signage and safety improvements.

2. EXISTING TRACK CONDITIONS

2.1 Physical Track Condition

Track conditions are typically described in terms of FRA track classifications as determined by the physical characteristics of the track, such as gage[7] and alinement[8]. The track classifications are translated into maximum allowable speeds for freight and passenger trains as stated in 49 CFR §213.9 (See Table 1). The maximum allowable speed assumes that the train is running on a track with little to no curvature, which can restrict speed.

Table 1: FRA Class of Track Standards

Class of Track	Maximum Allowable Freight Speed	Maximum Allowable Passenger Speed
Excepted track	10 mph	N/A
Class 1 track	10 mph	15 mph
Class 2 track	25 mph	30 mph
Class 3 track	40 mph	60 mph
Class 4 track	60 mph	80 mph
Class 5 track	80 mph	90 mph
Class 6 track	110 mph	110 mph

Source: 49 CFR §213.9 and 49 CFR §213.307

Based on the 40 mph freight operations that are reported in the FRA highway-rail crossing inventory records, existing track conditions on the Fort Wayne Line are consistently rated as Class 3 track. The current track condition was also verified in the field. However, periodic sections of jointed rail were observed along the corridor. Jointed rail is a construction technique used to join two sections of rail to make one continuous piece of rail with steel bolts and steel plates, as seen in Figure 2. Jointed rail is used in lieu of welding two pieces of rail together to create a continuous section of rail. Typically, jointed rail is subject to additional maintenance and is not desirable for higher speed train operations. Replacement of the existing jointed rail may need to be considered if passenger service is implemented on the Fort Wayne Line.

FRA highway-rail crossing inventory records in Appendix B also indicate crossings where freight operations are operating at 10 mph (Class 1) and 25 mph (Class 2). These lower speed crossings are located in Valparaiso, Bourbon, Warsaw, Columbia City, IN and Delphos, OH.

[7] Track gage is the distance between the heads of each load-bearing rail on a railroad.
[8] Track alinement (also referred to as alignment) is a term used to describe the uniformity (straightness) of the rails on a railroad.

Figure 2: Jointed Rail on the Fort Wayne Line



Note: The picture shows a rail joint on the second rail that is fastened using a steel plate and six steel bolts.

2.2 Track Geometry

The Fort Wayne Line is known as one of the straightest railroads in the country. There are very few curves along the route and many of the curves that do exist are flatter curves that are less restrictive on train speeds. There are 38 total curves between Tolleston and Lima, OH that range between 0 degrees 04 minutes and 4 degrees 24 minutes. There may be need and opportunity to flatten some of the tighter curves on the Fort Wayne Line to accommodate higher speed passenger rail operations. The need to flatten curves would depend on the future proposed passenger rail speed. Table 2 provides a list of all the curves along the Fort Wayne Line and the maximum speed that can be attained through each curve, assuming that the maximum speed for the service is 79 mph. Curves that restrict speeds under 79 mph are potential areas where flattening the curve may be beneficial to rail operations. The track geometry for the Fort Wayne Line is also schematically displayed in Appendix A.

Table 2: Fort Wayne Line Track Curvature

Curve Milepost	Radius		Degree of Curvature			Max Speed
	(decimal degree)	(feet)	(deg:min:sec)			(mph)
260A	1.500	3,819.83	1	30	0	79.00
260B	1.000	5,729.65	1	0	0	79.00
262A	1.250	4,583.75	1	15	0	79.00
264A	2.250	2,546.64	2	15	0	71.27
273A	2.500	2,292.01	2	30	0	67.61
273B	1.000	5,729.65	1	0	0	79.00
274A	1.000	5,729.65	1	0	0	79.00
274B	1.000	5,729.65	1	0	0	79.00
286A	1.000	5,729.65	1	0	0	79.00
287A	2.000	2,864.93	2	0	0	75.59
296A	0.330	17,362.38	0	19	48	79.00
304A	0.070	81,851.12	0	4	12	79.00
318A	1.630	3,515.20	1	37	47	79.00
318B	2.000	2,864.93	2	0	0	75.59
319A	4.400	1,302.50	4	24	0	50.96
319B	3.470	1,651.43	3	28	12	57.39
320A	4.250	1,348.45	4	15	0	51.86
321A	3.470	1,651.43	3	28	12	57.39
342A	0.830	6,903.17	0	49	47	79.00
344A	1.570	3,649.53	1	34	12	79.00
345A	0.670	8,551.66	0	40	12	79.00
358A	0.670	8,551.66	0	40	12	79.00
360A	1.000	5,729.65	1	0	0	79.00
387A	0.670	8,551.66	0	40	12	79.00
395A	0.330	17,362.38	0	19	48	79.00
398A	0.170	33,703.41	0	10	12	79.00
419A	0.070	81,851.12	0	4	12	79.00
422A	1.000	5,729.65	1	0	0	79.00
423A	1.000	5,729.65	1	0	0	79.00
427A	0.500	11,459.19	0	30	0	79.00
428A	1.000	5,729.65	1	0	0	79.00
429A	1.000	5,729.65	1	0	0	79.00
429B	0.500	11,459.19	0	30	0	79.00
429C	0.500	11,459.19	0	30	0	79.00
429D	0.500	11,459.19	0	30	0	79.00
435A	0.500	11,459.19	0	30	0	79.00
435B	1.500	3,819.83	1	30	0	79.00
435C	0.750	7,639.49	0	45	0	79.00

Notes: When calculating maximum velocity:
1.) Assume 5" Actual Superelevation and 3" Can't Deficiency
2.) Assume max speed is 79 MPH

2.3 Signalization

The majority of the corridor operates under either Track Warrant Control (TWC) or Form D Control System (DCS) that is dispatched by NS. TWC enables freight trains to safely travel on specified sections of railroad as authorized by the railroad dispatcher via radio. Operating instructions are recorded by the train engineer on a written form and then executed. DCS is similar to TWC, but utilizes a different written form called "Form D" that follows the operating rules set forth by the Northeast Operating Rules Advisory Committee (NORAC). DCS is used from Lima, OH to Fort Wayne, IN and TWC is used from Fort Wayne to Tolleston, IN, except in two areas where Centralized Traffic Control (CTC) is used.

Generally, between Hobart and Valparaiso and within Fort Wayne, IN, train operating safety is enhanced with the use of CTC. The CTC signal system is utilized in these two areas because of higher train traffic and because trains are operating between different railroads and operating subdivisions. Sections 3.1.1 and 3.1.2 further describe these congested segments of the Fort Wayne Line that are utilized by NS for routing train traffic on the CFE system. CTC uses signal indications to govern the movements of trains through an interlocking[9]. Within the CTC system, interlockings for a specified region are controlled by one dispatcher with the use of computer software that does not allow the dispatcher to authorize conflicting movements. Trains need only to observe the controlled signals to obtain permission to move through the interlocking.

2.4 Track Repair History and Recent Upgrades

As indicated in Section 1.2, maintaining the Fort Wayne Line has not been a priority since it was owned by Penn Central. NS invested in portions of the railroad and new connections between Tolleston and Fort Wayne, IN in the mid 1990's. However, capital maintenance work on the Fort Wayne Line since the 1970's has been minimal until 2004 when CFE entered a lease agreement with CSX to operate on the railroad.

The most recent upgrades on the Fort Wayne Line have been completed by NS to improve track to FRA Class 3 standards and allow speeds up to 40 mph across the entire corridor. NS crews began working on the track improvement project in November 2014, which involved leveling and aligning 50 track miles, replacing segments of rail, and installing more than 10,000 new ties from Tolleston, through Lima, to Crestline, OH. NS invested in the 315-mile long project to help alleviate freight-rail congestion in and out of Chicago on its other operating subdivisions. Much of the congestion was created by the high-priority crude oil shipments coming from the Bakken oil fields of North Dakota sent to the oil refineries on the east coast. The track improvement project was substantially completed by January 2015. At the time of construction, NS indicated that up to six additional eastbound freight trains would use the Fort

[9] A signaled interlocking refers to an arrangement of signals that prevents conflicting train movements where railroads meet or cross one another.

Wayne Line daily.[10] It is probable that much of this additional NS freight crude oil traffic on the Fort Wayne Line has since decreased as demand and market price of oil have been down.

Indiana, Ohio, and local municipalities have also worked to improve at-grade highway-rail crossings on the Fort Wayne Line as described in Table 3. These improvements have mainly been funded through the federal Railroad/Highway At-Grade Crossings Program (23 USC 130)[11] which aims to eliminate hazards at highway-rail crossings. Other sources of funding have come from the American Recovery and Reinvestment Act (ARRA) and state funding sources.

[10] Progressive Railroading. *Watco lands Potash Ridge deal; Chicago, Ft. Wayne & Eastern upgrades track*. January 28, 2015. Accessed May 2016. http://www.progressiverailroading.com/short_lines_regionals/news/Watco-lands-Potash-Ridge-deal-Chicago-Ft-Wayne-Eastern-upgrades-track--43360.

[11] The Railroad/Highway At-Grade Crossings Program, that has also been referred to as the Section 130 Program, is now known as the Railway-Highways Crossing Program under the Fixing America's Surface Transportation Act (FAST Act) that was signed into law on December 4, 2015.

Table 3: Recently Completed Highway-Rail Crossing Improvement Projects

INDIANA PROJECTS

Project Name	Year of Implementation	Project Cost	Funding Source
Harmac Circle Crossing Improvement Project	2010	$235,000	Section 130

Project Description

Upgrade warning devices at Harmac Circle highway-rail crossing in Wheeler, IN to flashing lights, gates, overhead cantilever, bells, and constant warning time[12] circuitry. New warning devices are interconnected with the parallel NS Chicago District providing one warning system for all parallel tracks.

Project Name	Year of Implementation	Project Cost	Funding Source
Boiling Springs Crossing Improvement Project	2010	$213,000	Section 130

Project Description

Upgrade warning devices at Boiling Springs highway-rail crossing in Valparaiso, IN to flashing lights, gates, overhead cantilever, bells, and constant warning time circuitry. New warning devices are interconnected with the parallel NS Chicago District providing one warning system for all parallel tracks.

Project Name	Year of Implementation	Project Cost	Funding Source
CR 400N Crossing Improvement Project	2010	$243,000	Section 130

Project Description

Upgrade warning devices at CR 400N (f.k.a. Loueks Crossing) highway-rail crossing in Valparaiso, IN to flashing lights, gates, overhead cantilever, bells, and constant warning time circuitry. New warning devices are interconnected with the parallel NS Chicago District providing one warning system for all parallel tracks.

[12] Constant warning time is a motion sensing system with the capability of measuring train speed and providing a relatively uniform warning time to public traffic at highway-rail crossings.

OHIO PROJECTS

Project Name	Year of Implementation	Project Cost	Funding Source
Van Wert Corridor Improvement Project	2016	$2,000,000	Section 130

Project Description

Improve crossing safety in Van Wert, OH by closing five at-grade crossings, upgrading warning devices at four at-grade crossings, and reconstructing the crossing surface at nine at-grade crossings.

Warning devices and surface reconstruction

- Market St.
- Race St.
- Franklin St.
- Wayne St.

Surface reconstruction

- Jefferson St.
- Washington St.
- Walnut St.
- Cherry St.
- Tyler St.

Closure

- Harrison St.
- Chestnut St.
- Vine St.

Project Name	Year of Implementation	Project Cost	Funding Source
Public Utilities Commission of Ohio Flasher LED Upgrade Program	2013	$90,000	Ohio Grade Crossing Protection Fund

Project Description

Improve crossing safety in Van Wert and Allen Counties by upgrading 8” flashing lights to 12” LED flashing lights at the following public crossing locations:

Van Wert County Crossings

- Vine St.
- Franklin St.
- Chestnut St.
- Race St.
- Tyler St.
- Fisher Ave
- Harrison St.
- Walnut St.
- Market St.
- Shannon St.
- Wall St
- State Line Rd.

Allen County Crossings

- Elizabeth St.
- West St.
- Center St.
- Greenlawn Rd.
- Piquad Rd.
- Ridge Rd.

OHIO PROJECTS (CONTINUED)

Project Name	Year of Implementation	Project Cost	Funding Source
City of Delphos, OH crossing improvements	2010	$895,390	ARRA

Project Description

Improve crossing safety in Delphos, OH by installing new signage, flashing lights, and/or gates at the following public crossing locations:

- Pierce St.
- Franklin St.
- Bredeick St.
- SR 697
- Main St.
- Clay St.
- Jefferson St.
- Canal St.

Project Name	Year of Implementation	Project Cost	Funding Source
Defiance Trail Crossing Improvement Project	2010	Unknown	Section 130

Project Description

Install flashing lights and gates at Defiance Trail crossing in Van Wert County, OH to improve crossing safety.

Source: Indiana Department of Transportation and Public Utilities Commission of Ohio.
Note: Ohio project costs were collected from early contract documentation and other sources and may not reflect the true project cost. True project costs could not be obtained from the Public Utilities Commission of Ohio or the Ohio Rail Development Commission without a Freedom of Information Act request.

2.5 Publicly Identified Future Projects

CFE, NS and CSX do not publicly disclose infrastructure investment strategies and planned improvements on the Fort Wayne Line are not available.

The Indiana and Ohio Departments of Transportation identify programmed transportation infrastructure improvements in their Statewide Transportation Improvement Programs (STIP). Indiana[13] and Ohio[14] have no programmed improvements along the Fort Wayne Line in the most current version of their respective STIP's. The Indiana[15] and Ohio[16] State Rail Plans also identify short range and long range rail infrastructure improvements. In reviewing the plans, Ohio identified no projects on the Fort Wayne Line, and Indiana identified three short range projects and one long range project as listed in Table 4. It is likely that both rail plans will be updated in the near future as they are over five years old. States are required to complete an updated state rail plan every five years to continue to be eligible for federal grant programs that support rail projects.

[13] Indiana Department of Transportation. *Statewide Transportation Improvement Program: Updated Project List FY 2016-2019.* Accessed May 2016. http://www.in.gov/indot/files/STIP_UpdatedProjectlisting_2016-2019.pdf.
[14] Ohio Department of Transportation. *2016-2019 STIP Project Listing as of 2/11/2016.* Accessed May 2016. https://www.dot.state.oh.us/Divisions/Planning/STIP/Current%20STIP%20Project%20List/Current%20STIP%20Project%20List.pdf.
[15] Indiana Department of Transportation. Indiana State Rail Plan. November 2011. Accessed May 2016. http://www.in.gov/indot/files/Rail_JanFinal_Report_011712.pdf.
[16] Ohio Department of Transportation, Ohio Rail Development Commission. *Ohio Statewide Rail Plan, Final Report.* May 10, 2010. Accessed May 2016. http://www.dot.state.oh.us/Divisions/Rail/Programs/StatewideRailPlan/Pages/default.aspx.

Table 4: Short-Range and Long-Range Fort Wayne Line Infrastructure Improvements

Project Name	Project Description	Project Benefits	Cost	Funding Source
Short Range Improvements				
Crossing surface renewal	Renew surface at highway-rail crossings on the CFE Fort Wayne Line in Indiana.	Safety	Undetermined	Indiana Railroad Grade Crossing Fund
Lake County crossing signage/ pavement marking improvements	Improve signage and pavement markings at highway-rail crossings in Lake County, IN.	Safety	Undetermined	Indiana Railroad Grade Crossing Fund
Starke County crossing signage/ pavement marking improvements	Improve signage and pavement markings at highway-rail crossings in Starke County, IN.	Safety	Undetermined	Indiana Railroad Grade Crossing Fund
Long Range Improvements				
Fort Wayne intermodal facility	Construct an intermodal facility with a capacity of 60,000 to 80,000 lifts. Intermodal trains from the facility would interchange traffic with the CN at Valparaiso.	Provides northeast Indiana direct access to west coast by rail and reduces transit time and costs.	$20,000,000	Undetermined

Source: Indiana Department of Transportation, Indiana State Rail Plan, November 2011 and Ohio Rail Development Commission, Ohio Statewide Rail Plan, May 10, 2010.

3. EXISTING FREIGHT OPERATIONS

3.1 Train Counts and Operations

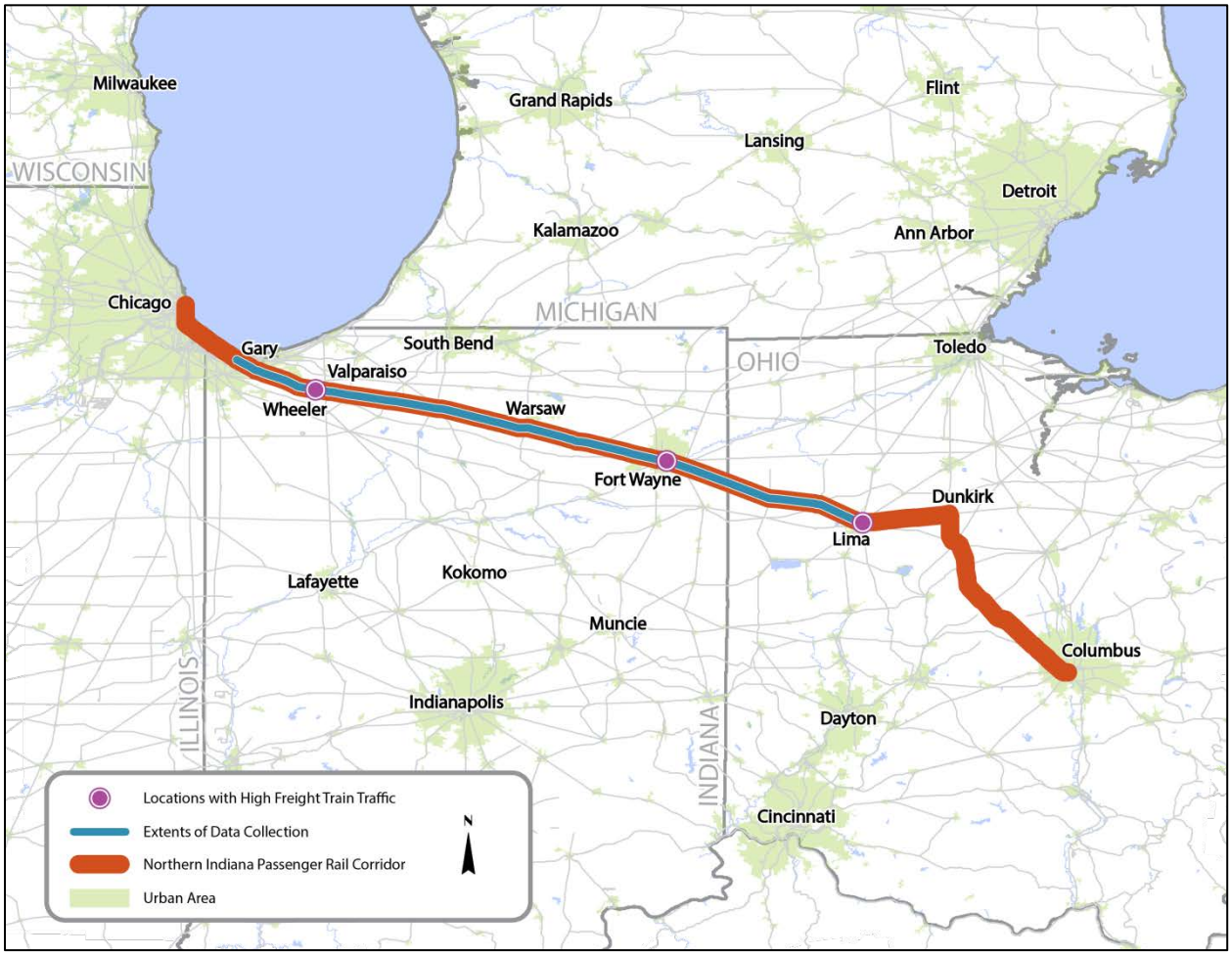
Train counts for the Fort Wayne Line between Tolleston and Lima, OH were obtained from the Federal Railroad Administration's *Highway-Rail Crossing Inventory.*[17] Records for all highway-rail crossings along the corridor were collected and organized by geographic location. The *Highway-Rail Crossing Inventory* not only provides a list of crossings, but also provides information on train traffic as reported to FRA by the operating railroad. This data collection exercise provided a database that develops a generalized picture of the amount of train traffic that is operating on the corridor on a typical day. A list of the highway-rail crossings and each individual crossing record is provided in Appendix B.

Across much of the Fort Wayne Line, train counts are fairly consistent and it is typical to see two to four trains per day. Of the four potential trains, two trains typically travel between the Chicago area and Lima, OH and two other trains are making switching movements, as they are likely serving industries on the line. CFE interchanges with CSX in Lima, OH and with the Indiana Harbor Belt (IHB) at Blue Island Yard just south of Chicago. The IHB is a neutral carrier that gives CFE access to all the US Class 1 railroads in Chicago.[18]

Despite the low traffic throughout much of the corridor, freight train traffic is more prevalent in Wheeler, IN, Fort Wayne, IN and Lima, OH (See Figure 3). Sections 3.1.1 through 3.1.3 describe the freight train traffic and bottleneck locations in each of these areas as perceived from studying train counts reported to the FRA in highway-rail crossing records and aerial images of the track infrastructure.

[17] Federal Railroad Administration Office of Safety Analysis. *Highway-Rail Crossing Inventory.* Accessed April 2016. http://safetydata.fra.dot.gov/OfficeofSafety/Default.aspx.
[18] Ohio Rail Development Commission. *Ohio Statewide Rail Plan.* May 10, 2010. Accessed May 2016. http://www.dot.state.oh.us/DIVISIONS/RAIL/Pages/default.aspx.

Figure 3: Higher Train Traffic Locations on the Fort Wayne Line

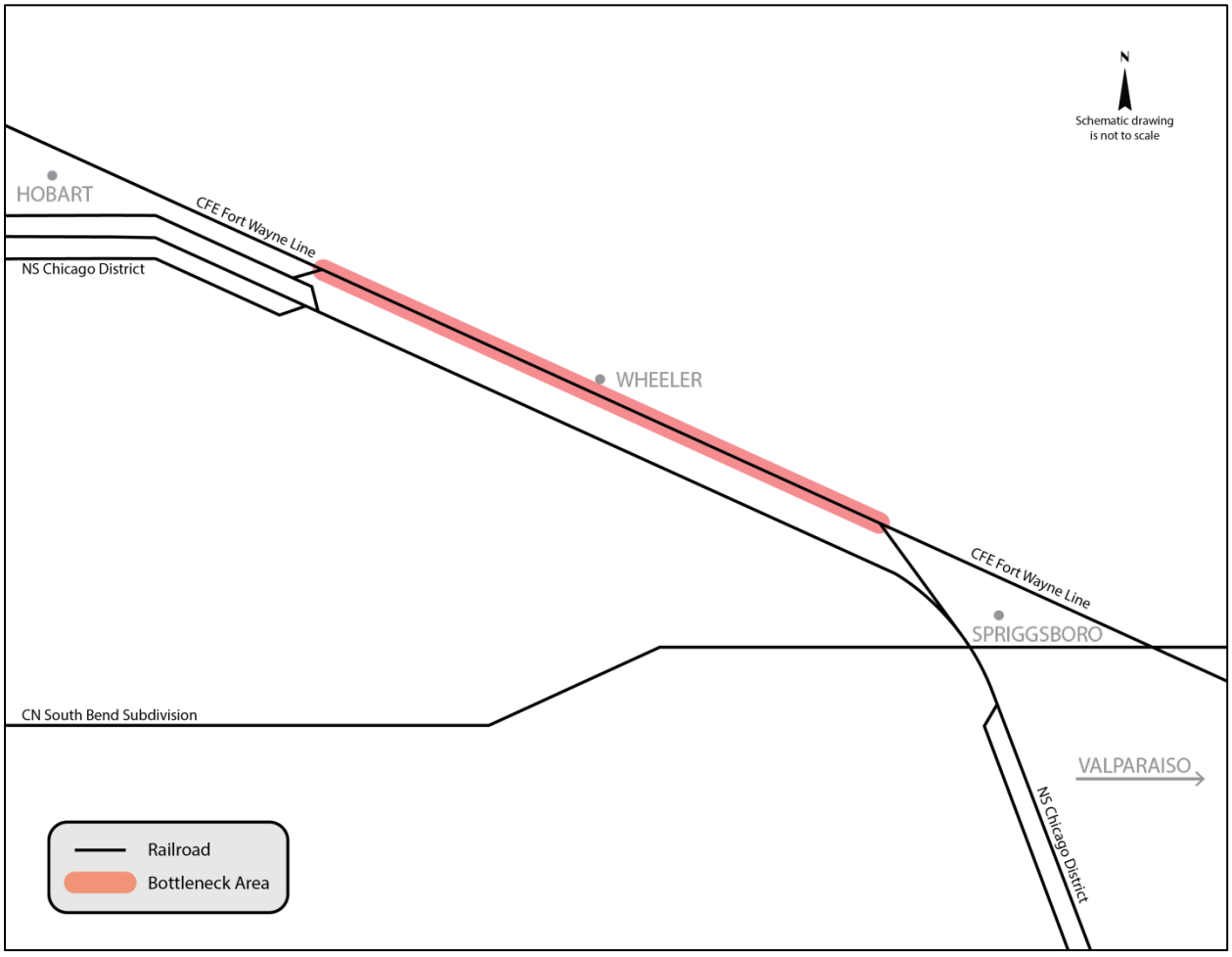


3.1.1 Wheeler

The NS Chicago District is the main NS route between Chicago and Fort Wayne and runs parallel to the Fort Wayne Line in the area of Wheeler, IN. As seen in Figure 4, there are crossover connections to the east and west of Wheeler, IN between the Fort Wayne Line and the NS Chicago District at Hobart, IN and Spriggsboro Junction.[19] The crossovers allow NS the ability to use the Fort Wayne Line as a passing siding or second main line, which improves operations on its Chicago District. The interaction with NS trains in this area increases reported train traffic to six trains per day on the Fort Wayne Line.

[19] Spriggsboro Junction is a location where the CFE/CSX Fort Wayne Line, NS Chicago District, and the Canadian National South Bend Subdivision converge just west of Valparaiso.

Figure 4: Wheeler Railroad Schematic



Note: The schematic drawing is not drawn to scale. The exhibit depicts the railroad network in a way that helps understand the railroad operations described in Section 3.1.1, and is not necessarily geographically accurate.

3.1.2 Fort Wayne

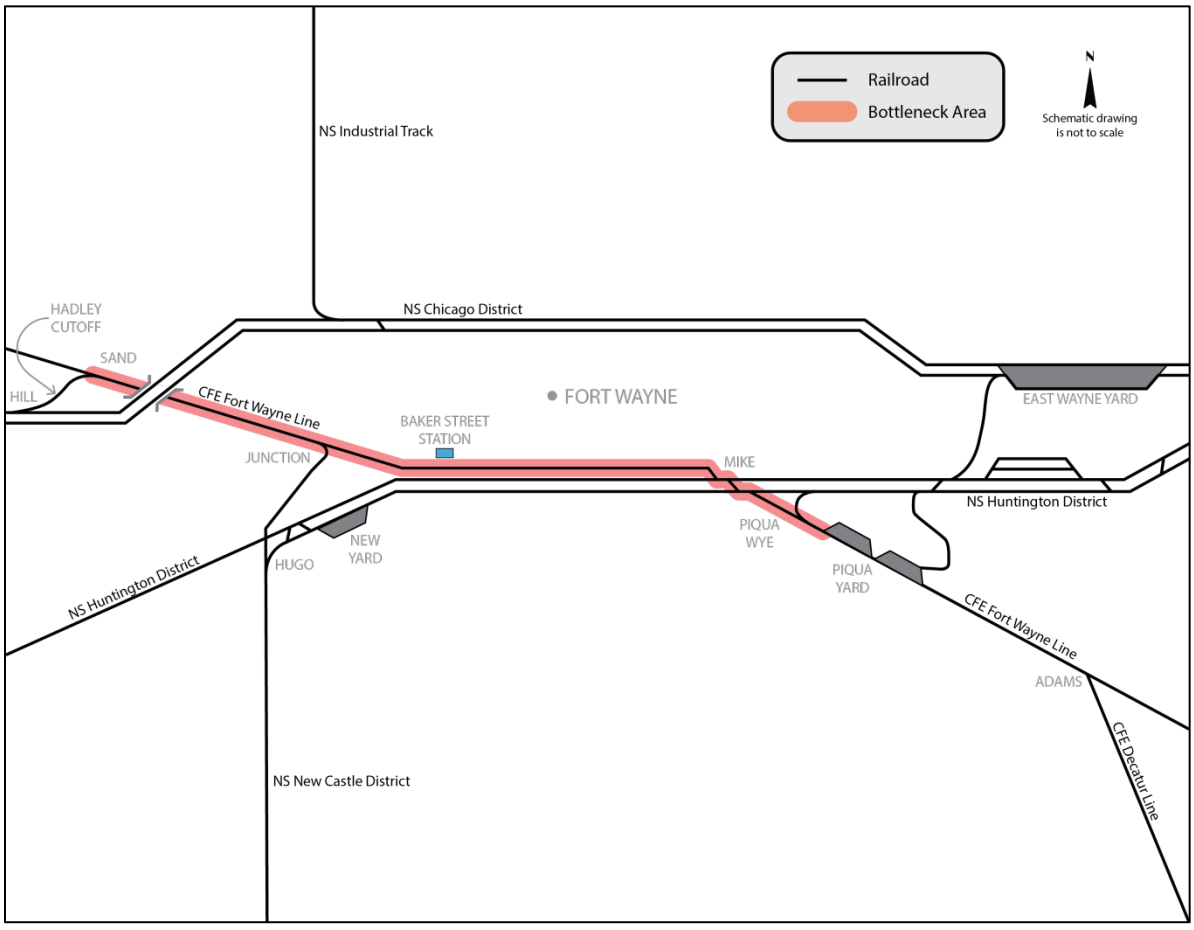
Fort Wayne, IN has the most complex system of railroads that the Fort Wayne Line navigates through. As seen in Figure 5, three separate NS districts converge in Fort Wayne, resulting in congested train traffic in the area. Research indicates that 8 to 12 trains travel on the Fort Wayne Line in Fort Wayne, IN. However, these train counts likely understate the level of congestion in the area. The NS Chicago, Huntington, and New Castle Districts all report between 28 and 35 trains running on each line within the Fort Wayne, IN. NS trains travel across or use the Fort Wayne Line to operate between districts and nearby train yards, likely increasing train traffic on the Fort Wayne Line.

For NS to navigate its trains between its districts in Fort Wayne, IN, it utilizes the Fort Wayne Line between the Hadley Cutoff and Piqua Yard. Between these two points, NS can enter and exit the Fort Wayne Line at four different junctions named Sand, Junction, Mike, and the Piqua Wye (see Figure 5). All four junctions are along a five mile segment of the Fort Wayne Line. Each junction requires the use of turnouts and crossovers to safely route trains between the various operating districts.

The junction at Mike utilizes a series of turnouts and crossovers to connect the Fort Wayne Line across the NS Huntington District. The NS Huntington District carries the most train traffic in the area at 35 trains per day on two main tracks. At Mike, trains traveling along the Fort Wayne Line would likely not be given priority over trains traveling on the NS Huntington District and would need to stop and wait for trains on the Huntington District to clear the Mike interlocking. NS has also been known to use the Piqua Wye, located just east of Mike, to turn trains entering and exiting Piqua Yard and turn around trains from East Wayne Yard. These types of operations further reduce the train capacity around Mike.

The Fort Wayne Line between Sand and Junction is also used by NS to transfer their trains between the Chicago and New Castle Districts. NS trains can enter or exit the Fort Wayne Line at either Sand or Junction to continue their trip north to Chicago or south to Cincinnati.

Figure 5: Fort Wayne Railroad Schematic



Note: The schematic drawing is not drawn to scale. The exhibit depicts the railroad network in a way that helps understand the series of junctions and train operations described in Section 3.1.2, and is not necessarily geographically accurate.

Additionally, Fort Wayne has served as the hub for Triple Crown Services[20], a subsidiary of NS. The intermodal operation is based out of Piqua Yard on the southeast side of Fort Wayne, IN. Triple Crown is particularly unique in that the service utilizes Roadrailer trailers that can be hauled by semi-trucks or placed on railroad bogies (or railroad wheel sets, see Figure 6) and hauled by trains. The technology enables a flexible shipping operation that provides door-to-door service for NS customers. It also eliminates the need for flatcars or well-cars that carry standard intermodal containers, making Triple Crown trains much lighter than traditional intermodal freight trains.

Figure 6: Triple Crown Roadrailer Bogie Assembly



Source: Bryan Flint at the English language Wikipedia

3.1.3 Lima

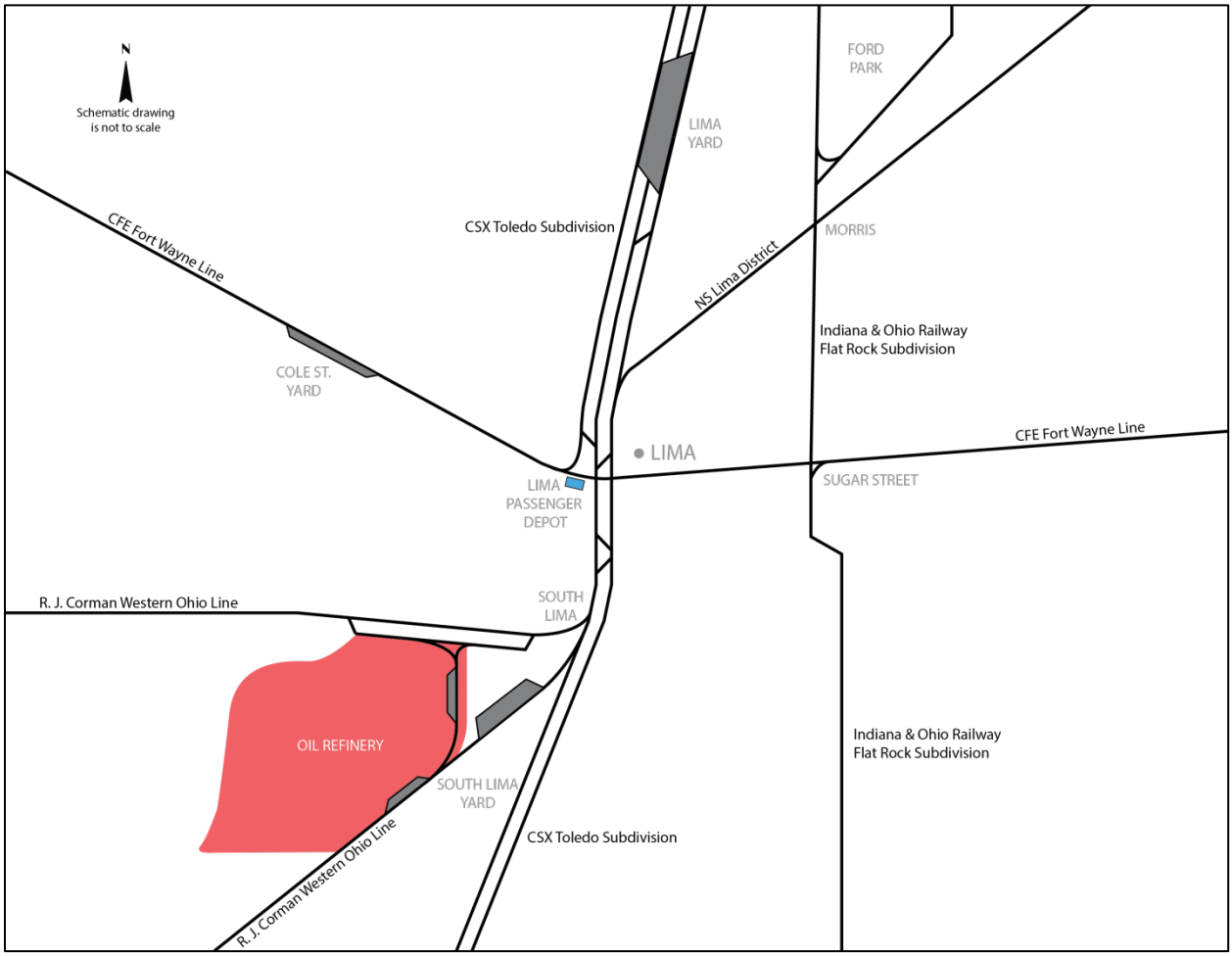
In Lima, OH, the through train traffic on the Fort Wayne Line remains consistent at two trains per day. However, there is an increase in local switching trains on the Fort Wayne Line. Data indicates that local switching trains in Lima, OH increase from two trains per day to between six and nine trains per day on the Fort Wayne Line. The local switching trains are operating in and out of Cole St. Yard on the west side of Lima, OH, serving local industries, and interchanging with other railroads.

In addition to the increased switching traffic, two railroads cross the Fort Wayne Line in Lima, OH that can negatively impact operations on the Fort Wayne Line if slow-downs occur at the crossings. The double-track CSX Toledo Subdivision crosses the Fort Wayne Line at grade

[20] Triple Crown Services is one of Norfolk Southern's subsidiaries that provide intermodal truckload service to major cities in the Midwest and East Coast.

near the center of the city and carries between 30 and 50 trains per day. The much smaller Indiana & Ohio Railway operation crosses at Sugar Street and averages closer to ten trains per day. These crossings are depicted in Figure 7.

Figure 7: Lima Schematic



3.2 Freight Tonnage

Specific data on annual freight tonnage is not publicly available. The total freight tonnage hauled on the Fort Wayne Line is likely to be low in comparison to other railroads in Indiana and Ohio as the CFE only operates two through trains and two local switching trains per day. The Indiana Department of Transportation estimates that the Fort Wayne Line carries between 0.1 and 4.9 million gross tons annually in Indiana.[21] Given that the reported train activity between the Indiana State Line and Lima, OH is similar to freight traffic in Indiana, it is likely that the annual freight tonnage hauled in the Ohio section of the study corridor also falls within the same range.

[21] Indiana Department of Transportation. *Indiana State Rail Plan*. November 2011. Accessed May 2016. http://www.in.gov/indot/files/Rail_JanFinal_Report_011712.pdf.

3.3 Commodities

Major commodities carried on the Fort Wayne Line include agricultural products, steel, paper, and chemicals.[22] The highest volume shipper for CFE is Bunge North America, an agribusiness and food ingredient company that produces over 7,000 annual carloads. Bunge is serviced by the CFE in Decatur, IN and Delphos, OH. The second highest volume shipper for the CFE is Steel Dynamics, Inc., which provides steel products for multiple industries. CFE hauls nearly 4,000 carloads per year from its Structural and Rail Division plant located west of Fort Wayne.

Recently, NS has also been carrying shipments of crude oil from the Bakken oil fields in North Dakota on the Fort Wayne Line. It was anticipated that NS would run up to five crude oil trains per day and one mixed freight train on the Fort Wayne Line once NS had upgraded the line to allow 40 mph freight operations in January 2015.[23] However, shipments of crude oil on the Fort Wayne Line likely reached its peak in 2015 as oil shipments across the country have recently decreased in volume.

Lima, OH is also home to an oil refinery operated by Husky Energy. The refinery is located on the southwest side of the City with switching and interchange service primarily served by R.J. Corman Railroad. R.J. Corman's Western Ohio Line connects in to the CSX Toledo Subdivision south of the Fort Wayne Line, where it likely receives crude oil shipments at South Lima (See Figure 7). The crude oil shipments that are carried by NS and CSX likely crossover the Fort Wayne Line at-grade while traveling on the CSX Toledo Subdivision to the oil refinery. Husky Energy's Lima Refinery processes light sweet crude oil and produces gasoline, diesel, jet fuel, residual fuels, and petrochemical feedstocks. The refinery produces approximately two billion gallons of refined petroleum products annually.[24] A series of chemical plants are also located near the oil refinery and are served in a similar fashion by the railroads to ship chemical products.

4. CORRIDOR SAFETY

4.1 Highway-Rail Crossings

There are 324 total highway-rail crossings between Tolleston and Lima on the Fort Wayne Line.[25] The route averages nearly two crossings per mile, however crossings are more concentrated in urban areas. Of the 324 total crossings, 275 are public crossings and 49 are private crossings. The matrix in Table 5 describes the type of crossings and associated warning devices found across the corridor. A cataloged list of the crossings along with all 324 highway-rail crossing records can be found in Appendix B.

[22] Indiana Department of Transportation. *Indiana State Rail Plan*. November 2011. Accessed May 2016. http://www.in.gov/indot/files/Rail_JanFinal_Report_011712.pdf.
[23] All Aboard Ohio. Fort Wayne Line rebirth. December 22, 2014. Accessed May 2016. http://allaboardohio.org/2014/12/22/fort-wayne-line-rebirth/.
[24] Husky Energy. U.S. Refineries – Lima Refinery. Accessed May 2016. http://www.huskyenergy.com/operations/downstream/facilities/usrefineries.asp.
[25] Federal Railroad Administration Office of Safety Analysis. *Highway-Rail Crossing Inventory.* Accessed April 2016. http://safetydata.fra.dot.gov/OfficeofSafety/Default.aspx.

Table 5: Summary of Crossing Types and Associated Warning Devices on the Fort Wayne Line

Crossing Type	Warning Device						
	None	X-Bucks	Lights	X-Bucks / Lights	Gates / Lights	X-Bucks / Gates / Lights	Total
At-grade	50	80	1	37	10	109	**287**
Railroad Over	22	0	0	0	0	0	**22**
Railroad Under	15	0	0	0	0	0	**15**
Total	**87**	**80**	**1**	**37**	**10**	**109**	**324**

Source: Federal Railroad Administration, Highway-Rail Crossing Inventory
Note: Grade separated crossings have no need for additional warning devices as seen in Table 5, and is the safest type of crossing.

4.2 Train Derailments and Accidents

Since CFE began operating the railroad in 2004, there have been ten rail equipment incidents reported to the FRA that occurred on the Fort Wayne Line between Tolleston and Lima, OH.[26] Seven of the incidents either occurred in Fort Wayne, IN or Lima, OH, which are the two locations on the Fort Wayne Line with the greatest amount of freight traffic. The other three incidents occurred in Bourbon and Warsaw, IN and Delphos, OH. Eight of the ten incidents involved train derailments that were typically caused by human error. The other two incidents resulted in property damage, but did not result in a train derailment. The ten incident reports submitted to FRA by CFE are included in Appendix C.

In addition to the ten rail equipment incidents, there have been six accidents involving trains and automobiles at highway-rail crossings. Each of the accident reports provided in Appendix D occurred on the main line track. Of the six accidents, one resulted in a fatality, two resulted in injuries, and three resulted in no injuries. In the one instance of a fatality the crossing warning equipment consisted of crossbuck signage only. Gates and lights have since been installed at the crossing. Gates were present at three of the crossings with reported accidents, while the remaining two accident locations had stop signs and crossbucks installed.

[26] Federal Railroad Administration Office of Safety Analysis. *Accident by State/Railroad Inventory*. Accessed April 2016. http://safetydata.fra.dot.gov/OfficeofSafety/publicsite/Query/AccidentByStateRailroad.aspx.