



Chapter 3

Transportation



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3 Transportation

3.1 Introduction

Chapter 3 describes current conditions and effects on the multimodal transportation system from the FEIS Preferred Alternative and identifies the effects of the alternatives considered in the DEIS, including the DEIS NEPA Preferred Alternative. This chapter describes the effect of the Project on the transportation network and the proposed mitigation of significant impacts. Areas of analysis for this chapter include public transportation, freight rail, bicycle and pedestrian, traffic, and parking. The analysis is organized by resource area (i.e., mode of transportation).

Changes to This Chapter since Publication of the DEIS

- Since publication of the DEIS, the data on existing conditions have been updated and design refinements have been made to the DEIS NEPA Preferred Alternative. The Project Area for each of the alternatives remains the same; therefore, some resource areas have few to no changes from the DEIS to the FEIS. The majority of the Project Area is in Indiana, with a small portion extending into Illinois. Construction activities in Illinois would be limited to the existing railroad ROW.
- **Section 3.2** describes the transportation system in the Project Area and travel demand modeling. The transportation system remains unchanged since publication of the DEIS. The SSL ridership would rise 30 percent, which is an increase from the 23 percent growth identified in the DEIS.
- **Section 3.3** describes freight infrastructure and service in the Project Area. The freight system remains unchanged since the publication of the DEIS. Potential freight transportation impacts include the placement of bridge structures over four active freight rail lines as stated in the DEIS. However, the proposed piers and abutments would avoid railroad ROW because of design refinements.
- **Section 3.4** describes the bicycle and pedestrian resources analyses for the Project and stations. This section is mostly unchanged, with the exception of documentation regarding the Little Calumet River Trail¹ and the effects on the Erie Lackawanna Trail. The Project would no longer affect the Erie Lackawanna Trail.
- **Section 3.5** describes vehicular traffic in the Project Area. Analyses were conducted at 26 intersections and at new station driveways. Due to station facility relocation and refinements, additional intersections have been analyzed and other intersections were removed in the FEIS. Connectivity impacts at Russell Street and the Project in Hammond were added.
- **Section 3.6** describes the parking analyses for the Project Area. The Project design has been refined to minimize parking loss due to development of proposed stations and to include the loss of six on-street parking spaces for Russell Street in Hammond. A discussion

¹ Since publication of the DEIS, NICTD has determined that, although the trail is used by bicyclists and pedestrians, the trail was built for the movement of maintenance equipment for the Little Calumet River levee and is not a public recreation resource.



of parking for the proposed stations was added to this section. Russell Street in Hammond.
A discussion of parking for the proposed stations was added to this section.

Table 3.1-1 summarizes effects, commitments, and mitigation measures for the FEIS Preferred Alternative. For reference, conceptual engineering drawings for the FEIS Preferred Alternative are in **Appendix E**.

Section 2.4.2 of this FEIS describes the FEIS Preferred Alternative.



Table 3.1-1: Summary of Transportation Effects, Commitments, and Mitigation Measures for FEIS Preferred Alternative

Category	FEIS Preferred Alternative	Summary of Transportation Effects, Commitments, and Mitigation Measures
Public Transportation	Operating Phase (Long-term) Direct Impacts	<ul style="list-style-type: none"> • The Project would result in 3,750 daily boardings in 2037. • The Project would share rail infrastructure with existing commuter rail service on the SSL and MED and would add 12 trains per day during peak periods to the nearly 200 existing trains.
	Construction Phase (Short-term) Impacts	<ul style="list-style-type: none"> • Intermittent impacts on bus operations in construction areas: temporary stop relocations, route detours, or suspension of service on segments of routes.
	Commitments and Mitigation Measures	<p>Operating Phase (Long-term):</p> <ul style="list-style-type: none"> • No mitigation is required because no long-term adverse impacts would occur. <p>Construction Phase (Short-term):</p> <ul style="list-style-type: none"> • Minimize disruption to the existing transit service to the extent reasonably feasible. • Coordinate with transit authorities to develop work zone traffic-control plans. • Provide advance warning for lane closures and detours. • Issue construction updates and post to Project website. • Establish 24-hour construction hotline. • Prepare materials with information about construction. • Assign staff to serve as liaisons between the public and contractors during construction. • Post information at bus stops and regional transit centers indicating temporary stop closures or detour details. • Publish information in advance on Metra’s website and in its on-board brochure.



Category	FEIS Preferred Alternative	Summary of Transportation Effects, Commitments, and Mitigation Measures
Freight Rail	Operating Phase (Long-term) Direct Impacts	<ul style="list-style-type: none"> • Placement of bridge structure piers located near privately owned railroad property would require close coordination with the railroads.
	Construction Phase (Short-term) Impacts	<ul style="list-style-type: none"> • Construction requires access to CSX, NS, and IHB properties and would include activities in proximity to their operations to span existing freight rail ROW. • A temporary shoofly track would be constructed around Munster/Dyer Main Street Station while the vehicle and pedestrian underpasses are constructed. • Construct new track adjacent to the CSX Monon Subdivision from the Project's southern terminus in Dyer to 45th Street in Munster.
	Commitments and Mitigation Measures	<p>Operating Phase (Long-term):</p> <ul style="list-style-type: none"> • No mitigation required because the placement of bridge structure piers would be resolved in the Project's engineering phase as the freight railroad entities would review design plans, minimizing any long-term adverse impacts. • Third-party agreements would be executed for use of property not owned by CSX, NS, or IHB. <p>Construction Phase (Short-term):</p> <ul style="list-style-type: none"> • Develop construction staging plans that would be submitted for approval by the freight railroad entities. • Work with affected freight rail entities to sequence construction to reduce effects on freight rail. • Use flaggers to allow freight rail operations to continue during construction.



Category	FEIS Preferred Alternative	Summary of Transportation Effects, Commitments, and Mitigation Measures
Bicycle and Pedestrian	Operating Phase (Long-term) Direct Impacts	<ul style="list-style-type: none"> • New separated crossing south of Fisher Street in Munster for Pennsy Greenway. • New railroad-highway grade crossing at Fisher Street for Pennsy Path. • Relocation of Pennsy Path from Manor Avenue to the Monon Trail. • Relocation of several segments of the Monon Trail in Munster and Hammond. • Restricted pedestrian crossings. • Restricted east-to-west connectivity at Russell Street (Hammond).
	Construction Phase (Short-term) Impacts	<ul style="list-style-type: none"> • Temporary closures or detours. • Construction traffic and debris (such as excess dirt) would pose obstacles or issues for pedestrians and bicyclists, particularly on the Monon Trail.
	Commitments and Mitigation Measures	<p>Operating Phase (Long-Term):</p> <ul style="list-style-type: none"> • Fencing would be provided to prohibit pedestrians and bicyclists from crossing the track where east-to-west facilities do not exist or where NICTD deems fencing important for safety. • All railroad-highway grade crossings would include east-to-west pedestrian access to maintain the sidewalk network's existing continuity. • Signs would be provided at Russell Street and the Project directing bicyclists and pedestrians to the north or south. <p>Construction Phase (Short-Term):</p> <ul style="list-style-type: none"> • A plan to manage the closure of pedestrian crossings and other restrictions on nonmotorized transportation facilities would be developed for construction. • Alternative crossings would be provided for temporary crosswalk closures. • Sidewalks and crosswalks would be required to meet minimum standards for accessibility and to be free of slipping and tripping hazards. • Special facilities such as temporary handrails, fences, barriers, ramps, and walkways would be implemented to maintain bicyclist and pedestrian safety as needed. • A plan for appropriate access provisions in the work zone, traffic-control plans, and best management practices (BMPs) to manage debris would be developed for construction.



Category	FEIS Preferred Alternative	Summary of Transportation Effects, Commitments, and Mitigation Measures
Traffic	Operating Phase (Long-term) Direct Impacts	<ul style="list-style-type: none"> • Three intersections would operate at an unacceptable level of service (LOS) with the No Build Alternative, which would increase to six intersections with the Project. Improvements would be completed for the three intersections affected by the Project. • Ten new railroad-highway grade crossings would be constructed at Fisher Street and Ridge Road in Munster and at 173rd Street, 165th Street, Kenwood Street, Conkey Street, Detroit Street, Highland Street, Waltham Street, and Douglas Street in Hammond. • Road closure would occur at Russell Street and the Project track, but local access would be maintained.
	Construction Phase (Short-term) Impacts	<ul style="list-style-type: none"> • Temporary disruptions to traffic operations, including lane closures; short-term intersection and roadway closures; and detours that would cause local temporary increases in congestion.



Category	FEIS Preferred Alternative	Summary of Transportation Effects, Commitments, and Mitigation Measures
	Commitments and Mitigation Measures	<p>Operating Phase (Long-Term):</p> <ul style="list-style-type: none"> • NICTD would coordinate with agencies having jurisdiction over and/or maintenance responsibility for affected roadways as well as emergency services and school districts regarding railroad-highway grade crossings, road closures, and changes to the roadway network connectivity. • Existing traffic signal at Sheffield Avenue and Main Street in Munster and Dyer would be upgraded to accommodate the parking lot driveway as a fourth leg to the intersection. • Intersection of 173rd Street and Harrison Avenue near South Hammond Station would be restriped to provide a shared left-turn/through lane and a right-turn lane to maintain acceptable LOS. • Traffic operations of the roundabout at Hohman Avenue and Chicago Street being built by others near Hammond Gateway Station would be monitored by the City of Hammond. • Signalized intersections within 200 feet of the railroad-highway grade crossings would be upgraded to include traffic signal interconnection with the rail crossing warning system. • Russell Street in Hammond would be converted to a two-way street from Hohman Avenue to Lyman Avenue and from the Project track to Oakley Avenue. Signs would direct pedestrians and bicyclists to safe crossings. The traffic signal, signage, and striping at Hohman Avenue and Russell Street would be modified accordingly. <p>Construction Phase (Short-Term):</p> <ul style="list-style-type: none"> • Work zone traffic-control plans would be coordinated with agencies having jurisdiction over and/or maintenance responsibility for affected roadways as well as emergency services, and would identify requirements for maintaining access to businesses and medical and emergency facilities. • Lane closures required for construction would be limited to off-peak hours of traffic operation to the extent feasible. • Traffic detours would be restricted to maximum durations through the contract and work zone traffic-control plans.



Category	FEIS Preferred Alternative	Summary of Transportation Effects, Commitments, and Mitigation Measures
Parking	Operating Phase (Long-term) Direct Impacts	<ul style="list-style-type: none"> • Loss of 76 on-street parking spaces in Hammond: 6 parking spaces on Russell Street and 70 parking spaces on Hanover Street near the proposed Hammond Gateway Station.
	Construction Phase (Short-term) Impacts	<ul style="list-style-type: none"> • Street parking spaces could be temporarily unavailable at construction locations.
	Commitments and Mitigation Measures	<p>Operating Phase (Long-Term):</p> <ul style="list-style-type: none"> • No on-street parking space loss in Hammond would be mitigated because of the availability of off-street parking at Russell Street and no demand for on-street parking on Hanover Street. • NICTD would work with municipalities to address the potential for parking to spill over onto nearby streets from new stations in Dyer, Munster, and Hammond. Mitigation measures by the municipalities would include the use of signs and enforcement of parking restrictions. All NICTD parking lots can be expanded should demand exceed capacity. <p>Construction Phase (Short-Term):</p> <ul style="list-style-type: none"> • Work zone traffic-control plans would be coordinated with the agency having jurisdiction over the road, as appropriate. Advance warning for parking restrictions would be provided in accordance with the work zone traffic-control plans.

Source: HDR 2017a.

3.2 Public Transportation

This section describes how the FEIS Preferred Alternative would affect public transportation (transit) services in the Project Area. This section further documents the travel demand modeling and preparation of the 2037 NICTD ridership forecasts.

3.2.1 Regulatory Setting

There have been no changes to the regulatory setting since publication of the DEIS.

No federal laws, regulations, or executive orders specifically regulate how effects on public transportation resulting from transit projects should be evaluated. However, NEPA provides the general legal framework for considering effects. In addition, Council on Environmental Quality (CEQ) regulations include requirements for describing the affected environment and environmental consequences for general resources, including public transportation facilities (see 40 CFR Part 1502.15).

3.2.2 Methodology

Since publication of the DEIS, NICTD has adjusted the DEIS 2040 ridership forecasts to comply with the FTA 20-year plan requirement (2017–2037). The FEIS therefore reflects the adjusted 2037 NICTD ridership forecast estimate. NICTD included updated ridership forecasts for NICTD’s proposed Double Track Northwest Indiana (DT-NWI) Project in the FEIS.

NICTD developed ridership forecasts for the Project for the planning horizon year of 2037 using FTA’s Simplified Trips-on-Project Software (STOPS) model version 2.0, based on the associated operating plans as summarized in the *Ridership Forecasts for NICTD Double Track–NWI Core Capacity Project and West Lake Corridor New Starts Project* (HDR 2017c). NICTD used this information to evaluate the Project’s effects on the transportation system at the local and regional levels. Inputs to the model include 2037 socioeconomic forecasts provided by NIRPC, which is the MPO in northwest Indiana, and by CMAP, the MPO in northeastern Illinois. These forecasts are used to analyze expected growth in travel demand. In addition, NICTD obtained MPO estimates of existing and expected automobile travel times between origins and destinations in the traffic analysis zones (TAZs). Estimated travel times and waiting times were applied for each alternative.

The FTA STOPS model forecasts ridership for fixed-guideway projects and measures the change in automobile VMT and VHT. NICTD reviewed existing and planned transit services within and near the Project Area for effects from the No Build Alternative and the FEIS Preferred Alternative. The planned transit projects include those listed in CMAP’s *GO TO 2040 CRP* (CMAP 2014) and NIRPC’s 2040 CRP (NIRPC 2011).

NICTD reviewed route and timetable information for existing commuter rail service. Considering the nearly 200 Metra and NICTD trains that currently operate on the existing Metra/SSL corridor north of Kensington, a technical analysis was performed using the Rail Traffic Controller (RTC) simulation model to assess the infrastructure’s capacity to accommodate the operation of Project trains. This tool simulates train operations over the rail network under existing and future conditions to evaluate the performance of the scheduled trains and the effects of infrastructure improvements. Opportunities for passenger transfers with existing and proposed commuter rail services were identified. The analysis is presented in *Analysis of Capacity on the Metra Electric*

*District (MED) to Serve Metra and Northern Indiana Commuter Transportation District (NICTD) Growth with West Lake Corridor Service (NICTD 2015) see **Appendix G1**.*

NICTD reviewed route information for existing bus service in the Project Area. The Project's effects on transit services were evaluated. Opportunities for passenger transfers with existing bus services were also identified.

3.2.3 Affected Environment

The transportation system remains unchanged since publication of the DEIS. Minor updates to the DEIS have been made to include current transit ridership and scheduling and to include current information on NICTD's proposed DT-NWI Project. Figures have been updated graphically to reflect current data.

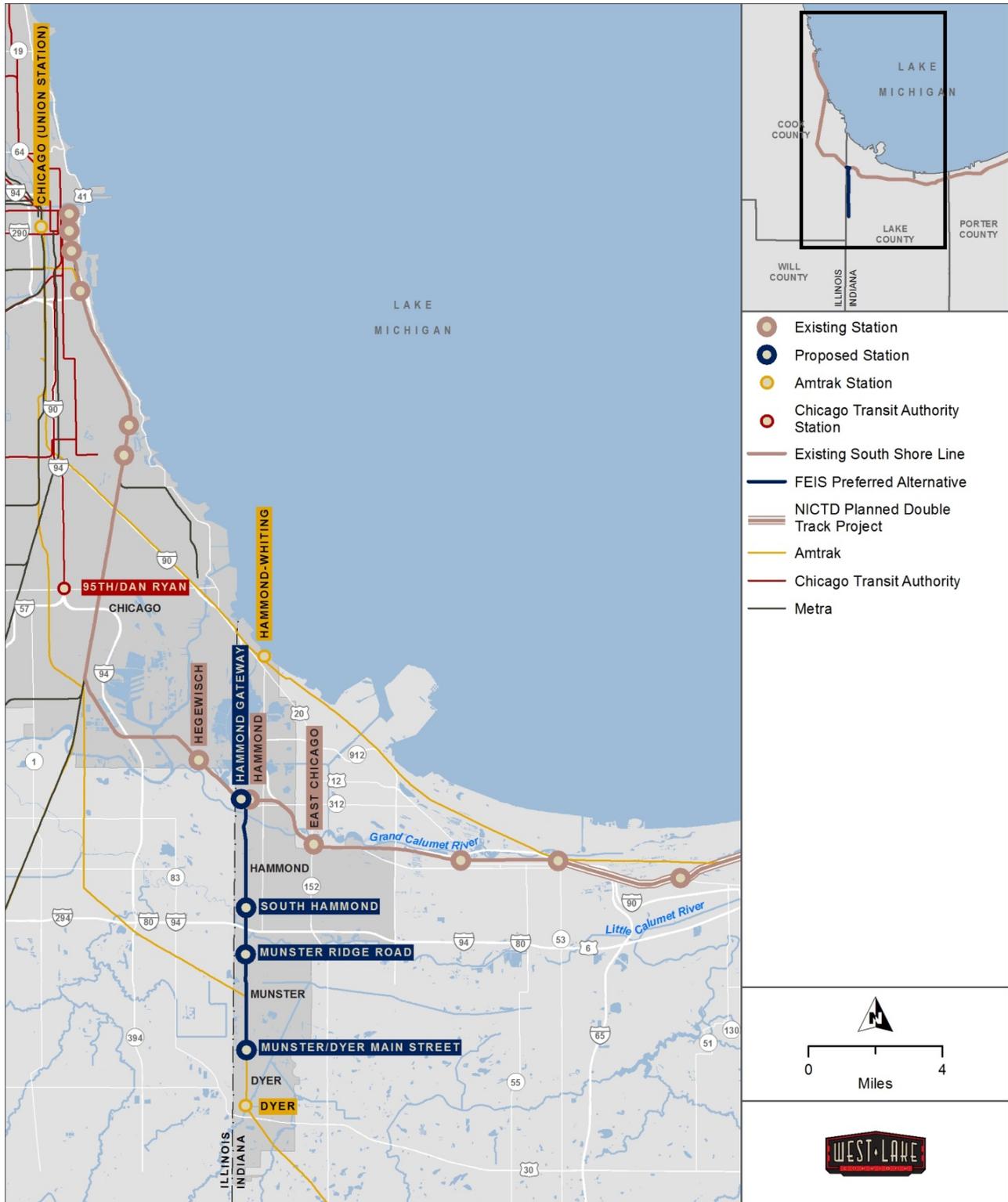
This section provides an overview of existing transit in the Project Area. Detailed information is included in the *West Lake Corridor Project Existing Conditions Report* (NICTD 2014) and is updated in this section. **Figure 3.2-1** shows the existing and planned commuter rail network in northwest Indiana and northeast Illinois.

- **NICTD:** NICTD operates the SSL, an electrically powered commuter railroad serving four counties in northwest Indiana (St. Joseph, LaPorte, Porter, and Lake) and Chicago, Illinois. The SSL provides regularly scheduled service 7 days a week (20 weekday round trips), with comparatively higher levels during the AM peak inbound and PM peak outbound periods, reflecting passenger demand for the line. The SSL carried approximately 3.5 million passengers in 2016. In addition, the SSL proposes to expand in Indiana from single track to double track between Gary and Michigan City and to construct signal, power, and platform improvements at five existing stations. NICTD expects that the DT-NWI Project would be completed and in operation by the end of 2020 and would provide additional trains and faster, more reliable service, which would increase ridership. The existing SSL Hammond Station located at 4531 Hohman Avenue would be relocated approximately 0.15 mile west as part of this Project to the proposed site of Hammond Gateway Station in order to connect the two lines (see **Figure 2.4-1**). The proposed Hammond Gateway Station would be south of the Project track and the SSL platform would be north of the Project track. The combined SSL/Project station would serve passengers transferring between the two services (see **Figure 3.6-6**).
- **Metra:** The entire Metra system, which serves northeast Illinois, includes 11 lines radiating from downtown Chicago. The Metra Electric District (MED) line serves south Chicago and the Chicago region's south suburbs. It is the only electrified line of the Metra system and is owned and directly operated by Metra. The MED line operates between University Park and Millennium Station. Service is provided 7 days a week at approximately 20-minute frequencies in the peak periods, including express trains, and at 60-minute frequencies for off-peak trains. It is relevant because the existing SSL, as well as the proposed West Lake service, use this line to continue the journey to Millennium Station. Due to the proximity to northwest Indiana (between 4 and 10 miles west of the Indiana-Illinois state line) the Metra Illinois stations are used by some Indiana residents to travel to Chicago.
- **Amtrak:** Intercity and long-distance passenger rail services are provided to and from northwest Indiana by Amtrak, the National Railroad Passenger Corporation. Amtrak service is available at two stations in Lake County (Amtrak 2017). Dyer Station is served by two routes: the Cardinal (3 days a week, long-distance service between Chicago and New York, NY) and the Hoosier State (4 days a week, intercity passenger rail service between Chicago and Indianapolis, IN). Trains to Chicago depart Dyer at 8:29 AM; trains from Chicago arrive

at 6:44 PM. Hammond-Whiting Station is served by the Wolverine Service (intercity passenger rail service between Chicago and Pontiac, Michigan) with two daily round trips. Trains to Chicago depart Hammond-Whiting Station at 3:09 PM and 10:07 PM; trains from Chicago arrive at 7:46 AM and 1:16 PM.

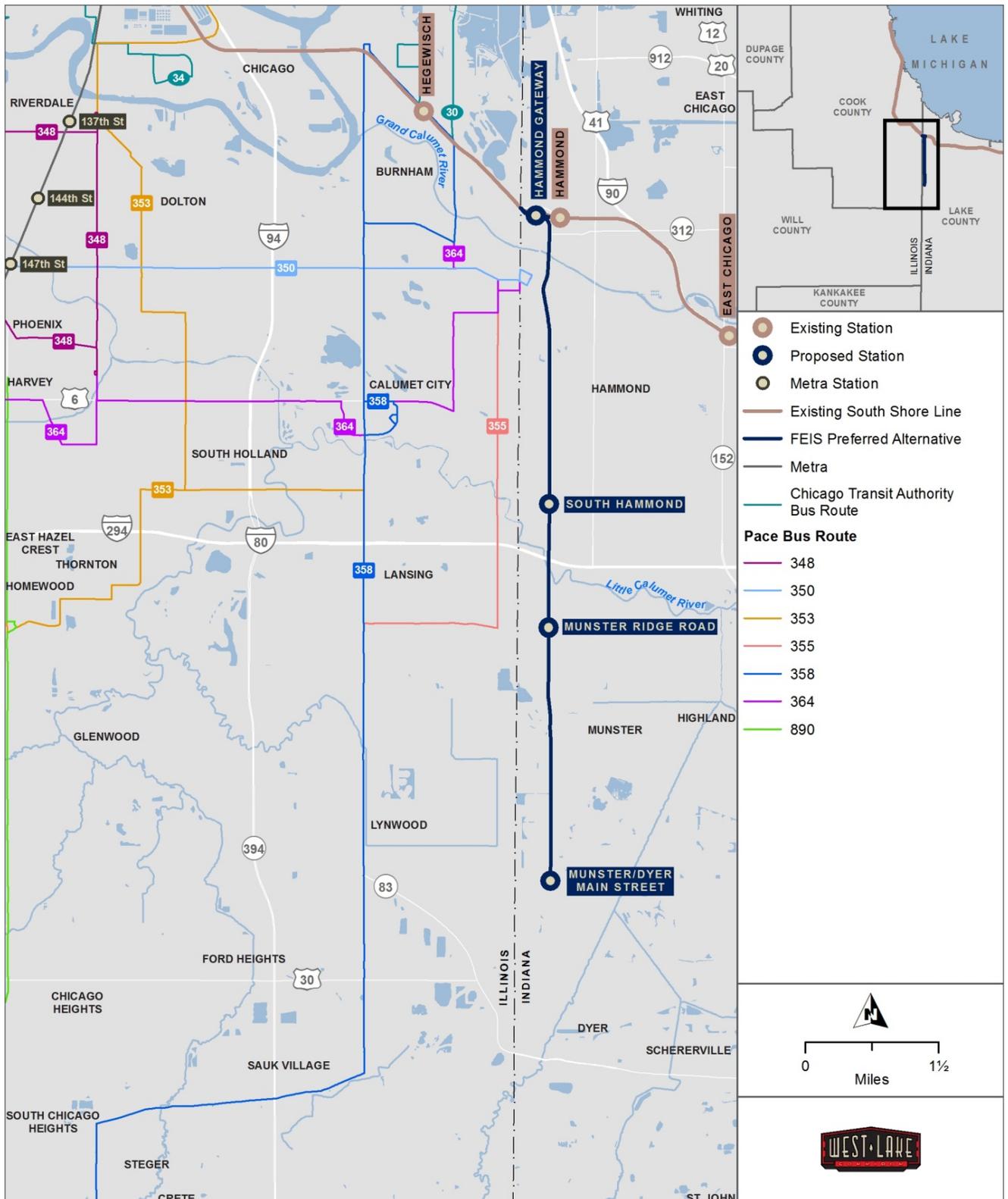
- **CTA:** CTA operates 140 fixed bus routes and eight rapid transit lines in Chicago and 35 surrounding suburbs (CTA 2017). The CTA Red Line Rapid Transit line might be an option for some northwest Indiana residents. The terminal station at 95th Street and Interstate 90/94 (I-90/94) would be the nearest point of access (see **Figure 3.2-2**).
- **Pace:** The Suburban Bus Division of the Regional Transportation Authority (RTA), Pace, offers fixed-route bus service primarily to and from the surrounding communities of Chicago, with some express bus service into downtown Chicago. The following bus routes are relevant to this Project because of their proximity to the Indiana-Illinois state line and because of the destinations they serve in the Project Area, including NICTD's Hegewisch Station and points within Hammond (Pace 2017). Pace Route 355 (Wentworth Limited), Route 358 (Torrence), and Route 364 (159th Street) connect with the SSL at Hegewisch Station. Pace Routes 350 and 364 have a terminal stop at Morton Court/Willow Court in Hammond. Pace bus routes that serve the Project Area are shown in **Figure 3.2-2**.
- **GPTC:** GPTC operates a system of 10 routes in northwest Indiana that serve Gary, Calumet Township, Crown Point, East Chicago, Griffith, Hammond, Hobart, and Merrillville. GPTC services connect with Pace, ECT, CTA, and the SSL at Gary/Miller, Gary Metro Center, Gary/Chicago Airport (Clark Road), and Hammond Stations. Routes 12 (Lakeshore Connection) and 24 (Lakeshore South) operate near the Project Area.
- **ECT:** ECT provides free fixed-route bus and paratransit service in East Chicago. The system's three fixed routes all serve the SSL East Chicago Station.

Figure 3.2-1: Existing and Planned Passenger Rail, Commuter Rail, and CTA Rail Service



Sources: NICTD 2017b; RRTA 2017.

Figure 3.2-2: Existing Bus Service



Source: RTA 2017.



3.2.4 Environmental Consequences

3.2.4.1 Long-term Operating Effects

NICTD evaluated the Project’s effects on transit service based on the expected ridership changes and existing commuter rail transit service route interface with the Project service. **Table 3.2-1** presents the existing and projected ridership on the NICTD system for all of the Build Alternatives and the No Build Alternative. The increase in ridership reflects the travel times associated with the Build Alternatives.

Table 3.2-1: NICTD 2037 Average Weekday Ridership

Alternative	Existing SSL	Project	Total	Difference No Build vs. Build Alternatives (%)
2015 Existing	12,050	—	12,050	—
No Build Alt (in year 2037) ^a	20,600	—	20,600	—
2037 FEIS Preferred Alternative (Alt.)	23,150	3,750	26,900	+30
<i>Other Build Alternatives Considered^b</i>				
No Build Alt. (in year 2040, for comparison to other DEIS alternatives)	19,535	—	19,535	—
CR Alt. Option (Opt.) 1–4	17,470	6,220	23,690	+21
IHB Alt. Opt. 1–4	18,010	5,750	23,760	+22
DEIS NEPA Preferred Alt., Hamm. Alt. Opt. 1 and 3	16,870	7,120	23,990	+23

Sources: FTA STOPS Model application (FTA and NICTD 2016; HDR 2017b; HDR 2017c).

Notes: Alt. = Alternative; CR = Commuter Rail; Hamm. = Hammond; IHB = Indiana Harbor Belt; Opt. = Option.

Ridership forecast estimates have been adjusted from the DEIS 2040 ridership forecasts to the FTA 20-year plan (2017–2037); the FEIS reflects this in the 20-year estimate of 2037 ridership forecasts.

^a Ridership forecasts were updated for the FEIS. The No Build Alternative in the year 2037 assumes construction of NICTD’s DT-NWI Project, which would provide more service and increase ridership.

^b Shaded areas indicate alternatives evaluated in the DEIS. DEIS Build Alternatives were compared with No Build Alternative in the DEIS for year 2040.

Ridership forecast estimates have been adjusted from the DEIS 2040 ridership forecasts to reflect the FTA 20-year plan (2017–2037); the FEIS reflects this in the 20-year estimate of 2037 ridership forecasts. The Project is projected to have average weekday boardings of 3,750 in 2037. Average weekday boardings on the SSL, including the West Lake Corridor Project and DT-NWI Project, are expected to increase from 12,050 in 2015 to 26,900 in 2037.

Projected travel times have not changed since publication of the DEIS (see DEIS Section 3.2.4). Travel time by automobile would be 86 minutes from Munster/Dyer Main Street Station to Millennium Station. For the No Build Alternative, which combines driving by automobile from Munster/Dyer Main Street Station to the existing Hammond Station and then boarding the existing commuter rail service to Millennium Station, the travel time would be 67 minutes, a 19-minute savings over driving. The Project’s travel time would be 47 minutes from

Munster/Dyer Main Street Station to Millennium Station, saving travelers 39 minutes over driving and 20 minutes over the No Build Alternative.

No Build Alternative

The No Build Alternative ridership forecasts assume the prior construction of NICTD's DT-NWI Project between Gary and Michigan City, which would enable NICTD to operate the SSL at a higher level of service, including more express trains. These improvements in frequency and speed explain much of the 70 percent increase in SSL boardings between 2015 and 2037 (i.e., 12,050 to 20,600 weekday boardings) for the No Build Alternative in the year 2037, shown in **Table 3.2-1**.

FEIS Preferred Alternative

The FEIS Preferred Alternative would share rail infrastructure with the existing commuter rail service operating on the SSL between the Indiana-Illinois state line and Kensington Interlocking and on the MED line between Kensington and Millennium Station. Possible effects on each include:

- **SSL between state line and Kensington Interlocking:** The track that the existing SSL operates on between the Indiana-Illinois state line and the connection with MED is owned by Chicago South Shore & South Bend (CSS). Although CSS is responsible for controlling this section of shared track in Illinois, the SSL has rights to operate along this segment of the CSS railroad. Priority is given to commuter trains during the peak periods. The Project would add 12 trains during peak periods to the current SSL weekday commuter service of 19 inbound trains and 20 outbound trains that serve Chicago. With priority given to commuter operations in the peak periods, Project trains can be added without constraining capacity along this section of rail.
- **MED between Kensington Interlocking and Millennium Station:** This final 14 mile section is owned by Metra and NICTD has a trackage rights agreement to operate on the MED. The results of the RTC simulation analysis, described in **Section 3.2.2**, showed that the MED line has enough capacity to accommodate the Project service. Metra has confirmed in its response to the DEIS that enhanced NICTD service on the MED would likely require implementation of some or all of the strategic improvements being explored in the ongoing jointly-funded Metra/NICTD MED Capacity/Calumet Corridor study.

The FEIS Preferred Alternative would raise SSL ridership 30 percent (i.e., 20,600 with the No Build Alternative versus 26,900 with the FEIS Preferred Alternative). The opportunity for passengers to transfer between the Project and SSL trains at the proposed Hammond Gateway Station would expand the potential destinations for Project riders (i.e., the SSL stations East Chicago to South Bend). This feature would expand service hours to approximately 18 hours per weekday and would add operation on weekends. In addition, developing Hammond Gateway Station and realigning the existing SSL would allow the service plan to include Project shuttle trains to operate between Munster/Dyer Main Street and Hammond Gateway Stations and make timed connections with SSL trains.

The FEIS Preferred Alternative would not affect existing bus service; however, some bus routes may include service to Hammond Gateway Station. The FEIS Preferred Alternative could also increase the number of bus transfers at the SSL Hegewisch Station due to the addition of new destinations. The FEIS Preferred Alternative would not affect the current service provided by Amtrak nor preclude future Amtrak service use. Although the FEIS Preferred Alternative and Amtrak serve similar origin and destination points, the frequency and timing of Amtrak services

are different than that of the proposed new service, so they would serve different markets. The Project service is designed to serve the work commute market, while the limited Amtrak schedules are designed to serve the infrequent intercity-travel market.

Other Build Alternatives Considered in the DEIS

The other Build Alternatives considered in the DEIS would have similar effects on the bus routes and Amtrak service in the Project Area as the FEIS Preferred Alternative. For specific possible effects of the other Build Alternatives considered in the DEIS on the public transportation network, refer to the DEIS Section 3.2.4.1. Because the year for projected NICTD ridership forecasts changed, estimated ridership for all Build Alternatives can be found in **Table 3.2-1** of the FEIS.

3.2.4.2 Short-term Construction Effects

With the No Build Alternative, no construction effects would occur, since the Project would not be built.

Construction of the FEIS Preferred Alternative could cause intermittent impacts on bus operations within the construction area, which could include temporary stop relocations, route detours, or suspensions of service on segments of routes operating on streets where the Project is being constructed. As Project planning and engineering advances, NICTD would work with affected transit providers to evaluate transit routes.

3.2.5 Avoidance, Minimization, and/or Mitigation Measures

3.2.5.1 Long-term Operating Effects

The No Build Alternative would not cause any direct impacts to public transportation and, therefore, would not require mitigation.

The FEIS Preferred Alternative would have a positive effect on transit ridership within the NICTD system. The FEIS Preferred Alternative would have no effect on existing bus service; however, some bus routes may include service to Hammond Gateway Station. The Project may increase the number of bus transfers at the SSL Hegewisch Station. No mitigation is required for the FEIS Preferred Alternative.

3.2.5.2 Short-term Construction Effects

The No Build Alternative would not cause any short-term construction impacts on public transportation and, therefore, would not require mitigation.

Construction of the FEIS Preferred Alternative would be planned to minimize disruption to the existing transit service to the extent reasonably feasible. Work zone traffic-control plans would be developed during the Project's engineering and construction phases and would be coordinated with transit authorities. Advance warning for lane closures and detours would be provided according to the work zone traffic control plans. NICTD would issue construction updates and post to the Project website along with establishing a 24-hour construction hotline to provide a liaison between the public and contractors during construction. Materials would be prepared with information about construction, which would include information to be posted at bus stops and regional transit centers indicating temporary stop closures or detour details. This information would be published in advance on Metra's website and in its on-board brochure.

3.3 Freight Rail

This section describes the existing freight infrastructure and service in the Project Area and the effects of the FEIS Preferred Alternative compared with the No Build Alternative.

3.3.1 Regulatory Setting

There have been no changes to the regulatory setting since publication of the DEIS.

The Federal Railroad Administration (FRA) regulates freight and passenger rail service and enforces rail safety regulations. FRA derives its authority from the Federal Railroad Safety Act of 1970 (Safety Act) and from 49 United States Code (USC) § 20101 et seq. and its implementing regulations. The purpose of the Safety Act is “to promote safety in every area of railroad operations and reduce railroad-related accidents and incidents” (49 USC § 20101). Railroad safety laws apply to all “railroad carriers,” which are defined as persons providing railroad transportation [49 USC § 20102(3)]. Under the broad definitions in the federal railroad safety laws, FRA has jurisdiction over all railroads except “rapid transit operations in an urban area that are not connected to the general railroad system of transportation” [49 USC § 20102(2)(B)]. An example of such rapid transit operations is the CTA in Chicago.

3.3.2 Methodology

Since publication of the DEIS, further coordination with the freight railroads has been conducted as the design of the Project was refined.

NICTD documented the existing railroad ownership and operating characteristics for both existing and future freight rail in the Project Area. This data collection included consultations with CN, CSX, NS, Conrail Shared Assets (Conrail), IHB, and CSS. NICTD conducted extensive consultation with all railroads (correspondence is included in the *NICTD Railroad Coordination Technical Memorandum* in DEIS Appendix F). The Project Area for the freight railroads includes the segment of the railroad ROW within 500 feet of the Project.

3.3.3 Affected Environment

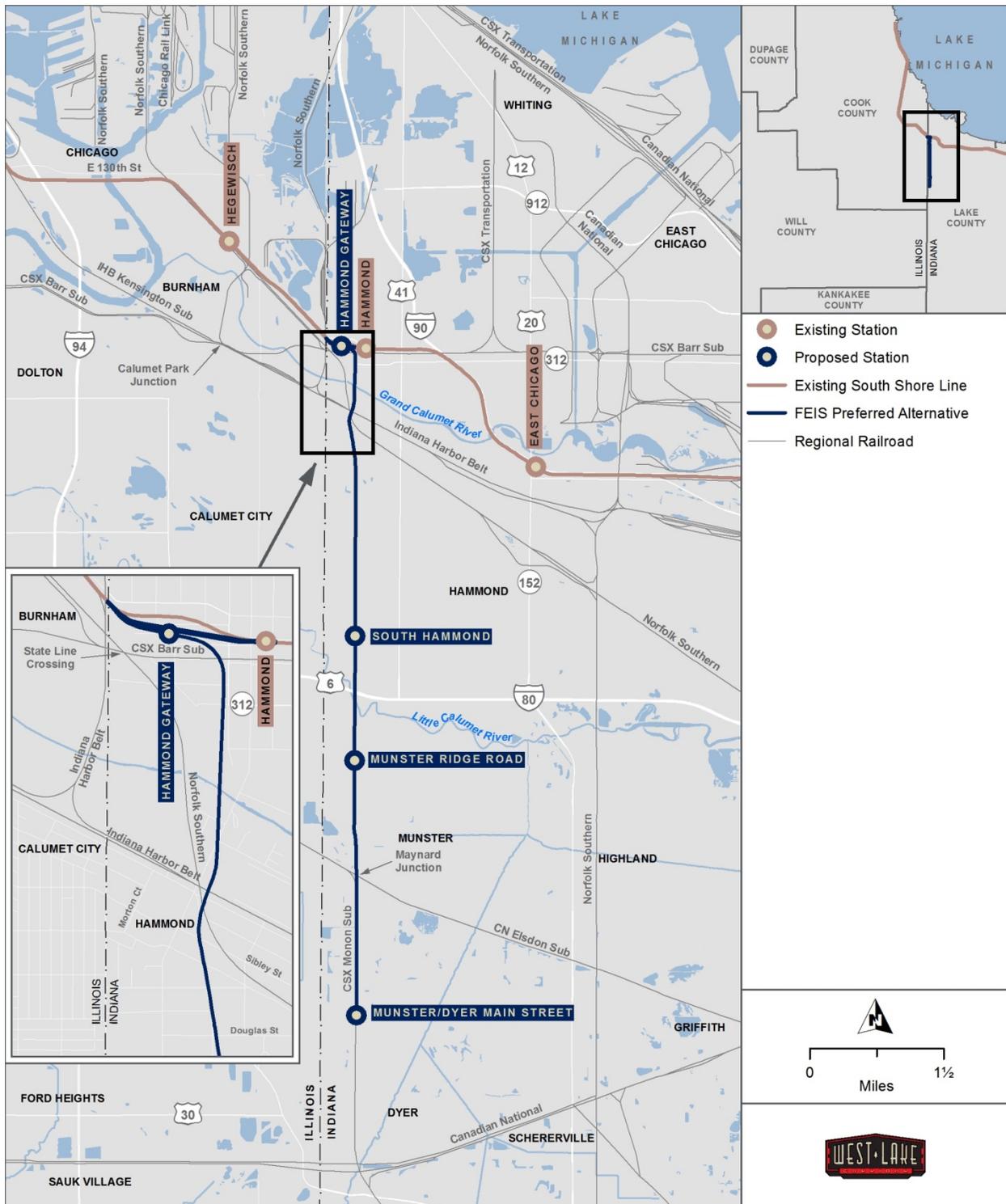
The freight rail system remains unchanged since publication of the DEIS. The figure has been updated graphically.

Northwest Indiana has a dense network of freight rail lines because of Chicago’s role as the nation’s rail hub and the area’s longstanding heavy industrial uses. Although many of the lines have been abandoned, the remaining network of routes includes some of the most heavily used in the country. Three of the nation’s seven Class I railroads (CN, CSX, and NS) provide service in northwest Indiana. In addition, several regional (Class II) and short-line (Class III) railroads serve the area, including two (IHB and CSS) that are based in northwest Indiana. Freight rail alignments are shown in **Figure 3.3-1**.

The following projects are planned by freight rail carriers in the Project Area:

- IHB plans to construct an 8,000-foot siding to support a customer’s unit train operation. This improvement would generally be located between Calumet Park Junction in Calumet City, Illinois and the Hohman Avenue overpass in Hammond, Indiana.
- CSS plans to expand the Burnham Yard, which is south of the SSL between the Indiana-Illinois state line and Burnham Avenue.

Figure 3.3-1: Existing Freight Rail Lines



Source: HDR 2017a.

3.3.4 Environmental Consequences

3.3.4.1 Long-term Operating Effects

The interaction between commuter rail and freight rail service would have implications for the timing, schedule, and capacity of existing and planned freight rail service in the Project Area.

Table 3.3-1 summarizes long-term operating effects for the No Build and all Build Alternatives.

Table 3.3-1: Summary of Freight Rail Effects

Alternative	Summary of Freight Rail Effects
No Build	No freight rail impacts.
FEIS Preferred Alt.	Placement of bridge structure piers located near privately owned railroad property would require close coordination with the railroads.
<i>Other Build Alternatives Considered^a</i>	
DEIS NEPA Preferred Alt. and Hamm. Alt. Opt. 1	Placement of bridge structure piers located near privately owned railroad property would require close coordination with the railroads.
CR Alt. Opt. 1–3	Placement of bridge structure piers located near privately owned railroad property would require close coordination with the railroads. Conflict with IHB's planned 8,000-foot freight track. Impact from acquiring unused NS ROW.
CR Alt. Opt. 4	Same impacts as CR Alt. Opt. 1–3. Additional potential impact from bridge supports affecting railroad expansion options.
IHB Alt. Opt. 1–3	Placement of bridge structure piers located near privately owned railroad property would require close coordination with the railroads. Impact from shared use of unused IHB ROW, construction of parallel IHB freight track, and conflict with IHB's planned 8,000-foot freight track.
IHB Alt. Opt. 4	Same impacts as IHB Alt. Opt. 1–3. Additional potential impact from bridge supports affecting railroad expansion options.
Hamm. Alt. Opt. 3	Same impacts as Hamm. Alt. Opt. 1 and DEIS NEPA Preferred Alt. Additional potential impact from bridge supports affecting railroad expansion options.

Sources: NICTD 2016; HDR 2017a.

^a Shaded areas indicate alternatives evaluated in the DEIS.

No Build Alternative

No freight rail direct impacts would be associated with the No Build Alternative.

FEIS Preferred Alternative

The FEIS Preferred Alternative would not cross any freight railroad tracks at grade or operate on existing railroad lines. The FEIS Preferred Alternative would include new track operating at grade on a separate ROW to be acquired adjacent to the CSX Monon Subdivision railroad in Dyer and Munster. The Project would be elevated from 45th Street in Munster to the CN Elsdon Subdivision railroad at Maynard Junction in Munster. North of the CN railroad, the Project would return to grade and join with the publicly owned former Monon Railroad corridor in Munster and Hammond and continue north. The Project would be elevated north of Douglas Street in

Hammond. The proposed structure would span the privately owned railroad ROW property and the piers and abutments would be located outside of the ROW, allowing for future expansion by the railroads within their ROW. Potential impacts include placing bridge structure piers near the railroad ROW to elevate the Project over the following four active freight rail lines:

- CSX Elsdon Subdivision (CN operates on this track) railroad at the Maynard Junction in Munster
- NS railroad just north of State Street (near the Dan Rabin Plaza) in Hammond
- IHB just north of Willow Court (near the Dan Rabin Plaza) in Hammond
- CSX Barr Subdivision railroad west of Sheffield Avenue in Hammond

Other Build Alternatives Considered in the DEIS

The analysis and methodology for the freight rail system remains unchanged from the DEIS to the FEIS. The other Build Alternatives considered in the DEIS would have impacts on the freight rail system; **Table 3.3-1** summarizes the effects. For specific possible effects of the other Build Alternatives considered in the DEIS on the freight rail network including the Maynard Junction Rail Profile Option, refer to the DEIS Section 3.3.4.1.

3.3.4.2 Short-term Construction Effects

With the No Build Alternative, no construction impacts would occur, since the Project would not be built.

During construction of the FEIS Preferred Alternative, NICTD and its contractors would require access to CSX, NS, and IHB properties to build bridges over their railroad tracks. The bridge abutments and piers would be near their tracks and train operations. Flagging by the freight railroad would be required for all construction operations adjacent to active freight lines.

The Project includes construction of separate vehicle and pedestrian underpasses for access to Munster/Dyer Main Street Station under the CSX railroad. A temporary shoofly track would be constructed to provide continuous CSX railroad operations during construction of these structures at Munster/Dyer Main Street Station.

Construction of the new track adjacent to the CSX Monon Subdivision, from 45th Street in Munster to the Project's southern terminus would require CSX flagging for safety of the CSX and NICTD contractors. The track would be constructed at a 40-foot centerline-to-centerline offset from the existing CSX track.

3.3.5 Avoidance, Minimization, and/or Mitigation Measures

3.3.5.1 Long-term Operating Effects

The No Build Alternative would not cause any long-term impacts on freight railroad operations and, therefore, would not require mitigation.

The FEIS Preferred Alternative would involve placing bridge structures which would span privately owned railroad properties; and piers and abutments adjacent to the freight railroad ROW. These efforts would be closely coordinated with the affected freight railroad throughout the Project's engineering and construction phases as the freight railroad would review design plans, minimizing any long-term adverse impacts. Third party agreements would be executed

for use of property not owned by CSX, NS, or IHB railroads. No other long-term effects on freight railroad operations are foreseen; therefore, no other mitigation actions are proposed.

3.3.5.2 Short-term Construction Effects

The No Build Alternative would not cause any short-term construction impacts on freight rail operations and, therefore, would not require mitigation.

For the FEIS Preferred Alternative, construction would be planned to avoid and minimize disruption to the existing freight railroad service to the extent reasonably feasible. Construction staging plans would be developed during the Project's engineering and construction phases and submitted for approval by the freight railroad entities. NICTD would continue coordination with each affected freight railroad regarding the nature and extent of construction activities affecting the respective freight railroad's property to reduce effects on freight rail. NICTD and its contractors would comply with each freight railroad's access, safety, and operational requirements during Project engineering and construction on or near the respective freight railroad's property, including securing appropriate easements and agreements, adopting the freight railroad's safety procedures, and not obstructing access to any freight railroad facilities at any time. CSX, NS, and IHB operations would be maintained at all times during Project construction.

3.4 Bicycle and Pedestrian

This section describes bicycle and pedestrian facilities and connections in the Project Area and the expected effects of the No Build Alternative and the FEIS Preferred Alternative on these facilities. Recreational pedestrian and bicycle infrastructure is also discussed in **Section 4.5**. Impacts on Section 4(f) resources are assessed in **Chapter 7**.

3.4.1 Regulatory Setting

There have been no changes to the regulatory setting since publication of the DEIS.

No federal laws, regulations, or executive orders specifically regulate how effects on pedestrian and bicycle facilities resulting from transit projects should be evaluated. However, NEPA provides the general legal framework for considering effects. In addition, CEQ regulations include requirements for describing the affected environment and environmental consequences for general resources, including pedestrian and bicycle facilities (see 40 CFR Part 1502.15).

In 2010, NIRPC approved a Complete Streets Resolution, which supports the development and design of roadways that accommodate safe and efficient access for all users by law, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities (NIRPC 2010).

3.4.2 Methodology

Since publication of the DEIS, further research and coordination with local and regional agencies has been conducted as the design of the Project was refined.

Pedestrian and bicycle facilities, such as sidewalks, trails, and bridges for nonmotorized transportation, exist in the Project Area. NICTD identified effects on these facilities based on the proximity of the resource to each alternative and whether the existing or planned facility would be affected in the long term (e.g., relocation of facility required) or short term (e.g., route detour during construction).

3.4.3 Affected Environment

The bicycle and pedestrian facilities remain unchanged since publication of the DEIS. Additional information on the Little Calumet River Trail and Pennsy Path has been added. Refinements to the Project design were analyzed and effects on the Erie Lackawanna Trail would be avoided. One figure has been updated graphically and one figure has been added.

Local and regional agencies in northwest Indiana and south suburban Cook County have actively promoted the development of nonmotorized trail systems. NICTD obtained the following list of trails in the Project Area from the *Northwest Indiana Regional Planning Commission 2020 Greenway Plan* (NIRPC 2014a) and the Rails-to-Trails Conservancy website (Rails-to-Trails Conservancy 2017). These trails are shown in **Figure 3.4-1**.

Pennsy Greenway includes a trail between Lansing, Illinois, and Crown Point, Indiana, using an abandoned Pennsylvania Railroad line. Plans to complete two gaps are in progress by others, including the gap where the trail ROW crosses the Project Area. The portion parallel to existing roadways is referred to as the Pennsy Path.

Specifically, the existing trail connects to the Pennsy Greenway near Fisher Street and extends east running under high-tension electric wires south of and alongside Fisher Street, then turning south along the western side of Calumet Avenue to just north of the CN railroad. The connection to the original Pennsy rail alignment is made at a park east of Calumet Avenue and south of the CN railroad tracks. The Pennsy Greenway would also be part of the American Discovery Trail, a 6,800-mile trail stretching from coast to coast.

Monon Trail uses the former Monon Railroad alignment between the Pennsy Greenway near Fisher Street in Munster and the Erie Lackawanna Trail at Douglas Street in Hammond.

Little Calumet River Trail is located between Gary and Hammond. The trail is south of the Frank Borman Expressway (I-80/94), running generally along the Little Calumet River. Although the Little Calumet River Trail is informally open to use by bicyclists and pedestrians, the trail's intended purpose is for maintenance equipment to access the levee.

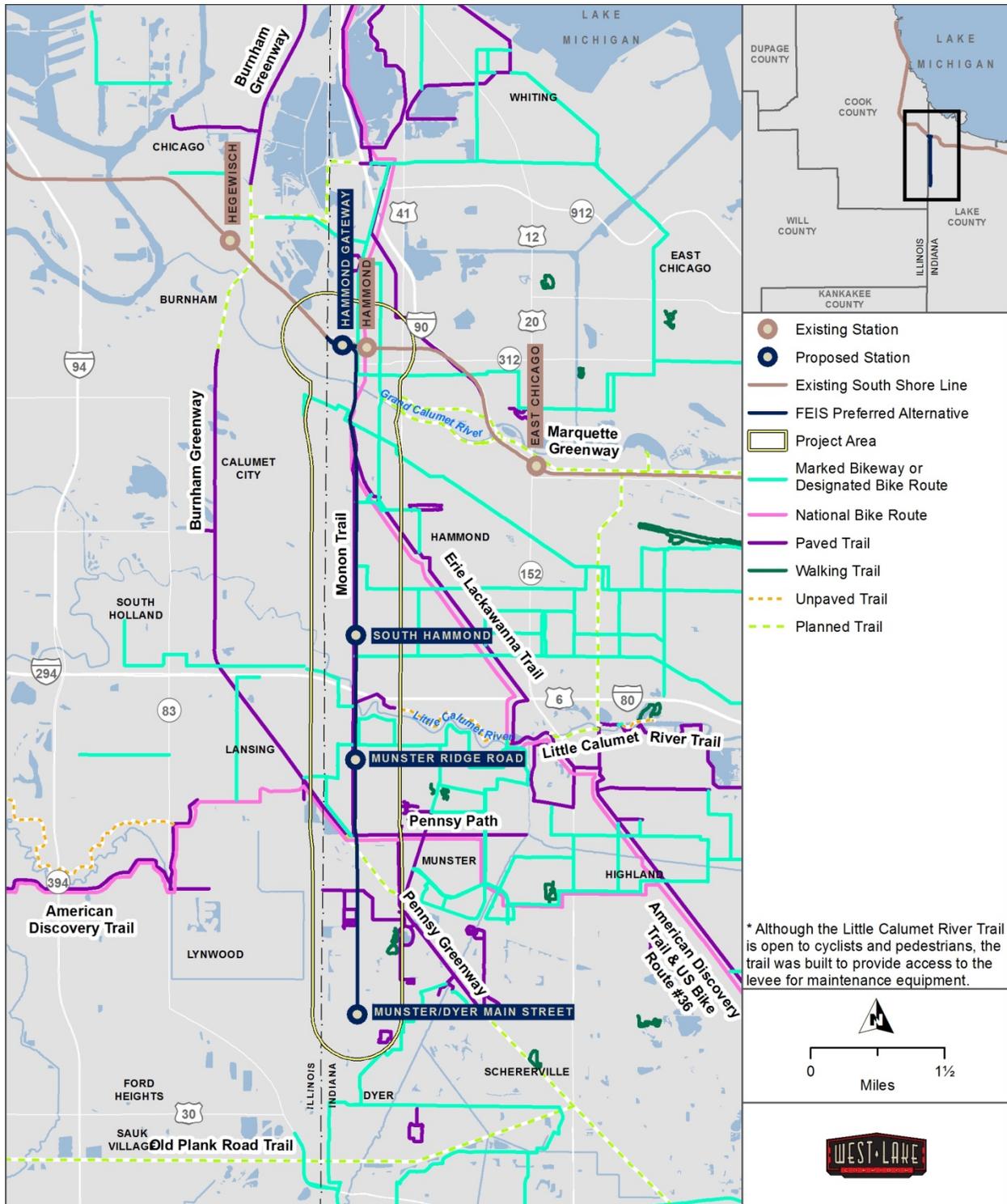
Erie Lackawanna Trail runs between Crown Point and Hammond using the former Erie Lackawanna Railway ROW.



Source: From NICTD 2016.

Trail Marker on Monon Trail

Figure 3.4-1: Bicycle Routes and Trails



Sources: NIRPC 2014a; Rails-to-Trails Conservancy 2017.

Burnham Greenway is a trail on a former railroad corridor between Chicago and Lansing, Illinois, with two distinct segments just north and south of the SSL. The trail is located west of Burnham Avenue.

In addition to the trails, on-street bicycle routes exist in the Project Area (**Figure 3.4-1**). Sidewalks and intersection corner curb ramps are located throughout the Project Area, although they are not present along every street.

3.4.4 Environmental Consequences

3.4.4.1 Long-term Operating Effects

Table 3.4-1 summarizes long-term operating effects for the No Build and all Build Alternatives.

Table 3.4-1: Summary of Bicycle and Pedestrian Facility Effects

Alternative	Summary of Bicycle and Pedestrian Facility Effects
No Build	No bicycle or pedestrian facility impacts.
FEIS Preferred Alt.	Relocation of segments of one trail facility, relocation of one trail facility. Restricted pedestrian crossings to grade crossings and east-to-west connectivity at two locations.
<i>Other Build Alternatives Considered^a</i>	
DEIS NEPA Preferred Alt. and Hamm. Alt. Opt. 1 and 3	Relocation of segments of three trail facilities. Restricted pedestrian crossings to grade crossings and east-to-west connectivity at three locations.
CR Alt. Opt. 1–4	Relocation of segments of three trail facilities. Restricted pedestrian crossings to grade crossings and east-to-west connectivity at four locations.
IHB Alt. Opt. 1–4	Relocation of segments of four trail facilities. Restricted pedestrian crossings to grade crossings and east-to-west connectivity at three locations.

Sources: NICTD 2016; HDR 2017a.

^a Shaded areas indicate alternatives evaluated in the DEIS.

No Build Alternative

No bicycle or pedestrian facility impacts would be associated with the No Build Alternative.

FEIS Preferred Alternative

The FEIS Preferred Alternative would cross a section of the undeveloped Pennsy Greenway corridor south of Fisher Street, which is currently programmed to be built in 2020 by the Town of Munster. At this location, the FEIS Preferred Alternative would be elevated (slightly descending in a northbound direction) utilizing retaining walls, and the trail would be at grade). The Project would include a separated crossing of the Pennsy Greenway. The Project would also cross Munster’s developed segment of the Pennsy Path where it is aligned along the southern side of Fisher Street on Northern Indiana Public Service Company (NIPSCO) ROW. The Project would relocate 350 feet of the Pennsy Path between Manor Avenue and the Monon Trail. The

relocation would direct trail users to the new railroad-highway grade crossing at Fisher Street. For more information regarding Pennsy Greenway, see **Chapter 7**.

The FEIS Preferred Alternative would overlay approximately 5,000 feet of the Monon Trail between Fisher Street in Munster and Douglas Street in Hammond. The current trail would be relocated adjacent to the Project track for several segments to accommodate the Project track and OCS infrastructure. This would include relocating the Monon Trail pedestrian bridge over the Little Calumet River in Munster so that the Project can retain use of the original railroad track bed. This relocation would require a slight modification of the junction of the Monon Trail with the Little Calumet River Trail by moving it east. This modification is not considered a significant impact since the Little Calumet River Trail is not formally considered a public trail. The Monon Trail would also be relocated adjacent to the Project track at Munster Ridge Road Station in Munster and Douglas Street in Hammond (see conceptual engineering drawings in **Appendix E**). For more information regarding the Monon and Little Calumet River Trails, see **Chapter 7**.

The DEIS NEPA Preferred Alternative included ROW from the City of Hammond’s Erie Lackawanna Trail property, shifting the paved trail on the trail’s land for approximately 0.06 mile (320 feet) between Sibley Street and Fayette Street. This would have formed a new trail terminus at the north and would connect to the remaining portion of the trail to the south. NICTD refined the design of the FEIS Preferred Alternative by revising the alignment and adding retaining walls to avoid these long-term effects on the Erie Lackawanna Trail. More information regarding the Erie Lackawanna Trail is provided in **Chapters 7 and 8**. The FEIS Preferred Alternative would operate additional train service on the existing SSL near the Burnham Greenway; however, this would not require any property from the Burnham Greenway. The FEIS Preferred Alternative would avoid long-term effects on the Burnham Greenway.



Source: From NICTD 2016.

Monon Trail Bridge over the Little Calumet River

In general, pedestrians and bicyclists can currently cross east to west across the Monon Trail at any point. However, with the FEIS Preferred Alternative, access across the tracks would be restricted to at-grade street crossing locations for safety purposes. This would result in extra travel for pedestrians and bicyclists to cross the Project.

Existing east-to-west access would be affected by street network connectivity changes at the following locations (also see **Section 3.5** for more information):

Russell Street (in Downtown Hammond): East of the Project, a cul-de-sac is proposed at the intersection of Russell Street and the Project track because the Project would be on an embankment at this location (see **Figure 3.4-2**). This segment of Russell Street currently has unconnected stretches of sidewalk, which are mostly in deteriorated condition and, therefore, are not often used by pedestrians. On the east side of the Project, the Erie Lackawanna Trail is located parallel to the Project in this area. Russell Street is currently a one-way eastward street that would be converted to a two-way street east of the Project and also west of the Project from



Hohman Avenue to Lyman Avenue where Russell Street would curve to align with Lyman Avenue. This conversion would not have a bicycle or pedestrian crossing across the Project track and would require signs advising the same. Crossings would be available for bicyclists and pedestrians to the south at Douglas Street and to the north at Fayette Street.

North Hammond MSF and Hammond Gateway Station: The Project would close or change streets in Hammond to accommodate the proposed North Hammond MSF and Hammond Gateway Station. Wabash Avenue would remain open between the CSX railroad and Marble Street. Hanover Street (west of Sheffield Avenue) and Marble Street (between Wabash and Sheffield Avenues) would be developed as part of the FEIS Preferred Alternative. Hudson Street would be extended west of Sheffield Avenue to connect with Wabash Avenue (shown as Allman Street on the conceptual engineering plans in **Appendix E**), which would provide access to the remaining segment of Marble Street, the North Hammond MSF, and otherwise landlocked industrial properties west of the NS line. Even though the roads would be removed, pedestrian access would be maintained to facilities west of Sheffield Avenue by the extension of Hudson Street (Allman Street).

Other Build Alternatives Considered in the DEIS

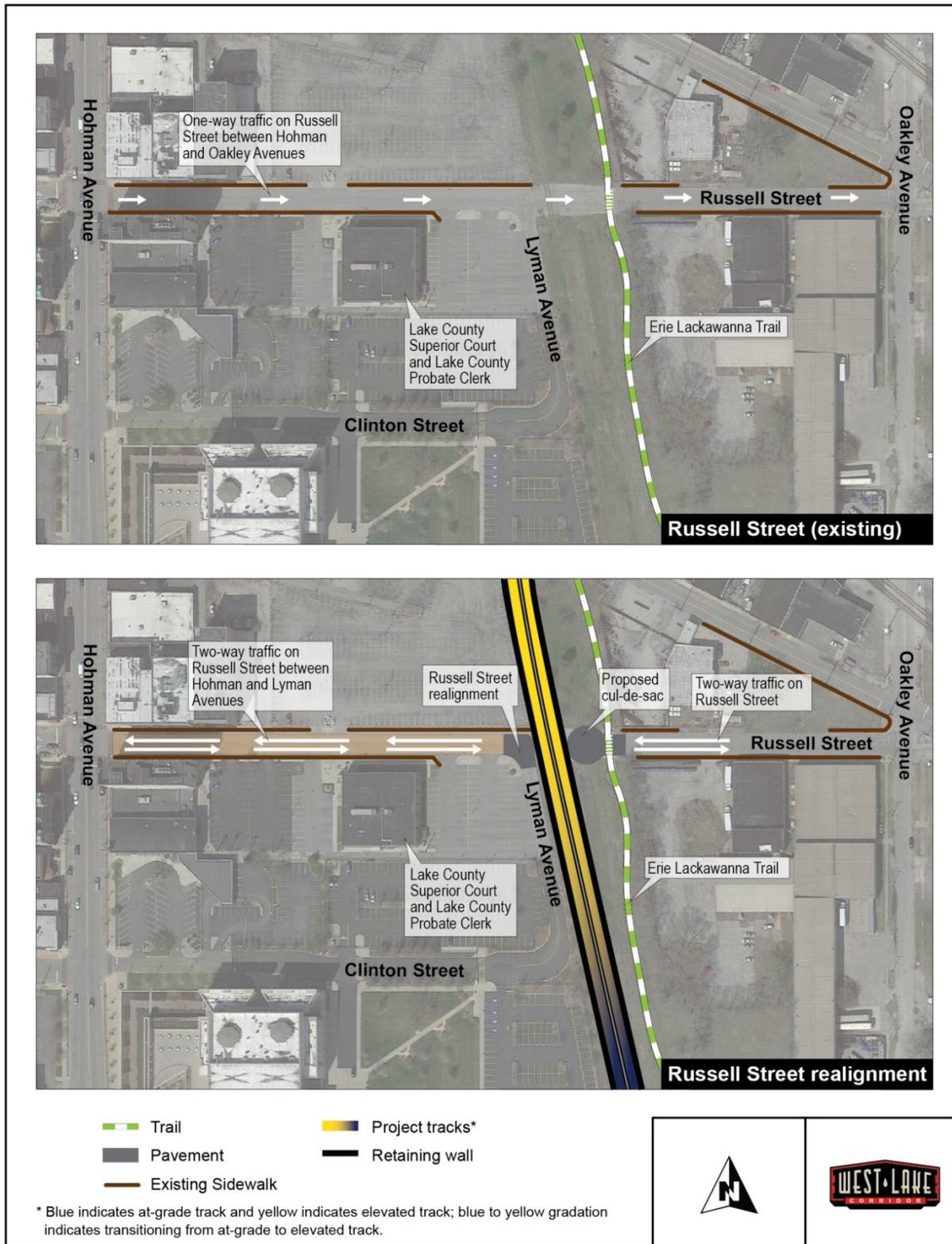
The analysis and methodology for the bicycle and pedestrian facilities remains unchanged from the DEIS to the FEIS. The other Build Alternatives considered in the DEIS would have similar effects on bicycle and pedestrian facilities as the FEIS Preferred Alternative; **Table 3.4-1** summarizes the effects. For specific possible effects of the other Build Alternatives considered in the DEIS on bicycle and pedestrian facilities, refer to the DEIS Section 3.4.4.1.

3.4.4.2 Short-term Construction Effects

With the No Build Alternative, no construction impacts would occur since the Project would not be built.

Construction impacts for the FEIS Preferred Alternative would include temporary closures or detours that would affect existing facilities. Construction traffic and debris such as excess dirt could also pose obstacles or issues for pedestrians and bicyclists. The Monon Trail would experience the greatest pedestrian- and bicycle-related construction impact.

Figure 3.4-2: Pedestrian Effects on Russell Street



Source: HDR 2017a.

3.4.5 Avoidance, Minimization, and/or Mitigation Measures

3.4.5.1 Long-term Operating Effects

The No Build Alternative would not result in any direct impacts on bicycle and/or pedestrian facilities and, therefore, would not require mitigation.

The FEIS Preferred Alternative would affect the Pennsy Greenway and the Monon Trail. The Project would include a separated crossing of the Pennsy Greenway and a closure and relocation of 350 feet of the Pennsy Path between Manor Avenue and the Monon Trail. The relocation would direct trail users to the new railroad-highway grade crossing at Fisher Street. The Monon Trail would be relocated adjacent to the proposed track and would include relocation of the Monon Trail bridge over the Little Calumet River so that the Project can retain use of the original railroad track bed. The Monon Trail would also be relocated adjacent to the Project track near Munster Ridge Road Station in Munster and Douglas Street in Hammond. No long-term impacts on the bicycle facilities would occur.

Fences would be provided to prohibit pedestrians and cyclists from crossing the track where east-to-west pedestrian or bicycling facilities do not exist or where NICTD deems them to be important from a safety perspective. All railroad-highway grade crossings would include east-to-west pedestrian access to maintain the sidewalk network's existing continuity.

East of the Project, a cul-de-sac would be placed at the intersection of Russell Street and the Project track and Russell Street would be converted to a two-way street west of Oakley Avenue (see **Figure 3.4-2**). West of the Project, Russell Street would be converted to a two-way street from Hohman Avenue to Lyman Avenue where Russell Street would curve to align with Lyman Avenue. This conversion would not include a bicycle or pedestrian crossing at the Project track and would require signs directing pedestrians to the north or south.

To accommodate the North Hammond MSF and Hammond Gateway Station, streets would be closed or modified. Wabash Avenue would remain open between the CSX railroad and Marble Street. Hanover Street (west of Sheffield Avenue) and Marble Street (between Wabash and Sheffield Avenues) would be developed as part of the FEIS Preferred Alternative. Hudson Street would be extended west of Sheffield Avenue to connect with Wabash Avenue (shown as Allman Street on the conceptual engineering drawings included in **Appendix E**), which would provide vehicular access to the remaining segment of Marble Street, the North Hammond MSF, and other industrial properties to the west. These mitigation plans would maintain access to facilities west of Sheffield Avenue for the FEIS Preferred Alternative. Sidewalk removal would not be mitigated.

Bicycle parking and locking facilities would be provided at stations. NICTD is designing stations to be as bicycle- and pedestrian-friendly as possible. At Munster/Dyer Main Street Station, where the station parking is located on the opposite side of the tracks as the station platform, a pedestrian underpass would be provided.

Additionally, bicycle and pedestrian facilities at the proposed stations were included in the West Lake transit-oriented development (TOD) study prepared by others. The Northwest Indiana RDA and NICTD, in coordination with the Town of Dyer, the Town of Munster, and the City of Hammond, have completed an FTA-funded pilot program for TOD planning. Through this program, NICTD, RDA and the communities examined ways to improve economic development and ridership, foster multimodal connectivity and accessibility, improve transit access for pedestrians and bicyclists, engage the private sector, identify infrastructure needs, and enable

and encourage mixed-use development near the Project stations. The West Lake TOD study was completed in September 2017 and is included in **Appendix F**.

3.4.5.2 Short-term Construction Effects

The No Build Alternative would not have any short-term construction impacts on bicycle and/or pedestrian facilities and, therefore, would not require mitigation.

For the FEIS Preferred Alternative, construction mitigation for disruptions to bicycle and pedestrian facilities during construction would include appropriate access provisions in the work zone traffic control plans and best management practices (BMPs) to manage debris. If crosswalks are temporarily closed, bicyclists and pedestrians would be directed to use alternative existing crossings within the vicinity of the closing. Reasonably feasible efforts as described in this section would be made to minimize the closure of adjacent crosswalks to allow for continued pedestrian movement across streets. Sidewalks and crosswalks would be required to meet minimum standards for accessibility and be free of slipping and tripping hazards. Temporary sidewalk closures would be discouraged but, if required, would be conducted in such a way as to minimize impacts and disruptions to the bicycle and pedestrian travel.

Depending on how construction activities affect sidewalk areas, special facilities (such as temporary handrails, fences, barriers, ramps, and walkways) would be implemented to maintain bicyclist and pedestrian safety. During the Project's engineering phase, a plan would be developed to manage the closure of pedestrian crossings and other restrictions on nonmotorized transportation facilities and crossings throughout the construction process. NICTD would coordinate with Munster during construction of the programmed improvements to the Pennsy Greenway.

3.5 Traffic

This section summarizes the traffic operations analyses that NICTD prepared for the FEIS Preferred Alternative, describes the expected effects of the FEIS Preferred Alternative and the No Build Alternative, and the proposed mitigation for significant impacts. The information in this section is based in part on the results and findings from the traffic simulations found in the *West Lake Corridor Project Traffic and Parking Technical Report* in **Appendix G2**.

3.5.1 Regulatory Setting

Since publication of the DEIS, NICTD determined that Indiana's 3R (rehabilitation, restoration, and resurfacing) guidelines for existing nonfreeway roadways and intersections should be followed; therefore, the minimum LOS is D, which is a change from the DEIS, where LOS C was acceptable. A 3R project on an existing nonfreeway is intended to extend the existing facility's service life and to enhance safety. A 3R project should make cost-effective improvements to existing geometrics, where practical. Figures have been updated graphically.

No federal laws, regulations, or executive orders specifically regulate how effects on roads resulting from transit projects are evaluated; however, NEPA provides the general legal framework for considering potential effects. In addition, CEQ regulations include requirements for describing the affected environment and environmental consequences for general resources, including roads (40 CFR Part 1502.15).

INDOT's *Indiana Design Manual* (2013) and IDOT's *Bureau of Local Roads and Street Manual* (2012) describe the acceptable LOS for intersections, depending on the type of road. The roads are described as suburban arterials, collectors, and local roads. LOS is an A-through-F rating system, with LOS A indicating free-flow conditions with little or no vehicle delay and LOS F indicating breakdown conditions with substantial congestion and long delays (**Figure 3.5-1**). For roads in Indiana, LOS A to D are acceptable, and LOS E and F are unacceptable.

Railroad-highway grade crossings require warning devices. Warning devices can be passive (e.g., stop signs) or active (e.g., automatic gates). The Federal Highway Administration's (FHWA) *Manual on Uniform Traffic Control Devices* (MUTCD) specifies the timing of the downward motion of gate arms, conditions for how long the gate arm must be down, and the timing for the gate arms to return to an upright position (FHWA 2009).

3.5.2 Methodology

Since publication of the DEIS, traffic operation analyses have been updated to reflect Project design refinements and current Project data. Due to station facility relocation and refinements, additional intersections have been analyzed and other intersections were removed in the FEIS. Connectivity effects at Russell Street due to proposed changes have been included. Figures have been updated graphically to reflect current analysis, and two new figures have been added.

3.5.2.1 Regional Traffic

NICTD used FTA's STOPS model to determine projected changes in VMT and VHT to assess the effect of the No Build Alternative and FEIS Preferred Alternative on regional transportation.

3.5.2.2 Intersection Operations

NICTD conducted traffic analyses at various intersections in the Project Area (existing intersections and new station driveways). Since publication of the DEIS, the intersections that were analyzed were modified based on Project refinements and public comments. Intersections no longer analyzed for the FEIS are:

- Ridge Road and former station north driveway in Munster
- Ridge Road and Harrison Avenue (former parking lot access) in Munster
- Dearborn Avenue and Gostlin Street in Hammond

Twenty-one additional intersections are analyzed in the FEIS and are reflected in **Figure 3.5-2**, which shows all the intersections analyzed. The traffic operations of these intersections were calculated before implementation of the Project (Before Project). Future traffic operations were calculated using projected traffic after implementation of the Project (After Project).

Figure 3.5-1: Level of Service

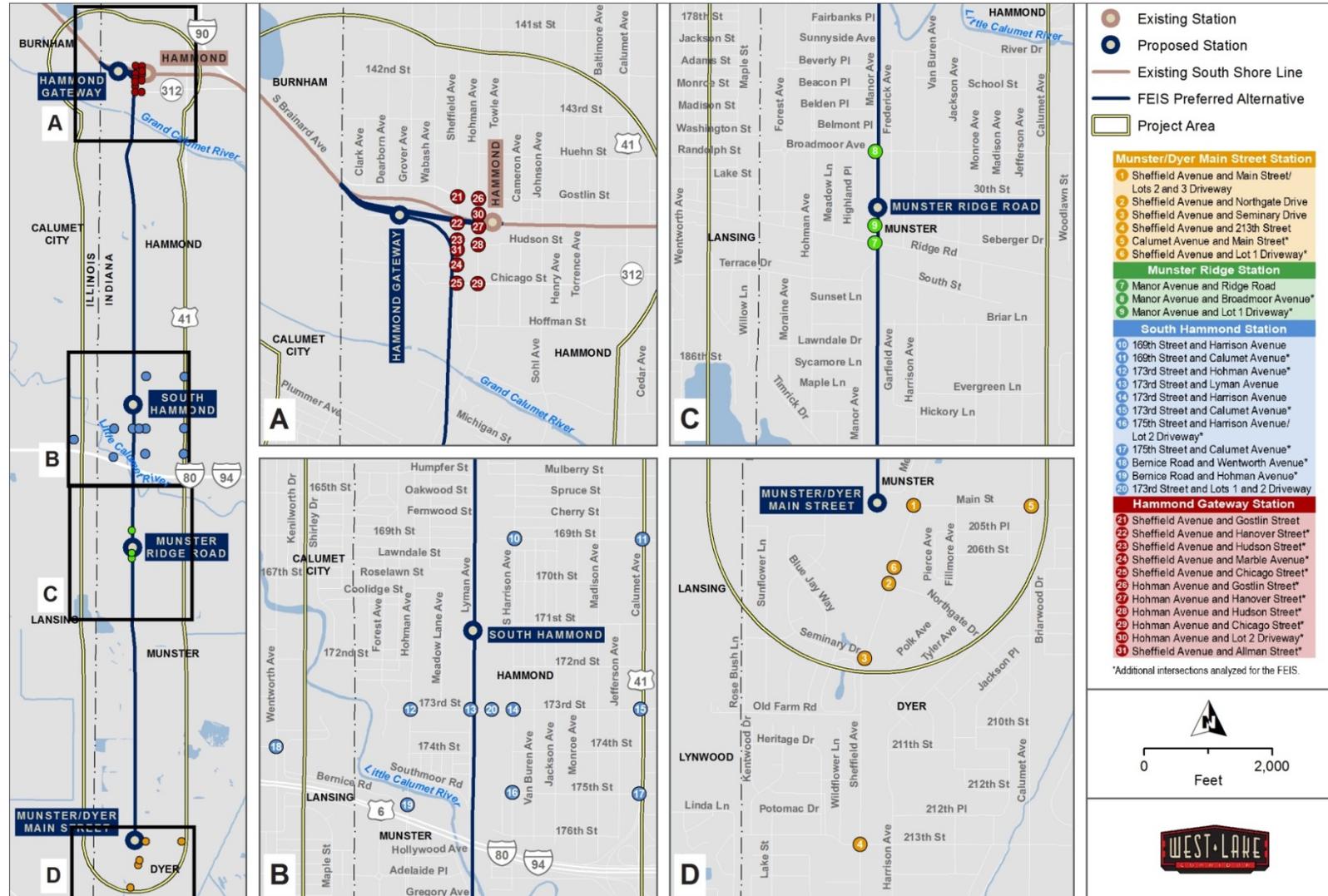
LEVEL OF SERVICE	FLOW CONDITIONS	TECHNICAL DESCRIPTIONS
A		Free flow conditions with minimal delays. Full freedom to choose lane and speed. minimum congestion
B		Stable flow conditions with restricted delays. Slightly restricted freedom to choose lane and speed. minimum congestion
C		Stable flow conditions with periodic delays. Restricted freedom to choose lane and speed. low congestion
D		Restricted flow conditions with regular delays. Limited freedom to choose lane and speed. moderate congestion
E		Constrained flow conditions with extended delays. Very limited freedom with frequent "stop and go conditions". high congestion
F		Forced flow conditions with excessive delay. No freedom with recurring "stop and go conditions". very high congestion

LOS C is generally the minimum acceptable threshold in rural areas.
LOS D is typically acceptable in urban areas.



Source: HDR 2017a.

Figure 3.5-2: Intersection Analysis Locations



Source: HDR 2017a.

Estimates for traffic use the regional planning horizon year of 2040, as opposed to the FTA 20-year plan (2017-2037) which was used for the ridership forecast estimates. The process involved collecting existing traffic data in 2014, 2015, and 2017; developing traffic projections; and estimating the station-generated traffic at each of the stations for each of the four scenarios. These data were used to model the intersection operations using the Transportation Research Board (TRB) *Highway Capacity Manual* (HCM) (2010) for stop-controlled intersections and using Synchro 8 traffic simulation software for signalized intersections. The calculated delay was used to determine the LOS based on the criteria in TRB's HCM.

NICTD identified the Project's effects on traffic operations by comparing the differences between the Before Project and After Project traffic. This comparison sought to isolate traffic deficiencies caused by normal traffic growth over time from traffic effects that could be caused by the Project. The following two general thresholds were established to define a Project effect:

- If an intersection in the Before Project scenario would operate at an acceptable LOS (A, B, C, or D) but would operate at an unacceptable LOS (E or F) in the After Project scenario, the intersection would be considered to be affected by the Project, or
- If an intersection in the Before Project scenario would operate at an unacceptable LOS (E or F) and the change in delay between the Before Project scenario and the After Project scenario would be greater than 20 percent, the intersection would be considered to be affected by the Project. If the change in delay would be less than 20 percent, the intersection would not be considered to be affected by the Project.

If an intersection would be considered to be affected by the Project, intersection improvements would be identified to minimize or mitigate the effect.

NICTD also evaluated operations of the proposed station parking lot entrances and exits. Because these access points are not present in the existing condition, effects at access points were evaluated only in the After Project scenario.

3.5.2.3 Railroad-highway Grade Crossings

NICTD analyzed the effects of railroad-highway grade crossings on traffic operations using a similar methodology as the intersection operational analysis. The analysis considered data for existing train arrivals (if applicable), the Project train speeds, and the length of time during which traffic would be stopped by a train crossing the road. The time needed for the train to pass the crossing depends on its speed at that location and its length. In addition to the time to pass the crossing, based on information from the MUTCD, NICTD assumed that the gates would descend in 12 seconds, return to an upright position in 12 seconds, and include a 5-second buffer interval.

Project trains would be no longer than eight cars and would be designed to fit at the station platforms without blocking any roads. However, warning devices would be required to stay activated at railroad-highway grade crossings while passengers are boarding and alighting when the train is in the southbound direction only. When a train is moving toward the cross road, gates would be down until the train passes the cross road. All stations are located north of the nearest cross road; for this reason, when a train is in the station and passengers are boarding and alighting and the train is traveling in the southbound direction, the cross road gates would stay activated while trains are in the station.

For the After Project scenarios, NICTD modeled the railroad-highway grade crossings with the highest traffic volume per lane in the peak traffic hours as worst-case scenarios. SIMTraffic, within Synchro 8, was used to perform the analysis. If the queue of vehicles from the gate

closing would not fully clear before the next existing or Project train passing, then the Project is considered to have an effect on the railroad-highway grade crossings.

3.5.2.4 Roadway Network Connectivity

NICTD evaluated the locations, nature, and effects of changes to the existing street network. Potential Project changes include roadway closings at railroad-highway grade crossings and changes in traffic routing.

3.5.3 Affected Environment

The traffic network remains unchanged since publication of the DEIS. Refinements to the Project design changed some locations of analysis. Modifications to Russell Street have been included. Figure 3.5-3 from the DEIS was removed, and new figures have been added.

The Project would create new railroad-highway grade crossings of local roads, collectors, and arterials. **Table 3.5-1** lists the new railroad-highway grade crossings.

Additionally, the Project would change traffic volumes and patterns. Traffic that would drive east to an existing station to access the SSL would instead travel west to the West Lake Corridor commuter line. The change in travel direction would increase traffic near the proposed stations during peak hours.

Table 3.5-1: Proposed Railroad-highway Grade Crossing Locations

Location	Functional Classification	Number of Lanes	Existing Average Daily Traffic
Fisher Street	Major collector	2	9,400
Ridge Road	Minor arterial	4	21,400
173rd Street	Minor arterial	2	6,800
165th Street	Minor arterial	4	16,400
Kenwood Street	Local	2	<2,500
Conkey Street	Major collector	2	2,700
Detroit Street	Local	2	<2,500
Highland Street	Major collector	2	4,200
Waltham Street	Local	2	<2,500
Douglas Street	Major collector	2	4,300

Source: HDR 2017a.

3.5.4 Environmental Consequences

3.5.4.1 Long-term Operating Effects

Table 3.5-2 summarizes long-term operating effects for the No Build and all Build Alternatives.

NICTD evaluated the effects of the Project on traffic operations based on changes at the regional and local levels resulting from Project service. **Table 3.5-3** shows the projected VMT and VHT for the No Build and Build Alternatives.

No Build Alternative

The No Build Alternative would not reduce VMT or VHT, thereby failing to reduce regional congestion. NICTD performed a detailed analysis of the effects of the No Build Alternative on the roadway system to determine the quality of operations on existing roads in the opening year of 2022 and the planning horizon year of 2040 to enable a direct comparison of Before Project and After Project scenario effects. The Before Project analysis identified an increase in traffic delays resulting from expected increases in traffic volumes; three intersections had increased delays that would result in unacceptable LOS in the Before Project (2040) scenario. The delay and LOS reports for all 26 intersections analyzed for the No Build Alternative are included in the *West Lake Corridor Project Traffic and Parking Technical Report* in **Appendix G2**.

Table 3.5-2: Summary of Traffic Operation Effects

Alternative	Summary of Traffic Operations Effects
No Build	No traffic impacts. Three intersections operate at unacceptable LOS.
FEIS Preferred Alt.	Three intersections operate at unacceptable LOS but would be improved as needed. Ten new railroad-highway grade crossings would be constructed. Road closure would occur at Russell Street and the Project track, but local access would be maintained.
<i>Other Build Alternatives Considered^a</i>	
DEIS NEPA Preferred Alt. and Hamm. Alt. Opt. 1 and 3	Two intersections operate at unacceptable LOS. Eleven new railroad-highway grade crossings would be constructed. Road closures would occur, but local access would be maintained.
CR Alt. Opt. 1–4	VMT and VHT savings. Two intersections operate at unacceptable LOS. Thirteen new railroad-highway grade crossings would be constructed. Road closures would occur, but local access would be maintained.
IHB Alt. Opt. 1–4	VMT and VHT savings. Two intersections operate at unacceptable LOS. Sixteen new railroad-highway grade crossings would be constructed. Road closures would occur, but local access would be maintained.

Sources: NICTD 2016; HDR 2017a.

^a Shaded areas indicate alternatives evaluated in the DEIS.



Table 3.5-3: Projected Annual Regional VMT and VHT in 2040

Alternative	VMT	Percent Difference of VMT Compared with No Build	VHT	Percent Difference of VHT Compared with No Build
No Build Alt.	26,404,841	—	1,064,452	—
FEIS Preferred Alt.	26,241,792	-0.6%	1,057,877	-0.6%
<i>Other Build Alternatives Considered^a</i>				
CR Alt. Opt. 1-4	26,291,789	-0.4%	1,060,095	-0.4%
IHB Alt. Opt. 1-4	26,283,352	-0.5%	1,059,790	-0.4%
Hamm. Alt. Opt. 1-3	26,282,479	-0.5%	1,059,738	-0.4%

Source: FTA STOPS model application (FTA and NICTD 2016; HDR 2017b).

^a Shaded areas indicate alternatives evaluated in the DEIS.

As shown in **Table 3.5-4**, three intersections would operate at an unacceptable LOS as a result of regional traffic growth in the planning horizon year of 2040. These intersections would fail primarily in the PM peak hour, as a result of the projected traffic growth without the Project. The No Build Alternative would not affect railroad-highway grade crossing traffic operations or street connectivity.

Table 3.5-4: Intersections with Poor LOS – Before Project (No Build) Scenarios

Intersection	Traffic Control Type	No Build (2022) Delay (seconds/vehicle)		No Build (2022) LOS		No Build (2040) Delay (seconds/vehicle)		No Build (2040) LOS	
		AM	PM	AM	PM	AM	PM	AM	PM
<i>Munster/Dyer Main Street Station Area</i>									
Sheffield Avenue and Northgate Drive	Two-way stop-controlled	14.0	19.3	B	C	18.0	37.1	C	E
Calumet Avenue and Main Street	Signal	34.0	42.9	C	D	79.4	123.8	E	F
<i>South Hammond Station Area</i>									
173rd Street and Calumet Avenue	Signal	21.8	35.2	C	D	28.4	60.0	C	E

Source: HDR 2017a.

FEIS Preferred Alternative

Regional Traffic

As reflected in **Table 3.5-3**, the FEIS Preferred Alternative would result in a VMT savings of 0.6% (163, 049 miles) and VHT savings of 0.6% (6,575 hours per year) in the region compared with the No Build Alternative.

The FEIS Preferred Alternative would include the North Hammond MSF, which would be near the proposed Hammond Gateway Station. The proposed layover facility would support approximately 30 employees; most would arrive before 7 AM and depart after 6 PM. The facility would be used by an overnight shift of fewer than 15 employees, all of whom would arrive in the evening and depart in the early morning. Traffic volumes generated by the facility would be minor and would occur outside of the peak hours; as a result, the proposed North Hammond MSF would have negligible effects on traffic.

Intersection Operations

With the addition of Project-related traffic, six intersections would operate at an unacceptable LOS in the After Project scenarios (**Table 3.5-5**). Three of the six intersections would also operate at an unacceptable LOS in the Before Project scenario, as described previously in **Table 3.5-4**.

For these three intersections, the change in delay from the Before Project scenario to the After Project scenario would be less than 20 percent and, therefore, the Project traffic would not further affect the roadway network. Roadway improvement needs at these three intersections are attributable to community traffic changes, not Project traffic, and generally require capacity improvements by others.

To minimize Project-related vehicular access to nearby neighborhoods, the Munster/Dyer Main Street Station parking lot would not connect with either Seminary Drive in the Meadows subdivision or Margo Lane in the West Lakes subdivision. However, bicycle and pedestrian access would be provided through the use of these streets.

Vehicular access to the parking lot would be from the station driveway at the Sheffield Avenue and Main Street intersection only (for a station layout, see **Figure 3.6-3**).

The intersection at Sheffield Avenue and the Lot 1 driveway for the ADA/"Kiss-and-Ride" lot for Munster/Dyer Main Street Station south of Main Street would operate at LOS E in the Build (2040) scenario. The delay would affect only those vehicles exiting the parking lot during the PM peak hour. Because the delay would not affect the street network and would affect only the station driveway, improvements are not warranted.

However, the intersection at 173rd Street and Harrison Avenue near South Hammond Station could be improved by restriping the pavement on 173rd Street to provide a shared left-turn/through lane and a right-turn lane in the eastbound direction (see **Figure 3.5-3**). The pavement marking improvement would improve the intersection LOS from E to C. Restriping would not require any additional ROW.

Table 3.5-5: Intersections with Poor LOS – After Project (Build) Scenarios

Intersection	Control Type	Build (2022) Delay (seconds/ vehicle)		Build (2022) LOS		Build (2040) Delay (seconds/ vehicle)		Build (2040) LOS		Effect from Project Traffic?
		AM	PM	AM	PM	AM	PM	AM	PM	
<i>Munster/Dyer Main Street Station Area</i>										
Sheffield Avenue and Northgate Drive	Two-way stop-controlled	16.6	23.0	C	C	25.5	37.7	D	E	No
Calumet Avenue and Main Street	Signal	34.2	54.7	C	E	86.5	145.0	F	F	No
Sheffield Avenue and Lot 1 driveway	Two-way stop-controlled	14.7	20.4	B	C	20.8	47.4	C	E	Yes
<i>South Hammond Station Area</i>										
173rd Street and Harrison Avenue	All-way stop-controlled	13.0	19.3	B	C	15.3	63.9	B	E	Yes
173rd Street and Calumet Avenue	Signal	24.0	46.1	C	D	31.2	68.7	C	E	No
<i>Hammond Gateway Station Area</i>										
Hohman Avenue and Chicago Street	Roundabout	9.2	41	A	E	12.5	98.9	B	F	Yes

Source: HDR 2017a.

The intersection at Hohman Avenue and Chicago Street, near Hammond Gateway Station, would be affected by the Project. The intersection is being improved in 2018 by the City of Hammond as a roundabout. With the addition of Project traffic, the intersection would operate at LOS E in the opening year of 2022. Since the LOS E would occur primarily during the PM peak hour service of trains and for a short duration (15 minutes), NICTD would seek to obtain a design variance from the City of Hammond for the opening year of 2022. The LOS for the 2040 Build scenario is projected to be LOS F in the PM peak hour service of trains, which would create a substantial queue in the southbound direction because of the exiting commuter traffic. A two-lane southbound approach is necessary to improve the operations to LOS B in 2040. NICTD recommends the City of Hammond monitor traffic growth and operations to validate the projection. If the projection is validated, coordination would occur between the City of Hammond and NICTD regarding cost sharing for an improvement to the roundabout.

Railroad-highway Grade Crossings

Ten new railroad-highway grade crossings would be included in the FEIS Preferred Alternative (shown in **Figure 3.5-4**). The characteristic of the roadway for each new railroad-highway grade crossing is shown in **Table 3.5-6**.

Table 3.5-6: Railroad-highway Grade Crossing Locations and Characteristics

Location	Number of Lanes	Existing ADT
Fisher Street	2	9,400
Ridge Road	5	21,400
173rd Street	2	6,800
165th Street	4	16,400
Kenwood Street	2	<2,500
Conkey Street	2	2,700
Detroit Street	2	<2,500
Highland Street	2	4,200
Waltham Street	2	<2,500
Douglas Street	2	4,300

Source: HDR 2017a.

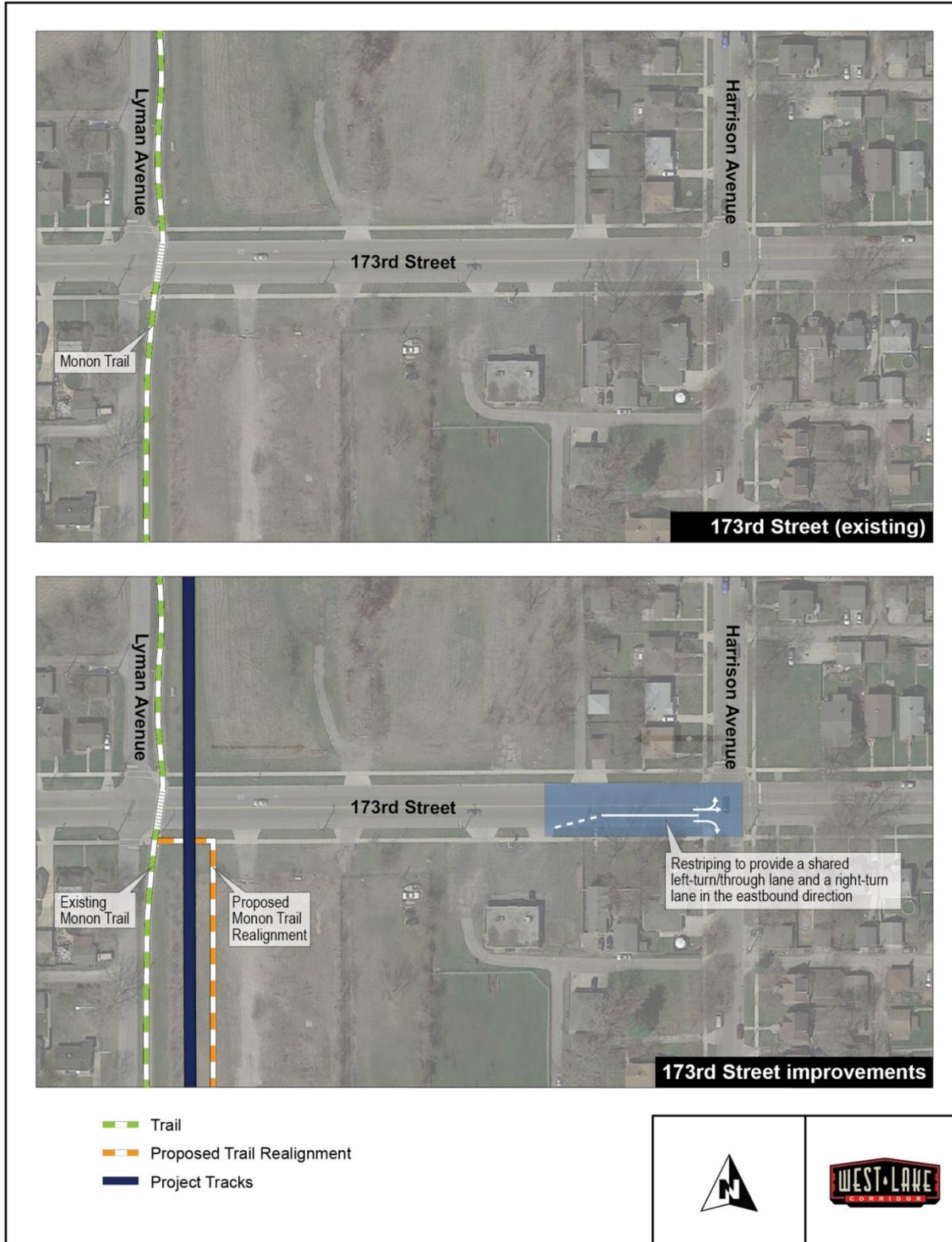
Given the varying geometry of each roadway (four lanes or greater versus two lanes) and varied average daily traffic (ADT), two scenarios were evaluated:

1. Roads with an ADT higher than 10,000 vehicles per day and with two lanes or more in each direction
2. Roads with an ADT lower than 10,000 vehicles per day and with one lane in each direction

Ridge Road in Munster is representative of scenario 1 and was analyzed to represent all streets within scenario 1. Fisher Street in Munster is representative of scenario 2 and was analyzed to represent all streets within scenario 2. If an effect would not occur with these two representative streets, then NICTD assumed that the remaining streets would not be affected by Project train traffic. If an effect were identified at either of these two representative streets, NICTD assumed that the similar streets would also be affected by Project train traffic.

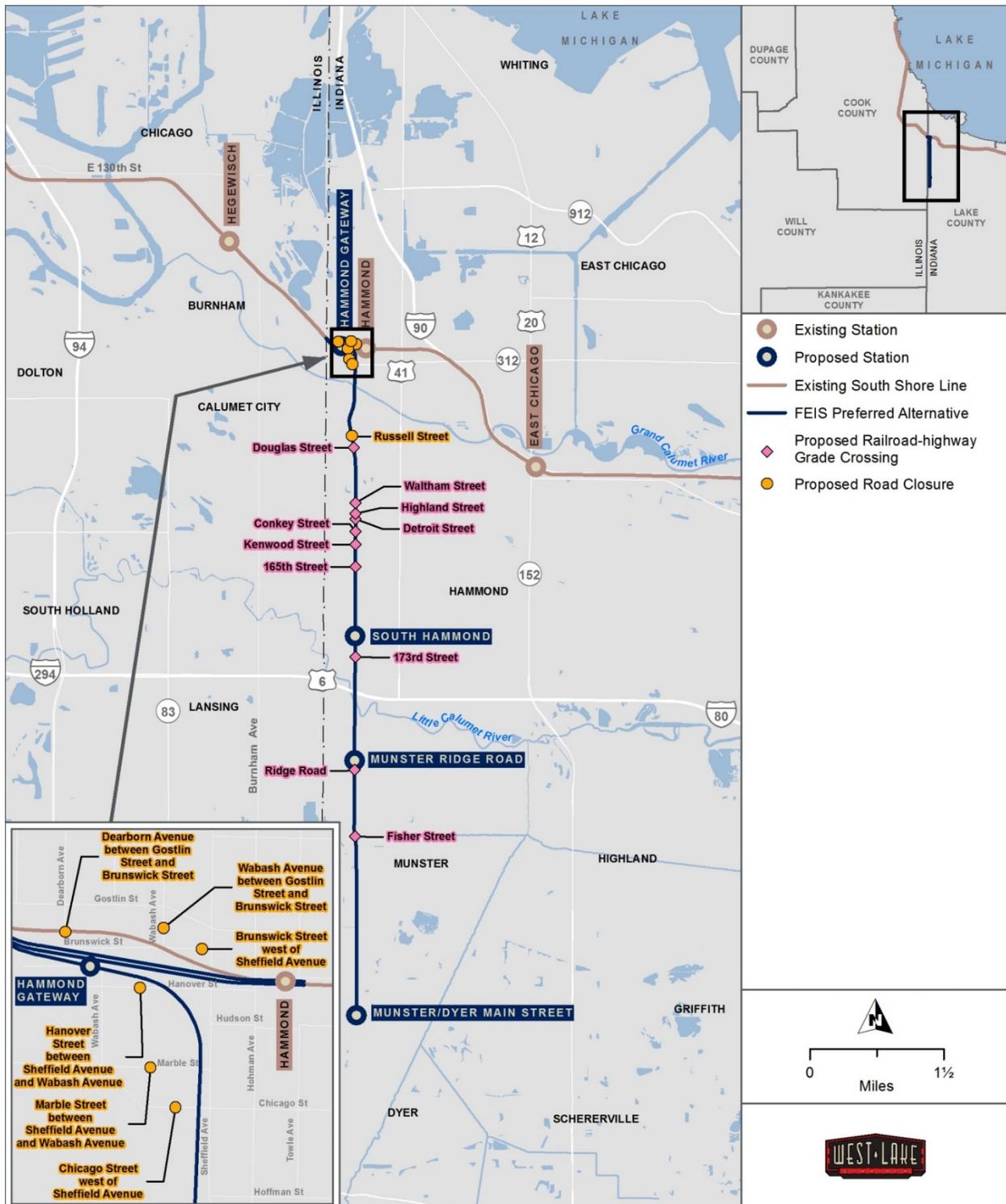
The traffic queue would clear in 40 seconds with scenario 1 and in 30 seconds with scenario 2. The gates would close only twice in the AM peak hour and once in the PM peak hour, causing an 80-second delay in the AM peak hour and a 30-second delay in the PM peak hour. The new railroad-highway grade crossings would not substantially affect traffic operations.

Figure 3.5-3: 173rd Street at Harrison Avenue Intersection Improvement



Source: HDR 2017a.

Figure 3.5-4: Railroad-highway Grade Crossings and Road Closure Locations



Source: HDR 2017a.

Roadway Network Connectivity

The FEIS Preferred Alternative would require permanent road closures where the alignment would cross the existing street network and sufficient vertical clearance to the guideway structure is not feasible or where it is necessary to avoid introducing a new railroad-highway grade crossing. Changes to street connectivity would occur in Hammond as described below and illustrated in the Project conceptual engineering drawings in **Appendix E**. The following streets would be affected:

- **Russell Street:** The FEIS Preferred Alternative would transition from an elevated structure at Fayette Street to an at-grade alignment north of Douglas Street in downtown Hammond. The track would be on retained fill or on an embankment throughout the vertical transition, and there would not be sufficient clearance over Russell Street. As a result, the existing Russell Street at-grade rail crossing between Lyman and Oakley Avenues would be closed. Russell Street is currently one-way in the eastbound direction. This closure would require modifying Russell Street to accommodate two-way traffic between Hohman and Lyman Avenues. In addition, the traffic signal, signage, and striping at the intersection of Hohman Avenue and Russell Street would be modified to accommodate two-way traffic on the eastern leg of Russell Street. At Lyman Avenue, Russell Street would curve and align to Lyman Avenue. East of the Project, Russell Street would become a cul-de-sac to continue providing access to properties between the Project track and Oakley Avenue (see **Figure 3.4-2**).
- **North of Grand Calumet River:** Much of the land between the Project's connection with the SSL near the state line and the Grand Calumet River would be redeveloped for the North Hammond MSF and Hammond Gateway Station. Wabash Avenue would remain open between the CSX railroad and Marble Street. Hanover Street (west of Sheffield Avenue) and Marble Street (between Wabash and Sheffield Avenues) would be developed as part of the FEIS Preferred Alternative. Hudson Street would be extended west of Sheffield Avenue to connect with Wabash Avenue (shown as Allman Street on the conceptual engineering drawings in **Appendix E**), which would provide access to the remaining segment of Marble Street, the North Hammond MSF, and other industrial properties to the west. These mitigation plans would allow access to be maintained to facilities west of Sheffield Avenue.

Other Build Alternatives Considered in the DEIS

The analysis and methodology for the traffic operations remains generally unchanged from the DEIS to the FEIS. **Table 3.5-2** summarizes the effects. For specific possible effects of the other Build Alternatives considered in the DEIS on traffic operations, refer to the DEIS Section 3.5.4.1.

3.5.4.2 Short-term Construction Effects

With the No Build Alternative, no construction effects would occur because the Project would not be built.

Construction of the Project would cause temporary disruptions to traffic operations, including lane closures, short-term intersection and roadway closures, and detours that cause local increases in congestion. The details of construction staging would be developed during the Project's engineering and construction phases.

Where the tracks would be constructed, NICTD expects disruption to normal traffic patterns. The primary roadway effect from construction of the Project would be the crossing of roads. Three types of crossings are proposed as part of the Project: railroad-highway grade crossings,

railroad crossings on a bridge over a road, and railroad crossings under an existing roadway bridge.

3.5.5 Avoidance, Minimization, and/or Mitigation Measures

3.5.5.1 Long-term Operating Effects

The No Build Alternative may have long-term effects on traffic operations. The effects would stem from not having an alternative mode of transportation to the automobile. Commuters would continue to drive and roads would increase in congestion.

Potential mitigation strategies to reduce or minimize the effects on intersection performance from the FEIS Preferred Alternative were evaluated using Synchro 8. The mitigation strategies for the intersections that would be affected near each station are described below.

- As the Project design advances, NICTD would coordinate with agencies having jurisdiction and/or maintenance responsibility for affected roads and with emergency services and school districts regarding railroad-highway grade crossings and changes to the roadway network connectivity.
- Signalized intersections located within 200 feet of the railroad-highway grade crossings would be upgraded to include traffic signal interconnect with the rail warning system.
- The existing traffic signal equipment at the Sheffield Avenue and Main Street intersection would be upgraded to control the fourth leg of the intersection (station driveway), to be actuated and to be retimed.
- The intersection of 173rd Street and Harrison Avenue would be striped to include an eastbound-to-southbound right-turn lane, which would help the intersection operate at an acceptable LOS. Sufficient roadway width exists to make this change without widening the intersection.
- The roundabout being built by the City of Hammond at Hohman Avenue and Chicago Street would be monitored for traffic operations by the City of Hammond, and coordination between the City of Hammond and NICTD would occur regarding cost sharing if an improvement to the roundabout is warranted.
- Russell Street would be converted to a two-way street from Hohman Avenue to Lyman Avenue and from the Project track to Oakley Avenue. West of the Project track Russell will curve to align with Lyman Avenue and east of the Project track a cul-de-sac will be placed. Signs would direct pedestrians to the north or south in order to cross the tracks safely. The traffic signal, signage, and striping at Hohman Avenue and Russell Street would be modified to accommodate two-way traffic.

3.5.5.2 Short-term Construction Effects

The No Build Alternative would not result in any short-term construction effects on traffic and, therefore, would not require mitigation.

For the FEIS Preferred Alternative, local traffic may be inconvenienced by detours and temporary lane closures during Project construction. It is important that pedestrian and vehicular access to businesses, medical facilities, and residences be maintained, with a priority placed on emergency facilities. Work zone traffic control plans would be prepared and approved by the appropriate agency during the Project's engineering and construction phases. These plans

would be coordinated with the Town of Dyer, the Town of Munster, the City of Hammond, Lake County, emergency services, and INDOT. The plans would identify requirements for maintaining access to businesses, medical facilities, and emergency facilities. Lane closures required for construction would be limited to off-peak hours of traffic operation to the extent it would be reasonably feasible. To construct railroad-highway grade crossings of existing roads, full closures may be used.

Major aerial construction over roadways would include the crossings of 45th Street, Fayette Street, Sibley Street, Willow Court, and Hohman Avenue. Construction of the structures would use methods that minimize the effects on roadway users. Lane closures on the major arterials must be approved by the agency with jurisdiction over the road and coordinated with the local police authority. Traffic detours would be restricted to maximum time durations according to the contract and work zone traffic-control plans. NICTD would coordinate with the jurisdictional agency over the roadway regarding the construction and detour plan. Project construction may require temporary closures or staged construction.

3.6 Parking

This section describes the direct, physical effects on existing parking facilities from the FEIS Preferred Alternative as compared with the No Build Alternative. Public parking can be provided as on-street parking (e.g., parallel parking) or off-street parking (e.g., surface lots or in public parking garages). It can also be paid (e.g., metered) or unpaid parking, or be restricted to certain users (e.g., persons with disabilities or customers of a business).

3.6.1 Regulatory Setting

There have been no changes to the regulatory setting since publication of the DEIS.

No federal laws, regulations, or executive orders specifically regulate how effects on parking resulting from transit projects are evaluated. However, NEPA provides the general legal framework for considering potential effects. In addition, CEQ regulations include requirements for describing the affected environment and environmental consequences for general resources, including parking (see 40 CFR Part 1502.15).

Each of the municipalities with a proposed station (Town of Dyer, Town of Munster, and City of Hammond) has parking ordinances that indicate where and for how long vehicles can park on its streets.

3.6.2 Methodology

Since publication of the DEIS, analyses have been updated to reflect Project design refinements including effects at Russell and State Streets and to include proposed station parking.

NICTD performed parking surveys using aerial images from the United States Geological Survey (USGS) National Geospatial Program (USGS 2014). The surveys inventoried the existing on- and off-street parking supply. The effects of the FEIS Preferred Alternative were determined by overlaying the anticipated footprint limits of the alternative on aerial maps and were based on the amount of current parking affected. The assessment of potential mitigation used GIS-based information supported by engineering to identify opportunities to replace affected parking close to the Project Area.

The ridership forecasts were categorized by mode of access and included “Park-and-Ride,” “Kiss-and-Ride,” walk, and transfer. NICTD intends to put new parking lots into service in 2020 for existing SSL stations. However, the year 2040 represents future parking and traffic conditions for the Project, since parking demand would not be realized on opening day (2022).

The vehicle occupancy factor used for converting “Park-and-Ride” ridership to equivalent parking spaces was 1.19. Parking demand was derived by dividing projected “Park-and-Ride” ridership by the vehicle occupancy factor.

3.6.3 Affected Environment

Public parking facilities remain unchanged since publication of the DEIS. Refinements to the design of the Project have caused some locations of analysis to change including Russell Street and State Street. Also, future station parking facilities were added for the proposed stations. Figures 3.6-1 through 3.6-6 have been added to the FEIS.

3.6.3.1 Public Parking

Table 3.6-1 identifies the approximate number of on- and off-street parking spaces for locations within the Project footprint where a loss of public parking would occur.

Table 3.6-1: Existing Public Parking

Location	Alternative	Approximate Number of Spaces	Parking Type
Russell Street	FEIS Preferred Alt.	18	On-street
State Street (Dan Rabin Plaza parking lot)	FEIS Preferred Alt.	40	Off-street
Hanover Street (Hammond Gateway Station)	FEIS Preferred Alt.	70	On-street
<i>Other Build Alternatives Considered^a</i>			
45th Street in Munster	CR Alt. Opt. 4, IHB Alt. Opt. 4, Hamm. Alt. Opt. 3	110	Off-street
Munster Ridge Road Station	All	44	On-street
Downtown Hammond Station	CR Alt. Opt. 1–3, IHB Alt. Opt. 1–3	24	On-street
Hanover Street (Hammond Gateway Station)	Hamm. Alt. Opt. 1 and DEIS NEPA Preferred Alt.	70	On-street

Sources: NICTD 2016; HDR 2017a.

^a Shaded areas indicate alternatives evaluated in the DEIS.

3.6.3.2 Station Parking

The existing SSL Hammond Station and parking lot is located approximately 0.15 mile east of the proposed combined Hammond Gateway Station. As shown in **Table 3.6-2**, Lot 1 provides 600 parking spaces between Hohman Avenue and Johnson Avenue south of the existing SSL tracks. Lot 2, located on the southwest quadrant of Hohman Avenue and Gostlin Street, is under

construction at the time of the writing of this FEIS. Lot 2 is considered existing for this FEIS and provides 142 parking spaces.

Table 3.6-2: Existing Station Parking

Location	Alternative	Approximate Number of Spaces	Parking Type
SSL Existing Hammond Station	All	742	Off-street

Source: HDR 2017a.

Limited transit options for residents in the Project Area are causing transit stations to experience parking demand at or near capacity. Considering that 90 percent of SSL riders use a “Park-and-Ride” to access stations, SSL riders in the Project Area are affected by constrained parking at existing SSL stations and would benefit from facilities in their home communities.

3.6.4 Environmental Consequences

3.6.4.1 Long-term Operating Effects

Table 3.6-3 summarizes long-term operating effects for the No Build and all Build Alternatives.

No Build Alternative

The constrained parking at existing SSL stations could worsen with the No Build Alternative.

Table 3.6-3: Summary of Effects to Parking Facilities Effects

Alternative	Summary of Effects to Parking Facilities
No Build	Could cause constrained parking at existing stations.
FEIS Preferred Alt.	Loss of 76 on-street parking spaces in Hammond.
<i>Other Build Alternatives Considered^a</i>	
DEIS NEPA Preferred Alt. and Hamm. Alt. Opt. 1	Loss of 114 on-street parking spaces in Munster and Hammond.
CR and IHB Alt. Opt. 1–3	Loss of 68 on-street parking spaces in Munster and Hammond.
CR and IHB Alt. Opt. 4	Loss of 178 on-street parking spaces in Munster and Hammond.
Hamm. Alt. Opt. 3	Loss of 224 on-street parking spaces in Munster and Hammond.

Sources: NICTD 2016; HDR 2017a.

^a Shaded areas indicate alternatives evaluated in the DEIS.

FEIS Preferred Alternative

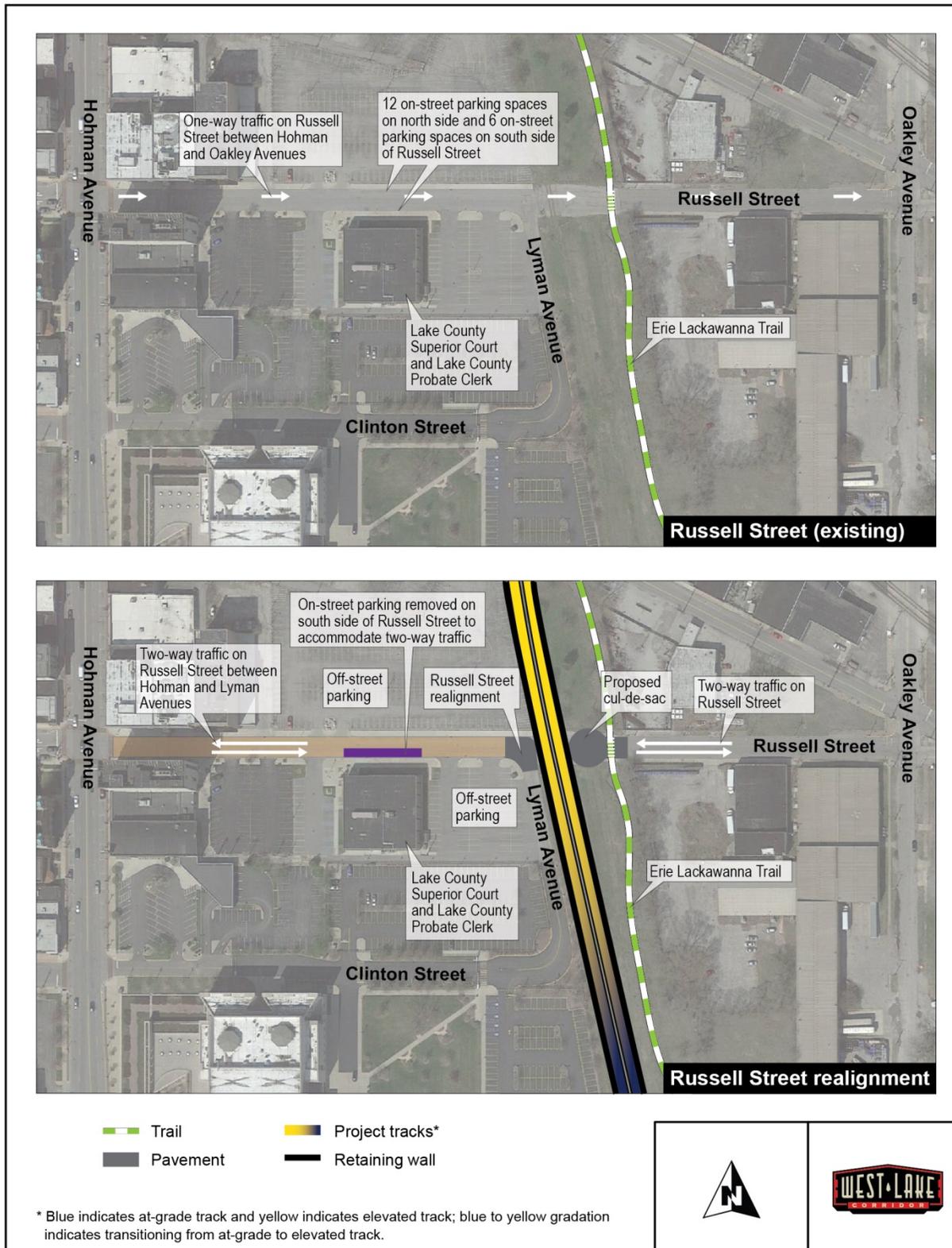
Public Parking

The DEIS NEPA Preferred Alternative would remove 114 on-street parking spaces. With the design refinements, the FEIS Preferred Alternative would remove 76 on-street parking spaces and no off-street parking spaces. Public parking that would be affected includes the following:

- **Russell Street:** Russell Street is currently a one-way eastbound street. The existing Russell Street at-grade crossing between Lyman and Oakley Avenues would be closed because of the Project. To maintain access to properties in this area, Russell Street would be modified to accommodate two-way traffic between Hohman and Lyman Avenues and also east of the Project. As shown in **Figure 3.6-1**, on the western side of the Project, Russell Street would curve and align to Lyman Avenue. East of the Project, Russell Street would become a cul-de-sac to continue providing access to properties between the Project track and Oakley Avenue. Near the Lake County Superior Court and Probate Clerk building west of the Project on Russell Street, there are 6 on-street parking spaces on the southern side of the street and 12 on the northern side. In addition, off-street parking owned by Lake County exists on both sides of the court building and a municipal parking lot is on the northern side of Russell Street. The Project would remove the 6 on-street parking spaces on the southern side of Russell Street. The 12 on-street parking spaces on the northern side of Russell Street would be maintained. Off-street parking is available nearby to accommodate the loss of these on-street parking spaces.
- **State Street:** As shown in **Figure 3.6-2**, the Project would realign State Street east of Hohman Avenue near the Dan Rabin Plaza. As a result of the realignment, a driveway to the municipal parking lot would need to be reconstructed and the parking lot modified. The parking lot has 40 off-street parking spaces and 40 spaces would be replaced, so no loss of off-street parking spaces would occur.
- **Hanover Street:** Hammond Gateway Station would remove 70 on-street parking spaces along Hanover Street that primarily support residential properties. However, all residences would be displaced within the station footprint, thereby reducing all of the demand for these spaces.

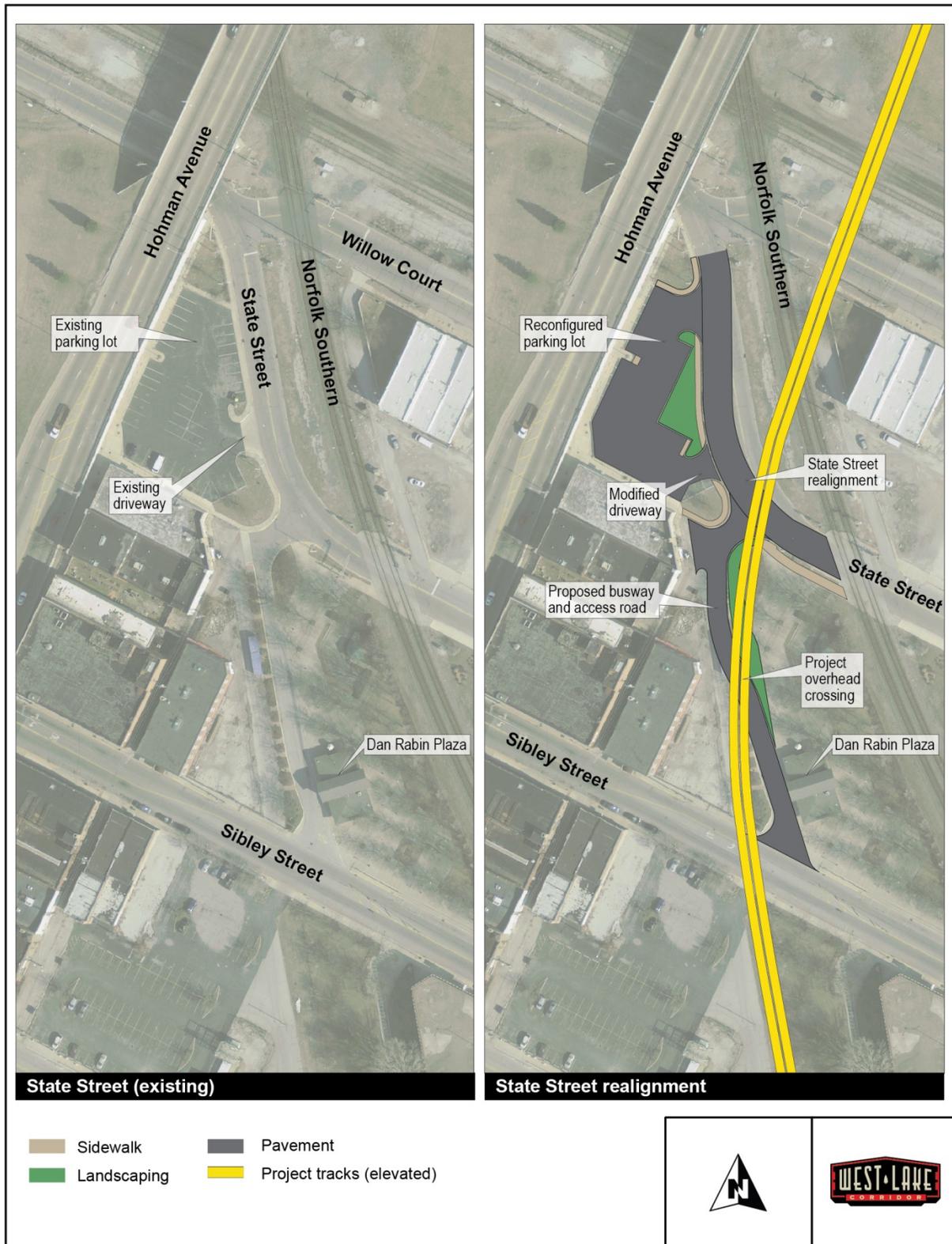
In addition to instances where the current parking supply could be affected, the Project could affect the demand for parking, which could lead to local effects to parking. Commuters accessing a Project station might choose to not use the Project's dedicated station parking for various reasons, including perceiving difficulties in entering or exiting a station parking lot, or encountering a full lot. In those cases, commuters might instead park on adjacent neighborhood streets, creating a spillover effect. All NICTD parking lots can be expanded if demand exceeds capacity.

Figure 3.6-1: Public Parking Effects on Russell Street



Source: HDR 2017a.

Figure 3.6-2: Public Parking Effects on State Street



Source: HDR 2017a.

Station Parking

The Project would create four new stations: Munster/Dyer Main Street, Munster Ridge Road, South Hammond, and Hammond Gateway.

MUNSTER/DYER MAIN STREET STATION

Munster/Dyer Main Street Station would serve as the Project's terminal station. As shown in **Figure 3.6-3**, the station would be accessed from Sheffield Avenue, with the driveway forming the western leg of the Sheffield Avenue and Main Street intersection. The station building and platform would be east of the CSX railroad and north of the station driveway. Three parking lots would be constructed to accommodate parking demand, providing a total of 875 "Park-and-Ride" spaces in the opening year (2022) and 1,333 "Park-and-Ride" spaces in 2040 including "Kiss-and-Ride" accommodations. The driveway access to the western parking lot would require an underpass of the CSX railroad ROW. Vehicular access to the parking lot would be from the station driveway only. The driveway to Lot 1 would be from Sheffield Avenue.

Lot 1 would accommodate all ADA and "Kiss-and-Ride" parking. Lot 1 would be east of the Project tracks and south of the station driveway. A pedestrian bridge would be provided over the station driveway to provide safe access between Lot 1 and the station. Lot 2 would be west of the CSX railroad with the Project tracks and station platform east of the CSX railroad and north of the station driveway. An ADA-accessible pedestrian underpass would exist under the CSX railroad and the Project tracks to provide safe access between Lot 2 and the station. To meet 2040 demand, Lot 3 would be constructed as an extension of Lot 2.

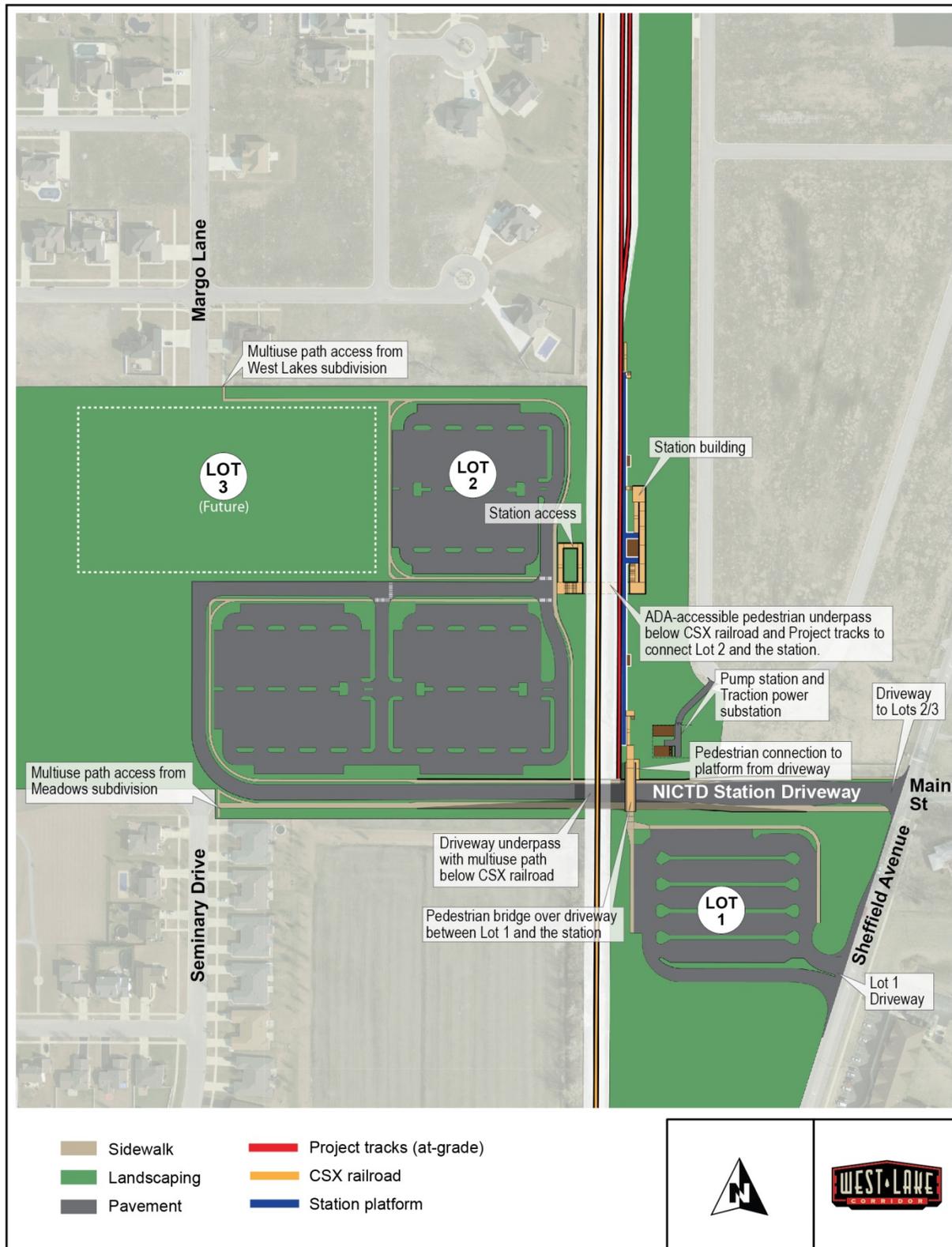
Other facilities would include a sidewalk along the southern side of the station driveway with a multiuse path along the northern side of the station driveway. A sidewalk connection from the intersection of Sheffield Avenue and Main Street to the east side of the station would also be provided. Multiuse path access would be proposed from Seminary Drive in the Meadows subdivision and Margo Lane in the West Lakes subdivision to the station.

MUNSTER RIDGE ROAD STATION

Munster Ridge Road Station would be west of the Project track and north of Ridge Road. **Figure 3.6-4** shows that the primary station access would be from Manor Avenue, approximately 500 feet north of Ridge Road. One parking lot would be constructed to accommodate parking demand, providing a total of 100 "Park-and-Ride" spaces. "Kiss-and-Ride" accommodations would also be provided on Manor Avenue near the station.

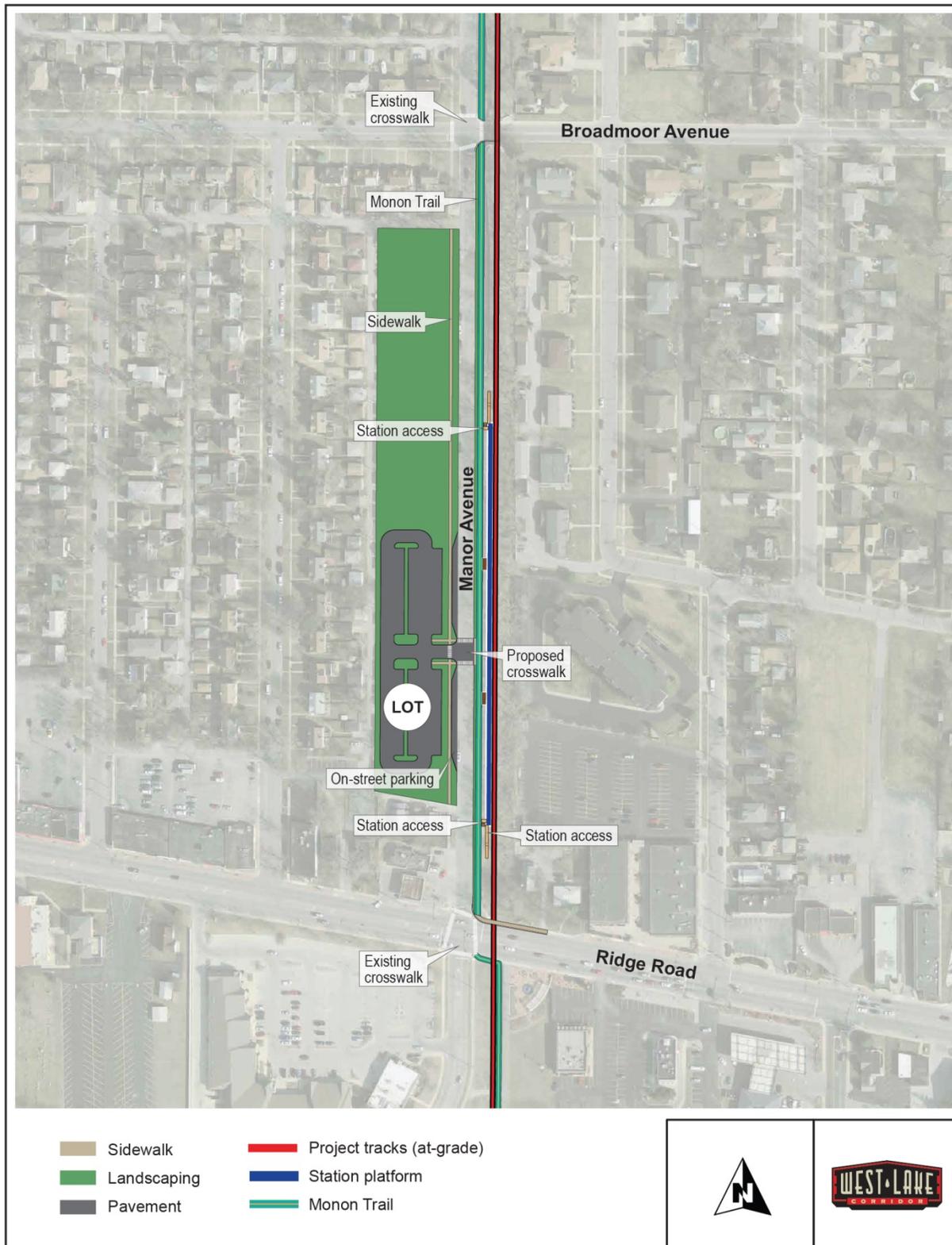
The proposed station platform would be east of Manor Avenue, and the parking lot would be west of Manor Avenue. To travel between the parking lot and the station, pedestrians would use the proposed crosswalks for the primary station access or walk north to Broadmoor Avenue or south to Ridge Road. At these intersections, pedestrians would cross to the opposite side of the road. Crosswalks exist at the Manor Avenue and Ridge Road intersection and at the Manor and Broadmoor Avenues intersection. A sidewalk would be installed west of Manor Avenue, and the Monon Trail would be reestablished east of Manor Avenue.

Figure 3.6-3: Munster/Dyer Main Street Station



Source: HDR 2017a.

Figure 3.6-4: Munster Ridge Road Station



Source: HDR 2017a.

SOUTH HAMMOND STATION

South Hammond Station would be east of the Project track and north of 173rd Street, as shown in **Figure 3.6-5**. Three parking lots would be constructed, north and south of 173rd Street, to accommodate parking demand, providing a total of 605 “Park-and-Ride” spaces in the opening year (2022) and 761 “Park-and-Ride” spaces in 2040.

Two parking lots would be constructed to accommodate the opening year (2022) parking demand. Lot 1 would provide ADA, “Kiss-and-Ride,” and “Park-and Ride” spaces. One driveway to Lot 1 located east of Lyman Avenue on 173rd Street would provide access to and from all directions. Lot 2 would be constructed south of 173rd Street and would have two driveways. One driveway is the western leg of the 175th Street and Harrison Avenue intersection with access to and from all directions. The second driveway, located east of Lyman Avenue on 173rd Street, would allow right turns into and right turns out of the parking lot. To meet 2040 demand, Lot 3 would be constructed as an extension to the south of Lot 2.

The platform for South Hammond Station would be on the eastern side of the Project track beginning approximately 100 feet north of 173rd Street. A crosswalk would be provided across 173rd Street for pedestrians. The Monon Trail would be located on the eastern side of the Project track south of 173rd Street. North of 173rd Street, the Monon Trail would be on the western side of the Project track.

HAMMOND GATEWAY STATION

The existing SSL Hammond Station located at 4531 Hohman Avenue would be relocated approximately 0.15 mile west for this Project. Hammond Gateway Station and parking would be south of the Project track. Access to the SSL platform (north of the Project track) from the parking lot would be accommodated by a paved plaza area under the elevated Project track (**Figure 3.6-6**). The combined SSL/Project station would serve passengers transferring between the two services.

The existing SSL Hammond Station is served by two parking lots that provide 742 parking spaces. With the SSL Hammond Station relocation, Lot 1 (600 spaces) would be removed.

For Hammond Gateway Station, the main station parking lot (Lot 3) would be constructed to provide 489 “Park-and-Ride” spaces. Lots 2 and 3 would accommodate the parking demand, providing 631 “Park-and-Ride” spaces. “Kiss-and-Ride” accommodations would also be provided near the station. Lot 3 would be south of the proposed Hammond Gateway Station. Two station driveways would be provided. One driveway would be on Chicago Street (formerly Sheffield Avenue) across from Hanover Street, and the second driveway would be on Wabash Avenue just north of the extension of Hudson Street (Allman Street).

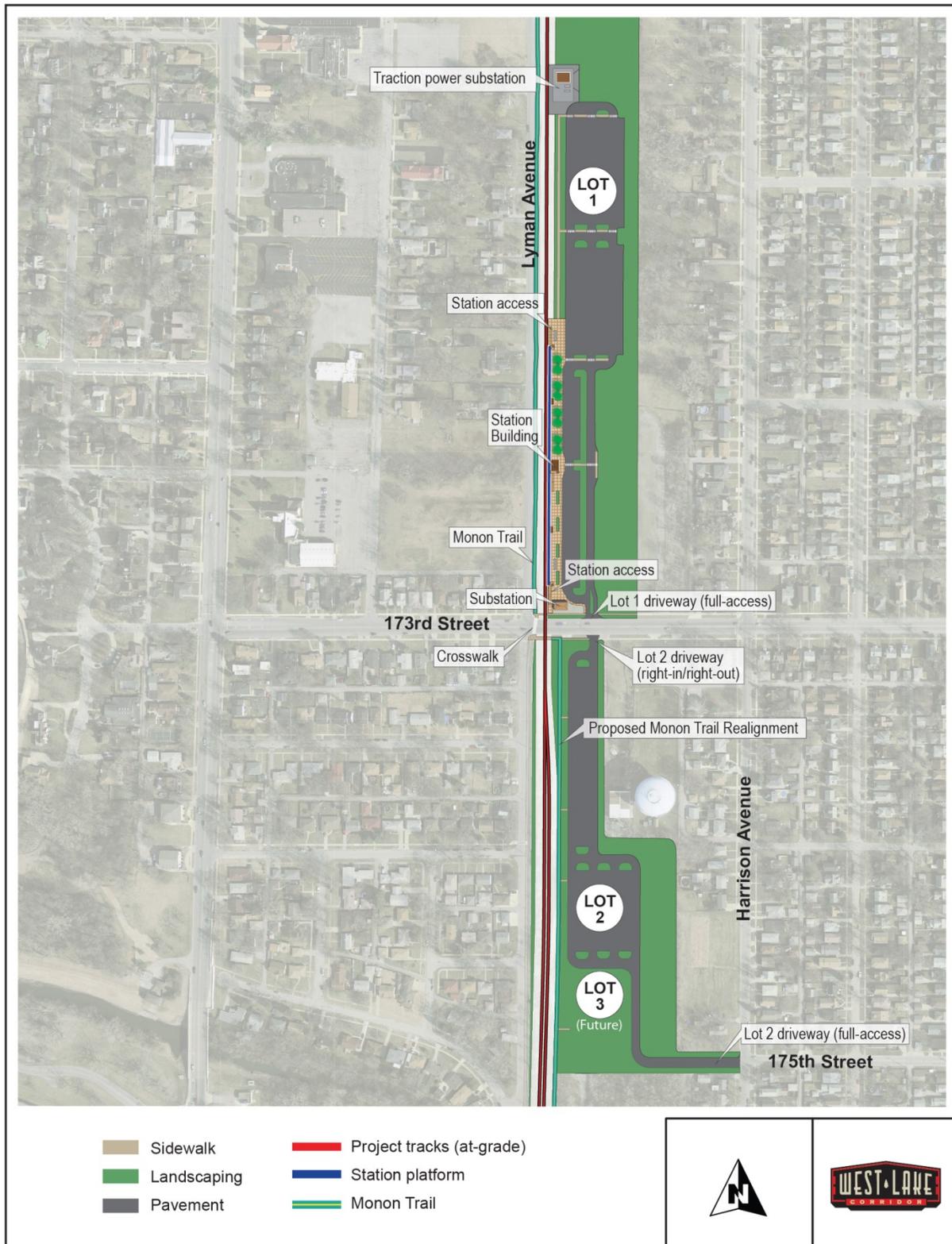
The parking and station building would be south of the Project track. Access to the SSL platform (north of the Project track) from the parking lot would be accommodated by a paved plaza area under the elevated Project track above. Sidewalks and crosswalks would be provided along Chicago Street to provide access from Lot 2 to the stations.

Other Build Alternatives Considered in the DEIS

The analysis and methodology for the parking facilities remains unchanged from the DEIS to the FEIS.

Table 3.6-3 summarizes the effects. For specific possible effects of the other Build Alternatives considered in the DEIS on parking facilities, refer to the DEIS Section 3.6.4.1.

Figure 3.6-5: South Hammond Station



Source: HDR 2017a.

Figure 3.6-6: Hammond Gateway Station



Source: HDR 2017a.

3.6.4.2 Short-term Construction Effects

With the No Build Alternative, no construction effects would occur, since the Project would not be built.

Construction of the FEIS Preferred Alternative would disrupt the existing parking supply if an area is needed to stage construction vehicles or equipment. On-street parking might be temporarily unavailable because of temporary lane closures or staging of vehicles or equipment during Project construction. This would generally occur where the Project would cross at grade or would be elevated over a roadway. Major aerial construction over highways includes the crossings of 45th Street, Fayette Street, Sibley Street, Willow Court, and Hohman Avenue. The details of construction staging would be developed during the Project's engineering and construction phases.

3.6.5 Avoidance, Minimization, and/or Mitigation Measures

3.6.5.1 Long-term Operating Effects

The No Build Alternative may worsen the constrained parking at existing SSL stations; however, it would not require mitigation.

The FEIS Preferred Alternative would affect existing available on-street parking supply and demand. This alternative would remove 76 on-street parking spaces through the closure of Russell Street and as part of the process to redevelop the adjacent properties into commuter rail stations. With off-street parking available at Russell Street and no demand for on-street parking on Hanover Street, no mitigation for the loss of on-street parking spaces is proposed. Parking replacement would be coordinated with local jurisdictions to identify whether suitable replacement locations are necessary. Off-street parking spaces at the State Street parking lot would remain the same.

The potential for parking to spill over onto nearby streets from new stations in Dyer, Munster, and Hammond would be addressed by NICTD working with the host municipalities to develop appropriate mitigation measures. This would be achieved principally through the use of signs and enforcement of parking restrictions by the host municipalities. All NICTD parking lots can be expanded if demand exceeds capacity.

3.6.5.2 Short-term Construction Effects

The No Build Alternative would not result in any short-term construction effects on parking and, therefore, would not require mitigation.

For the FEIS Preferred Alternative, street parking might be temporarily unavailable because of temporary lane closures or staging of vehicles or equipment during Project construction. Work zone traffic control plans would be prepared and approved by the appropriate agency during the Project's engineering and construction phases. These plans would be coordinated with the Town of Dyer, the Town of Munster, the City of Hammond, Lake County, emergency services, and INDOT. The plans would identify requirements for maintaining parking for businesses and medical and emergency facilities. Advance warning for parking restrictions would be provided according to the work zone traffic-control plans.