

Chapter 3

Transportation

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3 TRANSPORTATION

3.1 Introduction

Chapter 3 characterizes the existing conditions of the multi-modal transportation system, potential impacts of the West Lake Corridor Project (Project) on the transportation network, and proposed mitigation of potential 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). The information is presented for the No Build Alternative as a point of comparison with the impacts of the National Environmental Policy Act (NEPA) Preferred Alternative (Hammond Alternative Option 2) and the other Build Alternatives. For reference, conceptual engineering plans for the Build Alternatives are included in **Appendix G**.

3.2 Public Transportation

This section describes the potential impacts the Build Alternatives would have on public transportation (transit) services within the Study Area, which is defined as ½-mile on either side of the proposed alignments.

3.2.1 Regulatory Setting

No federal laws, regulations, or executive orders specifically regulate how impacts to public transportation resulting from transit projects should be evaluated. However, NEPA provides the general legal framework for considering potential impacts. In addition, the 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 Code of Federal Regulations (CFR) § 1502.15.

3.2.2 Methodology

Ridership forecasts were developed for the Project Alternatives for the planning horizon year 2040 using the Federal Transit Administration's (FTA) Simplified Trips-on-Project Software (STOPS) model based on the associated operating plans. This information was used to evaluate the effects of a transit project on the transportation system at a localized and regional level. Inputs to the model include 2040 socioeconomic forecasts approved by the Northwestern Indiana Regional Planning Commission (NIRPC), the Metropolitan Planning Organization (MPO) in Northwest Indiana, and by the Chicago Metropolitan Agency for Planning (CMAP), the MPO in northeastern Illinois, to represent expected growth in travel demand. In addition, MPO estimates of existing and expected automobile travel times between origin and destinations as represented by the Traffic Analysis Zone (TAZ) system were obtained. 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 vehicle miles traveled (VMT) and vehicle hours traveled (VHT). Existing and planned transit services within and near the Study Area were reviewed for effects from the No Build Alternative and Build Alternatives. The planned transit projects include those listed in CMAP's *2040 GO TO Comprehensive Regional Plan* (CMAP 2014c) and NIRPC's *2040 Comprehensive Regional Plan, A Vision for Northwest Indiana* (CRP) (NIRPC 2011).

Route and timetable information was reviewed for the existing passenger rail services. In light of the nearly 200 Metra and NICTD trains that currently operate on the existing Metra Electric District/South Shore Line (MED/SSL) north of Kensington; a technical analysis was performed using the Rail Traffic Controller (RTC) simulation model to assess the availability of infrastructure capacity to allow the operation of Project trains. This tool simulates operations of trains over the network under existing and future conditions to evaluate the performance of the scheduled trains and the effects of infrastructure improvement measures. Opportunities for passenger transfers with existing and proposed passenger rail services were identified. The analysis is presented in the report *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 2015a) (see **Appendix H**).

Route information was reviewed for existing bus service within the Study Area, which is defined as 1/2-mile on either side of the proposed alignment. The effects of the Project on the services were evaluated. Opportunities for passenger transfers with existing bus services were also identified.

3.2.3 Affected Environment

This section provides an overview of the existing transit within the Study Area. Detailed information is included in the *West Lake Corridor Project Existing Conditions Report* (NICTD 2014b). **Figure 3.2-1** shows the existing and planned passenger rail network in Northwest Indiana and Northeast Illinois.

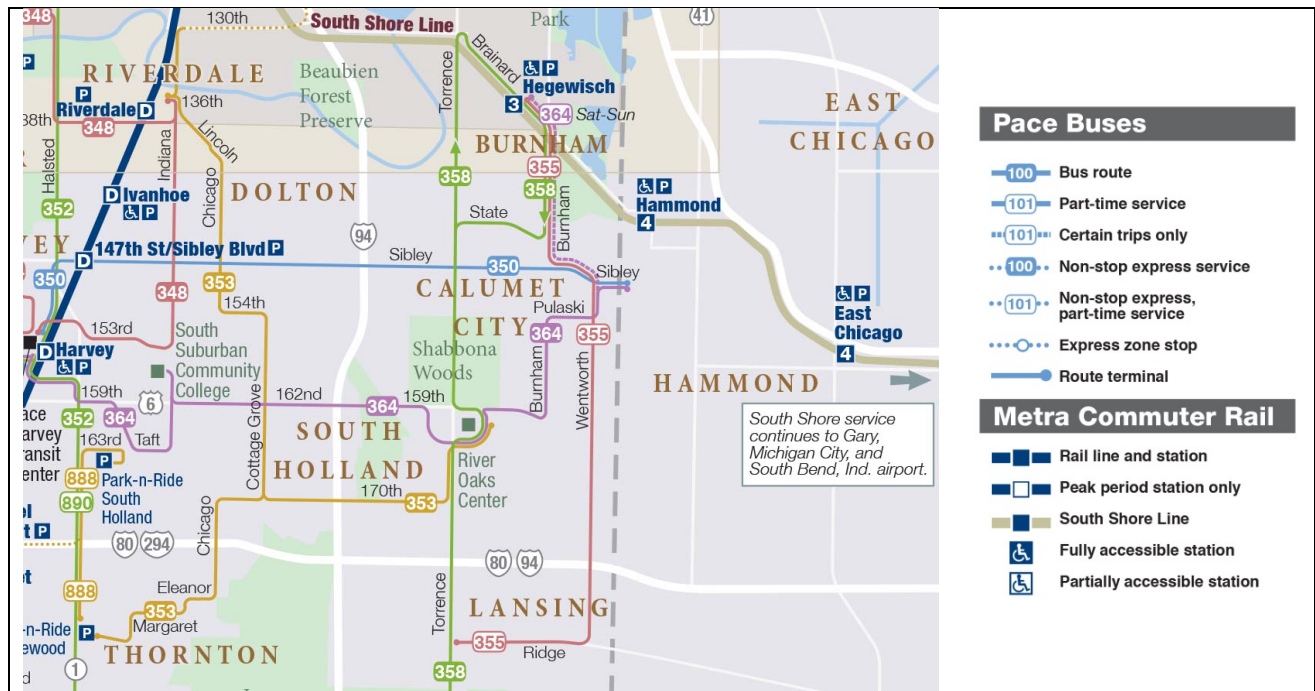


Figure 3.2-1: Existing and Planned Passenger Rail Service

- **Northern Indiana Commuter Transportation District (NICTD):** NICTD operates the SSL, an electrically-powered commuter railroad serving four counties in Northwest Indiana -- St. Joseph, LaPorte, Porter, and Lake as well as 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/PM Peak Outbound periods, which is reflective of passenger demand for the line. The SSL carries approximately 3.6 million passengers annually.

- **Metra Electric District (MED):** The Metra system, which serves Northeast Illinois, includes 11 lines all radiating out of downtown Chicago. The MED line serves the Chicago region's south suburbs. It is relevant because of its proximity to Northwest Indiana (between 4 and 10 miles west of the Indiana-Illinois state line) and it is utilized by some Indiana residents to access Chicago. MED is the only electrified line of the Metra system, and is owned and directly operated by Metra. The MED Main 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 60 minutes for off-peak trains.
- **Amtrak:** Intercity and long distance passenger rail services are provided to Northwest Indiana by Amtrak, the National Railroad Passenger Corporation. Amtrak service is available at two stations in Lake County (Amtrak 2014). The Dyer station is served by two routes, the Cardinal (3 days a week long distance service) and Hoosier State (4 days a week intercity passenger rail service). The Hammond-Whiting Station is served by the Wolverine Service (intercity passenger rail service) with two daily round trips. Trains to Chicago depart Hammond-Whiting at 3:09 p.m. and 10:09 p.m.; trains from Chicago arrive at 7:46 a.m. and 1:16 p.m.
- **Chicago Transit Authority (CTA):** CTA operates 140 fixed bus routes and 8 rapid transit lines in the City of Chicago, and 35 surrounding suburbs (CTA 2016). The CTA Red Line Rapid Transit line may be an option for some Northwest Indiana residents. The terminal station at 95th Street and I-90/I-94 would be the nearest point of access.
- **Pace:** The Suburban Bus Division of the Regional Transportation Authority (RTA), Pace, offers fixed route bus service primarily to 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 as well as the destinations within the Study Area that they serve – NICTD's Hegewisch Station or Hammond (Pace 2014): Route 350 (Sibley); Route 355 (Wentworth Limited); Route 358 (Torrence); and Route 364 (159th Street). All of these routes except for Route 350 connect with the SSL at the Hegewisch Station. Routes 350 and 364 have a terminal stop at Morton Court/Willow Court in Hammond. The Pace bus routes that serve the Study Area are shown on **Figure 3.2-2**.
- **Gary Public Transportation Corporation (GPTC):** GPTC operates a system of 10 routes in Northwest Indiana, which serve the City of Gary, Calumet Township, Crown Point, East Chicago, Griffith, Hammond, Hobart, and Merrillville. GPTC services connect with Pace, East Chicago Transit (ECT), CTA, and the SSL at the Miller, Gary Metro Center, Clark Road, and Hammond Stations. The #12 (Lakeshore Connection) and #24 (Lakeshore South) routes operate near the Study Area.
- **East Chicago Transit:** ECT provides free fixed route bus and paratransit service. The system's three fixed routes all serve the SSL East Chicago Station.



SOURCE: RTA 2016

Figure 3.2-2: Regional Transportation Authority System Map

3.2.4 Environmental Consequences

3.2.4.1 Long-Term Operating Effects

Project effects on transit service were evaluated based on the expected ridership changes and existing transit service route interface with the Project service. The projected ridership on the NICTD system for the Build Alternatives and the No Build Alternative is presented in **Table 3.2-1**. There are comparatively small differences in ridership between the Build Alternatives. The introduction of service to the Study Area would reduce the number of SSL forecasted boardings by between 8 and 11 percent, depending on the alternative, because the Project would attract some riders for whom the NEPA Preferred Alternative would be more convenient than the existing SSL (e.g., boarding station is closer to their residence).

Table 3.2-1: NICTD 2040 Average Weekday Ridership

Alternative	Existing SSL	West Lake Corridor Project	TOTAL	Percent Difference No Build vs Build Alternatives
2013 Existing	12,225	-	12,225	-
2040 No Build Alternative	19,535	-	19,535	-
NEPA Preferred Alternative	16,870	7,120	23,990	+23%
Commuter Rail Alternative	17,470	6,220	23,690	+21%
IHB Alternative	18,010	5,750	23,760	+22%
Hammond Alternative Options 1 and 3	16,870	7,120	23,990	+23%

SOURCE: FTA STOPS Model application (AECOM 2016).

The increase in ridership is reflective of the travel times associated with the Build Alternatives. **Table 3.2-2** presents the travel times from each proposed station to Millennium Station. These times do not include any additional travel time needed to or from a passenger’s boarding or alighting station. For comparison, the No Build Alternative includes the drive time from the area of the proposed station to the existing SSL Hammond Station combined with the travel time on the existing SSL to Millennium Station. The NEPA Preferred Alternative and Hammond Alternative would serve the Hegewisch Station during peak periods (i.e., 5:30 a.m. to 9:00 a.m. and 4:00 p.m. to 7:30 p.m.). During off-peak periods, these alternatives would serve the proposed Hammond Gateway Station where passengers would be able to transfer to the SSL to downtown Chicago.

Table 3.2-2: Average Peak Period¹ Travel Time (minutes) to Millennium Station

Proposed Station	Drive	No Build Alternative	NEPA Preferred Alternative	Commuter Rail Alternative	IHB Alternative	Hammond Alternative Options 1 and 3
Munster/Dyer Main Street	86	67	47	50	46	47
Munster Ridge Road	75	56	43	46	42	43
South Hammond	72	51	39	42	38	39
Downtown Hammond	66	41	-	38	34	
Hegewisch/Hammond Gateway	59	30	29	28	-	29

SOURCE: FTA STOPS Model application (AECOM 2016).

Note: ¹Peak: 5:30 a.m. to 9:00 a.m. and 4:00 p.m. to 7:30 p.m.

Based on the data from the STOPS model, any of the transit alternatives would be faster than driving to Millennium Station by 30 minutes or more. The travel time savings of the Build Alternatives would be greatest for those currently residing farthest from the SSL Hegewisch Station. Riders who would board at the Munster/Dyer Main Street Station would save between 17 and 21 minutes when compared to taking the SSL, while passengers who would board at the Downtown Hammond Station, which is closer to the SSL Hegewisch Station, would save between 3 and 7 minutes. The Indiana Harbor Belt (IHB) Alternative Options would have the shortest travel time because it is a slightly shorter alignment than the other Build Alternatives. The NEPA Preferred Alternative would only be a minute longer than the IHB Alternative travel times.

No Build Alternative

The No Build Alternative includes NICTD’s Double-Track Project between Gary and Michigan City, which would enable NICTD to operate a higher level of service, including more express trains. These improvements in frequency and speed explain much of the 60 percent increase in SSL boardings between 2013 and 2040 (i.e., 12,225 to 19,535 weekday boardings), shown in **Table 3.2-1**.

NEPA Preferred Alternative

The NEPA Preferred Alternative would share rail infrastructure with the existing passenger rail service operating on the SSL between the Indiana-Illinois state line and Kensington and on the MED line between Kensington and Millennium Station. Possible impacts to each include:

- **SSL between State line and Kensington:** The track that the existing SSL operates on between the Indiana-Illinois state line and the connection with the MED is owned by Chicago South Shore & South Bend (CSS). While CSS is responsible for controlling this section of shared railroad in Illinois, the SSL has rights to operate along this portion of the CSS freight line. Priority is given to commuter trains during the peak periods.

The Project would add 12 trains to the current 24 trains operating during the peak periods, and none during the off-period. Given the priority to passenger operations in the peak periods, Project trains can be added without constraining capacity along this section of rail line.

- **MED between Kensington and Millennium Station:** The results of the RTC simulation analysis, described in **Section 3.2.2**, indicated that the MED line has sufficient capacity to accommodate the proposed Project service. Project trains can be added to today's operation and infrastructure with relatively little disruption to schedules and on-time performance (NICTD 2015a).

The projected ridership for the NEPA Preferred Alternative in 2040 would be the highest of all of the alternatives. As shown in **Table 3.2-1**, the SSL ridership would decrease from the No Build conditions. The NEPA Preferred Alternative service would reduce the number of SSL No Build Alternative forecasted boardings by 14 percent. Overall, the NEPA Preferred Alternative would raise ridership 20 percent (i.e., 19,535 with the No Build Alternative versus 23,990 with the NEPA Preferred Alternative).

The opportunity for passengers to transfer between Project and SSL trains at the proposed Hammond Gateway Station would expand the potential destinations for Project riders (i.e., SSL stations East Chicago to South Bend). In addition, the development of the Hammond Gateway Station would allow the service plan to include shuttle trains operating between the Munster/Dyer Main Street and the Hammond Gateway Stations, making timed connections to SSL trains. This feature would expand service hours to approximately 18 hours per weekday, and add operation on weekends.

The NEPA Preferred Alternative would not affect existing bus service. The NEPA Preferred Alternative would not affect the current service provided by Amtrak. While serving similar origin and destination points, the frequency and timing of the Amtrak service would serve different markets than the proposed new service. 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.

Commuter Rail Alternative Options

All Commuter Rail Alternative Options would have slightly lower projected ridership than the NEPA Preferred Alternative. They would also cause the SSL ridership to decrease, although overall ridership on all NICTD service would increase by 2040, as shown in **Table 3.2-1**. All Commuter Rail Alternative Options would offer the opportunity for peak period Project passengers to transfer to SSL trains at the Hegewisch Station for destinations east of Hammond (i.e., between Hammond and South Bend).

All Commuter Rail Alternative Options would have the same effect on bus routes. Pace Routes 350 and 364 as well as GPTC #12 and #24 would not be able to use Willow Court as part of their turnaround at their Hammond terminals. Cul-de-sacs are proposed on Willow Court east of State Line Avenue and at Morton Court, which would eliminate the use of these streets for the affected bus routes. In addition, GPTC Route #24 buses operate along Douglas Street and could potentially connect with the proposed Downtown Hammond Station. All Commuter Rail Alternative Options would serve the SSL Hegewisch Station and would have the potential to expand the market for Pace Routes #355, #358, and #364. The lack of impacts to area Amtrak service from the NEPA Preferred Alternative would also apply to all Commuter Rail Alternative Options.

IHB Alternative Options

All IHB Alternative Options would have a lower effect on projected ridership than the NEPA Preferred Alternative. They would not provide Project passengers the opportunity for convenient transferring to SSL stations east of Hammond. The four options for the IHB Alternative would have no negative effects on transit service and, similar to all options of the Commuter Rail Alternative, could connect

with the Route #24 bus at the Downtown Hammond Station. The lack of impacts to area Amtrak service noted for the NEPA Preferred Alternative would also apply to all IHB Alternative Options.

Hammond Alternative Options 1 and 3

Hammond Alternative Options 1 and 3 would have the same impacts on transit service as the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

The option to cross the Maynard Junction at-grade would introduce no additional or different impacts on existing transit service to the impacts described for the applicable alternative options (i.e., NEPA Preferred Alternative, Commuter Rail Alternative Options 1, 2, and 3; IHB Alternative Options 1, 2, and 3; and Hammond Alternative Option 1) because transit service does not operate in this area.

3.2.4.2 Short-Term Construction Effects

Under the No Build Alternative, no construction effects would occur since the Project would not be built. Construction impacts would be the same for all Build Alternatives. Construction could result in intermittent impacts to bus operations within the construction area, which may 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 result in any long-term impacts on public transportation and, therefore, would not require mitigation. The NEPA Preferred Alternative and other Build Alternatives would have a similar positive effect on transit ridership within the NICTD system, although they would result in a lower SSL ridership than the future No Build Alternative. The NEPA Preferred Alternative and other Build Alternatives would have no impact on existing bus service, but have the potential to increase the number of bus transfers at the SSL Hegewisch Station.

3.2.5.2 Short-Term Construction Effects

The No Build Alternative would not result in any short-term construction impacts on public transportation and, therefore, would not require mitigation. Construction impacts and the mitigation measures proposed would be the same for all Build Alternatives. Construction 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 Engineering and Construction phases of the Project, and coordinated with transit authorities. Advanced warning for lane closures and detours would be provided according to the work zone traffic control plans, which would be developed during the Engineering phase of the Project.

3.3 Freight Rail

This section describes the existing freight infrastructure and service within the Study Area and the potential impacts of the Build Alternatives compared to the No Build Alternative.

3.3.1 Regulatory Setting

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), 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)).

3.3.2 Methodology

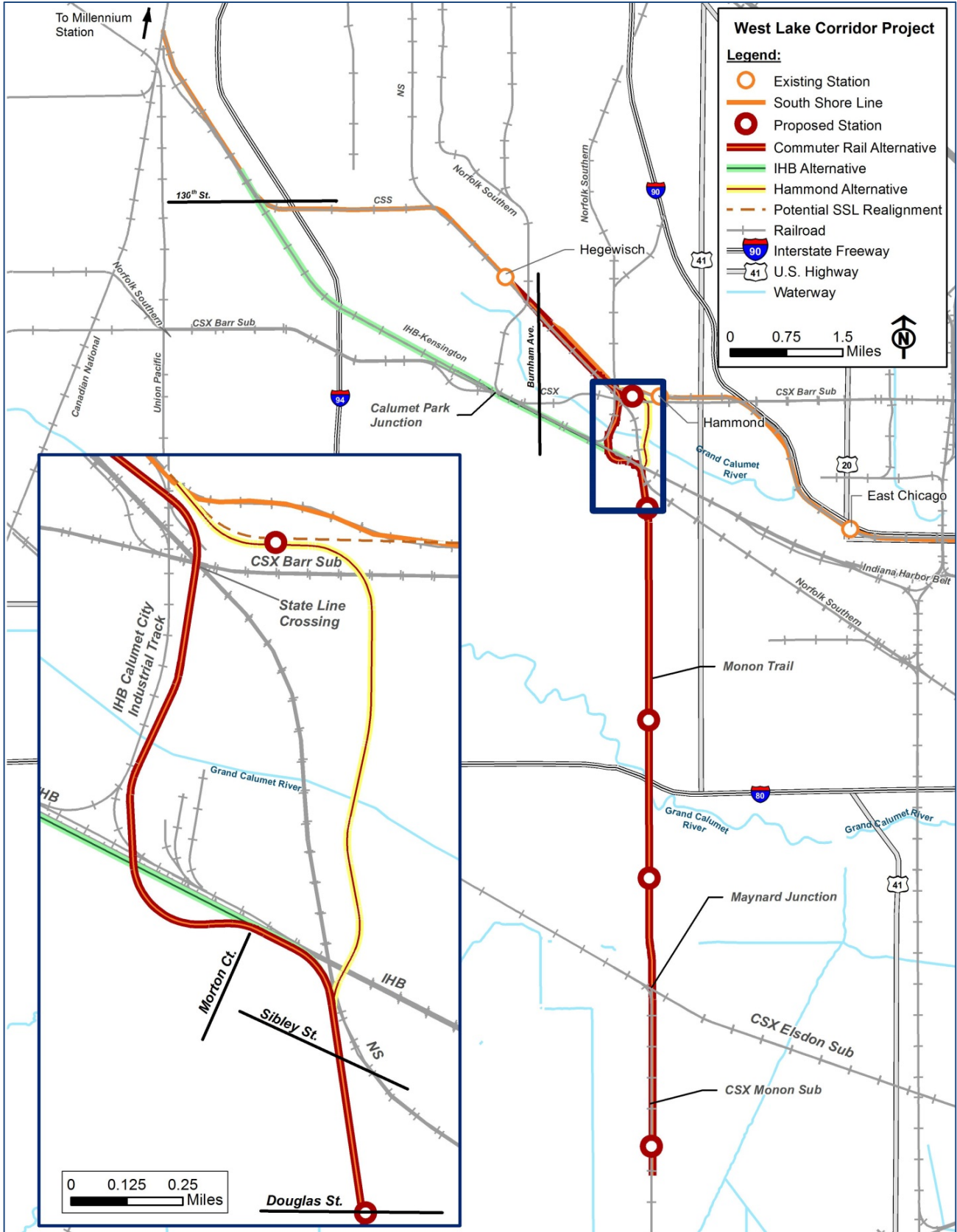
Data collection efforts documented the existing railroad ownership and operating characteristics for both existing and future freight rail within the Study Area. This effort included consultations with Canadian National (CN), CSX Transportation, Norfolk Southern (NS), Conrail Shared Assets (Conrail), IHB, and CSS. NICTD conducted extensive consultation with all railroads (correspondence is included in the *NICTD Railroad Coordination Technical Memorandum* in **Appendix F**). The Study Area for the freight railroads includes the portion of the railroad right-of-way (ROW) within 500 feet of the Project.

3.3.3 Affected Environment

Northwest Indiana has a dense network of freight rail lines, due to Chicago’s role as the nation’s rail hub and to the area’s historic heavy industrial uses. While 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 provide service in Northwest Indiana, including CN, CSX, and NS. In addition, several regional (Class II) and short-line (Class III) railroads serve the area, including two that are based in Northwest Indiana, IHB and CSS. A map of freight rail alignments is provided on **Figure 3.3-1**.

Planned projects of freight rail carriers in the Study Area include:

- IHB is planning to construct an 8,000-foot siding to support a customer’s unit train operation. This improvement would generally be located between the Calumet Park Junction and the Hohman Avenue overpass (Conrail letter dated 2015 in the *NICTD Railroad Coordination Technical Memorandum* in **Appendix F**).
- CSS is planning an expansion of the Burnham Yard, which is located south of the SSL, between the Indiana-Illinois state line and Burnham Avenue.



SOURCE: AECOM 2016.

Figure 3.3-1: Existing Freight Rail Lines

3.3.4 Environmental Consequences

3.3.4.1 Long-Term Operating Effects

The interaction between passenger rail and freight rail service could have implications on the timing, schedule, and capacity of existing and planned freight rail service within the Study Area.

No Build Alternative

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

NEPA Preferred Alternative

The NEPA Preferred Alternative would not cross any freight railroad tracks at-grade, or share railroad ROW or infrastructure. One area of potential impact is the design and placement of bridge structure piers for flyovers of active freight rail lines. This would involve three locations and four rail lines, including:

- CSX Barr Subdivision freight line west of Sheffield Avenue in Hammond
- IHB freight line and NS Ft. Wayne Line east of Hohman Avenue in Hammond
- CSX Elsdon Subdivision (former CN) freight line at Maynard Junction in Munster

The flyover piers could be located on privately-owned railroad property, which would have the potential to affect expansion options of the freight railroad infrastructure.

Commuter Rail Alternative Options

The four options for the Commuter Rail Alternative would have the same potential effect on freight railroad operations as the NEPA Preferred Alternative. In addition, all Commuter Rail Alternative Options would potentially conflict with IHB's planned 8,000 foot freight track on the south side of the IHB freight line between Hohman Avenue and the Calumet Park Junction.

A portion of the proposed Commuter Rail Alternative alignment for all options would be located on unused ROW previously owned by Chicago and Western Indiana (CWI), and currently owned by NS. Officials from NS have been briefed on the potential acquisition by the Project, but have yet to respond. The use of this ROW by the Commuter Rail Alternative Options would potentially limit expansion of NS service in this area. Details on coordination with freight rail operators are included in the *NICTD Railroad Coordination Technical Memorandum* in **Appendix F**.

IHB Alternative Options

The four options for the IHB Alternative all propose to share currently unused IHB ROW between Hohman Avenue and Calumet Park Junction, and to upgrade the existing IHB Kensington Branch track west of Calumet Park for the exclusive use of the Project service, and construct a new parallel track for use by freight traffic. Because the freight railroad track would be completely replaced as part of all IHB Alternative Options, and freight service would be able to continue as before the construction, no long-term freight operational impacts are anticipated. Potential impacts associated with bridge structures would be similar to those identified for the NEPA Preferred Alternative and the Commuter Rail Alternative Options. However, the proposed alignment of the IHB Alternative Options could be in direct conflict with a proposed IHB siding and potentially limit IHB's ability to expand their service. The flyover at the Calumet Park Junction of the IHB Mainline and the CSX Barr Subdivision freight lines could require the spreading of tracks to construct piers within the ROW of these freight railroad operators, which could affect their ability to expand their infrastructure in the future. Conrail

Shared Assets, as the majority owner of the IHB Kensington Branch, submitted a letter indicating that they cannot support use of this proposed alignment for the Project (Conrail Shared Assets letter dated 2015 in the *NICTD Railroad Coordination Technical Memorandum* in **Appendix F**).

Hammond Alternative Options 1 and 3

Hammond Alternative Options 1 and 3 would have the same effect on freight railroad options as the NEPA Preferred Alternative. In addition, Hammond Alternative Option 3 would involve the Project spanning both the CSX Elsdon Subdivision freight line and the CSX Monon Subdivision freight line connecting at the Maynard Junction, so as to route the Project along the west side of the CSX Monon Subdivision freight line to the Munster/Dyer Main Street Station. A CSX agreement to construct bridge supports for the Project on CSX property would be needed. Details on coordination with freight rail operators are included in the *NICTD Railroad Coordination Technical Memorandum* in **Appendix F**.

Maynard Junction Rail Profile Option

The Maynard Junction Rail Profile Option would cross the CSX Elsdon Subdivision freight line at-grade. This would affect the capacity of the Maynard Junction as the Project would introduce new north-south traffic through the crossing. The increased congestion at the Maynard Junction could potentially result in delays to the freight network, although it is likely that the commuter trains would be affected more, since permission for them to cross the freight rail track would be controlled by the freight railroad. This impact would be in addition to the freight rail impacts described for the applicable alternative options (i.e., NEPA Preferred Alternative, Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Option 1).

3.3.4.2 Short-Term Construction Effects

Under the No Build Alternative, no construction impacts would occur since the Project would not be built. During construction of the NEPA Preferred Alternative or the other Build Alternatives, NICTD and its contractors would require access to CSX, NS, IHB, or CSS properties, and would perform activities in proximity to their operations. These activities would mostly involve the construction of bridges to enable the Project to span existing freight rail lines.

3.3.5 Avoidance, Minimization, and/or Mitigation Measures

3.3.5.1 Long-Term Operating Effects

The No Build Alternative would not result in any long-term impacts on freight railroad operations and, therefore, would not require mitigation. The NEPA Preferred Alternative and other Build Alternatives involve potentially requiring placement of bridge structure piers on privately-owned railroad properties, which would need to be resolved in the Engineering phase of the Project. This work would need to be closely coordinated with the affected freight railroad operators. 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 result in any short-term construction impacts on freight rail operations and, therefore, would not require mitigation. For all Build Alternatives, 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 Engineering and Construction phases and submitted for approval by the freight railroad entities. NICTD would coordinate with each freight railroad operator regarding the nature and extent of construction activities

affecting the respective freight railroad operator's property. NICTD and its contractors would comply with each freight railroad operator's access, safety, and operational requirements during Project construction on or near the respective freight railroad operator's property, including securing appropriate easements and agreements, adopting the freight railroad operator's safety procedures, and ensuring each freight railroad operator access to their facilities at all times. CSX, NS, IHB, and CSS operations would be maintained at all times during construction of the Project.

3.4 Bicycle and Pedestrian

This section describes the condition of existing transportation-related pedestrian and bicycle facilities located in the Study Area. Recreational pedestrian and bicycle infrastructure is also discussed in **Section 4.5**. Impacts to Section 4(f) resources are assessed in more detail in **Chapter 7**. This section also discusses potential environmental consequences that would result from implementation of the Build Alternatives in comparison to the No Build Alternative.

3.4.1 Regulatory Setting

No federal laws, regulations, or executive orders specifically regulate how impacts to pedestrian and bicycle facilities resulting from transit projects should be evaluated. However, NEPA provides the general legal framework for considering potential impacts. 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 § 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

Pedestrian and bicycle facilities, such as sidewalks, trails, and bridges for non-motorized transportation, exist within the Study Area. Impacts to these facilities were identified based on the proximity of the resource to the alternative and whether the existing or planned facility would be affected long-term (e.g., relocation of facility required) or short-term (e.g., route detour during construction).

3.4.3 Affected Environment

The development of non-motorized trail systems has been actively promoted by local and regional agencies in Northwest Indiana and south suburban Cook County. The following list of trails in the Study Area was obtained through the Rails-to-Trails Conservancy website (Rails-to-Trails Conservancy 2014).

- **Pennsy Greenway** includes a trail between Calumet City, Illinois and Schererville, Indiana, using an abandoned Pennsylvania Railroad line. Plans to complete two gaps are in progress, including the gap where the trail ROW crosses the Study Area. The Town of Munster is planning a grade separation of Calumet Avenue and the CN freight line. The Pennsy Greenway will also be part of the American Discovery Trail, a 6,800 mile trail stretching coast to coast.
- **Erie Lackawanna Trail** runs between Crown Point and Hammond, using the former Erie Lackawanna Railway ROW.

- **Monon Trail** uses the former Monon Railroad alignment between the Pennsy Trail near Fisher Street in Munster and the Erie Lackawanna Trail at Douglas Street in Hammond.
- **Little Calumet River Levee Trail** is located between Gary and the Hammond/Munster border. The alignment is located south of the Frank Borman Expressway (I-80/I-94), running generally along the Little Calumet River.
- **Burnham Greenway** has two distinct sections that run along a former railroad corridor between Chicago and Lansing in Illinois. There are plans to connect the two portions, filling the gap between the IHB/CSX freight line crossing in Burnham and the SSL in Hegewisch. The “Burnham Gap” would bridge over the IHB/CSX freight line crossing on the south end and be at grade with the SSL on the north end of the Gap. The proposed alignment would run just west of Burnham Avenue.



SOURCE: AECOM 2014.

In addition to the trails, there is a series of on-street bicycle routes within the Study Area as shown on **Figure 3.4-1**. Sidewalks and intersection corner curb ramps are located throughout the Study Area, although not present along every street.

3.4.4 Environmental Consequences

3.4.4.1 Long-Term Operating Effects

No Build Alternative

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

NEPA Preferred Alternative

The NEPA Preferred Alternative’s proposed track alignment would overlay portions of the Monon Trail (approximately 5,000 feet) between Fisher Street (in Munster) and Douglas Street (in Hammond) and approximately 320 feet of the Erie Lackawanna Trail near downtown Hammond.

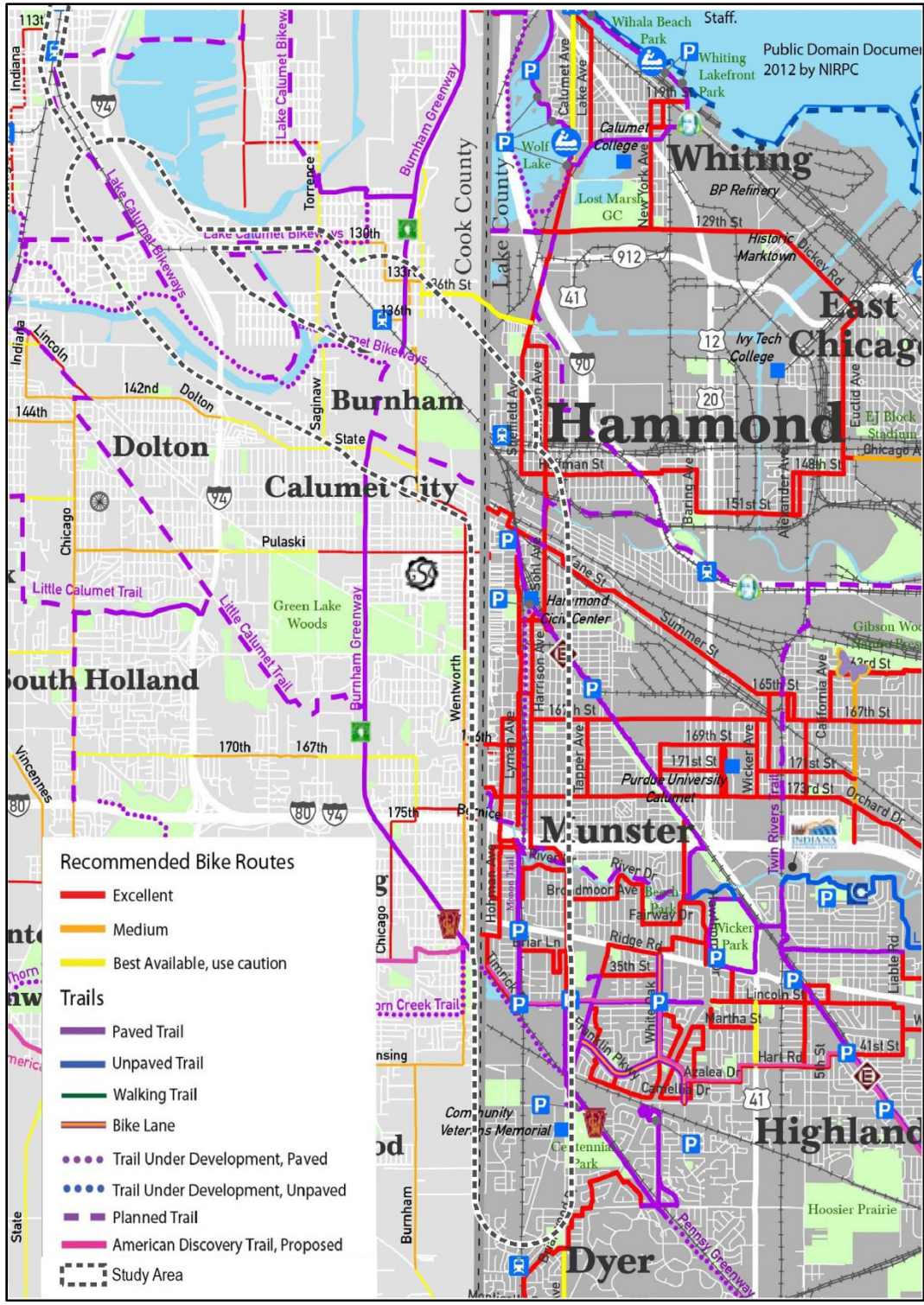
In general, along the length of the Monon Trail alignment, pedestrians and cyclists can currently cross east-west across the Monon Trail at any point. However, with the NEPA Preferred Alternative, access across the tracks would be restricted to at-grade street crossing locations for safety purposes. This would result in extra travel for pedestrians and cyclists to cross the proposed alignment. The current alignment of the trail would also be relocated for several segments to accommodate the Project track and overhead contact system (OCS) infrastructure. This 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 alignment.



SOURCE: AECOM 2014

Monon Trail Bridge over the Little Calumet River

This 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 alignment.



SOURCE: NIRPC 2012.

Figure 3.4-1: Bike Trails Map

For the programmed Pennsy Greenway south of Fisher Street in Munster, the Project flyover of the CSX Elsdon Subdivision freight line would include a culvert or bridge as part of the proposed retained fill rail structure for trail passage under the structure. The NEPA Preferred Alternative would have no long-term impacts on the Little Calumet River Levee Trail or the Burnham Greenway. Locations where

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

- **Russell Street (in Downtown Hammond):** A cul-de-sac is proposed at the intersection of Russell Street and Lyman Avenue because the proposed alignment would be on an embankment at this location. The Project would eliminate the existing sidewalks along Russell Street between Lyman Avenue and Oakley Avenue. This portion of Russell Street currently has unconnected stretches of sidewalk, which are mostly in deteriorated condition and, therefore, not often used by pedestrians. Pedestrians would still have access across the proposed alignment on Fayette Street (600 feet to the north) or Douglas Street (700 feet to the south).
- **Hammond Gateway Station and North Hammond Maintenance Facility:** The NEPA Preferred Alternative would result in the closure of several streets in order to accommodate the proposed Hammond Gateway Station as well as the North Hammond Maintenance Facility. Only Hanover Street, Brunswick Street, and Wabash Avenue currently include sidewalks. These facilities provide access to the residential properties along these streets. All three streets would be removed as result of the Project, and the adjacent properties acquired for the siting of the proposed Hammond Gateway Station (including surface parking).

Commuter Rail Alternative Options

The four options for the Commuter Rail Alternative would have the same impact on the Monon Trail, Erie Lackawanna Trail, and east-west pedestrian access across the track as the NEPA Preferred Alternative. The Commuter Rail Alternative Options would have the same potential long-term impacts on the Pennsy Greenway associated with an opening through the proposed retained fill rail structure. This Alternative would have no long term impacts on the Little Calumet River Levee Trail or the Burnham Greenway. Locations where existing east-west access would be eliminated are described below and would be the same for all four options. The street network connectivity changes are described in **Section 3.5**.

- **Willow Court between State Line Avenue and Morton Court (Hammond):** The cul-de-sacs proposed on Willow Court between State Line Avenue and Morton Court would likely not impact pedestrian traffic as there are currently few portions of the street with sidewalks.
- **Willow Court between Morton Court and Oakley Avenue (Hammond):** The proposed cul-de-sacs on Willow Court east and west of Hohman Avenue would eliminate pedestrian access along Willow Court under Hohman Avenue. Pedestrians would still have access along Sibley Street to connect between destinations east and west of Hohman Avenue. Sibley Street is 600 feet south of Willow Court and would not impose considerable out of direction travel for pedestrians.
- **State Street (Hammond):** Pedestrian access across the NS railroad tracks would be restricted along State Street, east of Hohman Avenue, because of the proposed change to the street alignment. Pedestrians would still have access along Sibley Street to connect between destinations east and west of Hohman Avenue. Sibley Street is 300 feet south of State Street and would not impose considerable out of direction travel for pedestrians.
- **Russell Street (Hammond):** A cul-de-sac proposed at the intersection of Russell Street and Lyman Avenue and the proposed Downtown Hammond Station would eliminate the existing sidewalks along Russell Street between Lyman Avenue and Oakley Avenue. This portion of Russell Street currently has unconnected stretches of sidewalk, which are mostly in deteriorated conditions and, therefore, not often used by pedestrians. Pedestrians would still have access across the proposed Commuter Rail Alternative alignment for all options on Fayette Street (600 feet to the north) or Douglas Street (700 feet to the south).

IHB Alternative Options

The four options for the IHB Alternative would have the same impacts on the Monon Trail, Erie Lackawanna Trail, and east-west pedestrian access across the track as the NEPA Preferred Alternative. This alternative would have no long-term impacts on the Pennsy Greenway, Little Calumet River Levee Trail, or Burnham Greenway. All IHB Alternative Options would result in the same impacts to pedestrian access and connectivity as all Commuter Rail Alternative Options except for Willow Court between State Line Avenue and Morton Court (Hammond). All IHB Alternative Options would not include any changes to the street or sidewalks along this section of Willow Court.

The proposed IHB Alternative flyover crossing of the IHB and the CSX Barr Subdivision freight lines at the Calumet Park Junction for all options is also the location of the proposed flyover of the Burnham Greenway Trail between Lansing and Chicago. Because the trail bridge would cross north-to-south and the Project structure southeast to northwest, it would require the trail bridge design to be revised and to be located over the elevated track for the Project service.

Hammond Alternative Options 1 and 3

Hammond Alternative Options 1 and 3 would have the same impact on the Monon Trail, Erie Lackawanna Trail, and east-west pedestrian access across the track as the NEPA Preferred Alternative. These options would also control east-west pedestrian/bicycle access across the proposed alignment as described for the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

The Maynard Junction Rail Profile Option would result in the rail alignment continuing at-grade from Fisher Street in Munster south to 45th Street. This portion of the proposed alignment would cross the Pennsy Greenway. With this option, the Pennsy Greenway is proposed to be depressed under the proposed alignment to create a grade separation between the trail and the tracks. This impact would replace the Pennsy Greenway impacts described in previous sections for the applicable alternative options (i.e., NEPA Preferred Alternative, Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Option 1).

3.4.4.2 Short-Term Construction Effects

Under the No Build Alternative, no construction impacts would occur since the Project would not be built. Construction impacts would be similar for all Build Alternatives. During construction, temporary closures or detours are anticipated to affect existing facilities. Construction traffic and debris such as excess dirt could also pose obstacles or issues for pedestrians and bicyclists. Construction impacts are generally expected to be similar for each alternative, with greater impacts where there are more existing pedestrian and bicycle facilities in or near the construction zone. In particular, the Monon Trail and the Erie Lackawanna Trail would experience the greatest pedestrian- and bicycle-related construction impact.

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 long-term impacts on bicycle and/or pedestrian facilities and, therefore, would not require mitigation. All Build Alternatives would have the same impact on the Monon Trail and the Erie Lackawanna Trail. The trails would be relocated adjacent to the proposed track. Fencing to prohibit pedestrians and cyclists from crossing the track where east-

west pedestrian or cycling facilities do not exist would be provided where deemed important from a safety perspective. All at-grade crossings would include east-west pedestrian access to maintain the existing continuity of the sidewalk network. Because street closures would occur along Hanover Street, Brunswick Street, and Wabash Avenue for the NEPA Preferred Alternative and Hammond Alternative Options 1 and 3, sidewalk removal would not be mitigated.

3.4.5.2 Short-Term Construction Effects

The No Build Alternative would not result in any short-term construction impacts on bicycle and/or pedestrian facilities and, therefore, would not require mitigation. For all Build Alternatives, construction mitigation for potential 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, pedestrians would be directed to use alternate crossings nearby. Reasonably feasible efforts would be made to not close adjacent crosswalks at the same time 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. Depending on how construction activities would impact sidewalk areas, special facilities (such as handrails, fences, barriers, ramps, and walkways) would be implemented to maintain bicyclist and pedestrian safety. During the Engineering phase, it is expected that a plan would be developed to manage the closure of pedestrian crossings and other restrictions on non-motorized transportation facilities and crossings throughout the construction process.

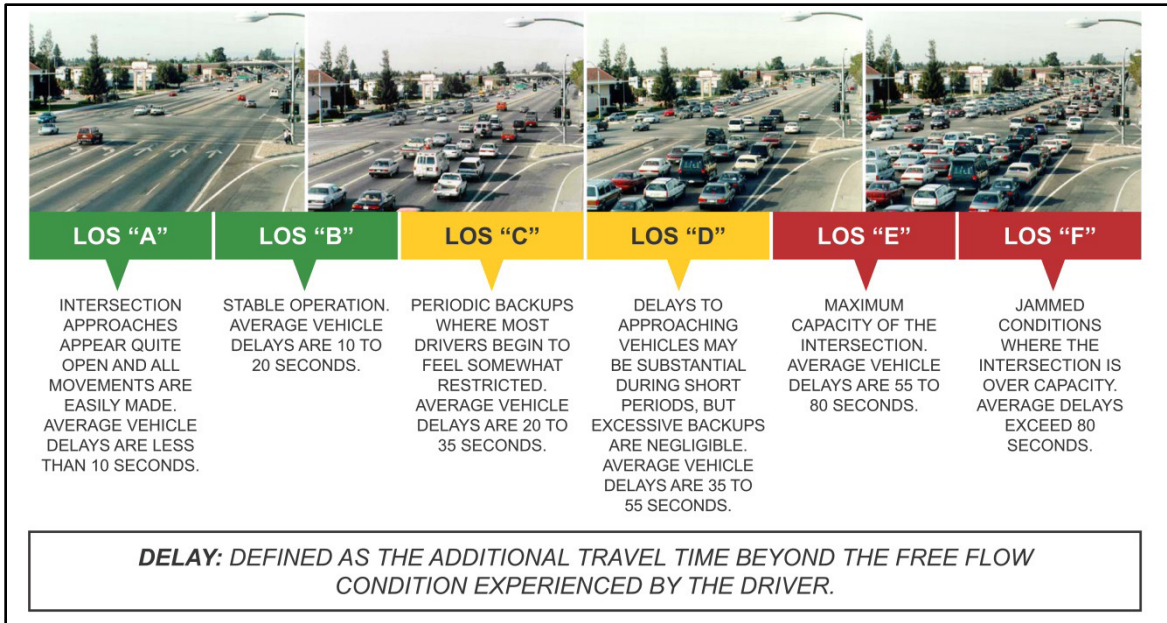
3.5 Traffic

Traffic operations analyses that were developed for the Build Alternatives are summarized in this section along with potential effects as compared to the No Build Alternative and proposed mitigation for potential impacts. Information included in this section is based in part on the results and findings provided in the traffic simulation reports (see the *West Lake Corridor Traffic Technical Report* in Appendix H).

3.5.1 Regulatory Setting

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

The Indiana Department of Transportation's (INDOT) *Design Manual* (2013) and the Illinois Department of Transportation's (IDOT) *Bureau of Local Roads and Street Manual* (IDOT 2012) describe the acceptable level of service (LOS) for intersections depending on the type of roadway. The roadways are described as suburban arterials, collectors, and local roads. For the roadways in Indiana, LOS A to C is considered acceptable and LOS D, E, and F are unacceptable. 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 break-down conditions with substantial congestion and long delays (see **Figure 3.5-1**). The Illinois roadways classified as arterials have a minimum LOS C and any collectors have a minimum LOS D and preferable LOS C.



Source: AECOM 2015.

Figure 3.5-1: Level of Service (LOS) Diagram

At-grade highway/railroad crossings require warning devices be installed. Warning devices can either 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 in a down position, and timing for the gate arms to return to an upright position (FHWA 2009).

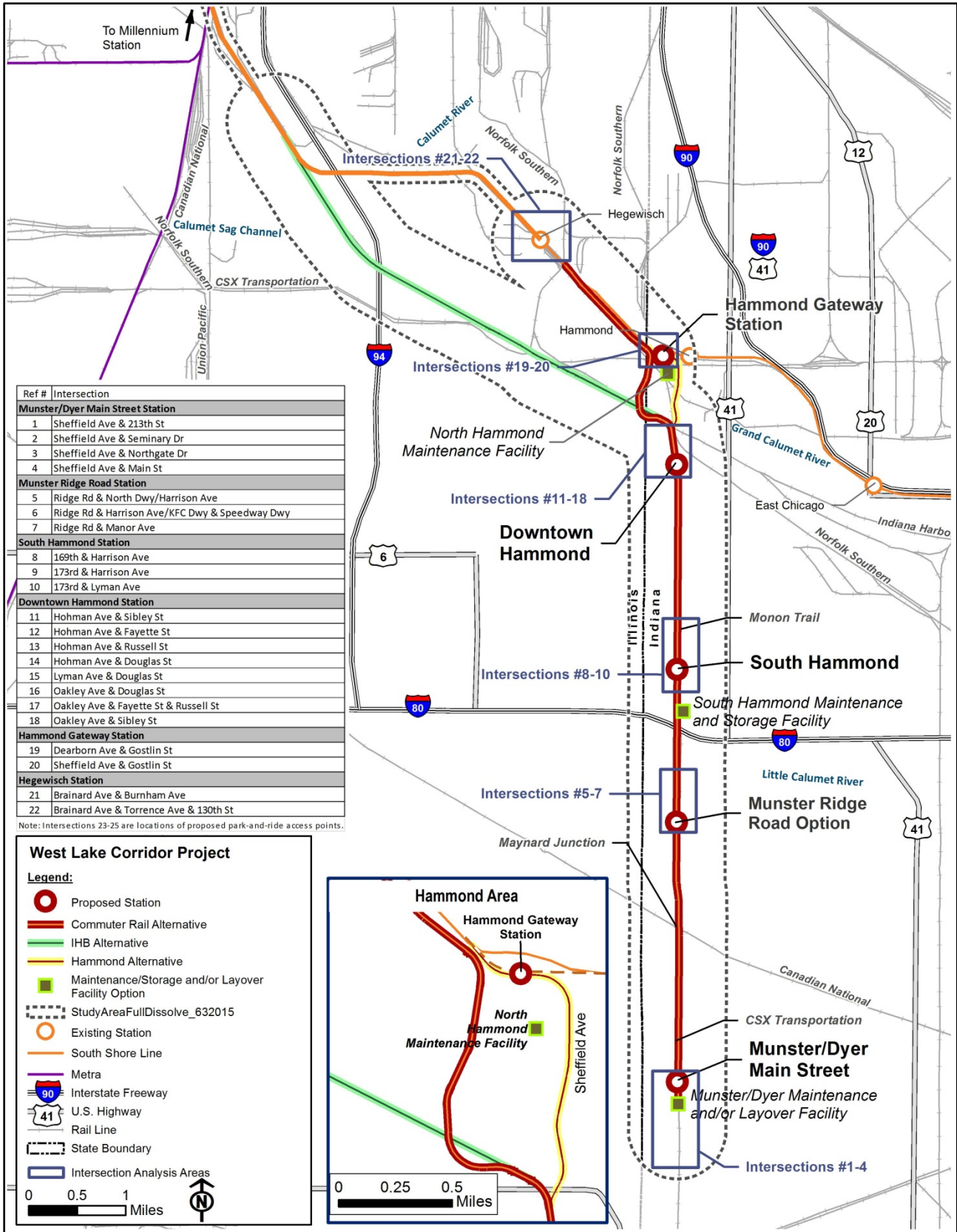
3.5.2 Methodology

3.5.2.1 Regional Traffic

The FTA STOPS model was used to determine projected changes in VMT and VHT to assess the effect of the Build and No Build Alternatives on regional transportation activity.

3.5.2.2 Intersection Operations

Traffic analysis was conducted at 25 intersections within the Study Area (22 existing intersections and 3 park-and-ride access points). **Figure 3.5-2** shows the locations of these intersections. The operations of these intersections were evaluated for existing conditions, the No Build Alternative (year 2040), and the Build Alternatives: the NEPA Preferred Alternative, Commuter Rail Alternative Options, IHB Alternative Options, and Hammond Alternative Options 1 and 3 (year 2040). The process involved collecting existing traffic data in 2014 and 2015, developing traffic projections, and estimating the site-generated traffic at each of the stations. These data were used to model the intersection operations using the Transportation Research Board’s (TRB) 2010 *Highway Capacity Manual (HCM)* for stop-controlled intersections and using the traffic simulation software Synchro 8 for signalized intersection conditions. The calculated delay was used to determine the LOS based on the criteria outlined in TRB’s HCM (2010).



SOURCE: AECOM 2015.

Figure 3.5-2: Intersection Traffic Count Locations

The potential Project impacts to traffic operations were identified by comparing the differences between the No Build and Build Alternatives during the planning horizon year 2040. This study sought to isolate traffic deficiencies caused by normal traffic growth over time from traffic impacts generated by the Build Alternatives. Two general thresholds were established to define an impact from the Project:

- If an intersection in the Build Alternative scenario operates at unacceptable conditions (LOS D, E, or F) but operates at acceptable conditions (LOS A, B, or C) in the No Build Alternative, the intersection is considered to be “impacted” and/or
- If the projected intersection delay is at unacceptable conditions (LOS D, E, or F) in the No Build Alternative and the change in delay between the No Build Alternative and Build Alternative is greater than 20 percent, this study considers the intersection to be “impacted.”

If the intersection was considered to be impacted by the Project, potential intersection modifications were considered to minimize or mitigate the impact. The operations of the proposed park-and-ride entrances/exits were also evaluated. As these access points are not present in existing condition and the No Build Alternative, impacts at access points were evaluated only in the Build Alternatives.

3.5.2.3 Highway/Rail At-Grade Crossings

The potential effects of highway/rail at-grade crossings on traffic operations were analyzed using a similar methodology to the intersection operational analysis. The analysis included data for existing train arrivals (if applicable), the Project train speeds, and the length of time traffic would be stopped by a train crossing the roadway. The time needed for the train to pass the crossing is dependent on its speed at that location and its length. Based on information from the MUTCD, it was assumed that the gates would descend in 12 seconds, include a 5-second buffer interval, and the time for the gates to return to an upright position would be 12 seconds.

For the Build Alternatives, the highway/rail at-grade crossings with the highest traffic volume per lane in the peak traffic hours were modeled as worst-case scenarios. SIM Traffic within Synchro 8 was used to perform the analysis. If the queue of vehicles from the gate closing would not fully clear prior to the next existing or Project train passing, then the Project is considered to have an impact.

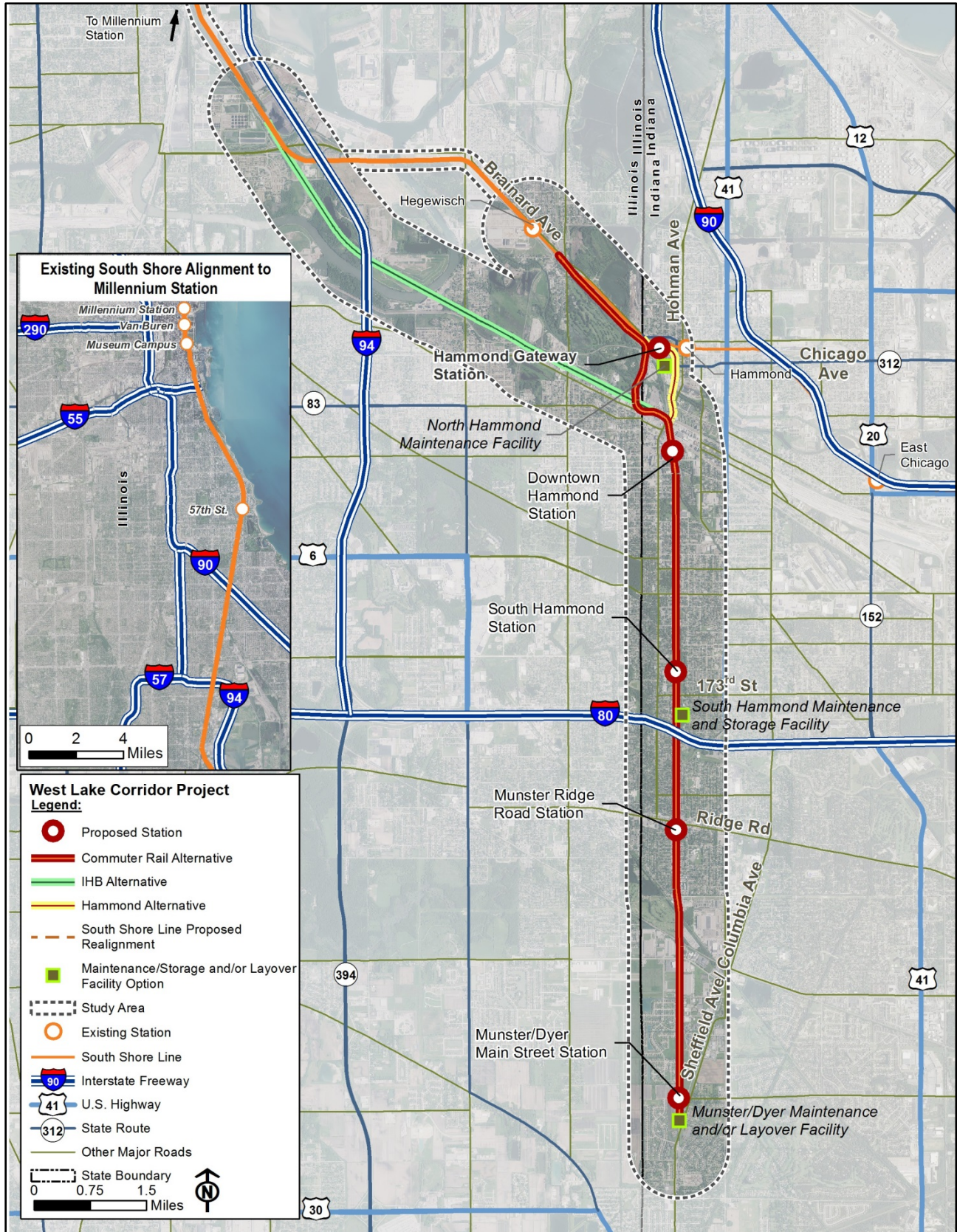
3.5.2.4 Roadway Network Connectivity

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

3.5.3 Affected Environment

Northwest Indiana is served by a comprehensive, hierarchical network of streets and roadways, ranging from local streets to interstate highways. Major routes are illustrated on **Figure 3.5-3**. Three of the nation’s principal east-west interstates, I-80, I-90, and I-94, traverse the Study Area. A primary link between Northwest Indiana and Chicago are the connections provided by these interstates; I-90 and I-94 provide the most direct access to downtown Chicago.

An extensive network of US and State routes also serve Northwest Indiana. Primarily built before the interstate system, use of this connected system of roads involves lower speeds than expressways. This network includes US 41, which has a north-south orientation through Lake County near the communities of Lowell, St. Joseph, Schererville, Highland, and Hammond. From Hammond, US 41 continues northwest into Chicago and becomes Lake Shore Drive.



SOURCE: ESRI 2008; FHWA 2014.

Figure 3.5-3: Major Roadways in the Study Area

3.5.4 Environmental Consequences

3.5.4.1 Long-Term Operating Effects

Effects of the Project on traffic operations were evaluated based on changes at the regional and local level as a result of the Project service. The projected VMT and VHT for the NEPA Preferred Alternative, Commuter Rail Alternative Options, IHB Alternative Options, and Hammond Alternative Options 1 and 3, as well as the No Build Alternative, are presented in **Table 3.5-1**. VMT is similar among the Project Build Alternatives because there are comparatively small differences in ridership among the Build Alternatives.

Table 3.5-1: NICTD Annual Regional VMT and VHT in 2040

Alternative	VMT	Percent Difference of VMT No Build vs Build Alternatives	VHT	Percent Difference of VHT No Build vs Build Alternatives
2040 No Build Alternative	26,404,841	-	1,064,452	-
NEPA Preferred Alternative	26,282,479	-0.5%	1,059,738	-0.4%
Commuter Rail Alternative	26,291,789	-0.4%	1,060,095	-0.4%
IHB Alternative	26,283,352	-0.5%	1,059,790	-0.4%
Hammond Alternative	26,282,479	-0.5%	1,059,738	-0.4%

SOURCE: FTA STOPS Model application (AECOM 2016).

No Build Alternative

The No Build Alternative would have no effect on reducing the VMT or VHT and, therefore, congestion of the region. A detailed analysis of the potential impacts of the No Build Alternative on the roadway system was performed to provide information about the quality of operations of existing roadways in planning horizon year 2040 and to enable a direct comparison of No Build Alternative and Build Alternatives impacts. The No Build Alternative analysis identified an increase in traffic delays as a result of expected increases in traffic volumes. Two intersections would operate at unacceptable LOS in the No Build Alternative. A comparison of the delay and LOS results for existing conditions and the No Build Alternative for these intersections is presented in **Table 3.5-2**. A table summarizing the delay and LOS for the 22 intersections analyzed for the No Build Alternative is included in the *West Lake Corridor Traffic Technical Report* in **Appendix H**.

Table 3.5-2: Intersection LOS – Existing Conditions and No Build Alternative

Ref. #	Intersection Name	Traffic Control Type ¹	Existing				No Build (2040)			
			Delay (sec/veh) ²		LOS ³		Delay (sec/veh) ²		LOS ³	
			AM	PM	AM	PM	AM	PM	AM	PM
2	Sheffield Avenue and Seminary Drive	TWSC	11.3	13.7	B	B	14.2	26.7	B	D
3	Sheffield Avenue and Northgate Drive	TWSC	12.2	13.5	B	B	16.9	25.2	C	D

SOURCE: AECOM 2016.

Notes: ¹TWSC -Two-Way Stop-Controlled; ²sec/veh - seconds per vehicle; ³LOS - level of service

As shown in **Table 3.5-2**, the two intersections operating at unacceptable LOS are at the southern end of the project. These intersections would fail as a result of the projected traffic growth along

Main Street and Sheffield Avenue. There would be no impacts on highway/rail at-grade crossing traffic operations or street connectivity associated with the No Build Alternative.

NEPA Preferred Alternative

The NEPA Preferred Alternative would result in a VMT savings of 122,362 miles and VHT savings of 4,714 hours per year within the region compared to the No Build Alternative. Four intersections near the proposed Munster/Dyer Main Street Station and South Hammond Station would be affected by the Project. Of these intersections, two would operate at an unacceptable LOS under No Build conditions in the PM peak hour. The delay and LOS in the No Build Alternative and NEPA Preferred Alternative at these intersections are presented in **Table 3.5-3**.

Table 3.5-3: Impacted Intersections – Munster/Dyer Main Street and South Hammond Stations

Ref #	Intersection Name	Control Type ¹	No Build (2040)				NEPA Preferred (2040)			
			Delay (sec/veh) ²		LOS ³		Delay (sec/veh) ²		LOS ³	
			AM	PM	AM	PM	AM	PM	AM	PM
Munster/Dyer Main Street Station										
2	Sheffield Avenue/Seminary Drive	TWSC	14.2	26.7	B	D	17.4	34.5	C	D
3	Sheffield Avenue/Northgate Drive	TWSC	16.9	25.2	C	D	25.9	44.2	D	E
4	Sheffield Avenue/Main Street	Signal	19.5	20.7	B	C	34.1	53.9	C	D
South Hammond Station										
9	173 rd Street and Harrison Avenue	AWSC	12.7	15.9	B	C	14.7	26.4	B	D

SOURCE: AECOM 2016.

Notes: ¹TWSC -Two-Way Stop-Controlled; AWSC - All-Way Stop Controlled; ²sec/veh - seconds per vehicle; ³LOS - level of service

The 173rd Street and Harrison Avenue intersection would fall below acceptable LOS to operate at a LOS D. The all-way stop control configuration at this intersection may not sufficiently support the projected traffic growth combined with the site-generated traffic from the South Hammond Station.

The NEPA Preferred Alternative includes the North Hammond Maintenance Facility, which would be located near the proposed Hammond Gateway Station. The facility is anticipated to be used by fewer than 15 employees, all of whom would work an overnight shift (arriving in the evening and departing in the very early morning). The proposed layover facility in Dyer would support approximately 30 employees; the majority of whom would arrive before 7:00 a.m. and depart after 6:00 p.m. train cleaners would arrive in the evenings and depart approximately 8 hours later. The traffic volumes generated by the facility would be minimal and would occur outside of the peak hours; as a result, the proposed North Hammond Maintenance Facility would have negligible impacts on traffic.

Eleven highway/rail at-grade crossings would be included in the NEPA Preferred Alternative. The highest traffic volume per lane would occur at the 173rd Street grade crossing. The traffic queue would clear in 35 seconds and the gates would only close twice in the AM peak hour and once in the PM peak hour; therefore, the new at-grade crossing would not substantially impact traffic operations. The other at-grade crossings would experience shorter queues as compared with 173rd Street; therefore, the new at-grade crossings of these other streets would have negligible impact on traffic operations.

The NEPA Preferred Alternative would require road closures where the proposed alignment crosses the existing street network and an at-grade crossing is not proposed, such as where sufficient vertical clearance between the existing road and the proposed guideway structure is not feasible or to avoid introducing a new at-grade crossing. Changes to the street connectivity would occur in Hammond as described below and illustrated in the Project plan view drawings provided in **Appendix G** (see page 23). Streets that would be affected include the following:

- **North of Grand Calumet River:** Much of the land area between the Project connection with the SSL near the state line and the Grand Calumet River is proposed to be redeveloped for the Hammond Gateway Station and the North Hammond Maintenance Facility. South of Gostlin Street, Dearborn Street would be reconfigured as the entrance to the station parking lot. Wabash Avenue would remain open between the CSX freight line and Marble Avenue.

Hanover Street (west of Sheffield Avenue) and Marble Avenue (between Wabash Avenue and Sheffield Avenue) would be developed as part of the NEPA Preferred Alternative. Hudson Street would be extended west of Sheffield Street to connect to Wabash Avenue, which would provide access to the remaining portion of Marble Street and the North Hammond Maintenance Facility.

- **State Street East of Hohman Avenue:** From Columbia Avenue, State Street is slightly more than 1 mile in length, bending northwest to Willow Court after crossing the two main tracks of the NS freight line where it terminates just east of Hohman Avenue. The NEPA Preferred Alternative would use the ROW of this segment of State Street. The Project would create a new roadway connection between State Street and Willow Court east of the NS freight line, as shown in the Project plan view drawings provided in **Appendix G** (see page 23).

Access from Sibley Street to the existing parking lot in the triangle of State Street and Hohman Avenue would be provided by using a bus lane from the Dan Rabin Transit Center, which is not currently used. Along Sibley Street in this area, the traffic volumes are relatively low; in November 2014 the AM peak hour traffic count was 45 vehicles and the PM peak hour count was 58 vehicles. Eliminating this NS freight line grade crossing would not substantially affect traffic operations and would have a safety benefit by eliminating potential train/vehicle conflicts.

Russell Street: The NEPA Preferred Alternative is proposed to 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 embankment throughout the vertical transition and there would not be sufficient clearance over Russell Street. As a result, Russell Street between Lyman Avenue and Oakley Avenue would be closed. This closure would require modifications to the traffic signal at Hohman Avenue and Russell Street to accommodate two-way traffic on the east leg. The intersection of Russell Street and Lyman Avenue would be designed as a cul-de-sac while maintaining the connection between these two streets. East of the track alignment, Russell Street would become a cul-de-sac to continue to provide access to properties between the proposed track and Oakley Avenue.

Commuter Rail Alternative Options

All options of the Commuter Rail Alternative would result in similar improvements in terms of reducing congestion as the NEPA Preferred Alternative with a VMT savings of 113,051 miles and VHT savings of 4,357 hours per year. The four options for the Commuter Rail Alternative would have similar impacts on the intersection operational performance and the highway/rail at-grade crossing performance as the NEPA Preferred Alternative. No impacts from the maintenance and storage or layover facilities would be associated with all Commuter Rail Alternative Options. All Commuter Rail Alternative Options would include 13 at-grade crossings and the largest queue would clear in 35 seconds (i.e., at the 173rd Street at-grade crossing). The gates would only close twice in the AM peak hour and once in the PM peak hour; therefore, there would be no substantial effect on traffic operations.

North of downtown Hammond, all Commuter Rail Alternative Options would bend north and west to pass under the Hohman Avenue bridge structure using the ROWs of State Street and Willow Court. After crossing under Hohman Avenue, the proposed alignment of all Commuter Rail Alternative Options would turn to cross the IHB freight line at an angle approaching 90 degrees; the angled approach would minimize the length of the structure span as shown in the Project plan view drawings provided in **Appendix G** (see pages 5 and 6).

Similar to the maintenance and layover facilities included in the NEPA Preferred Alternative, the South Hammond Maintenance and Storage Facility or the Munster/Dyer Maintenance or Layover facility would result in negligible traffic impacts. The traffic volumes generated by these types of facilities would be minimal and would occur outside of the peak hours.

All Commuter Rail Alternative options would require road closures at some railroad crossing locations, such as where sufficient vertical clearance between the existing road and the proposed guideway structure is not feasible or to avoid introducing a new at-grade crossing. Streets that would be affected include the following:

- **Russell Street:** The Downtown Hammond Station proposed as part of all Commuter Rail Alternative Options would require the removal of Russell Street between Lyman Avenue and Oakley Avenue. Russell Street is currently a one-way eastbound street. Russell Street between Hohman Avenue and Lyman Avenue would be converted to two-way operation. This would require modifications to the traffic signal at Hohman Avenue and Russell Street to accommodate two-way traffic on the east leg. The intersection of Russell Street and Lyman Avenue would be designed as a cul-de-sac while maintaining the connection between these two streets.

At less than ½-mile long, Russell Street serves mostly local traffic. The change in the configuration of Russell Street is not expected to impact traffic operations because the properties along Russell Street would still be accessible with the new configuration. In addition, access across the proposed track would be feasible along Fayette Street (located one block to the north) or Douglas Street (located two blocks to the south).

- **State Street East of Hohman Avenue:** From Columbia Avenue, State Street is slightly more than 1 mile in length, bending northwest to Willow Court after crossing the two main tracks of the NS freight line where it terminates just east of Hohman Avenue. All Commuter Rail Alternative Options would use the ROW of this segment of State Street. The Project would create a new roadway connection between State Street and Willow Court east of the NS freight line.

Access from Sibley Street to the existing parking lot in the triangle of State Street and Hohman Avenue would be provided by using the bus lane from the Dan Rabin Transit Center, which is not currently used by transit operations. Traffic volumes along Sibley Street in this area, were observed to be 45 vehicles in the AM peak hour and 58 vehicles in the PM peak hour based on November 2014 traffic counts. Based on existing and anticipated future traffic volumes, eliminating this NS freight line grade crossing would not substantially affect traffic operations and would have a safety benefit by eliminating potential train/vehicle conflicts.

- **Willow Court:** As all Commuter Rail Alternative Options extend under the Hohman Avenue underpass, the tracks would use the Willow Court ROW, requiring the closure of the street at the at-grade crossing. Willow Court is proposed to continue to connect to Bulletin Court, which would be reversed to a one-way southbound street with the exit onto State Street. A new roadway connection between Willow Court and State Street would be included to maintain network connectivity.

A cul-de-sac of Willow Court would also be developed west of Hohman Avenue, maintaining access via Morton Court to a grocery store on the south side of Willow Court. It is proposed that this section of Morton Court be modified to function more like an alley. On the west leg of the

intersection with Morton Court, the proposed alignment is on embankment, which restricts access along this leg. This intersection would be revised to only support northbound-to-eastbound and westbound-to-southbound movements. West of the embankment, Willow Court would terminate as a cul-de-sac.

The portion of all Commuter Rail Alternative Options on the embankment parallel to the section of Willow Court (between Morton Court and State Line Avenue) would conflict with the existing private access to Northlake Auto Recyclers. This private driveway would need to be closed; however, access to the property would be maintained via the existing Industrial Drive on the north side of the IHB freight line tracks.

In the AM peak period, Willow Court traffic volumes ranged from 140 to 180 vehicles between State Line Avenue and Morton Court based on counts taken in November 2014. PM peak period counts ranged from 170 to 230 vehicles. Traffic currently utilizing Willow Court could instead use Sibley Street, located two blocks to the south, with minimal out-of-direction travel. While the proposed cul-de-sacs would affect through traffic, access to developed properties along Willow Court would be maintained and an existing at-grade rail crossing would be eliminated. Therefore, all Commuter Rail Alternative Options are not expected to have substantial impacts to traffic currently utilizing Willow Court.

IHB Alternative Options

All IHB Alternative Options would result in similar improvements in terms of reducing congestion as the NEPA Preferred Alternative with a VMT savings of 121,489 miles and VHT savings of 4,662 hours per year. The four options for the IHB Alternative would have similar impacts on the intersection operational performance and the highway/rail at-grade crossing performance as the NEPA Preferred Alternative. No impacts from the maintenance and storage facilities would be associated with any of the IHB Alternative Options. All IHB Alternative Options would include 16 at-grade crossings and, similar to the Commuter Rail Alternative Options, would have no impact on traffic operations at the 173rd Street or the other at-grade crossings.

All IHB Alternative Options would require road closures at some railroad crossing locations, such as where sufficient vertical clearance between the existing road and the proposed guideway structure is not feasible or to avoid introducing a new at-grade crossing. North of the proposed Downtown Hammond Station, all IHB Alternative Options would bend north and west to pass under the Hohman Avenue bridge structure using the State Street and Willow Court ROW. After crossing under Hohman Avenue, the proposed alignment of all IHB Alternative Options would be parallel to the existing IHB tracks as seen in the Project plan view drawings provided in **Appendix G** (see pages 6 and 30). Streets that would be affected include the following:

- **Russell Street:** All IHB Alternative Options would have the same effects on street connectivity around the Downtown Hammond Station as those described under all Commuter Rail Alternative Options.
- **State Street East of Hohman Avenue:** East of Hohman Avenue, all IHB Alternative Options would have the same effects on street connectivity as those described under all Commuter Rail Alternative Options.
- **Willow Court:** As all IHB Alternative Options would extend through the Hohman Avenue underpass, the tracks would use the Willow Court ROW, requiring closure of the street at the at-grade crossing. Willow Court is proposed to continue to connect to Bulletin Court, which would be reversed to a one-way southbound street with the exit onto State Street. A new roadway connection between Willow Court and State Street is proposed to maintain network connectivity. A cul-de-sac of Willow Court would also be developed west of Hohman Avenue, maintaining access

via Morton Court to a grocery store on the south side of Willow Court. It is proposed that this section of Morton Court be modified to function more like an alley.

While the proposed cul-de-sacs would affect through traffic, access to developed properties along Willow Court would be maintained and an existing at-grade rail crossing would be eliminated. Therefore, the IHB Alternative Options are not expected to have substantial impacts to traffic currently utilizing Willow Court.

Hammond Alternative Options 1 and 3

Hammond Alternative Options 1 and 3 would have same the impact on VMT and VHT, intersection operational performance, highway/rail at-grade crossing performance, and street connectivity as the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

There would be no additional traffic impacts as a result of the Maynard Junction Rail Profile Option for any of the applicable alternative options (i.e., NEPA Preferred Alternative, Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Options1).

3.5.4.2 Short-Term Construction Effects

Under the No Build Alternative, no construction impacts would occur since the Project would not be built. Construction of the Project would be expected to result in temporary disruptions to traffic operations, including lane closures, short-term intersection and roadway closures, and detours that would cause localized increases in congestion. Construction impacts would be the same for all Build Alternatives. The details of construction staging would be developed during the Engineering and Construction phases of the Project.

Where the tracks would be constructed, disruption to normal traffic patterns is expected. The primary roadway impact from construction of the Project is the crossing of roadways. Three types of crossings are proposed as part of the Project: at-grade crossings, crossings of the proposed alignment on a bridge over a roadway, and crossing of the proposed alignment 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 would not result in any long-term impacts on traffic operations and, therefore, would not require mitigation. Potential mitigation strategies to reduce or minimize the impacts on intersection performance as a result of all Build Alternatives 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 of affected roadways as well as emergency services and school districts regarding highway/rail at-grade crossings and changes to the roadway network connectivity.
- The intersection of 173rd Street and Harrison Avenue could be striped to include an eastbound to southbound right-turn lane, which would help the intersection operate at an acceptable LOS. There is sufficient roadway width to make this change without widening the intersection.

- The potential impact to Sheffield Avenue/Seminary Drive could be mitigated by striping the west leg to include a right-turn lane, which would reduce delay below the impact threshold.
- The impact at Sheffield Avenue/Northgate Drive could be mitigated by signaling the intersection, which would reduce the delays below the impact threshold. The intersection meets MUTCD traffic signal warrant 3 under build conditions. A warrant is a condition that an intersection must meet to justify a signal installation. Traffic signal warrant 3 represents peak hour travel conditions (FHWA 2009).
- The impact at Sheffield Avenue/Main Street would be mitigated to improve the operations by upgrading the traffic signal equipment to an actuated traffic signal and retiming the signal and adding channelization at the intersection. This would include adding a right-turn lane to the south leg and widening Main Street to accommodate a right-turn lane, through lane, and left-turn lane in the westbound direction and two travel lanes in the eastbound direction. The station entrance would be designed with one travel lane in the westbound direction and a left-turn lane, two through lanes, and a right-turn lane in the eastbound direction. These improvements would improve the PM peak hour operations to LOS D and the AM peak hour would continue to operate at an acceptable LOS. The competing demand for the traffic signal green time in the PM peak hour exists between opposing traffic demands on the east and west legs; vehicles exiting the station would conflict with the demand of vehicles turning left from the east leg to the south leg. Only one train would be scheduled to arrive at the proposed Munster/Dyer Main Street Station during the PM peak period and the reduced operational level would occur primarily after passengers disembark the outbound train.

3.5.5.2 Short-Term Construction Effects

The No Build Alternative would not result in any short-term construction impacts on traffic and, therefore, would not require mitigation. For all Build Alternatives, local traffic may be inconvenienced by detours and temporary lane closures due to the construction of the Project. 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 Engineering and Construction phases. These plans would be coordinated with the City of Hammond, Town of Munster, Town of Dyer, Lake County, emergency services, and INDOT. The plans would identify requirements for maintaining access to businesses, medical, and emergency facilities. Lane closures, required for construction, would be limited to off-peak hours of traffic operation to the extent it is reasonably feasible. To construct at-grade crossings of existing roadways, full closures or staged closures could be used.

Full road closures with detours are typically used temporarily to speed up construction on minor roadways where alternate access is available so that traffic can be rerouted. Staged construction, where half of a roadway crossing is built while the other half of the road remains open is typically used on major roadways and/or where no detour route is available. Major aerial construction over highways includes the crossings of Hohman Avenue, Willow Court, Sibley Street, and 45th Street. Construction of the structures would employ methods that minimize the impact to the roadway user. Lane closures on the major arterials must be approved by the agency with jurisdiction of the roadway and coordinated with the local police authority. Traffic detours would be restricted to maximum time durations via the contract and work zone traffic control plans. NICTD would coordinate with INDOT on the construction and detour plan. The Project construction would potentially require temporary closure or staged construction.

3.6 Parking

This section documents the potential direct, physical impacts to existing parking facilities from the Build Alternatives compared to 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

No federal laws, regulations, or executive orders specifically regulate how impacts to parking resulting from transit projects are evaluated. However, NEPA provides the general legal framework for considering potential impacts. In addition, CEQ regulations include requirements for describing the affected environment and environmental consequences for general resources, including parking (see 40 CFR § 1502.15). Each of the municipalities with a proposed station (Hammond, Munster, and Dyer) have parking ordinances that indicate where and for how long vehicles may park on their respective streets.

3.6.2 Methodology

Parking surveys were performed using aerial imagery from the United States Geological Survey (USGS) National Geospatial Program (2014). The surveys inventoried existing on-street and off-street parking supply. Potential impacts were determined by overlaying the anticipated footprint limits of the Build Alternatives on aerial maps. Impacts were based on the amount of current parking affected. The assessment of potential mitigation used geographic information system (GIS)-based information supported by engineering to identify opportunities to replace affected parking in close proximity to the Project impact area.

3.6.3 Affected Environment

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

Table 3.6-1 Existing Parking Spaces

Location	Alternative	Approximate Number of Spaces	Parking Type
Munster Ridge Road Station	All	44	On-street
Downtown Hammond Station	Commuter Rail, IHB	24	On-street
Hammond Gateway Station	Hammond	70	On-street
45 th Street in Munster	Commuter Rail Option 4, IHB Option 4, Hammond Option 3	110	Off-street

SOURCE: AECOM 2016.

3.6.4 Environmental Consequences

3.6.4.1 Long-Term Operating Effects

No Build Alternative

There would be no impacts to parking supply associated with the No Build Alternative.

NEPA Preferred Alternative

The NEPA Preferred Alternative would result in impacts to 114 on-street parking spaces. These impacts would occur within the Project footprint of the proposed Munster Ridge Road Station and the Hammond Gateway Station. This impacted supply of on-street parking supports residential properties, which would be displaced within these station footprints. In addition to instances where the supply of current parking could be impacted, a project such as this could also affect the demand for parking, which can lead to localized problems. Commuters accessing a Project station may choose to not use the Project's dedicated station parking due to various reasons, including, for example, avoid paying the commuter lot parking fee, perceived difficulties in entering or exiting a lot, or the lot is full. In those cases, commuters may instead park on adjacent neighborhood streets.

Commuter Rail Alternative Options

The four options for the Commuter Rail Alternative would all have the same effect on the existing parking supply. Approximately 68 on-street parking spaces would be affected by the construction footprint of the proposed Munster Ridge Road Station and the Downtown Hammond Station. Forty-four of the on-street parking spaces support residential properties, which would be displaced by construction of the Munster Ridge Road Station. The other 24 on-street parking spaces support adjacent properties, which would be displaced within the Downtown Hammond Station footprint. A potential impact associated with parking demand could result if spillover of parking from the dedicated commuter station parking facilities occurs. Commuter Rail Alternative Option 4 would also impact approximately 110 off-street parking spaces in the parking lot of the Family Christian Center Church at 45th Street in Munster.

IHB Alternative Options

The effects on parking supply from the four options of the IHB Alternative would be the same as the Commuter Rail Alternative Options.

Hammond Alternative Options 1 and 3

The effects to on-street parking supply from Hammond Alternative Options 1 or 3 would be the same as the NEPA Preferred Alternative. Hammond Alternative Option 3 would also impact approximately 110 off-street parking spaces in the parking lot of the Family Christian Center Church.

Maynard Junction Rail Profile Option

There would be no impacts to parking as a result of the Maynard Junction Rail Profile Option in addition to those described for any of the applicable alternative options (i.e., NEPA Preferred Alternative, Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Option 1).

3.6.4.2 Short-Term Construction Effects

Under the No Build Alternative, no construction impacts would occur since the Project would not be built. Construction of the NEPA Preferred and other Build Alternatives would be expected to result in disruptions to existing parking supply if the area is needed to stage construction vehicles or equipment. On-street parking may be temporarily unavailable due to temporary lane closures or staging of vehicles or equipment due to construction of the Project. This would generally occur where the alignment would cross at-grade or elevated over a roadway. Major aerial construction over highways includes the crossings of Hohman Avenue, Willow Court, Sibley Street, and 45th Street. The details of construction staging would be developed during the Engineering and Construction phases of the Project.

3.6.5 Avoidance, Minimization, and/or Mitigation Measures

3.6.5.1 Long-Term Operating Effects

The No Build Alternative would not result in any long-term impacts to parking and, therefore, would not require mitigation. All Build Alternatives would affect existing available on-street parking supply and demand. The affected parking would be removed as part of the process to redevelop the adjacent properties into commuter rail stations. Because the adjacent land uses would no longer exist, the demand for this parking supply would also be diminished. Therefore, no mitigation for the loss of on-street parking spaces is proposed.

Impacts to off-street parking would be the same for Commuter Rail Alternative Option 4, IHB Alternative Option 4, and Hammond Alternative Option 3. Replacement parking would be coordinated with the affected property owner.

The potential for spillover of parking onto nearby streets would be addressed by NICTD in working with the host municipalities to develop appropriate mitigation measures. This would be principally achieved through the use of signage and enforcement of parking restrictions.

3.6.5.2 Short-Term Construction Effects

The No Build Alternative would not result in any short-term impacts to parking and, therefore, would not require mitigation. For all Build Alternatives, on-street parking may be temporarily unavailable due to temporary lane closures or staging of vehicles or equipment due to construction of the Project. Construction of the aerial structures would employ methods that minimize the impact to the roadway user. Work zone traffic control plans would be prepared and approved by the appropriate agency during the Engineering and Construction phases. These plans would be coordinated with Hammond, Munster, Dyer, emergency services, and INDOT. The plans would identify requirements for maintaining access to businesses, medical, and emergency facilities. Lane closures required for construction would be limited to off-peak hours of traffic operation to the extent feasible. To construct at-grade crossings of existing roadways, full closures or staged closures would be used.

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