Chapter 6
Secondary and Cumulative Effects

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6 SECONDARY AND CUMULATIVE EFFECTS

6.1 Introduction

Chapter 6 addresses potential secondary (indirect) and cumulative impacts of the West Lake Corridor Project (Project).

The Council on Environmental Quality (CEQ) provides definitions for secondary, or indirect, effects and cumulative impacts in 40 Code of Federal Regulations (CFR) § 1508.8. In general, indirect effects are induced by the Project, but occur later in time or are farther removed in distance than direct impacts. While there are uncertainties about the indirect effects of the Project, this Draft Environmental Impact Statement (DEIS) makes a good faith effort to disclose effects that are considered reasonably foreseeable (40 CFR § 1508.8(b)). Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water, and other natural systems, including ecosystems.

A cumulative impact is an impact on the environment that results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The terms “effects” and “impacts” are used synonymously in the CEQ regulations and in this section.

6.2 Methodology

The CEQ Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) (40 CFR § 1500-1508) direct federal agencies to examine indirect and cumulative effects, but does not prescribe a specific methodology for analyzing these effects. The Federal Transit Administration (FTA) also has not adopted a specific methodology for analyzing indirect and cumulative effects. Regulations included in the appendix to the Planning Assistance and Standards, 23 CFR § 450, indicate that the indirect and cumulative effects analysis should be sufficiently detailed such that consequences of different alternatives can be readily identified, based on current data and reasonable assumptions, and based on reliable and defensible analytical methods. Furthermore, courts have mandated that federal agencies take a reasonably “hard look” at projects with regard to available information and analysis of appropriate issues (including indirect and cumulative effects). The CEQ requires an assessment of indirect and cumulative impacts per 40 CFR § 1500-1508. CEQ guidance was used to inform the analysis of indirect and cumulative effects for this Project.

6.2.1 Secondary Effects

By providing broader commute options, transit projects have the potential to influence future land use and development decisions, particularly in the areas around proposed stations. Project-induced development has the potential to result in secondary, or indirect, effects to the built and natural environments within the vicinity of the Project. The analysis of the secondary effects of the Build Alternatives compared to the No Build Alternative uses the following methodology:

- Identification of the potential for changes in accessibility, such as improvements in travel time, more direct access, and more transportation options.

- Assessment of the potential for induced growth because of the potential for increased accessibility. Induced growth includes changes to the amount, type, location, and pace of development. Growth around proposed rail stations is often in the form of transit-oriented development (TOD), which typically consists of dense, walkable mixed-use development.
- Assessment of the potential for impacts on sensitive resources because of induced growth.
- Identification of potential minimization and mitigation strategies for induced growth effects.

6.2.1.1 Study Area

The Study Area for indirect effects includes areas that have the potential to be affected by land use changes that would be induced by the Project. The National Cooperative Highway Research Program (NCHRP) *Report 466: Desk Reference for Estimating Indirect Effects of Proposed Transportation Projects* indicates that indirect effects from transportation projects typically occur within ½ half mile of proposed stations. Therefore, this analysis evaluates indirect effects within a ½-mile radius around each proposed station.

As discussed in **Section 4.2**, the three municipal Project stakeholders (i.e., Dyer, Munster, and Hammond) will be collaborating with the Northwest Indiana Regional Development Authority (RDA) and the Northern Indiana Commuter Transportation District (NICTD) to develop TOD plans for Project proposed station areas. This planning work, which is being funded by a grant from FTA's Pilot Program for TOD Planning, will integrate land use and transportation planning with the Project. The objective will be to design plans that are supportive of the investment in transit while respecting local planning and economic development goals. For this reason, secondary impact analysis for each resource topic is analyzed with the assumption that the Project would induce TOD in the vicinity of the proposed stations.

6.2.1.2 Timeframe for Analysis

The potential for the Build Alternatives and the No Build Alternative to result in secondary effects is evaluated through 2040, the planning horizon for the Project. The regional planning documents of the Northwestern Indiana Regional Planning Commission (NIRPC) and the Chicago Metropolitan Agency for Planning (CMAP) also extend through the 2040 planning horizon (NIRPC 2011, CMAP 2014c). Past actions are summarized in the existing conditions section of each resource area in **Chapters 3, 4,** and **5** of this DEIS and reflect the current state of the resource within the boundaries of this analysis. Present actions are projects by local, state, or federal agencies just completed or under construction; or private development projects known to local jurisdictions.

6.2.2 Cumulative Effects

The following specific methods were used in the analysis of cumulative impacts:

- **Existing Conditions and Trends:** Review and analyze the existing condition of each potentially affected resource as described in **Chapters 3, 4,** and **5** of the DEIS. The assessment of existing conditions for each resource by definition includes the impact of past actions on the condition of the resource. Thus, the review focused on understanding the status, viability, and historical context of each resource to determine the relative vulnerability of the resource to cumulative impacts.
- **Project Impacts:** Review and analyze the potential impacts from the Build Alternatives on each resource, as described in **Chapters 3**, **4**, and **5** of this DEIS. The cumulative analysis relies upon the impact determinations in each resource chapter to foresee the status of each resource if the Project is implemented and the Project's contribution to cumulative impacts. The understanding of

Project impacts combined with existing conditions and past trends was used to provide an understanding of the state of each resource when subject to impacts from other present or reasonably foreseeable future actions.

- **Impacts of Other Actions:** Identify other present actions and reasonably foreseeable future actions (No Build Alternative) and the possible impacts of these actions on each resource. These actions and the process used to identify them are discussed in **Section 6.3**. Potential impacts from each action were identified using a checklist approach to consider each Study Area resource in relation to each action. For example, several of the reasonably foreseeable future actions are residential or commercial development projects. The understanding of the status of the existing resources (provided in the existing conditions analysis [NICTD 2014b]) combined with knowledge of the types of impacts typical from land development allows a qualitative description of the impacts to resources typically impacted by development. The result is a list of resources that are anticipated to be potentially affected by these actions.
- **Cumulative Impact:** Identify potential cumulative impacts to each resource by considering the combination of existing conditions and trends (including past actions), Project impacts, and the impacts of other present actions and reasonably foreseeable future actions. Professional judgment was used to reach conclusions as to the potential magnitude of cumulative impacts, taking into account the frequency, duration, magnitude, and extent of potential past, present, and future impacts. The results of the analysis (**Section 6.4**) are generally qualitative, reflecting the available data on other present and future actions. However, the lack of quantification does not prevent the analysis from considering potential magnitude of the impact and is not considered to limit the value or thoroughness of the analysis.

The geographic Study Area for cumulative impacts is 1 mile on either side of the proposed alignments. This area was selected based on CEQ and U.S. Environmental Protection Agency (USEPA) guidance on cumulative impact analysis (CEQ 1997, USEPA 1999) and the study areas defined for direct impacts. For some topical areas, the cumulative impact Study Area was expanded based on the physical characteristics of the resource, such as air quality, hydrology, or ecological networks.

6.3 Reasonably Foreseeable Future Actions

The planned and programmed actions listed in **Table 6.3-1** are projects and developments currently anticipated through state and local plans, known private development actions, and planned and funded transportation infrastructure projects within the Study Area through 2040, the planning horizon for the Project. One development project, the Lake Business Center, was identified in the portion of the Study Area where new rail infrastructure is proposed. All other development projects identified are located in the Chicago portion of the study area where no new rail infrastructure would be constructed. These actions were identified through review of master plans within the Study Area and coordination with local planners and economic development officials. The analysis includes only major development projects, which include those projects that encompass 10 acres or more, include 25 housing units or more, or are municipal projects for parks, facilities, or new institutions. Transportation infrastructure projects were identified through the Transportation Improvement Programs (TIPs) of the NIRPC and CMAP. These actions are reasonably foreseeable in that they are likely to occur by virtue of being funded, approved, or part of an officially adopted planning document by the appropriate planning agency within the Study Area. As noted above, use of the FTA Pilot TOD Planning grant will lead to other planning actions that are not currently included in the reasonably foreseeable future actions. This planning work was initiated in 2016.

Table 6.3-1: Reasonably Foreseeable Future Actions

Action	Municipality	Estimated Construction Timing	Description	Potential Environmental Impacts of Action
Land Use Projects				
Lake Business Center	Munster, IN	2016-2018	Convert 72-acre business center into a mixed-use retail and office center with open space	Construction, Transportation (traffic), Economic Development, Noise
113 E Roosevelt, Central Station Planned Development	Chicago, IL	2016-2018	800-unit mixed-use development	Construction, Transportation (traffic), Land Use, Visual and Aesthetic Resources, Noise, Water Resources
McCormick Place	Chicago, IL	2013-2016	10,000-seat event center currently under construction; facility would be used for conventions and DePaul University basketball games; future phases would allow for up to 1,200 additional hotel rooms.	Construction, Transportation (traffic), Land Use, Economic Development, Noise, Visual and Aesthetic Resources, Water Resources
Lake Meadows, East side of King Drive between 31st and 35th Street (Planned Development #1169)	Chicago, IL	2016-2020	Mixed-use redevelopment including up to 7,845 new or rehabilitated dwelling units and 200,000 square feet of commercial on 70-acre site	Construction, Transportation (traffic), Land Use, Economic Development, Neighborhoods and Community Resources, Visual and Aesthetic Resources, Environmental Justice, Noise, Water Resources
City Hyde Park (Southwest corner of 53rd and Lake Park (Planned development #1174)	Chicago, IL	2016	180-unit apartment building with 110,000 square feet of retail	Construction, Transportation (traffic), Visual and Aesthetic Resources, Water Resources
Obama Presidential Library	Chicago, IL	2017-2021	Building containing presidential archives, a museum, and office and program space for the Obama Foundation. Proposed to be constructed on approximately 20 acres of public open space.	Construction, Transportation (traffic), Land Use, Neighborhood and Community Resources, Water Resources, Visual and Aesthetic Resources,
Transportation Projects				
Construct Pennsy Greenway Trail from Fisher Street at Timrick Drive to Calumet Avenue north of 45th	Munster, IN	2018	Construct bicycle and pedestrian facilities	Construction, Transportation (bicycle/pedestrian facilities), Neighborhood and Community Resources
Pennsy Greenway Phase 2 (Transportation Enhancement Funds), Main Street to 137th Avenue	Schererville, IN	2018	Construct bicycle and pedestrian facilities	Construction, Transportation (bicycle/pedestrian facilities), Neighborhood and Community Resources
Construct Bike/Ped Bridge over Calumet Avenue (US 41) at Conkey Street	Hammond, IN	2019	Construct bicycle/pedestrian bridge	Construction, Transportation, Neighborhood and Community Resources
Bike/Ped Trail Connector: Erie Lackawanna & Pennsy Greenway Trails at Cady Ditch and Marsh Ditch	Munster, IN	2019	Construct bicycle and pedestrian trail connector	Construction, Transportation, Neighborhood and Community Resources, Water Resources

Table 6.3–1: Reasonably Foreseeable Future Actions (cont.)

Action	Municipality	Estimated Construction Timing	Description	Potential Environmental Impacts of Action
Transportation Projects				
Install Railroad Protection at Sheffield Avenue at CSX Railroad	Dyer, IN	2016	Installation of railroad protection features (including train-activated warning horns, flashing lights, overhead cantilevers, gates and constant warning time circuitry) to improve transit operations and vehicle safety	Construction, Transportation, Visual and Aesthetic Resources, Safety and Security, Noise
I-80 Illinois State Line to Calumet Ave W Ramps (Bi-State work by Illinois - #62114)	Hammond and Munster, IN	2016	Add travel lanes to I-80 between Illinois State Line and Calumet Avenue W Ramps	Construction, Transportation, Land Use, Neighborhood and Community Resources, Visual and Aesthetic Resources, Noise, Air Quality, Water Resources
Reconstruct SR 312	Hammond, IN	2016	Reconstruct relinquished SR 312 from IN/IL State Line to Marble Street Phase 1 Reconstruct relinquished SR 312 from Marble Street to Baltimore Street Phase 2	Construction, Transportation, Land Use, Air Quality, Energy, Water Resources
SR 312 R Advance Clearing	Hammond, IN	2017	SR 312 R Advance Clearing (IN/IL State Line to US 41) including demolition, removing of buildings and foundations	Construction, Transportation, Land Use, Historic Resources, Water Resources, Hazardous Materials
Reconstruct 45th St	Munster, IN	2017	Reconstruct 45th Street on new alignment, includes railroad underpass (from 0.2 mile west of Calumet Avenue)	Construction, Transportation, Land Use, Neighborhood and Community Resources, Visual and Aesthetic Resources, Noise, Water Resources
45th Street Grade Separation Structure	Munster, IN	2017	Construct Grade Separation Structure (45th Avenue beneath railroad)	Construction, Transportation, Safety and Security, Visual and Aesthetic Resources
Millennium Station Boarding Platform Improvements	Chicago, IL	2016	Engineer & Construct Extra Track at the Millennium Station Boarding Platform	Construction, Transportation, Safety and Security
Positive Train Control (PTC)	Various	2016	Implement PTC (NICTD) (computer and satellite system to control spacing and speed of trains)	Transportation, Safety and Security
Double Track Project	Various	2016	Add second track between Gary and Michigan City (NICTD)	Construction, Transportation, Noise, Air Quality, Water Resources
I-55 Stevenson Expressway from I-94 to Lake Shore Drive Improvements	Chicago, IL	2016-2017	Reconstruct I-55 Stevenson Expressway road in kind, improve lighting, landscape enhancements	Construction, Transportation, Land Use, Neighborhood and Community Resources, Visual and Aesthetic Resources, Water Resources
Circle Interchange Improvements	Chicago, IL	2016-2020	Add lanes to road; reconfigure bridge; reconstruct road; replace bridge; other improvements	Construction, Transportation, Noise, Air Quality

SOURCE: AECOM 2016.

6.4 Potential Secondary and Cumulative Effects

6.4.1 No Build Alternative

The No Build Alternative includes existing and planned transportation projects that are proposed to exist in 2040 and are included in NIRPC's and CMAP's TIPs, with the exception of the proposed rail improvements. These projects, which primarily involve highway maintenance and widening of existing roadways and bicycle/pedestrian infrastructure projects, have potential to induce secondary residential and commercial development. Forecast development will increase roadway traffic volumes, increase motor vehicle emissions and energy use, and potentially impact natural resources such as wetlands and natural habitat.

6.4.2 Build Alternatives

The following sections provide a description of the potential secondary and cumulative effects of the Build Alternatives.

6.4.3 Transportation

6.4.3.1 Secondary Effects

NEPA Preferred Alternative

Transportation facilities considered in the secondary effects analysis include transit, roadway, bicycle, and pedestrian modes and facilities. Ridership forecasts for the Project show an increase in new transit trips for all Build Alternatives compared to existing and No Build conditions, which can be associated with a decrease in auto trips as a result of people switching from auto to transit. Trips via bicycle and pedestrian modes could increase, as a certain number of transit riders would access the proposed stations by foot and/or bicycle.

The attractiveness of transit could also encourage new development that would generate additional trips for transit, automobiles, pedestrian, and bicycle modes. Local land use policies in the vicinity of proposed commuter rail stations are already in effect and are expected to encourage more compact localized development that would in turn encourage non-auto travel.

NICTD's receipt of an FTA grant to prepare TOD plans for the Project under the Pilot Program for Transit-Oriented Development Planning will be used to further refine local plans (see **Section 4.2.3** for more information). Any future development of residential and employment uses around stations could lead to an increase in the number of trips to and from these areas for all modes. This potential change in regional and local travel demand could also increase transit service demand, highway and local traffic volumes, and parking demand.

The proposed North Hammond Maintenance Facility would be located in an industrial use area near existing railroads; it would be unlikely to induce new development that would substantially increase traffic.

The proposed Munster/Dyer Layover Facility would be located in an area zoned for residential and commercial uses. Use of the Munster/Dyer Layover Facility site as proposed may influence the nature and extent of future development surrounding the site. For example, the presence of a maintenance facility could lead to zoning changes with less emphasis on residential uses and more focus on commercial uses. Such future changes could increase freight and delivery traffic that would serve potential commercial uses.

Commuter Rail Alternative Options

The proposed alignment and stations of the Commuter Rail Alternative Options would result in similar impacts as the NEPA Preferred Alternative; however, any impacts associated with the Hammond Gateway Station proposed under the NEPA Preferred Alternative would instead occur at the proposed Downtown Hammond Station.

The proposed South Hammond Maintenance and Storage Facility (under Commuter Rail Alternative Options 1, 2, and 4) and the proposed Munster/Dyer Maintenance and Storage Facility (under Commuter Rail Alternative Option 3) would be located in areas zoned for residential and commercial uses. Development of these sites as proposed could change the nature and extent of future residential and commercial development. For example, the presence of a maintenance facility could lead to zoning changes with less emphasis on residential uses and more focus on commercial. Such future changes could increase freight and delivery traffic that would serve potential commercial uses.

IHB Alternative Options

North of Sibley Street, the proposed alignment of the IHB Alternative Options would not support any stations. Therefore, the portion north of Sibley Street is not expected to induce growth. As such, this portion of the alignment is not anticipated to have secondary effects on transportation. South of Sibley Street, secondary impacts as a result of implementation of the IHB Alternative Options would be the same as those described for the Commuter Rail Alternative Options.

Hammond Alternative Options 1 and 3

The indirect effects of Hammond Alternative Options 1 and 3 would be the same as described for the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

The Maynard Junction Rail Profile Option would not provide economic incentives for TOD or bring employees to the area and, as such, would not induce new development or indirect transportation effects. Note that this Option would be associated with Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Options 1 and 2.

6.4.3.2 Cumulative Effects

Continued development and enhancement of the existing transportation network in the Study Area, combined with reasonably foreseeable future actions (non-transportation growth and development) and the direct and indirect effects of the Project, would increase demand for transportation as a whole. Transportation facilities would become more accessible to a greater number of people within the region. Foreseeable future land development, listed in **Table 6.3-1**, would increase the residential and employment populations over time, putting greater pressure on transportation facilities. The nature of past and present auto-centric development patterns would contribute to growth in traffic volumes and congestion on area roadways in the future despite the availability of transit. Transit demand would also increase as travelers seek relief from growing roadway congestion and travel delays. The decrease in regional travel as a result of the Project (see **Section 3.5.4**) would incrementally reduce the cumulative demand on the roadway system, but would not overcome the growth in auto-based demand.

Planned transportation projects, such as the bicycle/pedestrian bridge over Calumet Avenue, the Erie Lackawanna bicycle/pedestrian trail, and the Pennsy Greenway, would expand the capacity for alternative modes of transportation (i.e., bicycling and pedestrian modes) as well as transit

improvements that would support a cumulative increase in transit demand. Future station area transportation planning activities (see **Section 4.2.3** for a description of the RDA-led TOD planning funded under the FTA's Pilot Program for TOD Planning) would be expected to address needs for enhanced station area pedestrian and bicycle connections in correlation with future development and redevelopment plans. Because of the planned transportation improvements, which would generally support the increased demand for transit services within the region, the Project is not anticipated to result in substantial adverse cumulative impacts associated with transportation. Cumulative impacts would be the same for all of the Build Alternatives.

6.4.3.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to transportation would be mitigated as discussed in **Chapter 3**. Indirect effects would be addressed by developers in coordination with municipalities by applying TOD best practices for traffic, parking, and related issues such as walkability, and in following the recommendations of the in-progress RDA-led TOD station area plans. Municipalities would be responsible for reviewing and approving development plans, including assessing traffic and parking impacts, and requiring mitigation as warranted. No project-related mitigation specific to secondary or cumulative impacts is warranted.

6.4.4 Land Use

6.4.4.1 Secondary Effects

NEPA Preferred Alternative

The NEPA Preferred Alternative would enhance access to existing and programmed developments within ½ mile of existing and proposed stations in the Study Area, including affected sections of the existing MED/SSL. As a result, the NEPA Preferred Alternative is expected to have an indirect effect on land use in the form of induced development. Local land use policies in the vicinity of commuter rail stations are expected to encourage more compact regional development.

Local and regional planning efforts are supportive of the development of higher-density, walkable development in the vicinity of the proposed stations. If these communities are successful at implementing TOD, such development would likely result in more households and jobs within walking distance of the NEPA Preferred Alternative compared to the No Build Alternative. Additionally, because the density of TOD restricts its development footprint, development of TOD would result in more sustainable land uses than would occur under the No Build Alternative. Therefore, in general, the NEPA Preferred Alternative would result in a beneficial indirect impact to land use.

The proposed North Hammond Maintenance Facility would be located in an industrial use area near existing railroads; it would be unlikely to induce development. However, the nearby Hammond Gateway Station is likely to induce new residential development and redevelopment due to the proximity and ability of travelers to walk or bike to a commuter rail station.

The Munster/Dyer Layover Facility would be located in an area zoned for residential and commercial uses. Use of the proposed Munster/Dyer Layover Facility site as proposed could change the nature and extent of future residential and commercial development. For example, the presence of a maintenance facility could lead to zoning changes with less emphasis on residential uses and more focus on commercial uses.

Commuter Rail Alternative Options

The Commuter Rail Alternative Options are also expected to have an indirect effect on land use in the form of induced development in the vicinity of the proposed stations. Due to the limited amount of vacant land in the vicinity of the Downtown Hammond Station, most of which would support the proposed station and associated parking, there is less potential for TOD development at the Downtown Hammond Station than at the other proposed Commuter Rail Alternative Options station locations.

The proposed South Hammond Maintenance and Storage Facility (under Commuter Rail Alternative Options 1, 2, and 4) or the proposed Munster/Dyer Maintenance and Storage Facility (under Commuter Rail Alternative Option 3) would be located in areas zoned for residential and commercial uses. Use of these sites as proposed could change the nature and extent of future residential and commercial development surrounding the sites. For example, the presence of a maintenance facility could lead to zoning changes with less emphasis on residential uses and more focus on commercial uses.

IHB Alternative Options

North of Sibley Street, the proposed alignment of the IHB Alternative Options would not support stations, and therefore, would not be expected to induce growth or growth-associated effects. South of Douglas Street, secondary impacts as a result of implementation of the IHB Alternative Options would be the same as described for the Commuter Rail Alternative Options.

Hammond Alternative Options 1 and 3

The indirect land use effects of Hammond Alternative Options 1 and 3 would be the same as described for the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

The Maynard Junction Rail Profile Option would not provide economic incentives for TOD or bring employees to the area and, as such, would not induce new development or result in indirect changes to land use. Note that this Option would be associated with Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Options 1 and 2.

6.4.4.2 Cumulative Effects

The geographic Study Area for cumulative land use impacts is Lake County, Indiana, and Cook County, Illinois, including the communities of Dyer, Munster, and Hammond, Indiana; and Burnham, Calumet City, and Chicago, Illinois. These communities would receive the primary benefits of the Project commuter rail services. Because land use changes are generally associated with the increased connectivity between Northwest Indiana and downtown Chicago, the regions supporting the intended passengers' places of residence and employment were considered when identifying an appropriate cumulative effects' Study Area. A cumulative impact to land use would occur if the Project, combined with past, present and reasonably foreseeable development, would cause future land use patterns to be inconsistent with planned and programmed land uses in the Study Area.

NEPA Preferred Alternative

Implementation of the NEPA Preferred Alternative would induce development in proposed station areas as described in **Section 6.4.3.1**. There would be no substantive cumulative effect in terms of inconsistency or conflict with local land use plans, policies, or regulations. The NEPA Preferred

Alternative, in conjunction with past, present and reasonably foreseeable future development projects, which are derived from the capital planning documents of the regional planning entities, is consistent with regional and local land use plans, policies, and regulations. Therefore, it would be compatible with land use objectives of respective jurisdictions. The ongoing RDA-led TOD planning process being undertaken in coordination with affected communities would also serve to ensure consistency with local planning.

Commuter Rail Alternative Options

Implementation of the Commuter Rail Alternative Options would induce development in proposed station areas as described in **Section 6.4.3.1**. There would be no substantive cumulative effect in terms of inconsistency or conflict with local land use plans, policies, or regulations. The Commuter Rail Alternative Options, in conjunction with past, present and reasonably foreseeable future development projects, which are derived from the capital planning documents of the regional planning entities, are consistent with regional and local land use plans, policies, and regulations. Therefore, it would be compatible with land use objectives of respective jurisdictions. The in-progress TOD planning process would also ensure consistency with local objectives.

IHB Alternative Options

North of Sibley Street, the proposed alignment of the IHB Alternative Options would be generally consistent with local land use and zoning. South of Douglas Street, cumulative effects of past, present, and reasonably foreseeable projects on land use including the IHB Alternative Options would be the same as those described for the Commuter Rail Alternative Options.

Hammond Alternative Options 1 and 3

The cumulative effects of past, present and reasonably foreseeable projects on land use including Hammond Alternative Options 1 and 3 would be the same as described for the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

The Maynard Junction Rail Profile option would not result in land use changes and would have no potential for cumulative land use effects. Note that this Option would be associated with Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Options 1 and 2.

6.4.4.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to land use would be mitigated as discussed in **Section 4.2**. No mitigation specific to secondary or cumulative impacts on land use is warranted.

6.4.5 Land Acquisitions and Displacements

6.4.5.1 Secondary Effects

NEPA Preferred Alternative

As discussed in **Section 6.4.3.1**, the NEPA Preferred Alternative has the potential to result in secondary impacts to land uses surrounding the proposed stations. These impacts are associated with the market's response to investments made from the Project. For example, as the region becomes more attractive to developers due to the increased connectivity associated with the Project,

investment in their respective industry in response to the Project may generate economic development within the region. Incentives to develop residential and commercial properties associated with this economic development may result in acquisitions and displacements. While these impacts could be negative to property owners, they would not negatively affect the availability of housing and business opportunities within the Study Area. Instead, if the Indiana communities are successful at stimulating TOD surrounding the rail stations (as is stipulated in local and regional comprehensive plans), there would be a beneficial effect of wider housing choice (typically a feature of TOD).

The proposed North Hammond Maintenance Facility would be located in an industrial use area near existing railroads; it would be unlikely to induce new development that would result in acquisitions, relocations, and/or displacements because the area is not a location where changes in zoning are planned. The Munster/Dyer Layover Facility would be located in an area zoned for residential and commercial uses. Use of the Munster/Dyer Layover Facility site as proposed may lead to zoning changes with less emphasis on residential uses and more focus on commercial uses. Land acquisitions and displacements to enable redevelopment are potential secondary effects of the new facility.

Commuter Rail Alternative Options

The Commuter Rail Alternative Options are also expected to have an indirect effect on land use in the form of induced development in the vicinity of the proposed stations. A secondary effect could result from land acquisitions and displacements associated with TOD development near the proposed stations. Due to the limited amount of vacant land in the vicinity of the Downtown Hammond Station, most of which would support the proposed station and parking, there is less potential for TOD development than other proposed Commuter Rail Alternative Options station locations.

The South Hammond Maintenance and Storage Facility (under Commuter Rail Alternative Options 1, 2, and 4) or the proposed Munster/Dyer Maintenance and Storage Facility (under Commuter Rail Alternative Option 3) would be located in areas zoned for residential use. Land acquisitions and displacements due to development and redevelopment are a potential secondary effect because the proposed facilities have the potential to lead to changes in surrounding zoning.

IHB Alternative Options

North of Sibley Street, the proposed alignment of the IHB Alternative Options would not support stations. Therefore, the portion north of Sibley Street is not expected to induce new growth or growth-associated effects. As such, this portion of the alignment is not anticipated to have secondary effects on land acquisitions or displacements. South of Sibley Street, potential indirect impacts would be the same as those described for the Commuter Rail Alternative Options.

Hammond Alternative Options 1 and 3

The indirect effects of Hammond Alternative Options 1 and 3 would be the same as described for the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

The Maynard Junction Rail Profile Option would not provide economic incentives for TOD or bring employees to the area and, as such, would not induce new development or result in indirect land acquisitions or displacements. Note that this Option would be associated with Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Options 1 and 2.

6.4.5.2 Cumulative Effects

The geographic Study Area for cumulative land acquisitions and displacement impacts is the same as the Study Area for cumulative effects for land use impacts, as described in **Section 6.4.4.2**. Development of transportation infrastructure in the Study Area, including, for example, the Chicago Street Improvement Project (City of Hammond 2016), combined with the direct and indirect effects of each Build Alternative Option would result in acquisitions and displacements of residents and/or businesses. In north Hammond, the Project and the adjacent Chicago Street Improvement Project would partially impact the residential area west of Sheffield Avenue. The conversion of residences to transportation uses by both would require the displacement of residents, affecting a portion of the neighborhood.

6.4.5.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts of land acquisitions and displacements would be mitigated as discussed in **Section 4.3**. NICTD and the City of Hammond would coordinate to assess and address the potential cumulative effects of the Project and the Chicago Street project to the north Hammond residential area. Strategies identified in **Sections 4.3.5 and 4.9** would be considered in conjunction with the affected community.

6.4.6 Socioeconomics and Economic Development

6.4.6.1 Secondary Effects

NEPA Preferred Alternative

The availability of the Project would indirectly strengthen job and residential growth in Northwest Indiana, generally in the vicinity of station areas along the alignment. The ongoing RDA-led TOD planning process being undertaken in coordination with affected communities would serve to support local economic development goals and long-term economic vitality. Future TOD developments would be attractive to persons who seek more variety in housing options than is currently available in the Study Area, persons who would prefer to use transit, and businesses and services targeting local residents and transit users. This change would be beneficial in terms of supporting local economic development goals and long-term economic vitality.

Despite beneficial effects, redevelopment has the potential to increase property values and rents, which can alter the population characteristics of the areas around proposed stations and maintenance facility sites. The Munster/Dyer Layover Facility would be located in an area zoned for residential and commercial uses. Use of the Munster/Dyer Layover Facility site as proposed could change the nature and extent of future residential and commercial development surrounding the sites. For example, the presence of a maintenance facility could lead to zoning changes with less emphasis on residential uses and more focus on commercial uses. The proposed North Hammond Maintenance Facility would be located in an industrial use area near existing railroads. It is not expected to induce any changes in land use or zoning that would result in changes to socioeconomic or economic development conditions.

Commuter Rail Alternative Options

The Commuter Rail Alternative Options are expected to have an indirect effect on socioeconomics and economic development in the form of induced development in the vicinity of the proposed stations. Due to the limited amount of vacant land in the vicinity of the Downtown Hammond Station, most of which would support the proposed station and parking, there is less potential for TOD

development and associated local economic growth than at the other proposed Commuter Rail Alternative Options station locations.

The proposed South Hammond Maintenance and Storage Facility (under Commuter Rail Alternative Options 1, 2, and 4) and the proposed Munster/Dyer Maintenance and Storage Facility (under Commuter Rail Alternative Option 3) would be located in areas zoned for residential and commercial uses. Use of these sites as proposed could change the nature and extent of future residential and commercial development surrounding the sites. For example, the presence of a maintenance facility could lead to zoning changes with less emphasis on residential uses and more focus on commercial uses. Such future changes could result in a reduction of residential property values as a consequence of reduced residential homogeneity and desirability. This would likely occur in favor of higher commercial and light industrial land values. The changes could also result in a lower resident population in the area, but a higher level of employment.

IHB Alternative Options

As the portion of the IHB Alternative Options north of Sibley Street would occur in a largely built-out, urbanized, and industrial corridor and offer no new station locations, no substantive indirect effects to socioeconomic trends or economic vitality are anticipated. South of Douglas Street, potential indirect impacts would be the same as those described for the Commuter Rail Alternative Options.

Hammond Alternative Options 1 and 3

The indirect effects of Hammond Alternative Options 1 and 3 would be the same as described for the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

The Maynard Junction Rail Profile Option would not provide economic incentives for TOD or bring employees to the area, and as such, would not induce new development. Note that this Option would be associated with Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Options 1 and 2.

6.4.6.2 Cumulative Effects

Each Build Alternative Option, in addition to all of the other projects described in **Table 6.3-1**, would result in temporary construction jobs within the region. These jobs would have a beneficial cumulative impact on people who live and work in the region and the regional economy. The land use projects listed in **Table 6.3-1** would result in new, permanent jobs associated with proposed retail, commercial, entertainment, and hotel uses. New employment centers, along with greater access to jobs provided by the Project, would provide a beneficial cumulative effect on individual and regional business economic stability. This effect would be amplified by the socioeconomic and economic benefits of the Project as described in **Section 4.4** of this DEIS.

6.4.6.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts on socioeconomics and economic development would be mitigated as discussed in **Section 4.4** of this DEIS. NICTD would coordinate with Dyer, Munster, and Hammond to assess and address changes in property values, rents, and the population characteristics around proposed stations and maintenance facility sites. The in-progress TOD studies being conducted with local communities would strive to find the appropriate balance between residential growth and jobs-based development, consistent with the goals of each respective community.

6.4.7 Neighborhoods and Community Resources

6.4.7.1 Secondary Effects

NEPA Preferred Alternative

The use of land for the proposed stations may have an indirect beneficial effect on some neighborhoods. Potential impacts include secondary opportunities for economic revitalization and TOD. The previously noted FTA-funded Pilot Program for TOD Planning activities at proposed station areas would refine these opportunities. The availability of commuter rail service may also induce infill development in existing residential neighborhoods.

Overall, the proposed station locations would provide increased transit to suburban communities, spurring opportunities for walkable, mixed-use environments to develop. This economic growth could serve as a catalyst for wider redevelopment opportunities within the Study Area that may indirectly strengthen neighborhood cohesion.

Inducement of TOD and infill development around the station areas could result in adverse effects on neighborhood growth from increased demand on local infrastructure, including water, sewer, roads, and schools to serve new development. However, because such development would be consistent with local land use plans, increased demand for services is expected to be within the capacities of local service providers.

Other potential effects of the proposed stations would be changes to the character of neighborhoods and increases in property values in the vicinity of new stations. For example, increased residential property values associated with proximity to rail stations could preclude some low-income population groups. The RDA-led in-progress TOD studies with affected communities that would shape development plans in the vicinity of stations is considering impacts on neighborhoods, the availability of affordable housing, and the need for and access to community resources in the formulation of the plans.

The proposed North Hammond Maintenance Facility would be located in an industrial use area near existing railroads; it would be unlikely to induce development. The Munster/Dyer Layover Facility would be located in an area zoned for residential and commercial uses. Use of the Munster/Dyer Layover Facility site as proposed may lead to zoning changes that could lessen emphasis on residential uses and focus more on commercial uses. Such future changes could lead to a lower resident population change and neighborhood fragmentation. Secondary community resources impacts would not be anticipated.

Commuter Rail Alternative

The alignment and stations proposed under the Commuter Rail Alternative Options would result in similar impacts as the NEPA Preferred Alternative. Due to the limited amount of vacant land in the vicinity of the Downtown Hammond Station, most of which would support the proposed station and parking, there is less potential for TOD development than at other proposed Commuter Rail Alternative Options station locations.

The proposed South Hammond Maintenance and Storage Facility (under Commuter Rail Alternative Options 1, 2, and 4) and the proposed Munster/Dyer Maintenance and Storage Facility (under Commuter Rail Alternative Option 3) would be located in areas zoned for residential and commercial uses. Development of these sites as proposed could change the nature and extent of future residential and commercial development surrounding the sites. For example, the presence of a maintenance facility could lead to zoning changes with less emphasis on residential uses and more

focus on commercial uses. Such future changes could lead to lower resident population and neighborhood fragmentation. Secondary community resources impacts would not be anticipated.

IHB Alternative Options

As the portion of the IHB Alternative Options north of Sibley Street would occur in a largely built-out, urbanized, and industrial corridor and offer no new station locations, no substantive indirect effects to neighborhoods or community resources are anticipated. South of Sibley Street, potential impacts would be the same as those described for the Commuter Rail Alternative Options.

Hammond Alternative Options 1 and 3

The indirect effects of Hammond Alternative Options 1 and 3 would be the same as described for the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

The Maynard Junction Rail Profile Option would not provide economic incentives for TOD or bring employees to the area and, as such, would not induce new development or result in neighborhood or community resources effects. Note that this Option would be associated with Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Options 1 and 2.

6.4.7.2 Cumulative Effects

The geographic Study Area for cumulative neighborhood and community resource impacts is the same as for land use impacts, as described in **Section 6.4.4.2**. Growth and redevelopment by others and the catalytic effect of the Project would result in neighborhood change over the long-term. These changes may be beneficial to some and a burden for others. The primary development forces are local planning and zoning actions that call for development and redevelopment in many parts of the Study Area. The RDA-led TOD studies for proposed station areas would consider effects on neighborhood character through increases in the density and mix of land uses. Future redevelopment could be beneficial if it enhanced visual unity for neighborhoods and communities and was aesthetically pleasing or it could be of poor design and low quality.

The economic benefits of these actions have the potential to increase property values and provide additional housing and job opportunities with the improved access to transit. However, increases in property values could also result in increased business expenses (e.g., rents) and fewer affordable housing units in the Study Area. In addition, development that would follow the recommendations of station area TOD plans could result in additional demand for community resources such as recreation areas, community centers, and places of worship.

6.4.7.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to neighborhoods and community resources would be mitigated as discussed in **Section 4.5**. TOD and land development management would be addressed in the on-going TOD studies with local communities; and ultimately, the responsibility for implementation would be through municipal land use and zoning mechanisms. The TOD plans would be a cooperative effort between NICTD, RDA and the municipalities to shape future development plans in the vicinity of stations to minimize the impact on neighborhoods and consider the need for and access to community resources.

6.4.8 Cultural Resources

6.4.8.1 Secondary Effects

Under each Build Alternative Option, development and redevelopment induced by the Project could change land use in the vicinity of historic properties, particularly adjacent to the proposed Hammond Gateway and Downtown Hammond Stations, and the maintenance and storage facility sites. Redevelopment could have direct and indirect effects on historic properties, such as changes to historic property settings caused by incompatible new construction or renovations, demolition, or change in property values. For any development that uses federal funding or requires federal approvals, requirements under federal laws such as NEPA and the National Historic Preservation Act (NHPA) would have to be addressed. In the absence of federal funding, municipalities would be responsible for considering the effects of induced development on cultural resources according to Title 14 Natural and Cultural Resources of the Indiana Code.

6.4.8.2 Cumulative Effects

The geographic Study Area for cumulative impacts to historic resources included the area of potential effect (APE) and a 1-mile radius surrounding the Project. Several historic districts and historic buildings and structures of national or local significance are located within 1-mile of the Project, particularly in Hammond. The setting of these historic resources has been altered over the years with industrial changes, transportation corridor redevelopment, modern infill development, and demolition of several historic buildings and structures.

The Project would potentially impact two cultural resources, as described in **Section 4.6.4**. Other cultural resources are known to occur in the Study Area and vicinity that could be impacted by other past, present, and reasonably foreseeable projects. However, a cumulative impact to any single cultural resource due to the Project and other projects is not anticipated to occur.

6.4.8.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to cultural resources would be mitigated as discussed in **Section 4.6**. As no cumulative effects on cultural resources are anticipated to occur, mitigation is not warranted. Future federal projects that have the potential to adversely affect historic resources would be subject to review under Section 106 of the NHPA, and adverse effects to historic properties would be resolved at that time. State funded and authorized projects would be subject to review by the Indiana Department of Natural Resources (INDNR) Division of Historic Preservation and Archaeology and the Illinois Historic Preservation Agency (IHPA), as appropriate. Municipalities are responsible for considering the effects of non-transportation development on cultural resources.

6.4.9 Visual and Aesthetic Resources

6.4.9.1 Secondary Effects

NEPA Preferred Alternative

North of Kensington on the existing MED, the NEPA Preferred Alternative would not result in a change in the visual landscape since no new construction would occur. The potential for indirect TOD development arising as a result of the Project and associated with the proposed Munster/Dyer Main Street, Ridge Road, and South Hammond stations and parking areas would change the visual character of the residential neighborhoods at these locations from primarily suburban residential to mixed-use/commercial. The potential for induced development at the proposed Hammond Gateway

Station would be unlikely to change the local character or visual quality in this area, which is already developed with a mix of commercial uses.

The proposed North Hammond Maintenance Facility would be located in an industrial use area near existing railroads. Therefore, induced growth around the proposed maintenance facility is unlikely to occur and no secondary visual impact is anticipated. In contrast, a potential indirect visual impact could occur as a result of future development around the Munster/Dyer Layover Facility site depending on the size and design of the new development. For example, new buildings that are similar in scale, consistent with the visual and aesthetic character of the existing neighborhood, and that are aesthetically pleasing would likely be seen as a positive visual impact, while new development that is poorly designed, of low quality, or inconsistent with the visual and aesthetic character of the existing neighborhood would be viewed as negative visual impact.

Commuter Rail Alternative Options

The proposed alignment and stations of the Commuter Rail Alternative Options would result in similar indirect visual impacts as the NEPA Preferred Alternative. The potential for development at the proposed Downtown Hammond Station would be unlikely to change the local character or visual quality in this area, which is already developed with a mix of commercial uses.

The proposed South Hammond Maintenance and Storage Facility (under Commuter Rail Alternative Options 1, 2, and 4) or the Munster/Dyer Maintenance and Storage Facility (under Commuter Rail Alternative Option 3) would be located in areas zoned for residential and commercial uses. Use of these sites as proposed could change the nature and extent of future residential and commercial development surrounding the sites. For example, the presence of a maintenance facility could lead to zoning changes with less emphasis on residential uses and more focus on commercial uses. Such changes could secondarily change the visual and aesthetic characteristics of the areas from suburban residential to mixed-use/commercial.

IHB Alternative Options

North of Sibley Street, the proposed alignment of the IHB Alternative Options would not support any stations. Therefore, the portion north of Sibley Street is not expected to induce any growth. As such, north of Sibley Street, the IHB Alternative Options are not expected to have any secondary effect on visual character. South of Sibley Street, all IHB Alternative Options would be similar to those described for the Commuter Rail Alternative Options.

Hammond Alternative Options 1 and 3

The indirect visual effects of Hammond Alternative Options 1 and 3 would be the same as the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

The Maynard Junction Rail Profile Option would not provide economic incentives for TOD or bring employees to the area and, as such, would not induce new development. Indirect impacts on visual quality are not expected. Note that this Option would be associated with Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Options 1 and 2.

6.4.9.2 Cumulative Effects

The geographic Study Area is the area within view of the Project or that would have a view from the Project, as well as areas in the vicinity of proposed stations and maintenance and storage facility

where redevelopment could occur as a result of the Project. As described in **Section 4.7** of this DEIS, the visual environment in the Study Area is commercial, industrial, and residential development. Urban development includes intact, visually cohesive historic districts and areas that were developed over time and lack visual unity.

The existing visual character of the Study Area that was formed by past development would be cumulatively affected by foreseeable projects including each Build Alternative. TOD development around stations would add a new mixed-use visual element to the suburban-style visual character of existing residential areas. The combination of planned developments and the proposed station area TOD development would change views and add new viewers. The changes would be beneficial if the new development results in a more visually cohesive area. However, if the new development is out of scale with the surroundings or visually unappealing then the change would be a negative impact. Land use planning and design reviews can encourage aesthetically appealing development.

6.4.9.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts on aesthetics and visual resources would be mitigated as discussed in **Section 4.7.5**. Municipalities are responsible for considering the visual effects of non-transportation development on existing land use. Minimizing the effects of any future development around the proposed station areas on aesthetics and visual resources would also be addressed as a part of the in-progress TOD plan development with communities. No mitigation specific to secondary or cumulative impacts on visual and aesthetic resources is warranted.

6.4.10 Safety and Security

6.4.10.1 Secondary Effects

NEPA Preferred Alternative

The NEPA Preferred Alternative could potentially induce TOD, which would result in more intense uses around the proposed station areas. The increase in residential and commercial use of these areas could potentially increase the need for law enforcement and security providers, particularly where pedestrians and bicyclists would more frequently come into contact with the Project ROW. The proposed North Hammond Maintenance Facility would be located in an industrial use area near existing railroads. Induced development around the facility is unlikely; therefore, no secondary effects are anticipated. The proposed Munster/Dyer Layover Facility, although located in a traditionally residential area, is not anticipated to indirectly change safety and security needs. The layover facility would be relatively isolated from residential uses; on the west it would be protected by the existing CSX freight line and on the east by Sheffield Avenue and likely commercial land uses. In addition, screening and fencing would be installed.

Commuter Rail Alternative

The Commuter Rail Alternative Options would result in similar potential indirect impacts as the NEPA Preferred Alternative. Due to the limited vacant land in the vicinity of the Downtown Hammond Station, most of which would support the proposed station and parking lot, there is less potential for TOD development induced safety and security effects as the other proposed Commuter Rail Alternative Options station sites.

The South Hammond Maintenance and Storage Facility (under Commuter Rail Alternative Options 1, 2, and 4) or the Munster/Dyer Maintenance and Storage Facility (under Commuter Rail Alternative Option 3) could change the nature and extent of future residential and commercial development

surrounding the sites. For example, the presence of a maintenance facility could lead to zoning changes with less emphasis on residential uses and more focus on commercial uses. Such changes are not anticipated to substantially change safety and security needs.

IHB Alternative Options

North of Sibley Street, the proposed alignment of the IHB Alternative Options would not support stations and would not be expected to induce growth. As such, north of Sibley Street, the IHB Alternative Options are not expected to have secondary effect on safety and security. South of Sibley Street, potential impacts would be the same as those described for the Commuter Rail Alternative Options.

Hammond Alternative Options 1 and 3

The indirect effects of Hammond Alternative Options 1 and 3 would be the same as described for the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

The Maynard Junction Rail Profile Option would not provide economic incentives for TOD or bring employees to the area and, as such, would not induce new development requiring additional law enforcement. There would be no indirect impacts associated with this option. Note that this Option would be associated with Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Options 1 and 2.

6.4.10.2 Cumulative Effects

The geographic Study Area for cumulative safety and security impacts is 1 mile around the Build Alternatives. Planned transportation improvements and residential and commercial development adjacent to each Build Alternative would put more transit riders, pedestrians, and bicyclists in proximity to transit vehicles, tracks, crossings, and freight rail, potentially creating safety conflicts. This condition could place a cumulative demand on security providers and/or require changes in current patrol routes, schedules, and equipment needs.

6.4.10.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to safety and security would be mitigated as discussed in **Section 4.8**. Safety and security measures to address induced development and reasonably foreseeable projects would be planned for by the local municipalities, counties, transportation agencies, and emergency service providers. NICTD would expand its existing police force to provide security at and around the stations and throughout the Study Area, in cooperation with local law enforcement agencies. Safety and security, including provisions for increased capacity for the NICTD police, would be addressed in the safety and security management plan that would be prepared during the Engineering phase. Transit rider, pedestrian, and bicycle safety measures would be incorporated into the Engineering phase of the Project and maintained and enforced over time. No additional mitigation is required.

6.4.11 Environmental Justice (EJ)

6.4.11.1 Secondary Effects

NEPA Preferred Alternative

An indirect adverse impact to environmental justice (EJ) populations could occur if induced growth in the vicinity of the stations results in changes to existing residential neighborhoods and small businesses where such populations are found. Such effects could involve increases in property values, loss of housing, and displacement of businesses. While TOD typically offers opportunities for dense housing development (such as apartments and condominiums) that is more affordable than single-family residences, economic development associated with infill and redevelopment around the stations may result in an increase in property values. If property values, taxes, and rents increase, low-income EJ populations may no longer be able to afford to remain in their neighborhood or would have fewer housing choices.

Conversely, the development of TOD around the proposed stations may have an indirect beneficial effect on EJ neighborhoods by including designated affordable housing in the mix and providing development space for a variety of businesses and commercial enterprises that support the local community. In such cases, TOD would offer opportunities for economic revitalization in downtown Hammond, benefitting EJ populations with job opportunities and diversity of services. It is expected that the in-progress TOD studies would address these issues. The adopted plans emanating from this process would be implemented by the respective communities. The end result would be development that balances the benefits and effects to EJ populations so as to not have a disproportionately high and adverse impact.

Overall, the proposed station locations would provide increased access to transit among the Study Area communities, spurring opportunities for walkable, mixed-use environments to develop, and indirectly generating potential for access to more jobs and/or higher paying jobs for EJ populations. Such economic growth, particularly in the more suburban vicinity of the South Hammond Station, could serve as a catalyst for redevelopment in a wider geographic area that may also indirectly strengthen EJ neighborhood cohesion. Additionally, as the Project begins service, this may induce infill development in existing residential neighborhoods, strengthening their cohesion.

The proposed North Hammond Maintenance Facility would be located in an industrial use area near existing railroads; it would be unlikely to induce development or affect EJ populations. The Munster/Dyer Layover Facility would be located in an area zoned for residential and commercial uses. Use of the Munster/Dyer site as proposed could change the nature and extent of future residential and commercial development surrounding the sites. For example, the presence of a maintenance facility could lead to zoning changes with less emphasis on residential uses and more focus on commercial uses. Such future changes could increase property values and result in changes to neighborhood characteristics (such as increased noise levels and changes to the visual character depending on the type of development). If property values, taxes, and rents increase, low-income EJ populations may no longer be able to afford to remain in their neighborhood or would have fewer housing choices, which would disproportionately affect EJ populations. See **Sections 6.4.6, 6.4.7, 6.4.9,** and **6.4.12**.

Commuter Rail Alternative Options

The proposed alignment and stations for the Commuter Rail Alternative Options would result in similar impacts as the NEPA Preferred Alternative. Due to the limited vacant land in the vicinity of the Downtown Hammond Station, most of which would support the proposed station and parking lot, there

is less potential for TOD development than other proposed Commuter Rail Alternative Options station sites.

The proposed South Hammond Maintenance and Storage Facility (under Commuter Rail Alternative Options 1, 2, and 4) and the proposed Munster/Dyer Maintenance and Storage Facility (under Commuter Rail Alternative Option 3) would be located in areas zoned for residential and commercial uses. Use of these sites as proposed could change the nature and extent of future residential and commercial development surrounding the sites. For example, the presence of a maintenance facility could lead to zoning changes with less emphasis on residential uses and more focus on commercial uses. Such future changes could increase property values and population, and result in changes to neighborhood characteristics (such as increased noise levels and changes to the visual character depending on the type of development). If property values, taxes, and rents increase, low-income EJ populations may no longer be able to afford to remain in their neighborhood or would have fewer housing choices, which would disproportionately affect EJ populations. See **Sections 6.4.6, 6.4.7, 6.4.9,** and **6.4.12**.

IHB Alternative Options

North of Sibley Street, the proposed alignment of the IHB Alternative Options would not support stations, and therefore would not be expected to induce growth. As such, north of Sibley Street, the proposed alignment of the IHB Alternative Options is not expected to have secondary EJ effects. South of Sibley Street, the potential indirect effects would be the same as those described for the Commuter Rail Alternative Options.

Hammond Alternative Options 1 and 3

The indirect effects of Hammond Alternative Options 1 and 3 would be the same as described for the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

The Maynard Junction Rail Profile Option would not provide economic incentives for TOD or bring employees to the area and, as such, would not induce new development. Indirect EJ impacts are not expected. Note that this Option would be associated with Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Options 1 and 2.

6.4.11.2 Cumulative Effects

The geographic Study Area for cumulative EJ impacts is the same as the cumulative effects Study Area for land use impacts, as described in **Section 6.4.4.2**. Past and present development projects have influenced where EJ populations live and work in the Study Area, as described in **Section 4.9**. As planned projects proceed throughout the Study Area, including transportation and non-transportation projects, EJ populations may experience beneficial as well as negative effects, such as changes in property values, more housing choices, loss of housing, new business opportunities, displacement of businesses or increased access to transportation and jobs. While these effects could be experienced by all populations in the Study Area, low-income EJ populations would be more likely to experience challenges involving increased property values and housing and business impacts. The consideration of means to avoid or minimize and mitigate negative impacts of non-transportation development on all Study Area populations, and particularly EJ populations, is a critical component of successful, cumulative municipal planning.

Development of planned transportation projects in the Study Area, including the improvements to I-80, SR 312, 45th Street, and I-55, combined with the direct and indirect effects of each Build Alternative

Option, have the potential to result in cumulative effects to EJ populations where these projects occur, such as changes in zoning, land use, visual character, property values, population, and acquisitions and displacements of residents and/or businesses. In north Hammond, the Project would be adjacent to the Chicago Street Improvement Project (City of Hammond 2016), where each project would impact the residential area west of Sheffield Avenue. The conversion of residential land uses to transportation uses would displace some residents, including an area containing EJ populations.

While some foreseeable future projects would be induced by the Project around stations, most projects are being advanced without influence by the Project. Thus, the Project would have an incremental role in potential cumulative effects on EJ populations. The in-progress TOD studies with communities are expected to address balancing benefits and effects to EJ populations so as to not have a disproportionately high and adverse impact.

6.4.11.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to EJ communities would be mitigated as discussed in **Section 4.9**. Mitigation proposed for land acquisitions and displacements would also apply to EJ populations, as discussed in **Section 4.3**. The in-progress TOD studies would consider the effects of non-transportation development on EJ populations in the proposed station areas. As the Project advances, NICTD would consider the Project's role in cumulative effects on EJ populations; it would examine means to avoid or minimize and mitigate such effects in coordination with affected communities.

6.4.12 Noise and Vibration

6.4.12.1 Secondary Effects

Each of the Build Alternatives has the potential to induce TOD in the vicinity of the proposed stations. Increased residential and commercial activity associated with the higher-density uses typically associated with TOD has the potential to increase noise levels around the stations. No secondary vibration effects are anticipated.

Each Build Alternative Option has the potential to induce land use change in the area of proposed maintenance facility sites in South Hammond and Munster/Dyer. Increases in commercial uses near residential uses could have secondary noise effects. In the NEPA Preferred Alternative and Hammond Alternative Options, the proposed North Hammond Maintenance Facility would be located in an industrial use area near existing railroads; it would be unlikely to induce development and, therefore, no noise changes are anticipated.

6.4.12.2 Cumulative Effects

The geographic Study Area for cumulative noise and vibration impacts includes the area defined by the screening distance of 375 feet from the proposed rail alignments, per FTA's guidance manual *Transit Noise and Vibration Impact Assessment* (USDOT FTA 2006). If construction of multiple reasonably foreseeable projects occurred simultaneously, there would likely be a temporary exacerbation of noise levels. In order to ensure noise levels at sensitive receptors are not adversely increased, construction of the Project would be coordinated with nearby projects.

As described in **Section 5.2** and **Section 5.3**, each Build Alternative Option has the potential for direct noise and vibration impacts, primarily related to the use of warning horns and rail operations. Other transportation projects may also have noise and vibration impacts, which would be evaluated by each project sponsor. Where one transportation project is physically close to another, such as where the Project is near Hammond's Chicago Street improvement project in Hammond, the potential exists for cumulative noise and vibration effects to be greater than that of each single project.

6.4.12.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to noise and vibration would be mitigated as discussed in **Section 5.2** and **Section 5.3**. NICTD and the City of Hammond would coordinate to assess the potential for a cumulative noise and vibration impact due to the Project and Chicago Street project. Land use developments would be required to comply with the relevant local noise ordinance, which would ensure that nearby receptors would not be exposed to adversely high noise levels. Construction of induced development would result in temporary noise and vibration increases; however, these impacts would be temporary and would be mitigated using standard engineering best management practices (BMPs).

To avoid adverse cumulative impacts to noise levels during construction, NICTD would coordinate construction with the Indiana Department of Transportation (INDOT) and local agencies to ensure construction noise would remain consistent with local requirements.

6.4.13 Air Quality

6.4.13.1 Secondary Effects

With all Build Alternatives, air emissions are expected to be lower with people switching from driving to transit. However, as described above, each Build Alternative Option has the potential to induce TOD in the vicinity of the proposed stations. Increased residential and commercial activity associated with the high-density uses typically associated with TOD has the potential to increase congestion (and thereby air emissions) at intersections in the vicinity of the stations and result in localized indirect air quality impacts. Construction of induced development would result in temporary adverse air quality impacts related to dust emissions and truck activities.

The North Hammond Maintenance Facility in the NEPA Preferred Alternative and Hammond Alternative Options 1 and 3 would be located in an industrial use area near existing railroads; it would be unlikely to induce development or cause secondary air quality effects. The Munster/Dyer Layover Facility under the NEPA Preferred Alternative and Hammond Alternative Options 1 and 3, the South Hammond Maintenance and Storage Facility (under the IHB Alternative Options 1, 2, and 4 and Commuter Rail Alternative Options 1, 2, and 4), and the proposed Munster/Dyer Maintenance and Storage Facility (under the IHB Alternative Option 3 and Commuter Rail Alternative Option 3) may lead to zoning changes with less emphasis on residential uses and more focus on commercial uses. Such future changes could alter foreseeable transportation patterns associated with increased traffic at the proposed facility, which could result in potential negative effects to air quality.

6.4.13.2 Cumulative Effects

The geographic Study Area for cumulative air quality impacts includes the traffic network within the Study Area for which a mesoscale emission analysis was conducted for each Build Alternative Option (see **Section 5.4**). Past, present, and reasonably foreseeable projects within the Study Area that would contribute to cumulative man-made air emissions consist primarily of land developments, building developments, transportation infrastructure upgrades and improvements, and roadway improvements as summarized in **Table 6.3-1**. The results of the mesoscale analysis, reported in **Section 5.4**, indicate that cumulative daily emissions under all Build Alternative conditions would be slightly lower than the totals for the No Build Alternative alone. This finding indicates that the Project's role in cumulative air quality effects would be beneficial; the Project would reduce regional air pollutant emissions.

This reduction would be due, in part, to the decreased vehicle miles travelled (VMT) as a result of the Project compared to the No Build Alternative. Additionally, as described in **Section 5.4**, none of the Build Alternatives would cause violations of the National Ambient Air Quality Standards (NAAQS).

6.4.13.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to air quality would be mitigated as discussed in **Section 5.4**. Land use developments would be required to comply with the relevant local ordinances, which would ensure that nearby receptors would not be exposed to adversely high air emissions. Construction-induced dust emissions and truck activities would be mitigated using standard engineering BMPs for the Project.

No mitigation specific to secondary or cumulative impacts on air quality is warranted.

6.4.14 Energy

6.4.14.1 Secondary Effects

Each Build Alternative Option is expected to result in travel shifts from single-occupant vehicles to transit. This transition would result in a reduction of energy (gasoline) use in the Study Area and the region. Induced TOD around the Project stations would result in increased, localized electricity demand; however, new TOD is typically required to include energy efficient design components consistent with contemporary building code. As a result, an indirect energy impact of future TOD development is not anticipated to occur.

6.4.14.2 Cumulative Effects

The geographic Study Area for cumulative energy impacts includes the traffic network within the Study Area. Past, present, and reasonably foreseeable projects within the Study Area that would contribute to a cumulative increase in energy use consist primarily of land developments, building developments, transportation infrastructure upgrades and improvements, and roadway improvements as summarized in **Table 6.3-1**. The results of the energy analysis, reported in **Section 5.5**, indicate that cumulative energy consumption including the Project Alternatives and No Build Alternative projects would be slightly lower than the totals for the No Build Alternative alone. This finding indicates that the Project role in cumulative energy use would be beneficial; the Project would reduce energy consumption. This reduction would be due, in part, to the decreased VMT as a result of the Project compared to the No Build Alternative.

6.4.14.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to energy would be mitigated as discussed in **Section 5.5**. No mitigation specific to secondary or cumulative impacts on energy is warranted.

6.4.15 Soils, Geologic Resources, and Farmlands

6.4.15.1 Secondary Effects

No secondary impacts to soils or geologic resources are anticipated from any of the Build Alternatives, because there are no farmlands or agricultural properties in the Study Area that are not already designated for development in local land use plans.

6.4.15.2 Cumulative Effects

Reasonably foreseeable projects including the Project would temporarily disturb soils during construction. Deep excavations could locally affect the underlying geology. However, given the site-specific and temporary nature of these impacts, permanent cumulative impacts on soils or geologic resources are not anticipated to occur. In many cases, past and present projects have converted farmland soils by development for other uses. Remaining farmland soils in the Study Area are designated for development in local land use plans. Development activities occurring on farmland soils would primarily occur within the urban centers of the existing communities or previously developed industrial areas that are incompatible with agricultural activities. The cumulative effect of development of farmland soils is the loss of availability of these soils for agriculture in the Study Area. The Project role in the loss of farmland soils available for agriculture would be minor since most of the land NICTD would use for the Project is already developed for previous transportation or other uses.

6.4.15.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to soils and geologic resources would be mitigated as discussed in **Section 5.6**. There would be no direct impacts to farmlands. No mitigation specific to secondary or cumulative impacts on soils and geology is warranted.

6.4.16 Water Resources

6.4.16.1 Secondary Effects

Surface Waters, Waters of the US/State, and Coastal Zone Management

The geographic Study Area for secondary effects assessment of surface waters, waters of the US/state and coastal zone management is the same as for land use in **Section 6.4.4**. Most of the Study Area is developed with urban or suburban uses. Future development encouraged by zoning changes around stations is described in **Section 6.4.4** as well as the announced projects (listed in **Table 6.3-1)** may be induced by any of the Build Alternatives. Such development would consist of infill mixed use development around stations and outside of sensitive hydrological areas. Nevertheless, such development has the potential to negatively affect the quality and quantity of surface waters or wetlands as a result of direct fill, diversion, stormwater runoff, and increased impervious surface area.

Commuter rail service would result in decreased regional use of automobiles and more focused and dense development around transit locations; this decrease in automobile dependency and focused development supports coastal zone management goals. In Indiana, the Coastal Zone Management Program is overseen by the Indiana Department of Natural Resources (INDNR) under the state's Lake Michigan Coastal Program. One of the state goals of this program is pollution prevention, which is supported by the expansion of commuter rail service and the resulting decrease in automobile traffic.

In Illinois, the Coastal Zone Management Program is overseen by the IDNR as part of the Illinois Coastal Management Program. A primary goal of the Coastal Management Program is to promote sustainable development, including reducing carbon footprints. Reducing automobile use and focusing development in primarily urban areas supports sustainable development.

Secondary impacts to coastal zone management areas due to increased population that may occur due to economic development in the vicinity of the proposed stations would be negligible.

Stormwater, Groundwater, Floodplains, and Water Supply

The geographic Study Area for secondary effects assessment of stormwater, groundwater, floodplains, and water supply is the same as for land use in **Section 6.4.4**. Each Build Alternative Option could result in the development of TOD around the proposed stations. Future development encouraged by zoning changes around stations is described in **Section 6.4.4**, including the announced projects listed in **Table 6.3-1.** As most of these areas are developed with industrial, commercial, and residential uses, utilities currently exist where development would be most likely to occur. Development would increase demand for water supply and wastewater treatment. Water supply planning should occur prior to development of these areas to ensure adequate water supply and wastewater treatment provision.

Induced development resulting from the Project would result in increased impervious surface area compared to the No Build Alternative. Future development would be likely to occur in a more compact manner in the vicinity of the stations, resulting in less impervious surface compared to current development trends. The relatively small increase in impervious surface would have a commensurately small reduction in permeation and aquifer recharge.

Secondary impacts to stormwater detention could result if development generated polluted runoff that was not appropriately detained and/or treated. Secondary impacts to stormwater detention would be minimal, as federal, state, and local regulations would require appropriate stormwater detention for new development.

Secondary impacts to floodplains could result if development occurred within the floodplain or would generate polluted runoff in the watershed of a floodplain. However, federal, state, and local regulations would require appropriate construction practices and compensatory storage for new development, which would minimize potential impacts.

6.4.16.2 Cumulative Effects

Surface Waters, Waters of the US/State, and Coastal Zone Management

Past projects have affected Study Area surface waters through filling of wetlands, waterway diversion and channelization, and other activities. Reasonably foreseeable projects (listed in **Table 6.3-1**) have the potential to further impact surface waters where crossings or adjacent activities are planned. Land use projects such as 113 E Roosevelt, Central Station Planned Development, McCormick Place, Lake Meadows, East side of King Drive between 31st and 35th Street (Planned Development #1169), City Hyde Park (Southwest corner of 53rd and Lake Park) (Planned development #1174), and the Obama Presidential Library could potentially impact surface waters through fill, diversion, and/or increases in stormwater runoff and impervious surface. Likewise, many of the transportation projects identified in **Table 6.3-1** could have similar direct impacts on surface waters. The cumulative effect of all reasonably foreseeable projects would be a decrease in the total area of surface waters.

Stormwater, Groundwater, Floodplains, and Water Supply

Past projects have impacted surface and groundwater quality and quantity by adding pollutants to runoff, directly discharging runoff to waterways and floodplains, and blocking some groundwater recharge with impervious surfaces. Foreseeable projects as identified in **Table 6.3-1**, combined with this Project, would add impervious surface area and stormwater runoff, thereby affecting surface and groundwater. All projects together could result in cumulative effects associated with reduced groundwater recharge and increased stormwater runoff on a regional basis. The Project's role in surface and groundwater effects is incremental and would be addressed through compliance with local stormwater management ordinances, which require implementation of BMPs to reduce

impervious surface area and stormwater runoff.

6.4.16.3 Avoidance, Minimization, and/or Mitigation Measures

Surface Waters, Waters of the US/State, and Coastal Zone Management

Direct impacts to surface waters, waters of the US/state, and coastal zone management would be mitigated as discussed in **Section 5.7**. Federal, state, and local regulations, including Sections 401 (33 USC § 1341) and 404 (33 USC § 1344) of the Clean Water Act (CWA) and the Coastal Zone Management Act (CZMA) (16 USC §§ 1451-1464), are applicable to all reasonably foreseeable projects and each Build Alternative. Compliance with these regulations by all projects, including coordination with resource agencies as necessary, would minimize cumulative impacts to the quality or quantity of surface waters and Waters of the US.

Stormwater, Groundwater, Floodplains, and Water Supply

Direct impacts on stormwater, groundwater, floodplains, and water supply would be mitigated as discussed in **Section 5.7**. NICTD would coordinate with the regulatory agencies and local agencies during the Engineering phase to address surface and groundwater requirements relevant to the Project. Other projects would be subject to federal, state, or local stormwater management and floodplain requirements, as appropriate.

6.4.17 Biological Resources (Wildlife and Habitat, and Threatened and Endangered Species)

6.4.17.1 Secondary Effects

NEPA Preferred Alternative and Commuter Rail Alternative Options

The Study Area is primarily a suburban to urban environment, such that additional development in the vicinity of proposed station and maintenance/layover facility areas is not expected to create secondary impacts to threatened and endangered species, natural areas, and habitat within the more developed portions of the Study Area. The natural areas are of sufficient distance from the NEPA Preferred Alternative and Commuter Rail Alternative Options that secondary impacts are not anticipated.

IHB Alternative Options

North of Sibley Street, the proposed alignment of the IHB Alternative Options would not support any stations. Therefore, the portion north of Sibley Street is not expected to induce any growth. As such, this portion of the alignment is not anticipated to have secondary effects on threatened and endangered species associated with induced growth. South of Sibley Street, secondary impacts as a result of implementation of the IHB Alternative Options would be similar to those described for the Commuter Rail Alternative Options.

Hammond Alternative Options 1 and 3

The indirect effects of Hammond Alternative Options 1 and 3 would be the same as described for the NEPA Preferred Alternative.

Maynard Junction Rail Profile Option

There are no natural areas in the vicinity of the Maynard Junction Rail Profile Option; therefore, there

would be no potential secondary impacts to these areas as a result of this option. Note that this Option would be associated with Commuter Rail Alternative Options 1, 2, and 3, IHB Alternative Options 1, 2, and 3, and Hammond Alternative Options 1 and 2.

6.4.17.2 Cumulative Effects

Past projects have affected some Study Area natural areas and habitat for common and threatened and endangered species through development of previously undeveloped lands. Reasonably foreseeable land development and transportation projects as identified in **Table 6.3-1** have the potential to further impact such areas and state-protected species due to proximity or direct land alteration. Impacts from these projects could include direct removal or isolation of habitat areas and introduction of physical barriers such as roads. The Project would have no cumulative effects on threatened and endangered species and generally minimal effects on habitat as most of the Project is remote from such areas. As noted in **Section 5.8** land acquisition would primarily affect developed lands or fringe areas inhabited by urban tolerant species and minimal impacts to natural areas and habitat would occur. There would be no cumulative impacts to natural areas and habitat or protected species anticipated associated with the Maynard Junction Rail Profile Option.

6.4.17.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to threatened and endangered species would be mitigated as discussed in **Section 5.8**. No mitigation specific to secondary or cumulative impacts on threatened or endangered species is warranted.

6.4.18 Hazardous Materials

6.4.18.1 Secondary Effects

For each Build Alternative Option, induced development and redevelopment around proposed stations and maintenance facility sites could be negatively affected by potential contamination at hazardous materials sites if federal, state, and local regulations pertaining to hazardous materials handling, storage, and transport are not employed. The presence of contamination could cause concerns for worker safety and might result in the need for remediation of soil or contaminated water. This could result in higher cost of development and/or cause health hazards for workers or future residents. Beneficial impacts would occur through the remediation and clean-up of contaminated sites.

6.4.18.2 Cumulative Effects

As indicated by the number of areas of concern identified in **Section 5.9**, past activities have affected some of the Study Area through accidental or deliberate disposal of contaminated or hazardous materials. Many of the reasonably foreseeable projects identified in **Table 6.3-1** would involve excavation as part of the construction process in order to install below-ground utilities, building footings and foundations, and other typical development elements. These projects, combined with each Build Alternative, have the potential to encounter and be negatively affected by contaminated sites and hazardous materials during construction, particularly during the excavation process. The cumulative effect is to potentially expose a larger amount of contaminated or hazardous materials compared to the area of any single project. As a result, risk to worker safety could occur as projects are implemented. The Project role in cumulative effects regarding hazardous materials is incremental as the Project area is smaller than the cumulative project area and worker safety is limited to project activities.

Compliance with hazardous material regulations would be the responsibility of project sponsors and would be required for all projects, including the creation of spill and containment plans for projects requiring regular handling of hazardous materials. In addition, depending on the nature of contaminated sites listed in the *West Lake Corridor Hazardous Materials Technical Report* (see **Appendix H**), each would be addressed according to applicable regulations (i.e., investigated, treated, contained, and/or cleaned up) as development occurs, which would result in beneficial cumulative effects regarding hazardous materials. Compliance with hazardous material regulations, as ensured through mitigation monitoring and the development permitting process, would prevent negative cumulative impacts to hazardous materials.

6.4.18.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to hazardous materials would be mitigated as discussed in **Section 5.9**. Municipalities would be responsible for reviewing and approving development plans, including overseeing appropriate documentation and resolution of hazardous materials issues related to induced development. NICTD, as well as developers and agencies involved in future actions and TOD, would be required to follow all state and federal laws concerning hazardous materials.

6.4.19 Utilities

6.4.19.1 Secondary Effects

For each Build Alternative Option, induced development and redevelopment around proposed stations has the potential to conflict with utilities, possibly requiring utility relocation during construction. In addition, a need for expanded capacity could result in increased usage, and/or the need for new utility services altogether.

6.4.19.2 Cumulative Effects

Potential direct impacts of the Project on utilities are discussed in **Section 5.10**. Additional development and growth in the Study area associated with the Build Alternatives in combination with the reasonably foreseeable future actions identified in **Table 6.3-1** could likely result in more demand for electricity compared to the demand by existing land uses, more sewer capacity to accommodate potentially higher water usage rates, and increases in the amounts of other utility services required in the Study Area due to higher population and/or increased needs resulting from more intensive land uses.

6.4.19.3 Avoidance, Minimization, and/or Mitigation Measures

Direct impacts to utilities would be mitigated as discussed in **Section 5.10**. NICTD, as well as developers and agencies involved in future actions and TOD, would be required to assess and address potential effects on utilities related to their projects in coordination with utility owners.

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