3.19 Indirect and Cumulative Impacts

The President's Council on Environmental Quality (CEQ) regulations implementing NEPA define indirect impacts as those:

> "which are caused by the proposed action and are later in time or farther removed in distance, but are reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to the induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."

Cumulative impacts are those impacts:

> "which result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions" *(CFR, Title 40, Section 1508.7*)

The USEPA provides additional guidance on cumulative impacts:

> "The assessment of cumulative impacts in NEPA documents is required by the CEQ regulations (CEQ, 1987)…Cumulative impacts result when the effects of an action are added to or interact with other effects in a particular place and within a particular time. It is the combination of these effects, and any resulting environmental degradation, that should be the focus of cumulative impact analysis. While impacts can be differentiated by direct, indirect and cumulative, the concept of cumulative impacts takes into account all disturbances since cumulative impacts result in the compounding of the effects of all actions over time. Thus the cumulative impacts of an action can be viewed as the total effects on a resource, ecosystem, or human community of that action and all other activities affecting that resource no matter what entity (federal, non-federal, or private) is taking the actions." (USEPA, May 1999)

The indirect impacts of the Illiana Corridor would be primarily caused by induced land development resulting from improved accessibility and mobility. Between the present and 2040, the most notable indirect impact of the corridors would be to attract induced development near the proposed project interchanges with the US and state highways. This induced development is likely to be low density similar to existing development unless changed by municipalities through revisions to their comprehensive plans and zoning. Cumulative impacts would result from the proposed project, induced development, and other reasonably foreseeable development that would occur with or without the proposed project.

3.19.1 Methodology

The methodology used for the indirect and cumulative impact assessment was based on guidance contained in the following:

- CEQ's January 1997 and update May 1999 reports Considering Cumulative Effects under the NEPA.
- FHWA's April 1992 "Position Paper: Secondary and Cumulative Impact Agreement in the Highway Project Development Process."
- FHWA's January 31, 2003 "Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process."
- National Cooperative Highway Research Program's May 1996, Report 402, "Estimating the Indirect Effects of Proposed Transportation Projects."
- USEPA's May 1999 Consideration of Cumulative Impacts in USEPA Review of NEPA Documents.
- IDOT, BDE Manual, September 2010.
- INDOT, Procedural Manual for Preparing Environmental Documents, 2008.

The analysis was performed in accordance with "Considering Cumulative Effects under the National Environmental Policy Act" (CEQ, 1997). The methodology includes the following steps:

1. Scoping or identification of issues.
2. Establishing the geographical limits of the Study Area.
3. Establishing the time frame or temporal limits for the analysis (starting years for trends analyses and future year for impact assessment).
4. Identifying other actions affecting resources, ecosystems, and human communities of concern.
5. Identifying Study Area characteristics, including:
    a. Past population, changes in agricultural land and natural resources, and water quality trends;
    b. Existing land use, currently developing areas, and future land use plans;
    c. Applicable environmental protection and land use control laws, ordinances, and programs; and
    d. Potentially affected environmental features.
6. Defining a baseline condition for the resources, ecosystems, and human communities.
7. Identifying important cause and effect relationships between human activities and resources, ecosystems, and human community.
8. Determining indirect actions (actions taken by others in response to the presence of the proposed project) and other reasonably foreseeable future actions (development and associated transportation and other infrastructure expected to occur with or without the proposed project).

9. Assessing indirect impacts (environmental impacts associated with the indirect actions) and cumulative impacts (impacts associated with past, present, and reasonably foreseeable future actions).
10. Modifying the proposed corridors to avoid, minimize, or mitigate substantial indirect and cumulative impacts.

To assess the potential indirect impacts, as described in item 9 above, the direct and indirect impacts of the corridors were calculated using the proposed project's GIS in combination with economic and transportation modeling. The analysis was based on market driven forecasts by township, as documented in *"Historic and Forecasted Growth of Employment and Population – Market Driven Forecasts 2010-2040"* (ACG: The al Chalabi Group, Ltd., 2011) (see Appendix E). These forecasts are considered an approximate update and extrapolation of the NIPC and the Chicago Metropolitan Agency for Planning (CMAP) 2030 forecasts, which were also market driven. However, these forecasts do not directly correspond to the CMAP 2040 forecasts as documented in the *"Go To 2040 – Comprehensive Regional Plan,"* which is a policy driven approach for channeling development.

The ACG report referenced above describes the difference between market trend based and policy based forecasts:

> "The quasi market-driven forecast reflects local plans and preferences; whereas, the second, represents a policy-based forecast channeling development within the policies prescribed in the Go to 2040: Comprehensive Regional Plan. Recognizing that all intended Policy-Based results may not materialize, CMAP opted not to adopt its forecasts as the official forecasts to be used for infrastructure planning studies. The differences between the NIPC/CMAP 2030 and the CMAP 2040 forecasts are themselves, the result of two different approaches to forecasting. The 2040 Forecasts prepared by the PB/ACG team for the Illiana Expressway Corridor No Build Scenario are more-closely related to extrapolations of the NIPC/CMAP 2030 forecast than to the CMAP 2040 forecasts, as both (NIPC/CMAP and ACG) share the same market approach, environmental awareness and local/community control to forecasting."

A project-specific travel demand model was developed utilizing these market driven forecasts. A total of 18 counties in the Chicago metropolitan planning area were included in the model. Of these, 15 counties are located in northeast Illinois and three are located in adjacent northwest Indiana; three counties in Wisconsin located outside the Study Area were not included in the model.

The proposed project would cause changes in accessibility, as measured in travel time to jobs, labor force, and consumers in the above 18-county Region. Changes in accessibility to jobs would cause changes in the distribution of housing units within the Study Area. Changes in accessibility to labor and consumers would cause changes in the distribution of jobs.

For purposes of this analysis it was assumed that a new transportation project would not induce additional population or employment growth in the 18-county Region, but rather would only change the distribution of that projected growth. For example, the assumed total is fixed for the 18-county Region and is the same for any corridor considered in this DEIS. Municipalities with the best reductions in travel time would tend to attract the most redistributed development.

Model results were supplemented by:

- Reviews of comprehensive planning documents of municipal, county, and MPOs in the Study Area to identify potential future development characteristics.
- Surveys conducted with municipal and county planning officials and senior staff to gather information about planned land development projects and consistency or inconsistency of the projects with existing land use plans and policies.

The assessment of the environmental impacts associated with development along the Illiana Corridor used reasonably foreseeable 2040 "build case" development footprints associated with the corridors. This assessment was compared to the No-Action Alternative forecasts. The footprints were based on the model results, plan reviews, and surveys. In addition, an environmental resource database was used to create GIS maps showing the known community, agricultural, cultural, and natural features in the Study Area.

The indirect impacts associated with the corridors are difficult to predict and catalogue with any certainty or specificity. The evaluation process involves designating a Study Area (that is, the area subject to the proposed project's influence, such as the induced impact area); using forecasts of potential growth in population and employment referred to above, in this case based on market driven trends; interpreting how this growth would translate into potential future land use (based on general estimates of land areas needed to support projected growth, surveys completed by local land use decision makers, and a review of comprehensive plans); and lastly, predicting how the potential future land use could affect area resources. The results of the study of indirect impacts are generalized and do not name specific areas or resources requiring mitigation, however the analysis provides a general indicator of the possible extent and location of project-induced development that may result. In addition, in the case of the Illiana Corridor, the findings reflect reasonably foreseeable assumptions based on changes in accessibility. This improved accessibility would increase the tendency for development to occur in a local area assuming there is a demand for new development in that area.

3.19.2 Scoping

Issues and the reasonably foreseeable future actions within the Study Area addressed in the indirect and cumulative impacts assessment for the Illiana Corridor were selected based on the scoping process. The focus is on future development in the Study Area and its potential impact on travel in the Study Area; the loss of existing agricultural land,

forest, prairie, and wetland resources to development; and the need for investment in additional public services to support new development.

3.19.3 Geographic Limits

The geographic limits of the indirect assessment (Figure 3-51) encompass the area of induced development associated with the proposed project. The Study Area for indirect impacts contains portions of Will and Kankakee counties in Illinois and Lake County in Indiana. This area was identified by the population and employment forecasts and travel demand modeling, and refined with information obtained from land use plans and surveys.

This analysis assumes that the area of project-induced development is within 1 to 2 miles of a proposed project interchange for highway oriented commercial and industrial uses, and within 5 miles for residential development. (See Figure 3-51 for these commercial and residential areas near project interchanges). The indirect impact Study Area encompasses the primary area of improved accessibility associated with the Illiana Corridor , the 5-mile radius around each project interchange with a US or state highway. It was in these areas where the study team focused their attention when reviewing local, county and regional comprehensive plans. Indirect impacts were assessed as well considering the actual area of impact identified by the population and employment modeling described earlier.

Interchanges that were included in the indirect analysis are shown on Figure 3-51. Interchanges connecting the proposed project to I-57 and I-65 are not included in this analysis because they would be Interstate system-to-system interchanges with no local access at these points and, therefore, no induced development. However, local access to IL-129 would likely be retained at the new interchange with I-55 and, therefore, is included in the analysis.

For multimodal development considerations, the area of induced development for passenger rail is assumed to be within 0.25 to 0.50-mile of a station. This walking distance area could take the form of transit-oriented development with appropriate local land use policies and controls. Alternatively, this area could take the form of commuter parking facilities, especially at stations near major highways with commuter bus service or with nearby Metra commuter rail service. The primary area of induced development for freight rail is the location where a freight transfer takes place, such as from rail to truck, at an intermodal center. Otherwise, induced development from freight rail would be limited beyond its intermodal site.

The primary geographic limit of the cumulative impacts analysis (Figure 3-52) was selected to encompass known or reasonably foreseeable developments within the boundaries of the Study Area. The model shows accessibility benefits beyond the Study Area, which are noted in the text. There also are projected travel benefits beyond the Study Area in portions of Grundy County, Illinois, and Porter County, Indiana, which may benefit communities of concern for EJ.

Figure 3-51. Indirect Impact Area

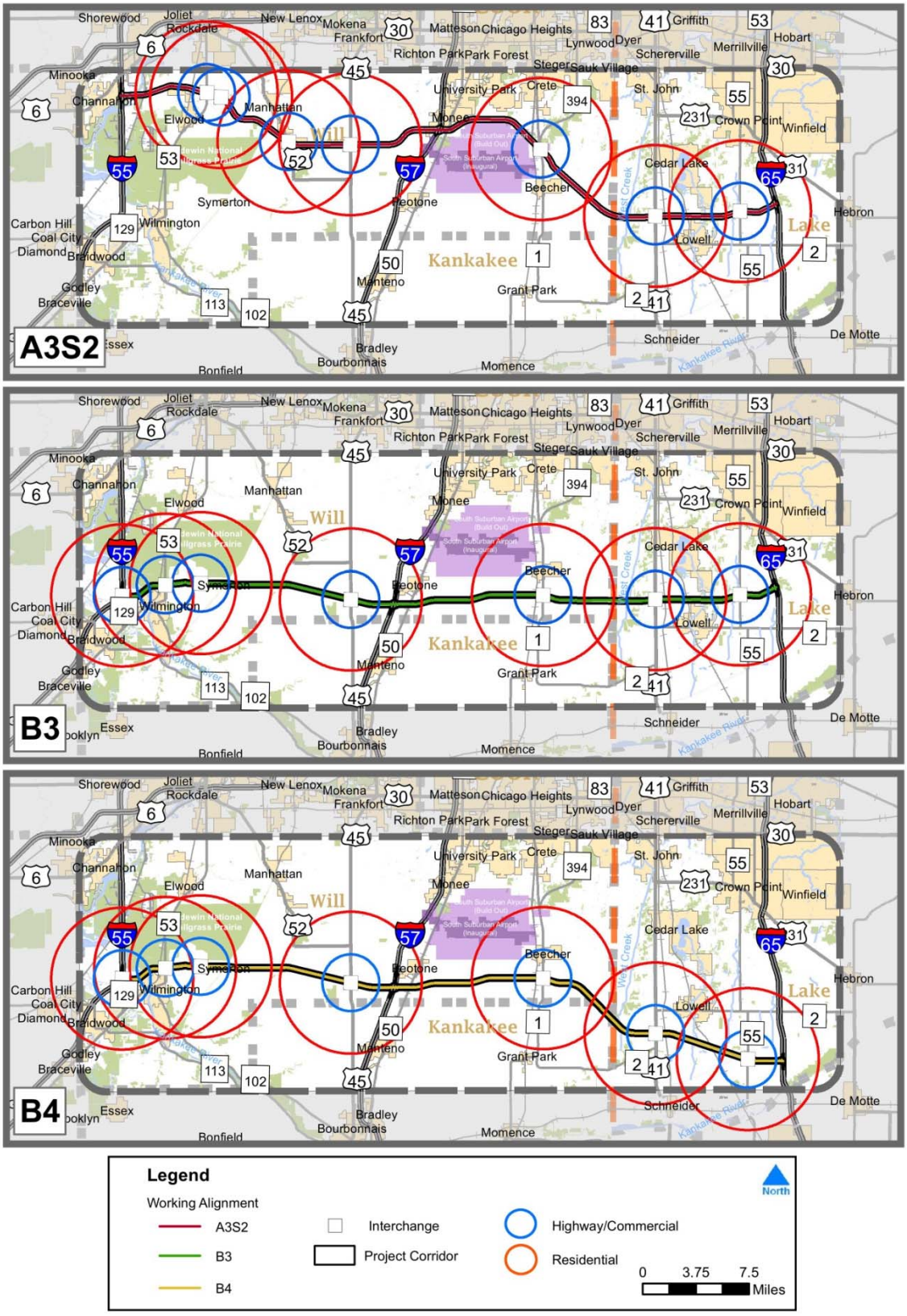
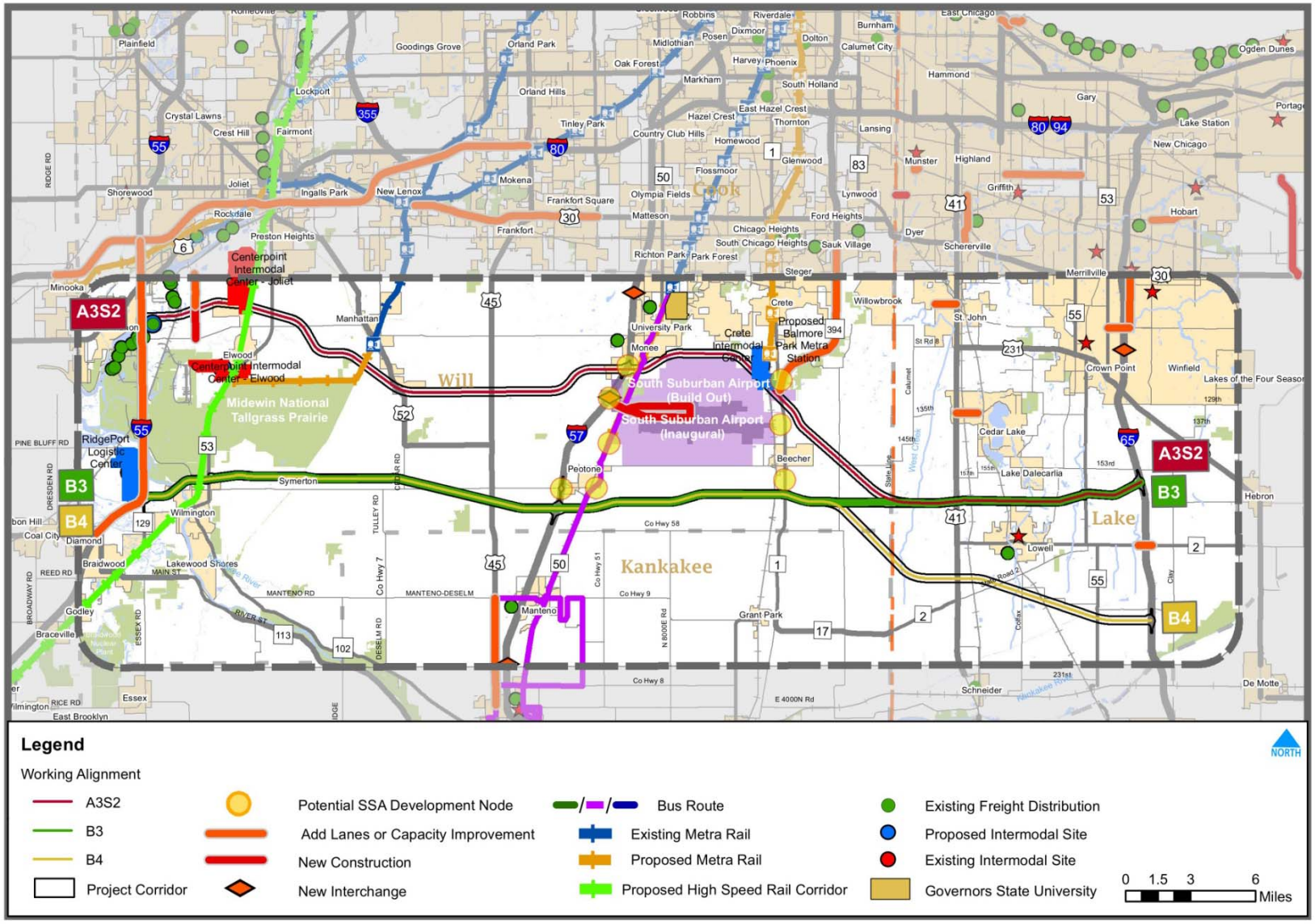


Figure 3-52. Cumulative Impacts Analysis Area beyond Study Area



The cumulative impact area incorporates:

- The areas likely to experience an increase in development with improved accessibility offered by the proposed project.
- The areas where the primary benefits to travel associated with the proposed project are expected to occur.
- The municipalities where increased development is expected.
- The areas of potential resource loss associated with development and potential larger zones of influence associated with such losses (e.g., downstream water quality effects).

3.19.4 Temporal Limits

Substantial changes in the rate of development did not begin until the 1950s. Based on these trends, 1950 was selected as the starting point to examine trends in the loss of agricultural lands, loss of natural resources, and changes in water quality based on available data.

The year 2040 was selected as the planning horizon for the assessment of indirect and cumulative impacts. This timeframe is most commonly used by municipalities, MPOs, and the CMAP model for forecasting future growth and planning its location and characteristics.

3.19.5 Definition of Reasonably Foreseeable Actions

The analysis of cumulative impacts for the proposed Illiana Corridor considered the cumulative impacts on resources in the Study Area. This included the proposed project's direct and indirect impacts as well as the impacts of other major federal, state, and private actions in the Study Area not related to the Illiana Corridor. The projects considered to be "reasonably foreseeable actions" have typically received preliminary approvals, are included in local plans, or have advanced in project development and were described in the Transportation Systems Performance Report (2012) prepared for the project. The major federal and state transportation projects identified as other actions are shown in Figure 3-52 and the full list is in Section 3.19.9.2. These include:

- SSA;
- Roadway improvement projects;
- Additional or enhanced freight and passenger rail service; and
- Reasonably foreseeable large development projects, such as private commercial and industrial development, between the current year and the design year for the No-Action Alternative.

3.19.6 Environmental Protection and Land Use Control Laws, Ordinances, and Programs

Several federal, state, and local regulations already apply in the Study Area that can channel development where it is wanted and away from protected resources. A few of the local and county comprehensive plans have anticipated and planned for the increased mobility and access provided by the proposed project. This section describes the most relevant federal, state, local laws, regulations, and planning policies that protect the environment and control land use development in the Study Area.

3.19.6.1 Federal and State

Water Quality

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C. §1251(a)). Under CWA Section 303(d) and Section 401 WQC, states are required to classify waters with respect to impairments. Waters that do not (or are not anticipated to) meet applicable water quality standards are considered impaired and are cataloged in the 303(d) list, requiring TMDLs. TMDLs establish pollution reduction goals to improve the quality of the impaired waters.

Illinois waters are protected and evaluated under the General Use Water Quality Standards (Title 35 Illinois Administrative Code, Subtitle C, Chapter I, Part 302, Subparts A and B). Waters that do not fully support their designated uses are considered impaired.

Indiana water quality standards are established under Title 327 IAC, Article 2, Rule 1. Indiana assesses its waters for compliance with state water quality standards and determines whether waters are attaining designated uses, such as supporting a well-balanced warm water aquatic community (and maintenance of trout populations where natural temperatures permit), being safe for FBC recreation, and protective of wildlife and human health.

These water quality regulations protect water resources from further impairment and constitute another control on the locations of potential project induced development.

US Army Corps of Engineers (USACE, Section 10 and 404 Permits)

Section 10 of the Rivers and Harbors Act of 1899 (Title 33 U.S.C. Section 403) and Section 404 of the CWA (Title 33 U.S.C. Section 1344) authorize permits for placement of structures, dredged, or fill material into waters of the US. All public and private projects must obtain permits. The most likely types of these permits in the Study Area would be for filling wetlands or relocating streams.

Both Indiana and Illinois require Section 401 WQC to obtain Section 404 USACE permits, as required by Section 401 of the CWA.

National Pollutant Discharge Elimination System (NPDES) Permits

The NPDES Program is under Section 318, 402, and 405(a) of the CWA and requires permits for the discharge of pollutants from any point source into waters of the US. The NPDES Program does not regulate other types of impacts.

The IEPA and IDEM are responsible for administering the associated storm water control program. Storm water from projects must be treated to the maximum extent practicable. Also, developers of construction sites disturbing more than 1 acre must obtain a permit and have a SWPPP. These permits may control the locations of indirect impacts such as induced development.

Farmland

Potential impacts to farmland must be considered under federal and state rules administered by state agencies. These rules apply to the Illiana Corridor, and other development-related infrastructure projects in the Study Area, but not to private development. Consideration must be given to corridors that could lessen impacts to farmland in coordination with the USDA's NRCS, the Illinois DOA, and the Indiana DOA. Relevant laws include the Farmland Protection Policy Act (Title 7 U.S.C. Sections 4201-4209) and the Illinois Farmland Preservation Act (Chapter 505 *Illinois Compiled Statues* Section 75/1).

Protected Species

Potential impacts to threatened and endangered species must be considered under the ESA of 1973 (Title 16 U.S.C. Section 1536). Under the ESA, Section 7 Consultation, "Interagency Cooperation," is required to ensure that federal actions do not jeopardize the existence of any listed species. Section 7 Consultation requires federal agencies to consult with the USFWS when any action may affect a listed endangered or threatened species.

In Illinois, the Illinois DNR -IDOT Natural Resource Review and Coordination Agreement (February 2, 1996) requires that an agreement on compensation be developed if adverse impacts could occur. The agreement is only approved once a detailed study and conservation plan/biological opinion is prepared.

In Indiana, animal species listed as endangered under the ESA or designated as endangered by the state are also protected under the NESCA.

These protections may affect the locations of, and municipal approvals for, indirect impacts such as induced development. Future land use development may not be approved if there is an adverse impact to protected species.

Section 4(f)

Section 4(f) of the USDOT Act of 1966 states that the Secretary shall not approve any transportation program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance as determined by the federal, state, or local officials having jurisdiction

thereof, or any land from an historic site of national, state, or local significance as so determined by such officials unless (1) there is no feasible and prudent alternative to the use of such land, and (2) such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site resulting from such use.

Section 6(f)

Section 6(f) of the LWCF requires that if the intended use of land areas acquired with Section 6(f) funds is to be changed (for example, from recreation), the project proponent must assure replacement lands of equal market value, location, and usefulness are provided as conditions to approval of land conversions.

Both Section 4(f) and 6(f) intend to protect public parkland, conservation land and other publicly-owned natural resources from transportation or other development. For example, Section 4(f) requires alternatives and mitigation and Section 6(f) requires replacement lands and has a review and approval process. Accordingly, they constitute additional controls on the location of potential indirect impacts such as induced development that may or may not be approved by the affected municipality.

3.19.6.2 Regional Planning

At the regional level, CMAP's *Go To 2040 – Comprehensive Regional Plan* is for the future of the Chicago metropolitan area. In addition, the NIRPC approved its 2040 Comprehensive Regional Plan in June 2011. The regional plans establish a policy framework, while the authority for land use control remains at the municipal level.

3.19.6.3 County Planning

The counties in the Study Area have each adopted plans that guide development within their jurisdiction. In Will County, the LRMP (2002) and the 2030 Transportation Plan provide a framework for future growth. The Kankakee County Regional Planning Commission's (KCRPC) 2030 Comprehensive Plan is the official policy guide to future land use, development, and conservation for Kankakee County; it was adopted by the County Board in November 2005. The Transportation Long Range Plan – 2010, prepared by the local MPO and the KATS provide a plan for long range transportation improvements.

The NIRPC's 2040 Comprehensive Regional Plan provides a guide for the future development of Lake County. Lake County has adopted a Zoning Map called Development Target Areas (November 2000) to control future land use development. These plans are described in Section 3.2, Social and Economic, Section 3.2.10, Local Planning.

3.19.6.4 Municipal Planning

Local jurisdictions exercise independent authority for planning and land use regulation. This Tier One DEIS focuses on master planning that proposes future land use rather than zoning that controls future land use and is a tool that implements the master plan. Applicable municipal zoning will be reviewed as part of the Tier Two NEPA studies.

Most public infrastructure services are provided at the municipal level. Decisions on municipal boundary changes are also made at the local level.

3.19.6.5 Summary of Land Use Recommendations and Land Use Policies in Affected County, Regional, and Municipal Master Plans

The desired future land use pattern in the Study Area is already established by extensive county and municipal planning, which is up to date. The Illiana Corridor would be an important new transportation facility and planned growth along it in central Will County has been recognized in the comprehensive plans of Will County, Lake County and some municipalities in Illinois and Indiana. The comprehensive plans for the counties in the Study Area illustrate that they seek to preserve agricultural land and rural character, while concentrating development in and around existing community centers and along major roads. Below is a summary of the proposed land use recommendations that affect the Study Area.

Grundy County, Illinois

Grundy County is outside the Study Area but a portion of it is adjacent to the western termini of the corridors at I-55, and this portion is expected to receive accessibility benefits. Minooka, a village of nearly 10,000 people (2010), is very close to I-55, and I-80 traverses the northern edge of the Village. Accordingly, the Illiana Corridor would be easily accessible via the existing I-80/1-55 interchange. The terminus of Corridor A3S2 is near the Village Center. The area to the east of the Village Center is planned for rural and low density residential as well as open space, according to the Minooka Comprehensive Plan Land Use Plan Map (2005). Farther south near the termini of Corridors B3 and B4, the area near Coal City is reserved for private club outdoor recreation, according to its comprehensive plan (2007). Southwest of this recreation land are planned residential and neighborhood commercial areas. Braceville, a small residential village, is located farther southwest of Coal City and mostly east of I-55, but no master plan has been identified for this community.

Will County, Illinois

The Will County LRMP Form Map (2011) envisions the corridors as a designated "Rural" area but with several major exceptions. The Plan's Form Map shows the individual communities of Braidwood, Wilmington, Elwood, Manhattan, Monee, Crete, Peotone and Beecher as towns with concentrated growth around their centers surrounded by rural areas. The hamlets of Symerton, Wilton Center, Andres, Goodenow and Eagle Lake are designated to retain their form. "Projects of Regional Impact" are shown in this Plan Form Map on Figure 3-52:

- Near the 18,225-acre (as of January 2010 from USDA website) Midewin National Tallgrass Prairie, southwest of Elwood (i.e., the existing CenterPoint Intermodal Center, 2,500 acres, 8,000 jobs at buildout).
- At the southern end of the Midewin National Tallgrass Prairie between Wilmington and Symerton (i.e., the proposed Ridgeport Logistic Center).

- In the center of the Study Area, the site of the SSA is bounded by Monee on the northwest, Crete on the northeast, Peotone on the southwest, and Beecher on the southeast.
- The proposed Crete Intermodal Center, south of Crete and northeast of the SSA site (1,000 acres).
- The existing CenterPoint Intermodal Center in Joliet (3,600 acres, 14,000 jobs at buildout).

The Airport Environs Element (adopted January 2011) of the Will County LRMP indicates eight possible locations for "Development Nodes of Office & Hospitality or Industrial and Distribution" surrounding the SSA (see Figure 3-51). They are located near or in the corridors in or near Monee, Crete, Beecher and Peotone. The Village of Channahon (population 12,560 (2010)) is located at the western terminus of Corridor A3S2 at I-55 just south of the US 6 Interchange. Channahon is southeast of and adjacent to Minooka. The Comprehensive Plan (approved December 2008) indicates this interchange area is planned for a mix of commercial, business park/light industrial and transitional uses such as office to medium density residential. Several existing freight distribution facilities are located east of the Village.

The Village of Elwood (population 2,279 (2010)) is located just south of the proposed interchange of Corridor A3S2 with IL-53. The Village is located south and east of the existing 2,500-acre CenterPoint Intermodal Center, which has 12 million square feet of warehouse and distribution floor space and the capacity to generate 8,000 jobs at buildout. The Village's comprehensive plan (2008) proposed land use plan map shows continued industrial development north of the Village where Corridor A3S2 would be located, but timing is not indicated. An extension of a Metra passenger rail is planned from Manhattan to Elwood, near the CenterPoint Intermodal Center. An additional CenterPoint Intermodal Center is located in Joliet to the north.

Two suburban areas south of Joliet would receive accessibility benefits from Corridor A3S2, Preston Heights and Rockdale. Preston Heights is a census designated place in Will County and had a population of 2,575 in 2010, over 63 percent being African American. Rockdale is a village in Will County and had a population of 1,976 in 2010, almost 30 percent being Hispanic. Neither has a comprehensive plan.

The fast growing Village of Manhattan (population 7,051 (2010)) located on US 52, doubled its population between 2000 and 2010, and its 2008 Comprehensive Plan would accommodate a population of 40,000 by 2030. This past and expected future growth is the result of continued southerly expansion of Chicago suburbs and possibly lower costs of living in Manhattan. Most of the growth has taken place north of downtown Manhattan, where some 8,000 homes were proposed in 2008. Corridor A3S2 is aligned south of downtown through the center of the Manhattan planning boundary; the Illiana Corridor is anticipated in the Comprehensive Plan. Land uses planned along this corridor include the Hoff Industrial District and open space and agri-tourism, the latter because it is adjacent to the Midewin National Tallgrass Prairie. Manhattan has an existing Metra station.

Farther east, the Village of Monee is situated on IL-50 and I-57, approximately 35 miles south of the Chicago Loop. It, like Manhattan, has experienced rapid growth; its 2010 population of 5,148 was up 76 percent since 2000. The Village is located at the northwest corner of the site for the future SSA. Monee is primarily residential but is actively promoting commercial and industrial development. A comprehensive plan for the Village was not available.

The Village of University Park is located just north of Monee and had a population of 7,129 in 2010, a 7 percent increase since 2000. Its comprehensive plan anticipates a growth to 32,000 by 2030. This largely African American community was originally planned as a federally financed new community. The Village is home to Governors State University (GSU) with 6,000 students, whose 2008 university master plan accommodates a doubling of the enrollment within the master plan's 10-15 year planning timeframe. GSU plans to expand westerly toward the existing Metra station. The town zoning map (2009) shows a distinct division between industrial districts west of IL-54 and GSU immediately east of the highway. The remainder of the Village has a typical mix of uses but concentrated adjacent to existing built up areas to encourage contiguous development rather than a sprawl development pattern.

The Village of Crete is located northeast of the proposed SSA. Its 2010 population was 8,259, up 12 percent from 2000. Its 1997 Comprehensive Plan includes alternative growth plans for the south half with or without the airport. With the airport, more growth to the south is planned to support the airport. The proposed site of the Balmoral Park Metra station is near the proposed Crete Intermodal Center.

Farther south and west near I-55 are Braidwood and Wilmington, both southwest of the western identical terminus of Corridors B3 and B4. The corridors traverse the north side of Wilmington. This area is planned for mixed uses including low density residential, commercial, research-light industrial, open space and more commercial at the interchange with I-55 near Stripmine Road and IL-129. At its eastern end in this area, the corridors traverse through the hamlet of Symerton.

Much farther east is the village of Peotone, located between I-57 and IL-50 near the southwest corner of the site of the SSA. It is positioned for major growth with both Corridors B3 and B4 south of the village and the planned SSA northeast of it. The Will County LRMP indicates two possible locations for "Development Nodes of Office & Hospitality or Industrial and Distribution" in and near Peotone; one at I-55 and the other at IL-50.

The Village of Beecher is located on IL-1 near the southeast corner of the site of the SSA. Beecher is positioned for major growth with the corridors located north and south of it and the planned SSA northwest of it. The Will County LRMP indicates two possible locations for "Development Nodes of Office & Hospitality or Industrial and Distribution;" one north and one south of Beecher. The Land Use Plan map (2008) for the Village of Beecher shows continued strip commercial development along IL-1 with Rail-served Industrial land uses northwest of the center and Single Family land uses

northeast of the center. Therefore, the corridors would traverse areas planned for a mix of single family residential as well as strip commercial along IL-1.

Kankakee County, Illinois

The corridor in southern Will County is very close to and parallel to the northern boundary of Kankakee County for much of its length. Corridor B4 encompasses a small portion of northeastern Kankakee County. The 2030 Kankakee County Long Range Plan (2005) calls for preservation of farmland and scattered hamlets with two exceptions, concentrated growth in Manteno and also in smaller Grant Park farther east. The Plan map shows growth in Manteno eventually joining with Bourbonnais and Kankakee City farther south into one contiguous urbanized area.

Lake County, Indiana

Lake County does not have a Comprehensive Plan, but does have a Zoning Map. NIRPC's 2040 Comprehensive Regional Plan has a strong vision for the future that encourages growth near existing communities and strong consensus that no new growth centers be introduced. According to Figure 1.23, Regional Planning Areas in the referenced Plan, Crown Point is designated as an economic center, while Lake Dalecarlia, Lowell, Cedar Lake, and Winfield are designated "Livable Centers." As such, future growth is to be located as close to the centers as possible, in an attempt to arrest suburban sprawl into Central and South Lake County.

The most rapid growth has occurred in central Lake County. Since 1980, Crown Point has grown by about two-thirds and Winfield, incorporated in 1993, has grown into a town of 4,383 residents. In south Lake County, Cedar Lake and Lowell have experienced modest growth. Growth in unincorporated Lake County has been low, as most of the growth experienced in the county has occurred within municipalities.

The communities of Lake Dalecarlia (a private lake-oriented residential community of about 1,300 residents) and Lowell (2010 population 9,276) are closest to the corridors, as shown on Figure 3-52. Lowell is south of the Corridors A3S2 and B3 and Lake Dalecarlia is north of them between US 41 and SR 55, near the proposed eastern terminus at I-65. Both communities' future growth patterns would be influenced by proposed project interchanges at US 41 and SR 55. Cedar Lake (2010 population 11,560) is directly north of Lake Dalecarlia but also would be impacted by these two proposed interchanges. Farther north along I-65 are Crown Point (2010 population 27,317) and Winfield (2010 population 4,383). Schneider, a very small village, is located south of Corridor B4 outside the Study Area.

3.19.7 Study Area Trends and Existing Conditions

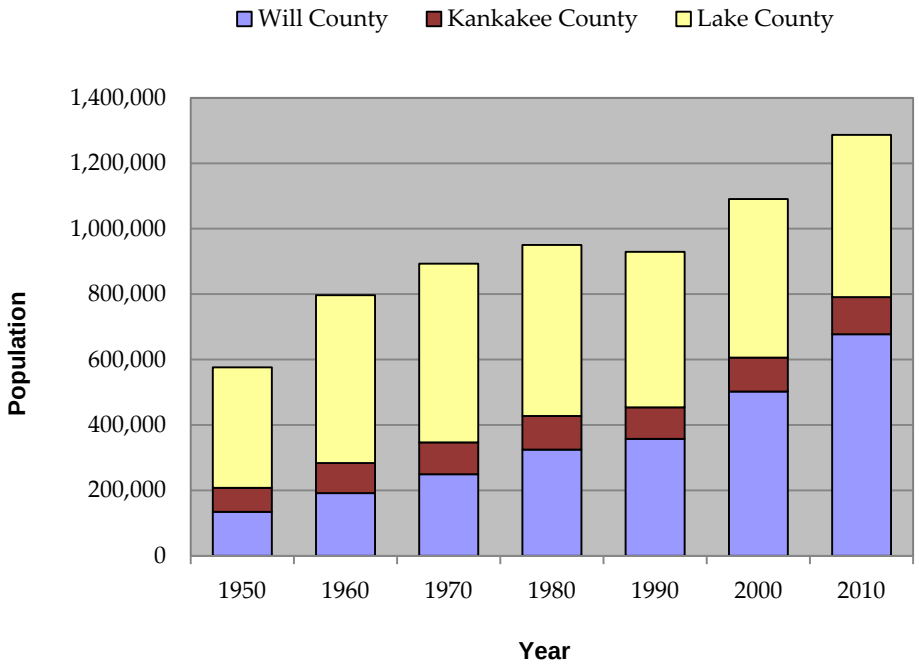
The consideration of trends, past changes, and the existing conditions in the natural and built environments is important to the assessment of indirect and cumulative impacts. Such information helps provide an indication of reasonably foreseeable future trends and their potential consequences.

3.19.7.1 Population/Development

Historically, the pattern of growth in the Region has expanded outward from Chicago's urban core. As Cook and DuPage counties have become developed, new growth has pushed into Will and Lake counties. Existing and planned developments within the Study Area are shown on Figure 3-10 (in Section 3.2.5 - Neighborhoods).

Table 3-82 and Chart 3-1 show population trends since 1950 for the three counties in the Study Area. Demographic data show population growth after a period of decline in the 1980s. Will County, which has the largest population of the three counties, has had substantial growth since 1980. By far the fastest growing of the three counties, Will County has been one of the fastest growing counties in the nation. Although Kankakee County's population declined from 1980 to 1990, it has increased 17.9 percent since 1990. It has the smallest population of the three counties. Lake County had a decline of 9.1 percent in population from 1980 to 1990, but has since experienced modest growth. Compared with Will and Kankakee counties, Lake County is by far the slowest growing county in the past decade. The three counties in the Study Area grew almost twice as fast during the 1970 to 2010 period as the Chicago Region as a whole.

Chart 3-1. Population Trends, 1950 to 2010



Source: US Census

Table 3-82. Population Trends, 1950 to 2010

	Population							Population Change			Percent Change	
	1950	1960	1970	1980	1990	2000	2010	1950-1970	1970-1990	1990-2010	1950-2010	1970-2010
Will	134,340	191,620	249,500	324,460	357,310	502,270	677,560	115,160	107,810	320,250	404.4%	171.6%
Kankakee	73,520	92,060	97,250	102,930	96,260	103,830	113,450	23,730	(990)	17,190	54.3%	16.7%
Lake	368,150	513,270	546,250	522,970	475,590	484,560	496,010	178,100	(70,660)	20,240	34.7%	(9.2%)
Sub-Total	576,010	796,950	893,000	950,360	929,160	1,090,660	1,287,020	316,990	36,160	357,860	123.4%	44.1%
Chicago Region	5,495,360	6,794,460	7,612,310	7,869,540	8,065,630	9,098,320	9,461,110	2,116,950	453,320	1,395,480	72.2%	24.3%

Source: US Census.

Areas near the planned SSA in Will County also had substantial population increases in the past 10 years. The 2010 total population in the Study Area was 233,398.

These growth trends were well established before the Illiana Corridor began. Growth in the Study Area is fueled by several factors including the continuing western and southern expansion of the Chicago metropolitan area, the availability of less expensive and developable land, and the lower housing prices as compared with areas closer to Chicago.

3.19.7.2 Land Use

Existing land use in the Study Area (see Figure 3-15, Existing Land Use in Section 3.2) includes a diverse mix including agriculture, commercial business, heavy industry, and residential areas, particularly in the northern half. Agricultural lands dominate farther south in the Study Area. Since the Study Area is within the Chicagoland metropolitan area, land is more urban to the north and suburban and rural to the south. There are emerging growth areas in the northwest and north central portions of Will County, in the north Kankakee area of Kankakee County, and in central Lake County.

The eastern portion of Will County is comprised generally of agricultural land with small scattered residential subdivisions. Most of the county in the Study Area is rural, but it is changing with more residential development occurring in Monee, Crete, and University Park. The area to the north (on the eastern end) is more suburban and residential in character than to the south. Commercial development is concentrated around I-57, IL-1, and IL-50.

There are nature preserves located throughout the county that are protected from development, as described in Section 3.8. The 18,225-acre Midewin National Tallgrass Prairie administered by the USFS is located in the western portion of the county between Elwood and Wilmington. When the site is cleaned up by the US Army, because of its prior use as the Joliet Ammunition Plant and Arsenal, the size will increase to 19,000 acres. The Midewin National Tallgrass Prairie is the largest designated natural feature in the Study Area. It is bisected in a north-south direction by IL-53 and the railroad corridor designated for future high speed rail between Chicago and St. Louis. The Midewin National Tallgrass Prairie is an emerging outdoor recreational area visited by some 20,000 persons annually largely from within 25 miles and used for hiking, horseback riding, and bicycling as well as conservation and educational programming (AECOM, 2010).

The proposed development of the SSA is also located within Will County between the communities of Monee, Crete, Peotone, and Beecher.

Most suburban development in northwest Indiana occurs in Lake County because of its proximity to Chicago. Low-density residential uses account for most of urban uses in the county. The most rapid growth in the northwest Indiana has occurred in central Lake County.

A substantial amount of real estate development occurred in Kankakee County in the 1990s along I-57, which accesses Manteno and Bourbonnais farther south. Between 1980 and 2000, Manteno Township was the second-fastest growing area of the county. This area had high industrial growth with new warehouse distribution centers in the late 1980s and early 1990s. Another warehouse distribution center was built in 2000 for Sears in this township. Currently, more than 75 percent of land is agriculture with scattered single-family residential along county roads. Commercial development is concentrated along I-57 and IL-50 in Manteno. There are few industrial sites in the area.

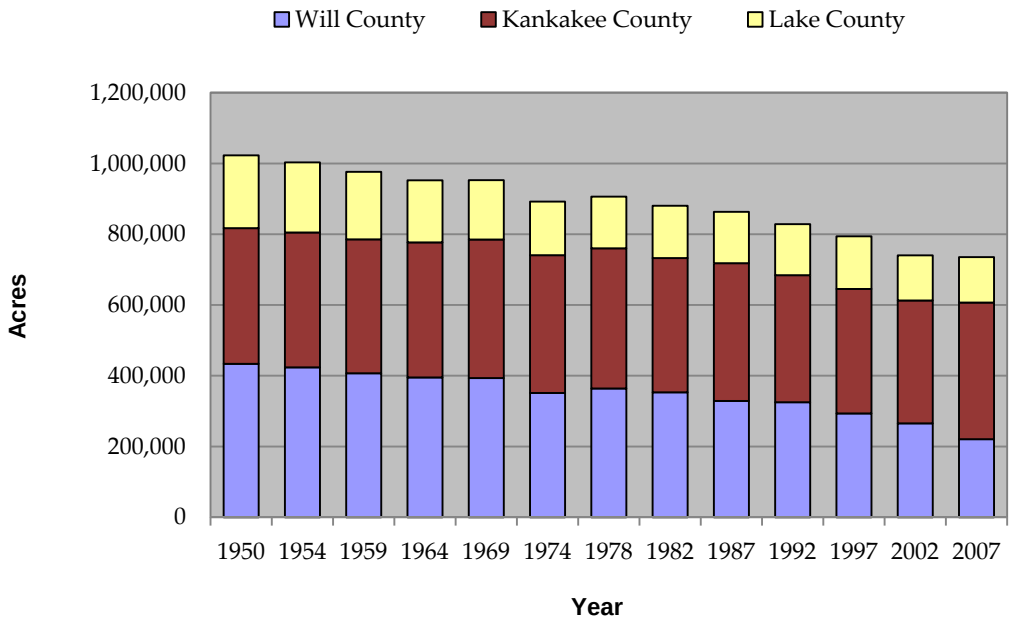
3.19.7.3 Agriculture and Agricultural Land Loss

Prime farmland is federally protected by the USDA under the Farmland Protection Policy Act. The Study Area contains approximately 25,900 acres of prime farmland, including 20,800 acres in Illinois and approximately 5,100 acres in Indiana. In Illinois, approximately 16,000 acres and 4,800 acres of prime farmland soils are known to occur in Will and Kankakee counties, respectively (see Section 3.3 for more information on agricultural impacts). Within Will and Kankakee counties the concentration of prime farmland is fairly consistent except for areas around developed communities such as Manteno, University Park/Monee, and Symerton. Within Lake County, a large concentration of prime farmland is located in the south central part of the Study Area between Cedar Lake to the north and the Kankakee River floodplains to the south. The Kankakee River valley soils are not classified as prime farmland, although they are now drained and in agricultural production. Prime farmland does exist north of Cedar Lake, but in lesser concentrations. Other areas of high concentration of prime farmland in Lake County include the northeast corner of the Study Area near the Deep River headwater.

The majority of the Study Area is agricultural and agricultural areas are generally located near forest preserves and along the Kankakee River. Small percentages of the total amount of farmland are enrolled in federal or state agricultural conservation protection or reserve programs. In Will County, approximately 1,050 acres of farmland, which is approximately 0.5 percent of the total farmland, is enrolled in conservation programs. Approximately 2,600 acres of farmland in Kankakee County, which is approximately 0.7 percent of farmland, is enrolled in some type of conservation program. In Lake County, approximately 2,620 acres, which is approximately 2.0 percent of the farmland, is enrolled in conservation programs.

As development pressures increased between 1950 and 2007, there has been an overall reduction in the amount and size of agricultural land in the Study Area (see Chart 3-2). In Will County, the amount of land in farms decreased by 49 percent (from approximately 433,420 acres to 220,850 acres). In Kankakee County, the amount of land in farms increased by 1.0 percent (from 383,818 acres to 385,808 acres). In Lake County the amount of land in farms decreased by 38 percent between 1950 and 2007 (from nearly 205,560 acres to nearly 128,440). The average size of farms is increasing in Will, Kankakee, and Lake counties. In Will County, the average size of a farm increased from nearly 150 acres in 1950 to slightly more than 250 acres in 2007, an increase of about 70 percent. In Kankakee County, during the same period farm size increased 175 percent

Chart 3-2. Acres of Land in Farms, 1950 to 2007



Source: USDA, Census of Agriculture, 2007

from nearly 170 acres to slightly more than 460 acres. In Lake County, the average size of a farm increased from nearly 110 acres in 1950 to slightly more than 290 acres in 2007, an increase of about 160 percent.

In 2007, approximately 72 percent of the State of Illinois and 63 percent of the State of Indiana consisted of farmland. Table 3-83 describes the major agricultural trends for Will, Kankakee, and Lake counties.

3.19.7.4 Natural Resource Loss

The following information is based on information available in Section 3.8, Natural Resources.

Forest

- Land cover within the corridors is comprised primarily of agricultural land interspersed with urbanized areas, public lands, and riparian corridors. Natural plant communities cover a relatively small portion of the Study Area. The Midewin National Tallgrass Prairie is the only major grassland community within the Study Area.
- Public lands within the corridors, including forest preserves, nature reserves, Park Districts, and USFS land, are protected at the local, state, and/or federal level. In Illinois, there are 23 INAI sites totaling 11,524 acres within the Study Area. INAI sites include areas that are high quality natural areas, contain habitat for endangered species, and other substantial natural features. The majority of the INAI sites are high quality natural areas with specific suitable habitat for state-listed threatened and endangered species.

Table 3-83. Agricultural Trends, 1950 to 2007

	1950	1954	1959	1964	1969	1974	1978	1982	1987	1992	1997	2002	2007	Percent Change 1950 to 2007
Number of farms														
Will County	2,937	2,607	2,277	1,912	1,845	1,430	1,382	1,381	1,239	596	506	830	877	-70%
Kankakee County	2,284	2,108	1,761	1,557	1,500	1,384	1,251	1,173	1,086	928	831	722	835	-63%
Lake County	1,858	1,706	1,183	932	878	685	654	622	551	271	219	482	441	-76%
Land in farms (acres)														
Will County	433,416	423,710	406,823	395,140	393,460	351,486	364,072	353,300	328,729	325,227	293,526	265,490	220,851	-49%
Kankakee County	383,818	381,083	378,632	381,645	391,646	389,262	396,141	379,052	389,185	358,920	351,567	347,161	385,808	1%
Lake County	205,558	198,376	191,081	175,523	167,771	151,289	146,177	148,139	145,566	144,305	148,872	127,782	128,439	-38%
Average farm size (acres)														
Will County	148	163	179	207	213	246	263	256	265	308	323	320	252	70%
Kankakee County	168	181	215	245	261	281	317	323	358	387	423	481	462	175%
Lake County	111	116	162	188	191	221	224	238	264	299	337	265	291	162%

Source: USDA Census of Agriculture, 2007.

FPDWC forest preserves, Illinois State Nature Preserves, Indiana State Nature Preserves, Lake County Indiana Park District land, and the Midewin National Tallgrass Prairie are located within the Study Area. Within the corridors, riparian corridors and forested areas greater than 20 acres provide the best quality habitat for wildlife. A total of 324 areas within the Study Area were determined to be large forested areas, which are defined as forests greater than 20 acres in size. These forested areas are primarily associated with preserves, parks, and riparian corridors. Forested areas greater than 20 acres are given consideration under the Illinois DNR and IDOT Review and Coordination Agreement (IDOT, 1996).

The majority of forested areas greater than 20 acres are located adjacent to the Kankakee River, Des Plaines River, and the DuPage River at the western terminus of the Study Area; Plum Creek at the north-central portion of the Study Area; and West Creek in the central-east portion of the Study Area. Another forested habitat area within the Study Area is within the boundaries of the Midewin National Tallgrass Prairie.

In Illinois, forests have drastically decreased since 1820, when approximately 13,800,000 acres were forested. By 1985, only 31 percent of the forested area remained. Forested area increased, however, from 1962 to 1985 as a result of reduced cattle production and conversion of land to secondary forests (Iverson, 1994).

In Indiana, forests provided approximately 85 percent of land cover, or 19,500,000 acres, prior to European settlement. Beginning in 1800, there was a loss of forest as forested lands were converted to farmland. This trend began to change in 1950 and by 1998, forest increased from 4,140,000 to 4,501,300 acres, an increase of 8.5 percent. Today, approximately 20 percent of Indiana is forested, and most of the forested land is concentrated in the southern part of the state (USDOT, FHWA, and IDOT, 2002).

Within the corridors, Corridor A3S2 has 1,120 acres of forested land of 20 acres or more in size compared to 288 acres for Corridor B3 and 711 acres for Corridor B4.

Wetlands

In Illinois, wetlands once covered 22 percent of the state. Approximately 85 percent of Illinois wetlands were lost between the 1780s and 1980s as a result of population growth and conversion of land to agricultural use (Dahl, 1990). Data from 1980 to 1987 indicate that approximately 18,630 and 5,620 acres of wetland were present within Will and Kankakee counties, respectively, based on Section 3.12, Wetlands.

In Indiana, prior to European settlement, an estimated 5,600,000 acres were wetlands. Over the past 200 years, Indiana lost approximately 85 percent of its wetlands (Dahl, 1990). In the mid 1980s, Indiana was estimated to have approximately 813,030 acres of wetlands. Since the 1970s, this downward trend has reversed as a result of federal and state regulations requiring "no net loss of wetlands" (USDOT, FHWA, and IDOT, 2002). Data from 1980 to 1987 indicates that approximately 19,760 acres of wetland were present in Lake County (IDEM, 2012). Historically, many agricultural fields in northern Illinois and Indiana were ditched or tiled, which eliminated wetlands in these areas.

Up until the 1980s, there was no regulatory control over wetlands destruction and destruction of wetlands continued. Since the CWA Amendments were passed in 1977 enforcement of wetlands protection became evident in the 1980s and destruction slowed. Acreage of wetlands may be increasing some because of enforcement of replacement wetlands at higher replacement ratios. However, since 2001, there may have been a slight increase in wetlands destruction because of the decision by the US Supreme Court, referred to as SWANCC, which removed regulatory protection of isolated wetlands.

Most of the wetlands in the corridors are near or along streams or ditched channels. There are limited opportunities for isolated wetlands to remain in actively used areas, such as active farmland. Wetlands generally are associated with streams or localized depressional areas. Most of the corridors are agricultural interspersed with forested, riparian, and urbanized areas. Based on a review of the resources in the corridors, there are approximately 128 acres of wetland within the corridors (approximately 87 acres in Illinois and approximately 41 acres in Indiana). The working alignment within Corridor A3S2 would impact the most wetlands (75.8 acres) while the working alignments within Corridors B3 and B4 would impact approximately 34.5 and approximately 15.3 acres, respectively (see Table 3-67 and Table 3-68).

Prairies

The 18,225-acre Midewin National Tallgrass Prairie is located in the Study Area, as described above.

Pre-settlement prairie in Illinois was estimated to be over 22 million acres, or approximately 60 percent of the land area of the state, as shown in Table 3-84. Statewide, with the conversion to urban/suburban development, agriculture, and fire suppression, more than 99 percent of all prairies have been converted to other uses (IDOT, 2006).

In Indiana, pre-settlement prairie was estimated to be 3,200,000 acres, or approximately 15 percent of the land area of the state (Betz, 1978). Since that time, it is estimated that more than 99 percent of prairies have been converted to other uses (Butler University, 2012).

3.19.7.5 Water Resources

In 2008, the Illinois DNR released biological stream ratings for Illinois (Illinois DNR/ORC, 2008).[30] Streams that are rated as Class A or B are considered to be high quality with the highest biological integrity or diversity. In general, the higher quality streams are located within the west portion of the corridors. None of the stream sections in the corridors received an A rating for diversity or integrity.[31] Two stream sections in Corridor A3S2 (Jackson Creek and Forked Creek) and three stream sections in Corridors

[30] Based on information from Illinois DNR, the new stream ratings replace the Biological Stream Characterization (BSC) and BSS list developed in 1984 and 1992, respectively.

[31] A segment of the Kankakee River and a segment of Forked Creek (near their confluence) have an A rating for diversity roughly 2,100 feet south of Corridors B3 and B4.

Table 3-84. Historic Natural Resource Trends

	Year	State Trends in Acres	
		Illinois	Indiana
Wetlands	Pre-settlement	8,000,000[1]	5,600,000[2]
	1906	N/A	625,000[2]
	1954	N/A	267,100[2]
	1980s	1,200,000[3]	813,000[2]
Prairie	Pre-settlement	22,000,000[4]	3,200,000[5]
	2000s	< 220,000[6]	< 32,000[6]
Forest	Pre-settlement	N/A	19,500,000[2]
	1820	13,800,000[7]	N/A
	1950	N/A	4,140,000[2]
	1985	4,278,000[7]	N/A
	1998	N/A	4,501,300[2]

1 Calculation based on pre-settlement wetlands coverage equal to approximately 22 percent of the area of Illinois (Dahl, 1990).
2 Sources: US DOT, FHWA, and IDOT, 2002. (I-69 DEIS Section 5.26.3).
3 Calculation based on 85 percent of wetlands loss between 1780s (pre-settlement) and 1980s (Dahl, 1990).
4 Source: IDOT, 2006. (Prairie Parkway Study DEIS Section 4.15.4).
5 Source: Betz, 1978.
6 Calculation based on estimates that less than 1 percent of pre-settlement prairie in Illinois (IDOT, 2006) and Indiana (Butler University, 2012) remain.
7 Source: Iverson, 1994.

B3 and B4 (Forked Creek, Kankakee River, and Trim Creek) have a B rating for biological diversity. Sections of Forked Creek and the Kankakee River (in Corridors B3 and B4) also received a B rating for integrity. No stream sections in Corridor A3S2 have a B rating for integrity (see Section 3.9). No ratings were available for Indiana streams.

The 303(d) impairment sources for the corridors' resources generally include channelization, habitat modification, agricultural-related activities, and/or MPSDs/stormwater associated with development. These sources are consistent with the current agricultural land use of the corridors' watersheds and the urban development.

Since the 1970s, various environmental regulations (at the federal, state, and local levels) and flood control projects have played a role in improving water quality and reducing flooding. Regulations, such as the federal CWA and local ordinances, are reducing the adverse effects of development upon water resources, as described in Section 3.11. These regulations are additional controls on the location of potential indirect effects such as project induced land use development, which would not be allowed in such protected areas.

Nonpoint source pollution from agricultural land and urban areas was identified by IDEM as a primary contributor to impaired biotic communities in a segment of West

Creek located upstream of the corridors. Water quality data collected in 2011 showed that stream health has improved and that the biotic community in a segment of West Creek is no longer impaired.

Stormwater runoff and highway pollutants could cause further degradation of receiving waters, erosion, harm, or stress to aquatic life, and decreased recreational use and aesthetics. BMPs would be incorporated into the corridors to minimize adverse impacts to the downstream aquatic environment. Water quality would be managed through a combination of stormwater runoff and drainage collection facilities, and the implementation of other post-construction BMPs in accordance with state and federal water quality goals of managing the water quality of impaired or degraded streams. To the extent practicable, improvements would be designed so that stormwater runoff quality would be improved with infiltration, detention, or other stormwater treatment before discharge to surface waters. Stormwater controls that treat typical highway pollutants (e.g., suspended solids, sediment, heavy metals, inorganic salts, PAHs) and that control the volume of stormwater runoff are discussed in Section 3.9.

3.19.8 Impact Assessment

3.19.8.1 Population and Employment

The locations of changes in growth associated with the corridors compared to the No-Action Alternative are shown in Figure 3-53, Figure 3-55 and Figure 3-57 for Population and in Figure 3-54, Figure 3-56, and Figure 3-58 for Employment. In general, development is expected to continue to expand outward and southerly from Chicago.

According to population and employment projections for 2040, the total population in Will, Kankakee and Lake counties would increase to approximately 2.14 million with the No-Action Alternative compared to approximately 1.29 million in 2010 (Table 3-85). This growth of over 854,000 people represents a 66 percent increase in population (2.2 percent a year) without the proposed Illiana Corridor.

Table 3-85. Population Change with the Corridors

County	2010	2040						
		No-Action Alternative	Corridor A3S2		Corridor B3		Corridor B4	
			Number	Change from No-Action	Number	Change from No-Action	Number	Change from No-Action
Will	677,560	1,366,460	1,380,574	14,114	1,371,330	4,870	1,371,330	4,870
Kankakee	113,450	150,000	150,544	544	151,080	1,080	151,080	1,080
Lake	496,010	625,000	631,733	6,733	630,230	5,230	630,796	5,796
Total	1,287,020	2,141,460	2,162,851	21,391	2,152,640	11,180	2,153,206	11,746

Source: ACG: "Historic and Forecasted Growth of Employment and Population – Market Driven Forecasts 2010-2040" (ACG: The al Chalabi Group, Ltd., 2011). See Appendix E.

Figure 3-53. Corridor A3S2 Changes in 2010 – 2040 Population Growth

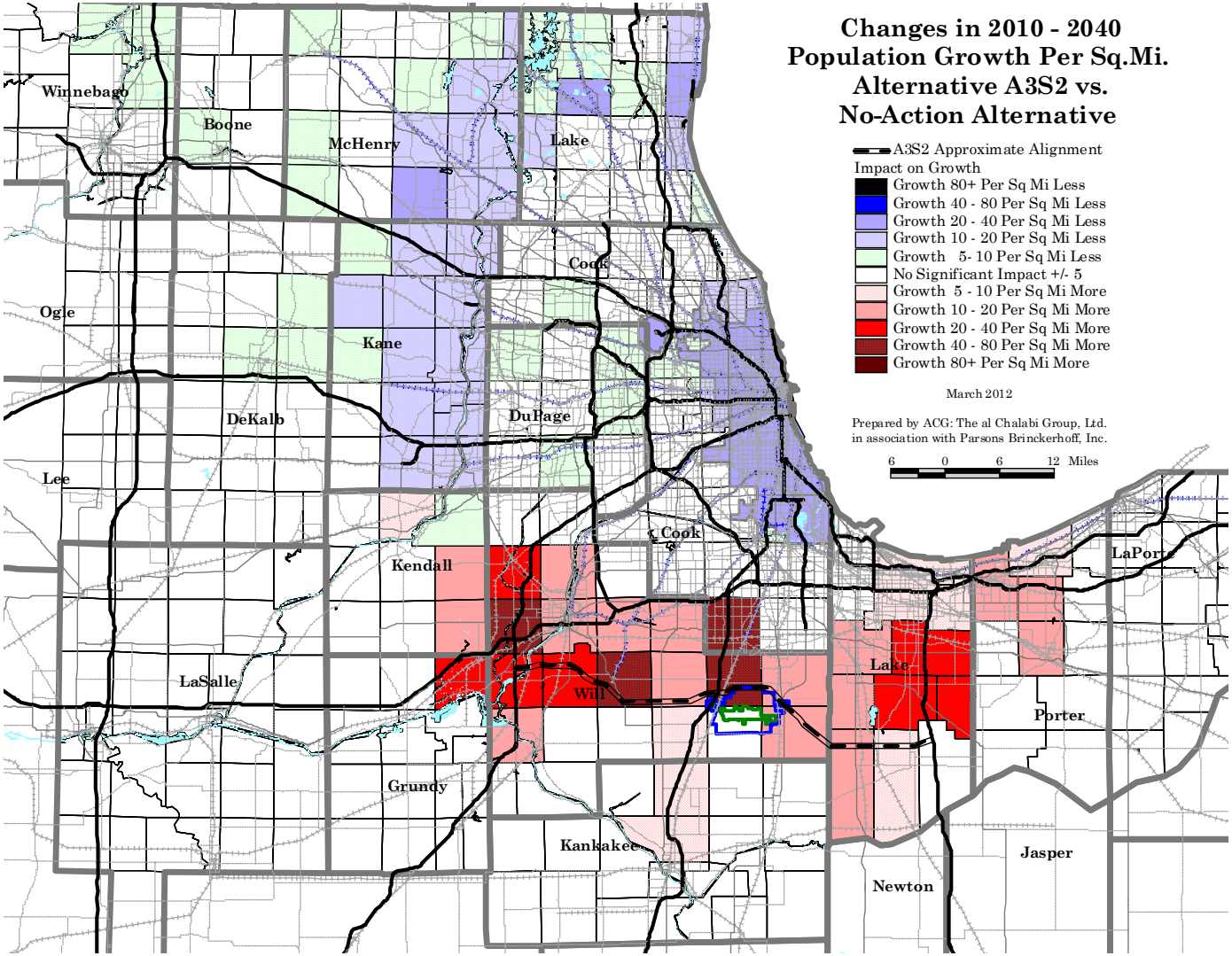


Figure 3-54. Corridor A3S2 Changes in 2010 – 2040 Employment Growth

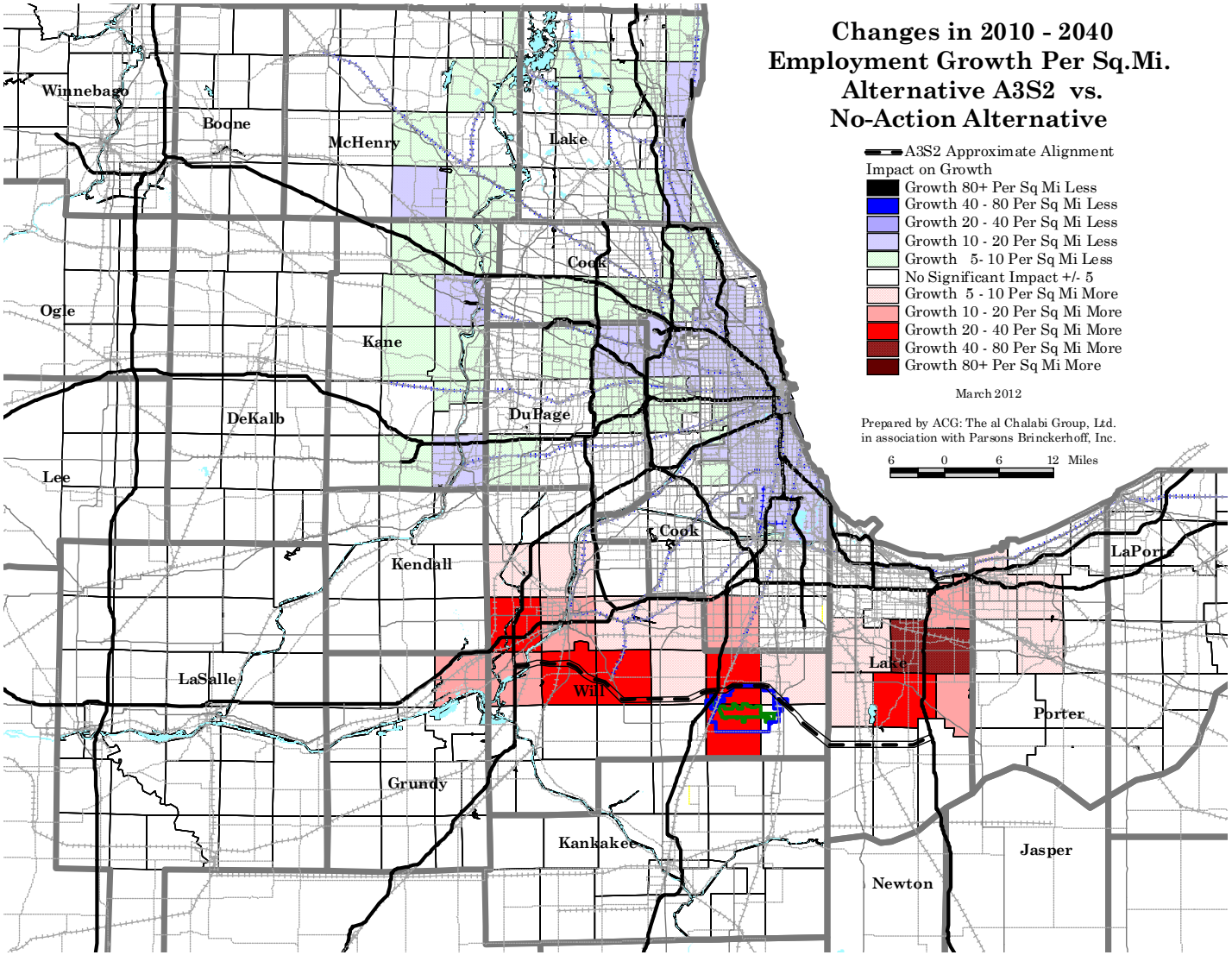


Figure 3-55. Corridor B3 Changes in 2010 – 2040 Population Growth

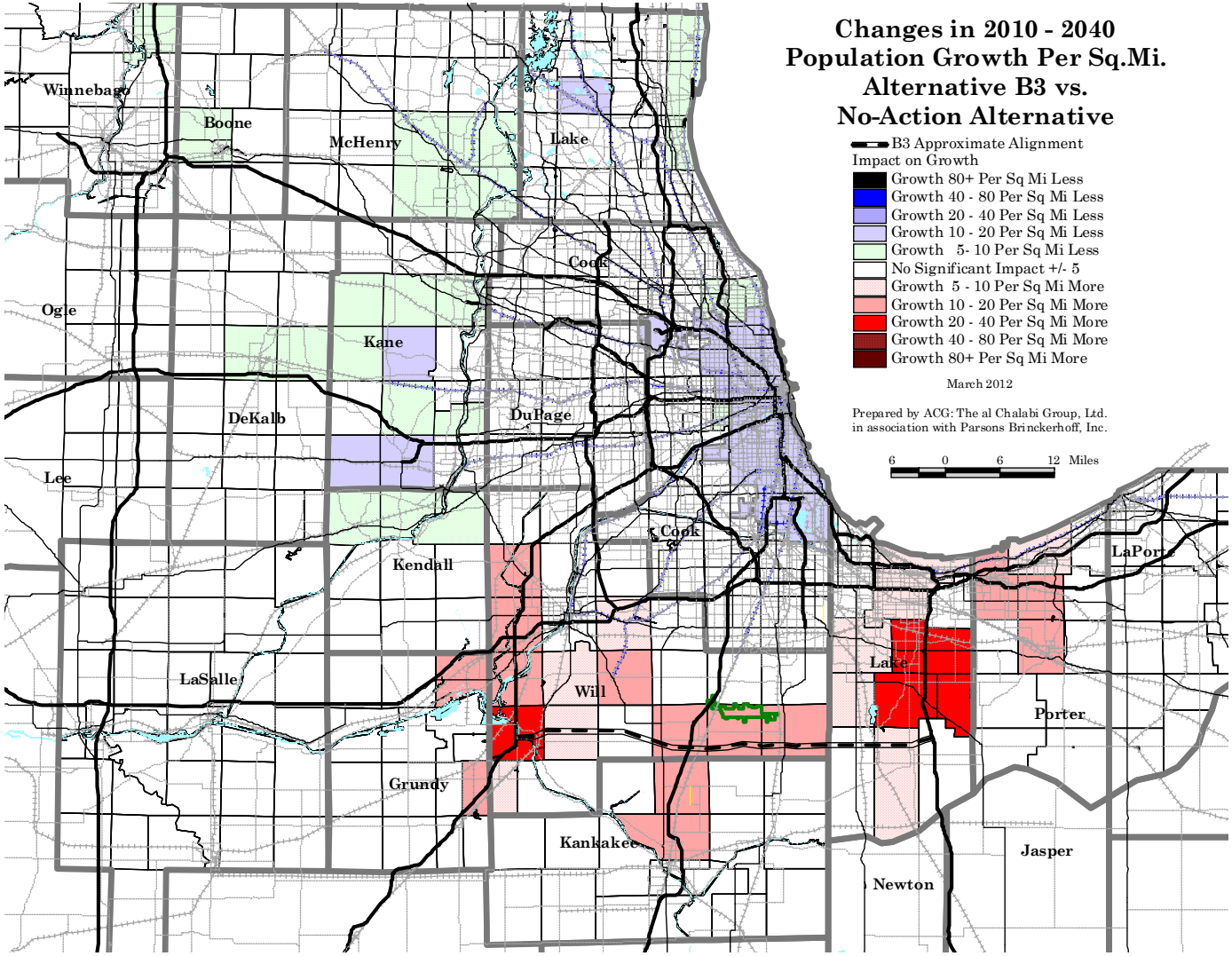


Figure 3-56. Corridor B3 Changes in 2010 – 2040 Employment Growth

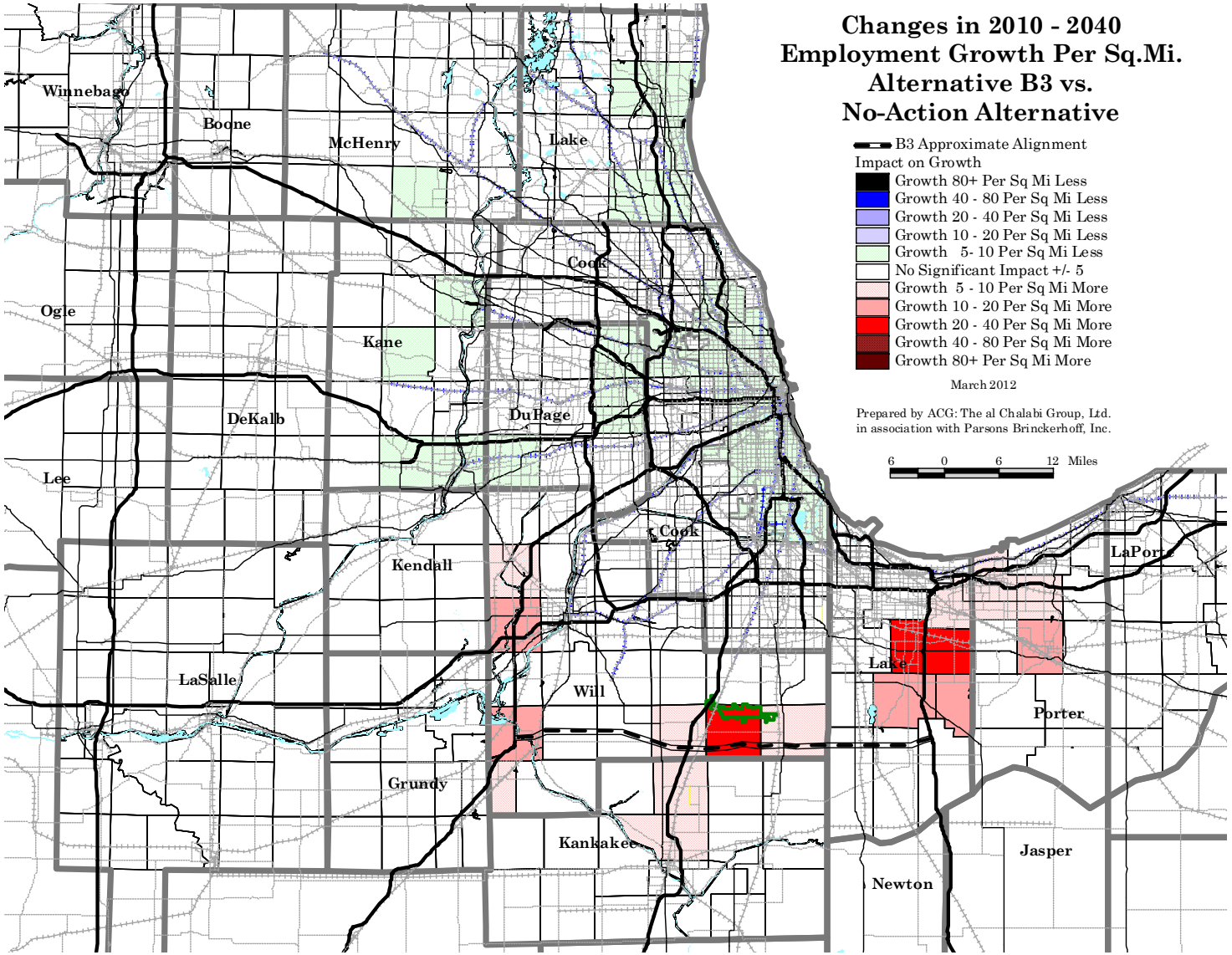


Figure 3-57. Corridor B4 Changes in 2010 – 2040 Population Growth

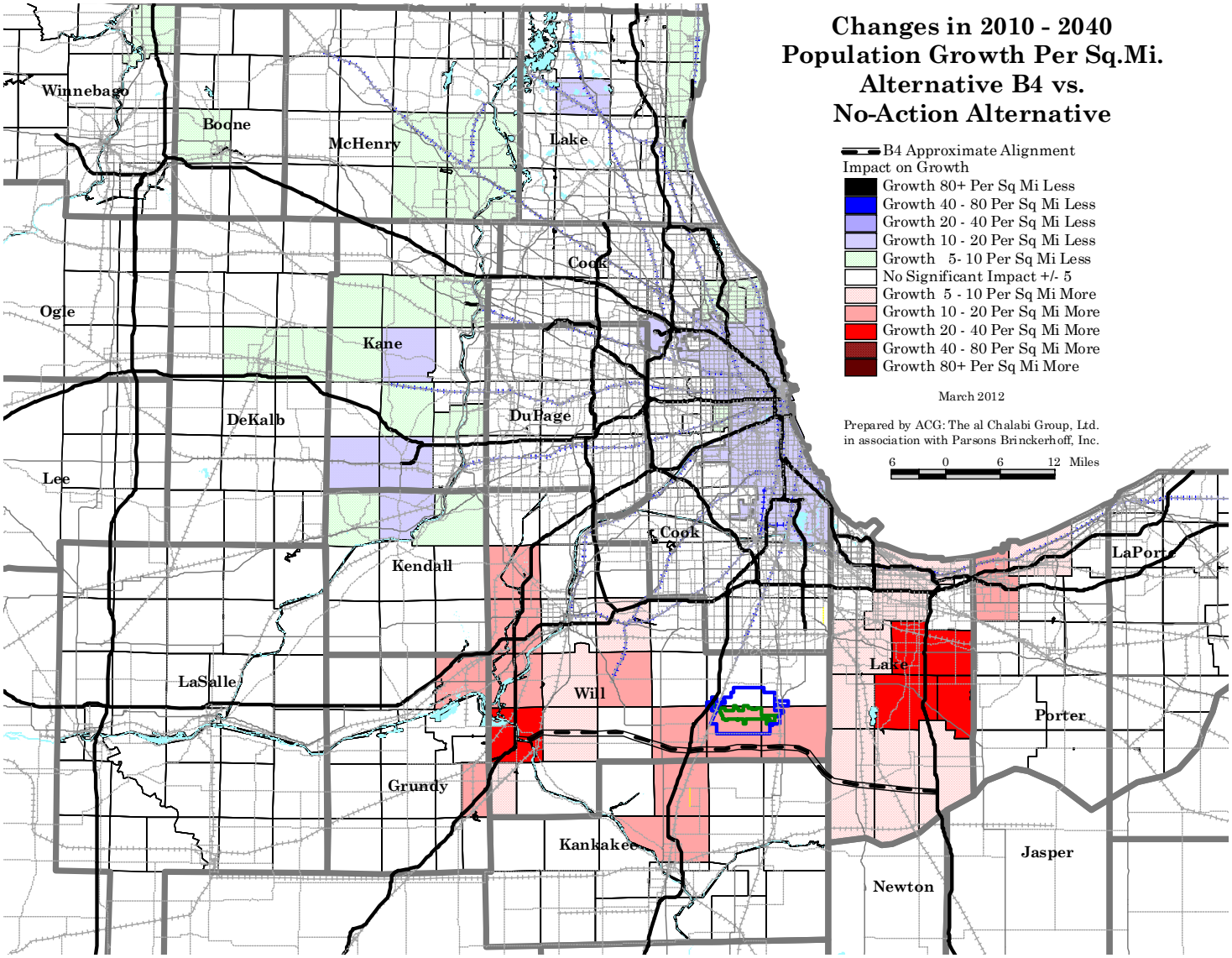
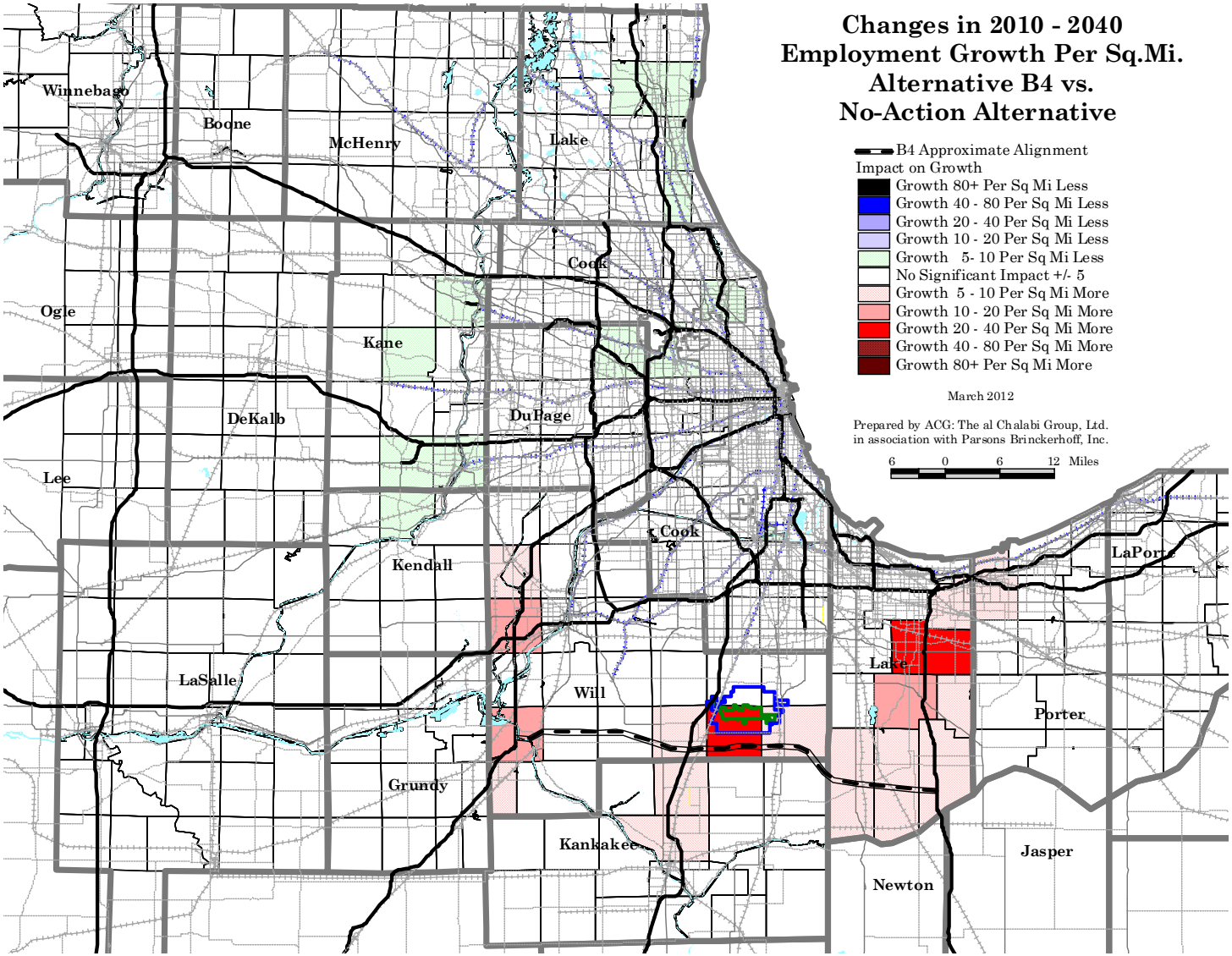


Figure 3-58. Corridor B4 Changes in 2010 – 2040 Employment Growth



Corridor A3S2 would increase the population to 2.16 million or approximately 1 percent higher than without the project. Corridors B3 and B4 would each increase the population to 2.15 million or approximately a 0.9 percent higher than without the proposed project. Population growth is slightly higher with Corridor A3S2 because it is closer to existing growth areas.

According to population and employment forecasts for 2040, the total employment in Will, Kankakee, and Lake counties would increase to approximately 1.057 million with the No-Action Alternative compared to approximately 0.535 million in 2010. This represents a 49 percent increase without the proposed project (Table 3-86).

Table 3-86. Employment Change with the Corridors

County	2010	2040						
		No-Action Alternative	Corridor A3S2		Corridor B3		Corridor B4	
			Number	Change from No-Action	Number	Change from No-Action	Number	Change from No-Action
Will	252,320	672,960	681,126	8,166	676,510	3,550	676,510	3,550
Kankakee	55,230	75,000	75,284	284	75,560	560	75,560	560
Lake	227,610	309,600	314,391	4,791	313,150	3,550	313,150	3,550
Total	535,160	1,057,560	1,070,801	13,241	1,065,220	7,660	1,065,220	7,660

Source: ACG: The al Chalabi Group, Ltd., 2011.

With Corridor A3S2, employment would increase by 13,241 to 1.071 million, or approximately 1.0 percent higher than without the proposed project. With Corridors B3 and B4, employment would increase by 7,660 to 1.065 million, or approximately 0.7 percent higher than without the proposed project.

In all, 11,180 to 21,391 residents and 7,660 to 13,241 jobs are projected to be attracted to the three counties with the corridors. These numbers compare with 854,444 more residents and 522,400 more jobs in the three counties with the No-Action Alternative. Therefore, there will be substantial increases in population and employment in the Study Area with the No-Action Alternative and under any of the corridors.

The above forecasts for population and employment for Corridors A3S2 and B4 were derived by interpolating and/or extrapolating the build socio-economic forecasts for the Northern and Southern Alignments (identified in the report referenced under the tables). These latter forecasts were generated reflecting the changes in accessibility resulting from building along these alignments and using the same methodology as that used for similar NEPA studies (e.g., the proposed Prairie Parkway project in IL).

Most of the urban development occurring in central and southern Will County is a result of the outward growth from points north (i.e., DuPage County, west Suburban Cook County, and the City of Chicago). Accordingly, for the townships along the sections of

Corridors A3S2, B3, or B4 that are near to either the Northern or Central Alignments (identified in the report referenced under the tables), the forecasts generated for these alignments are accepted. For townships along sections midway between Corridors A3S2, B3, and B4, an average of forecasts of the two corridors is used.

In Lake County, Indiana, most of the urban growth is due to migration from Illinois. Accordingly, the forecasts for Lake County townships, along Corridor A3S2, are slightly higher than the prior forecasts generated for the Central Alignment, as Corridor A3S2 connects with the faster growing townships in Illinois.

3.19.8.2 Indirect and Cumulative Effects on Environmental Justice (EJ) Communities

Minority and low income populations (EJ populations) are in Joliet (including suburban Preston Heights and Rockdale), University Park, Crete, and Monee in Will County, Illinois, and in Crown Point in northern Lake County, Indiana. Joliet and Crown Point and the communities near Lake Michigan such as Gary are outside the Study Area but within the Cumulative Impacts area. The household income and poverty characteristics for the counties located within the Study Area vary, with Will County having higher incomes and lower poverty rates. The proportion of families considered to be living below the poverty line is 4.8 percent in Will County and 13 percent in Lake County.

Federal and state laws related to EJ, include Executive Order 12898 and the final USDOT Order on Environmental Justice. This section describes the potential for disproportionate indirect and cumulative impacts to EJ communities affected by the corridors.

The EJ focus is on target groups that may require special consideration (e.g., with respect to travel patterns and access to jobs, schools, churches, parks, hospitals, shopping, and community services). The corridors do not pass through neighborhoods with disproportionately high concentrations of minorities, low-income residents, or non-English speaking populations and communities (see Section 3.2.6). A disproportionate impact to these populations exists when they bear more than their "fair share" in accordance with the HHS Poverty Guidelines, or minority populations within the influence area of the corridors.

The following identifies the generalized indirect effects of the corridors on EJ populations within the Study Area and outside of it. Potential impacts associated with communities outside of the corridor would be considered indirect and are addressed here.

This analysis of indirect and cumulative effects is based on a review of the changes in population and employment growth forecasts shown in Figure 3-53 to Figure 3-58, which indicate the forecast locations of changes in growth between 2010 and 2040 with both the No-Action Alternative and the three corridors. The forecasts indicate that the three corridors will stimulate growth in most of the "townships" shown on the figures that include concentrations of EJ communities referenced above. In addition, the forecasts indicate that there would be no decline in growth in the communities with concentrations of EJ communities with the corridors. This means that there would be

mobility and accessibility benefits to most residents and workers in those EJ communities with no disproportionate adverse effects. Additionally, there will be no displacement of EJ populations due to indirect effects.

Table 3-87 below indicates the amount of population and employment change between 2010 and 2040 in the communities with EJ concentrations by corridor.

Table 3-87. Changes in Growth in Population and Employment per Township in or near Communities with EJ Concentrations, 2010-2040, By Corridor

Communities With EJ Concentrations	Corridor A3S2		Corridor B3		Corridor B4	
	Population	Employment	Population	Employment	Population	Employment
Joliet	40 – 80+	20 – 40	10 – 20	10 – 20	10 - 20	5 – 20
Crete	10 - 20	10 – 20	0	0 – 10	0 - 20	0 – 10
Monee	5 – 10	20 – 40	10 – 20	10 – 20	0 - 20	0 – 10
University Park	80+	20 – 40	0	0	0	0
Crown Point	20 – 40	10 - 20	20 – 40	10 – 40	20 – 40	5 – 40
Lake Michigan Communities	5 - 10	0 - 10	5 - 20	0 - 10	5 - 10	0 – 10

Source: Growth Identified by Parsons Brinckerhoff from forecasts in *"Historic and Forecasted Growth of Employment and Population – Market Driven Forecasts 2010-2040"* (ACG: The al Chalabi Group, Ltd., 2011).

3.19.8.3 Reasonably Foreseeable Indirect Actions

Based on the above forecasts, the impacts of reasonably foreseeable induced development were considered in combination with the corridors. The following estimates of land area that may be converted to urban uses in the indirect impact area should not be interpreted as predictions of exactly how much development will be project-induced and where. They can be used to compare the approximate extent and location of potential induced development with existing natural resources and development in the 5-mile area evaluated in the vicinity of the proposed interchange locations.

Land Area Needed to Accommodate Growth from Indirect Impacts

For residential and commercial/industrial development, the projected population and employment growth in the three counties would require an additional 4,929 acres of land with Corridor A3S2; 2,699 acres of land with Corridor B3, and 2,771 acres of land with Corridor B4 (see Table 3-88). For residential use, the working alignment within Corridor A3S2 would require 2,722 more acres, Corridor B3 would require 1,422 more acres, and Corridor B4 would require 1,494 more acres to support the net increase in population, due to the resulting increase in residential development. In addition, for commercial and industrial land, the working alignment within Corridor A3S2 would require 2,207 more acres and Corridors B3 and B4 would require 1,277 more acres each to support the net increase in employment (see Table 3-88).

Table 3-88. Estimate of Land Area Needed to Accommodate Indirect Impact Growth in Will, Kankakee, and Lake Counties

Corridor	Residential (acres)	Commercial/ Industrial (acres)	Total (acres)
A3S2	2,722	2,207	4,929
B3	1,422	1,277	2,699
B4	1,494	1,277	2,771

Source: Calculations by Parsons Brinckerhoff based on forecasts in "Historic and Forecasted Growth of Employment and Population – Market Driven Forecasts 2010-2040" (ACG: The al Chalabi Group, Ltd., 2011).

The above estimate of the land area needed to accommodate projected growth was calculated using assumptions based on existing development patterns for the Tier One NEPA level of analysis. Additional population growth was converted to number of housing units needed by dividing the additional projected growth with the proposed project in 2040 by the average number of persons per housing unit in 2010 (2.62) in the three counties (Will, Kankakee, and Lake). The result was the number of housing units required. This number was then applied to an average residential density allowed (approximately three housing units per acre) based on the predominant form of development in the three counties, which accounts for primarily single family detached homes.

A similar procedure was used to calculate the land area needed to support the growth in employment. A ratio of four to eight employees per gross acre was used for new industrial jobs, recognizing the growth of intermodal centers in the area. The midpoint of six employees per acre was used to reflect that there would also be employees in offices and the hospitality industries serving the SSA as well as the intermodal centers.

A finer scale analysis will be employed in the Tier Two NEPA studies.

General Locations of Induced Development

The corridors are expected to shift some of the projected population and employment growth in the Study Area towards the proposed project's interchanges with US and state highways. Project-induced development is likely at and near these interchanges because of the increased accessibility to undeveloped land areas near them. The following is a discussion of probable induced development and its consistency with known local and county comprehensive plans and regional plans. The discussion is organized by corridor and from west to east.

Corridor A3S2

The proposed western terminus of this corridor is at I-55 with no local access provided. Therefore, this system to system interchange would not be expected to have indirect land use impacts.

The Corridor A3S2 Design Concept 1 interchange at IL-53 would be northeast of the Village of Elwood, Illinois, and southeast of a large intermodal center in Joliet, Illinois. As such, the indirect land use impacts would be expected to be substantial since the area already is experiencing growth from the southerly expansion of the Chicago suburbs, including the major City of Joliet just 5 miles to the north. Within 5 miles of this interchange, Corridor A3S2 would induce population change of approximately 1,400 more people than the No-Action Alternative and would require approximately 178 acres of land for new residential development. Corridor A3S2 would induce approximately 900 more jobs than the No-Action Alternative and would require approximately 150 acres for new commercial and industrial development.

The Corridor A3S2 Design Concept 2, located just east of IL-53, would induce population change of approximately 1,300 more people than the No-Action Alternative and would require approximately 165 acres of land for new residential development. Corridor A3S2 Design Concept 2 would induce approximately 700 more jobs than the No-Action Alternative and would require approximately 117 acres for new commercial and industrial development.

The proposed interchange at US 52 in south Manhattan, Illinois, would be expected to shift some of the future growth in north Manhattan southerly due to improved accessibility and mobility. This growth shift would support Manhattan's planned "Hoff District" east of the interchange, which is expected to include "all major non-residential uses including office, research, industrial, commercial, agri-tourism, and agricultural uses," according to the General Land Use Map & Planning Districts graphic in the Village's 2008 Comprehensive Plan. West of the interchange the planned uses include more office, research, and industrial plus medium density residential. Floodplains and creeks in this area would shape and limit some development potential. The primary future land use indirect impacts would be highway oriented commercial uses, which are not expected to compete with planned transit oriented uses in downtown Manhattan near the Metra station. Corridor A3S2 would induce approximately 1,100 more people than the No-Action Alternative and would require approximately 140 acres for new residential development. Corridor A3S2 would induce approximately 500 more jobs than the No-Action Alternative and would require approximately 83 acres for new commercial and industrial development.

Although the above referenced interchanges of Corridor A3S2 are approximately 4 miles north of the Midewin National Tallgrass Prairie, indirect impacts could include induced residential development in the future on land outside of but adjacent to the Midewin National Tallgrass Prairie in Elwood and Manhattan. Other projects may also induce development along the north edge of the Midewin National Tallgrass Prairie, such as the CenterPoint Intermodal Center-Elwood and the planned extension of the Metra commuter rail line south and west of Manhattan. Induced development inside the boundaries of Midewin National Tallgrass Prairie is unlikely as it is protected by the USFS.

The Corridor A3S2 proposed interchange at US 45, just 5 miles east of the proposed interchange at US 52, would be expected to induce approximately 1,100 more people than the No-Action Alternative and would require approximately 140 acres for new residential development. Corridor A3S2 would induce approximately 500 more jobs surrounding this interchange than the No-Action Alternative and would require 83 acres for new commercial and industrial development. The proposed interchange at I-57 in Monee, Illinois, would not have direct local access. However, it would be close to the existing interchange of I-57 and IL-6 between Monee and University Park, Illinois. Indirect lands use impacts would be expected along both IL-6 and IL-50 because of the increased access and mobility provided by the new proposed project interchange. These indirect impacts would support the Will County LRMP's possible locations for "Development Nodes of Office & Hospitality or Industrial and Distribution" as the SSA is built out. In addition, because these future land use indirect impacts would be primarily highway oriented commercial uses, they would not be expected to compete with the transit oriented uses planned in University Park by GSU near the Metra station.

The proposed interchange at IL-1/394 north of the Village of Beecher, Illinois, also would be located near the northeast corner of the site of the planned SSA and the site of the proposed Crete Intermodal Center. This area would be positioned for major growth with the proposed interchange and the planned airport and intermodal center. Further, the Will County LRMP indicates possible locations for "Development Nodes of Office & Hospitality or Industrial and Distribution" north and south of the proposed interchange. The Land Use Plan for the Village of Beecher shows continued strip commercial land use along IL-1 with rail-served industrial land use northwest of the village center and single family residential land use northeast of it. Induced development by the new interchange would be consistent with the 2008 Beecher Comprehensive Plan. Corridor A3S2 would induce approximately 1,200 more people than the No-Action Alternative and would require 153 acres for new residential development. Corridor A3S2 would induce approximately 500 more jobs than the No-Action Alternative and would require 83 acres for new commercial and industrial development.

The proposed interchange with US 41 would be located to the west of Lake Dalecarlia (a private lake oriented residential community), Lowell, and Cedar Lake, Indiana. All three communities' future growth patterns would be influenced by this interchange because of increased accessibility, especially Lowell along SR 2. Farther north along I-65 are Crown Point and Winfield, Indiana. Within 5 miles of this interchange, Corridor A3S2 would induce population change of approximately 650 more people than the No-Action Alternative and would require approximately 83 acres of land for new residential development. Corridor A3S2 would induce approximately 400 more jobs than the No-Action Alternative and would require approximately 67 acres for new commercial and industrial development.

The proposed interchange with SR 55 would be located between Lake Dalecarlia and the eastern terminus of the project at I-65. Future growth south of Crown Point is expected to be influenced by the proposed interchange with SR 55, which would provide direct access. In contrast, Winfield is not expected to be impacted because it does not have direct access to

SR 55. Therefore, the potential indirect impact associated with Corridor A3S2 would be consistent with local and county comprehensive plans and regional plans.

NIRPC's 2040 Comprehensive Plan has strong consensus and agreement in its vision for the future that growth and development take place within and around existing communities and strong consensus that no new growth centers be introduced. According to the Plan, Crown Point is designated as an economic center, while the other communities Lake Dalecarlia, Cedar Lake, Lowell and Winfield are designated "Livable Centers." As such, future growth is to be located as close to the centers as possible, in an attempt to arrest suburban sprawl into central and south Lake County. Within 5 miles of this interchange, Corridor A3S2 would induce population change of approximately 1,600 more people than the No-Action Alternative and would require approximately 204 acres of land for new residential development. Corridor A3S2 would induce approximately 900 more jobs than the No-Action Alternative and would require approximately 150 acres for new commercial and industrial development.

Corridor B3

The proposed Corridor B3 interchange at I-55 retains access to IL-129 in Wilmington. Therefore, increased development along the IL-129 corridor would be expected as a result from the additional access to the east. Within 5 miles of this interchange, Corridor B3 would induce population change of approximately 600 more people than the No-Action Alternative and would require approximately 76 acres of land for new residential development. Corridor B3 would induce approximately 300 more jobs than the No-Action Alternative, which would require approximately 50 acres for new commercial and industrial development.

The proposed Corridor B3 Design Concept 1 interchange at IL-53 in Wilmington would be amidst the mostly developed and still developing area along the entire corridor. Induced development such as highway commercial uses would be expected along IL-53, especially in Wilmington, Illinois. The communities of Braidwood, Illinois, and Wilmington are located southwest of the western terminus of Corridor B3 along I-55, and the corridor traverses the north side of Wilmington. The Wilmington Comprehensive Plan has designated the general area near the interchange for mixed uses including low density residential, commercial, research, light industrial, open space, and more commercial at the interchange with I-55 near Stripmine Road and IL-129. Moreover, two "Projects of Regional Impact" are shown in the Will County LRMP: (1) at the western end of the 18,225-acre Midewin National Tallgrass Prairie, near Elwood, Illinois (the existing CenterPoint Intermodal Center); and (2) at the southern end of the Midewin National Tallgrass Prairie between Wilmington and Symerton, Illinois (the proposed Ridgeport Logistic Center). The proposed interchange would be the key access points to these intermodal centers and the Midewin National Tallgrass Prairie recreation area. Therefore, the potential indirect impact would be consistent with these land use policies.

Within 5 miles of this proposed interchange, Corridor B3 would induce approximately 800 more people than the No-Action Alternative and would require approximately 102 acres of land for new residential development. Corridor B3 would induce

approximately 500 more jobs than the No-Action Alternative and would require approximately 83 acres for new commercial and industrial development.

Corridor B3 Design Concept 2 interchange, located 2.5 miles east of IL-53 in Wilmington, would result in similar indirect impacts as described for Corridor B3 Design Concept 1. Under Design Concept 3, there would be no interchange in the vicinity of IL-53. Therefore, there would be no indirect impacts in this area. However, additional indirect impacts would be expected at I-55/IL-129 (see Table 3-89).

Table 3-89. Comparison of Resource Areas, Developed Land and Potential Indirect Impacts within 5 Miles of a Project Interchange (acres)

Working Alignment within Corridor	Local Interchange	Existing Area of Farmland	Existing Area of Forest	Existing Area of Wetlands	Existing Area of Developed Land	Area of Future Potential Indirect Impact
A3S2	IL-53	30,545	5,891	2,573	18,065	328
	East of IL-53	32,117	3,737	1,225	16,895	282
	US 52	43,238	1,121	656	5,890	223
	US 45	43,280	799	713	5,492	223
	IL-1	38,147	4,932	1,027	10,755	236
	US 41	35,078	7,186	2,678	13,488	150
	SR 55	33,483	6,452	2,465	15,431	354
B3	I-55/IL-129	26,112[1]	11,014	6,552	15,748[1]	126
	IL-53	37,243	8,746	4,042	11,888	185
	Between IL-53 & Symerton	42,829	5,003	1,788	6,543	185
	US 45	45,459	716	738	2,624	184
	IL-1	45,880	645	443	3,002	169
	US 41	35,078	7,186	2,678	13,488	106
	SR 55	33,483	6,452	2,465	15,431	308
B4	I-55/IL-129	26,112[1]	11,014	6,552	15,748[1]	126
	IL-53	37,243	8,746	4,042	11,888	185
	Between IL-53 & Symerton	42,829	5,003	1,788	6,543	185
	US 45	45,459	716	738	2,624	184
	IL-1	45,880	645	443	3,002	169
	US 41	42,934	4,182	842	6,889	106
	SR 55	41,327[2]	2,781	3,082	2,962[2]	308

1 Calculation does not include land use data outside of Will County.
2 Calculation does not include land use data outside of Lake County.

Although the above referenced interchanges of Corridor B3 are south and adjacent to the Midewin National Tallgrass Prairie, indirect impacts could include induced residential and commercial development in the future on land outside of, but adjacent to the Midewin National Tallgrass Prairie in Wilmington. Another project that may also induce future development along the southwestern corner of the Midewin National Tallgrass Prairie is the proposed Ridgeport Logistic Center west of I-55 at the proposed future terminus of Corridor B3. Project-induced development inside the boundaries of the Midewin National Tallgrass Prairie is unlikely since it is protected by the USFS.

The proposed interchange at US 45/52 would be located in an area designated as an agriculture and hamlet preservation area in the Will County LRMP. However, the interchange would be expected to induce development within 5 miles, reaching Peotone, Illinois, to the east and Manteno, Illinois, to the south. Peotone is located approximately 4 miles east of US 45/52. It is also located directly on IL-50 and near a proposed interchange with I-57. Peotone is positioned for major growth with Corridor B3 south of the village and the planned SSA northeast of it. The Will County LRMP indicates two possible locations for "Development Nodes of Office & Hospitality or Industrial and Distribution" in and near Peotone; one at I-57 and the other at IL-50. Therefore, the potential indirect impact is consistent with this county planning policy.

Corridor B3 in southern Will County would be very close to and parallel to the northern boundary of Kankakee County for much of its length. The proposed land use in this area of Kankakee County is largely farmland and scattered hamlets with the exception of concentrated growth in Manteno. The County's Long Range Plan map (November 2005) anticipates community growth in Manteno eventually joining with Bourbonnais and Kankakee, Illinois, farther south and evolving into one contiguous urbanized area. However, this interchange may tend to attract growth from Manteno. Therefore, the potential indirect impact may be inconsistent with this policy. Within 5 miles of this interchange, Corridor B3 would induce population change of approximately 1,000 more people than the No-Action Alternative and would require approximately 127 acres of land for new residential development. Corridor B3 would induce approximately 340 more jobs than the No-Action Alternative and would require approximately 57 acres for new commercial and industrial development.

Beecher, Illinois, is located on IL-1 near the location of a proposed interchange, southeast of the SSA. Like Peotone, it is positioned for major growth with Corridor B3 south of the village and the planned airport northwest of it. The Will County LRMP indicates two possible locations for "Development Nodes of Office & Hospitality or Industrial and Distribution," one north and one south of Beecher. The Land Use Plan for Beecher shows continued strip commercial land use along IL-1 with rail-served industrial land use northwest of the village center and single family residential land use northeast of it. Closer to Corridor B3, proposed land uses would include a mix of single family residential and large commercial tract land uses. Induced development by the new interchange is consistent with the Beecher Comprehensive Plan and LRMP.

Farther south in Kankakee County, the proposed new interchange would impact future development along the north side of the Grant Park, Illinois. Therefore, the potential indirect impact is consistent with these local and county planning policies as shown in the applicable future land use maps. Within 5 miles of this interchange, Corridor B3 would induce population change of approximately 1,000 more people than the No-Action Alternative and would require approximately 127 acres of land for new residential development. Corridor B3 would induce approximately 250 more jobs than the No-Action Alternative and would require approximately 42 acres for new commercial and industrial development.

The proposed interchange with US 41 would be located to the west of Lake Dalecarlia, Lowell, and Cedar Lake, Indiana. The future growth patterns of all three communities would be influenced by this interchange because of increased accessibility. At the proposed US 41 interchange, Corridor B3 would be expected to induce approximately 540 more people than the No-Action Alternative and would require approximately 69 acres of land for new residential development. Corridor B3 would induce approximately 220 more jobs than the No-Action Alternative and would require approximately 37 acres for new commercial and industrial development.

The proposed interchange with SR 55 would be located between Lake Dalecarlia and the eastern terminus of the project at I-65. Future growth south of Crown Point is expected to be influenced by the proposed interchange with SR 55, which would provide direct access. Winfield is not expected to be impacted because it does not have direct access to SR 55. Therefore, the potential indirect impact associated with Corridor B3 would be similar to that of Corridor A3S2. At the proposed interchange with SR 55, Corridor B3 would be expected to induce approximately 1,400 more people than the No-Action Alternative and would require approximately 178 acres of land for new residential development. Corridor B3 would induce approximately 780 more jobs than the No-Action Alternative and would require approximately 130 acres for new commercial and industrial development.

Corridor B4

Corridors B3 and B4 are identical in Illinois. Just west of the Illinois/Indiana state line, Corridor B4 heads southwesterly to its terminus at I-65 in Indiana. Since the induced impacts of Corridors B3 and B4 would be identical in Illinois, the discussion of the indirect impacts of the proposed interchanges in Illinois is not repeated here. Only the proposed two new interchanges farther south along Corridor B4 are discussed here.

At the proposed interchange with US 41 near Lowell, Corridor B4 would induce population change of approximately 540 more people than the No-Action Alternative and would require approximately 69 acres of land for new residential development. Corridor B4 would induce approximately 220 more jobs than the No-Action Alternative and would require approximately 37 acres for new commercial and industrial development.

Within 5 miles of the proposed SR 55 interchange near Lowell, Corridor B4 would induce population change of approximately 1,400 more people than the No-Action Alternative and would require approximately 178 acres of land for new residential development. Corridor B4 would induce approximately 780 more jobs than the No-Action Alternative and would require approximately 130 acres for new commercial and industrial development.

To summarize, the total project-induced indirect impact in acres within 5 miles of each of the corridor interchanges would range between 106 and 354 acres. For comparison, Table 3-89 shows the amount of existing acres in farmland, forest, wetlands, and developed areas within 5 miles of each interchange. (Please note that there are some areas of overlap in the data and in the design concepts for the interchanges and, therefore, the data are not additive.) The column on the right shows the total amount of potential indirect impact in acres of land converted to accommodate population and employment forecasts at each interchange. Note that the Design Concept 2 interchange at IL-53 and Symerton is included in the table and indirect impacts are expected to be similar.

3.19.9 Cumulative Impacts

As described in 3.19.1, cumulative impacts result from the proposed corridors' direct impacts (i.e., takings), induced development, and other reasonably foreseeable development that would occur in the Study Area with or without the project. Other reasonably foreseeable future actions considered in the cumulative impact analysis are described below and shown on Figure 3-52.

3.19.9.1 The South Suburban Airport (SSA)

The planned SSA is within the Study Area east of I-57 and IL-50 and west of IL-394/IL-1 (see Figure 3-51). The initial phase of airport development is designated on approximately 4,000 acres but the ultimate acquisition area is over 24,000 acres, most of which occurs in unincorporated Will County. The Will County Land

Resource Management Plan indicates eight possible locations for "Development Nodes of Office & Hospitality or Industrial and Distribution" surrounding the SSA. These nodes are located near or in the corridors in or near Monee, Crete, Beecher, and Peotone.

The initial phase of airport development includes one commercial service runway with parallel taxiway, a four-gate passenger terminal with surface access to I-57 and state routes, and support facilities to accommodate air cargo and general aviation activity. Future phased development of the airport includes six primary parallel runways and one commuter general aviation crosswind runway with a complete parallel taxiway system on all runways; a 120-gate air passenger terminal with access to I-57 and state routes; and air cargo facilities and general aviation facilities. It is expected that when the initial phase is completed, the airport would operate between 360 and 3,400 flights serving between 19,600 and 169,000 passengers during the first year. Within 5 years, airport travel is anticipated to increase to between 470,000 and 970,000 passengers per year (SSA, 2002). Preliminary studies on airport alternatives indicate that approximately

1,600 acres would be converted for the initial development of the SSA. Most of the land that would be impacted is currently farmland. It is estimated that 890 acres of farmland would be directly converted to airport use. Approximately 29 acres of wetlands would also be impacted by the airport alternatives for the initial phase of development.

From the Airport's 2002 Tier I FEIS, the full build of the airport would impact approximately 180 to 266 acres of wetlands and approximately 15,660 to 16,570 acres of farmland, depending on the alternative(s) selected.

3.19.9.2 Governors State University (GSU)

Located in University Park, GSU currently has a student enrollment of 6,000. The 2008 master plan anticipates that the size of the student body will double within the next 10-15 years. The 750-acre campus includes nearly 600,000 square feet of facilities. One of the objectives of the campus master plan is to enhance the adjacency of the campus to the University Park Metra Station and develop a transit-oriented campus.

3.19.9.3 Joliet Arsenal Development Authority (JADA)

The JADA was created as a special district by the Illinois General Assembly to manage the 3,000 acres of the former Joliet Arsenal. Land managed by JADA is located in the northwest portion of the Study Area to the north of the Midewin National Tallgrass Prairie. JADA's mission is to dispose of the remaining 400 acres under its control by developing it to its highest and best use. JADA's developments include Elwood CenterPoint Intermodal Facility and an intermodal container repair facility.

3.19.9.4 Midewin National Tallgrass Prairie

The 18,225-acre Midewin National Tallgrass Prairie is an emerging outdoor recreational area visited by some 20,000 persons annually largely from within 25 miles and used for hiking, horseback riding, and bicycling as well as conservation and educational programming. Because of planned expanded facilities and services, visitation is expected to rise to 60,000 to 200,000 in 2020 (AECOM, 2010).

3.19.9.5 Programmed and Planned Roadway Improvements

Only committed highway improvement projects in the Study Area were assumed in this analysis. Committed projects include those programmed projects that are included in the 2040 "constrained" networks of MPOs, including the 5-year TIP. These projects include:

- Will County
  - I-80: Add Lanes from US 45 in Frankfort to US 30 in New Lenox
  - I-80: Add Lanes from US 30 in New Lenox to Ridge Road in Minooka
  - US 30: Add Lanes from IL-43 in Frankfort to Williams Street in New Lenox
  - IL-394: Upgrade from IL-1 in Crete to Sauk Trail in Sauk Village – This roadway upgrade, which extends from Sauk Trail to Thornton-Lansing Road, would impact a

total land area of approximately 130 acres. This includes impacts to approximately 7 acres of wetlands.

  - I-57: New Interchange at Stuenkel Road/University Parkway in University Park
  - I-57: New Interchange at SSA in Monee
  - Baseline Road: New Road from Arsenal Road to Schweitzer Road in Elwood – This new road would impact approximately 0.4 acres of wetlands, 1.1 acres of forest, and approximately 17 acres of farmland.
  - I-55: Add Lanes from IL-113 to I-80

- Kankakee County
  - I-57: New Interchange at 6000 N. Road in Bourbonnais – The development of the preferred alternative(s) for the proposed interchange would require the acquisition of approximately 75 acres of new right-of-way. Approximately 63 acres of the land to be acquired for the project is currently farmland.
  - US 45/52: This roadway widening project would add lanes from Kathy Drive to Manteno Road and impact approximately 0.8 acres of farmland within the existing right-of-way.
- Lake County
  - I-65: New interchange from 109th Avenue in Crown Point (completed)
  - Mississippi Street: New Road from US 30 to 61st Avenue in Merrillville
  - 101st Avenue: Add Lanes in Merrillville
  - SR 2: Lanes/interchange improvement at I-65 east of Lowell
  - Kennedy Avenue: Add Lanes at Schererville

3.19.9.6 Additional or Enhanced Freight and Passenger Rail Service

- Several passenger rail projects are programmed in the Study Area. Only projects that have a high probability of implementation were considered. These projects include: University Park – SSA – Kankakee Commuter Rail Service: Proposed commuter rail service from the current University Park terminus of the Metra Electric District Line to the proposed SSA and continuing south with intermediate stops to a terminus in Kankakee via the CN's right-of-way.
- Southeast Service: Proposed commuter rail service along existing UPRR/CSX freight and passenger railroad tracks, serving 20 communities in south suburban Cook and Will counties.
- UPRR Track Improvement Project from Joliet to Dwight – This project is expected to impact 13.9 acres of property in Will County in Joliet and Elwood adjacent to the UPRR right-of-way. Of the area to be impacted, approximately 10 acres is agricultural or vacant, and the remaining 3.9 acres is woodlands or wetlands, including the crossings of the Sugar Run Creek, Cedar Creek, and Jackson Creek.

The following projects are presently on hold but it is a reasonable assumption that they may be implemented by 2040:

- Metra Southwest Service line (enhanced service; Manhattan to Chicago).
- Extension of the Rock Island District (enhanced service; Joliet to Chicago).
- West Lake Commuter Rail Service: Proposed commuter rail service along existing and abandoned (Metra Electric, South Shore, NS, Indiana Harbor Belt, and Monon Railroad) freight and passenger railroad tracks from Chicago to Valparaiso and/or Cedar Lake and Lowell.
- Extension of the Metra Southwest Service to Midewin National Tallgrass Prairie (CMAP fiscally unconstrained portion of the enhanced service).
- Extension of the Metra Rock Island District to Minooka (CMAP fiscally unconstrained portion of the enhanced service).

In addition, the following programmed intercity passenger improvements were considered:

- The State of Illinois was awarded $1.4 billion in funding for the Chicago – St. Louis high speed rail line. This project is moving forward and construction is expected to be completed by 2014. The project would improve the existing UPRR right-of-way in the Study Area to allow 110 miles per hour (mph) intercity passenger trains to be operated by Amtrak. At full build, the entire line will be double tracked and will transition to eight round trips per day. The nearest proposed passenger stations are in Joliet and Dwight, northwest and southwest of the Study Area, respectively. The project environmental review is in the early stages of development, but preliminary information indicates that 250 acres may need to be acquired for right-of-way for the section between Joliet and Springfield. Only a small part of this right-of-way is within the Illiana Corridor Study Area. Most of the acreage to be acquired is farmland.
- IDOT is partnering with the University of Illinois and a special advisory group to study the feasibility of 220 mph high speed passenger rail service between Chicago and Champaign-Urbana and beyond (St. Louis, Indianapolis, and other potential metropolitan areas south of Champaign-Urbana). This line would pass through the center of the Illiana Corridor Study Area.
- Existing Amtrak service in Indiana includes the Chicago to Indianapolis service through Dyer, Indiana. NIRPC's 2040 Comprehensive Regional Plan discusses the potential for improved Amtrak service from Chicago to Indianapolis, and the potential for high speed passenger rail service.

3.19.9.7 Major New Development between the Current Year and the Design Year for the No-Action Alternative

Four intermodal sites exist or are planned within the Study Area. As a result of public and private investments, these facilities have combined to create one of the largest inland

container ports in the US resulting in efficient operations and convenient onsite services. Figure 3-55 shows major development plans and municipal planning areas within the Study Area.

The existing or planned intermodal facilities within the Study Area are:

- CenterPoint Intermodal Center - Elwood is an existing facility that encompasses 2,500 acres of the former Joliet Arsenal and is projected to create approximately 8,000 new jobs and increase property tax revenue by as much as $27 million per year. The intermodal and associated industrial business park has the capacity for up to 12 million square feet of industrial and distribution facilities.
- CenterPoint (Global IV) Intermodal Center – Joliet is an existing integrated logistics center and inland port on 3,600 acres. The park would also feature up to 20 million square feet of industrial facilities as well as container/equipment management yards and is projected to generate more than 14,000 new jobs.
- RidgePort Logistics Center, near Wilmington, is a proposed 14 million square foot rail-served park located on more than 1,500 acres. The facility parallels the BNSF mainline and I-55.
- The CenterPoint Intermodal Center- Crete is a proposed facility approximately 1,000 acres in size located along the UPRR and CSX Transportation (UPRR, CSX) main line within the Study Area. The park would feature up to 300 acres for intermodal and related container/equipment management and 700 acres for an industrial park that can accommodate up to 6 million square feet of warehouse distribution centers, transloading, and/or cross-dock facilities.

Existing intermodal centers in Elwood and Joliet handled more container units in 2008 (3,000,000 TEU, or approximately 1.5 million trucks) than any comparable land-based facility, and all but three of the largest coastal ports in the US.[32] Operations of these existing and proposed facilities are projected to account for 47,000 daily truck movements by 2040. The proposed SSA is expected to include a freight cargo facility, which would add to these numbers.

3.19.10 Cause and Effect Relationships

The major resources considered in this cumulative effects analysis are farmland, forests, prairies, and water resources/wetlands. The most expected cause and effect issue is land conversion from farmland, forests, and wetlands to other uses, primarily as a result of urbanization. Impacts to traffic and public facilities associated with new development were also considered.

3.19.10.1 Traffic

Induced development in combination with existing traffic generators would increase traffic on the regional highway system. Truck traffic associated with the SSA and proposed intermodal facilities would generate considerable additional traffic. The

[32] "Inland Port Impact Study," Will County Center for Economic Development, September 2010.

Illiana Corridor, together with other proposed roadway improvements, would provide increased capacity to accommodate this increased demand. The proposed transportation improvements were planned and designed based on demand without the Illiana Corridor.

The corridors would provide increased capacity and are expected to relieve traffic congestion. Most of the planned transportation improvements are in the northern part of the Study Area, closer to the Chicago metropolitan area, where there is more traffic congestion. The corridors would provide an east-west connection to these planned transportation projects that are mostly oriented north-south. Communities of concern for EJ, especially concentrated along the northern boundary of the Study Area in Illinois and northwest Indiana beyond the Study Area as described in the Section 3.2, would receive accessibility and mobility benefits based on the traffic model forecasts, which are described in Section 3.19.8.2.

3.19.10.2 Farmland Impacts

The conversion of farmland to urban development has resulted from the continued expansion of the Chicago metropolitan area. Most of the active farmland in the Study Area is located in southern Will County and throughout Kankakee County. Except for the northern portion of the cumulative impact area which is mostly urban/suburban development, other portions of the cumulative impact Study Area primarily consist of suburban development interspersed with farmland.

The corridors would have a direct impact on farmland. The working alignment within Corridor A3S2 would be expected to directly impact approximately 2,453 to 2,483 acres of farmland, depending on the design concept. The working alignment within Corridor B3 would directly impact approximately 2,667 to 2,725 acres of farmland. The working alignment within Corridor B4 would directly impact approximately 2,768 to 2,827 acres of farmland.

By far, farmland is the most prevalent land use within the 5-mile radius of the interchanges as compared with wetlands and forest. Of the 50,265 acres of total land area within a 5-mile radius of the interchanges, 25,000 to 45,000 acres are farmland, depending on the interchange. The indirect impacts, mainly induced development, range from approximately 100 to 300 acres. Since it is unknown where development would ultimately occur, the amount of indirect impact on farmland from this project cannot be quantified.

This conversion of farmland to other uses because of the corridors and their interchanges would be noticeable, even though the amount of farmland needed for population and employment growth would be small compared to projected growth without the proposed project. Initially, conversions could be expected near IL-53 in the west end of the corridors because conversion of farmland to urban uses is already underway in the areas near Wilmington, Elwood, and Manhattan and more can be expected with the proposed intermodal center near Wilmington. Next, conversion of farmland could be expected near the proposed interchanges near US 41 and SR 55 in

Lake County since growth influences are already extending southerly toward Cedar Lake as northern Lake County fills up with urban development. Finally, the most substantial conversions of farmland to urban uses could be expected in the rural center of the proposed project in southern Will County (Peotone and Beecher) and northern Kankakee County (Manteno) at the proposed interchange at US 45.

With the No-Action Alternative, substantial conversion of farmland would still be expected to continue in the northern part of the Study Area where growth already is taking place. Additional urban growth pressures can be expected to convert farmland as the SSA expands to its proposed build out. However, the amount of farmland to be converted as a result of the corridors would be expected to be relatively small in comparison to farmland conversion expected with the No-Action Alternative.

Cumulatively, the Illiana Corridor represents a small incremental impact in comparison to the direct and assumed indirect impacts of the planned projects identified for the No-Action Alternative.

3.19.10.3 Forest, Wetlands and Prairies

Fragmentation of forest areas caused by development can adversely impact core forest habitat and species. Of the three working alignments, the working alignments within Corridors A3S2 and B3 would each directly impact 179 acres of forested areas, compared to only 74 acres with the working alignment within Corridor B4. Direct impacts in the corridors on other natural resources are discussed in Section 3.8.

The working alignment within Corridor A3S2 would directly impact approximately 76 acres of wetlands, of which 56 acres are in Illinois and 20 acres are in Indiana. The working alignment within Corridor B3 would directly impact approximately 38 acres of wetlands, of which approximately 18 acres are in Illinois and approximately 20 acres are in Indiana. The working alignment within Corridor B4 would directly impact approximately 19 acres of wetlands, 18 acres in Illinois and 0.7 acres in Indiana. See Table 3-3 and Table 3-4 in Section 3.12 for details.

The proposed corridors are expected to cause some forest, wetland, and prairies to be converted to highway commercial land uses within 1 to 2 miles from a proposed project interchange with a US or state highway and up to 5 miles for residential and related land uses. No conversion of prairie land is expected within the Midewin National Tallgrass Prairie because of its protected status under the jurisdiction of the USFS. For Corridor A3S2, there are between 800 to 7,200 acres of existing forest compared to Corridors B3 and B4, which range from 600-11,000 acres each. For Corridor A3S2, there are between 700 to 2,700 acres of existing wetlands within 5 miles of the proposed interchanges, as compared with Corridors B3 and B4, which range from 400 to 6,600 acres.

The proposed corridors would impact wetlands in the Wilmington, Illinois, area between I-55 and I-53 and in Lake Dalecarlia and nearby Indiana locations. Elsewhere in

the corridors, there are only small scattered wetlands some of which may be filled by permit and mitigated to support urban development or avoided.

The proposed corridors would cause some fragmentation of forest areas. "Fragmented" means breaking up a contiguous forested habitat into smaller parcels which may adversely affect the dynamics of the habitat for wildlife.

The corridors in the western Study Area traverse the Midewin – Des Plaines – Goose Lake Prairie, a COA, as described in Section 3.8, Natural Resources. Corridor A3S2 avoids the Midewin National Tallgrass Prairie, for example, but Corridors B3 and B4 are parallel to its southern boundary. However, impacts from such sources as highway noise, air quality, and lighting from these corridors are not expected to be adverse since it is commonly believed that relatively mobile birds and wildlife would move away from such sources. This "edge" effect is more prevalent for more undisturbed natural communities and not ones that are already bisected by features such as IL-53 and the active railroad corridor designated for the future Chicago-St. Louis high speed trains. The high speed rail project would be expected to generate direct impacts such as noise as the trains pass through at high speeds; however, indirect effects on wildlife habitat are unlikely since no station is planned in this area. The purpose of the Memorandum of Agreement (MOA) between IDOT and the Illinois DNR on 20-acre forested areas is based on reducing created edges in somewhat intact habitat. That same 20 acre parameter could be applied to grasslands since some species habitat requirements are large undisturbed grasslands, not forests.

The corridors are expected to enhance the economic development prospects of adjacent communities and features. For example, the managers of the Midewin National Tallgrass Prairie plan to develop it as a major outdoor recreational tourism resource and adjacent Wilmington and Elwood have plans for greater economic development. The corridors' proposed interchanges would support these plans because they would be grade-separated lessening the divisive effect through these areas. More likely, these interchanges would make the Midewin National Tallgrass Prairie and the municipalities more accessible and mobile.

3.19.10.4 Public Services/Facilities

Substantial expansion of public services and facilities would be expected with future growth in the Study Area associated with the No-Action Alternative. Additional public services would be expected for the incremental increase in population with the corridors. Nevertheless, the small municipalities within the Study Area near the proposed interchanges may need to consider additional public services closer to the project-induced growth.

3.19.11 Conclusion

The Study Area forecasted population and employment growth with the No-Action Alternative is substantial and would convert a great deal of farmland into urban development. The Illiana Corridor would have a 1 percent or less additional indirect and cumulative impact on the main resource of the Study Area, i.e., farmland, in

comparison with the amount of farmland converted with the No-Action Alternative. For example, the No-Action Alternative would increase population by 66 percent and employment by 49 percent between 2010 and 2040. In comparison, any of the build alternative corridors studied would have incremental increases of only approximately 1 percent or less in either population or employment. Of the three most prevalent resources (farmland, forest and wetlands) within 5 miles of each interchange (i.e., the indirect impact area) farmland is the most likely resource to be impacted. Likewise, the combined impact of indirect and cumulative effects on wetlands, forests, and prairies in the corridors would be relatively small.

For residential and commercial/industrial development, the projected population and employment growth in the three counties would require an additional 4,929 acres of land with Corridor A3S2, 2,699 acres of land with Corridor B3, and 2,771 acres of land with Corridor B4. This acreage of indirect impacts is less compared to the amount of acreage required for the forecasts for the No-Action Alternative.

Within 5 miles of each interchange, the indirect impacts of the working alignments within the corridors are similar. Corridor A3S2 would have a slightly greater potential for indirect impacts than the other two corridors; approximately 126 to 354 acres would be required for induced development. In comparison, Corridors B3 and B4 would each require between 106 to 308 acres.

3.19.12 Mitigation

Corridors were developed and refined to avoid, minimize, or mitigate adverse effects to environmental resources. As a result of this, the corridors were adjusted to avoid or minimize impacts to the Midewin National Tallgrass Prairie. A multi-disciplinary team evaluated and compared the potential impacts of corridors in an iterative process that continually focused on reducing project impacts, including cumulative impacts. The corridors were advanced over other preliminary corridor concepts that would have had greater direct impacts on community and natural resources. Consideration has also been given to an optional interchange for each of the corridors 2.5 miles east of IL-53 to avoid adverse impacts to Alternate Route 66. It is through these decisions that many of the potential development-related impacts associated with the proposed project have been reduced.

BMPs will be evaluated and incorporated in Tier Two when working alignments in the preferred corridor(s) are developed to minimize adverse impacts to the downstream aquatic environment, including in sensitive areas such as the Midewin National Tallgrass Prairie. Water quality would be managed through a combination of stormwater runoff and drainage collection facilities, and the implementation of other post-construction BMPs. Neither the CEQ regulations nor FHWA's environmental guidance documents implementing NEPA requires mitigation of indirect impacts associated with highway projects. Specifically, the CEQ regulations do not address the issue of mitigation for indirect impacts. FHWA policy as stated in Title 23 CFR Section 771.105 discusses mitigation in Section (d)(1) and (2) for adverse impacts that directly result from a project and that the mitigation represents a reasonable public expenditure.

As a result, this section does not specifically address mitigation for indirect impacts. In addition, the permitting requirements associated with Section 404(b)(1) guidelines governing the USACE's permit are limited to requiring mitigation for secondary (indirect) impacts that are quite specific and predictable in terms of location and degree. More generalized indirect impacts, like those associated with possible future growth, do not require mitigation.

Indirect impacts are identified, evaluated, and documented in relation to all other impacts so decision makers have pertinent information on hand to make decisions. This type of comprehensive evaluation of the full range of impacts to environmental, cultural, social, and economic resources is required under NEPA before state highway agencies, FHWA, and permitting agencies can make project decisions. Consideration of indirect impacts is one factor that is considered in this process.

The guidance of development in a manner that benefits the local community and preserves valued resources traditionally has been addressed by cities and counties through the administration of land use regulations (zoning, site plan, and subdivision regulations). These regulations are usually based on local master or comprehensive plans. The responsibility for mitigating the impacts of ongoing growth rests largely with the local governments that have jurisdiction over land use, as well as with the developers who are carrying out development projects.

Potential planning measures that have been used by local governments to mitigate the impacts of growth on the environment also can be used by local jurisdictions in the Study Area to mitigate impacts associated with both the No-Action Alternative and the corridors carried forward. Some of these measures are already being used by jurisdictions in the Study Area. These measures include:

- Revise local comprehensive plans to accommodate higher densities than planned, especially at interchanges and/or transit stations, and to use less agricultural land. Even a slight increase in densities in residential subdivisions, for example, would result in a more compact arrangement of single family homes, the predominant market preference, and use less agricultural land.
- Update zoning districts to increase densities near the proposed project and add a planned community zone. This strategy would encourage mixed-use developments and planned communities. It also could allow for higher densities in exchange for buffers along area streams and rivers and other set-asides of valued natural resources. This would allow owners to build the same number of homes on their land while at the same time preserving natural resources.
- Plan and develop additional parks and open spaces focused on preserving natural resources.
- Acquire open space and protect farmland. An open space acquisition program can help shape and restrict the area of development.
- Engage in more aggressive regional planning efforts. Long-range regional and inter-jurisdictional planning efforts would allow the cumulative impacts of

individual and incremental land use decisions to be better understood and, given the scarcity of native resources and multi-jurisdictional impacts of development decisions on water quality, the greatest overall benefit can be achieved with a coordinated and consistent regional vision.

- Area plans include strategies for reducing the impact of growth. Additional opportunities also exist to reduce the cumulative impacts of growth with and without the proposed project.

3.20 Construction Impacts

This section discusses the expected construction related impacts associated with the working alignments within Corridors A3S2, B3, and B4. For any of the working alignments, construction impacts generally would be of short duration (i.e., approximately 3 to 4 years) and end shortly after project completion. With a linear transportation corridor the effects of construction would not be centered in one location for the entire construction period; rather the construction related impacts would continually progress along the corridor. The expected short term impacts associated with the construction of a transportation facility along a working alignment are identified below. This section also identifies common commitments made to minimize construction impacts.

3.20.1 Transportation

Construction activities have the potential to impact travel patterns across each of the corridors and access to and from properties adjacent to the construction zone. Each of the working alignments would connect into I-55 on the west and I-65 on the east, while crossing several major roads including US 52, US 45, I-57, and US 41, as well as several state and county designated routes. Construction would require lane closures and temporary detours, which would interrupt the normal flow of traffic adjacent to the work zones and result in temporary travel delays. Motorists traveling through work areas may experience noise and fugitive dust associated with construction/demolition related operations.

Emergency service routes and access for emergency vehicles would be maintained throughout the construction period. In addition, ingress and egress would be provided for residences and businesses adjacent to the work.

3.20.2 Water Resources

Construction of various roadway features such as bridges, approaches, and culverts has the potential to impact water resources. Each of the working alignments traverse primarily rural portions of Will, Kankakee and Lake Counties and cross numerous water resources (see Section 3.9). Typical construction activities would involve various ground disturbing activities including clearing/grubbing, grading, filling, and excavation. The removal of vegetative cover and soil disturbance would increase the potential for erosion and could result in increased sedimentation in nearby streams. Any temporary structures placed in streams or rivers may increase turbidity (suspended solids) and