

Interstate 55 at Airport Road and at Illinois Route 126/Essington Road

PURPOSE AND NEED

A. PROJECT BACKGROUND

1. Regional and Local Context

Interstate 55 (I-55) is a full access controlled north-south interstate freeway linking Chicago with the southwest suburbs and downstate Illinois. It serves as a life line between the Chicago Metropolitan Area and Will County (See Exhibit 1). Will County is one of the fastest growing counties in Illinois and has doubled in population in the last 25 years. The Chicago Metropolitan Agency for Planning (CMAP) projects that Will County's population will grow from 677,560 in 2010 to 1,215,818 by 2040 or a growth of 79%.

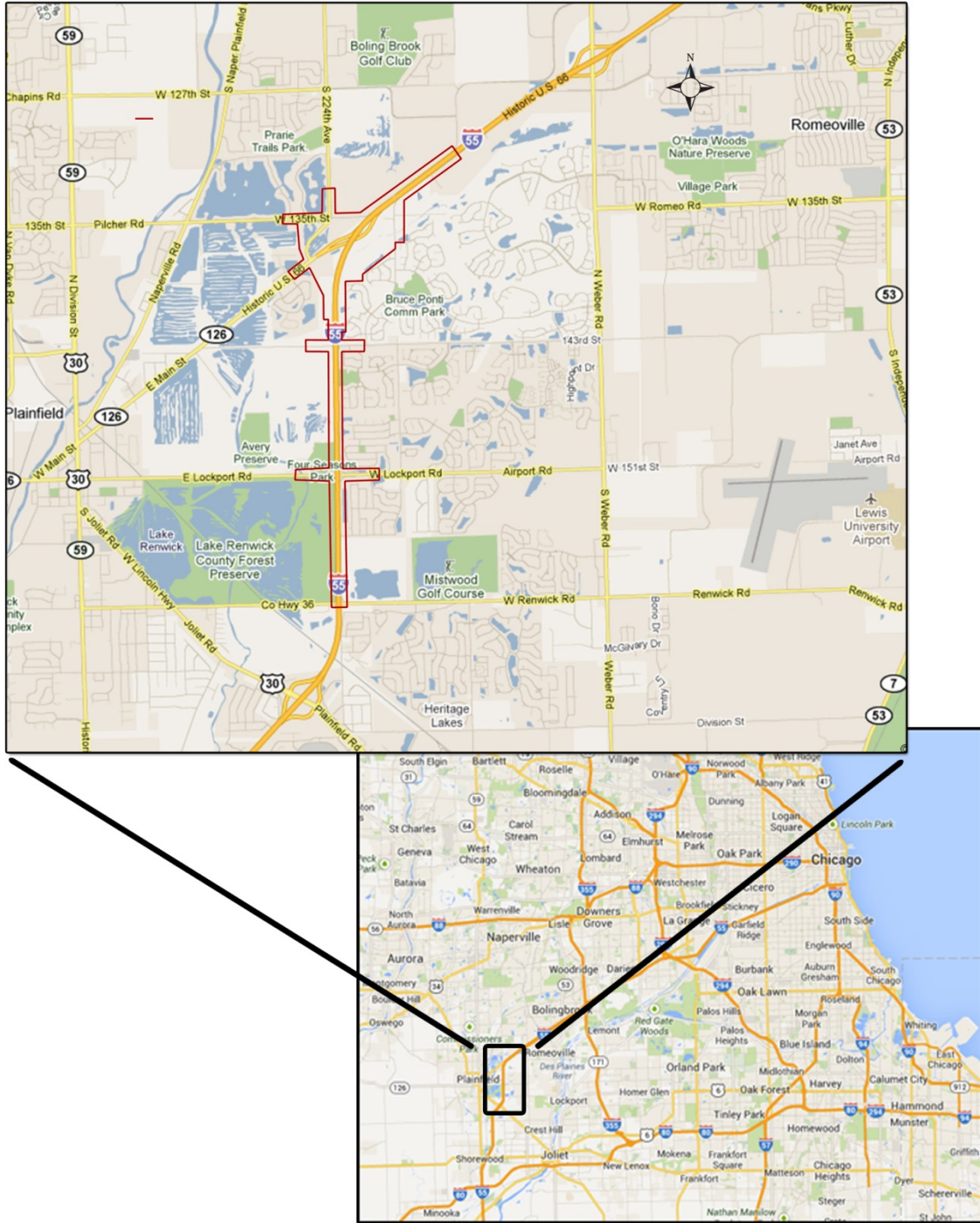
The Villages of Romeoville, Bolingbrook and Plainfield have also shown substantial growth over the past two decades. Between 1990 and 2010, the population of the three communities combined grew from 59,474 to 152,627 or a growth of 157%. As noted in Tables 1 and 2, CMAP projects that population and employment will grow by 79% and 53% respectively by 2040 in the three villages. This growth will not only mean more travel demand from new residents that live in the area but also more commuters driving to the area for employment opportunities. Part of what will encourage this growth, particularly for job creation, will be the adequacy of the transportation system in the area to serve the movement of goods and services in and out of the I-55 corridor. Considering that many traveling to the area will use I-55 as their primary route for the work commute, the capacity of interchange access to and from I-55 will be critical to serving the added traffic demand generated by population and employment growth.

**Table 1
Population Growth**

POPULATION	2010	2040	% CHANGE
Bolingbrook	73,366	116,463	59%
Plainfield	39,581	82,490	108%
Romeoville	39,680	74,068	87%
Total	152,627	273,021	79%

**Table 2
Employment Growth**

EMPLOYMENT	2010	2040	% CHANGE
Bolingbrook	23,417	30,166	29%
Plainfield	14,144	23,464	66%
Romeoville	17,900	31,468	76%
Total	55,461	85,098	53%



**Exhibit 1
Study Area Map**

Land use adjacent to the study area varies within the corridor along I-55. Exhibit 2 shows a compilation of existing land uses within the study area. The land uses illustrated have been compiled from an aerial review of the corridor and the municipality's zoning plans. The land use information is based on the following documents:

- Village of Bolingbrook Zoning Map, February 2013
- Village of Plainfield Zoning Map, March 2013
- Village of Romeoville Zoning Map, 2012

The current land use adjacent to the US Route 30 (US 30) interchange consists primarily of industrial and residential uses. From US 30 north to Illinois Route 126 (IL 126), land use is primarily residential east of I-55 and a mix of residential, industrial, agricultural, recreational clubs, greenways, nature preserves and public parks west of I-55. East of the IL 126 interchange to the Weber Road interchange, land use primarily consists of a stone quarry, greenways and industrial and commercial uses on both sides of I-55.

In their 2010 "State of the Village Report", Bolingbrook reported that there remains more than 5,000,000 square feet of industrial building area available in the village before the area reaches full build out. U.S. Census Bureau data for Romeoville shows a 93% increase in transportation and warehousing jobs between 2000 and 2008. As CMAP projects the employment growth to continue over the next 30 years, the need for a reliable and efficient access to I-55 on the local roadway network and at the interchanges will be critical.

Notably, there are several natural resource areas within the I-55 study area including public parks, private recreational areas, nature preserves and a wetland mitigation site. These areas front the right of ways of I-55, Renwick Road, Airport Road/Lockport Road, 143rd Street, IL 126, and Essington Road. Exhibit 3 illustrates the location and land area of the natural resources within the vicinity of the I-55 study area

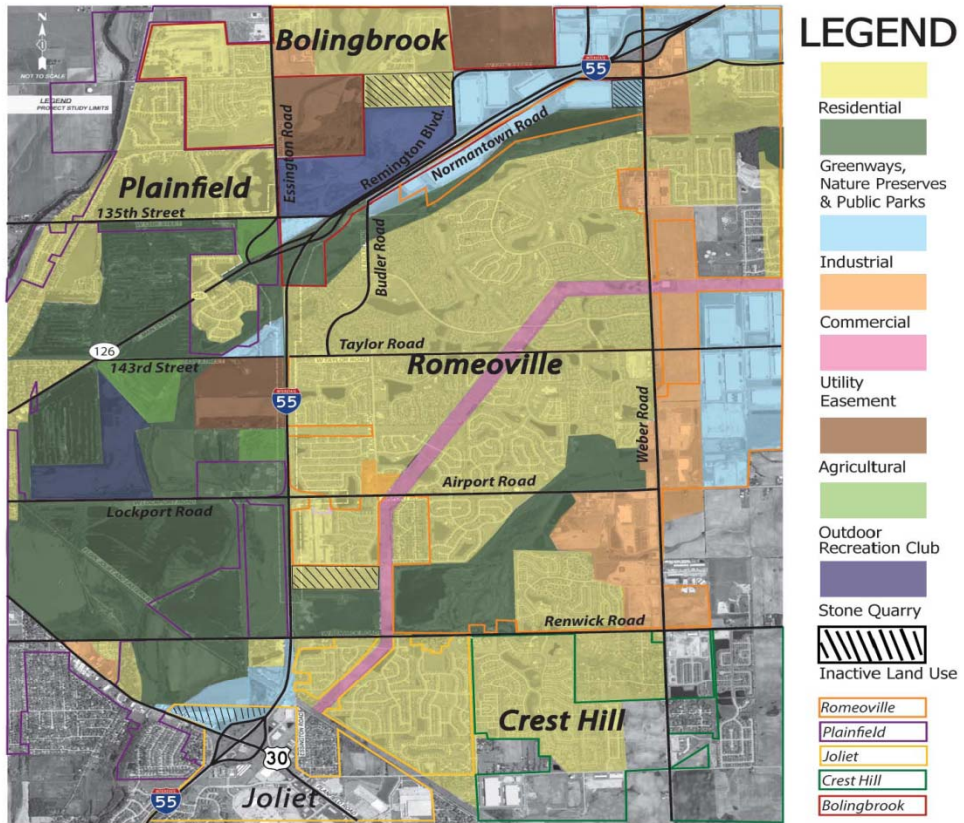
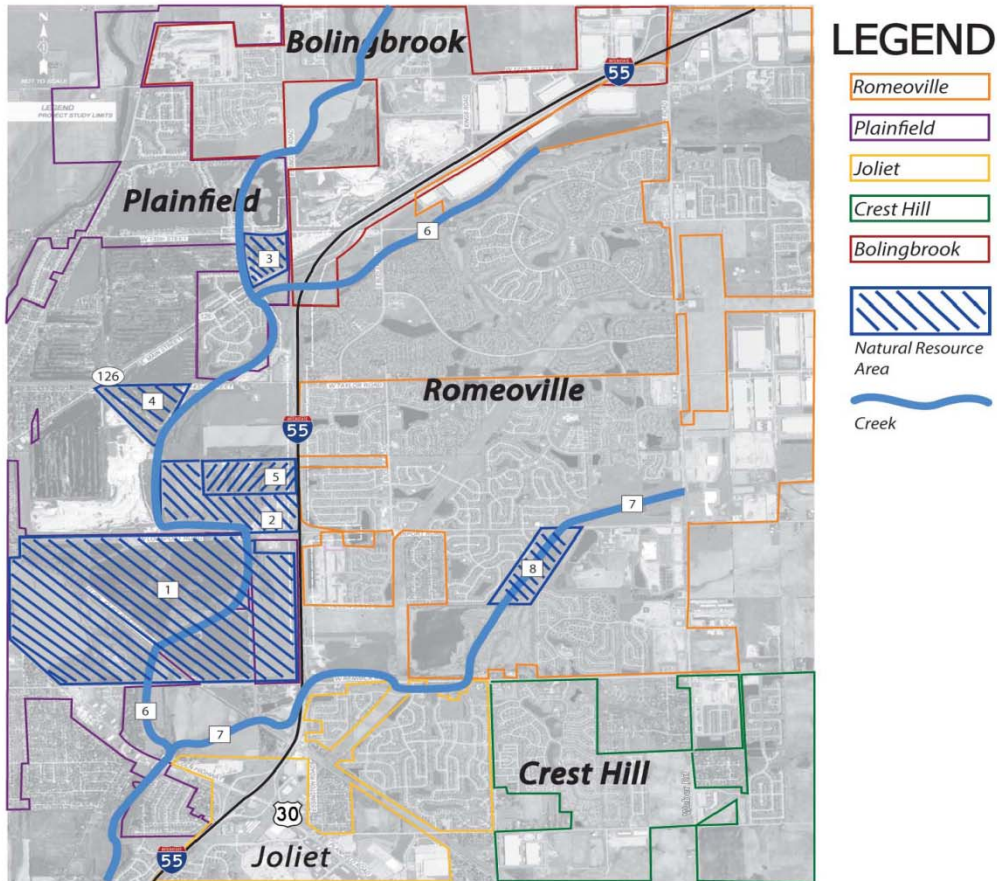


Exhibit 2
Study Area Land Uses



LEGEND

- Romeoville
- Plainfield
- Joliet
- Crest Hill
- Bolingbrook
- Natural Resource Area
- Creek

1. Forest Preserve District of Will County's (FPDWC) Lake Renwick Heron Rookery and Lake Renwick East Land and Water Reserve located west of I-55 and south of Lockport Road
2. Plainfield Township Park District's Avery Preserve and Four Seasons Park, located west of I-55 and north of Lockport Road
3. Hickory Hills Rod & Gun Club, a private club, located on the northwest corner of IL 126 and Essington Road
4. Deer Creek Recreation Club, a private club, located west of I-55 and south of 143rd Street
5. Oak Park Sportsman Club, a private club, located on the frontage road west of I-55 midway between Lockport Road and 143rd Street
6. Lily Cache Creek and Slough
7. Mink Creek
8. Mink Creek Wetland Mitigation Bank

Exhibit 3 Study Area Natural Resources

2. I-55 and the Local Roadway Network

I-55 is a regional route that connects to other northeastern Illinois interstate highways including I-355, I-294, I-94, and I-90 to the northeast and I-80 to the south (See Exhibit 1). South of the Chicago area, I-55 travels through Illinois to the St. Louis, Missouri metropolitan area. I-55 is part of the Primary National Defense network and the National Highway System (NHS), which is a network of interstate routes that can be used during times of national crisis or need.

In 2008, I-55 was widened to three lanes in each direction between the interchanges of I-80 and Weber Road, providing an increase in mainline I-55 capacity. This improvement did not include provisions of additional or improved access to I-55 and did not increase access capacity at the existing interchange locations. Auxiliary lanes are provided at the exit and entrance ramps at IL 126 and Weber Road to provide additional merging and diverging length. The mainline travel lanes are separated by an eight-foot median shoulder on each side of a raised concrete barrier. The posted speed limit along I-55 south of Weber Road is 65 mph.

The logical termini for this project have been identified as Weber Road to the north and US 30 to the south. They were selected due to their significance in providing travel connections to I-55 from the northwestern Will County region. The study area limits have been set at approximately 1.25 miles south of Weber Road and the Renwick Road overpass, approximately 0.8 miles north of US 30. This length of I-55 was selected since interchanges are desirably spaced at two-mile intervals in suburban areas. Based on the potential interchange locations and designs, arterial, collector, and frontage roads will provide access to I-55. Three crossroads within the study area that have been identified as potential interchange locations are IL 126, 143rd Street/Taylor Road, and Lockport Road/Airport Road. Exhibit 1 illustrates the study area limits for this project and the location of the three crossroads.

Within this area, I-55 serves the communities of Romeoville, Plainfield and Bolingbrook. Located east of study area is the I-55 interchange at Weber Road, which is part of the Strategic Regional Arterial Network. It provides access to northwestern Romeoville, southwestern Bolingbrook, and suburban communities to the north and south. IL 126, the only I-55 interchange within the study limits, is a partial access interchange that provides a northbound entrance ramp and a southbound exit ramp from I-55. The IL 126 interchange serves Plainfield, southwestern Bolingbrook, and areas west in Kendall County. The interchange at US 30, located at the south study limit, functions as an I-55 access point for southwestern Romeoville, Plainfield, northwestern Joliet, Crest Hill and areas west in Kendall County.

Normantown Road, Remington Boulevard, Taylor Road and Airport Road/Lockport Road are classified as major collectors. Normantown Road and Remington Boulevard provide access to industrial and commercial properties in the Bolingbrook region while Taylor Road and Airport Road provide a link to the residential areas of Romeoville. Streets such as Budler Road and 143rd Street are minor collector streets connecting to residential neighborhoods (See Exhibits 1 and 2).

3. Stakeholder Involvement

IDOT has identified the study of I-55 as a project that will follow the Department's Context Sensitive Solutions (CSS) principles. CSS is a process that requires early coordination with stakeholders to better understand the concerns and needs of the communities that encompass the project study area. As part of ongoing stakeholder involvement efforts that will be scheduled throughout the study process, an initial public informational meeting was held. At the meeting, stakeholders were encouraged to provide their input in defining the area's context by submitting written comments and completing a Community Context Survey.

A Community Advisory Group (CAG) has also been formed and four meetings have been held to seek input into the context of the area and the need for improved access to I-55 between the interchanges at US 30 and Weber Road. The CAG has also assisted in defining the Purpose and Need Statement for this project and in developing an initial range of alternatives for access improvements.

Members of the Community Advisory Group report that the area's roadway network and the interchanges providing access to I-55 are heavily congested under current traffic volumes. This congestion is occurring even with the slowdown in economic activity since 2008 and the 14.7% vacancy rate reported for the first quarter of 2011 by Crain's Chicago Business for industrial properties in the I-55 corridor.

4. Purpose of the Proposed Action

The purpose of the proposed action is to provide improved access to I-55. Enhancement of regional and local connectivity will be a supplementary benefit (or other desirable outcome) which will assist in accommodating population and employment growth forecasted in the Villages of Romeoville, Bolingbrook, and Plainfield and in unincorporated portions of northwestern Will County. This secondary benefit of the proposed action can be understood in reviewing the layout of the existing roadway network.. West Romeoville does not have access to the east side of Plainfield - similarly, northwest Romeoville does not possess direct access to southwest Bolingbrook. These areas are limited by frontage roads running parallel to I-55 with no ability to cross over I-55 except at Renwick Road and Airport Road/Lockport Road. Currently, individuals traveling locally utilize major roadways adding to the interchange congestion.

B. NEED FOR PROPOSED ACTION

Projected 2040 traffic volumes for I-55 have been developed by CMAP and show a substantial increase from 2010 traffic volumes. Table 3 provides the existing and projected Average Daily Traffic (ADT) on I-55 in the roadway section south of US Route 30 to the roadway section north of Weber Road. The increase in projected ADT suggests that I-55 will continue to remain a vital lifeline to the surrounding communities.

Table 3
Projected I-55 Average Daily Traffic Volumes

I-55 SECTION	2010 ADT	2040 ADT	INCREASE IN ADT	% INCREASE
South of US 30	74,000	104,000	30,000	41%
South of IL 126	75,000	108,000	25,000	33%
North of IL 126	98,000	132,000	34,000	35%
North of Weber Road	136,000	150,000	14,000	10%

As part of the Phase I study process, a CORSIM traffic model has been developed to project traffic operations for the local and regional roadway network under various access improvement alternatives. CORSIM can be used to model the movements of individual vehicles as they travel through a roadway system by taking into account the effects of geometric conditions, traffic controls, and driver behavior. CORSIM also conducts traffic operations analysis. The model includes capacity improvements planned for the area roadway network by each of the three villages and Will County. Based on the 2040 peak hour traffic volumes projected by the model, capacity analyses were then conducted to determine the Level of Service (LOS) that would be expected at each ramp junction providing access to I-55 within the corridor. LOS is the measure by which the quality of traffic flow on a roadway or intersection operates under specific traffic conditions. LOS accounts for the operating speed, traffic density, driver comfort and convenience, and traffic safety. As travel speed decreases and traffic density increases, traffic flow becomes increasingly unstable. LOS is graded on a scale of A to F with LOS levels defined as follows:

- Level A: Optimum Free Flow
- Level B: Reasonable Free Flow
- Level C: Stable Flow
- Level D: Approaching Unstable Flow
- Level E: Unstable Flow
- Level F: Forced or Breakdown in Flow

IDOT's Bureau of Design and Environment (BDE) Manual states that the desired LOS (i.e., mobility and freedom from delay and congestion) for a state highway is determined by its functional classification and urban or rural location. Based on the BDE Manual Figure 44-5.A, the design criteria for an urban freeway is LOS C, while LOS D may be considered in major urban areas with study and justification. Based on the BDE Manual, when the LOS drops below LOS C to LOS D, the roadway is considered as having constrained or limited capacity. When the LOS drops to either LOS E or F, it is considered as having inadequate capacity and operating in an unacceptable condition.

Table 4 provides a comparison of LOS at the ramp junctions with the mainline I-55 travel lanes for existing and projected conditions during the morning and evening peak hours for the peak travel direction. The 2040 No Build traffic projections consider those roadway improvements that are included in CMAP's "Go To 2040" Comprehensive Regional Plan. This includes improvements on Weber Road at its interchange with I-55, the widening of US 30 from IL 59 to I-55 and the construction of additional turn lanes at the US 30 intersection with access ramps that are part of the I-55 interchange.

**Table 4
 I-55 Ramp Junctions
 Projected Level of Service in 2040**

NORTHBOUND, AM		2010 ADT	2040 ADT
Interchange Location		Existing	No Build
Weber Road	Exit	D	C
	Entrance	D	F
IL 126	Entrance	C	F
US 30	Exit	C	D
	Entrance	B	D
SOUTHBOUND, PM		2010 ADT	2040 ADT
Interchange Location		Existing	No Build
Weber Road	Exit	B	A
	Entrance	D	D
IL 126	Exit	D	F
US 30	Exit	B	C
	Entrance	D	D

This analysis demonstrates that under projected 2040 traffic volumes, an acceptable or stable level of service will not be achieved at ramp junctions for the IL 126 interchange.

The congestion and delay experienced now will only worsen, particularly as truck traffic increases from projected warehouse and industrial developments within the I-55 corridor. The ability of the area to grow in population and attract new business activity into available vacant property and into developable industrial sites will be hindered without the benefit of improved interchange access and capacity. Any improvement in access to interchanges will relieve traffic congestion and provide more alternatives for local and regional travel to village residents and employers within the study area.