

SECTION 4

Environmental Consequences

This section describes the potential beneficial and adverse social, economic and environmental effects of Build Alternatives 203 and 402. The content and level of analysis in this section is consistent with the two-tiered environmental process used to advance the project. For Tier One, the build alternatives were developed at a conceptual level of detail sufficient to compare their environmental consequences. Existing and available data in conjunction with GIS were used to evaluate the potential impacts of the build alternatives in Tier One with detailed field studies to be conducted in Tier Two as agreed to by FHWA, IDOT, and resource agencies early in the process. (See Section 5.2.1 for a summary of the agency scoping meetings at which this topic was discussed.) The GIS database was improved following field verification for select resources (wetlands, parks, commercial, industrial properties, etc.) in areas near the proposed improvements for each alternative to determine more accurately impacts on socioeconomic and environmental resources. For some resource topics, impacts are described as “potential” (e.g., noise-sensitive receptors, threatened and endangered species), pending full field investigations in Tier Two of the process. Tier Two of the process will involve detailed environmental studies and engineering plans for individual projects within the context of the preferred alternative. The work ultimately will lead to the preparation of contract plans, full right-of-way acquisition, and construction.

Alternatives 203 and 402 were retained for further consideration in the Draft EIS because of their ability to satisfy the purpose of and need for the project while minimizing potential environmental and socioeconomic impacts. Also, Options A and D were retained for the south bypass connection. Other modal improvements (transit, bicycle and pedestrian facilities, TDM/TSM) are common to the roadway alternatives. The roadway footprints accommodate transit and bicycle facilities co-located with proposed roadway improvements. In these instances, impacts are reflected in the analysis contained in the Draft and Final EIS's. Transit and bicycle facilities outside planned roadway improvements are common to both Alternatives 203 and 402; therefore, impacts are the same and are not a deciding factor in terms of impacts.

Fundamentally, two comparisons were made in the Draft EIS, one between Alternative 203 and 402, and the other between Options A and D. Because the options could be combined with either alternative, this section describes environmental and social impacts separately for Alternatives 203 and 402 and the Options A and D. This format is observed for most resources; however, this method does not always apply. In some cases, the discussion of impacts is broader. Combining Alternative 203 or 402 with Option A or D constitutes a complete alternative and the full extent of their impact as shown in Table 4-32. After comparing the environmental and socioeconomic benefits and impacts along with travel performance and public input, Alternative 203 with Option D was identified as the Preferred Alternative. Impacts of the Preferred Alternative can be found in the Alternative 203 and Option D discussions throughout this section as well as in the Alternative 203 with Option D column in Table 4-32. It should be noted that because of a shift in the south bypass connection alignments to the south side of the Bensenville Yard since the publication of the Draft EIS, the

impacts have changed slightly for Options A and D. The modified impact numbers are represented in this section. The images on page 4-3 show the location of Alternatives 203 and 402 with the Options A and D.

The No-Action Alternative, consisting only of transportation improvements to existing roadway and transit facilities in the study area that are expected to be constructed by the design year (2030), was carried forward as a basis of comparison to the build alternatives in the Draft EIS. The No-Action Alternative is common to both build alternatives; therefore, the impacts would also be common. Thus, a discussion of the environmental and socioeconomic impacts for the No-Action Alternative would not provide a distinction between the build alternatives and is not included in this section.

The impacts described in this section are consistent with the resources presented in Section 2, except those for which no impact would occur: agriculture and air quality. In addition to analyzing direct impacts associated with the build alternatives, indirect and cumulative impacts were also analyzed. Mitigation measures designed to reduce or off-set environmental and social impacts are discussed at a conceptual level in Section 4.13. The section concludes with a summary of the project's potential environmental consequences.

4.1 Socioeconomic Impacts

4.1.1 Population, Households, and Employment

Using CMAP's 2030 RTP socioeconomic forecasts (CMAP, 2006), the project team developed population, household, and employment forecasts specific to the No-Action Alternative, Alternative 203, and Alternative 402.¹ Detail about how the forecasts were developed is documented in the EO-WB Finalist Build Alternatives and No Build Baseline Alternative 2030 Socioeconomic Data Forecasts: Estimation and Distribution Methodology (FHWA and IDOT, 2009) and is part of the project files. Because both south bypass connection options (A and D) are the same facility type and provide identical connections to the larger system, the socioeconomic forecasts do not differentiate between A and D.

Each build alternative would result in slightly different population, household, and employment forecasts in 2030. Table 4-1 details the change associated with each alternative. Comparing the no-action scenario to existing (2006) data, the forecasts show that the study area will experience a nominal increase in population and households over the next 20+ years, which is characteristic of a mature area.² A much higher growth rate for employment is forecasted, with a 14.1 percent increase over the next 20-year period.

Each build alternative would result in slightly different population, household, and employment forecasts in 2030. There is not a wide range of difference in the forecasted population or number of households between the two build alternatives – less than a one

¹ The forecasts, which were developed using CMAP's methodology, are based on accessibility and additional lane-miles available above and beyond the CMAP 2030 RTP. The population and employment redistribution only pertains to whether or not there is a connection, and does not take into account a specific alignment location. Because both South Bypass Connections Options (A and D) are the same facility type and provide identical connections to the larger system, the redistribution does not differentiate between Options A and D.

² It was preferable to compare to the baseline forecasts rather than the RTP forecasts; as the RTP assumed that the Elgin O'Hare Expressway and West Bypass would be in place by 2030 when developing the associated demographic forecasts.

Alternative 203



Alternative 402



percent difference in population and households, and less than a two percent difference in employment. This is because little vacant or undeveloped land use available, and most development or redevelopment will tend to be industrial (a predominant use through much of the study area) rather than residential.

TABLE 4-1
Study Area Population, Household, and Employment Changes by Alternative

	Population	Households	Employment
2006 estimate ^a	509,900	198,850	569,500
No-Action Alternative: 2030 forecast	537,620 ^b (+5.4% ^c)	202,500 ^b (+1.8% ^c)	649,600 ^b (+14.1% ^c)
Alternative 203: 2030 forecast	540,790 (+0.6% ^d)	207,400 (+2.4% ^d)	712,100 (+9.6% ^d)
Alternative 402: 2030 forecast	539,040 (+0.3% ^d)	206,800 (+2.1% ^d)	698,100 (+7.5% ^d)

^a Source: CMAP, 2006.

^b Forecasts developed by CH2M HILL in coordination with CMAP.

^c Percent increase from 2006 estimate.

^d Percent increase over No-Action projection.

Under Alternative 203, the 2030 population in the study area would increase by 3,170, or 0.6 percent, over 2030 no-action population. The number of households would increase by 4,900, or 2.4 percent, and employment would increase by 62,500, or 9.6 percent.

Under Alternative 402, the 2030 population forecast is projected to increase by an additional 1,420 persons, or 0.3 percent, over the 2030 no-action population. Households are forecast to increase by 2.1 percent and employment in the study area by 7.5 percent.

4.1.2 Displacements

The proposed transportation improvements would displace residences and commercial and industrial structures in the study area (see Exhibit 4-1A through D and Exhibit 4-2). Impacts to residents and businesses by alternative and south bypass connection option are described below and summarized in Table 4-2. No multifamily residential structures would be displaced by the proposed improvements. Losses in tax revenue resulting from the displacement of residences and commercial and industrial structures by the build alternatives are described in subsection 4.1.5.

Alternatives 203 and 402 would displace the same 11 residences. One is located along the east side of Medinah Road between the Elgin O'Hare Expressway and Irving Park Road. Eight are concentrated on the north and south sides of the extended Elgin O'Hare Expressway between Arlington Heights Road and Prospect Avenue. Another is located in Itasca east of Prospect Avenue on the south side of the extended Elgin O'Hare Expressway. Alternatives 203 and 402 will displace a residence within a mobile home community along Touhy Avenue in Des Plaines. The few residential displacements and their locations will not eliminate any residential neighborhoods. They are distributed among several communities and do not disproportionately affect the residential nature of any one community.

All commercial and industrial structures affected by Alternative 402 are common to Alternative 203. Two commercial structures in Itasca with one business and 14 employees each would be affected. A vacant commercial structure and six industrial structures (with four businesses and 96 employees) on the east end of the extended Elgin O'Hare Expressway in

TABLE 4-2
Displacements per Build Alternative and South Bypass Connection Option

Alternative	Residential Displacements (residences/residents) ^a	Commercial Structure Displacements	Industrial Structure Displacements	Businesses Displaced	Employees Displaced
203	11/33	4	10	12	292
Medinah ^b	1/3	0	0	0	0
Itasca	9/27	2	0	2	28
Des Plaines	1/3	1	2	3	158
Bensenville	0	1	6	5	96
Elk Grove Village	0	0	2	2	10
402	11/33	3	7	8	129
Medinah ^b	1/3	0	0	0	0
Itasca	9/27	2	0	2	28
Des Plaines	1/3	0	0	0	0
Bensenville	0	1	6	5	96
Elk Grove Village	0	0	1	1	5
Option A	7/21	0	30	47	708
Bensenville	7/21	0	26	43	424
Franklin Park	0	0	2	2	76
Northlake	0	0	2	2	208
Option D	0	8	18	23	985
Bensenville	0	8	5	9	430
Franklin Park	0	0	12	12	521
Northlake	0	0	1	2	34

^a The number of displaced residents is calculated by multiplying the number of displaced residences by the average household size. According to the 2000 U.S. Census, the average household size for communities where displacements would occur is three.

^b Medinah is not an incorporated community but an area within unincorporated DuPage County.

Bensenville would be displaced. Another industrial structure with one business and five employees would be displaced along Elmhurst Road in Elk Grove Village. Alternative 203 affects an additional commercial structure and another three industrial structures. One industrial structure with one business and five employees in Elk Grove Village and two industrial structures in Des Plaines, each with one business and 108 employees, would be affected along the north leg of the O'Hare West Bypass. The additional commercial structure displaced by Alternative 203 has one business with 50 employees and is located in Des Plaines. The proposed interchange with I-90 would affect another commercial structure in Des Plaines with one business and 50 employees.

Table 4-2 summarizes the socioeconomic impacts of the south bypass connection option. Option A would displace seven residences, but Option D would not displace any residences. The seven displaced residences are located along the west side of County Line Road in Bensenville.

Option A would affect no commercial structures and 30 industrial structures containing 47 businesses. Those businesses are along Green Street, along the west side of County Line Road, and where the O'Hare West Bypass would connect with I-294. Two of the 26 industrial structures in Bensenville are within the Bensenville Yard on the north side of Green Street. Two more industrial structures with one business each and 108 employees are also located along Green Street, one is on the north side of Green Street west of County Line Road and the other is on the south side of Green Street west of County Line Road. Twenty-two industrial structures with 41 businesses would be displaced on the west side of County Line Road in Bensenville; 316 employees would be displaced. The impacts from the O'Hare West Bypass/I-294 interchange include two industrial buildings (containing two businesses and 76 employees) in Franklin Park and two industrial buildings (two businesses and 208 employees) in Northlake.

Option D would affect two industrial structures within the Bensenville Yard, eight commercial and three industrial structures on the north side of Green Street (in Bensenville), 12 industrial structures on the east side of the railroad tracks (in Franklin Park), and one industrial structure on the southeast side of I-294 in Northlake. The eight commercial structures on the north side of Franklin Avenue contain six businesses with 175 employees; the three industrial structures have three businesses with a total of 255 employees. The 12 displaced industrial structures on the east side of the railroad tracks in Franklin Park contain 12 businesses with 521 employees. The industrial structure on the southeast of I-294 has two businesses with 34 employees.

Relocation assistance will be provided without discrimination and in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and IDOT's *Land Acquisition Procedures Manual*. For further information, see subsection 4.13.3.

4.1.3 Community and Land Use Impacts

Carefully planned roadway improvements can foster beneficial results, such as making communities more cohesive and supporting future growth and planning policies. Lack of planning for roadway improvements can bring undesirable effects to a community, including fracturing community cohesion. The discussion below describes the potential effects of each alternative on community cohesion and land use.

4.1.3.1 Consistency with Land Use Plans

Alternatives 203 and 402 traverse the core communities of Schaumburg, Roselle, Itasca, Wood Dale, Elk Grove Village, and Bensenville in generally the same geographic area. Their comprehensive plans were reviewed to assess whether the proposed improvements would be consistent with their long-range plans. Each community's plan is addressed below:

- **City of Wood Dale**—The City of Wood Dale does not have a communitywide comprehensive plan, but it is developing a Thorndale Corridor subarea plan that

incorporates applicable elements of this transportation study. The City has incorporated recommendations to upgrade and extend the Elgin O'Hare Expressway into this subarea plan. The plan notes that within its corporate boundaries, the Thorndale Corridor is primarily a location for business and industry. The plan proposes additional commercial, industrial, residential and mixed transit land use development with the eastern extension of the Elgin O'Hare Expressway. The plan states that it intends to capitalize on the eastern extension of the Elgin O'Hare Expressway and other improvements planned for the area's roads and expressways (City of Wood Dale, 2009).

- **Village of Roselle** – Within the Village of Roselle, the Elgin O'Hare Expressway is an existing facility. The Village's comprehensive plan delineates residential, commercial, industrial, and open space land uses near the expressway corridor (Village of Roselle, 1995). Its plan states that no plans have been made to develop additional land unless it provides a benefit to the Village or if the development can provide services to the property at no additional cost to present residents.
- **Village of Itasca** – The Village of Itasca's comprehensive plan identifies the eastern extension of the Elgin O'Hare Expressway in its document (Village of Itasca, 1994). Existing and future land uses adjacent to the project corridor are a mix of residential, industrial, and commercial uses. The Village has been an engaged stakeholder in the study, and acknowledges that Thorndale Avenue is an important corridor in the community that needs to provide efficient travel and access to the community and businesses.
- **Village of Schaumburg** – The Elgin O'Hare Expressway is within the Village of Schaumburg. The Village's plan delineates residential and industrial land uses adjacent to the expressway (Village of Schaumburg, 1996). The Village proposes continued residential and industrial uses through the area.
- **Village of Bensenville** – The Village of Bensenville's plan recognizes the possibility of the eastern extension of the Elgin O'Hare Expressway (Village of Bensenville, 2004). Its plan encourages development of new office/research and light industrial uses along Thorndale Avenue. The Village has developed another document containing short-term development strategies that can be implemented independent of activities related to the airport expansion or O'Hare West Bypass facilities. The *Alternative Redevelopment Strategies Final Report* indicates that the Village will reevaluate future land use policies if the eastern extension of the Elgin O'Hare Expressway becomes a reality (Village of Bensenville, 2009). The Village has been an active participant in this project's planning process and has provided comments concerning alternatives to be considered and the location of proposed improvements. It remains concerned, however, about infrastructure improvements that would adversely affect neighborhoods and the economic vitality of the community.
- **Elk Grove Village** – The Village last developed its comprehensive plan in the 1960s and considers it out-of-date. Elk Grove Village has been an active stakeholder in the project planning process. It indicates that current land uses (industrial) will continue if upgraded transportation facilities are constructed. Representatives have commented that alternatives that involve IL 83 would impose barrier effects costly to its business vitality and to emergency response times for fire, police, and ambulance services and

would disrupt community cohesion. Because the build alternatives do not involve IL 83, the Village acknowledges that they are reasonably compatible with its future plans.

- **DuPage County** – DuPage County's Comprehensive Plan (DuPage County, 2005) and its West O'Hare Corridor Economic Development Study (DuPage County, 2006) identify and plan for an eastern extension of the Elgin O'Hare Expressway and an O'Hare West Bypass of the O'Hare Airport. Northeastern DuPage County encompasses all major land use categories throughout the study area including residential, commercial, industrial, open spaces, transportation and utilities, and agricultural properties. The County's plans propose future uses that would be compatible with these roadway improvements.

Overall, community plans or strategies complement the concept of the proposed build alternatives, and there are no material distinctions in impacts to land use proposed by the core communities between Alternatives 203 and 402. Either communities have already included the proposed transportation project, or they will include the project in their plans if the project becomes a reality. In all cases, the design aspects of the final system of improvements will require consideration of several designs to fit the needs of the various communities. Besides the local planning issues, the proposal to construct the Elgin O'Hare Expressway has been part of the region's long-range plan since the late 1960s, and the proposal to construct an O'Hare West Bypass extending from I-294 to I-90 has been part of the regional plan since the 1990s. For that reason, the communities have had the opportunity to consider and plan for compatible land uses near the proposed facilities. Further, over the years (in particular, when the existing section of the Elgin O'Hare Expressway was being designed and built), some of the right-of-way along the Thorndale Avenue corridor was purchased in anticipation of a future upgraded roadway. This has enhanced the possibility that future land use and development would be compatible with a future upgraded roadway facility.

4.1.3.2 Airspace Compatibility

The FAA regulates airspace and clearance requirements near airport operations. Clearance requirements control the height of structures or objects in aircraft operating areas. The FAA encouraged early review of the proposed transportation improvements and their possible conflicts with controlled air space. Early review is voluntary and was considered preliminary, with the object of assisting IDOT with future design parameters. Because of the project's proximity to the airport, early coordination was initiated to determine if there were issues of concern regarding airspace. Although the FAA typically conducts airspace reviews (using Form 7460 and required information) for projects much further into design, it agreed that a preliminary 7460 review would be beneficial to facilitate later the stages of design. The FAA conducted the review and offered the following comments in its response dated March 6, 2009 (included in Appendix G), to be considered as the design/planning process proceeds:

- Four locations were identified as having instrument flight rule (IFR) impacts, which concern departing aircraft initial climb surfaces. Points 9R-PT5 and 9R-PT6 are located near proposed Runway 9R, where Elgin O'Hare Expressway connects to the O'Hare West Terminal. FAA noted that if those points were reduced by the amount of penetration (two to seven feet), there would be no IFR impacts. Failure to do so could result in a reduction of aircraft departure weights allowed by the carriers. Point 4R"G"-PT3 is located along the O'Hare West Bypass South Connection Option G, which was eliminated from further study during the initial alternatives evaluation process. Point

14R-PT3 is located near runway 14R, which will be decommissioned in the near future as part of the OMP.

- The FAA also provided a table of critical points for Part 77 height restrictions. The points show where potential penetrations to Part 77 Approach Surfaces could occur. See FAA memorandum dated March 6, 2009, in Appendix G for the full list.
- Highway light poles must be affixed with visual delineation/safety light for aircraft safety.
- As the project proceeds to design, a formal 7460 Review will be required before actual construction may commence.

Per the March 6, 2009 memorandum, FAA cited no major concerns resulting from the location of the build alternatives, bypass, north connection, or the south bypass connection options. All conflicts described above relate to future highway lighting considerations. The issues identified can all be adjusted in during the detailed design. As planning and design proceed, FAA will review the updated design plans from the standpoint of an airspace use.

4.1.3.3 Consistency with Land Use Patterns

The study area benefits from extensive transportation infrastructure (including proximity to I-90, I-290, and I-294; multiple rail yards, lines, and intermodal facilities; and the O'Hare Airport). Therefore, commercial and industrial land uses are concentrated within the study area. Much of the development just west of the airport took place in the 1950s and 1960s, as regional growth pushed development out to areas where land was available. The presence of O'Hare Airport was a further influence for new or relocating industries that relied on easy access to air and railroad facilities. Industrial development in the study area generally is concentrated in Elk Grove Village and Bensenville, and is adjacent to much of the Thorndale corridor and the Elgin O'Hare Expressway (west of I-290). Within the study area there is little available developable land (five percent of area), so change to land uses would represent either infill or redevelopment of underused properties. Table 4-3 summarizes the land use impacts of the build alternatives.

The common sections of Alternatives 203 and 402 (the Elgin O'Hare Expressway part and the south section of the O'Hare West Bypass) are aligned through areas that are primarily industrial or airport properties. Through the shared roadway sections, neither alternative crosses community centers or residential neighborhoods. There would be changes to property access along the improved routes. Frontage roads would be provided at critical locations along Elgin O'Hare Expressway alignment on both the north and south sides of the upgraded facility to provide local property access. Access to and from the freeway facility would be channeled to specific interchange locations, as identified in Section 3. Freeway overpasses would be provided in several locations along the expressway to provide continuity for travel on crossing roadways, to accommodate bicycle and pedestrian travel, and community linkages. For Alternative 203, the north section of the O'Hare West Bypass is located primarily on O'Hare Airport property, where access is restricted and land use is airport-related. No property access changes would result from the improvements and adjacent land-use would remain unchanged.

Alternative 402 would cause only minor changes to property access along the north leg of the improvement, between the Elgin O'Hare facility and I-90. Property access generally would be

modified by consolidating ingress and egress in areas of concentrated development and at intersections. Major roadway intersections would remain at grade, except at the interchange with I-90. Intersections would be upgraded to accommodate high-volume turning movements. To maintain efficient traffic movement and operation at intersections, access to nearby properties may be controlled, possibly by limiting the number of ingress and egress points or by limiting turning movements to right-in and right-out. The partial interchange at I-90 would be upgraded to a full interchange.

Where properties are already developed adjacent to the proposed improvement (which is the case for most areas adjacent to proposed project), design details could protect those areas from access issues and barrier effects resulting from an access controlled facility.

TABLE 4-3
Land Use Impacts per Build Alternative and South Bypass Connection Option

	Compatibility with Land Use Patterns	Consistency with Land Use Plans and Policies
Alternative 203	<p>The Elgin O'Hare Expressway segment is routed through an area where land use anticipates a future high-type transportation facility. Industrial and commercial uses will benefit from an upgraded facility and improved access.</p> <p>Much of the O'Hare West Bypass (middle section) would be on O'Hare Airport property reserved for a roadway corridor. No land use changes would occur on airport property. The roadway segments not on airport property would be within the Bensenville Yard. It is not expected that changes to land use would occur as a result of placement of the roadway in the vicinity of that property.</p>	<p>The six-core communities' plans or stated policies support and reflect eventual presence of the improved transportation facilities.</p>
Alternative 402	<p>The Elgin O'Hare Expressway segment is routed through an area where land use anticipates a future high-type transportation facility. Industrial and commercial uses will benefit from an upgraded facility and improved access.</p> <p>Much of the O'Hare West Bypass (south section) would be on O'Hare Airport property reserved for a roadway corridor. No land use changes would occur on airport property. The roadway segments not on airport property would be within the Bensenville Yard. It is not expected that changes to land use would occur as a result of placement of the roadway near that property.</p> <p>O'Hare West Bypass (north section) would be an upgraded arterial facility on Elmhurst/York Road. Industrial and commercial uses would benefit from upgraded roadway facility.</p>	<p>The six-core communities' plans or stated policies support and reflect eventual presence of these improved transportation facilities.</p>

TABLE 4-3
Land Use Impacts per Build Alternative and South Bypass Connection Option

	Compatibility with Land Use Patterns	Consistency with Land Use Plans and Policies
Option A	Adjacent lands are industrial to the east and commercial/light industrial/residential/park to the west. This alignment, which is on the eastern fringes of the community, avoids major disruption or compatibility issues, but it would require the use of extensive design features to soften the effects especially to the neighboring residential area. Improved access to this area would potentially benefit new investment in industrial and commercial uses.	While not explicitly stated in its plan documents, the Village of Bensenville has expressed opposition to South Bypass Connection Option A. The Village stated its concerns for Option A at the March 11, 2009, Public Meeting, as well as at one-on-one meetings conducted with the Village following the public meeting. The Village's position is that Option A would site a new freeway corridor adjacent to residential areas and displace remaining commercial and industrial properties along County Line Road.
Option D	Adjacent industrial lands would benefit from improved access (aside from those directly impacted).	While not stated in its plan documents, the Village of Franklin Park has expressed support for a south bypass connection. On September 8, 2009, the Village passed a resolution in favor of Option D.

Although both build alternatives are compatible with the core communities' comprehensive plans and adjacent land uses, coordination and review by communities directly affected by the improvements would be required at each successive design phase.

Both Options A and D involve construction of a tunnel under the western Bensenville Yard, and then extending east on the south edge of the facility. This alignment location is compatible with existing uses at the rail yard and avoids displacement of any existing track. It would require the relocation of the (no longer used) roundhouse and machine shop. Table 4-3 summarizes the land use impacts for the south bypass connection options.

Option A on County Line Road runs through an industrial area. The buildings on the east side of County Line Road (which generally would not be affected) are large industrial facilities, whereas those on the west side of the roadway (which would be affected) tend to be small industrial/commercial facilities. Uses just west of the proposed improvements tend to be residential and park uses.

Option D, which extends south along the east side of the UP rail tracks, is aligned through an existing and antiquated industrial area before connecting at I-294.

4.1.4 Environmental Justice

This subsection describes the potential for disproportionate impacts to low-income and minority populations that could occur with the build alternatives. The assessment included a technical analysis to determine potential effects and the use of public involvement activities that included all residents and population groups in the study process. It did not exclude anyone based on income, race, color, religion, national origin, sex, age, or handicap.

For each alternative, the influence area is defined by the census tracts bordering the proposed improvements. A disproportionate impact to these populations exists when they bear more than their “fair share.” An analysis of these populations showed that, compared to the general population, there would be no disproportionate impact to low-income populations (in accordance with the U.S. Department of Health and Human Services Poverty Guidelines) or minority populations within the influence area of the alternatives.

Demographic and income characteristics were compiled for the census blocks and block groups, respectively, for the 2000 census within each alternative corridor and combined to represent the residential nature of each alternative and south bypass connection option. This information, along with similar information for DuPage and Cook counties and the State of Illinois, is presented in Tables 4-4 and 4-5 for comparison purposes. Information for individual block groups and blocks within which displacements would occur were reviewed to determine whether there are locations along the proposed improvements with a high percentage of minority populations or families with income levels below the U.S. Department of Health and Human Services Poverty Guidelines.

TABLE 4-4
Comparison of Build Alternative and South Bypass Connection Option Demographic Characteristics to Those of DuPage County, Cook County, and the State of Illinois

Race	Alt. 203	Alt. 402	Option A	Option D	DuPage County	Cook County	State of Illinois
White	12,303 (73.3%)	10,245 (77.1%)	185 (75.2%)	55 (74.3%)	759,924 (84.0%)	3,025,760 (56.3%)	9,125,471 (73.5%)
Black or African American	498 (3.0%)	438 (3.3%)	0 (0.0%)	0 (0.0%)	27,600 (3.1%)	1,405,361 (26.1%)	1,876,875 (15.1%)
American Indian and Alaska native	60 (0.4%)	53 (0.4%)	0 (0.0%)	0 (0.0%)	1,520 (0.2%)	15,496 (0.3%)	31,006 (0.2%)
Asian	1,920 (11.4%)	1,133 (8.5%)	30 (12.2%)	11 (14.9%)	71,252 (7.9%)	260,170 (4.8%)	423,603 (3.4%)
Native Hawaiian and other Pacific islander	13 (0.1%)	10 (0.1%)	0 (0.0%)	0 (0.0%)	217 (0.0%)	2,561 (0.0%)	4,610 (0.0%)
Other race	1,462 (8.7%)	1,063 (8.0%)	21 (8.5%)	8 (10.8%)	28,166 (3.1%)	531,170 (9.9%)	722,712 (5.8%)
Two or more races	518 (3.1%)	343 (2.6%)	10 (4.1%)	0 (0.0%)	15,482 (1.7%)	136,223 (2.5%)	235,016 (1.9%)
Total population	16,774	13,285	246	74	904,161	5,376,741	12,419,293
Percent minority	26.7%	22.9%	24.8%	25.7%	16.0%	43.7%	26.5%
Hispanic population (any race)	24.8%	21.4%	18.7%	18.9%	9.0%	19.9%	12.3%
Average household size	2.5	2.4	2.3	2.2	2.7	2.7	2.6

Source: U.S. Bureau of the Census, 2000.

Alternative 203 lies within 318 census tract blocks. Minority residents account for 26.7 percent of the Alternative 203 area (see Exhibit 4-3A). This percentage is similar to the statewide average, lower than the Cook County average, but higher than DuPage County. Alternative 402 lies within 279 blocks. Minority residents account for 22.9 percent of the

TABLE 4-5
Comparison of Build Alternative and South Bypass Connection Option Income Characteristics to Those of DuPage County, Cook County, and the State of Illinois

	Alt. 203	Alt. 402	Option A	Option D	DuPage County	Cook County	State of Illinois
Total population	57,784	49,169	13,857	10,562	904,161	5,376,741	12,419,293
1999 median family income	\$64,418	\$65,902	\$59,610	\$57,786	\$79,314	\$53,784	\$55,545
Average family size	4.0	4.0	4.6	4.6	3.3	3.4	3.2
Poverty status	5.7%	5.0%	7.2%	7.8%	3.6%	13.5%	10.7%

Source: U.S. Bureau of the Census, 2000.

Alternative 402 area. This is higher than DuPage County but lower than Cook County and the State of Illinois percentages.

Census blocks with higher percentages of minority residents than the state average are located throughout the study area. Census blocks within DuPage County with minority percentages higher than the County are spread across the study area as well. Census blocks within Cook County with minority percentages higher than the County are located mostly along the I-90 corridor where Alternative 203 improvements extend farther (west and east) than Alternative 402 improvements. The Asian population makes up the highest percentage of minorities under both alternatives. Census blocks consisting of a higher percentage of Asian population than the county and state averages are distributed at locations along the western portion of the Elgin O'Hare Expressway, the area southwest of O'Hare Airport, and north and west of the I-90 interchange at Elmhurst. The notable difference between Alternatives 203 and 402 are the additional census blocks with higher than average percentages of Asian residents along Alternative 203, where it extends farther west along I-90 than Alternative 402. Census block data were further analyzed in areas where displacements would occur. Displacements from Alternatives 203 and 402 occur in 18 and 22 census blocks, respectively, three of which have higher minority percentages than the state or county they are located and are common to both alternatives.

The U.S. Department of Health and Human Services defined the 2009 poverty guideline for a family of four (the average family size for census tract block groups in the study area) at \$22,050. Alternatives 203 and 402 lie within 33 and 27 census tract block groups, respectively (see Exhibit 4-4). The median family income for families in Alternative 203 census tract block groups is \$64,418 and the median family income of the Alternative 402 area is \$65,902, both of which are much higher than the poverty threshold and exceed the median family income levels of Cook County and the State of Illinois (although they are lower than DuPage County) (see Table 4-5). No block group where displacements would occur has a median family income below the 2009 poverty guideline. One block group has a median family income slightly below the 2009 poverty guideline for the average family size of that block group and is common to both alternatives. However, the residential portion of the block group does not intersect with and is not proximate to the Alternative 203 footprint.

Based on the evaluation of the demographic and income characteristics in the study area, neither alternative has the potential to exert high or disproportionate adverse impacts on minority or low-income populations. Census block groups and blocks with minority populations are distributed across the study area; therefore, it cannot be concluded that improvements causing access changes or displacements are confined to a minority population in a particular location. Conversely, improvements causing displacements and access changes are proposed in locations without minority or low income populations. Local access would be maintained in nearly all locations by means of frontage roads (e.g., Thorndale Avenue). Thus, local trips would not require indirect or circuitous travel. Though employees would be displaced as a result of business impacts, the potential for relocation in the proximate area is high and therefore, is not expected to adversely affect any employees living and working in this area. Therefore, it cannot be concluded that minority or low income populations will bear more than their fair share of impacts.

Options A and D are located within 56 and 52 census tract blocks, respectively. Of the census blocks within the options, eight blocks within Option A and four within Option D are populated; all populated census blocks are located within DuPage County along Green Street or along the west side of County Line Road. The percentage of minority residents for both options is approximately 25 percent – higher than in DuPage County but below the State of Illinois or Cook County (see Table 4-4 and Exhibit 4-3A). As with the alternatives, the highest percentage of the minority population is Asian. Under Option A, displacements would occur in three populated census blocks, only one of which has a minority population. All displacements under Option D would occur in nonpopulated census blocks. The percentage of residents of Hispanic origin in these census tract blocks is also higher than DuPage County or state percentages. Two census blocks have Hispanic populations higher than DuPage County or state percentages, one of which would experience displacements.

Options A and D are located within 10 and eight census tract block groups, respectively (see Exhibit 4-4). Median family incomes of the Option A and D areas are \$59,610 and \$57,786, much higher than the poverty threshold and exceeds the median family income levels of Cook County and the State of Illinois (although it is lower than DuPage County). No individual block group along these options has a median family income below the 2009 poverty guidelines.

Based on the evaluation of the demographic and income characteristics in the study area, neither option has the potential to exert high or disproportionate adverse impacts on minority or low-income populations. No low-income population is located along the south bypass connection options. The residential population within the census blocks along the proposed options is very low (only 14 percent of census blocks along Option A and eight percent along Option D are populated). The percentage of minority residents is very similar for both options and slightly higher than the DuPage County average but lower than the State average. The percentages of Hispanic residents along both options are higher than for both DuPage County and the state. However, displacements would occur (under Option A) in only one census block with a higher percentage of Hispanic residents than the county or state averages. Further, access changes and improvements are spread across the proposed connection options and would be experienced by minority and nonminority populations alike. Local access would be maintained in most all locations by means of frontage roads (e.g., County Line Road). Thus, local trips would not require indirect or circuitous travel. Though

employees would be displaced as a result of business impacts, the potential for relocation in the proximate area is high and, therefore, not expected to adversely affect employees living and working in the area. Therefore, it cannot be concluded that minority populations will bear more than their fair share of impacts.

4.1.5 Economic Impacts

The build alternatives have a varied impact upon the study area in terms of beneficial and adverse impacts to businesses, employment, and taxes.

4.1.5.1 Beneficial Impacts Resulting from Improved Access

The build alternatives address purpose and need issues identified early in the environmental process:

- Improve local and regional travel
- Improve travel efficiency (e.g., better access)

The proposed transportation improvements are expected to improve access and opportunities to industrial and commercial properties, which would enhance the possibility of redeveloping underused property. Both build alternatives would improve access and shorten travel times to industrial areas within the study area. More than 40 percent of the study area is more than 10 minutes driving time from interstate facilities, which is considered a competitive disadvantage to many industrial and commercial properties in the area.

Both build alternatives would provide improved access and travel benefits throughout the study area. The proposed build alternatives would assist in shifting nonlocal travel from arterial roadways to higher capacity roads, and to some degree shift automobile travel trips to transit, thus reducing travel on local roadways. Construction of a freeway would relieve local roadways of through traffic that use roads throughout the study area. It would provide the appropriate facility for the nonlocal trips.

For the common elements of the build alternatives, the proposed improvements would enhance access to the study area with an upgraded and extended Elgin O'Hare Expressway that would provide a freeway with nine interchanges (four existing, five new) throughout its length. The improvements would maintain full access at all major crossings on existing Thorndale Avenue. Minor crossings would be maintained under the proposed Elgin O'Hare Expressway facility to maintain community and business connectivity across the freeway and provide access to industrial areas at key interchange locations.

Improved access would strengthen the competitive position of a thriving industrial area, which could lead to additional investment in redeveloping older or obsolete structures and modernizing the industrial parks. Improvements to the O'Hare West Bypass (both north and south sections) would enhance access³ to the west side of O'Hare Airport and industrial businesses in the area with a facility that provides the following benefits:

- An upgraded interchange at Elmhurst Road and I-90 (both alternatives)

³ All interchange modifications or new interchanges will be approved by the FHWA during review of access justification reports, which would be completed in subsequent design phases.

- An interchange at Touhy Avenue/IL 72, and at Pratt Street/Devon Avenue, providing access to the north (Alternative 203)
- An interchange at IL 19 (both alternatives)
- An interchange to Franklin Avenue from the south (both south bypass connection options)
- Improved access from Franklin Avenue/Green Street to Irving Park Road on a new Taft Road bridge over the Bensenville Yard

4.1.5.2 Beneficial Economic Impacts

Dollars invested in transportation flow through all sectors of the economy. Such investments spur increased jobs, income, profit and tax revenue, and provide an economic stimulus far exceeding the original investment. This transportation investment not only will benefit the local economy by providing needed infrastructure; it also will benefit the economy and increase economic output through a multiplier effect. The project will employ construction workers and their suppliers. It will stimulate employment in other sectors of the economy to support those workers, such as medical facilities, laundries, restaurants, and other service industries throughout the area. These multiplier effects were estimated using IMPLAN PRO.⁴ The model estimates economic impacts by tracing spending and consumption in various economic sectors. By their nature, total economic impacts are greater than initial project costs where the magnitude of the increase is termed the *multiplier effect*.

The estimate of economic impacts from each alternative's construction activities on the regional economy⁵ was measured in terms of value added and employment. The following construction cost estimates were used (2009 dollars):

- Alternative 203⁶: \$3.0 billion for construction and \$660 million for right-of-way⁷
- Alternative 402: \$2.3 billion for construction and \$473 million for right-of-way

It was assumed the construction costs would be evenly spread over a three-year period.⁸

Table 4-6 details the results of the analysis. Economic impact of Alternative 203, with construction costs of \$1.0 billion per year, would result in creation of 9,200 jobs per year in the region (during the three years of construction) in the highway construction industry, and a total of 21,600 jobs per year (during the three years of construction), including those in other services and industries (benefits accrue to all industries throughout the regional economy). Total value added per year would be an estimated \$1.6 billion, translating to \$4.8 billion over the three-year period. For perspective, the value added resulting from the project is roughly one percent of the value added in the region (the Chicago MSA plus

⁴ IMPLAN is a modeling system originally developed by the U.S. Forestry Service in the late 1970s. Today, the Minnesota IMPLAN Group (MIG Inc.) owns the copyright and distributes data and software. It is probably the most widely used economic impact model in existence. IMPLAN comes with databases containing the most recently available economic data for geographic areas from a variety of sources.

⁵ For this analysis, the region included the Chicago MSA (Cook, DuPage, Kane, Lake, McHenry, and Will counties) and Kenosha County, Wisconsin.

⁶ Construction costs for Alternatives 203 and 402 include Option D. Option D was used as a representative south bypass connection option and presents the "worst case," as its construction costs are higher than those for Option A.

⁷ Right-of-way costs typically are treated as transfer payments and therefore do not contribute to an increase in economic activity in terms of jobs and value added.

⁸ Three years is the anticipated construction time for this project.

Kenosha County, Wisconsin), which is \$479 billion. Value added is the net measure of the economic contribution of an industry to the regional economy less the intermediate goods and services used.

Alternative 402, with construction costs of \$770 million per year, would result in creation of 7,000 jobs per year in the highway construction industry, and a total of 16,600 jobs annually in the region. Total value added per year would be an estimated \$1.3 billion, translating to \$3.9 billion over the three-year period.

4.1.5.3 Employment Loss

The build alternatives would affect commercial and industrial structures within the proposed footprint, as discussed in subsection 4.1.2, causing the displacement of businesses and their employees.

Employee estimates for displaced businesses range from two to 174 workers per business; no major employers will be displaced as a result of the proposed improvements. Communities affected will incur a reduction of 1.90 percent or less in their employee bases (see Table 4-7).

TABLE 4-6
Economic Impacts from Construction^a

	Alternative 203	Alternative 402
Construction costs total	\$3.0 B	\$2.3 B
Construction costs per year	\$1.0 B	\$770 M
Total value added per year	\$1.6 B	\$1.3 B
Total value added	\$4.8 B	\$3.9 B
Jobs directly ^b created per year	9,200	7,000
Total jobs ^c created per year	21,600	16,600

^a The economic benefits from construction (value added and jobs created) are for the region (the Chicago MSA plus Kenosha County, Wisconsin).

^b These are jobs related to construction of the transportation improvement.

^c These include jobs in all sectors of the economy that are created as a result of the initial investment.

TABLE 4-7
Employee Loss per Community by Build Alternative and South Bypass Connection Option

Alternative	Employees per Community ^a	Employees Displaced	Employment Loss (%)
203			
Des Plaines	60,359	158	0.26
Itasca	31,374	28	0.09
Bensenville	29,903	96	0.32
Elk Grove Village	61,121	10	0.02
Total	182,757	292	0.16
402			
Itasca	31,374	28	0.09
Bensenville	29,903	96	0.32
Elk Grove Village	61,121	5	0.01
Total	122,398	129	0.11
Option A			
Bensenville	29,903	424	1.42
Franklin Park	27,474	76	0.28
Northlake	10,934	208	1.90

TABLE 4-7
Employee Loss per Community by Build Alternative and South Bypass Connection Option

Alternative	Employees per Community^a	Employees Displaced	Employment Loss (%)
Total	101,196	708	0.70
Option D			
Bensenville	29,903	430	1.44
Franklin Park	27,474	521	1.90
Northlake	10,934	34	0.31
Total	68,311	985	1.44

^a Source: CMAP, 2006.

The economic impacts of the employee displacements include the loss of earned wages, further employment loss in the region, and loss of added value to the affected industry. The economic impact to the region from displaced businesses and employees was estimated using the IMPLAN model (see Table 4-8). Because it is beyond the scope of this project to investigate whether or not the potentially displaced businesses would relocate in the area, the analysis is conservative and reflects the “worst case” in that it assumes none of the businesses and their employees will relocate in the region.

TABLE 4-8
Worst Case Economic Impacts from Employee Displacement by Build Alternative and South Bypass Connection Option (2009 \$)

	Alternative 203	Alternative 402	Option A	Option D
Employees directly displaced	292	129	708	985
Total employees displaced	692	277	2,481	3,670
Direct employee compensation lost	\$13.7 M	\$4.7 M	\$47.1 M	\$83.2 M
Total value added lost	\$54.0 M	\$20.1 M	\$223.4 M	\$350.7 M

Source: IMPLAN, 2009.

Alternative 203 would directly affect 292 employees by displacing 12 businesses. IMPLAN predicts their employment could ultimately affect 692 jobs in the region. The direct loss in employee compensation is \$13.7 million, or \$46,900 per employee. Alternative 402 would directly affect 129 employees by displacing eight businesses. Their displacement ultimately affects the employment of 277 workers in the region. The direct loss in employee compensation is \$4.7 million, or \$36,000 per employee. The loss in total value added is \$20.1 million.

Table 4-8 lists the results from the IMPLAN analyses for Options A and D. The direct loss of 708 employees under Option A ultimately affects the employment of 2,481 workers in the region. The direct loss in employee compensation is \$47.1 million, which averages \$66,600 per employee. The loss in total value added is \$223.4 million. The displacement of businesses by Option D results in the loss of 985 employees. Their displacement ultimately affects the employment of 3,670 workers in the region. The direct loss in employee compensation is \$83.2 million, which averages \$84,500 per employee. The loss in total value added is \$350.7 million.

4.1.5.4 Business Relocation and Labor Absorption Potential

The effects of employment loss assumed a “worst case” whereby none of the businesses and their employees will relocate in the region. Although the businesses presumably selected their specific locations for some comparative advantage (e.g., low rent, access to nearby businesses as either clients or suppliers), it does not appear that any businesses are tied to a specific location, as in the case of a gravel mining operation.

Therefore, the affected businesses have the opportunity to readily relocate. An impediment may be the lack of a desirable location and site. It is beyond the scope of this analysis to determine whether a business will choose to relocate, but market conditions suggest the availability of industrial real estate in the Chicago area is the highest in 15 years (Baeb, 2009). This suggests that displaced businesses that wish to relocate within the region should have sufficient locations from which to choose.

The potential for displaced workers to be absorbed into the workforce is a function of the local and national labor market conditions, which are important determinants of employment outcomes. Personal characteristics, household circumstances, and ascribed skills are also important, as employers use these attributes to screen potential recruits.

4.1.5.5 Tax Revenues

Tax revenues for affected taxing jurisdictions (e.g., municipalities, townships, fire department districts, etc.) will decrease from the conversion of private property to transportation use. Table 4-9 is a summary of tax revenue loss by alternative and south bypass connection option within each community. Tax revenues from 2007 were used to complete the analysis.

TABLE 4-9
Tax Revenue Loss per Alternative and South Bypass Connection Option (2007 \$)

	Alternative 203	Alternative 402	Option A	Option D
Bensenville	\$151,055	\$161,086	\$158,655	\$441,946
Des Plaines	\$978,813	\$276,502	\$0	\$0
Elk Grove Village	\$259,780	\$198,387	\$0	\$0
Elmhurst	\$0	\$0	\$27	\$27
Franklin Park	\$0	\$0	\$587,603	\$1,777,237
Hanover Park	\$4,474	\$4,474	\$0	\$0

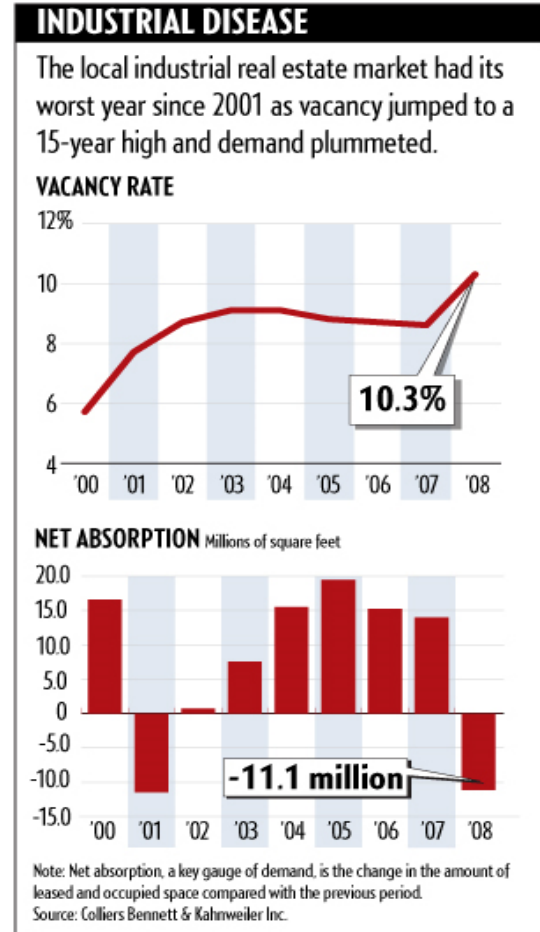


TABLE 4-9
Tax Revenue Loss per Alternative and South Bypass Connection Option (2007 \$)

	Alternative 203	Alternative 402	Option A	Option D
Itasca	\$59,650	\$59,650	\$0	\$0
Mount Prospect	\$13,681	\$13,681	\$0	\$0
Northlake	\$0	\$0	\$543,404	\$434,105
Roselle	\$18,506	\$18,506	\$0	\$0
Schaumburg	\$48,254	\$48,254	\$0	\$0
Wood Dale	\$44,225	\$44,225	\$0	\$0
Unincorporated	\$222,351	\$67,859	\$2,621	\$15,357
Total	\$1,800,789	\$892,624	\$1,292,310	\$2,668,662

4.1.6 Public Facilities

A review of publicly available information found that no fire stations, hospitals, or places of worship would be directly affected by the proposed improvements. Alternatives 203 and 402 would affect a Chicago Police Department K-9 Training Center on the north side of Touhy Avenue between Elmhurst and South Mount Prospect Roads. The footprints for Alternatives 203 and 402 potentially encroach upon the property of Medinah Intermediate School on Medinah Road (see Exhibit 4-1B). At that location, Medinah Road would be widened from two to three lanes in each direction. Only the landscape strip between the school and the sidewalk would be shortened. No structures or activity centers on the property would be impacted, and the sidewalk would be replaced. In addition, Options A and D both would displace the Northlake water tower on the east side of I-294.

School bus routes and emergency response routes are not expected to be adversely affected. Rather, movement is expected to be enhanced by the diversion of vehicles from lower type facilities onto higher type facilities or frontage roads and by the addition or improvement of access points to and from higher type facilities.

4.2 Water Resources and Quality

4.2.1 Groundwater Resources

This analysis focuses on potential effects of the build alternatives to community and private water supplies. The communities that will be affected by the build alternatives all receive their drinking water supply from Lake Michigan; therefore, impacts to their drinking water are not anticipated. However, based on available data from IEPA and ISGS, well locations mapped within the alternative footprints must be considered.

Every community near to the proposed build alternatives has municipal wells. The active wells are used for irrigation, for water supply at parks, or other facilities that do not have a Lake Michigan water supply. Some of the wells are remnants from pre-Lake Michigan water supply and are kept operational in case the Lake Michigan water supply is compromised. Similarly, private wells are used for various purposes; not every owner is on Lake Michigan water, and therefore, wells may be used to provide potable water.