

## 3.2 Roadway Alternatives Development, Evaluation, and Screening

This subsection describes how a broad-range of roadway alternatives were developed and subsequently narrowed to the alternatives carried forward and into the Draft EIS. The alternatives were developed and evaluated through an iterative process (modules) based on technical analysis, environmental constraints, and stakeholder input.

### 3.2.1 Module 1—Identifying Strategies

Module 1 consisted of a workshop where stakeholders identified both roadway and transit improvements needed in the study area. This involved project stakeholders applying their local knowledge of the transportation problems in the area, and marking aerial maps showing the desired locations and types of improvements (see Exhibit 3-3). The project team then assembled the stakeholder input into 15 roadway packages termed Initial Roadway System Strategies (see Exhibits 3-4A through 3-4I). The strategies were grouped into three general categories that best represented their individual characteristics:

- Improve Existing System (Group 1, contained two system strategies: 101 and 102).
- System Expansion (Group 2, contained five system strategies: 201, 202, 203, 204, and 205).
- Combined System Improvements and Expansions (Groups 3 to 6, contained eight strategies: 301, 302, 401, 402, 403, 404, 501, and 601).

The Initial Roadway System strategies included a high level of participation by interested stakeholders. They represent a broad range of alternative roadway concepts that capture the local knowledge of stakeholders in the study area. The range of strategies that evolved include improvements to existing roads, new corridors, and combinations of existing and new roadways. The stakeholders and the project team considered north-south route improvements and east-west route improvements. North-south routes include the O'Hare West Bypass, IL 83, I-290, and Elmhurst Road/York Road; the east-west routes include Thorndale Avenue, Devon Avenue, and Higgins Road (see Exhibit 3-4A regarding Devon Avenue and Higgins Road). Improvements to freeways and tollways were considered, such as improving I-290 in Strategy 601 (see Exhibit 3-4I). Other such improvements are part of the No-Action Alternative, such as improvements to I-294 and I-90. These facilities are nearing buildout, and further widening is most likely unrealistic. The consideration of new east-west routes other than Thorndale Avenue as a freeway type improvement did not emerge from the stakeholder involvement process, given the extraordinary displacement of homes and businesses that would occur, and the strong desire of stakeholders to avoid or minimize community impacts. Stakeholders repeatedly identified Thorndale Avenue as the appropriate corridor for improving east-west travel. Thorndale Avenue is a logical extension of the Elgin O'Hare Expressway. Because it would provide continuity for travel to and from the west and connect to the proposed Western Terminal at O'Hare Airport, it was an element of many strategies.

Each Initial System Strategy included about 75 lane miles of new capacity. Major differences between the 15 strategies were locations of proposed major improvements (e.g.,

improvements along IL 83 versus York Road/Elmhurst Road versus new alignment) and facility type (e.g., arterial improvements versus freeway improvements).

### 3.2.2 Module 2—Purpose and Need Screening

Module 2 focused on determining which initial roadway system strategies satisfied the purpose of and need for the project. The evaluation was conducted using the travel demand model and systemwide travel performance measures related to purpose and need. With stakeholder input, various travel performance evaluation criteria and performance measures were developed to test the ability of each roadway system strategy to address transportation needs (see Table 3-1).

TABLE 3-1  
Travel Performance Evaluation Criteria

Purpose and Need Objectives	Performance Criteria	Evaluation Measure
Improve local and regional travel	Vehicle hours of delay (VHD)	Daily P.M. peak period VHD.
	Congested vehicle miles of travel (VMT)	Miles traveled in congestion on arterials during P.M. peak period.
	Regional areas with travel time savings	Areas with travel time savings for representative regional trip origins (northwest, west, southwest).
Improve O'Hare West access	Selected trip pair travel time savings	Travel time savings for select study area trips to O'Hare West access.
Improve travel efficiency	Improved interstate accessibility	Area and number of trips within five minutes of a new or improved service interchange.
Improve modal connection opportunities	Modal opportunities	Population/employment served by potential new dedicated transit corridors.

The overall travel performance of each strategy was compared using a scoring system that ranked the performance of the 15 strategies from 1 to 15 for each criterion, and totaling the rankings for each criterion for each alternative. The scoring showed stratification in scores, with 10 options being substantially better than the other five (see Table 3-2). Five Initial System Strategies (Group 1, 101 and 102; Group 3, 301 and 302; Group 6, 601) did not meet purpose and need, as demonstrated by appreciably lower overall travel performance and consistently low comparative rankings. The lower performing strategies provided relatively less congestion relief on regional and local roadways, and only moderate improvements in access to major regional roadway corridors. Further, they did not appreciably improve the O’Hare West Access and provided only moderate new transit market potential.

This information was presented to stakeholders for review and comment. Based on their review and input, the five low ranking initial system strategies (including all in the “improve existing system” category) were dropped from further consideration. Stakeholders agreed that the remaining 10 strategies should be retained for further consideration: 201, 202, 203, 204, 205, 401, 402, 403, 404, and 501 (see Exhibits 3-4B, 3-4C, 3-4D, 3-4F, 3-5G, and 3-4H).

### 3.2.3 Module 3—Refinement, Evaluation, and Screening of Roadway Alternatives

Module 3 began with the 10 strategies retained from Module 2 and concluded with the alternatives to be carried forward for more detailed analysis in the Draft EIS. The analyses also included development and evaluation of options for roadway connections to I-90 and I-294 (see subsection 3.2.3.4).

#### 3.2.3.1 Environmental / Socioeconomic Screening of 10 Roadway System Alternatives

The 10 roadway system alternatives were subjected to an initial environmental and socioeconomic impact analysis using the GIS tool. Preliminary roadway footprints were developed for each system alternative to allow a measurement and comparison of potential impacts to federal/state regulated resources, land use, economic, and community resources. The object was to establish an initial assessment of environmental and socioeconomic impacts. This step served to identify alternatives with high impacts (see Table 3-3, which shows the number of building displacements for each alternative).

Three roadway system alternatives (Group 2: 201, 204, and 205) were dropped because of greater socioeconomic impacts (primarily residential, commercial, and industrial displacements). It is important to note that these impact totals represent the initial layout of the roadway alternatives, which were then refined in subsequent steps.

TABLE 3-2  
Initial Roadway System Strategies: Purpose and Need Screening Results

Strategy Number	Rank (1-15)	Total Score
201	1	21
202	2	24
203	3	30
403	4	39
401	5	43
204	6	48
402	7	51
205	8	55
404	9	59
501	10	62
102 <sup>a</sup>	11	99
302 <sup>a</sup>	12	100
301 <sup>a</sup>	13	102
101 <sup>a</sup>	14	105
601 <sup>a</sup>	15	112

<sup>a</sup> Alternative did not address purpose and need, and was dropped.

Seven system alternatives were carried forward into the second step of Module 3 as Finalist Roadway System Alternatives (see Exhibit 3-4B, 3-4C, 3-4F, 3-4G, and 3-4H):

- Group 2: 202 and 203
- Group 3: 401, 402, 403, and 404
- Group 5: 501

TABLE 3-3  
Initial Roadway System Strategies: Number of  
Potential Building Displacements

### 3.2.3.2 Evaluation and Screening of Roadway System Alternatives

The seven remaining alternatives represented two general categories of improvements:

1. System expansion (202 and 203), which would provide new east-west and north-south freeway corridors in the study area; and
2. Combined system improvements and expansion (401, 402, 403, 404, 501), which would provide new partial east-west and north-south freeway corridors in combination with roadway widening improvement in the study area.

Alternative	Total Number of Displacements
203	42
402	49
401	60
202	88
404	109
403	151
501	139
205	302
204	344
201	368

Engineering detail was added to each roadway alternative, including refinements in the conceptual layout, adjustments to avoid adjacent properties, and locations of interchanges. Adding to the detail were options for connecting the O'Hare West Bypass on the north with I-90, and on the south with I-294 (see subsection 3.2.3.4 for additional details). Following these refinements, representative roadway footprints were developed for each alternative and each connection option, and were used to assess environmental and social impacts, and design and constructability feasibility.

Among the other analyses at this stage was a second round of travel demand modeling to determine the effects of the improvement alternatives on existing roadways. The analysis showed that the alternatives would effect changes in volume and distribution of traffic that warranted improvements to adjacent and crossing roads. One notable conclusion of the analysis was that, regardless of the alternative, widening the existing Elgin O'Hare Expressway westward to the Gary Avenue interchange was consistently required. This finding caused IDOT to expand the study area, with the existing Elgin O'Hare Expressway now defining the western boundary (see Exhibit 3-2).

Using the information from the travel modeling results, further detail was added to the seven alternatives, with supporting improvements to adjacent and crossing roads. These improvements would improve travel efficiency to and from the major improvements and would consist of widened arterials to accommodate increased travel as service interchanges, improved intersections, or widened roadway sections.

The seven roadway alternatives and the north and south bypass connection options were evaluated separately. The following is a detailed description of the evaluation for the seven roadway system alternatives. In consideration of an evaluation method, IDOT concluded that the complexities of the evaluation warranted several methods to compare the relative merits of each of the alternatives with the goal being to identify the best overall performing

alternatives. Thus, a three-part evaluation process was implemented consisting of a comparative scoring system, a qualitative comparison, and stakeholder input. The evaluation was performed using an expanded list of evaluation factors and greater depth of analysis. Additional detail about this process is documented in the Alternatives to be Carried Forward Technical Report (see Appendix D).

**Comparative Scoring System.** A comparative scoring system was used to assist in comparing the overall performance of the seven alternatives (see Table 3-4 for a summary of the results and see Appendix D for details of the scoring). The scoring system provided a means for comparing performance and impacts objectively and consistently across a broad array of criteria. The evaluation criteria aimed at comparing the overall performance, costs, and environmental and socioeconomic impacts of the alternatives. This included criteria suggested by stakeholders: travel performance (systemwide travel delay, accessibility, travel times); initial costs (construction, right-of-way); environmental impacts (floodplains, designated lands); and socioeconomic impacts (displacements, tax revenue loss, job loss). The following approach was used to score alternatives:

- For the 24 criteria developed to compare alternatives, each criterion was scored using a scale of one to seven, with one being best and seven worst. Thus, regardless of the range of performance or impact for any individual criterion, an alternative is relatively the best while another is relatively the worst. For alternatives that fell between one and seven (best and worst), for each evaluation criteria, a scaled scoring system<sup>6</sup> was used to account for the range of performance or impact difference within each evaluation criteria.
- An overall score was calculated for each alternative by adding scores from each evaluation criterion (nine related to travel performance, one to cost, eight to environmental resources, and six to socioeconomic resources). The lower the total score, the better the performance of the alternative in terms of both travel performance and lower environmental impacts. No weighting was given to the criteria within the categories or in comparing the categories to one to another.

The numeric scoring and analysis identified four alternatives that were measurably superior (Alternatives 202, 203, 401, 402). This conclusion was reached assessing a large array of criteria that addressed key evaluation factors, including travel performance, construction cost, and environmental and socioeconomic impacts.

TABLE 3-4  
Finalist Roadway System Alternatives:  
Total Scaled Score

Alternative	Total Score
402	76
401	77
202	79
203	81
501	107
403	118
404	119

Note: A lower score indicates better overall performance of the alternative.

<sup>6</sup> For example, across all seven alternatives, wetland impacts ranged from 25.9 to 28.0 acres, for a total difference of 2.1 acres. Using the scoring system, the alternative with 25.9 acres of impact would be scored as 1, and the alternative with 28 acres of impact would be scored as 7. Regardless of the range of performance/impact for any individual criteria, something would be relatively the best and another would be relatively the worst. For alternatives between the best and the worst, the scaled system was used, wherein alternatives that had impact totals closer to 25.9 acres would have a score closer to 1, and those closer to 28 acres would have a score closer to 7. This scoring system acknowledges and accounts for the range of differences for individual evaluation criterion, whether narrow or wide.

**Qualitative Analysis.** Although the scoring approach provided insights into the best overall performing alternatives, a qualitative evaluation of the performance measures and impacts was also conducted to express differences in more relative terms. The Finalist Roadway System Alternatives represented two general categories of improvements:

- System Expansion (Alternatives 202 and 203), which would provide new east-west and north-south freeway corridors in the study area
- Combined System Improvements and Expansions (Alternatives 401, 402, 403, 404, 501), which would provide new partial east-west and north-south freeway corridors in combination with existing roadway widening improvements in the study area

For the qualitative evaluation, the alternatives within each category were compared. This approach was taken because of the functional similarities of the System Expansion alternatives (i.e., new freeways) and of the Combined System Improvements and Expansion alternatives. This allowed for a determination of the best alternatives within each category. The qualitative assessment was conducted using the criteria and measures shown in Tables 3-5 and 3-6.

Table 3-5 summarizes the relevant qualitative analysis factors and impacts for Alternatives 202 and 203. Based on travel performance, environmental and cost factors, Alternatives 202 and 203 generally had slight differences and were comparable in terms of these factors. Most of the travel performance characteristics, environmental impacts, and initial cost factors were within 10 percent of each other and considered comparable. However, in comparing socioeconomic factors, notable differences were found. Alternative 202 had 50 percent greater displacement of residential, commercial, and industrial buildings. It had far greater commercial and industrial building impacts (71 compared to 37 for Alternative 203). Most building displacements would occur in the IL 83 corridor in Elk Grove Village.

Commensurate with the high number of commercial and industrial displacements would be greater tax revenue loss and greater employment displacement. Employment loss under Alternative 202 was almost 30 percent greater than for Alternative 203, and tax loss was about 40 percent greater. The loss of businesses, employment, and tax base were major differences between the alternatives. Therefore, based upon the substantial differences in social impacts of the two alternatives, the qualitative analysis supported dismissal of Alternative 202 and retention of Alternative 203. Table 3-6 summarizes the relevant qualitative analysis factors and impacts for the Combined System Improvement and Expansion alternatives. The five alternatives in this category – 401, 402, 403, 404, and 501 – had comparable travel performance but exhibited considerable contrast in environmental, socioeconomic, and initial cost factors. Alternatives 401 and 402 had the least impact on socioeconomic and environmental factors, including displaced structures and effect on noise-sensitive land uses. Alternatives 403, 404, and 501 had more building displacements, the greatest impact to noise sensitive land uses, and the greatest impact to protected recreational lands. Additionally, Alternatives 403, 404, and 501 potentially affected threatened and endangered species.

Another factor associated with two alternatives was design feasibility. For Alternative 404, conceptual design studies revealed a design issue related to a new freeway system interchange near O'Hare Airport, for which feasibility would be complicated by restricted

TABLE 3-5  
Qualitative Analysis: System Expansion Improvement Alternatives

	202	203
<b>Improve Local and Regional Travel</b>		
Percent increase in regional travel efficiency in study area	13%	11%
Percent decrease in congested VMT on secondary roadways (P.M. peak period)	20%	20%
Percent increase in network speeds on principal arterials (P.M. peak period)	8%	4%
<b>Improve O'Hare West Access</b>		
Selected trip pair travel time savings from northwest study area to O'Hare west (P.M. peak period)	39%	40%
Selected trip pair travel time savings from west study area to O'Hare west (P.M. peak period)	38%	39%
<b>Improve Travel Efficiency</b>		
Percent increase in trips within five minutes to interstate (P.M. peak period)	44%	53%
<b>Environmental Impacts</b>		
Acres of wetlands affected	27.1	28.0
Acres of waters affected	3.2	6.6
Acres of 100-year floodplains affected	29.1	24.6
Acres of designated/recreational lands affected	6.7	9.1
<b>Socioeconomic Impacts</b>		
Total structures potentially fully displaced	103	57
Potential noise sensitive areas	37	36
Lost tax revenue (2007)	\$5.5M	\$3.9M
Employees displaced	1,360	1,065
<b>Financial Performance</b>		
Initial total costs	\$3.3B	\$3.6B

Note: Shaded areas denote a considerable difference compared to the other alternative.

airspace. Accommodating air space requirements at this location requires a deep roadway tunnel section that raises constructability issues given conflicts with active railroads, high water table, adjacent floodplains, and other constraints.

There are also issues with Alternative 501, since it terminated a freeway cross-section at an arterial near IL 83. Terminating a freeway in this manner is undesirable from an operations and safety perspective, since it forces freeway traffic to transition abruptly onto a roadway with limited access control and lower travel speeds. To address these performance issues, the arterial improvements east of IL 83 would have to be upgraded to a fully access controlled highway, so as to provide continuity for freeway traffic. If an access controlled highway replaced the arterial improvements east of IL 83, Alternative 501 would be similar to Alternative 403.

In conclusion, the qualitative analysis supported dismissal of Alternatives 202, 403, 404, and 501 because of higher relative socioeconomic impacts, as well as design feasibility issues

TABLE 3-6  
Relevant Qualitative Factors: Combined System Improvement Alternatives

	401	402	403	404	501
<b>Improve Local And Regional Travel</b>					
Percent increase in regional travel efficiency in study area	11	6	4	5	7
Percent decrease in congested VMT on secondary roadways (P.M. peak period)	19	19	20	17	16
Percent increase in network speeds on principal arterials (P.M. peak period)	8	7	8	10	13
Percent savings in annual work days per employee (actual number of days saved)	10 (1 day)	0	0	0	10 (1 day)
<b>Improve O'Hare West Access</b>					
Selected trip pair travel time savings from northwest study area to O'Hare west (P.M. peak period)	31	37	36	35	37
Selected trip pair travel time savings from west study area to O'Hare west (P.M. peak period)	38	40	41	41	34
<b>Improve Travel Efficiency</b>					
Area (mi <sup>2</sup> ) with travel time savings of greater than 5 percent in study area (P.M. peak period)	50	50	54	48	49
<b>Environmental Impacts</b>					
Acres of wetlands affected	26.9	26.5	27.5	26.1	25.9
Acres of waters affected	2.7	4.0	2.7	6.3	2.8
Acre-feet of stormwater detention	184.9	178.8	216.2	166.8	55.8
Acres of 100-year floodplains affected	29.1	24.6	29.1	17.6	28.7
Acres of designated/recreational lands affected	6.7	6.5	13.4	13.4	12.5
Number of state-listed species potentially affected	0	0	4	4	4
<b>Socioeconomic Impacts</b>					
Total structures potentially fully displaced	58	47	168	146	144
Potential noise sensitive areas	33	31	52	54	53
Lost tax revenue (2007)	\$3.3M	\$2.8M	\$3.4M	\$2.0M	\$1.5M
Employees displaced	820	760	945	490	85
<b>Financial Performance</b>					
Initial total costs	\$2.6B	\$2.5B	\$3.0B	\$3.2B	\$2.1B

Note: Shaded areas denote a considerable difference compared to the other alternatives.

with Alternatives 404 and 501. The qualitative analysis supported retention of Alternatives 203, 401, and 402 for further study.

**Stakeholder Input.** The third component of the screening process included consideration of stakeholder input. The consistent feedback from stakeholder meetings, more than 1,000 attendees at public meeting number three in March 2009, and responses from over 36,000 citizens in the area has been resounding support for Alternative 203, with the caveat that any alternative that involved improving IL 83 north of Thorndale Avenue would be unacceptable. Elk Grove Village in particular stated that any alternative with an IL 83 improvement north



of Thorndale Avenue (such as 202, 401, 403, and 501) would be intrusive and damaging to the economic stability of the community. The more than 36,000 comments supporting Alternative 203 represented a strong consensus opinion from the project stakeholders.

Elk Grove Village and area stakeholders conducted an unprecedented effort to demonstrate support for Alternative 203 while providing reasoned arguments for dismissing alternatives including improvements to IL 83. The Village augmented the public comment cards with additional data that supported their views. In a letter to IDOT dated March 19, 2009, the Village presented two conceptually engineered roadway proposals for the IL 83 corridor improvements common to Alternatives 202 and 401, 403 and 501, along with employment associated with buildings displaced by the Village's concepts, impacts on emergency response systems, and an assessment of the community barrier effects of these alternatives. Appendix C contains a copy of that letter and the proposal for the improvement requirements along IL 83. The intent of the Village's analysis was to illustrate the damaging effects of the IL 83 corridor improvements upon their community.

Stakeholder comments and the Village's technical analysis, as additional factors, served to highlight a key area of concern that required closer examination by the project team – namely, the appropriate location for north-south roadway improvements north of Thorndale Avenue. This step was considered an additional and complementary refinement of the quantitative and qualitative analyses, which had yielded three alternatives to be carried forward (203, 401, and 402).<sup>7</sup> Alternative 203 involved a new north-south freeway along the west side of O'Hare Airport; Alternative 401 involved an upgraded arterial along IL 83; and Alternative 402 involved an upgraded arterial along York Road/Elmhurst Road. Regarding Alternatives 401 and 402, they differed only according to their northern leg improvements. Therefore, the team examined the north leg options for the two alternatives, the object being to determine the best location for an improvement. The evaluation criteria included those used in the prior quantitative and qualitative analyses, as well as additional considerations that were brought forth in the material presented by Elk Grove Village.

The alternatives provided comparable travel performance, were similar in cost, and were similar in impact to environmental resources. However, socioeconomic impacts diverged, with the alternative containing improvements along the IL 83 corridor creating measurably higher socioeconomic and community impacts. Alternative 401 resulted in more displacements, job loss, tax loss, utility relocation costs, circuitous travel, and interruption to emergency services, and lost business revenue when compared to Alternative 402 (see Table 3-7).

Fundamentally, the decision regarding improved transportation was one that would be most compatible with the fabric of the community. Neither Alternative 202 nor 401 maintained the relational aspects of the community. From Elk Grove Village's perspective, the alternatives were disruptive in ways that could seriously affect the competitive economic position of the community and would require a sizable public and private sector investment to reestablish what would be lost by implementing either alternative.

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<sup>7</sup> Two alternatives identified in Elk Grove Village's analysis had already been eliminated (Alternative 202 had been eliminated due to high socioeconomic impacts and Alternative 501 had been eliminated due to high socioeconomic impacts and design feasibility); therefore, additional analysis of those alternatives was not undertaken.

TABLE 3-7  
Comparing the North Leg Improvements for Alternatives 401 and 402

	Alternative 401	Alternative 402
North Leg Improvement	Arterial widening along the IL 83 corridor.	Arterial widening along York Road/Elmhurst Road.
Socioeconomic impacts	Comparatively higher socioeconomic impacts with North Arterial widening along IL 83: - 23 total structure displacements, or 27% higher - \$3.3M lost tax revenue, or 17% higher - 820 employee displacements, or 8% higher	Lower socioeconomic impacts with North Arterial widening along Elmhurst Road: - 18 total structure displacements - \$2.8M lost tax revenue - 760 employee displacements
Other considerations	Impacts to community cohesion related to widening IL 83 to four-through lanes in each direction with new interchanges at major cross roads through the center of Elk Grove Village Industrial Park.  Interrupted existing east and west travel at some locations would result in circuitous or out-of-direction travel.  Potential impacts to major utility lines including gas pipelines, along with potential interruption of services.  Direct impacts to commercial and industrial properties related to partial loss of frontage along IL 83.	Arterial widening location supports proposed full service interchange at I-90 at Elmhurst Road, as reflected in regional and local plans.  Elmhurst Road widening would not result in any apparent community cohesion issues.  Arterial located along boundary between Elk Grove Village and O'Hare Airport.

Based on additional analysis resulting from stakeholder input, Alternative 402 was found to be superior to Alternative 401.

### 3.2.3.3 Finalist Roadway System Summary of Findings

Each step of the evaluation of the Finalist Roadway System Alternatives led to individual conclusions that collectively formed the basis for determining the alternatives to carry forward:

- The quantitative scoring and analysis identified four measurably superior alternatives (202, 203, 401, 402) when assessing the 24 criterion that addressed major considerations, including travel performance, environmental and socioeconomic impacts, and construction costs.
- The qualitative analysis concurred that Alternatives 403, 404, and 501 should be dismissed from further consideration. The three alternatives consistently showed greater adverse impacts for socioeconomic and environmental criteria considered, and two alternatives (404 and 501) also raised design issues that negated their feasibility. Analysis also determined that Alternative 203 should be retained, and Alternative 202 should be dismissed because of the higher socioeconomic impacts associated with the IL 83 freeway improvement.
- Stakeholder input clearly expressed preference for Alternative 203, and stated that any alternative involving IL 83 north of Thorndale Avenue would be unacceptable based on disruption to community land use and travel patterns, economic impacts, emergency service response and conflicts with existing underground utilities.

When considered in total, the evaluation process supported the conclusion that Alternatives 203 and 402 and the No-Action Alternative should undergo detailed analysis and that all other alternatives (202, 401, 403, 404, and 501) should be dismissed from further consideration.

#### 3.2.3.4 Evaluation and Screening of the North and South Bypass Connection Options

Various location options were considered for the O'Hare West Bypass freeway connections to I-90 and I-294. Location options were also developed for connections to I-90 at IL 83; however, since all alternatives using IL 83 were dismissed through the alternatives screening process, those connection options are not presented in this section. They are documented in the Alternatives to be Carried Forward Technical Report (see Appendix D).

The I-90 and I-294 connection options were developed with input from stakeholders compiled during the alternatives development process. The connection options were developed and evaluated independently of the roadway system alternatives, with the object of identifying a range of locations for new freeway connections near I-90 and I-294 (see Exhibits 3-5A and 3-5B).

An iterative process was used to develop, evaluate, and screen connection options. The evaluation employed criteria similar to those used in the evaluation of roadway system alternatives: initial cost (construction and right-of-way); environmental impact (to wetlands, floodplains, designated lands); and socioeconomic impact (displacements, tax revenue loss, job loss). Travel performance was not used, as the sections of roadway were too short to have measurably different travel performance results. Design performance characteristics of the connection options were evaluated using a combination of quantitative and qualitative analyses aimed at identifying potential major performance issues with the connection options.

**North Bypass Connection to I-90.** Connection Options A, B, C, D, and E were developed for the O'Hare West Bypass freeway corridor near I-90. Options A, B, C and E were eliminated for the following reasons: (1) Option A did not provide a full system interchange at I-90 and had greater socioeconomic impacts, greater impacts to high quality wetlands, and higher initial costs; (2) Option B had the greatest socioeconomic impact and affected high quality wetlands; (3) Option C had high socioeconomic impacts and floodplain impacts; and (4) Option E, though virtually identical to Option D, lacked new local access along I-90 from Elmhurst Road. The evaluation yielded one preferred location for the I-90 West Bypass north connection (Option D).

**South Bypass Connection to I-294.** Connection Options A, B, C, D, E, F, and G were developed for the O'Hare West Bypass freeway corridor near I-294. Options E, F, and G were dismissed because of major design feasibility issues (conflicts with adjacent O'Hare Airport runway protection zones), and major impacts to the Bensenville Yard.

For the I-294 O'Hare West Bypass south connection, Options A, B, C, and D were retained for further consideration. The O'Hare West Bypass connection to I-294 options (see Exhibit 3-6) were refined and evaluated with targeted stakeholder input. The representative conceptual layout of the options was refined to allow a more detailed analysis of their design feasibility, relative impacts, and relative costs. Findings for Options A, B, C and D indicated the following:

- **Design Feasibility** – Option C has major constructability issues associated with constructing a freeway over an active railroad. Severely constrained construction periods (imposed by the railroad), and construction staging (longer construction period and remobilization issues) make Option C unworkable.
- **Cost** – Costs for Options B (west of UPRR) and C (over UPRR) are relatively higher than for Options A and D because of higher construction costs complicated by freight rail facilities and higher right-of-way costs.
- **Environmental Impacts** – Potential natural resource impacts (wetlands, waters, floodplains, threatened and endangered species) and impacts to designated/recreational lands are comparable among options, with only small impacts to environmental resources.
- **Socioeconomic Impacts** – There are substantial differences in socioeconomic impacts across the evaluation criteria. Option A has the highest relative structure displacements and highest relative impacts to noise sensitive areas, but lowest overall tax revenue loss and employee displacements. Option B had substantially higher tax revenue loss and employee displacement than the other options, and thus has higher socioeconomic impacts compared to the other connection options.

Stakeholder input was an important consideration in the evaluation of the south bypass connection options. A public meeting was held on March 11, 2009. In addition, the project team coordinated with the Village of Bensenville, the Village of Franklin Park, and representatives of the UPRR and CPRR to get focused input. Stakeholders raised the following key issues:

- The Village of Bensenville expressed strong opposition to Option A, which would site a new freeway corridor adjacent to residential areas and displace commercial and industrial properties along County Line Road.
- UPRR expressed strong opposition to Option C and established unworkable constraints to constructing the option while maintaining the existing operation of the tracks.
- The Villages of Franklin Park and Bensenville expressed concern with socioeconomic impacts related to Option B, which would displace several major large industrial employers in the area.
- The general public had somewhat mixed opinions regarding Options A, B, C, and D. Some individuals expressed strong opposition to Option A because of direct impacts in Bensenville, including impacts to adjacent residential areas. Others expressed concern with displacement of major area industrial employers (under Options B, C, and D).

Based on the analysis findings and stakeholder input, Options B and C were dismissed from more detailed analysis. For Options A and D, neither the analysis nor community input provided a strong rationale to eliminate either option, so both were retained for more detailed consideration as part of Alternatives 203 and 402.

**Summary of North and South Bypass Connection Options.** In summary, the following north and south bypass connections options were retained for evaluation in this EIS:

- North Bypass Connection to I-90: Option D
- South Bypass Connection to I-294: Options A and D

The following connections were eliminated from further consideration:

- North Bypass Connection to I-90: Options A, B, C and E
- South Bypass Connection to I-294: Options B, C, E, F, and G