

## SECTION 3

# Alternatives/Preferred Alternative

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This section describes the project alternative development and evaluation process leading to the identification of a Preferred Alternative. The content is structured to provide an understanding of the methodology that began with the consideration of many alternatives and resulted in the identification of a Preferred Alternative to be carried forward in Tier Two of the EO-WB project. Supporting improvements for transit, freight, and bike and pedestrian facilities that have been planned as companion improvements to the Preferred Alternative are also described. Exhibit 3-1 illustrates the overall alternatives development and evaluation process. Further details are provided in the *Alternatives Development Report* (FHWA and IDOT, 2009) and in the Alternatives to be Carried Forward Technical Report (see Appendix E).

The study process has brought together stakeholders and transportation providers who have interests in improved transportation in the study area. Their involvement has been key, and their high level of participation has assisted in the development and evaluation of a broad range of transportation improvements. The Preferred Alternative that is identified in this section emerged from a process with more than 130 stakeholder events that lead to a consensus plan. Stakeholders participated directly in identifying transportation problems, environmental and community constraints, transportation improvements to consider, locations of those improvements, and criteria for evaluating improvements. Stakeholders also weighed in at various stages in the process regarding alternatives to be eliminated.

As noted, the EIS for the EO-WB study is being advanced in two tiers. In Tier One, a conceptual level of detail is applied with respect to the engineering. Working concepts for roadway and transit facilities are developed to assess environmental impacts and travel performance, develop initial costs, and make relative comparisons. In Tier Two, detailed engineering and environmental studies of the Preferred Alternative are conducted, including full engineering plans, profile and cross sections, access justification reports, interchange type studies, and interchange/intersection design studies. Detailed environmental studies and documentation, and the regulatory requirements of state and federal agencies will be completed in Tier Two.

This section begins with a discussion of the process used to develop and evaluate roadway and transit alternatives, leading to the identification of the build alternatives that were carried forward and comparatively evaluated in the Draft EIS, and concludes with identification of the Preferred Alternative. Subsection 3.2 explains the roadway development and screening process, and subsection 3.3 describes the transit development and screening process. In subsection 3.4, the No-Action Alternative is detailed, followed by a description of the build alternatives retained for evaluation and their supporting improvements, including transit, freight, and bicycle and pedestrian improvements. Subsection 3.5 contains a comparative evaluation of transportation performance factors for the two build alternatives, and subsection 3.5 describes the reasoning for identifying the Preferred Alternative.

The study area was established at the start of the project. As traffic impacts were further evaluated for various roadway alternatives, it became apparent that they would result in localized trip redistribution. Depending on the specific alternative, supporting improvements were required on roadways outside the original study area. Therefore, the study area (see Exhibit 3-2) was expanded to include areas where additional improvements would be evaluated.

### 3.1 Alternatives Development Process Overview

The methodology for developing and evaluating alternatives included technical analysis, environmental considerations and analysis, and stakeholder input. For roadway alternatives, the process involved four interrelated modules, or steps (refer to Exhibit 3-1):

1. Module 1 began with stakeholders identifying a range of potential improvements to address diverse transportation issues in the study area, such as physical, operational, and demand management strategies.
2. In Module 2, complete sets of roadway improvements termed “Initial System Strategies” were packaged. The Initial System Strategies were screened based on transportation performance measures compared to the purpose and need criteria, and identifying system alternatives to be carried to the next step for consideration.
3. Module 3 consisted of continued refinement and screening of the remaining roadway system alternatives, which were completed in two steps. The first step focused on screening out alternatives with relatively high environmental or social impacts. The second step focused on refining and evaluating the remaining alternatives on the basis of transportation performance, financial (initial cost), environmental/social factors, and stakeholder input. The determination of alternatives to carry forward into the Draft EIS occurred at the conclusion of Module 3.
4. Module 4 began with a detailed side-by-side comparison in the Draft EIS of two build alternatives that evaluated travel performance, social and environmental impacts, and economic benefits. Public involvement was continued with the same rigor as other steps in the process including the Public Hearing for the Draft EIS and comments received during the official comment period. Lastly, the Final EIS was prepared with the supporting rationale for identification of the Preferred Alternative.

A key aspect of the process was an extensive stakeholder outreach program that was integrated with IDOT’s CSS<sup>1</sup> policies. From project inception through refinement of alternatives to selection of the Preferred Alternative in the Final EIS, approximately 130 meetings were held with established stakeholder groups, communities, transportation service providers, federal and state resource agencies, and the general public. More details regarding outreach and coordination can be found in Section 5 of this Final EIS.

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<sup>1</sup> IDOT’s CSS Policy and Procedural Memorandum 48-06 establishes project development guidance, stakeholder involvement processes, and design flexibility principles to be used in the project development process for major projects. CSS is an interdisciplinary approach that seeks effective, multimodal transportation solutions by working with stakeholders to develop, build, and maintain cost-effective facilities that fit into and reflect a project’s surroundings.

In the development of the transportation alternatives, several underlying assumptions guided the process:

- The No-Action Alternative would serve as the baseline 2030 transportation condition for comparing the travel performance of the build alternatives.
- Existing roadway travel performance was established as the year 2007. The project design year would be 2030, consistent with the planning horizon established by the 2030 RTP.
- The development of alternatives was guided by the purpose of and need for the project (to improve local and regional travel, improve travel efficiency, provide O'Hare West Access, and improve modal opportunities and connections). A two-part approach was used to identify transportation problems: (1) extensive stakeholder coordination;<sup>2</sup> and (2) a comprehensive technical analysis of transportation system performance<sup>3</sup> under existing (2007) and future (2030) conditions assuming no action is taken.
- The technical analysis of alternatives relied on two tools: a travel demand model and a GIS database. The travel demand model,<sup>4</sup> a computer analysis tool designed to replicate the transportation system, was used to evaluate the relative travel performance of the alternative transportation solutions. The GIS database,<sup>5</sup> a spatial and data management analysis tool, was developed to assist with the development of alternatives identifying the social and environmental constraints in the area, and the evaluation of the social and environmental impacts of the alternatives.

## 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:

<sup>2</sup> From the project start through development of the first 15 alternatives, more than 50 meetings were held with communities, resource agencies, transportation service providers, stakeholder and corridor groups, and the public.

<sup>3</sup> Documented in the Transportation System Performance Report (TSPR) (FHWA and IDOT, 2009).

<sup>4</sup> The model is based on information used by CMAP.

<sup>5</sup> The GIS database has more than 120 data layers of environmental, land use, utility, socioeconomic, and transportation data in an electronic format. It was used in identifying where environmental and social resources should be avoided or impact to them minimized, as well as in calculating impacts associated with the various alternatives.

- 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.

TABLE 3-1  
Travel Performance Evaluation Criteria

Purpose and Need Objectives	Performance Criteria	Evaluation Measure
	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, 3-4G, 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).

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.

### 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.

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

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

### 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.

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 E).

**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 E 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

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.

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.

**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.

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<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.

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.

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.

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.

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 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 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 D 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,

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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.

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).

**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.

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.

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 E).

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

### 3.3 Multimodal Alternatives Development, Evaluation, and Screening

The development and evaluation of transit improvements used a three-step process to arrive at a set of improvements to be carried forward in the Draft EIS.

#### 3.3.1 Level One: Development of Transit Corridors and Screening

The transit alternatives development and evaluation process began with the March 2008 Stakeholder's Workshop, where project stakeholders identified potential transit improvements in the study area. Input was sought from transit agencies through Transit Agency Coordination Meetings. The project team then assembled the collective ideas into a workable system of 20 transit-related corridors (see Exhibit 3-7).

The first level of screening of the 20 transit corridors was a joint project team and transit agency exercise. Initial evaluation measures were developed and validated with the transit agencies. In addition to the analysis of compatibility with transportation plans or the ability to build a transit improvement by 2030 (projects that could not be implemented by 2030 were categorized as beyond the planning period, and not considered relevant), an analysis of population and employment factors was conducted. Population and employment data were mapped proximate to each transit corridor, and analyses were performed to determine the density of households, employment, and workers residing in the study area, as well as the origins and destinations of airport travelers. Table 3-8 summarizes the Level One Screening criteria.

TABLE 3-8  
Level One Screening Criteria

Criteria	Measures of Effectiveness	Factor
<b>Travel Performance</b>		
Improve travel/service	Connect concentrations of population to work	Households and employment per route mile Study area workers by residence TAZ
	Serve major employment concentrations	Sites with 75 or more employees
	Connect to O'Hare's air traveler markets	Trips (daily origins and destinations) per route mile
Improve O'Hare West access	Connect to O'Hare's west entrance	Yes or no
<b>Other Criteria</b>		
Compatibility	With adopted transportation plans	Yes or no
Implementation horizon	Can be implemented by 2030	Yes or no

Of the 20 corridors evaluated, five had at least one “fatal flaw” and thus were eliminated from further consideration. For example, the Inner Circumferential corridor was eliminated because of conflicts with freight rail operations and because the likely implementation horizon for this corridor falls beyond the 2030 horizon of this study. Also, the Metra Rail Connector was eliminated because of freight conflicts, a high cost point to low travel benefit, and because it does not appear in the RTP. Five of the remaining 15 corridors were modified based on the findings of the corridor-level market analysis (see Table 3-9).

TABLE 3-9  
Alternatives Subject to Fatal Flaw and Level One Screening

Alignment or Facility	Result
<b>Rail or BRT Alternatives</b>	
STAR Line connection to West Terminal	Retained.
CTA Blue Line Extension to West Terminal	Retained.
CTA Blue Line Express Track from Chicago Loop	Retained.
J-Line: West O'Hare to IKEA and STAR Line	Retained.
J-Line: IL-83 to Aurora and Naperville	Retained.
Inner Circumferential	Eliminated: cannot implement by 2030 and freight conflicts.
Rail Connector: Metra UP-NW Line to UP-W Line	Eliminated: not in 2030 RTP; freight conflicts; high cost-low benefit.
Mid-City Connector	Modified: retained for screening as express bus or BRT; rail eliminated.
CTA Yellow Line Extension to Old Orchard Shopping Center, Skokie	Eliminated: too far from study area.

TABLE 3-9  
 Alternatives Subject to Fatal Flaw and Level One Screening

Alignment or Facility	Result
<b>Arterial Rapid Transit or Express Bus</b>	
Golf Road: Evanston to Woodfield	Retained.
Dempster Street: East O'Hare to Yellow Line, Skokie	Retained.
I-94 Yellow Line Transfer: Jefferson Park to Yellow Line Dempster Street terminal	Retained.
I-294 North to Lake County: East O'Hare to Gurnee	Modified: route shortened to terminate at Lake-Cook Road because of low densities farther north.
I-294 South to Homewood: East O'Hare to Homewood	Modified: route shortened to terminate at Ogden Avenue because of low densities farther south.
Mannheim Road: East O'Hare to Orland Park	Modified: route shortened to terminate at I-55 because of low densities farther south.
I-355: Thorndale Avenue to Shorewood	Modified: route shortened to terminate at I-55 because of low densities farther south, and at Higgins Road to conform to Pace plans.
<b>Local Limited Stop Bus Service</b>	
East Airport to West Airport via Irving Park Road	Retained.
West Airport Metra Connector via York Road, UP-NW to UP-W	Retained.
<b>Other Facilities</b>	
Metra Transfer Station: NCS to UP-NW at Des Plaines	Eliminated: physically infeasible.
Metra Transfer Station: STAR Line and proposed North-South rail connector	Eliminated: North-South rail connector is eliminated.

### 3.3.2 Level Two: Refinement of Transit Corridors and Screening

For this step, the remaining 15 transit improvement corridors were validated and further defined. Greater definition was established for each corridor to include potential mode (rail, heavy or commuter rail, bus rapid transit, arterial rapid transit, express bus, local bus, or local circulator) and operational aspects, and transit station locations. Other considerations included station spacing, intermodal transfer opportunities and physical feasibility of transfer connections.

During this refinement and screening step, the study area was expanded (as noted in the introduction to Section 3 and shown in Exhibit 3-2). As a result, additional transit elements were developed for the expanded study area, including (1) an extension of the Thorndale Avenue transit corridor from the O'Hare West Terminal to the Schaumburg Metra Station; (2) local circulator routes; (3) a Roselle Road bus route; (4) a service upgrade to Pace Route 554; and (5) employer shuttles designed to provide frequent, convenient and direct "last mile" connection service between rail and transfer stations and employment or activity centers.

At this stage of evaluation, further analysis was conducted for transportation performance, and environmental and socioeconomic measures. As a result of the screening, three corridors were eliminated from further consideration (see Table 3-10).

TABLE 3-10  
 Alternatives Subject to Level Two Screening

Alignment or Facility	Result
<b>Rail or BRT Alternatives</b>	
STAR Line connection to West Terminal	Retained.
CTA Blue Line Extension to West Terminal	Retained.
CTA Blue Line Express Track from Chicago Loop	Retained as a “regional supporting project.”
J-Line: West O’Hare to IKEA and STAR Line	Retained.
J-Line: IL-83 to Aurora and Naperville	Retained.
J-Line: West O’Hare to Schaumburg Metra MDW station	Retained for screening. Alignment added to address markets in expanded study area.
Mid-City Connector	Retained as a “regional supporting project.”
<b>Arterial Rapid Transit or Express Bus</b>	
Golf Road: Evanston to Woodfield	Retained.
Dempster Street: East O’Hare to Yellow Line, Skokie	Retained. Corridor to be extended to Evanston, consistent with Pace plans.
I-94 Yellow Line Transfer: Jefferson Park to Yellow Line Dempster Street terminal	Eliminated: low market potential for express service.
I-294 North to Lake County: East O’Hare to Gurnee	Eliminated: low market potential.
I-294 South to Homewood: East O’Hare to Homewood	Eliminated: low market potential
Mannheim Road: East O’Hare to I-55	Retained.
I-355: Higgins Road to I-55	Retained.
<b>Local Limited Stop Bus Service</b>	
Irving Park Road, East Airport to West Airport	Retained.
York Road Shuttle, UP-NW to UP-W	Retained.
<b>Local Services</b>	
Golf Road West (Pace Route 554), Northwest Transportation Center to Elgin	Retained.
Roselle Road, Palatine to Glen Ellyn	Retained.
Circulators	Not evaluated at this stage; to be assessed in later analysis.
Employer Shuttles	Not evaluated at this stage; to be assessed in later analysis.

### 3.3.3 Level Three: Refinement of Transit Corridors and Screening

At this step, the remaining transit corridors and elements were refined. For example, to reinforce the IL 83 section of the J-Line as a BRT line, its southern terminus was relocated from the future STAR line station at Naperville Road/95th Street to the I-88/Naperville Road interchange. This section of the route was replaced with a connecting shuttle service to link to the BRT service and coordinate with the BRT schedule. Another J-line refinement occurred in the section linking West O'Hare Airport to the STAR Line's Schaumburg/IKEA station. This section originally was to operate in the I-290 corridor, but it was moved to the Rowling Road/Martingale Road/IL 53 alignment to facilitate station development and access to neighboring employment and activity centers. Other refinements include modifications of station locations to accommodate parking requirements or further input from communities or transit agencies.

Other socioeconomic evaluation factors were introduced to assess the number of transit-dependent populations near proposed facilities. These factors included determining how many zero- or one-car households represent potential transit users near transit facilities; how many people are more than 65 years old; and how many households had incomes of \$50,000 or less.

Level Three screening supported the conclusions of Level Two, confirmed ridership demand and benefit based on population and employment, and confirmed the presence of a potential transit-dependent population within the area. This final analysis confirmed that all 15 remaining transit elements should be retained and combined with other multimodal elements and roadway improvements to form complete transportation system alternatives for the Tier One Draft EIS evaluation.

## 3.4 Alternatives Carried Forward to the Draft EIS

### 3.4.1 No-Action Alternative

The No-Action Alternative consists of transportation improvements to existing roadway and transit facilities in the study area that are expected to be constructed by 2030. It represents an investment aligned to current program funding levels, and thus, does not include the major transportation improvements considered in this study. Development of the No-Action Alternative required extensive coordination with the region's transportation service providers to gather information on funded or anticipated transportation improvements in the study areas. The roadway improvements identified in the 2030 RTP and in the 2007–2012 Proposed Highway Improvement Program were the foundations for developing the No-Action Alternative. Through coordination with area transportation providers, including IDOT, Illinois State Toll Highway Authority (ISTHA), Cook County, DuPage County, Chicago Department of Transportation, transit service providers, and CMAP (the MPO), it was agreed that improvements identified in the 2030 RTP for parts of the region outside the study area would be included in the No-Action Alternative modeling. Also, the federally approved OMP, including a western terminal complex, would be completed within the planning period. Recognizing that other projects likely would be implemented as part of multiple short-range programs beyond 2012, additional improvement projects were identified through the end of the planning period (2030) in coordination with transportation providers. The additional projects were added to the No-Action Alternative.

The transportation improvements for the No-Action Alternative represent 80 lane miles of additional capacity and 135 miles of rehabilitation improvements to roadways, 54 interchange/intersection location improvements, and bus and rail transit improvements (see Exhibits 3-8 and 3-9, and Table 3-11). The No-Action Alternative includes no individual bicycle/pedestrian or travel demand management (TDM)/transportation system management (TSM) improvements, although such improvements could be components of specific baseline projects included in the No-Action Alternative. The No-Action Alternative will be carried forward throughout the NEPA process to serve as the baseline for comparing the performance of the build alternatives.

TABLE 3-11  
2030 Roadway and Transit Baseline Projects Included in the No-Action Alternative

Name	Project Type	Project Limits
<b>Roadway</b>		
Balmoral Avenue	New interchange, extend roadway	Bessie Coleman Drive to east of US 12/20/45
Des Plaines River Road	Bidirectional turn lane, utility/drainage relocation	River Street to Lawrence Avenue
IL 53 (Rohling Road)	Add lanes, bridge replacement	Elgin O'Hare Expressway to Army Trail Road
I-190	Corridor improvement	US 12/20/45 to I-294
I-290	Corridor improvement, high occupancy vehicle, auxiliary lanes	St. Charles Road to IL 50 (Cicero Avenue)
I-294 (Tri-State Tollway)	Widening, reconstruction	Balmoral Avenue to Dempster Street
I-90 (Jane Addams Tollway)	Add lane, reconstruction	I-294 (Tri-State Tollway) to IL 53
Meacham Road	Add lanes	IL 62 (Algonquin Road) to Old Plum Grove Road
Meacham Road	Add lanes, traffic signals	IL 62 (Algonquin Road) to IL 72 (Higgins Road)
Meacham Road	Add lanes, reconstruction w/change lane width	Kirchoff Road to IL 62 (Algonquin Road)
Medinah Road	Reconstruction, bidirectional turn lanes, channelization	IL 19 (Irving Park Road) to US 20 (Lake Street)
Thorndale Avenue	Add lane	I-290 to York Road
US 12/20/45 (Mannheim Road)	Widen Mannheim Road to three lanes in each direction	IL 19 (Irving Park Road) to IL 72 (Higgins Road)
Wood Dale Road	Reconstruction, channelization	Montrose Avenue to North of US 20 (Lake Street)
Arlington Heights Road	Intersection improvement	Landmeier Road
Arlington Heights Road	Intersection improvement	Oakton Avenue
Devon Avenue	Intersection improvement	Arlington Heights Road
Grand Avenue	Intersection improvement	York Road
IL 58 (Golf Road)	Intersection improvement	New Wilke Road
IL 62 (Algonquin Road)	Intersection improvement	New Wilke Road
York Road	Intersection improvement	IL 19 (Irving Park Road)
West Terminal Entrance	Intersection improvement	Thorndale Avenue
Wood Dale Road	Intersection improvement	IL 19 (Irving Park Road)
I-294 (Tri-State Tollway)	Add interchange ramp	Balmoral Road

TABLE 3-11  
2030 Roadway and Transit Baseline Projects Included in the No-Action Alternative

Name	Project Type	Project Limits
<b>Transit</b>		
CTA Blue Line	Express service	Dedicated line from Block 37 to O'Hare
Metra – UP-W Line	Capacity upgrades	TBD
Metra – UP-NW Line	Capacity upgrades & extension	TBD
Metra – STAR Line	New rail segment	O'Hare to Hoffman Estates
CREATE	New crossovers and signals	Franklin Park
	Track additions	UP Line in Bellwood
	Track additions	UP Line in Melrose Park

Note: The projects listed were compiled from both the 2030 RTP (as revised in 2006) and feedback from the transit service agencies.

### 3.4.2 Build Alternatives

The alternatives that best satisfy project purpose and need and have lower overall impacts are Alternatives 203 and 402 (see Exhibits 3-10 and 3-11). Each is described below, with an analysis of its respective travel performance in subsection 3.5.1. Environmental and socioeconomic impacts for the two alternatives are compared in Section 4, Environmental Consequences. The two alternatives are similar except for their north connection to I-90. The following elements are the same for both:

- **Elgin O'Hare Expressway Section** includes upgrading and extending the Elgin O'Hare Expressway. The expressway would be improved with additional travel lanes in each direction for 4.4 miles from IL 19/Gary Avenue to I-290. A new expressway with three basic lanes in each direction is proposed from I-290 to the proposed O'Hare West Bypass, a distance of about 5.4 miles.
- **O'Hare West Bypass South Section** includes a new freeway facility extending 1.85 miles from the Bensenville Yard tunnel south to I-294 with four basic lanes in each direction. South Bypass Connection Options A and D occur between the Bensenville Yard and I-294.

The elements that differ for the O'Hare West Bypass are the location of the north roadway section and the connection to I-90. For Alternative 203, the north section is proposed as a freeway, located mostly on the western edge of O'Hare Airport property, consistent with a planned transportation corridor described in the Airport's adopted *Airport Layout Plan* (2005). The northern terminus of Alternative 203 alignment is the Des Plaines Oasis on the Northwest (Jane Adams) Tollway. The north section for Alternative 402 is proposed as an arterial improvement to York Road/Elmhurst Road. The proposed improvement would add a travel lane in each direction, for a total of three travel lanes in each direction. The arterial improvement would extend along York Road/Elmhurst Road from the east end of the new Elgin O'Hare Expressway to the service interchange at I-90. The partial interchange would become a full interchange and accommodate exiting and entering movements from all directions.

The roadway build alternatives were developed to a concept design level of detail sufficient to facilitate a planning level decision related to the type and location of improvements. Detail was sufficient to identify the general right-of-way footprint to ensure that the

improvements could be accommodated, develop construction and right-of-way cost estimates, and analyze the relative environmental and socioeconomic impacts.

**3.4.2.1 Alternative 203**

**Elgin O'Hare Expressway Section.** Alternative 203 consists of new freeway/tollway facility extending from the Elgin O'Hare Expressway between I-290 to the O'Hare West Bypass for about 5.4 miles. Between IL 19/Gary Avenue and I-290, the expressway would be widened and upgraded for 4.4 miles. The facility would have three basic lanes in each direction, with additional auxiliary lanes between high volume interchanges. The center median would vary between 70 to 144 feet, which could accommodate potential dedicated transit service including stations. Service interchanges would be provided at major crossroads, and to accommodate access to local road system, a frontage road would be provided between Meacham Road and Rohlwing Road and east of the I-290 interchange to York Road/Elmhurst Road.

System and service interchanges would be provided at the locations listed in Table 3-12. There would be 10 service interchanges: four would provide partial access, and six would provide full access. Partial interchanges would provide only two interchanging movements between local roads and a freeway, whereas full access interchanges would provide for all directions of movement. System interchanges are provided at two locations and provide freeway to freeway access.

Supporting crossroad improvements are planned to manage efficient traffic circulation. In some cases, the crossroad improvements would extend several hundred feet north and south of the intersections. In other situations, more extensive capacity improvements are needed for adjacent roadways. Among these are proposed widening for Meacham/ Medinah Road and Roselle Road for a short distance north and south of the expressway. Improvements to I-290 are also planned between IL 19 and Biesterfield Road, which would accommodate system ramp connections, lane balance requirements, and entering and exiting transitions. In total there are more than 12 miles of supporting improvements associated with the Elgin O'Hare Expressway section. See Appendix F for a summary of these improvements. See Table 3-12 for a summary of the system and service interchanges for Alternative 203.

TABLE 3-12  
Summary of Interchange Improvements for Alternative 203 in the Elgin O'Hare Expressway Section

<b>Interchange</b>	<b>Type</b>	<b>Access</b>
Gary Avenue	Service	Partial
IL 19/Springinsguth Road	Service	Full
Wright Boulevard	Service	Partial
Roselle Road	Service	Full
Meacham Road	Service	Full
Rohlwing Road	Service	Partial
I-290	System	Full
Arlington Heights Road/Park Boulevard	Service	Partial
Prospect Avenue	Service	Full
Wood Dale Road	Service	Full

TABLE 3-12  
Summary of Interchange Improvements for Alternative 203 in the Elgin O'Hare Expressway Section

Interchange	Type	Access
IL 83	Service	Full
West Terminal	System	Full

Interchange studies and FHWA approval will be required to determine interchange type and design in subsequent design phases for the project.

**O'Hare West Bypass Section.** Alternative 203 includes a freeway section that would extend from I-90 at the current location of the Des Plaines Oasis, south along the western edge of O'Hare Airport to the Bensenville Yard for about 4.35 miles.

The freeway would consist of four basic lanes in each direction, with additional auxiliary lanes at interchanges, and a 70-foot median to accommodate transit service north of Thorndale Avenue. System interchanges are proposed at I-90, the Elgin O'Hare Expressway, and I-294. Service interchanges are proposed at IL 72, Devon/Pratt, the proposed O'Hare West Terminal, IL 19, and Green Street/Franklin Street.

There are two alignment options for connecting to I-294 that would begin at the tunnel under the yard. They are described below and shown on Exhibits 3-12a and 3-12b.

- **South Bypass Connection Option A**— The freeway generally would proceed south along the western edge of County Line Road to a new system connection with I-294 near Grand Avenue ( 1.9 miles). The freeway would be located west of County Line Road. County Line Road would be retained as a one-way frontage road on the east side, and a new one-way frontage road would be provided on the west side of the proposed facility.
- **South Bypass Connection Option D**— The freeway generally would extend southeast along the southern edge of the rail yard, then cross the UPRR and proceed south, paralleling the east side of the UPRR, to a new system connection with I-294 near Grand Avenue (1.8 miles).

These options also include a new bridge that reconnects Taft Road across the Bensenville Yard, linking Franklin Avenue and IL 19. A full-access system interchange would be provided at I-294. Part of I-294, extending roughly from Grand Avenue south to North Avenue, would be improved to accommodate system ramp connections and lane balance requirements.

Service and system interchanges would be provided along the O'Hare West Bypass. System interchanges would be located at the north and south ends of the bypass. The north system interchange would exchange traffic between I-90 and the O'Hare West Bypass, and would be located in the vicinity of the Des Plaines Oasis. The full access interchange would have long flyover ramps spanning the Metropolitan Water Reclamation District of Greater Chicago flood control reservoirs near I-90. The north system interchange would also require improvements along I-90 (from Devon Avenue to Arlington Heights Road) to accommodate system ramp connections and lane balance. The south system interchange would interconnect I-294 and the

O'Hare West Bypass, and would include I-294 improvements between Grand Avenue and North Avenue to accommodate system ramp connections and lane balance requirements.

Service interchanges would be provided at Elmhurst Road and I-90, IL 72, Elmhurst Road/Pratt Boulevard/Devon Avenue, IL 19, Franklin Boulevard/Green Street/Taft Road, I-294, and IL 64. The Elmhurst Road and I-90 interchange would be a total reconstruction of the partial interchange to a full access interchange. Partial access will be provided at IL 72 through a half diamond service interchange with service to and from the south. At Elmhurst Road, partial access will be provided by ramps that form a split interchange at Pratt Boulevard and Devon Avenue. The Franklin Boulevard/Green Street/Taft Road interchange would be a partial access service interchange with an off-ramp from northbound O'Hare West Bypass to Franklin Boulevard/Green Street and an on-ramp from Franklin Boulevard/Green Street/Taft Road to southbound I-294. A full access service interchange is provided at IL 19. The northbound off-ramp to IL 19 will be offset at Greenlawn Avenue. A partial access service interchange will also be provided at IL 64. A new northbound on-ramp from IL 64 and new southbound I-294 off-ramp to IL 64 will be provided.

Local improvements would accommodate traffic circulation and would include Elmhurst Road (from Higgins Road to Oakton Avenue), IL 72 (from Elmhurst Road to Mt. Prospect Road) including grade separation of Touhy Avenue and UPRR, widening Franklin Boulevard/Green Street between County Line Road and Taft Avenue to two lanes with an 18-foot median in each direction. A new connector road would be provided from Franklin Boulevard spanning the Bensenville Yard to a connection on the north with IL 19. Supporting local improvement would total 11 miles of improved local roads associated with the bypass. See Appendix F for a summary of supporting roadway improvements.

#### 3.4.2.2 Alternative 402

The Elgin O'Hare and south bypass sections for Alternative 203 is the same for Alternative 402. However, the north section (north of Thorndale Avenue; about 3.1 miles) for Alternative 402 is proposed as an arterial improvement to York Road/Elmhurst Road. The arterial improvement would extend along York Road/Elmhurst Road from the east end of the new Elgin O'Hare Expressway to the service interchange at I-90. The arterial facility would be upgraded to provide three lanes in each direction separated by a raised median along York Road/Elmhurst Road. Provision for double left turns will be made at large volume intersections requiring a 30-foot median. Outside the interchange influence areas, the median will be narrowed to 18 to 22 feet to avoid unnecessary right-of-way impacts. Local improvements would include grade separation of Touhy Avenue from the UPRR tracks. The interchange at York Road/Elmhurst Road and I-90 would be upgraded to full access with added access to and from the west. See Appendix F for a summary of supporting roadway improvements.

#### 3.4.2.3 Multimodal Elements

The EO-WB Study is seeking a multimodal transportation solution for the study area. The commitment to that objective has been fulfilled throughout the process, and attention to all modes has been demonstrated. Transit, bicycle and pedestrian, and freight rail improvements are defined elements of the two build alternatives and consideration has been given to TSM and TDM strategies. Each element is common to the build alternatives carried forward in the Draft EIS analysis. As stated by stakeholders early in the study

process, more is needed from other modes to help reduce travel and congestion on area roadways. The study has established the foundation for the elements, which other transportation providers may now use to advance these initiatives. The four common elements are described below.

**Transit.** Part of developing a transportation plan for the study area has been to find ways to improve transit service. Stakeholders at the very earliest meetings stated the need for more transit opportunities as part of the overall solution. The project team, transit providers in the region, and other stakeholders brought forth numerous ideas that were used in developing an overall transit plan. The plan that emerged from an evaluation of 20 initial ideas was refined to a final set of 15 transit corridors and strategies, each with a specific proposed transit service – rail, heavy or commuter rail, bus rapid transit, arterial rapid transit, express bus, local bus, or local circulator – and operational criteria. Table 3-13 and Exhibit 3-13 detail each proposed corridor.

During the public comment period of the Draft EIS, Hanover Park requested consideration of extending the J-Line at the Schaumburg Metra Station to the Hanover Park Metra Station (see Page 5-28 for a description of Hanover Park’s entire comment and IDOT’s response. Hanover Park’s comment letter can be found in Appendix D beginning on page D\_5-81). Preliminary study of the Village’s request showed that extending the J Line as BRT or rail to Hanover Park requires an evaluation of a number of complicating factors beyond the level of engineering conducted in Tier One; therefore, it was agreed that further study regarding the Village’s request would be conducted in Tier Two. However, the preliminary study showed that another variant of transit service between these locations, specifically a non-stop bus shuttle service, would provide the needed connectivity and easily function on local roads. As such, it was agreed that a bus shuttle service between Schaumburg and Hanover Park would be included as a planned improvement in the Tier One Final EIS until further study in Tier Two determines a final solution (see Exhibit 3-13).

TABLE 3-13  
Proposed Transit Improvements

Corridor	Route Detail	Mode and Operating Assumptions
Blue Line Extension to West Terminal	Connects O’Hare Terminal station to proposed West Terminal. These are the only two stops along this proposed corridor.	Heavy rail transit; dedicated subway tunnel with seven-minute headways.
STAR Line Spur	Rail spur that connects the proposed West O’Hare Terminal station to the Metra STAR Line. West terminal is the only stop along the spur section.	DMU-type vehicles that operate commuter rail service with undetermined headway times, contingent upon Metra STAR line headways.
J Line West to Schaumburg Metra	Connects West O’Hare Terminal station to Schaumburg Metra MDW station. Stop locations include West Terminal, Lively Boulevard, Arlington Heights Road, Rohlwing Road, Roselle Road, and Schaumburg Metra Station.	High capacity transit corridors (BRT or rail). A-B service with 15-minute headways along branches and seven-minute headways along shared section of Elgin O’Hare Expressway alignment.
J-Line Northwest to Woodfield	Connects West O’Hare Terminal station to IKEA store at Meacham Road. Stop locations include West Terminal, Lively Boulevard, Arlington Heights Road, Rohlwing Road, Higgins Northwest Transportation Center, and IKEA.	

TABLE 3-13  
Proposed Transit Improvements

Corridor	Route Detail	Mode and Operating Assumptions
Schaumburg Metra Station to Hanover Park Metra Station	Connects Schaumburg Metra Station to Hanover Park Metra Station.	Shuttle bus service. Operating assumptions to be identified in Tier Two.
J Line South to Aurora	Connects West O'Hare Terminal station to Aurora. Stop locations include Elgin O'Hare Expressway and IL 83, Grove Avenue, Lake Street, North Avenue, Oakbrook Mall, 22nd and Highland, Warrenville and Naperville Road, Naperville Metra, IL 59 and Ogden Avenue, and Aurora STAR line station at 95th Street.	BRT service with few stops placed at major nodes of activity. Headways are seven-minute peak/15-minute off-peak.
I-355	Connects Northwest Transportation Center with Bolingbrook. Stop locations include Higgins Northwest Transportation Center, Biesterfield Road, Devon, Lake Street, Army Trail Road, North Avenue, Roosevelt, Butterfield, Ogden Avenue, Maple, 63rd Street, 75th Street, and 87th Street.	Express bus service running exclusively along expressway lanes. Headways are 15-minute peak/30-minute off-peak.
Golf Road West	Local stops every two to four blocks.	Local bus service with 15-minute peak/30-minute off-peak minute headways. Upgrade to an existing Pace service.
Mannheim Road	Connects O'Hare East Terminal with I-55. Stop locations include East O'Hare, Irving Park Road, Grand, North, St. Charles, Butterfield, Roosevelt, Cermak, Ogden Avenue, LaGrange Metra, 55th Street (Countryside Village Hall), Joliet Road, and I-55.	Arterial Rapid Transit also can be conceptualized as an express bus that runs along a local arterial and incorporates technologies designed to five transit vehicles priority. 15-minute peak/30-minute off-peak.
Dempster Street	Connects O'Hare East Terminal with Skokie. Stops include East O'Hare, Mannheim and Touhy, River Road Des Plaines Metra, Carlean Court (Maine High School), Luther Road (Lutheran General Hospital), Milwaukee Avenue, Harlem, Waukegan, Central, and Skokie Yellow Line station.	Arterial Rapid Transit also can be conceptualized as an express bus that runs along a local arterial and incorporates technologies designed to five transit vehicles priority. 15-minute peak/30-minute off-peak.
Golf Road East	Connects Evanston to Woodfield Mall. Stop locations include Higgins (Northwest Transportation Center), Gold and STAR Line station at Northwest Highway and Golf Road, Arlington Heights Road, Elmhurst Road, Wolf Road, River Road Des Plains Metra, Greenwood Road, Waukegan Road, Gold Road and US Highway 41, Church and Crawford, Church and Dodge, and CTA Purple Line Davis Station.	Arterial Rapid Transit; also can be conceptualized as an express bus that runs along a local arterial and incorporates technologies designed to five transit vehicles priority. 15-minute peak/30-minute off-peak.
Irving Park Road	Connects the East and West Terminals at O'Hare Airport. Stop locations include East O'Hare, Mannheim, Post Office, and West O'Hare.	Local express service. Headways are seven-minute peak/15-minute off-peak.
Roselle Road	Connects Palatine UP-NW Metra Station to the UP-W Metra Glen Ellyn station. Local stops every two to four blocks.	Local bus service. Headways are seven-minute peak/15-minute off-peak.

TABLE 3-13  
Proposed Transit Improvements

Corridor	Route Detail	Mode and Operating Assumptions
York Road Shuttle (UP-NW to UP-W)	Connects the UP-NW Metra Mt. Prospect station to the MDW Metra Elmhurst station. In addition to local stops every two to four blocks, route serves proposed STAR line, O'Hare West Terminal, and MDW Metra Bensenville station.	Local bus service. Headways are seven-minute peak/15-minute off-peak.
Circulators	Several proposed routes; connections include Woodfield, NW Transportation Center, Rohwing Road, and various high-level transit stations in the western part of the study area.	Local shuttle service linking residential areas to high level transit stations. Proposed headways are 15-minute peak/30-minute off-peak.
Employer Shuttles	Several proposed routes serving the industrial area directly west of O'Hare Airport as well as concentrated areas of commercial and industrial use within the vicinity bounded north-south by the UP-W and MDW Metra lines and east-west by IL-83 and Roselle Road.	Local shuttle service linking employment centers to high level transit stations. Peak period scheduled runs; no off-peak service.

Upgrades to transportation centers and new transportation centers also are proposed (see Table 3-14). Transportation centers provide connections and transfer points between modal services and are vital to the overall function of the system. This component would add opportunities and convenience for improved automobile connections, passenger dropoff, bus-to-bus interconnections, bus-to-rail, and airport to bus or rail interconnections at five key locations: East O'Hare Airport, I-290/Elgin O'Hare Expressway, the Northwest Transportation Center, Schaumburg Metra, and West O'Hare Airport. Each location would include bus stands, bicycle and pedestrian access, bicycle storage, and real-time displays of service information. Timed coordination of bus schedules is important to allow easy transfer to rail services and between bus routes and transportation centers.

TABLE 3-14  
Proposed Transportation Transfer/Intermodal Facilities

Name	Intersection	Status	Park and Ride	Connecting Transit Service		
				Corridor	Mode	Status
East O'Hare	Near Mannheim Road and E. Higgins Road	Proposed	Yes	Metra NCS	Commuter rail	Existing
				O'Hare Airport Transit System	Fixed guideway	Existing
				Dempster Street	ART	Proposed
				Mannheim Road	ART	Proposed
				Irving Park Road	Express bus	Proposed

TABLE 3-14  
Proposed Transportation Transfer/Intermodal Facilities

Name	Intersection	Status	Park and Ride	Connecting Transit Service		
				Corridor	Mode	Status
I-290/Elgin O'Hare Airport vicinity	Rohlwing Road/Elgin O'Hare Expressway	Proposed	No	J-Line NW	High capacity transit	Proposed
				J-Line West to Schaumburg Metra	High capacity transit	Proposed
				I-355	Express bus	Proposed
				Circulator	Shuttle	Proposed
				Employment	Shuttle	Proposed
NW Transportation Center	E. Higgins Road between I-290 and Meacham Road (at Mall Drive)	Existing	Yes	J-Line NW to Woodfield	High capacity transit	Proposed
				Golf Road East	ART	Proposed
				Golf Road West	Local bus	Proposed
				I-355	Express bus	Proposed
				11 Pace Routes	Various bus services	Existing
				Circulator	Shuttle	Proposed
Schaumburg Metra	Elgin O'Hare Expressway and S. Springinsguth Road	Existing	Yes	Metra MDW	Commuter rail	Existing
				J-Line West to Schaumburg Metra	High capacity transit	Proposed
				#602 Pace	Local/feeder bus	Existing
				Circulator	Shuttle	Proposed
West O'Hare	York Road/Elmhurst Road and Thorndale Avenue	Proposed	No	STAR Line	Commuter rail	Proposed
				CTA Blue Line	HRT/subway	Proposed
				J-Line West to Schaumburg Metra	High capacity transit	Proposed
				J-Line NW to Woodfield	High capacity transit	Proposed
				Irving Park Road	Express bus	Proposed
				York Road	Local bus	Proposed

Another aspect of the transit component is employer shuttles. This service helps to fill the “last mile” connection service between rail and transfer stations and employment or activity centers. The provision of frequent, convenient and direct service to employers and activity centers is central to shifting automobile trips to transit. Application of this type of service is considered critical in an area that has a large potential for attracting new transit ridership.

One aspect of the transit plan that would improve connectivity between the automobile and rail/bus is new or upgraded park and ride facilities at two existing and two new sites (see Table 3-15).

TABLE 3-15  
Additional Park and Ride Facilities

Name	Intersection	Status	Connecting Transit Service		
			Corridor	Mode	Status
Bensenville	N. York Road and W. Main Street	Existing	Metra MDW	Commuter rail	Existing
			York Road Shuttle	Local bus	Proposed
			#319 Pace	Regular/express bus	Existing
			#332 Pace	Regular/express bus	Existing
Bolingbrook	I-355 and I-55	Proposed	I-355	Express bus	Proposed
Countryside	LaGrange Road and Joliet Road	Proposed	Mannheim	ART	Proposed
			#330 Pace	Regular/express bus	Existing
Skokie	Dempster Street between Gross Point Road and Skokie Boulevard	Existing	CTA Yellow Line	HRT	Existing
			Dempster	ART	Proposed
			#250 Pace	Regular/express bus	Existing
			#97 CTA	Local bus	Existing
			#626 Pace	Regular/express bus	Existing
			#54A CTA	Limited local bus	Existing

**Bicycle/Pedestrian.** Early in the study process, stakeholders identified the need for more bicycle/pedestrian opportunities within the study area as a means of reducing vehicular travel. Promoting bicycle and pedestrian facilities starts with understanding where people want to travel. Destinations for bicyclists and pedestrians are much like auto travel, but generally shorter trips (e.g., community or activity centers, places of employment, or recreational attractions). The framework for improving bicycle and pedestrian mobility in the area began with the existing trail system combined with planned improvement in the study area by others. The proposed bicycle/pedestrian improvements recommended by the EO-WB study focus on filling the gaps in bicycle trail and pedestrian paths to provide better connections to transit stations, park and ride facilities, community activity centers, regional trail systems, and employment areas. The recommendations for bicycle and pedestrian improvements are common features of both Alternatives 203 and 402.

Exhibit 3-14 shows the existing and planned regional trail system within and near the study area. The area is conveniently located near major regional trails, including the Illinois Prairie Path, the Great Western Trail, and the Des Plaines River Trail. The location of these trails in relation to the study area is shown in Exhibit 3-14. Per the comment on the Draft EIS submitted by the City of Des Plaines, this exhibit was updated to more accurately reflect the location of the regional trail through Des Plaines and correct road names (see Page 5-26 for a description of the entire comment and IDOT's response. The City of Des Plaines' comment letter can be found in Appendix D beginning on Page D\_5-49). Regional trail improvements have also been planned by others, which total 10 miles of new trails. These planned

improvements provide linkages between existing trail sections to existing regional trails. The EO-WB expands on these other planned improvements to fill gaps in the system that would provide for a complete regional trail loop. It would pass through the study area extending from the Des Plaines River Trail (just north of the study area) to the west in the vicinity of Busse Road, extending south in the general vicinity of Salt Creek to a connection on the south with the Great Western Trail, and to the east with the Des Plaines River trail.

The regional trail improvements proposed by the EO-WB total an additional seven miles of trail improvements and include three primary links:

- A section in Elk Grove Village primarily on Oakton Avenue and Tonne Road extending from Higgins and Oakton, west on Oakton and south on Tonne Road (Regional Trail A).
- A section in Elk Grove Village primarily on Walnut Lane and along Salt Creek extending along Tonne Road between Pratt Boulevard and Walnut Lane, then west along Walnut, south on Ridge Avenue, west on Devon Avenue, and finally south along Salt Creek (Regional Trail B).
- A section in Elmhurst primarily on York Road connecting a proposed trail along Lake Street to a proposed trail along Wrightwood Avenue by York Road (Regional Trail C).

Exhibit 3-15 shows the principal existing and planned community trail system in the study area. The location of employment and community centers, and transit stations and facilities in relation to the trail system, is also shown in Exhibit 3-15. An examination of the existing trail network (Exhibit 3-15) shows many gaps in linking these activity nodes. Others have planned trail improvements for the area including those by DuPage County, DuPage County Forest Preserve District, CMAP, and others. The proposals by others total more than 18 miles of improvements that begin to link gaps between trails and to link trails with community and employment centers. The EO-WB study has looked at additional trail improvements beyond those recommended by others to include opportunities for bicycle and pedestrian facilities in conjunction with the roadway and transit aspects of the EO-WB plan. The EO-WB study proposes an additional 15 miles of trails that would improve access to communities, employment centers, and transit facilities.

One notable proposal included in the build alternatives is the bicycle/pedestrian trail along the existing and proposed Elgin O'Hare Expressway from the west end of the study area to O'Hare Airport (Community Trail Improvement One, see Exhibit 3-15). This link would provide intercommunity travel and easy access to transit stations proposed in the corridor. Other proposed community trail sections include a north-south link that would connect Busse Woods with Irving Park Road generally between Salt Creek and IL 83 (Community Trail Improvement Two; see Exhibit 3-15), and a proposed trail section between Lake Street and Irving Park Road in Bensenville (Community Trail Improvement Three, see Exhibit 3-15). Finally, several smaller trail improvements proposed throughout the community trail system would fill gaps between existing and proposed improvements by others.

The plan includes safe identifiable crossings for bicycle and pedestrian facilities at major roadway crossings (I-290, Elgin O'Hare Expressway, I-90, etc.) that represent a barrier to non-motorized travel. The "starred" locations in Exhibit 3-14 illustrate the locations where special design considerations are warranted to accommodate the safe movement of bicycle and pedestrian traffic for north-south and east-west travel.

The proposed community trail system would link major activity areas. In several cases, more is needed to improve bicycle and pedestrian access within the expansive commercial and industrial developments in the area. Exhibit 3-14 also shows the areas where a local trail framework should be expanded within those areas to enhance access for workers using non-motorized transportation. Further examination of these areas is recommended for the local communities to explore opportunities for bicycle and pedestrian facilities.

The planned improvements by the EO-WB study and others for both the community and regional trail system represent a comprehensive bicycle and pedestrian trail system for the study that provide non-motorized access to communities, job centers, activity centers, transit, and recreational facilities. The EO-WB study has sought to integrate bicycle and pedestrian facilities into the overall transportation plan for the study area. Bicycle and pedestrian improvements are common to both Alternatives 203 and 402. In locations where proposed bicycle improvements overlap roadway improvements, the roadway footprint has been sized to accommodate the bicycle facilities. Non-motorized facilities are an important part of the overall EO-WB plan and have a role in reducing automobile travel on the area roadways, and will be considered in further detail during Tier Two.

**Freight Rail.** The numerous freight rail facilities throughout the study area include a large track network (mainline tracks, industrial spur tracks, and yard tracks), classification/marshalling yards, and intermodal facilities. The numerous at-grade crossings (120) complicate automobile movement and reduce travel efficiency. In considering all the transportation modes in the study area, the project team addressed freight rail needs as part of the overall transportation solution. Three areas of freight rail improvements are proposed: separation of highway and rail at key locations, interlocking improvements, and improved access to intermodal facilities.

- **Highway-Rail Grade Crossings.** Several at-grade crossings of road and rail have been identified as key locations for grade-separating these crossings.
  - A proposed grade separation of the CPRR in Bensenville at Irving Park Road and York Road. This grade separation would improve roadway traffic where traffic delays for crossing trains can be up to 15 minutes. This location is named in the region’s CREATE program as a priority location.
  - A proposed improvement of Metra’s MDW at Irving Park Road and Wood Dale Road. This location has long traffic delays and many accidents. The improvement, consistent to an interim project, would provide for a new roadway under the Metra track connecting Wood Dale and Irving Park roads, thereby improving roadway operations at that location.
  - The UPRR and CPRR would be grade separated in many locations along the proposed O’Hare West Bypass including from north to south:
    - Improved existing grade separation of the UPRR and CPRR crossing I-90 (Jane Adams Tollway) north of O’Hare Airport
    - The UPRR and CPRR crossing Touhy Avenue on the north side of O’Hare Airport
    - The east-west spur line crossing Elmhurst Road near Pratt Boulevard

- The mainline of the O'Hare West Bypass crossing under the UPRR and CPRR near Devon Avenue
- System interchange ramps (seven ramps either over or under the railroads) at the intersection of the Elgin O'Hare Expressway and the O'Hare West Bypass
- The mainline of the O'Hare West Bypass crossing under the UPRR tracks and the CPRR tracks near the west end of the Bensenville Yard
- The UPRR crossing over Green Street near Taft Road
- UPRR and CPRR spurs service industrial areas in Franklin Park and Bensenville, south of Green Street and Franklin Avenue
- Taft Road improvement over the Bensenville Yard
- Railroad separations would be provided at two location on the Elgin O'Hare Expressway:
  - A north-south spur line east of Wright Boulevard
  - A north-south spur line east of IL 83
- **Interlock Improvements.** Track interlockings are a complex system of signals and special trackwork that ensure safe and efficient train movements between one track and another. Potential improvements to interlocking in the study area include B-17 and Bryn Mawr interlocker. Numerous trains pass daily through these interlock systems. Current operations are slowed by aged signal systems, train length, and limited track capacity. Improving these conditions would include improvements at the interlockers, or system improvements in other locations that would assist movement through the capacity limited interlockers. One benefit of these improvements would be reducing backups at railroad/roadway at-grade crossings.
- **Intermodal Considerations.** Intermodal freight operations are co-located with railroad classification/marshalling yards in the study. There are three intermodal facilities in or near the study area, where containerized freight from one mode of transportation is transferred to another (e.g., truck to rail, or rail to truck). Attention has been given to improving these connections. One example is the local access that would be provided from the south bypass connection to industrial development in Franklin Park and Bensenville. Hundreds of truck movements (more than 500 to the intermodal facility alone) that enter and leave the area daily experience circuitous travel to and from the nearest freeway connection. This single improvement will save travel time, travel and operation costs, and reduce fuel consumption. The benefit of this new access could affect the competitive attractiveness of the area, and should have a positive benefit on occupancy, land values, and development and redevelopment potential.

**Transportation System Management and Travel Demand Management.** TSM and TDM represent strategies that offer added efficiencies to travel on the system. TSM techniques include modernized traffic signal control systems that adjust themselves to optimize traffic flow, freeway traffic flow management, incident detection and response, system surveillance, intersection improvements, and traveler information services. TDM attempts to reduce single

occupancy automobile travel during peak periods of travel and includes strategies or techniques such as car pooling, van pooling, park and ride facilities, and alternate work hours, etc. The specific strategies that would be implemented would be developed during Tier Two. During this phase of analysis, the effects of these strategies have been approximated in the travel modeling work and have resulted in a small reduction in travel on the roadway.

### 3.4.3 Cost

Preliminary cost estimates, including construction and right-of-way costs, were prepared for each build alternative. Standard IDOT contingencies have been applied to the cost estimate, and to the inclusion of engineering design and construction management/inspections costs. Under either south bypass connection option, Alternative 203 is estimated to cost \$3.6 billion in 2009 dollars, and \$2.8 billion for Alternative 402. Preliminary costs to construct transit improvements were also developed and are limited to transit infrastructure improvements within the proposed roadway improvement corridors. Transit costs in 2009 dollars would be \$430 million for Alternative 203 and would be \$250 million for Alternative 402. The difference in cost is related to the north leg of Alternative 402, which is proposed as an arterial improvement. The arterial improvement would have insufficient right-of-way to incorporate the proposed STAR Line; therefore, this aspect of transit is not provided in conjunction with Alternative 402 and the cost is lower.

### 3.4.4 Financing Strategies

The government traditionally has financed major transportation infrastructure primarily through a combination of federal and state monies. These resources typically are combined to fund projects on a pay-as-you-go basis, meaning that projects often are built in phases or increments as funds become available over time. The pay-as-you-go approach has the benefit of simplicity and avoids the interest costs associated with debt. However, delayed implementation involves the hidden costs associated with inflation and foregone economic development, foregone safety improvement, and environmental benefits.

Project funding has been tied closely to federal and state cash management policies, with nearly exclusive responsibility for the process vested in state and local public transportation agencies.

Because public resources are limited, state and local governments are faced with the challenge of inadequate funding to meet transportation needs, and critical projects may face years of delay before funding is available. In an era of constrained public funding, new funding mechanisms are being considered across the country and the use of alternative methods is being implemented in some locales.

The alternative funding methods include the following:

- Credit Instruments
  - Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA): A new Federal transportation credit program authorized as part of Transportation Equity Act (TEA)-21 that provides direct Federal loans, lines of credit, and loan guarantees provided through U.S. Department of Transportation (USDOT) to large projects of national significance, under criteria developed by Congress. However, Illinois does

not have enabling legislation to allow for TIFIA assistance in transportation financing.

- Section 129 Loans: Section 129 of Title 23 of U.S. Code permits states to use federal funds to make loans to any federally eligible project. The loans must be repaid with a dedicated, nonfederal source. Illinois does not have enabling legislation in place to use Section 129 loans for surface transportation projects.
- Grant Management Initiatives and Techniques
  - State Infrastructure Banks (SIBs): A state or multistate revolving fund that provides loans, credit enhancement, and other forms of financial assistance to surface transportation projects. Illinois does not have enabling legislation in place to allow for use of the SIB at this time. Such legislation must designate how the SIB would be funded and how it would operate.
  - Grant Anticipate Revenue Vehicle Bonds (GARVEEs): A GARVEE is any bond or other form of debt repayable, either exclusively or primarily, with future federal highway funds under Section 122 of Title 23 of the U.S. Code. Although the source of payment is federal funds, GARVEEs cannot be backed by a federal guarantee but are issued at the sole discretion of, and on the security of, the state issuing entity. At this time, Illinois does not have enabling legislation to allow GARVEEs for transportation financing.
  - Tapered Match: TEA-21 section 1302 removed the requirement that federal share of project costs be applied to each progress payment, thereby allowing the FHWA to establish a more flexible matching share policy for progress payments, as long as the appropriate matching ratio is achieved by the end of the project. Tapered match may be useful when the government sponsor lacks the funds needed to match a federal project at the start but will accumulate the match over the life of the project. The state, when requesting a tapered match, should include in its request for project approval, a statement that tapered match will achieve earlier project completion, reduced project costs, or allow additional nonfederal funds to be leveraged for the project. With or without the authorization of tapered match, the state remains committed to providing the required nonfederal share of project costs. The state must also be able to control the federal share amount in its billing system.
- Public and Private Partnerships (PPP): A contractual agreement that is formed between public and private sector partners, which allows more private sector participation in the delivery or operation of a transportation project than is traditional. The agreements usually involve a government agency contracting with a private company to renovate, construct, operate, maintain, and/or manage a facility or system. While the public sector usually retains ownership in the facility or system, the private party will be given additional decision rights in determining how the project or task will be completed. The term public-private partnership defines an expansive set of relationships from relatively simple contracts (e.g., A+B contracting), to development agreements that can be very complicated and technical (e.g., design-build-finance-operate-maintain). PPP projects are often undertaken to supplement conventional procurement practices by taking additional revenue sources and mixing a variety of funding sources, thereby reducing

demands on constrained public budgets. However, Illinois does not have enabling legislation to allow for PPPs in transportation financing.

No funding currently is committed to the project, except for the \$140 million funded by SAFETEA-LU as a nationally and regionally significant project and a \$35 million state match. Thus, there is a considerable shortfall for construction of any build alternative. Further funding requirements for the project will be given detailed attention in future steps of this project, including Tier Two environmental documents.

## 3.5 Module 4 – Identification of a Preferred Alternative

Many alternative transportation solutions have been developed and evaluated since the beginning of the Tier One Draft EIS for the EO-WB study in 2007. Alternatives were analyzed and screened based on travel performance, environmental and socioeconomic impacts and benefits, and public input as part of preparing the Draft EIS. As a result of comments made by stakeholders after the publication of the Draft EIS, minor modifications were made to the south portion of the O'Hare West Bypass. The alignment was shifted to the southern most edge of the Bensenville Yard (see Exhibit 3-16). This modification helped to maintain the functionality of the rail yard by preserving rail access to undeveloped lands in the yard. In addition, this modification resulted in slight changes to environmental and social resource impacts (as described in Section 4).

The build alternatives are similar, but there are differences that clearly lead to the identification of a preferred alternative. Based on an examination of all the materials available in this process including environmental and socioeconomic impacts and benefits, engineering data, comparative travel performance analyses, unanimous concurrence by regulatory resource agencies, and pertinent stakeholder input, Alternative 203 with South Bypass Connection Option D is the Preferred Alternative (see Exhibit 3-17). Other needed improvements are companion to the Preferred Alternative including transit, bicycle and pedestrian accommodations, and freight rail. TSM and TDM are not included as defined improvements in Tier One, but will be examined in detail in Tier Two of the process. The rationale for identifying Alternative 203 and Option D are described in the following sections.

### 3.5.1 South Bypass Connection

#### 3.5.1.1 Design Performance

Functionally, the intersection of the freeway ramps to and from the south directly connecting with Taft Road under Option D offers more continuity in access and is more central to existing and planned industrial development in the area. Additionally, the alignment under Option D allows for a longer weaving distance between North Avenue and the I-294 system interchange than under Option A.

#### 3.5.1.2 Travel Performance

Travel performance was not considered for the south bypass connections evaluation. The travel demand model would not produce any measurable differences in performance due to the relatively short lengths and similar locations and configurations of the south connection options.

### 3.5.1.3 Environmental Impacts

Options A and D are located in a highly developed area and, therefore, have relatively minor impacts to wetlands, floodplains, threatened or endangered species, forested lands, or surface waters (see Table 3-16). For both wetlands and surface waters, the impact would be less than one-half acre for either Option A or D. For forested land and floodplains, both options impact less than one acre, and neither option would impact threatened and endangered species.

TABLE 3-16  
Environmental Consequences of Options A and D

Resource	Option A	Option D
Wetlands (acre) <sup>a</sup>	0.1	0.4
Stream crossings (total number)	3	3
Surface waters (acre) <sup>a</sup>	0.4	0.3
Floodplain encroachments (acre)	0.6	0.6
Threatened or endangered species (number)	0	0
Forested lands (acre)	0.9	0.3

<sup>a</sup> Totals include impacts to potentially jurisdictional areas, such as stormwater facilities. Subject to regulatory review, several manmade stormwater facilities may be exempt from regulation.

### 3.5.1.4 Social Impacts

The number of structures displaced, the number of individual businesses displaced, and the tax base impacts were considered for Options A and D. As show in Table 3-17, Option A has a greater number of structures displaced (37 buildings versus 26 buildings), but relatively fewer (277 fewer) employees displaced as these businesses are smaller than those along Option D. The tax base impact is also lower for Option A than Option D. However, given that Option A is adjacent to residential areas in Bensenville, there is a potential for impacts to noise sensitive areas. Conversely, Option D is located wholly within non-residential areas, and the Village of Franklin Park considers the implementation of Option D as an opportunity to revitalize the adjacent industrial uses through improved access.

TABLE 3-17  
Socioeconomic Consequences of Options A and D

Resource	Option A	Option D
Residential structure displacements (number)	7	0
Commercial or industrial structure displacements (number)	30	26
Business displacements (number)	47	23
Employee displacements (number)	708	985
Tax revenue loss (\$)	\$1.3M	\$2.7M

### 3.5.1.5 Stakeholder Input

Overall, stakeholder comment clearly favors Option D. Bensenville has stated that Option A would be in conflict with the community's vision and passed a resolution in support of Option D. The Village of Franklin Park also has passed a resolution endorsing Option D. As noted above, the Village of Franklin Park foresees the implementation of Option D as an opportunity to enhance the viability of the adjoining land uses through improved access, as well as address existing flooding concerns through drainage improvements.

### 3.5.1.6 Conclusion

Travel performance and environmental impacts are not distinguishing factors, and the social impacts, for Option D, while higher, are viewed by the local community as an opportunity to revitalize the adjoining land uses through improved access and drainage improvements. Lastly, the communities have weighed in on the issue through the stakeholder involvement process, with a consensus position favoring Option D. Therefore, Option D is included in the Preferred Alternative.

## 3.5.2 Build Alternative

### 3.5.2.1 Travel Performance

The travel performance of the two build alternatives is comparable, with Alternative 203 offering slightly better travel performance than Alternative 402 in every category, including both local and regional measures (see Table 3-18).

TABLE 3-18  
Build Alternatives Systemwide Travel Performance Comparisons

	Alternative 203	Alternative 402
Percent Increase in Regional Travel Efficiency in Study Area	10% <sup>a</sup>	8% <sup>a</sup>
Percent Decrease in Congested VMT on Secondary Roadways (P.M. Peak)	15.2%	12.3%
Percent Increase in Network Speeds on Principal Arterials (P.M. Peak)	8%	7%
Improve O'Hare West Access—Travel Time Savings from the Study Area West to O'Hare	49%	47%
Improve Accessibility—Percent Increase in Trips within Five Minutes to Interstate/Freeway facilities	50%	41%
Percent Increase in Transit Trips	37%	34%

<sup>a</sup> Measures represent improvements over the No-Action Alternative.

### 3.5.2.2 Environmental Impacts

The environmental analysis shows a comparable level of impacts for Alternatives 203 and 402 with Alternative 402 having slightly lower impacts (see Table 3-19). Avoidance and minimization techniques throughout the process have reduced environmental resource impacts, and the impact difference between alternatives is small. Only a few acres of impact separate the alternatives with only three acres difference for wetlands, surface waters, and floodplains. Effects on 4(f) resources such as DuPage and Cook counties forest preserve

properties and municipal parks represent small impacts to the edges of these resources that do not impair any functional aspects of the properties. There is no effect on threatened and endangered species, historical structures, and archaeological resources. During the Draft EIS comment period, the USFWS suggested that traffic noise could impact wildlife species. General information regarding noise impacts to wildlife was added to this Final EIS. The SHPO has concurred that the proposed improvements will have no effect on architectural and archaeological resources, and no further study is required in Tier Two.

In the final analysis, most unavoidable environmental impacts are common to both alternatives, with only the north leg of each alternative accounting for slight differences. Thus, from the perspective of environmental resources there are no effects that materially distinguish the alternatives.

TABLE 3-19  
Summary of Environmental Consequences

	Alternative 203 with Option D	Alternative 402 with Option D
Wetlands (acre) <sup>a</sup>	39.1	36.5
Stream crossings (total number)	22	20
Surface waters (acre) <sup>a</sup>	18.1	15.1
Floodplain encroachments (acre)	24.7	27.2
Threatened or endangered species (number)	0	0
Noise-sensitive resources	74	68
Architectural and archaeological resources	0	0
Acres of Section 4(f) and non-Section 4(f) special lands impacts (number of properties)	2.95(4)	0.95 (3)
Special waste sites	245	240

<sup>a</sup> Totals include impacts to potentially jurisdictional areas, such as stormwater facilities. Subject to regulatory review, several manmade stormwater facilities may be exempt from regulation.

### 3.5.2.3 Socioeconomic Impacts and Costs

Socioeconomic impacts favor Alternative 402 with slightly fewer displacements of residential, commercial and industrial structures, fewer job displacements, and lower tax revenue losses (see Table 3-20).

In the examination of socioeconomic benefits, both Alternatives 203 and 402 show ability to generate significant economic benefit in terms of value added to the economy and job creation. With the use of an econometric model, it was estimated that with either alternative the total economic effect is greater than the initial roadway investment. The spending and consumption of project investment dollars would be greatest with Alternative 203 with an added value to the regional economy of \$5 billion. Alternative 402 would provide an added value of \$4 billion. The measure of employment growth includes changes in direct, indirect and induced employment. Alternative 203 provides greater job growth with 21,600 jobs during the three-year construction period of the project, whereas Alternative 402 would create 16,600 jobs. With the assistance of CMAP, a special analysis was performed estimating the year 2030 employment with the project improvements. The improved access

to the study area would increase the competitive advantage of businesses located there, by improving access to the interstate system, shortening travel times to industrial areas within the study area, reducing traffic on local roads by shifting non-local trips to higher capacity roads, and enhancing the possibility for the redevelopment of underused properties. For the purposes of this analysis, the 2030 job forecasts are considered as long term jobs. As compared to the No-Action Alternative, the effect of Alternative 203 would be an additional 62,500 employees in the study area by 2030, while Alternative 402 would add 48,500 employees to the study area by 2030. In terms of project costs, Alternative 402 is lower in cost, due to its design, which includes an arterial connection to the north instead of a full bypass. However, as noted below, the layout and design of Alternative 203, while having a higher cost, satisfies a critical stakeholder concern with respect to community planning and cohesion.

TABLE 3-20  
Summary of Socioeconomic Impacts and Benefits

	Alternative 203 with Option D	Alternative 402 with Option D
Residential, commercial and industrial displacements	51	47
Employees displaced	1,277	1,114
Roadway construction costs (1999 \$)	\$2.99B	\$2.33B
Value added to the regional economy	\$5B	\$4B
Short-term job creation	21,600	16,600
Long-term job creation	62,500	48,500
Tax revenue loss	\$4.47M	\$3.56M

### 3.5.2.4 Stakeholder Input

From project inception through refinement of alternatives to selection of alternatives to be analyzed in the Draft EIS, approximately 130 meetings were held with established stakeholder groups, communities, transportation service providers, federal and state resource agencies, business owners, and the general public. The result has been a consensus on which alternative and south bypass connection option should be selected as the Preferred Alternative (see Table 3-21 for a summary of public comments). Over the course of those public events, the overwhelming majority of stakeholder comments were in support of Alternative 203 and South Bypass Connection Option D. The strong consensus for Alternative 203 is squarely aligned with a plan to manage traffic relatively better, and is consistent with the concerns about traffic congestion in the study area. The study area is rich in commercial and industrial development, which is the economic engine of many communities in the area. Stakeholders favor Alternative 203 because of better access and greater potential for reinvestment in aging properties in the area. Lastly, communities agree that Alternative 203 is most compatible with their land use policies, particularly Elk Grove Village. For example, Alternative 203 would serve their community without disrupting existing land use patterns.

The public hearing for the Draft EIS held in October 2009 produced more comments from agencies, municipalities, and other stakeholders (general public). Ninety-four percent of

comments that indicated support for an alternative or south bypass connection option named Alternative 203 and/or South Bypass Connection Option D as preferred (see Table 3-21). Five agencies (USEPA, USFWS, USACE, IDNR and IEPA) submitted comments on the Draft EIS, with virtually all agencies commenting that the build alternatives resulted in comparable adverse impacts and identifying details that should be addressed in the Tier Two document. No comments require reconsideration of the range of alternatives considered or the technical analyses contained in the document. The USEPA assigned a rating of “Lack of Objections” to the Draft EIS. The USFWS had positive comments on the document and the rigorous agency involvement process. Additional information was requested by USFWS pertaining to potential noise impacts on wildlife species. General information regarding noise impacts to wildlife was included in this Final EIS in response to the agency’s comment. USACE noted that all agency comments on the project had been successfully addressed. Comments that did not identify a preference for an alternative or option requested further information or clarification on the design. Eight local government agencies in the study area submitted letters or resolutions, four of which were supportive of Alternative 203 and/or Option D, and one identified Alternative 402 as the Preferred Alternative. Others focused on issues important to the communities in the next phases of the project such as noise abatement, stormwater management, and preserving transit as a part of the solution. Fifty-seven comments were received from the public at-large, and most comments (41) supported Alternative 203 and/or Option D. Other comments included requests for specific information or clarification of the proposed concept.

TABLE 3-21  
Summary of Public, Municipality, and Agency Comments and Resolutions

	<b>Support Alternative 203 and/or Option D</b>	<b>Support Other Proposed Alternatives</b>	<b>Other Comments</b>
March 2009 Public Information Meeting Comments	36,700	NA	NA
October 2009 Public Hearing	47	3	24

### 3.5.3 Conclusion

Extensive technical studies and stakeholder involvement throughout the process resulted in informed decisions that led to a transportation solution that best fit the needs of the area. As the process narrowed the field of the build alternatives, travel performance and environmental impacts proved to be comparable. Whereas, social impacts were mixed, economic benefits clearly favored Alternative 203. Furthermore, the project’s stakeholder involvement achieved a degree of partnership in the process that is not often achieved, and resulted with consensus amongst the stakeholders that is rare with such an expansive study area. Over the two-year planning process, communities in the area united in their support for Alternative 203 with Option D. They believe this solution best serves their transportation needs and future land use opportunities, while maintaining their current overall community and land use structure. In consideration of all the technical analysis and stakeholder input to this process, the Preferred Alternative has been identified as Alternative 203 with South Bypass Connection Option D.

### 3.5.4 Implementation Strategy and Tier Two Studies

The EO-WB Tier One Study considered various highway projects and improvements to other modes of transportation as being part of the solution to satisfy the travel needs of the study area. The study brought together various transportation providers who have interests in improved transportation in the study area. They have participated at a high level of involvement, allowing a broad range of transportation improvements to be considered through the process. The study results that have evolved from Tier One serve as a platform for highway agencies and for other transportation providers to prioritize and potentially initiate their respective processes for advancing projects in the plan.

Because the implementation of the Preferred Alternative will be costly, the work would likely be completed over time in phases or sections. Phased construction of highway projects are guided by the definition of operational independence—an operationally independent phase of work is a portion of the work described in this environmental document that can be built and function as a viable transportation facility even if the remainder of the work is never built. Environmental commitments (wetland mitigation, relocation assistance of residents or businesses, etc.) associated with the phase of work to be built must be implemented as part of the project. Potential phased implementation scenarios for proposed highway projects will be considered in detail with future Tier Two studies. At that time, funding scenarios will also be explored in detail, including tolling options and public private partnership opportunities. Ultimately, a detailed implementation plan for improvements will be developed, per Section 6002 guidance, establishing a proposed sequence for implementing highway projects with operational independence based on funding scenarios and schedules.

The preferred transportation system alternative, specifically the proposed package of highway projects identified in Tier One, will be advanced for Tier Two studies. Tier Two will consist of detailed Phase I engineering and environmental studies of the proposed highway improvements, including consideration of design alternatives and of complementary improvements (e.g., travel demand management strategies and transportation system management improvements), their environmental consequences, and of proposed environmental mitigation measures. Study findings will be presented in the *Tier Two Environmental Impact Statement and Record of Decision*.

The development of a phased improvement plan can only be generally defined in Tier One. Many more details are required to sequence the development of a project of this magnitude. Further work will be done in Tier Two to prepare a development plan for overall implementation of the project.

The EO-WB study has considered a variety of modes of transportation in attempting to satisfy the travel needs of the study area. It has brought together various transportation providers who have interests in improved transportation in the study area. They have participated at a high level of involvement in the transit improvements and others that have been identified as part of the plan. The study results that have evolved from Tier One and to be further developed in Tier Two serve as a platform for other transportation providers to initiate their respective processes for advancing projects in the plan.