*Alternatives to be Carried Forward*
*Technical Report*

# Elgin O'Hare – West Bypass Project

Prepared for

**Illinois Department of Transportation**

May 2009

CH2MHILL

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# 1. Introduction

In June 2007, IDOT commenced a study to examine multimodal transportation improvements for the Elgin O'Hare–West Bypass (EOWB) project. A central element of the study is the identification and evaluation of a broad range of alternative solutions to address transportation issues in the study area. The *Transportation System Performance Report*, completed in April 2008 and updated in May 2009, involved a comprehensive system evaluation of transportation conditions and problems in the study area. The evaluation identified travel patterns, trip characteristics, location and extent of major problems, and the reasons for the problems. The findings established the starting point for developing transportation system alternatives in the study area with a clear understanding of what the problems are and why they are occurring.

The EOWB alternatives development and evaluation process has been in progress for more than a year and has led to the Build Alternatives proposed to be carried forward in the Draft Environmental Impact Statement (DEIS). The evaluation process has been structured to allow consideration of a broad array of alternatives with stakeholder input at every step. Improvements to the various transportation modes (e.g. roadway versus transit) were considered independently, with the object of combining the optimal modal improvements into complete multimodal Build Alternatives for detailed consideration in the DEIS.

This report describes how roadway alternatives were developed and then screened to those that will be included in the DEIS. Other aspects of the overall multi-modal solution for the study area (transit, travel demand management (TDM), transportation system management (TSM), bike and pedestrian improvements) which will be common to the roadway alternatives carried forward, are described in Section 5 of this document.

# 2. Alternatives Development Process Overview

The methodology for developing and evaluating alternatives for EOWB included technical analysis, environmental considerations and analysis, and stakeholder input. For roadway alternatives, there were four interrelated modules described as follows (see Exhibit 1):

1. Module 1 began with stakeholders identifying a range of improvement strategies to be considered 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 were packaged and termed "Initial System Strategies." This step involved screening the Initial System Strategies based on transportation performance measures against 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 in two steps; the first step focused on screening out alternatives with relatively high environmental or socioeconomic impacts, and the second step on refining and then evaluating the remaining Finalist Roadway System Alternatives on the basis of transportation performance, financial (initial cost), and environmental/socioeconomic factors.

4. Module 4 will involve combining the remaining roadway alternatives and complementary multi-modal improvements (transit, TDM, TSM, bike and pedestrian improvements) to form complete system alternatives that will be considered in detail in the Tier One DEIS. The Preferred System Alternative will then be identified in the Tier One FEIS on the basis of analysis findings, agency input, and public input.

The determination of the Finalist Roadway System Alternatives to be carried forward in the DEIS occurs at the conclusion of Module 3. Module 4 is a future step and is mentioned for reference only.

Several underlying assumptions guided the alternatives development process:

- The No-Action Alternative serves as the baseline 2030 transportation condition, and a basis for comparing the travel performance of the proposed alternatives.
- Existing roadway travel performance was established as the year 2007; the project design year is 2030, consistent with the regional planning horizon established by the 2030 Regional Transportation Plan.
- Alternatives were developed at a sufficient level of detail to reasonably define an environmental footprint that would accommodate the likely improvements needed to satisfy the 2030 travel requirements and needed capacity improvements to satisfy 2030 demand.
- The technical analysis of alternatives relied on a travel model and GIS database. A travel demand model[2] of the study area was used to evaluate the relative performance of the alternative transportation solutions. A GIS database was developed as a decision support tool for alternative development and evaluation. The database has more than 120 layers of environmental, land use, utility, socioeconomic, and transportation data in an electronic format. It was used in identifying where environmental and socioeconomic resources should be avoided or impacts to them minimized, as well as in calculating impacts associated with the various alternatives.
- An extensive stakeholder outreach program is a key aspect of the process and is being conducted consistent with IDOT's Context Sensitive Solutions (CSS) policies.[3] The EOWB project is stakeholder driven and input is sought and received on every aspect of the study.

# 3. Transportation Issues and Problem Identification

Identifying the transportation issues that are important to the study area is the corner stone of a transportation planning process. In the first months of the study, a two-pronged approach was used to identify transportation problems and to establish the purpose of and need for the project. The approach included extensive stakeholder coordination activities

[2] The model is based on that used by CMAP.

[3] 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.

coupled with a comprehensive technical analysis of transportation system performance, both today and in 2030, under the No-Action Alternative.

Stakeholder coordination activities included face-to-face stakeholder meetings and written input. Four meetings were held in late 2007: a Corridor Planning Group (CPG) Meeting; a Public Informational Meeting; an Agency EIS Scoping Meeting; and a Joint Task Force Meeting. Table 1 summarizes roadway and other transportation issues identified through this process. During this period, IDOT conducted technical analyses to develop and confirm the nature of transportation problems within the study area. This culminated in the *Transportation System Performance Report (TSPR),* which included a comprehensive analysis and summary of the performance of the transportation system for the study area both today and in 2030.

TABLE 1
Technical and Stakeholder Problem Statements

| Project Needs | Technical Analysis Findings | Stakeholder Problem Statement |
|---|---|---|
| Improve local and regional travel | Roughly 86% of the area's interstates and major arterials are congested, growing to 91% by 2030.<br>Congestion on major roads will spill over to secondary roads with 81% congested on minor arterials and collector roads by 2030, and travel delay increasing up to roughly 52%. | Congestion on major routes.<br>Reduced truck/freight mobility. |
| Improve travel efficiency | 40% of the study area has the longest travel times to interstate connections.<br>Lack of service interchanges along existing interstates results in poor access and inadequate connections with major regional corridors.<br>System interchanges operate inefficiently because of traffic volumes exceeding capacity, lack all movements, inefficient loop style ramps, and short weaving sections.<br>Freight rail traffic impedes the movement of vehicle traffic in the study area with 120 at-grade crossing, and 15 on major routes. | Poor access and connectivity in the study area.<br>Travel delays caused by at-grade railroad crossings.<br>Travel management strategies that could improve travel efficiency are minimally applied in the study area. |
| Improve O'Hare West Access | Proposed O'Hare West Terminal reliant on high-capacity transportation connections from the west (i.e. roadway, rail transit, bus, shuttle) to serve an estimated average daily traffic of 29,000 in 2030.<br>West terminal entrance would have longest travel times in study area to interstate connections.<br>Western access would be required to serve the terminal need while maintaining local route continuity, and supporting local community economic goals. | Lack of access to O'Hare Airport. |
| Improve modal opportunities and connections | Roughly 4% of the all trips in the study area are made by transit, increasing to 5% by 2030.<br>Ridership is affected by gaps in service, inability to adequately serve the reverse commute or suburb-to-suburb commutes, lack of system capacity, inadequate bus/shuttle connections to rail transit and to employment centers, constrained parking capacity at rail stations, and inadequate pathways for pedestrians and bicyclists to transit. | Public transportation not being a realistic choice: enhanced service options and improved infrastructure are required.<br>Fragmented pedestrian and bicycle system that impairs access to transit stations and other nodes. |

The stakeholder input and the *TSPR* findings formed the foundation of the overall study process and provided essential input for development of the project's purpose and need.

# 4. Alternatives Development, Evaluation, and Screening

## 4.1 Module 1—Identifying Strategies

The alternatives development and evaluation process began with project stakeholders marking aerial maps showing the desired locations and types of improvements. The outcome was an exhibit with lines drawn on major roadways in the study area, including IL 83, York and Elmhurst Roads, Thorndale Road, IL 19, and others (see Exhibit 2). The project team assembled the improvements into a range of system alternatives in three general categories:

1. Improve existing system
2. System expansion
3. Combined system improvements and expansions

The outcome was the development of 15 Initial Roadway System Strategies (see Exhibit 3). Each alternative strategy includes about 75 lane miles of new capacity. Major differences between various system alternatives included the improvement corridor locations (e.g., IL 83 versus York Road) and the facility type (e.g. arterial vs. freeway).

## 4.2 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 the 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 2).

TABLE 2
Travel Performance Evaluation Criteria

| Purpose and Need Objectives | Performance Criteria | Evaluation Measure |
|---|---|---|
| Improve local and regional travel | Vehicle hours of delay | Daily PM peak period vehicle hours of delay |
| | Congested vehicle miles of travel | Miles traveled in congestion on arterials during PM peak period |
| | Regional areas with travel time savings | Areas with travel time savings for representative regional trip origins (northwest, west, southwest) |
| Improve O'Hare west access | Selected trip pair travel time savings | Travel time savings for select study area trips to O'Hare West Access |
| Improve travel efficiency | Improved interstate accessibility | Area and number of trips within 5 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 criteria for each alternative. The scoring showed stratification in scores, with 10 options being substantially better than the other 5 (see Table 3). The following 5 Initial System Strategies (including all in the Improve Existing System category) did not address purpose and need adequately (as demonstrated by appreciably lower overall travel performance and consistently low comparative rankings), and were therefore dropped from further consideration:

- Group 1: 101 and 102
- Group 3: 301 and 302
- Group 6: 601

These strategies provided relatively lower congestion relief on area regional and local roadways, and only moderate improvements in access to major regional roadway corridors. Further, they would not appreciably improve O'Hare west access and would provide only moderate new transit market potential. Ten strategies were retained for further consideration: 201, 202, 203, 204, 205, 401, 402, 403, 404, and 501 (see Exhibit 4).

TABLE 3
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[a] | 11 | 99 |
| 302[a] | 12 | 100 |
| 301[a] | 13 | 102 |
| 101[a] | 14 | 105 |
| 601[a] | 15 | 112 |

[a] Alternative does not address purpose and need and therefore was dropped.

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

Alternatives considered in Module 3 consisted of the 10 roadway system alternatives carried forward from Module 2, and a broad range of options for potential connections between a new north-south freeway near I-90 to the north (North Connection Options) and I-294 to the south (South Connection Options). These connection options represent a range of corridor locations for a portion of the West Bypass corridor, and therefore can be applied to all system alternatives which include the West Bypass. Connection options were evaluated independently of the system alternatives in order to allow for a direct, side by side comparison of the relative performance and impacts of various corridor locations. Including the overall system alternatives within this connection option evaluation would not provide any benefit, as it would simply add another layer of data that would be common to all of the connection options being considered. The results of the connection options evaluation are discussed separately in Section 4.3.3.

A 2-step process was followed to refine, evaluate and screen the 10 remaining roadway system alternatives. The first step focused on refining the alternatives to permit an initial screening based on environmental and socioeconomic factors. In the second step, the traffic impacts on adjacent roadways were evaluated to determine if the alternatives forced other

improvements. As a result of the analysis, supporting improvements were identified, including the widening of the existing Elgin O'Hare Expressway westward to the Gary Avenue interchange. The study area was expanded to include these improvements (see Exhibit 5). All of the remaining alternatives were refined, incorporating the supporting improvements that were identified, and evaluated based on their overall performance.

### 4.3.1 Environmental / Socioeconomic Screening for Initial Roadway System Alternatives

The Initial 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, or community resources. The objective was to establish an initial assessment of environmental and socioeconomic impacts. Once this step was taken, it served to identify system alternatives that would result in relatively high impacts. Three Initial Roadway System Alternatives (Group 2: 201, 204, and 205) were dropped because of disproportionately high socioeconomic impacts. It is important to note that these impact totals represent the initial layout of the roadway alternatives, which were then refined in subsequent steps (see Table 4, which presents a summary the socioeconomic impacts for each alternative).

TABLE 4
Initial Roadway System Strategies: Number of Potential Building Displacements

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

Seven system alternatives were carried forward as Finalist Roadway System Alternatives (see Exhibit 6):

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

### 4.3.2 Evaluation and Screening of Finalist Roadway System Alternatives

The seven Finalist Roadway System Alternatives shown in Exhibit 6 fall into either the System Expansion (202 and 203) or Combined System Improvements and Expansion (401, 402, 403, 404, 501) categories. Engineering detail was added to these remaining roadway alternatives. Where required, supporting improvements to adjacent roadways were added to the alternatives. A representative conceptual layout (e.g., an interchange configuration) was developed for each alternative to allow an assessment of design viability and to more accurately define the roadway's estimated footprint.

Finalist Roadway System Alternatives Evaluation. At this stage, a comprehensive evaluation of the alternatives was performed. The evaluation was performed using an expanded list of evaluation factors and greater depth of analysis, with the object being to identify a set of Build Alternatives for detailed consideration in the DEIS. The evaluation considered a refined set of 25 evaluation criteria aimed at comparing the overall performance, costs and environmental and socioeconomic impacts of the alternatives, including criteria suggested by stakeholders:

- **Travel Performance**. Nine separate performance criteria were used to evaluate alternatives with respect to their ability to: improve local and regional travel performance (regional travel throughput - a ratio of the vehicle miles of travel (VMT) to the vehicle hours of delay (VHD), congested vehicle miles of travel on the secondary roadway system, network travel speeds on principal arterials; annual travel time savings); improve travel efficiency (travel time savings, areas with improved freeway/interstate access, and number of trips with improved freeway/interstate access); and improve O'Hare west access (travel time savings for representative trip pairs from the west and northwest).

- **Initial Costs.** Initial planning level cost estimates were prepared to provide an order-of-magnitude comparison of the overall roadway improvement costs in existing (2009) terms.

- **Environmental Impacts**: Nine criteria were used to evaluate alternatives with respect to their potential impacts to federal and state regulated resources: water resource impacts (wetlands, waters, floodplains); stormwater detention requirements; recreational land impacts (acres of designated lands, number of parks); threatened/endangered species impacts (number of listed species); historical/archaeological impacts (number of historical sites, number of archaeological sites).

- **Socioeconomic Impacts**: Six criteria were used to compare the relative socioeconomic impacts of the Finalist Roadway System Alternatives: potential building and business displacements (commercial, industrial, residential); number of potential noise sensitive areas affected; lost tax revenue; employee displacements; cemeteries impacted; and community facilities impacted.

Preliminary analysis findings for the remaining System Expansion (Alternative 202, 203) and Combination (401, 402, 403, 404, and 501) alternatives (see Table 5) indicated the following:

- **Travel Performance:**
  - There was a measurable difference in travel performance across the range of alternatives that remain under consideration.
  - Overall, the Group 2 alternatives (202 and 203) provided comparably better systemwide travel performance.
- **Initial Costs:**
  - The initial estimated costs (construction, right-of-way, engineering) for the remaining alternatives, ranged from $2.1 billion to $3.6 billion (2009 $).

- The costs were proportional to the amount of new freeway construction for each alternative, with Alternatives 202 and 203 (construction of 12 miles of new freeway corridors) having the highest cost, and Alternative 501 (construction of 5 miles of new freeway corridor) having the lowest cost.

- **Environmental Impacts:**
  - Natural resource issues were comparable across all alternatives, with one exception. Alternatives with IL 83 improvements south of Thorndale (403, 404, and 501) showed the potential for up to 4 threatened and endangered species within those alternatives' footprint. None of the other alternatives had T&E species within their footprint.
  - Alternatives 403, 404 and 501 had the relatively greatest potential impacts to designated or recreational lands (number of parks affected and acreage).

- **Socioeconomic Impacts:**
  - Given the heavily developed nature of the improvement corridors, all alternatives had the potential for substantial socioeconomic impacts, and this issue was identified as a key stakeholder concern.
  - There are substantial differences in potential socioeconomic impacts across the evaluation criteria, with mixed results. Alternatives 501, 404, 403, and 202 had the relatively highest number of buildings displaced.
  - Alternatives 501 and 404 had the lowest tax revenue loss, and Alternative 202 and 403 had the highest tax revenue loss.
  - Alternative 501 had the relatively lowest number of employees displaced, and Alternatives 202, 203, 401, 402, and 403 had a relatively higher number of employees displaced.
  - Alternative 202 was the only alternative that consistently resulted in the largest impacts across the major socioeconomic factors.

Finalist Roadway System Alternatives Screening. A three-part approach to compare the relative merits of the alternatives was used to identify the best overall performing alternatives to be carried forward as DEIS Build Alternatives. The approach consisted of a comparative scoring system; a qualitative comparison of differentiating features of alternatives and their key advantages and disadvantages; and stakeholder input.

*Comparative Scoring.* A scoring system was developed to compare the remaining alternatives. This tool was used to compare performance objectively and consistently across the broad array of criteria described in Section 4.3.2.

The system was structured as follows:

- Evaluation criteria that had subtotal values (such as initial construction costs, initial right-of-way costs, number of commercial buildings displaced) were combined into one criterion (initial total costs, total buildings fully displaced) for the purpose of scoring (see Table 6).

- To distinguish among the seven alternatives, the measured impacts reported in Table 5 were converted to a scoring system that compared relative performance of the alternatives objectively and consistently across the range of criteria. For each individual criterion, the alternatives were scored using a scale from 1 to 7 (the range is equivalent to the remaining 7 alternatives) with 1 being best and 7 being worst. Thus, regardless of the range of performance or impact for any individual criterion, an alternative is relatively the best while another is relatively the worst. For alternatives that fell between 1 and 7 for each evaluation criterion, a scaled scoring system was used to account for the range of difference within each evaluation criterion.

  For example, across the suite of seven alternatives, stormwater detention requirements range from 55.8 to 216.2 acre-feet, for a total difference of 160.4 acre-feet. Using the scoring system, the alternative with 55.8 acre-feet of impact was scored 1 and the alternative with 216.2 acre-feet of impact 7 (see Figure 1). For alternatives between the best and the worst, the scaled system is used, wherein alternatives that have impact totals closer to 55.8 acre-feet will have a score closer to 1, and those closer to 216.2 acre-feet will have a score closer to 7. This scoring system acknowledges and accounts for the range of differences for individual evaluation criteria, whether narrow or wide.

FIGURE 1
Example: Scaled Scoring for Stormwater Detention

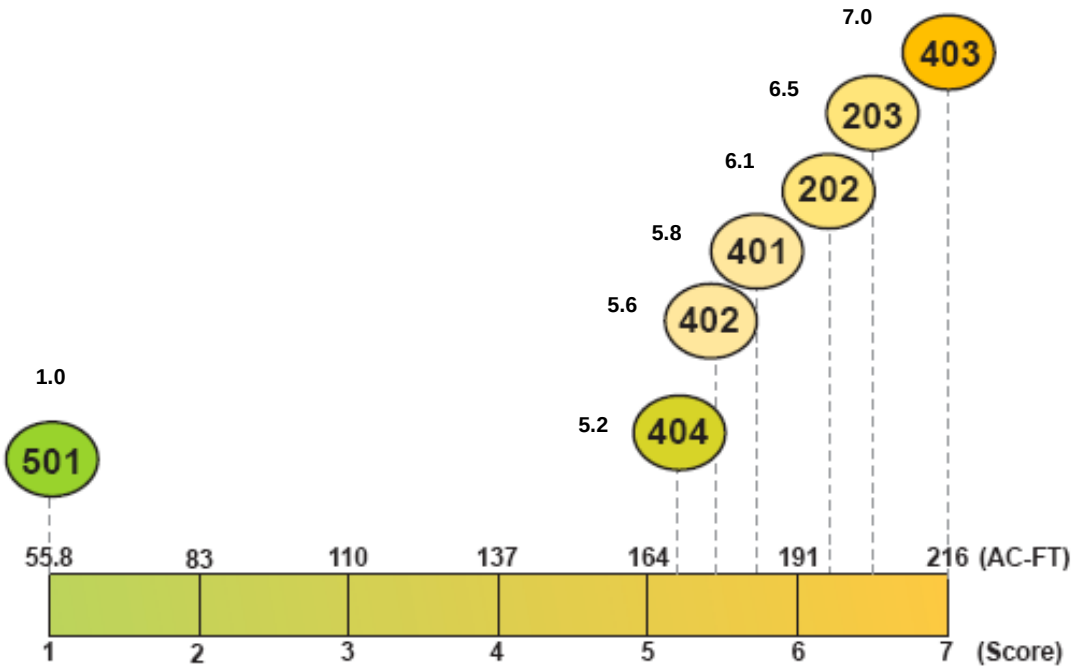



Table 7 illustrates scaled versus nonscaled scoring for stormwater detention requirements for each alternative, which has a wide range of difference in impacts from best to worst.

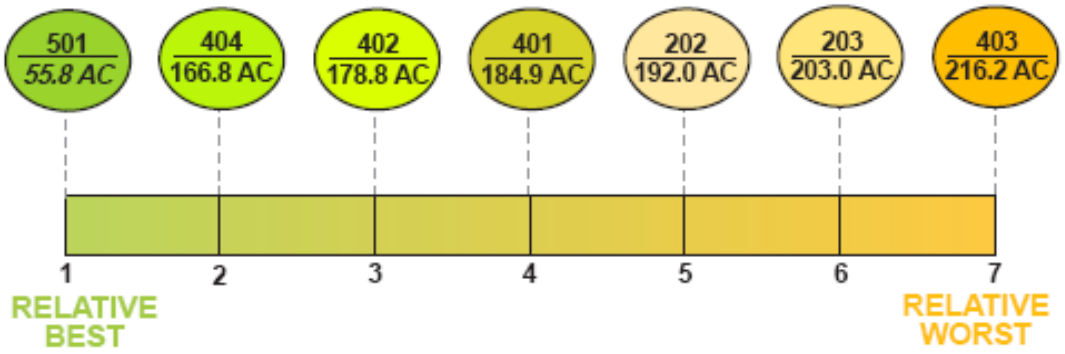
If a nonscaled scoring system was used for the evaluation criterion, it would have the effect of understating the relative impacts. For example, for Alternative 404, the scaled score is 5.2,

while the nonscaled score is 2. Figure 2 depicts the non-scaled scoring for alternatives for stormwater detention impacts, as further example of how the non-scaled scoring system may not fully represent the range of impacts.

TABLE 7
Stormwater Detention Criteria

| Alternative | Impacts (ac-ft) | Scaled Formula | Scaled Scoring | Nonscaled Scoring |
|---|---|---|---|---|
| 202 | 192.0 | $[((192.0 - 55.8) / 160.4^{a}) \times 6^{b}] + 1 = 6.1$ | 6.1 | 5.0 |
| 203 | 203.0 | $[((203.0 - 55.8) / 160.4^{a}) \times 6^{b}] + 1 = 6.5$ | 6.5 | 6.0 |
| 401 | 184.9 | $[((184.9 - 55.8) / 160.4^{a}) \times 6^{b}] + 1 = 5.8$ | 5.8 | 4.0 |
| 402 | 178.8 | $[((178.8 - 55.8) / 160.4^{a}) \times 6^{b}] + 1 = 5.6$ | 5.6 | 3.0 |
| 403 | 216.2 | $[((216.2 - 55.8) / 160.4^{a}) \times 6^{b}] + 1 = 7.0$ | 7.0 | 7.0 |
| 404 | 166.8 | $[((166.8 - 55.8) / 160.4^{a}) \times 6^{b}] + 1 = 5.2$ | 5.2 | 2.0 |
| 501 | 55.8 | $[((55.8 - 55.8) / 160.4^{a}) \times 6^{b}] + 1 = 1.0$ | 1.0 | 1.0 |

FIGURE 2
Example: Nonscaled Scoring for Stormwater Detention




An overall score was calculated for each alternative by adding scores from each of the 24 evaluation criteria (9 travel performance; 1 initial cost; 8 environmental; 6 socioeconomic). This evaluation technique emphasizes factors that are key considerations in the alternatives screening process (travel performance, impacts to regulated environmental resources, and socioeconomic impacts).

*Comparative Scoring.* Table 6 shows the relative scoring for the Finalist Roadway System Alternatives. Alternatives that scored better than others by a substantial margin were 202, 203, 401, and 402 (Table 8).

*Qualitative Analysis.* While the comparative scoring results provide insights into which alternatives have the

TABLE 8
Finalist Roadway System Alternatives – Total Scaled Score

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

best overall performance based on a structured scoring method, a qualitative evaluation of the performance measures and impacts shown in Table 6 was also conducted to express differences in more relative terms (see Table 9). The Finalist Roadway System Alternatives represent 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 this qualitative evaluation, a comparison of alternatives within each category was conducted. This approach was taken due to the overall functional similarities of the System Expansion Alternatives (i.e., new freeways), as well as the functional similarities of the Combined System Improvements and Expansions Alternatives. This allows for a determination of the best types of improvements within each of the two categories.

*System Expansion Alternatives.* A qualitative assessment was conducted for the categories of alternatives defined above using the criteria and measures shown in Table 5: travel performance, initial cost, environmental impacts, and socioeconomic impacts.

The travel performance characteristics of the system expansion alternatives (202 and 203) are comparable, with a majority of the criteria being within 10 percent of each other. In view of these slight differences, Alternative 202 and 203 are comparable in terms of travel performance (see Table 10).

TABLE 10
Travel Performance: Alternatives 202 and 203

| | 202 | 203 |
|---|---|---|
| **Improve Local and Regional Travel** | | |
| Percent increase in regional travel efficiency in study area | 13% | 11% |
| Percent decrease in congested vehicle miles of travel on secondary roadways (p.m. peak period) | 20% | 20% |
| Percent increase in network speeds on principal arterials (p.m. peak period) | 8% | 4% |
| Percent savings in annual work days per employee (actual number of days saved) | 10% (1 day) | 10% (1 day) |
| **Improve O'Hare West Access** | | |
| 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% |
| **Improve Travel Efficiency** | | |
| Area with travel time savings of greater than 5 percent in study area (p.m. peak period) | 59 $mi^2$ | 52 $mi^2$ |
| Percent increase in area with travel within 5 minutes to interstate (p.m. peak period) | 22% | 24% |
| Percent increase in trips within 5 minutes to interstate (p.m. peak period) | 44% | 53% |

The estimated initial cost for Alternatives 202 and 203 are within 10 percent of each other. The slightly higher cost for Alternative 203 is attributed to additional tunnel and structure cost for the north leg of the West Bypass. Therefore, the costs for these alternatives are considered comparable (see Table 11).

TABLE 11
Initial Cost: Alternatives 202 and 203

| | 202 | 203 |
|---|---|---|
| Initial construction costs | $2.67 | $2.93B |
| Initial right-of-way costs | $616.1M | $660.4M |
| Initial total costs | **$3.3B** | **$3.6B** |

The environmental impacts associated with Alternatives 202 and 203 vary slightly. Comparing the nine criteria, a majority of the impacts are within 10 percent of each other. The historical sites affected are not included in the comparative scoring analysis because none of the alternatives affect historical sites. While two of the categories showed slightly greater differences, waters of the U.S., floodplains affected, and publicly owned recreational lands, they are not substantial when considering their absolute values. Regulatory and resource agencies have reviewed the impacts associated with the alternatives and concluded the magnitude of impact is manageable for either of these alternatives at this stage. In a side-by-side comparison of the two alternatives, the impacts are similar for a majority of the criteria (see Table 12).

TABLE 12
Environmental Impacts: Alternatives 202 and 203

| | 202 | 203 |
|---|---|---|
| Acres of wetlands affected | 27.1 | 28.0 |
| Acres of waters affected | 3.2 | 6.6 |
| Acre-feet of stormwater detention | 192.0 | 203.0 |
| Acres of 100-year floodplains affected | 29.1 | 24.6 |
| Acres of designated/recreational lands affected | 6.7 | 9.1 |
| Number of parks impacted by improvement | 4 | 5 |
| Number of state-listed species potentially affected | 0 | 0 |
| Number of historical sites affected | 0 | 0 |
| Number of archaeological sites affected | 25 | 28 |

The last factor is a comparison of socioeconomic factors. As highlighted in Table 13, there are notable differences for Alternatives 202 and 203. First, Alternative 202 has 50 percent greater displacement of residential, commercial, and industrial buildings. It has far greater commercial and industrial building impacts with 71 (45 commercial and 26 industrial) versus 37 (14 commercial and 23 industrial) for Alternative 203. Most building displacements would occur in the IL 83 corridor in Elk Grove Village. Commensurate with the high number of commercial and industrial displacements are high tax revenue loss, and high employment displacement. Employment loss is almost 30 percent greater than for Alternative 203, and tax loss is about 40 percent greater. The loss of businesses, employment and tax base are the major difference in these alternatives (see Table 13).

Therefore, based upon the substantial differences in socioeconomic impacts of the two System Expansion alternatives, it is recommended that Alternative 202 be dropped from further consideration and that Alternative 203 is carried forward from the System Expansion category.

*Combined System Improvement Alternatives.* The five system alternatives in this category were compared to the principal evaluation factors: travel performance, initial cost, environmental impacts, and socioeconomic factors.

The travel performance characteristics of the alternatives show some minor differences among alternatives; however no alternative provides noticeably better performance across the range of performance criteria. As shown in Table 14, the alternatives generally provide comparable improvements, with most of the performance results either being within 10 percent of each other, or having a relatively low absolute value, or being tightly grouped in such a way that does not distinguish a particular alternative or set of alternatives. Overall, the margin of difference in travel performance of the alternatives in this category is minimal. Thus, overall travel performance is comparable among these alternatives.

TABLE 13
Socioeconomic Impacts: Alternatives 202 and 203

| | 202 | 203 |
|---|---|---|
| Commercial buildings (businesses) potentially fully displaced by improvement | 45 (50) | 14 (17) |
| Industrial buildings (businesses) potentially fully displaced by improvement | 26 (32) | 23 (21) |
| Residential buildings potentially fully displaced by improvement | 32 | 20 |
| Total buildings 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 |
| Cemeteries and historic cemeteries affected by improvement | 0 | 0 |
| Community facilities affected (churches, hospitals, schools, fire/police stations) | 2 | 1 |

TABLE 14
Travel Performance: Alternatives 401, 402, 403, 404, and 501

| | 401 | 402 | 403 | 404 | 501 |
|---|---|---|---|---|---|
| **Improve Local And Regional Travel** | | | | | |
| Percent increase in regional travel efficiency in study area | 11% | 6% | 4% | 5% | 7% |
| Percent decrease in congested vehicle miles of travel 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) |
| **Improve O'Hare West Access** | | | | | |
| 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% |
| **Improve Travel Efficiency** | | | | | |
| Area with traveltime savings of greater than 5 percent in study area (p.m. peak period) | 50 $mi^2$ | 50 $mi^2$ | 54 $mi^2$ | 48 $mi^2$ | 49 $mi^2$ |
| Percent increase in area with travel within 5 minutes to interstate (p.m. peak period) | 22% | 21% | 21% | 19% | 21% |
| Percent increase in trips within 5 minutes to interstate (p.m. peak period) | 42% | 40% | 42% | 39% | 39% |

The range of initial cost among the five alternatives is from $2.1 billion to $3.2 billion. The lowest cost alternative (501) provides the least amount of new freeways. Alternatives 403 and 404 have the highest relative costs in the category, which is attributed to the extent of the IL 83 improvements for 403, and complex design and construction issues for 404. Alternatives 401 and 402 exhibit costs that are almost 20 percent less than Alternatives 403 and 404. Therefore, Alternatives 403 and 404, which have the highest overall costs, are the lowest performers for this category (see Table 15).

TABLE 15
Financial Performance: Alternatives 401, 402, 403, 404, and 501

| | 401 | 402 | 403 | 404 | 501 |
|---|---|---|---|---|---|
| Initial construction costs | $2.24B | $2.15B | $2.61B | $2.81B | $1.80B |
| Initial right-of-way costs | $409.6M | $391.9M | $426.7M | $399.3M | $322.7M |
| Initial total costs | $2.6B | $2.5B | $3.0B | $3.2B | $2.1B |

The environmental impacts of alternatives in this category are generally comparable for resources such as wetlands, waters of the U.S., and floodplains. Impacts for these three criteria are either within 10 percent of each other, have relatively low absolute values, or are tightly grouped. Focusing on the factors that have more substantial differences, as highlighted in Table 16, Alternatives 401 and 402 affect fewer parks and 50 percent less designated lands as compared to other alternatives. The impact upon cultural resources is considerably less for Alternatives 401 and 402. Also, four state-listed plants in the IL 83 corridor south of Thorndale Avenue could be affected by Alternatives 403, 404, and 501. Therefore, Alternatives 401 and 402 would have the least overall impact on environmental resources (see Table 16).

TABLE 16
Environmental Impacts: Alternatives 401, 402, 403, 404, and 501

| | 401 | 402 | 403 | 404 | 501 |
|---|---|---|---|---|---|
| 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 parks affected by improvement | 5 | 3 | 7 | 6 | 8 |
| Number of state-listed species potentially affected | 0 | 0 | 4 | 4 | 4 |
| Number of historical sites affected | 0 | 0 | 0 | 0 | 0 |
| Number of archaeological sites affected | 23 | 21 | 28 | 32 | 29 |

The socioeconomic impacts for the alternatives vary substantially as highlighted in Table 17. Alternatives 403, 404, and 501 result in nearly three times the number of residential,

TABLE 17
Socioeconomic Impacts Alternatives 401, 402, 403, 404 and 501

| | 401 | 402 | 403 | 404 | 501 |
|---|---|---|---|---|---|
| Commercial buildings (businesses) potentially fully displaced by improvement | 16(12) | 10(7) | 16(15) | 6(11) | 10(8) |
| Industrial buildings (businesses) potentially fully displaced by improvement | 19(17) | 19(17) | 19(17) | 10(7) | 1(0) |
| Residential buildings potentially fully displaced by improvement | 23 | 18 | 133 | 130 | 133 |
| Total buildings 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 |
| Cemeteries and historic cemeteries affected by improvement | 0 | 0 | 0 | 0 | 1 |
| Community facilities affected (churches, hospitals, schools, fire/police stations) | 1 | 1 | 4 | 4 | 4 |

commercial, and industrial displacements as compared to Alternatives 401 and 402, largely due to displacement of residential properties along IL 83 south of Thorndale Avenue. Correspondingly, these alternatives have the most impact on adjacent land uses that are sensitive to noise. Loss of employment is highest for Alternatives 403 (945 jobs) and 401 (820 jobs), with the highest job losses related to the West Bypass south of Thorndale Avenue and to improvements along IL 83. Similarly, tax losses are highest for Alternatives 403 ($3.4M) and 401 ($3.3M), due largely to the West Bypass south of Thorndale Avenue and to IL 83 improvements.

Another factor associated with two of the alternatives (404 and 501) is design feasibility. For Alternative 404, conceptual design studies have revealed a design issue for a new freeway system interchange near O'Hare Airport for which feasibility is complicated by restricted airspace. A tunnel placed two levels below grade would be required at the system interchange near the proposed west O'Hare access, which raises constructability issues given such constraints as active railroads and adjacent flood plains (see Exhibits 7-A and 7-B). There are also issues with Alternative 501, since it terminates a freeway cross section at an arterial near IL 83 (see Exhibit 8). Terminating a freeway in this manner is undesirable from an operations and safety perspective since it forces freeway traffic to abruptly transition onto a roadway with limited access control and lower travel speeds. In order to address these performance issues, the arterial improvements east of IL 83 would need to be upgraded to a fully access controlled highway, providing continuity for freeway traffic. If an access controlled highway replaced the arterial improvements east of IL 83, Alternative 501 basically would look like Alternative 403.

There is considerable contrast in several of the evaluation results for the five alternatives in the Combined System Improvement category. Examination of environmental factors

showed that Alternatives 401 and 402 have the least impact on environmental resources; in particular these alternatives have the lowest impact to protected recreational lands, and avoid potential affects to threatened and endangered species. When considering socioeconomic impacts, Alternative 402 has the least building displacements, and impacts to noise sensitive areas. Alternatives 401 and 403 have the highest tax revenue loss ($3.3M and $3.4M) and employee displacements (820 and 945 jobs). Overall, the alternatives provide reasonably comparable travel performance. As an additional qualitative comparison factor, design feasibility was considered, and issues regarding Alternatives 404 and 501 were identified.

In conclusion, the qualitative analysis supports dismissal of Combined System Improvement Alternatives 403, 404, and 501 due to higher relative socioeconomic impacts, environmental impacts, and design feasibility issues with Alternatives 404 and 501.

The overall conclusion of the qualitative analysis is that Alternatives 203, 401, and 402 should be carried forward for further analysis.

Stakeholder Input. The last component of the screening process includes consideration of stakeholder input. The quantitative and qualitative analysis results reflect stakeholder input in a more indirect manner. Stakeholders have provided input with respect to every major aspect of the alternatives development and evaluation process, but the quantitative and qualitative analyses results are a reflection of the project sponsors taking one further step with the technical evaluation and interpretation of the results. Therefore, a direct stakeholder perspective on the alternatives to be carried forward is an important consideration yet to be considered, and is needed to complete this comprehensive evaluation of alternatives.

Stakeholder meetings were held to share the performance characteristics and environmental and socioeconomic impacts of the Finalist Roadway System Alternatives. That process culminated with a Public Meeting on March 11, 2009. Attendance and response were outstanding, with more than 1,000 attendees and responses from over 36,000 citizens in the area. Table 18 is a preliminary summary of the comments.

The consistent response by most respondents was resounding support for Alternative 203, with the caveat that any alternative improving IL 83 north of Thorndale Avenue is unacceptable. IDOT valued this stakeholder input. Elk Grove Village, in particular, stated that any alternative with an IL 83 improvement north of Thorndale Avenue (such as Alternatives 202, 401, 403, and 501) would be intrusive and damaging to the economic stability of their community. The more than 36,000 comments supporting Alternative 203 represents a strong consensus opinion from a group of project stakeholders.

*Special Analysis of the IL 83 Corridor.* 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 that are 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 A contains a copy of the Elk Grove Village letter and their proposal for the improvement requirements along IL 83. The intent of the Village's analysis was to further illustrate the damaging effects of the IL 83 corridor improvements upon their community.

Stakeholder comments and Village's technical analysis, as additional factors, served to highlight a key area of concern that required closer examination by the EOWB team—namely, the appropriate location for north-south roadway improvements north of Thorndale Avenue. This step can be considered an additional and complementary refinement of the quantitative and qualitative analyses, which yielded three alternatives to be carried forward (203, 401, and 402). Alternative 203 includes a new north-south freeway along the west side of O'Hare Airport (in lieu of Alternative 202, which included a new freeway along IL 83); Alternative 202 was dismissed due to relatively higher socioeconomic impacts as part of the qualitative evaluation. Regarding Alternatives 401 and 402, these alternatives only differ according to their northern leg improvements. Therefore, the team chose to conduct an additional examination of the north leg options for these two alternatives (e.g. improvements north of Thorndale Ave either as a freeway or arterial) with the objective of determining the best location for an improvement. The analysis was structured to compare the arterial improvement in the IL 83 corridor or the Elmhurst Road corridor (e.g. Alternative 401 or 402). 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.

A comparison of Alternatives 401 and 402 shows similar performance between these two alternatives for factors such as travel performance, costs, and environmental impacts (see Table 19). The greatest difference in performance lies with the socioeconomic impacts associated with building displacements, job loss and tax losses. Alternative 401 impacts five more buildings than Alternative 402, or 24 percent more. The widening along IL 83 for Alternative 401 impacts six more commercial and industrial buildings than Alternative 402, with a corresponding increase in job loss, and tax revenue loss.

Alternative 401 is proposed as an eight-lane roadway with full interchanges at major intersections, and new access to I-90. Alternative 401 imposes a barrier in the center of the Elk Grove Village business park. Also, the major concentration of petroleum and gas lines in and across the IL 83 corridor is an issue of major importance. The relocation of these pipelines would require detailed planning, engineering, and a long lead time for the relocation of these pipelines to avoid disruption to these critical regional facilities.

Comparatively, Alternative 402 does not share any of the barrier effect or utility issues that are more prevalent with Alternative 401. Alternative 402 is located on the eastern edge of the community and avoids the barrier phenomenon. Additionally, utilities that are in the corridor are manageable when compared to Alternative 401.

As noted above, the comparison of the roadway improvements north of Thorndale Avenue led to the pairing of Alternatives 401 and 402. Each provides comparable travel performance, are similar in cost, and similar in the impact to environmental resources. The alternatives, however, diverge with the consideration of socioeconomic impacts, with

TABLE 19
Comparing the North Leg Improvements (Arterial) for Alternatives 401 and 402

| | Alternative 401 | Alternative 402 |
|---|---|---|
| North Leg Improvement Description | Arterial widening along existing IL 83 corridor | Arterial widening along Elmhurst Road |
| Travel Performance | Comparable overall systemwide travel performance | Comparable overall systemwide travel performance |
| Initial Costs | Lower initial costs ($2.5B) | Higher initial costs ($2.6B, or 4% higher) |
| Environmental Impacts | Comparable potential impacts to regulated water resources, designated lands and archaeological resources | Comparable potential impacts to regulated water resources, designated lands and archaeological resources |
| | Comparable amount of stormwater detention required | Comparable amount of stormwater detention required |
| Socio-Economic Impacts | Comparatively higher socio-economic impacts with North Arterial widening along IL 83 | Lower socio-economic impacts with North Arterial widening along Elmhurst Road: |
| | 23 total building displacements, or 27% higher | 18 total building displacements |
| | $3.3M lost tax revenue, or 17% higher | $2.8M lost tax revenue |
| | 820 employee displacements, or 8% higher | 760 employee displacements |
| Other Considerations | Impacts to community cohesion related to widening IL 83 to 4-through lanes in each direction with new interchanges at major cross roads through the center of Elk Grove Village Industrial Park: | Arterial widening location supports proposed full service interchange at I-90 at Elmhurst Road, as reflected in regional and local plans |
| | Potential impacts to major utility lines including gas pipelines, along with potential interruption of services | Elmhurst Road widening would not result in any apparent community cohesion issues: |
| | Direct impacts to commercial and industrial properties related to partial loss of frontage along IL 83: | Arterial located along boundary between Elk Grove Village and O'Hare Airport |

improvements along the IL 83 corridor creating measurably higher socioeconomic and community impacts. Alternative 401 results in more displacements, job loss, tax loss, and lost business revenue when compared to Alternative 402. Fundamentally, the decision regarding improved transportation in this locale is one that is most compatible with the fabric of the community and the patterns in which the community relates. Alternative 401 does not maintain the relational aspects of the community, and to the contrary are disruptive in ways that could seriously affect the economic competitive position of the community that would require a sizable public and private sector investment to re-establish what would be lost by the implementation of that alternative.

Finalist Roadway System Summary of Findings. Each step of the evaluation of the Finalist Roadway System Alternatives has led to individual conclusions that collectively form the basis for a final determination of the alternatives to be carried forward.

The quantitative scoring and analysis clearly identified 4 alternatives that were measurably superior (Alternatives 202, 203, 401, 402) when considering the 24 evaluation criteria. This conclusion was reached assessing a large array of criteria that addresses every major consideration, including travel performance, initial cost, and environmental and socioeconomic impacts. The integrity of the numeric approach is underscored by the consistency in which it was applied.

A qualitative approach was developed to analyze the differing elements of the alternatives. While, the numeric approach provides insight into the best overall performance characteristics for the alternatives, the qualitative analysis shows how the differing elements of the alternatives affected performance. The findings of this analysis reached similar conclusions to the numeric approach regarding Alternatives 202, 403, 404, and 501. Each of these alternatives consistently showed higher impacts for socioeconomic and environmental criteria considered, and two alternatives (404 and 501) also exhibit design issues that negate their feasibility. Analysis found that Alternative 202 warranted dismissal from further consideration. When comparing the characteristics of the Expansion Alternatives (202 and 203), the key difference lies in a freeway on IL 83 versus the West Bypass corridor. The disproportionately higher socioeconomic impacts associated with the IL 83 Freeway improvement (as compared to the north leg of the West Bypass) singularly support the dismissal of Alternative 202. Therefore, the qualitative analysis concluded with three alternatives (203, 401, and 402) being relatively better than the others.

When the quantitative and qualitative results are combined with the March 11, 2009, stakeholder input, the conclusion becomes apparent. Stakeholder input supports the elimination of alternatives dismissed on the basis of quantitative and qualitative analyses (including Alternative 202) and draws further comparison of Alternatives 401 and 402. The EOWB team considered the stakeholder input and independently evaluated the north leg improvements associated with Alternatives 401 and 402. The team concluded that Alternative 401 was far more disruptive to the community land use economic viability, and reliability of underground utilities, and therefore, that Alternatives 203 and 402 provide the best overall performance.

When considering the results of all three screening methods in total, the evaluation process supports the conclusion that Alternatives 203 and 402 and the No-Action (Baseline) Alternative should be carried forward for detailed consideration in the DEIS.

### 4.3.3 Evaluation and Screening of the North and South Connection Options

Various location options were considered for the West Bypass freeway connections near I-90 and I-294, and for the IL Route 83 Freeway connection at I-90. The options were developed on the basis of locations suggested by stakeholders compiled during Module 1 of 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 9-A, 9-B, 9-C).

An iterative process was used to develop, evaluate, and screen connection options for the IL 83 Freeway and West Bypass. The evaluation considered similar criteria 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 and design performance characteristics of the connection options also were evaluated using a combination of quantitative and qualitative analyses aimed at identifying potential major performance issues with the connection options (see Table 20).

Initial North and South Connection Options Evaluation and Screening. Initially, a broad range of location options was considered:

- North Connection Options A and B were developed for the IL 83 Freeway corridor near the I-90 system interchange. Option A was dismissed as it would not provide a full system interchange at I-90, and it would result in relatively higher socioeconomic impacts and require higher initial costs than Option B.
- North Connection Options A, B, C, D, and E were developed for the West Bypass freeway corridor near I-90. Option D was retained, but Options A, B, C, and E were not.
  - Option A would not provide a full system interchange at I-90 and would have higher socioeconomic impacts, impacts to high quality wetlands, and higher initial costs.
  - Option B would have the greatest socioeconomic impact and also affect high quality wetlands.
  - Option C would have high socioeconomic impacts and floodplain impacts.
  - Option E is virtually identical to Option D but lacking new local access along I-90.
- South Connection Options A, B, C, D, E, F, and G were developed for the 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 Rail Yard.

The evaluation of the North and South Connection Options yielded one location each for the IL 83 Freeway connection (Option B) and the West Bypass north connection (Option D) near I-90. For the West Bypass connection to I-294, Options A, B, C, and D were retained for further consideration.

Refined South Connection Options Evaluation and Screening. The West Bypass South Connection Options (Exhibit 10) were refined and evaluated with 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. Analysis findings for South Connection Options A, B, C, and D (see Table 21) 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 (4 hour construction duration per 24 hour period), and construction staging (longer construction period and remobilization issues) make Option C unworkable.

- **Initial Cost:**
  - Initial estimated costs (construction, right-of-way, engineering) for the options range from $635 million to $804 million (2009 $).
  - Costs for Options B (west of UPRR) and C (over UPRR) were relatively higher than for Options A and D, because these corridors either result in substantial conflicts with major freight rail facilities, requiring more complex and costly construction (C), or, has a higher ROW cost due to the size and type of displacements (B).
- **Environmental Impacts:**
  - Potential natural resource impacts (wetlands, waters, floodplains, threatened and endangered species) and impacts to designated/recreational lands were comparable across all options, with no major impacts to environmental resources along the West Bypass corridor.
- **Socioeconomic Impacts:**
  - Given the developed nature of the improvement corridors, all connection options have substantial socioeconomic impacts. This issue is a key stakeholder concern.
  - There are substantial differences in potential socioeconomic impacts across the evaluation criteria, with mixed results. Option A has the highest relative building displacements and the highest relative impacts to noise sensitive areas, but the lowest overall tax revenue loss and employee displacements. Option B has substantially higher tax revenue loss and employee displacement than the other options, and thus can be viewed as resulting in relatively high socioeconomic impacts as compared to the other connection options.

As with the screening of the Finalist Roadway System Alternatives, evaluation findings and stakeholder input both are important considerations in the screening of the remaining South Connection Options. In addition to the Public Meeting on March 11, 2009, multiple one-on-one meetings were conducted 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 opposition to Option A, which would site a new freeway corridor adjacent to residential areas and displace remaining commercial and industrial properties along County Line Road.
- UPRR expressed strong opposition to Option C, questioning the basic design feasibility and constructability of a new freeway spanning an active mainline freight rail corridor (see Appendix B – UPRR and CPRR Coordination).
- 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).

When considering analysis findings and stakeholder input, Options B and C are clear candidates for dismissal due to design feasibility issues and relatively higher socioeconomic impacts. Option B has socioeconomic impacts that are substantially higher when compared to Options A, C, and D, with $4M in lost tax revenue 1,285 employee displacements. Option C presents major constructability concerns, as documented in coordination with the UPRR; the UPRR would not accept a shoe-fly as it would reduce freight rail operating speeds, and would allow construction operations over their tracks to occur only 4 hours of every 24 hours.

The technical analysis findings show generally comparable performance for Options A and D, with the key difference being the location (Bensenville or Franklin Park) and type (industrial, commercial, or residential) of building displacements. Whereas, the findings show comparable performance, and stakeholder input revealed no clear local consensus with respect to Options A and D, they are proposed to be carried forward for detailed consideration as part of Alternatives 203 and 402 with the DEIS Build Alternatives.

# 5. Alternatives to be Carried Forward

Build Alternatives 203 and 402 (with South Connection Options A and D) along with the No-Action Alternative will be considered in detail in the Tier One DEIS. Build Alternatives consist of roadway improvements described below:

Alternative 203 includes:

- The Elgin O'Hare Extension, a new freeway extending from Meacham Road to O'Hare Airport's west entrance and the West Bypass, which is 3-4 lanes in each direction.
- Widening the existing Elgin O'Hare expressway, from Gary Avenue to Meacham Road, to three lanes in each direction, with auxiliary lanes.
- The West Bypass, a new freeway along the west side of O'Hare Airport extending from I-294 to I-90, which is 3-4 lanes in each direction.
- New interchanges along the proposed freeways, providing connections between freeways and local roadways and updates to existing interchanges.

Alternative 402 includes:

- The Elgin O'Hare Extension, a new freeway extending from Meacham Road to O'Hare Airport's west entrance, which is 3-4 lanes in each direction.
- Widening the existing Elgin O'Hare expressway, from Gary Avenue to Meacham Road, to three lanes in each direction, with auxiliary lanes.

- The West Bypass (South Leg Only), a new freeway along the west side of O'Hare Airport extending from the Elgin O'Hare eastern Extension to I-294, which is 3-4 lanes in each direction.
- Widening Elmhurst Road to three lanes in each direction, from the Elgin O'Hare Extension north to I-90.
- New interchanges along the proposed freeways and updates to existing interchanges.

The Roadway alternatives have a package of supporting multi-modal improvements that are common to both:

- **Transit:** The transit proposal for the project includes 15 corridors with new or enhanced transit service (light rail, heavy or commuter rail, bus rapid transit, arterial rapid transit, express bus, local bus, or local circulator) and operational criteria. Upgrades to transportation centers and new transportation centers are also proposed to improve local and regional modal connections. The transit proposal was shaped through extensive stakeholder input and technical analyses, with the objective of improving modal opportunities and connections, and reducing dependence on automobile travel. Proposed transit improvement corridors and transportation centers are illustrated on Exhibit 11.
- **Bicycle/Pedestrian**: A bicycle and pedestrian improvement framework plan will be prepared and presented in the Tier One DEIS. Improvements would complement the roadway and transit system, with the objective of providing non-motorized connections to employment, activity centers, and recreational facilities. The framework will focus on filling the gaps in bicycle trail and pedestrian paths in order to provide better connections to transit stations, transportation centers, park and ride facilities, community activity centers, regional trail systems, and employment areas.
- **TSM and TDM**: Transportation system management (TSM) and transportation demand management (TDM) applications are other important features of proposed transportation improvements in the study area. TSM applications make transportation facilities function more effectively, work more reliably, and operate more safely. They encompass such improvements as modernized traffic signal control systems that adjust themselves to optimize traffic flow, freeway traffic flow management, incident detection and response, system surveillance, and traveler information services. Many of these TSM strategies are already in use in the study area. TDM strategies are designed to decrease vehicle demand on the roadway system by increasing vehicle occupancy or changing the attractiveness of competing modes. TDM activities currently applied in the study area include rideshare programs, employer activities, and public education programs. A general framework for enhancing TSM and TDM applications to optimize the overall efficiency of the transportation system will be prepared and presented in the Tier One DEIS.