

## 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.