SECTION 3

Alternatives

This section describes the project alternatives and the process used to develop, evaluate, screen, and refine them. The content is structured to provide an understanding of the methodology that began with the consideration of many alternatives and resulted in the selection and evaluation of two roadway build alternatives. Also included are a package of supporting transit, freight, and bike and pedestrian improvements that are common to both alternatives. 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 D).

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 build alternatives described in this section represent a consensus driven outcome derived from more than 100 stakeholder meetings. Stakeholders participated directly in defining transportation problems, identifying environmental and community constraints, identifying transportation improvements to consider, identifying the locations of those improvements, and identifying the 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 to be carried forward in the Draft EIS. 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 build alternatives.

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 will occur with the development of the Final EIS and conclude with the identification of the Preferred Alternative. During this step, further refinement of the build alternatives may be warranted prior to selection of the Preferred Alternative based on stakeholder input from the Draft EIS and Public Hearing.

A key aspect of the process was an extensive stakeholder outreach program that was integrated with IDOT's CSS[1] policies. From project inception through refinement of alternatives to selection of alternatives to be analyzed in the Draft EIS, roughly 125 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 Draft EIS. Several underlying assumptions guided the alternatives development 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,

[1] 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.

and improve modal opportunities and connections). A two-part approach was used to identify transportation problems: (1) extensive stakeholder coordination;[2] and (2) a comprehensive technical analysis of transportation system performance[3] 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,[4] 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,[5] 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.

[2] 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.

[3] Documented in the Transportation System Performance Report (TSPR) (FHWA and IDOT, 2009).

[4] The model is based on information used by CMAP.

[5] 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.