

1. Introduction

In the fall of 2007, the Illinois Department of Transportation (IDOT) commenced a study to examine multimodal transportation improvements for the Elgin O'Hare-West Bypass (EO-WB) 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 *Final Transportation System Performance Report (TSPR)*, completed in April 2008 and finalized in July 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 solutions in the study area with a clear understanding of what the problems are and why they are occurring. This *Alternatives Report* details the alternatives development and evaluation process, along with the study findings, and serves as back up documentation for the Draft Environmental Impact Statement (EIS).

1.1 Study Overview

The EO-WB study was undertaken to address the transportation needs in northeast DuPage and northwest Cook counties, as cited in regional transportation plans (RTPs) published since the 1960s. Strategies for new or expanded transportation corridors and public transportation linkages in the area have been studied since that time, and recommendations have been made for improving transportation mobility and reliability in this major regional and national transportation hub.

Highway transportation planning has long focused on providing improved travel mobility and reliability in the area. The Elgin O'Hare corridor was first introduced as a proposed east-west highway facility in 1967 to connect growing communities in western DuPage County and Kane County with Cook County and Chicago to the east. Construction of the first phase of the Elgin O'Hare Expressway between Hanover Park and Itasca was completed in 1993, with an eastern terminus adjacent to the Thorndale Avenue corridor. The Illinois State Toll Highway Authority (ISTHA) first studied the O'Hare Bypass concept in 1987. The objective of the bypass concept was to relieve congestion and to distribute traffic more effectively along the interstate system. A proposal for western access to O'Hare International Airport (O'Hare Airport) recently was adopted as part of the *O'Hare Airport Layout Plan* (2005).

The rapidly growing travel and mobility demand in the region has outpaced the capacity of the region's transportation infrastructure, resulting in transportation facilities characterized by congestion, traffic delays, and increased frequency of incidents. These conditions, coupled with the unique multimodal constraints and opportunities in the area, underscore the need for a comprehensive and innovative transportation planning solution.

In 2005, the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU) was signed into law. The Act authorizes federal surface transportation programs. It includes \$140 million in earmarked funding to initiate project development for the EO-WB project. As a result, a planning process was initiated to develop a comprehensive, multimodal transportation system solution. The results of this planning effort, documented in

a Tier One Environmental Impact Statement complies with the requirements of the National Environmental Policy Act (NEPA) document. This effort provides a foundation for implementing reliable and convenient transportation, to improve the quality of life for surrounding communities, and to sustain the region's future economic health and growth.

1.1.1 Study Area Description

The original study area (see Exhibit 1-1) established at the outset of the project generally is bounded by I-90 (the Jane Addams Tollway, formerly the Northwest Tollway) to the north, the Eisenhower Expressway (I-290) to the south and west, and the Tri-State Tollway (I-294) to the east. That area represents the general boundaries within which major potential improvements will be considered to address the project's purpose and need. As the project team began detailed traffic modeling of project alternatives, it became apparent that complementary off-system improvements would be needed both within and outside the original study area to address changing traffic patterns. Therefore, the study area was expanded to the west to include corridors where complementary capacity improvements may be needed, including the length of the existing Elgin O'Hare Expressway from I-290 to its western terminus in Hanover Park (see Exhibit 1-1). See Chapter 5, Finalist System Alternatives, for further detail of why and how the study area was expanded.

The total study area covers slightly more than 127 square miles in the Chicago metropolitan area and is represented by 27 communities and the 2 most populous counties in the state (Cook and DuPage). The core communities within the study area are Elk Grove Village, Bensenville, Itasca, Wood Dale, Schaumburg, and Roselle, each with boundaries essentially wholly contained inside the area. Approximately 509,900 individuals, or 5.3 percent of the Chicago metropolitan area's 9.7 million people, reside within the EO-WB study area (Source: CMAP estimates). The study area is roughly 15 miles from the center of Chicago and is characteristically suburban. It contains a large percentage of industrial and transportation land uses, and core communities within the study area show similar land use patterns. The presence of several major transportation facilities in the study area accounts for the unusually large percentage of transportation demand. Among the major facilities within the study area is O'Hare Airport, with airport properties that total more than 7,000 acres. Major roadway facilities are also present: I-294, I-90, I-290, I-190, I-355, IL 53, and the Elgin O'Hare Expressway. Major freight and commuter rail, whose operators include Union Pacific Railroad (UPRR), Canadian National (CN), Canadian Pacific Railway (CPRR), and Wisconsin Central, also cross the study area and operate freight yards, including the Bensenville rail yard, and intermodal transfer facilities in the area. These major transportation facilities make up a transportation hub within the region that has influenced the area's industrial and commercial development patterns.

The study area is a major economic center in the Chicago metropolitan region. It has more jobs than residents, which is attributed to its proximity to major transportation infrastructure. Based upon 2006–2007 estimates, there are 569,500 jobs within the study area, or 11.1 percent of the overall metropolitan employment total. With implementation of the *2030 Regional Transportation Plan (RTP)*, the Chicago Metropolitan Agency for Planning (CMAP) estimates a 2030 employment forecast for the study area of 687,500 jobs, or a growth of nearly 120,000. Factors influencing this growth are the study area's central location within the metropolitan area and its proximity to O'Hare Airport. Roughly 5.3 percent of the Chicago metropolitan area's population, or 509,900 individuals, reside in the EO-WB study area. CMAP estimates the study area population for 2030 to be 533,130, a slight increase from current levels.

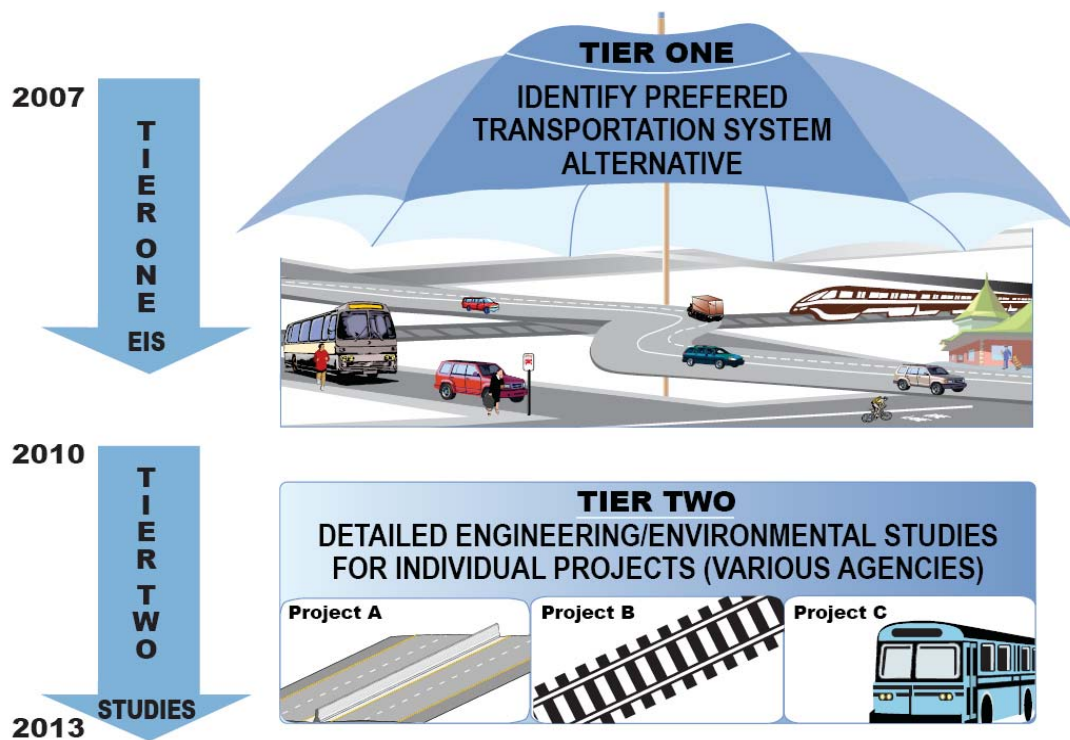
1.1.2 Study Process

The EO-WB project has two lead agencies: the Federal Highway Administration (FHWA) and the Illinois Department of Transportation (IDOT). The project is being conducted in accordance with the NEPA and its associated regulations. Also, the project will be developed in conformance with IDOT's Context Sensitive Solution (CSS) policy and procedures. The CSS process seeks stakeholder input to transportation solutions that fit into and reflect their surroundings.

The EO-WB planning process will be completed in two parts, or tiers (see Exhibit 1-2). Tier One is the focus of the current effort. It consists of a broad planning process that includes an examination of the transportation needs, evaluation of transportation system alternatives at a broad system planning level, and consideration of environmental and human impacts of the alternatives using existing and available data. Tier One will identify the general location and character of various transportation system improvements, and disclose the potential beneficial and adverse impacts of proposed system alternatives in an EIS. The Tier One EIS will conclude with a Record of Decision (ROD) that will document the following:

- A preferred conceptual plan for multimodal transportation improvements in the EO-WB study area
- Priority components of the conceptual plan that have operational independence and may be implemented in phases by the respective jurisdictional agencies
- Early consideration of funding options

EXHIBIT 1-2
Elgin O'Hare - West Bypass Planning Process



Tier Two studies will commence after the conclusion of Tier One for elements of the conceptual plan that have operational independence. Tier Two studies will consist of traditional Phase I engineering and environmental studies, including consideration of design alternatives, for operationally independent elements of the recommended Tier One system alternatives. The Tier Two studies will be performed by implementing agencies responsible for the individual system improvement components and will result in the following:

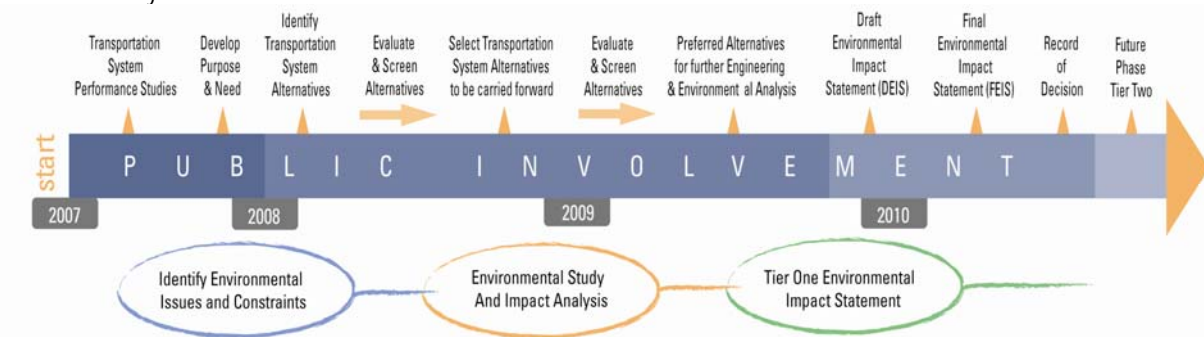
- Identification of design details, environmental impacts, and mitigation measures for improvements with operational independence
- Conclusion of the NEPA process for improvements with operational independence
- Identification of project funding strategies

The current Tier One project development process has the following major steps:

- Project initiation and scoping, including various agency notifications, project organizational activities, and EIS scoping activities
- Assessment of the “state of the transportation system” today and in the future, and preparation of the TSPR detailing transportation performance issues and gaps
- Identification of the purpose of and need for the project
- Development of a broad range of multimodal transportation system alternatives through an iterative four-step process – Module 1, Modal Strategies; Module 2, Initial System Strategies; Module 3, Finalist System Alternatives; and Module 4, Preferred System Alternative – including the evaluation of alternatives and their associated environmental consequences
- Preparation and circulation of the EIS, which will ultimately support the identification of the recommended transportation system alternatives.

Exhibit 1-3 illustrates the overall Tier One project development process and schedule.

EXHIBIT 1-3
Tier One Study Timeline



1.1.3 Relationship to Ongoing Studies and Planning Efforts

Studies and reports related to transportation initiatives in the study area were gathered from regional planning agencies and transportation providers in the early stages of the EO-

WB project. Those documents either defined capital improvements to be implemented over a specific period of time, or proposed potential future improvements. Committed projects identified in these documents were used to establish the project baseline condition for the planning period (2030 No-Action Alternative), while other potential future improvements were incorporated as appropriate into the range of alternatives being considered with this project.

The EO-WB project has taken into account the following relevant transportation planning and programming documents:

- **Chicago Metropolitan Agency for Planning 2030 RTP** – The RTP represents the regionally endorsed transportation plan and its underlying land use assumptions, and thus serves as the foundation for project development efforts. Projects identified in the 2030 RTP, with the exception of the major potential improvements under consideration with this study (the Elgin O’Hare Extension and the West Bypass) are committed projects, and as such are included in the 2030 No-Action Alternative.
- **IDOT Highway Improvement Program** – The *FY 2008–2013 Transportation Highway Improvement Program* identifies committed highway improvement projects based upon funding availability and system improvement priorities.
- **Illinois State Toll Highway Authority Congestion Relief Program** – The Illinois State Toll Highway Authority (ISTHA) *FY 2005–2016 Congestion Relief Program* identifies projects to modernize and rebuild the 274-mile tollway system in northern Illinois, including various committed capacity and access improvements on the tollway system.
- **Cook County 2006–2010 Highway Transportation Plan** – The *2006–2010 Highway Transportation Plan* is a five-year forecast guide that identifies proposed safety, infrastructure preservation, and capacity improvement projects on the Cook County highway system.
- **DuPage County Comprehensive Road Improvement Plan** – The County plan identifies roadway improvements required to meet future transportation needs for a 10-year period extending from FY 2005 to 2014.
- **Cook-DuPage Corridor Study** – This is an ongoing joint Regional Transit Authority-IDOT study to develop a multimodal plan for a 30-square-mile area centered on the I-88 and I-290 corridors. The study is evaluating a series of transit and highway proposals that will be considered as part of the EO-WB alternatives development process.
- **DuPage Area Transit Plan** – This plan, developed by the DuPage Mayors and Managers Conference, recommends short-, mid- and long-term improvements for all modes of public transportation (bus, rail, dial-a-ride) serving the county through 2020. Proposals identified in this plan will be considered as part of the EO-WB alternatives development process.
- **Pace Bus System Vision 2020 Plan** – The *Vision 2020 Plan* recommends new services and infrastructure improvements to make public transportation more widely available to the suburbs. Proposed service expansion projects are identified in Pace’s *Vision 2020*:

Blueprint for the Future will be considered as part of the EO-WB alternatives development process.

- **Metra STAR Line Feasibility Study**—The *STAR Line Feasibility Study* addresses the feasibility of the proposed Metra STAR Line, a commuter rail line that would connect several Metra lines, linking municipalities near Joliet to Aurora, north to Elgin and Hoffman Estates, east to Schaumburg and Arlington Heights and terminating at O'Hare Airport/Rosemont. The STAR Line corridor from O'Hare to Joliet is included in the 2030 RTP, and therefore is recognized as a committed project in the 2030 No-Action Alternative.
- **West O'Hare Corridor Economic Development Study**—The West O'Hare Corridor Implementation Team (WOCIT) in alliance with DuPage County initiated planning efforts for a long-term economic development vision in anticipation of future transportation improvements within the EO-WB study area. WOCIT is a group of agencies and organizations that promote efficient, logical and beneficial transportation, land use and economic development solutions. The study focused on transportation infrastructure, economic impacts, and land use. It was conducted with community and stakeholder outreach between DuPage County and DuPage communities in the area of O'Hare Airport to create a vision for future development based on factual characteristics of the area combined with realistic market potential. Relevant strategies identified through the study effort will be incorporated into the alternatives development and evaluation process for the EO-WB project.

1.2 Organization of Report

1.2.1 Report Content Overview

This *Alternatives Report* is organized to present the four interrelated steps of the alternatives development and evaluation process for the EO-WB project. It begins with a description of the alternatives objectives, process overview, procedures, and criteria in Chapter 2. The remaining chapters correspond to the four steps of the alternatives development process (Modules 1 through 4) as follows:

- **Chapter 3, Modal Strategies**, summarizes Module 1 of the alternatives development and evaluation process. The objective of this step is to inventory transportation technologies that could be used to address transportation issues in the study area (i.e., roadway, transit, and travel demand and system management improvements). This section describes potential modal technologies (the "toolkit"), stakeholder input, conclusions and recommended modal strategies to be used to develop complete multimodal transportation system alternatives.
- **Chapter 4, Initial System Strategies**, summarizes Module 2 of the alternatives development and evaluation process. The objective of this step is to develop, test, and identify a set of roadway system strategies that address purpose and need, and to identify a set of complementary transit system strategies. The section contains an overview of system design and evaluation procedures for Module 2, a description of the 15 initial roadway and transit system strategies considered, evaluation findings, and the

10 roadway strategies to be carried forward for development of the Finalist Roadway System Alternatives.

- **Chapter 5, Finalist System Alternatives and Build Alternatives**, summarizes Module 3 of the process. The objective of this step is to identify the optimal performing multi-modal transportation system alternatives for detailed consideration as Build Alternatives in the Tier One EIS. This section includes an overview of system design and evaluation procedures, a description and evaluation of the alternatives considered (10 Initial Roadway System Alternatives, seven Finalist Roadway System Alternatives, various transit improvements, and two multi-modal Build Alternatives), and evaluation findings including their transportation performance, environmental impacts, and social impacts.
- **Chapter 6, Preferred System Alternative**, summarizes Module 4, whose objective is to refine the remaining Build Alternatives on the basis of comments related to the Draft Tier One EIS, and to identify a Preferred Alternative to be presented in the Final Tier One EIS. This chapter will be developed following circulation of the Draft Tier One EIS, and will describe potential conceptual design refinements, as well as features and performance characteristics of the Preferred Alternative.

1.2.2 Relationship to Other Study Documents and Project Decisions

This *Alternatives Report* is one among many interrelated documents that support the EO-WB project development and decision process. As described in Section 1.2.1, it presents a comprehensive discussion of the range of multimodal transportation system alternatives considered to address the project purpose and need and to address transportation issues and gaps described in the TSPR. The TSPR contains a detailed discussion of travel performance issues both today and in the planning horizon year (2030), and thus serves as the starting point for developing transportation system solutions. The *Alternatives Report* contains detailed technical descriptions of the alternatives considered and a comparative performance evaluation. Findings presented in the *Alternatives Report* were used to support the Tier One EIS, in particular the evaluation of alternatives as described in Section 3 of the EIS.