

## 3.5 Performance Comparison of Alternatives Carried Forward

### 3.5.1 Travel Performance Measures

The travel performance of the build alternatives is similar, but do show some differences when compared to the No-Action Alternative. The similarity in performance is attributed to many features of the alternatives being the same with the exception of the north leg either as a freeway or improved arterial. The travel performance of each build alternative was conducted with the use of an alternative-specific population and employment forecast that was developed with the aid of CMAP (a process acknowledged by CMAP to be appropriate). The relative performance of each alternative is described for several criterion including VMT, vehicle hours of travel (VHT), VHD, regional travel efficiency, decreased congestion on secondary roads, network speed, transit ridership, and others.

#### 3.5.1.1 Alternative 203

For Alternative 203, the Elgin O'Hare Expressway component has the greatest impact in terms of traffic growth and traffic pattern changes. Estimates from the travel model show that the year 2030 bidirectional average daily traffic (ADT) along the Elgin O'Hare Expressway improvement from I-290 to the O'Hare West Bypass ranges from 179,000 to 246,000, and that from Gary Avenue to I-290 ranges from 122,000 to 203,000. These volumes clearly show that the corridor operates as a primary travel route for traffic to and from the west of the study area.

The other major component of Alternative 203 is the O'Hare West Bypass corridor, which has two distinct travel patterns: to the north and to the south. The connection to the south operates as a parallel travel corridor to I-290, thereby supporting travel patterns to and from the west to the south. The bidirectional ADT along with the south bypass connection ranges from 120,000 to 195,000. The connection to the north operates as a connector facility between the Elgin O'Hare Expressway improvement, O'Hare West Bypass, the I-90 corridor, and has bidirectional ADT ranging from 165,000 to 204,000.

Table 3-16 summarizes the systemwide travel characteristics. The daily VMT is 23.0 million, and freeway facilities account for almost 67 percent of the total VMT, thereby supporting efficient travel entering, leaving, and through the study area.

TABLE 3-16  
Systemwide Travel Performance Measures—Build Alternatives (Daily)

| Performance Measures | Alternative 203 | Alternative 402 |
|----------------------|-----------------|-----------------|
| VMT                  | 22,971,000      | 22,669,000      |
| VHT                  | 718,000         | 719,900         |
| VHD                  | 209,300         | 209,800         |

#### 3.5.1.2 Alternative 402

For Alternative 402, the Elgin O'Hare Expressway component also has the most significant impact in terms of traffic growth and traffic pattern. Bidirectional ADT along the Elgin O'Hare Expressway improvement from I-290 to the O'Hare West Bypass ranges from 176,000 to 263,000, and from Gary Avenue to I-290 ranges from 151,000 to 238,000. Like Alternative 203, this component of Alternative 402 operates as a primary travel corridor for traffic to and from the west of the study area.

For Alternative 402, the O'Hare West Bypass component is limited to the south section connecting the east-end of the Elgin O'Hare Expressway improvement and I-294. The connection to and from the north is served by an arterial improvement on York Road. Similar to Alternative 203, the south bypass operates as a parallel travel corridor to I-290, thereby supporting travel patterns to and from the west going south. Bidirectional ADT along with the south section of the bypass ranges from 130,000 to 203,000. The improvement along York Road facilitates travel from the I-90 corridor accessing the west side of O'Hare and local travel in the study area. It does not serve as a through traffic corridor like the north bypass connection does in Alternative 203. Bidirectional ADT along York Road ranges from 36,000 to 59,000.

Table 3-16 summarizes the systemwide travel characteristics for Alternative 402. The daily VMT is 22.7 million. Freeway facilities accounted for almost 68 percent of the total VMT, thereby supporting through and efficient travel to and from the west, which is the predominant travel pattern observed in the study area.

Both build alternatives would manage the increased VMT and provide efficient travel in and through the study area. This is measured as a percent increase in regional travel efficiency in the study area. For Alternative 203, there is a net increase of 10 percent over the No-Action Alternative. For Alternative 402, there is an increase of eight percent (Table 3-17). For this measure, Alternative 203 provides an additional benefit with the north freeway connection facilitating better through travel in the study area, carrying most of through travel on access controlled facilities, as opposed to Alternative 402, where the arterial improvement on York Road/Elmhurst Road acts as a local connection between I-90 and the Elgin O'Hare Expressway improvement.

Both alternatives demonstrate the ability to manage more traffic efficiently by reducing delay on the system. The reduction in congestion is demonstrated by the build alternatives reducing congestion on secondary roadways. Exhibit 3-16 shows the traffic demand for the build alternatives. The freeway/interstate and tollway facilities (access controlled facilities) carry most of the traffic in the study area, supporting through travel and access to the study area. The Elgin O'Hare corridor acts as an additional parallel route to support the east-west travel choices through the region along with providing direct access to O'Hare Airport. The access controlled facilities are well connected at various locations reducing the need for using localized facilities as through travel and cut through routes thereby facilitating the use of the secondary roadway facilities for local area access and travel choices. Alternative 203 performs the best with a reduction in congested VMT on secondary roads during the P.M. peak period by 15.2 percent (see Table 3-17). Alternative 402 reduces congestion on secondary roads by 12.3 percent when compared to the No-Action Alternative. The reduction in congestion yields increases in average speeds on the system, and as shown in Table 3-17, network speed on the principal arterials would increase by eight percent under Alternative 203 and by seven percent under Alternative 402.

Another way to illustrate improved travel conditions on the roadway system is to compare changes in travel speed and roadway capacity with the improvements. Exhibit 3-17 shows where future (2030) speeds and capacity either improve or decline with the build alternative compared to the baseline condition. The findings show that Alternative 203 would improve speed and capacity on 70 percent of the study area roadways, whereas Alternative 402 would improve 71 percent.

TABLE 3-17  
Systemwide Travel Performance Comparisons—2030 Baseline and Build Alternatives

| Alternatives   | 2030<br>Baseline | Build<br>Alternative 203 | Build<br>Alternative 402 |
|--|------------------|--------------------------|--------------------------|
| Percent Increase in Regional Travel Efficiency in Study Area   | —                | 10%                      | 8%                       |
| Percent Decrease in Congested VMT on Secondary Roadways (P.M. Peak)                                  | —                | 15.2%                    | 12.3%                    |
| Percent Increase in Network Speeds on Principal Arterials (P.M. Peak)                                | —                | 8%                       | 7%                       |
| Improve O'Hare West Access—Travel Time Savings from the Study Area West to O'Hare                    | —                | 49%                      | 47%                      |
| Improve Accessibility—Percent Increase in Trips within Five Minutes to Interstate/Freeway facilities | —                | 50%                      | 41%                      |
| Percent Increase in Transit Trips  | —                | 37%                      | 34%                      |

Improving access to the west side of O'Hare Airport is one of the key elements of the purpose of and need for the project. The Elgin O'Hare Expressway extension facilitates effective and efficient travel to and from the west, which has the highest forecast demand as part of the project. Both alternatives demonstrate the ability to save significant travel time to access O'Hare west. For select trips, Alternative 203 will improve travel times from the west by 49 percent and Alternative 402 improves the travel times by 47 percent.

Along with improved access to O'Hare, the study area will benefit from additional interchange locations providing effective connections to freeway and interstate facilities. Both alternatives substantially increase the number of trips within five minutes of a freeway. As compared to the No-Action Alternative, Alternative 203 would increase trips by 50 percent, and Alternative 402 by 41 percent.

The proposed transit improvements improve transit trips for the build alternatives. Alternative 203 would increase the number of transit trips by 37 percent over the No-Action Alternative, and Alternative 402 by 34 percent.

### 3.5.2 Cost

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

### 3.5.3 Financing Strategies

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

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

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

The alternative funding methods include the following:

- Credit Instruments
  - Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA): A new Federal transportation credit program authorized as part of Transportation Equity Act (TEA)-21 that provides direct Federal loans, lines of credit, and loan guarantees provided through U.S. Department of Transportation (USDOT) to large projects of national significance, under criteria developed by Congress. However, Illinois does not have enabling legislation to allow for TIFIA assistance in transportation financing.
  - Section 129 Loans: Section 129 of Title 23 of U.S. Code permits states to use federal funds to make loans to any federally eligible project. The loans must be repaid with a dedicated, nonfederal source. Illinois does not have enabling legislation in place to use Section 129 loans for surface transportation projects.
- Grant Management Initiatives and Techniques
  - State Infrastructure Banks (SIBs): A state or multistate revolving fund that provides loans, credit enhancement, and other forms of financial assistance to surface transportation projects. Illinois does not have enabling legislation in place to allow for use of the SIB at this time. Such legislation must designate how the SIB would be funded and how it would operate.
  - Grant Anticipate Revenue Vehicle Bonds (GARVEEs): A GARVEE is any bond or other form of debt repayable, either exclusively or primarily, with future federal highway funds under Section 122 of Title 23 of the U.S. Code. Although the source of payment is federal funds, GARVEEs cannot be backed by a federal guarantee but are issued at the sole discretion of, and on the security of, the state issuing entity. At this time, Illinois does not have enabling legislation to allow GARVEEs for transportation financing.

- Tapered Match: TEA-21 section 1302 removed the requirement that federal share of project costs be applied to each progress payment, thereby allowing the FHWA to establish a more flexible matching share policy for progress payments, as long as the appropriate matching ratio is achieved by the end of the project. Tapered match may be useful when the government sponsor lacks the funds needed to match a federal project at the start but will accumulate the match over the life of the project. The state, when requesting a tapered match, should include in its request for project approval, a statement that tapered match will achieve earlier project completion, reduced project costs, or allow additional nonfederal funds to be leveraged for the project. With or without the authorization of tapered match, the state remains committed to providing the required nonfederal share of project costs. The state must also be able to control the federal share amount in its billing system.
- Public and Private Partnerships (PPP): A contractual agreement that is formed between public and private sector partners, which allows more private sector participation in the delivery or operation of a transportation project than is traditional. The agreements usually involve a government agency contracting with a private company to renovate, construct, operate, maintain, and/or manage a facility or system. While the public sector usually retains ownership in the facility or system, the private party will be given additional decision rights in determining how the project or task will be completed. The term public-private partnership defines an expansive set of relationships from relatively simple contracts (e.g., A+B contracting), to development agreements that can be very complicated and technical (e.g., design-build-finance-operate-maintain). PPP projects are often undertaken to supplement conventional procurement practices by taking additional revenue sources and mixing a variety of funding sources, thereby reducing demands on constrained public budgets. However, Illinois does not have enabling legislation to allow for PPPs in transportation financing.

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

### 3.5.4 Implementation Strategy and Tier Two Studies

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

Because the implementation of either build alternatives will be costly, the work likely will likely be completed over time in phases or sections. Phased construction of highway projects are guided by the definition of operational independence – an operationally independent phase of work is a portion of the work described in this environmental document that can

be built and function as a viable transportation facility even if the remainder of the work is never built. Environmental commitments (wetland mitigation, relocation assistance of residents or businesses, etc.) associated with the phase of work to be built must be implemented as part of the project. Potential phased implementation scenarios for proposed highway projects will be considered in detail with future Tier Two studies. Ultimately, a detailed implementation plan for improvements will be developed, per Section 6002 guidance, establishing a proposed sequence for implementing highway projects with operational independence based on funding scenarios and schedules.

A preferred transportation system alternative, specifically the proposed package of highway projects identified in Tier One, will be advanced for Tier Two studies. Whereas a detailed implementation plan and funding sources have not yet been established, this approach will allow completion of the required NEPA studies for all highway improvements in Tier Two. Tier Two will consist of detailed Phase I engineering and environmental studies of the proposed highway improvements, including consideration of design alternatives and of complementary improvements (e.g. travel demand management strategies and transportation system management improvements), their environmental consequences, and of proposed environmental mitigation measures. Study findings will be presented in the *Tier Two Environmental Impact Statement and Record of Decision*.

The phased implementation of the project would be the focus of Tier Two of this process, where detailed engineering and environmental studies would be prepared leading to final design and construction. The development of a phased improvement plan can only be generally defined in Tier One. Many more details are required to sequence the development of a project of this magnitude. Further work will be done in Tier Two to prepare a development plan for overall implementation of the project.

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