5.3 SURFACE TRANSPORTATION

This section evaluates the potential impacts of the proposed alternatives on the surface transportation system. It describes the traffic modeling methodology, and it presents the analysis of baseline and future traffic conditions that are expected to occur with the No Action Alternative (Alternative A) and each of the three Build Alternatives for each of the four future years of analysis (or construction phases). The modeling was performed by Kimley-Horn and Associates, Inc. as part of the City of Chicago's Consultant Team (CCT). The FAA's Third Party Contractor (TPC) reviewed and concurred with the modeling results. The results of the surface transportation analyses also serve as input into the surface transportation component of **Section 5.6, Air Quality** and **Section 5.1, Noise** analyses. Additional information related to surface transportation is included in **Appendix G**, **Surface Transportation**.

The Background and Methodology section describes the regulatory context for the implementation of surface transportation projects in the Chicago area. The thresholds of significance that are used in comparing the proposed alternatives are defined in this section. The surface transportation analysis methodologies that are employed in this study are also summarized in this section.

The Baseline Conditions section provides a brief overview of the various surface transportation elements that comprise the base year transportation system. These include both on-airport and off-airport facilities for private and commercial vehicles as well as for public transit.

The Alternatives Analysis section compares the No Action Alternative (Alternative A) with the three Build Alternatives (Alternatives C, D, and G) for four future years of analysis defined as Construction Phase I, Construction Phase II, the Build Out phase, and the Build Out + 5 phase. In the Alternative Analysis section, the No Action Alternative (Alternative A) surface transportation conditions that are expected to occur for each future year (or construction phase) are summarized first. This discussion is followed by a summary of the transportation conditions for each of the Build Alternatives. Since Alternative C, Alternative D, and Alternative G, include essentially the same set of surface transportation projects, a single discussion encompasses these three Build Alternatives for each construction phase.

The Alternative Analysis section also summarizes the noteworthy impacts related to the Build Alternatives for each construction phase. This section also includes tables comparing surface transportation performance measures (e.g., intersection level of service and roadway link volume-to-capacity ratios) for the No Action and Build Alternatives at key locations in the surface transportation study area. Intersections and roadway links where the thresholds of significance are exceeded are highlighted in the tables and located on an area map in this section.

5.3.1 Background and Methodology

5.3.1.1 Regulatory Context

The Chicago Area Transportation Study (CATS) is the surface transportation Metropolitan Planning Organization (MPO) for northeastern Illinois, designated by the governor of Illinois and locally elected officials. The CATS planning area covers the six county area of Cook, Lake, McHenry, Will, Kane, and DuPage counties, plus portions of Kendall County. The CATS Policy Committee, the decision-making body for transportation planning, includes representation from throughout the region. CATS and its Policy Committee develop and approve the policies and strategies for the region's transportation system.

CATS is responsible for developing the long-range Regional Transportation Plan (RTP) for northeastern Illinois that is required in order to be eligible to receive Federal funds to improve transit and highway systems. The RTP is based on regional population and on growth projections for households and jobs supplied by the Northeastern Illinois Planning Commission (NIPC). In addition, forecasts of financial resources are used to guide the selection of capital projects to be included in the plan.

A six-year program of surface transportation projects, called the Transportation Improvement Program (TIP),[1] is developed by the various entities responsible for the regional infrastructure and serves as the implementation vehicle for the RTP. The entities include the Illinois Department of Transportation (IDOT), the Illinois State Toll Highway Authority (ISTHA), the City of Chicago, county governments, local governmental units, private transit providers, and the Regional Transportation Authority (RTA) and its service boards: the Chicago Transit Authority (CTA), Metra and Pace. The TIP is the short-term plan for implementing the policies and strategies of the RTP. It is updated continuously and consists of projects that are expected to receive Federal funding, plus other non-federally funded projects of regional significance.

The TIP in turn is used as the basis for conducting the region's transportation focused air quality analysis, which documents conformity with the State Implementation Plan (SIP), in accordance with the requirements of the IEPA and the USEPA. See **Section 5.6, Air Quality,** for further information on the SIP. The conformity analysis must demonstrate that the projects proposed in the TIP will not exceed the air quality "budgets" that have been established to achieve the clean air goals of the region.[2] The TIP identifies Transportation Control Measures (TCMs), which are intended to reduce emissions by reducing the number of vehicular trips. The IEPA has included the emission reduction contributions to be achieved from TCMs as part of the SIP. Additionally, the TIP contains a Congestion Management System (CMS), which is a set of strategies designed to reduce congestion and improve mobility and accessibility. The CMS establishes highway congestion benchmarks in the region and monitors the degree to which the RTP and TIP projects address forecast deficiencies.

[1] Transportation Improvement Program for Northeastern Illinois, FY 2001-2006, 2020 Regional Transportation Plan, Chicago Area Transportation Study, October 2000.

[2] Conformity Analysis Documentation, 2030 Regional Transportation Plan, FY 2004-2009 Transportation Improvement Program, October 2003.

At the time that surface transportation studies for the EIS were initiated, the 2020 RTP[3] and the FY 2001-2006 TIP were the region's approved long- and short-range plans. Current transportation investments in the CATS planning area are now based on the 2030 RTP[4] and the FY 2004-2009 TIP. With regard to the issue of consistency with the surface transportation modeling procedures in this EIS, CATS specifically stated that the methods employed are "consistent and appropriate use of CATS regional data in local traffic operations analysis."[5]

5.3.1.2 Thresholds of Significance

The capacity and operation of a surface transportation network are constrained by the performance of its signalized intersections and the roadway links that comprise the network. For purposes of this EIS, a project is determined to have a significant impact if the performance of these intersections and roadway links fall below certain prescribed thresholds. These thresholds are defined for levels of service (LOS) and volume-to-capacity (V/C) ratios. For this EIS, LOS is used to measure the performance of intersections, and V/C ratios are used to measure the performance of roadway links.

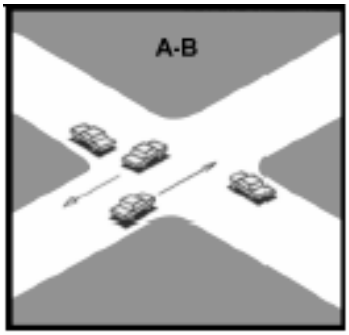
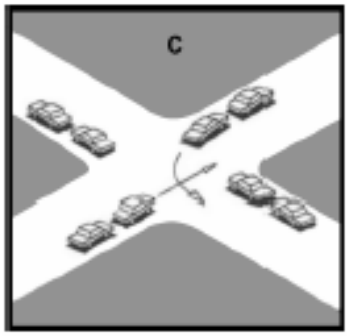
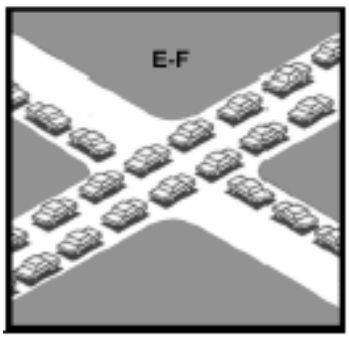
The LOS of an intersection is defined by the amount of delay (in seconds per vehicle) experienced by vehicles traveling through the intersection. The LOS of an intersection is calculated based on its lane configurations, traffic volumes, signal timings, and other factors. LOS A represents the best LOS with the least delay, while LOS F represents intersection breakdown with the highest delay. Although intersections can and do function at LOS F, the traffic speeds are very low and vehicle delays are high, since vehicles may wait through at least one signal cycle to travel through the intersection. LOS values from A through D are considered acceptable for peak period traffic operations. LOS values E and F are considered unacceptable because of the associated severe congestion and long delays. **Table 5.3-1** summarizes and illustrates the LOS delay ranges. For this EIS, a significant impact (threshold of significance) on signalized intersection operations is defined as a decrease in the LOS from an acceptable LOS (e.g., D or better occurring with the No Action Alternative) to an unacceptable LOS (e.g., E or F occurring with the Build Alternatives).

Roadway V/C ratios are defined as the relationship between traffic volumes and a theoretical estimate of the roadway's capacity. A roadway is over-capacity when the V/C ratio is greater than 1.0. For this EIS, a significant impact (threshold of significance) on roadway operations is defined as an increase in the V/C ratio with the proposed Build Alternatives compared to the No Action Alternative (Alternative A) from either:

- *under* or *near capacity* (V/C ratio under 1.0) to *over-capacity* (V/C ratio over 1.0); or,
- *over-capacity* (V/C ratio between 1.0 and 1.2) to *substantially over-capacity* (V/C over 1.2)

[3] 2020 Regional Transportation Plan for Northeastern Illinois, Chicago Area Transportation Study, October 2000.
[4] 2030 Regional Transportation Plan for Northeastern Illinois, Adopted by Resolution, CATS, October 9, 2003.
[5] Letter from Kermit Wies, Chicago Area Transportation Study, to Michael MacMullen, Federal Aviation Administration, May 12, 2003 (included as **Attachment G-1** in **Appendix G, Surface Transportation**.

TABLE 5.3-1
INTERSECTION LEVEL-OF-SERVICE DEFINITIONS

LOS(a)	Interpretation	Delay Range(b)	
A	**Uncongested operations**; all vehicles clear in first green light opportunity.	< 10 seconds	
B	**Uncongested operations**; all vehicles clear in first green light opportunity.	10 – 20 seconds	
C	**Light congestion**; occasional backups on critical approaches.	20 – 35 seconds	
D	**Moderate congestion**; vehicles required to wait through more than one green light opportunity during short peaks.	35 – 55 seconds	
E	**Severe congestion**; some longstanding lines on critical approaches, with blockage occurring if the traffic signal does not provide for protected turning movements.	55 – 80 seconds	
F	**Total breakdown with stop-and-go operations**.	> 80 seconds	

Notes: (a) Level of Service
(b) Seconds per Vehicle

Source: 2000 Highway Capacity Manual. Transportation Research Board, National Research Council, Washington, D.C. 2000.

The surface transportation thresholds of significance are summarized in **Table 5.3-2**.

TABLE 5.3-2
THRESHOLDS OF SIGNIFICANCE

Type	No Action	Build Alternatives	Impact
Signalized Intersection	NA	LOS is A, B, C, or D	Not Significant
Signalized Intersection	NA	LOS is E or F	Significant
Signalized Intersection	LOS is A, B, C, or D	LOS is A, B, C, or D	Not Significant
Signalized Intersection	LOS is A, B, C, or D	LOS is E or F	Significant
Signalized Intersection	LOS is E or F	LOS is A, B, C, D, E or F	Not Significant
Roadway Link	V/C 1.0	V/C 1.0	Not Significant
Roadway Link	V/C 1.0	1.0 < V/C	Significant
Roadway Link	1.0 < V/C 1.2	V/C 1.2	Not Significant
Roadway Link	1.0 < V/C 1.2	V/C > 1.2	Significant
Roadway Link	V/C > 1.2	V/C > 1.2	Not Significant

Note: NA = Not applicable, intersection will not exist or will not be signalized; roadway segment is not yet built.
Source: Jacobs Engineering Group, Inc. [TPC] analysis, 2004.

5.3.1.3 Methodologies

The EIS traffic model was developed for use in the surface transportation analyses and to estimate travel operational patterns that replicate actual roadway link and signalized intersection traffic volumes. The surface transportation modeling process consisted of modeling travel demand and developing evaluation measures for each alternative and for the four future years of analysis. **Exhibit 5.3-1** illustrates the interrelationships between the key elements of the surface transportation model. The specific modeling process is discussed in the following sections.

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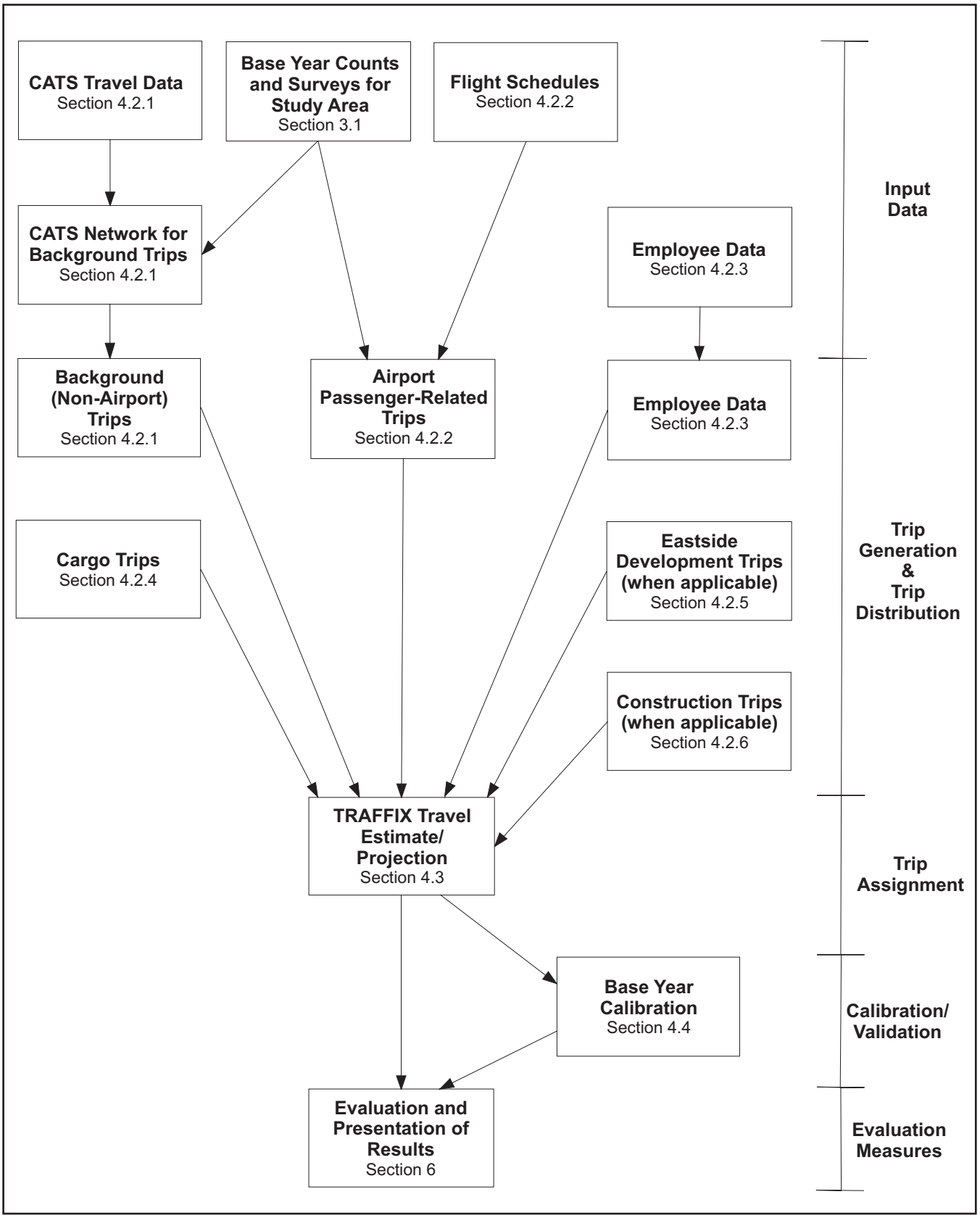

Source: Kimley-Horn & Associates, Inc. [CCT] November 17, 2004

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Surface Transportation Modeling Approach

▶ **Exhibit 5.3-1**

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Defining the Study Area

The study area for the surface transportation analysis, as depicted in **Exhibit 5.3-2,** was defined to capture the major access routes to and from the airport. The study area developed for the surface transportation analysis of the World Gateway Program (WGP) EA was used as a starting point for the surface transportation analysis study area. The WGP EA, for which FAA issued a ROD on June 21, 2002,[6] focused primarily on the east side of the airport, since its main existing and proposed access into the airport was from this direction only. The WGP surface transportation study area was bounded by River Road on the east, Irving Park Road on the south, York Road on the west, and Touhy Avenue/Higgins Road on the north.

The study area for the surface transportation analysis was created by expanding the WGP study area to include the roadway facilities that would likely be used to access the airport from the west. These facilities include York/Elmhurst Road, which could be the primary access route from I-90 to the north; Thorndale Avenue, which will provide access from I-290 to the west; and York Road and Busse Road (IL Route 83), which will provide access from I-290 to the south. In addition, a sensitivity analysis was conducted to evaluate intersections located outside of the designated study area to validate the surface transportation study area. Intersections identified through this sensitivity analyses that are located outside of the designated study area were "post processed", rather than being included explicitly in the larger surface transportation model, and evaluated using the same standard analyses procedures used for intersections located within the designated study area. The methodology for post-processing involved the application of comparable growth percentages to the existing vehicular movement counts for the post-processed intersections. A complete discussion of the development of the study area can be found in **Appendix G, Surface Transportation**.

Documenting Existing Conditions

On-airport and off-airport facilities were inventoried in the study area to define the potentially affected roadways. Surface transportation data representing the 2002 Baseline conditions were developed by collecting and analyzing current field count and other data; reviewing previous studies, surveys, and reports; and using the CATS regional network database. The Baseline data[7] collection and analysis are presented in **Appendix G**. **Appendix G** also references the data from previous studies, surveys, and reports that were used to identify trends and perform checks, with special consideration given to data that were collected prior to September 11, 2001, because of the changes in air travel patterns that have occurred since that date.

[6] Final Environmental Assessment, World Gateway Program, June 2002; Finding of No Significant Impact/Record of Decision, Federal Aviation Administration, June 21, 2002.

[7] Chicago O'Hare International Airport, O'Hare Modernization Program, 2002 Surface Transportation Survey, Technical Memorandum, Summary of Data Collection, Analysis of Survey Results. Kimley-Horn and Associates, June 27, 2002 (revised January 2003).

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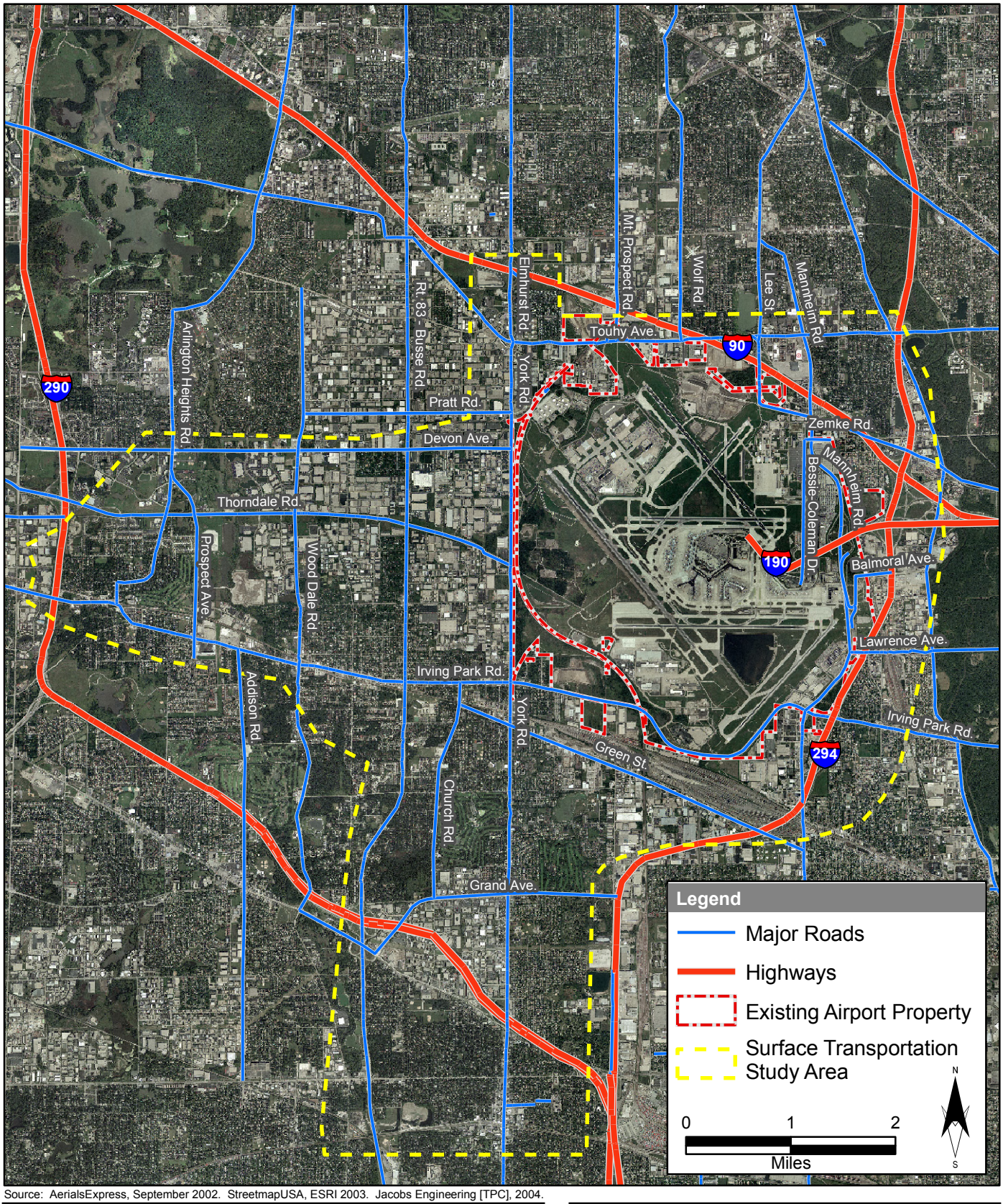

Source: AerialsExpress, September 2002. StreetmapUSA, ESRI 2003. Jacobs Engineering [TPC], 2004.

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Surface Transportation Study Area

▶ **Exhibit 5.3-2**

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Calibrating and Validating the Surface Transportation Model

The surface transportation model was calibrated and validated by comparing the model results for the 2002 Baseline conditions and characteristics with actual field count data. The accurate calibration of the model permitted the preparation of valid projections of roadway and intersection volumes reflecting future changes in the variables affecting surface traffic demands and patterns.

Forecasting Future-Year Traffic Volumes

After calibration, the model was used to estimate future year airport trips. These trips were estimated by incorporating (1) the future year background (non-airport) traffic volumes, as defined by the network included in the existing transportation model, and (2) future projects included in the CATS network for the closest available year revised to include the projects listed in the O'Hare Modernization Project Matrix for the corresponding year. Future-year airport trips were established by applying the projected air traffic volumes for the No Action and Build Alternatives developed from flight schedules, to the surface transportation model, and then adding the estimated employee trips, cargo trips, airport passenger-related trips, construction trips, and Eastside Collateral Development trips.

The surface transportation model involved multiple steps incorporating several commercially available traffic analysis software packages. These include (1) Advanced Landside Performance System (ALPS) which was developed specifically for modeling traffic at airports, (2) TRAFFIX one of many software packages commonly used for traffic impact studies, (3) Synchro Version 5.0, which uses the techniques described in the *Highway Capacity Manual 2000* (HCM)[8] to analyze the efficiency of traffic operations at signalized intersections, and (4) EMME/2 is a traffic modeling tool used by CATS to evaluate travel times for traffic assignment as part of its regional traffic model.

Throughout the surface transportation modeling process the peak hour is defined as 4:30 PM to 5:30 PM. The designation of this period was determined though analysis of the peak month average day (PMAD) airline passenger activity patterns using airport flight activity data, and traffic count data gathered on the study area roadways. A complete discussion of the basis for the selection of this period for the surface transportation peak hour is presented in **Appendix G**, **Surface Transportation**.

Future-Year Intersection LOS

To determine the LOS at each affected intersection a Synchro analysis was prepared for the peak hour conditions for each alternative and year of analysis. **Table 5.3-3** lists the signalized intersections included in the surface transportation analyses. Inputs for Synchro include traffic volumes, lane configurations, and traffic signal timings (phasings, cycle lengths, and phase splits).

[8] Highway Capacity Manual 2000, Transportation Research Board, National Research Council, Washington, D.C., 2000.

Several global assumptions were made to prepare the signalized intersection analyses including: 120-second cycle length; 4-second yellow phases; 2-second red phases; optimized phase splits; and uncoordinated signals. The 120-second cycle length assumption was consistent with the cycle lengths assumed for the signalized traffic studies performed for the *Eastside Development*[9] traffic impact analysis prepared for the WGP EA. In addition, the 120-second cycle length was close to the actual cycle lengths observed in the 1999 *Surface Transportation Data Collection Program*[10] which was prepared for the WGP EA. The four and two second yellow and red phases, respectively, were based on field observations from the 1999 *Surface Transportation Data Collection Program*.

Phase splits were optimized for every intersection analysis. Field observations in 2002 indicated actuated signal operations at existing intersections, and future intersections were also assumed to have actuated signal operation. The intersection red times were calculated by determining the amount of time a vehicle is at a stopped position during each cycle. Red times were calculated for each movement on each approach at each intersection for each scenario.

Future-Year Roadway Link V/C Ratios

To determine the V/C ratios on each affected roadway link peak hour traffic volumes were extracted for each roadway link from the TRAFFIX model output and compared with the calculated roadway capacity. Daily link volumes were derived by dividing the modeled peak hour traffic volumes on each link by the percentage of total daily traffic occurring during the peak hour for on-and off-airport locations (based on the machine traffic count data collected during the 2002 Surface Transportation Survey).

The peak hour roadway V/C ratios were determined by dividing the traffic volumes from the TRAFFIX model by the capacities of the roadways. Roadway capacities were derived from Table A-1 in Appendix B of the CATS 2020 RTP for Northeastern Illinois. This table estimates capacity based on characteristics such as roadway width, availability of curbside parking, and the surrounding area land use types. The roadway link widths and number of through lanes were based on existing conditions and include any planned improvements that are applicable to each future year alternative.

Other evaluation measures analyzed included the peak hour link speeds for arterials which were determined using a formula adapted from the Bureau of Public Roads curves. The initial speed on the link was assumed to be the same as the posted speed limit. Where speed limits were not posted or where links do not yet exist, reasonable speed limits were assumed. To determine daily link speeds, the traffic volumes on each roadway during each hour of the day were estimated using the daily temporal distributions of traffic by hour of the day and the estimated total daily traffic. Based on these volumes, link speeds were calculated for each hour

[9] Traffic Impact Analysis: Eastside Development, Chicago O'Hare International Airport, Kimley-Horn and Associates, Inc., April 2000.

[10] Chicago O'Hare International Airport Environmental Review, Surface Transportation Data Collection Program, Kimley-Horn and Associates, Inc., October 1999.

of the day using the same methodology used for the peak hour. The daily speeds were determined by calculating the average of the hourly speeds, weighted by hourly volume.

Vehicle classifications were determined for both on-airport and off-airport facilities. For the on-airport facilities, the vehicle classification was taken from the ALPS model. IEPA vehicle classifications were used for off-airport facilities.

Temporal distributions were established for the roadway volumes, based on machine traffic count information collected during the 2002 Surface Transportation Survey. Separate temporal distributions were calculated for the on- and off-airport roadways. To calculate the temporal distributions, the total volumes for all days from all relevant machine traffic count locations were summed for each hour of the day. The hourly sums were divided by the sum of all daily traffic to determine the percentage of the total daily traffic occurring in each hour of the day.

Developing Future Year Evaluation Measures

The evaluation measures produced by the surface transportation model were used as inputs for the air quality and surface noise analyses, as well as for assessing the surface transportation environmental impacts of the proposed alternatives. The primary evaluation measures developed for the surface transportation analyses were the LOS occurring during peak hours on intersections and the V/C ratios occurring during peak hours on roadway links.

All major signalized intersections and roadway links considered in this EIS were analyzed by comparing the peak hour traffic demands on each roadway facility with its corresponding peak hour capacity to determine the facility's operational LOS (or V/C ratio). For each facility and each year of analysis, the LOS for the No Action Alternative (Alternative A) scenarios was compared with the corresponding LOS for the Build Alternatives to determine if they would significantly impact that facility. The comparisons were prepared for the forecast conditions in Construction Phase I, Construction Phase II, Build Out phase, and Build Out + 5 phase for both the No Action and Build Alternatives.

In addition, the surface transportation analyses included the development of airport terminal curbfront dwell times, parking lot occupancy levels, and intersection approach speeds which are used in the air quality analyses (see **Appendix G, Surface Transportation**).

TABLE 5.3-3
SIGNALIZED INTERSECTIONS ANALYZED

ID No.	Construction Phase I		Construction Phase II		Build Out		Build Out + 5		Intersection Location
	No Action	Build	No Action	Build	No Action	Build	No Action	Build	
1	X	X	X	X	X	X	X	X	Touhy Avenue & Elmhurst Road
2	X	X	X	X	X	X	X	X	Touhy Avenue & Mount Prospect Road
3	X	X	X	X	X	X	X	X	Touhy Avenue & Wolf Road
4	X	X	X	X	X	X	X	X	Touhy Avenue & Lee Street (West)
5	X	X	X	X	X	X	X	X	Touhy Avenue & Lee Street (East)
6	-	X	-	X	-	X	-	X	Bessie Coleman Drive & Higgins Road
7	X	X	X	X	X	X	X	X	Mannheim Road & Higgins Road
8	-	-	-	X	-	X	-	X	Bessie Coleman Drive & Johnson Road
9	-	X	-	X	-	X	-	X	Bessie Coleman Drive & Zemke Road
10	X	X	X	X	X	X	X	X	Mannheim Road & Zemke Road
11	X	X	X	X	X	X	X	X	Bessie Coleman Dr. & Mannheim Flyover
12	X	-	X	-	X	-	X	-	Bessie Coleman Dr. & Northern Rental Car Road
13	X	X	X	X	X	X	X	X	Bessie Coleman Dr. & Commercial Vehicle Hold Area
14	X	X	X	X	X	X	X	X	Bessie Coleman Dr. & I-190 Westbound Ramps
15	X	X	X	X	X	X	X	X	Bessie Coleman Dr. & I-190 Eastbound Ramps
16	X	X	X	X	X	X	X	X	Balmoral Avenue & Des Plaines River Road
17	X	X	X	X	X	X	X	X	Mannheim Road & Lawrence Avenue
18	X	-	X	-	X	-	X	-	Bessie Coleman Drive & Lot E South
19	X	X	X	X	X	X	X	X	Mannheim Road & Montrose Avenue
20	X	X	X	X	X	X	X	X	Mannheim Road & Irving Park Road
21	X	X	X	X	X	X	X	X	Irving Park Road & Main Cargo Road
22	X	X	-	-	-	-	-	-	York Road & Irving Park
23	-	X	-	X	-	X	-	X	Bessie Coleman Drive & Lot E North
24	X	X	X	X	X	X	X	X	York Road & Green Street
25	X	X	X	X	X	X	X	X	York Road & Thorndale Avenue
26	X	X	X	X	X	X	X	X	Thorndale Avenue & Busse Road
27	X	X	X	X	X	X	X	X	Thorndale Avenue & Wood Dale Road
28	X	X	X	X	X	X	X	X	Thorndale Avenue & Prospect Avenue
29	X	X	X	X	X	X	X	X	Thorndale Avenue & Arlington Heights Road
30	X	X	X	X	X	X	X	X	Devon Avenue & Elmhurst Road
31	X	X	X	X	X	X	X	X	Elmhurst Road & Pratt Boulevard
32	X	X	X	X	X	X	X	X	Devon Avenue & Wood Dale Road
33	X	X	X	X	X	X	X	X	Devon Avenue & Arlington Heights Road
34	X	X	X	X	X	X	X	X	Irving Park Road & Prospect Avenue
35	X	X	X	X	X	X	X	X	Irving Park Road & Addison Road
36	X	X	X	X	X	X	X	X	Church Road & West Grand Avenue
37	-	-	X	X	X	X	X	X	York Road & Irving Park Road Ramp
38	-	-	X	X	X	X	X	X	Irving Park Road & York Road Ramp
39	X	X	X	X	X	X	X	X	Irving Park Road & Wood Dale Road

Notes: X = Signalized intersection will exist.
(-) = Intersection would not exist or would not be signalized.

Source: Jacobs Engineering Group, Inc. [TPC] review of information received from Kimley-Horn and Associates, Inc. [CCT], 2004.

5.3.2 Baseline Conditions

The Airport is surrounded by a well-developed surface transportation system, which includes the Interstate Highway System, regional highways, major arterial roadways, public transit facilities, and railroads. A major expressway/tollway interchange is located just to the east of the Airport. This interchange links the Kennedy Expressway (I-90), the Northwest Tollway (I-90), and the Tri-State Tollway (I-294) with the Airport Access Road (I-190). I-190, which extends from Cumberland Avenue into the Airport, carries most of the vehicular traffic into the Airport's passenger terminals. The traffic on I-190 west of Mannheim Road is almost exclusively airport related (refer to **Exhibit 5.3-2**).

Multiple major arterial roadways border the Airport, such as Mannheim Road (US Route 12/45), Higgins Road (Illinois Route 72), Touhy Avenue, and Irving Park Road (Illinois Route 19). These roadways carry some airport-related traffic, but are primarily used for non-airport related trips.

Data for baseline surface transportation conditions was collected in 2002 in and around O'Hare. This data is summarized in the 2002 Surface Transportation Survey report, and provided in **Appendix G, Surface Transportation.** A detailed discussion of the on- and off-airport surface transportation system is also provided in **Appendix G,** and is briefly discussed below**.**

5.3.2.1 On-Airport Ground Transportation Facilities

On-Airport ground transportation facilities are primarily used by airport passengers, visitors, employees, cargo vehicles, and service and delivery vehicles. The major Airport ground transportation facilities are I-190, the circulation and service roadway system, the terminal curbfront roadways, the Airport Transit System (ATS) and several public and employee parking and rental car facilities. Other on-Airport roadways are Bessie Coleman Drive, Zemke Road, Mt. Prospect Road, Spine Road, Montrose Avenue, Balmoral Avenue, and Main Cargo Road.

5.3.2.2 Interstate Highway 190 (I-190)

I-190 is the primary access roadway to and from the Airport and connects with the regional expressway system. I-190, which ranges from four to eight lanes in width, is located at the junction of two interstate highways: the Tri-State Tollway (I-294) and the Northwest Tollway (I-90). Traffic volumes entering the Airport on I-190 westbound were approximately 2,500 vehicles during the PM peak hour[11] in 2002.

[11] Chicago O'Hare International Airport, O'Hare Modernization Program, Surface Transportation Survey, Kimley-Horn and Associates, Inc. [CCT], January 2003.

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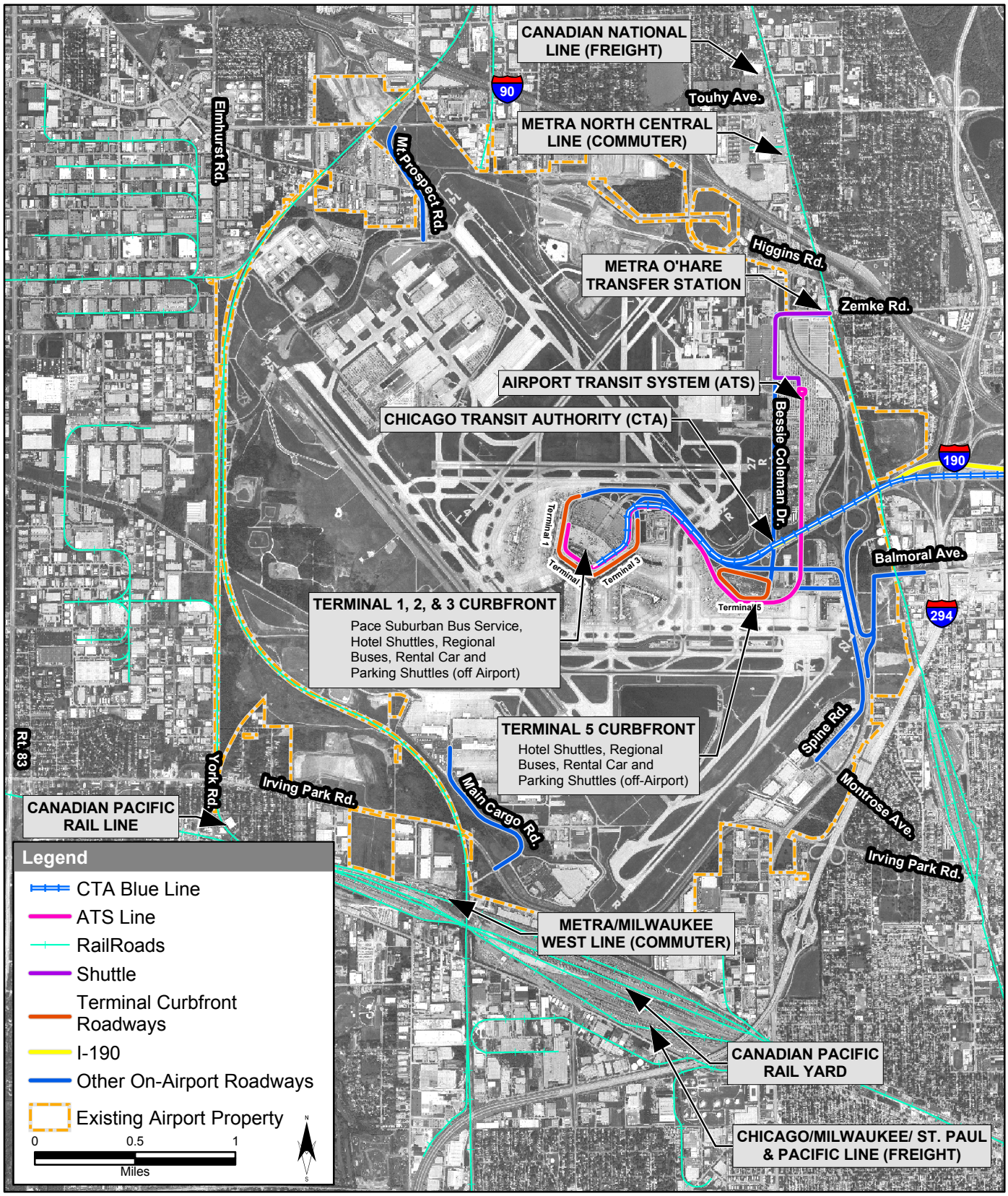

Source: Aerial; Aerials Express, September, 2002 and OMP Land Acquisition Coverage, Ricondo and Associates, Inc. [CCT] 2004.

Chicago O'Hare International Airport

Existing On-Airport Facilities, Including Transit and Rail

O'Hare Modernization Environmental Impact Statement

▶ Exhibit 5.3-3

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5.3.2.3 Terminal Curbfront Roadways

A two-level curbfront roadway serves the domestic terminals (Terminal 1, Terminal 2, and Terminal 3). The international terminal (Terminal 5) is served by a separate two-level curbfront roadway. In 2002, the traffic volumes in the domestic terminal area were approximately 42,000 vehicles per day, and approximately 7,000 vehicles per day entered the Terminal 5 roadway system.[12]

5.3.2.4 Airport Transit System (ATS)

The ATS began operation in the spring of 1993 as a fully automated, electric-powered transit system that transfers passengers between Terminals 1, 2, 3, and 5, and long-term parking. Along the 2.7-mile guideway, five stations are located to serve the three domestic terminals (Terminals 1, 2, and 3), the International Terminal (Terminal 5), and Long-Term Parking (Lot E).

5.3.2.5 On-Airport Roadways

Exhibit 5.3-3 shows other on-airport roadways that provide access to the air cargo facilities, maintenance facilities, public and employee parking lots, commercial vehicle holding areas, and rental car parking. The primary roadways include: Bessie Coleman Drive, Zemke Road, Mount Prospect Road, Main Cargo Road, Spine Road, Montrose Avenue, and Balmoral Avenue.

5.3.2.6 Off-Airport Roadways

Access to the terminal area and support areas is provided by several roadways including the Interstate Highway System, regional highways, arterial roadways, public transportation system, and railroads. **Exhibit 5.3-4** depicts these off-airport roadways.

Three interstate highways are within the project area:

- I-90 (Kennedy Expressway/Northwest Tollway) extends from downtown Chicago, and continues to the north of the Airport where it becomes a part of the tollway system.
- I-294 (Tri-State Tollway) is located on the east side of the Airport.
- I-290 (Eisenhower Expressway and Eisenhower Extension) is located to the west and south of the Airport.

There are also several major arterial roadways that border the Airport. These major arterials include: Touhy Avenue, Mannheim Road (US Route 12/45), Irving Park Road (Illinois Route 19), York Road/Elmhurst Road, Higgins Road (Illinois Route 72), Lee Street, Thorndale Avenue, and Busse Road.

[12] Chicago O'Hare International Airport, O'Hare Modernization Program, Surface Transportation Survey, Kimley-Horn and Associates, Inc.[CCT], January 2003.

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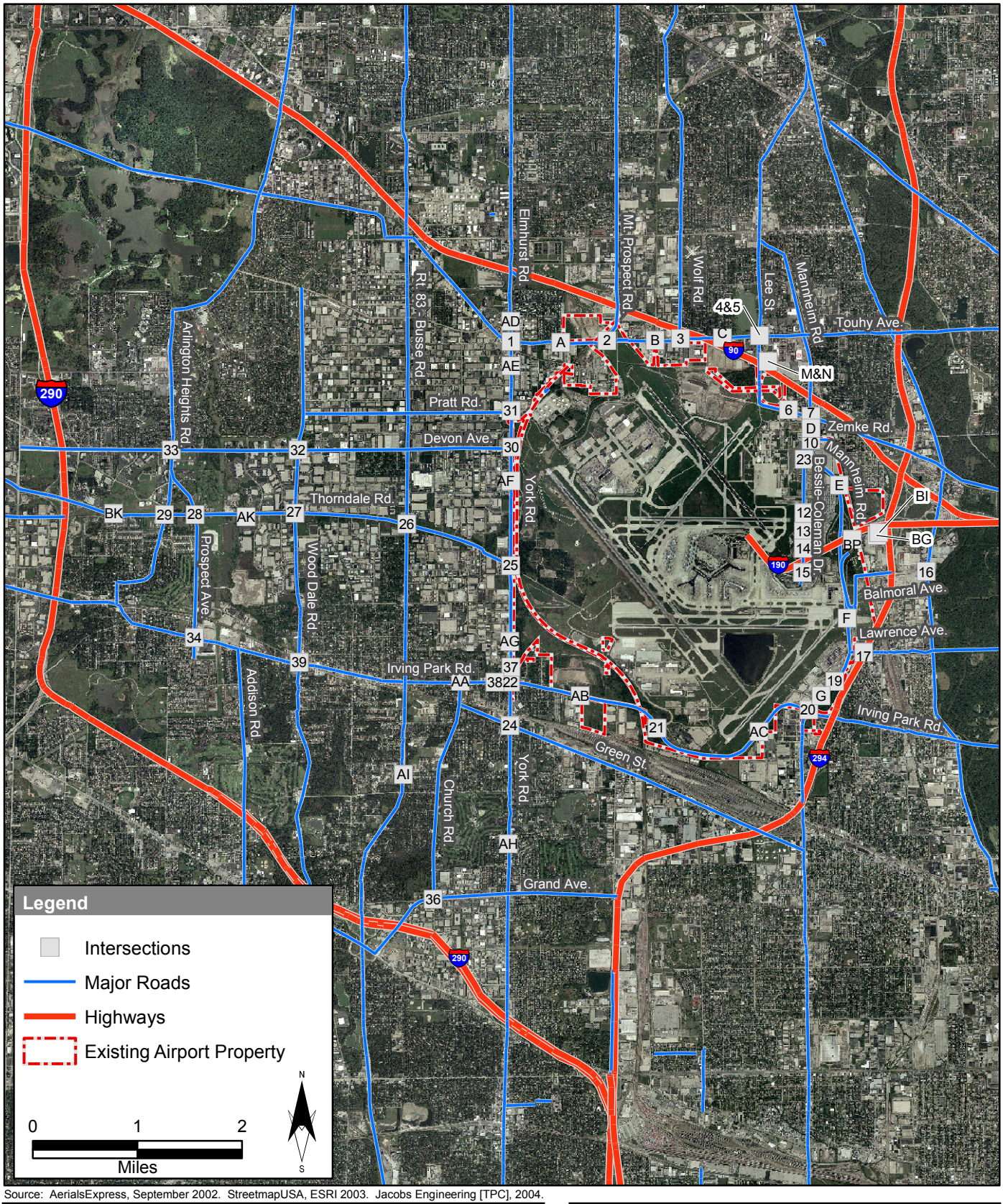

Source: AerialsExpress, September 2002. StreetmapUSA, ESRI 2003. Jacobs Engineering [TPC], 2004.

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Off-Airport Roadways and Intersections

▶ Exhibit 5.3-4

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5.3.2.7 Automobile Parking

The Airport automobile parking system accommodates several types of parking: public (passengers/visitors), employee, rental car vehicles, and commercial vehicle hold areas (CVHA). Public parking includes short-term hourly parking for passenger pick-up and drop-off, daily parking, and long-term parking for airline passengers. The Airport also provides a staging lot for commercial vehicles (i.e., taxicabs, limousines), and a rental car area. (**Exhibit G-3** in **Appendix G, Surface Transportation** shows the locations of the various parking areas at the Airport).

5.3.2.8 Public Transportation Services

The three main public transit services that provide transportation to the Airport are the Chicago Transit Authority, Pace Suburban Bus Service, and Metra Commuter Train Service.

Chicago Transit Authority (CTA)

The CTA is an independent governmental agency created by state legislation. CTA rapid transit service to and from O'Hare consists of a double track line between O'Hare and downtown Chicago, which follows Interstate 90/94 from downtown to the junction, and then Interstate 90 before branching off and reaching the CTA station in the lower level of Terminal 2.

Pace Suburban Bus Service

Pace, the Suburban Bus Division of the RTA, operates bus service to the Airport core on two routes.

Metra Commuter Train Service

Metra provides commuter rail service on 12 lines to and from downtown Chicago. The O'Hare Transfer Station is located east of the intersection of Mannheim Road and Zemke Road. A shuttle bus service takes passengers between the Metra station and the ATS station at Lot E for transfer to the Airport.

5.3.2.9 Railroads

Railroad lines encircle and intersect the Airport property, bringing both passengers and cargo into the project area. Three rail lines handle freight movement, and two of the three freight lines are also used by Metra for commuter rail service. The Canadian National freight line runs along the east side of the Airport, and shares the corridor with the Metra North Central Service line. The existing Union Pacific Railroad freight line runs along the northwest and west sides of the Airport property, and then bisects the southwest quadrant of the Airport property before continuing to the south. The Canadian Pacific Railway line runs along the southern edge of the Airport property, and shares the corridor with the Metra Milwaukee District West Line.[13]

[13] Chicago Operating Rules Association (CORA) Chicago District Terminal Map, April 2000.

On the south side of the Airport property, just south of Irving Park Road, lies a Canadian Pacific Railway (CP) rail yard. This yard serves as a major intermodal hub for CP, sending and receiving cargo to and from trucks and the Airport. Not only does the rail yard aid in the transfer and movement of freight across Airport property, it also functions as a switching yard for the Metra Milwaukee District West Line, and two Union Pacific freight lines. **Exhibit 5.3-3** shows the location of the railroad facilities in the vicinity of the Airport.

5.3.2.10 Baseline Signalized Intersections Analysis

The 2002 Baseline LOS was calculated for the peak hour at major intersections in the study area. The arterial roadways and intersections in the study area are shown in **Exhibit 5.3-4**. The Baseline LOS results for 30 of the intersections are shown in **Table 5.3-4**.

5.3.2.11 Baseline Roadway Link Analysis

The 2002 Baseline V/C ratio was calculated for the peak hour at major roadway links in the study area. The Baseline V/C results for 51 roadway links are shown in **Table 5.3-5**.

TABLE 5.3-4
2002 BASELINE PEAK HOUR INTERSECTION PERFORMANCE

Reference ID(a)	Intersection	Level of Service(b)	Average Delay per Vehicle (seconds)
1	Touhy Avenue & Elmhurst Road	D	52.8
2	Touhy Avenue & Mt. Prospect Road	D	36.0
3	Touhy Avenue & Wolf Road	D	52.9
4	Touhy Avenue & Lee Street (West)	C	29.2
5	Touhy Avenue & Lee Street (East)	B	11.3
6	ID Not Used In Baseline Year	NA	NA
7	Mannheim Road & Higgins Road	E	59.1
8	ID Not Used In Baseline Year	NA	NA
9	ID Not Used In Baseline Year	NA	NA
10	Mannheim Road & Zemke Road	E	64.2
11	ID Not Used In Baseline Year	NA	NA
12	Bessie Coleman Drive & Northern Rental Car Road	A	5.1
13	Bessie Coleman Drive & CVHA Entrance	B	17.8
14	Bessie Coleman Drive & I-190 WB Ramps	C	21.7
15	Bessie Coleman Drive & I-190 EB Ramps/Terminal 5	B	11.5
16	Balmoral Avenue & Des Plaines River Road	B	12.2
17	Mannheim Road & Lawrence Avenue	F	99.9
18	ID Not Used In Baseline Year	NA	NA
19	Mannheim Road & Montrose Avenue	B	17.4
20	Mannheim Road & Irving Park Road	D	48.2
21	Irving Park Road & Main Cargo Road	B	16.1
22	York Road & Irving Park Road	F	155.7
23	ID Not Used In Baseline Year	NA	NA
24	York Road & Green Street	D	36.3
25	York Road & Thorndale Avenue	B	16.5
26	Thorndale Avenue & Busse Road	D	36.2
27	Thorndale Avenue & Wood Dale Road	D	39.9
28	Thorndale Avenue & Prospect Avenue	D	44.8
29	Thorndale Avenue & Arlington Heights Road	F	105.3
30	Devon Avenue & Elmhurst Road	B	19.7
31	Elmhurst Road & Pratt Boulevard	B	17.8
32	Devon Avenue & Wood Dale Road	D	42.7
33	Devon Avenue & Arlington Heights Road	E	76.6
34	Irving Park Road & Prospect Avenue	D	39.8
35	Irving Park Road & N. Addison Road	C	26.3
36	Church Road & Grand Avenue	C	23.9
37	ID Not Used In Baseline Year	NA	NA
38	ID Not Used In Baseline Year	NA	NA
39	ID Not Used In Baseline Year	NA	NA

Notes: (a) Reference numbers refer to locations on **Exhibit 5.3-4**.

(b) LOS = Level of Service

NA = Not applicable; intersection will not exist or will not be signalized.

Sources: OMP ST 2007 NA Final Draft (CD), Kimley-Horn & Associates, Inc. [CCT], October 26, 2004.

2000 Highway Capacity Manual, Transportation Research Board, National Research Council, Washington, D.C., 2000.

TABLE 5.3-5
2002 BASELINE PEAK HOUR V/C RATIOS FOR ROADWAY LINKS

Reference Id.(a)	Roadway	Between	Direction(b)	2002 Baseline	
				No Action (Alternative A)	Alternatives C, D, or G
A	Touhy Avenue	Elmhurst Road and Mt. Prospect Road	WB	1.05	NA
			EB	1.16	NA
B	Touhy Avenue	Mt. Prospect Road and Wolf Road	WB	1.05	NA
			EB	1.33	NA
C	Touhy Avenue	Wolf Road and Lee Street	WB	1.84	NA
			EB	1.63	NA
D	Mannheim Road	Higgins Road and Zemke Boulevard	NB	1.35	NA
			SB	1.32	NA
E	Mannheim Road	South of Zemke Boulevard	NB	1.12	NA
			SB	1.47	NA
F	Mannheim Road	Balmoral Ramps and Lawrence Avenue	NB	1.53	NA
			SB	1.66	NA
G	Mannheim Road	Montrose Avenue and Irving Park Road	NB	1.39	NA
			SB	1.60	NA
H	Mannheim Flyover		WB	NA	NA
			EB	NA	NA
I	Bessie Coleman Drive	South of Zemke	NB	0.17	NA
			SB	0.25	NA
J	Bessie Coleman Drive	South of Mannheim Flyover	NB	NA	NA
			SB	NA	NA
K	Bessie Coleman Drive	North of CVHA Lot	NB	0.35	NA
			SB	0.47	NA
L	Bessie Coleman Drive	North of I-190 WB Ramps	NB	0.99	NA
			SB	0.75	NA
M	Lee Street / Higgins Road	I-90 Ramps	NB / WB	1.07	NA
			SB / EB	1.50	NA
N	Lee Street / Higgins Road	I-90 Ramps and Mannheim Road	NB / WB	1.18	NA
			SB / EB	1.23	NA
O	Zemke Road	West of Bessie Coleman Drive	WB	NA	NA
			EB	NA	NA
P	Zemke Road	Bessie Coleman and Mannheim	WB	NA	NA
			EB	NA	NA
Q	Zemke Road	East of Mannheim	WB	0.32	NA
			EB	0.06	NA
R	Access to Lot E South from Bessie Coleman Drive		WB	0.28	NA
			EB	0.13	NA
S	Access to Limo Service Center		WB	NA	NA
			EB	NA	NA
T	Access to CVHA at Bessie Coleman Drive		WB	0.41	NA
			EB	0.09	NA
U	Rental Car Entrance	East of Bessie Coleman Drive		0.32	NA
V	CVHA Exit and Return Roadway	To / From Core Terminals	WB	0.46	NA
			EB	NA	NA

TABLE 5.3-5
2002 BASELINE PEAK HOUR V/C RATIOS FOR ROADWAY LINKS

Reference Id.(a)	Roadway	Between	Direction(b)	2002 Baseline	
				No Action (Alternative A)	Alternatives C, D, or G
W	Balmoral Avenue	East of Bessie Coleman Drive	WB	NA	NA
			EB	NA	NA
X	Balmoral Avenue	Over Mannheim Road	WB	NA	NA
			EB	NA	NA
Y	Balmoral Avenue	East of Mannheim Road	WB	0.01	NA
			EB	0.17	NA
Z	Montrose Avenue	West of Mannheim Road	WB	0.15	NA
			EB	0.31	NA
AA	Irving Park Road	Busse Road and York Road	WB	1.15	NA
			EB	1.54	NA
AB	Irving Park Road	East of York Road	WB	1.14	NA
			EB	1.25	NA
AC	Irving Park Road	Mannheim Road and Main Cargo Road / Taft Road	WB	1.15	NA
			EB	1.49	NA
AD	Elmhurst Road	Touhy Avenue and I-90	NB	0.97	NA
			SB	0.79	NA
AE	Elmhurst Road	South of Touhy Avenue	NB	1.38	NA
			SB	1.12	NA
AF	Elmhurst Road	North of Thorndale Ave	NB	0.77	NA
			SB	0.82	NA
AG	York Road	Irving Park Road and Thorndale Avenue	NB	1.28	NA
			SB	0.96	NA
AH	York Road	I-290 and Irving Park Road	NB	1.10	NA
			SB	1.07	NA
AI	Busse Road	I-290 and Irving Park Road	NB	0.72	NA
			SB	1.01	NA
AJ	Busse Road	Irving Park Road and Thorndale	NB	0.55	NA
			SB	0.88	NA
AK	Thorndale Avenue	Wood Dale Road and Prospect Avenue	WB	1.32	NA
			EB	0.93	NA
AL	Thorndale Avenue	Wood Dale Road and Busse Road	WB	0.54	NA
			EB	0.74	NA
AM	Thorndale Avenue	Busse Road and York Road	WB	0.30	NA
			EB	0.51	NA
AN	I-190	at Taxiway Bridge	WB	0.42	NA
			EB	0.59	NA
AO	Ramp from Bessie Coleman Drive to WB I-190			0.50	NA
AP	Ramp from WB I-190 to Bessie Coleman Drive			0.71	NA
AQ	Free-Flow Ramp from WB I-190 to T5 / T6			NA	NA
AR	Ramp from EB I-190 to Bessie Coleman Drive			0.61	NA

TABLE 5.3-5
2002 BASELINE PEAK HOUR V/C RATIOS FOR ROADWAY LINKS

Reference Id.(a)	Roadway	Between	Direction(b)	2002 Baseline	
				No Action (Alternative A)	Alternatives C, D, or G
AS	Ramp from T5 / T6 to EB I-190			0.30	NA
AT	Ramp from SB Bessie Coleman Drive to EB I-190			0.27	NA
AU	Ramp from SB Mannheim Road to WB I-190			0.06	NA
AV	Ramp from WB I-190 to NB Mannheim Road / Mannheim Flyover			NA	NA
AW	Ramp from SB Mannheim Road to WB I-190			NA	NA
AX	Ramp from NB Mannheim Road to WB I-190			0.16	NA
AY	Ramp from SB I-294 and EB I-90 to NB Mannheim Road / Mannheim Flyover			NA	NA
AZ	Ramp from SB Mannheim Road to EB I-190			0.49	NA
BA	ID Not Used			0.45	NA
BB	Ramp from NB Mannheim to EB I-190			NA	NA
BC	Ramp from T5 to SB Mannheim Road			0.23	NA
BD	Ramp from NB Mannheim Road to Balmoral Avenue			NA	NA
BE	Ramp from Balmoral Avenue to NB Mannheim Road			NA	NA
BF	Ramp from NB I-294 to WB I-190			0.58	NA
BG	Ramp from WB I-190 to SB I-294			1.20	NA
BH	Ramp from SB I-294 and EB I-90 to WB I-190 and Mannheim Road			1.02	NA
BI	Ramp from EB I-190 to SB I-294			0.83	NA
BJ	ID Not Used			NA	NA
BK	Thorndale Avenue	Arlington Heights and I-290	WB EB	1.75 0.99	NA NA
BL	Ramp from WB I-190 to NB Mannheim Road			0.25	NA
BM	Ramp from WB I-190 to SB Mannheim Road			0.55	NA
BN	Ramp from EB I-190 to NB Mannheim Road			0.07	NA
BO	Ramp from WB I-190, EB I-90 and SB I-294 to SB Mannheim Road			NA	NA
BP	Ramp from SB Mannheim Road to EB I-190			NA	NA
BQ	Ramp from NB Mannheim Road to EB I-190			NA	NA

TABLE 5.3-5
2002 BASELINE PEAK HOUR V/C RATIOS FOR ROADWAY LINKS

Reference Id.(a)	Roadway	Between	Direction(b)	2002 Baseline: No Action (Alternative A)	2002 Baseline: Alternatives C, D, or G
BR	Ramp from EB I-190 to NB I-294			NA	NA
BS	Access to Lot E North from Bessie Coleman Drive		WB	NA	NA
			EB	NA	NA
BT	Balmoral Avenue Ramp to SB Mannheim			NA	NA

Notes: (a) Reference letters refer to locations on figures in **Exhibit 5.3-4**.
(b) NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound
NA = Not applicable; road segment is not yet built.

Source: Jacobs Engineering Group, Inc. [TPC] review of information received from Kimley-Horn and Associates, Inc. [CCT], 2004.

5.3.3 Alternatives Analysis

This section presents information on the potential impacts on surface transportation expected to result from the No Action Alternative (Alternative A) and each of the three Build Alternatives (Alternatives C, D, and G) for each of four future years of analysis, which as noted earlier, are defined as Construction Phase I, Construction Phase II, the Build Out phase, and the Build Out + 5 phase. These years of analysis reflect the "original" construction schedule

As previously discussed in **Section 5.0**, **Introduction,** and in more detail in **Section 5.20, Construction**, in an effort to bound the potential timeframe under which construction could commence or be completed, two additional construction schedule scenarios were considered in addition to the Original schedule: the Compressed Schedule and the Delayed Schedule. This section also presents the results of analyses of these two additional construction scenarios.

For the purposes of the surface transportation analyses, Alternative D consists of the same set of projects as Alternative C, with the exception of relocating Irving Park Road (IL Route 19) during the Build Out phase. The access points on Irving Park Road and the traffic generated at those access points are assumed to be the same as with Alternative C. Similarly, the proposed grade separation (by others) of York Road/CNRR/Relocated UPRR over Irving Park Road during Construction Phase II is included in Alternative D. Therefore, the surface transportation impacts for Alternative D are expected to be the same as those presented for Alternative C.

Alternative G consists of the same set of projects as Alternative C, with the exception of a reconfiguration of some of the on-airport facilities in the south airfield to accommodate the construction of the proposed Runway 12/30. The access points on Irving Park Road and the traffic generated at those access points are assumed to be the same as with Alternative C for modeling purposes. Therefore, the surface transportation impacts for Alternative G are expected to be the same as those presented for Alternative C.

A summary of the peak hour intersection performance and directional roadway segment performance for the No Action Alternative (Alternative A) and the Build Alternatives is included in **Tables 5.3-6** and **Table 5.3-7**, and is discussed in detail in the follow sections.

TABLE 5.3-6
SUMMARY OF PEAK HOUR INTERSECTION PERFORMANCE

Expected Traffic Operations	Construction Phase I		Construction Phase II		Build Out		Build Out + 5	
	No Action (Alternative A)	Build (Alternative C, D, or G)	No Action (Alternative A)	Build (Alternative C, D, or G)	No Action (Alternative A)	Build (Alternative C, D, or G)	No Action (Alternative A)	Build (Alternative C, D, or G)
Signalized Intersections								
Number of intersections expected to operate at LOS D or better	22		21		20		13	
Number of intersections expected to operate at LOS E or F	11		13		14		15	
With delays 55.1 to 80 seconds (LOS E)	4		4		4		3	
With delays > 80 seconds (LOS F)	7		9		10		12	
Total number of intersections analyzed	**33**		**34**		**34**		**38**	
Comparison to 2002 Baseline								
Number of intersections deteriorated from LOS D or better	5		6		7		9	
Number remaining at LOS E or F	6		8		8		6	
Total number expected to operate at LOS E or F	**11**		**14**		**15**		**15**	
Comparison to No Action Alternative (Alternative A)								
Total number of intersections analyzed	N / A	**33**	N / A	**34**	N / A	**34**	N / A	**38**
Number expected to operate at LOS E or F with Alternative A	N / A	11	N / A	13	N / A	14	N / A	15
Number of intersections expected to:								
Improve from LOS E or F to LOS D or better	N / A	3	N / A	1	N / A	0	N / A	1
New intersections operating at LOS E or F(a)	N / A	0	N / A	0	N / A	1	N / A	2
Deteriorate from LOS D or better to LOS E or F(a)	N / A	0	N / A	0	N / A	6	N / A	8
Remain at LOS E or F with:	N / A	0	N / A	12	N / A	14	N / A	14
Decreased delay per vehicle		0		10		8		6
Increased delay per vehicle		0		2		6		8
Number significantly impacted (based on threshold of significance)	N / A	**0**	N / A	**0**	N / A	**7**	N / A	**10**

Notes: (a) Threshold of Significance criteria
N / A = Not Applicable

TABLE 5.3-7
SUMMARY OF PEAK HOUR ROADWAY SEGMENT PERFORMANCE

Expected Traffic Operations	Construction Phase I		Construction Phase II		Build Out		Build Out + 5	
	No Action (Alternative A)	Build (Alternative C, D, or G)	No Action (Alternative A)	Build (Alternative C, D, or G)	No Action (Alternative A)	Build (Alternative C, D, or G)	No Action (Alternative A)	Build (Alternative C, D, or G)
Directional Roadway Segments								
Number of segments expected to operate at V/C ≤ 1.0	61	68	60	69	60	64	59	61
Number of segments expected to operate at V/C > 1.0	37	34	38	33	38	39	39	42
With 1.0 < V/C ≤ 1.2	13	11	21	7	9	10	8	11
With V/C > 1.2	24	23	27	26	29	29	31	31
Total number of roadway segments analyzed	**98**	**102**	**98**	**102**	**98**	**103**	**98**	**103**
Comparison to 2002 Baseline								
Number of roadway segments deteriorated from V/C ≤ 1.0	3		4		5		6	
Number remaining at V/C > 1.0	34		34		33		33	
Total number expected to operate at V/C > 1.0	**37**		**38**		**38**		**39**	
Comparison to No Action Alternative (Alternative A)								
Total number of roadway segments analyzed	**98**	**102**	**98**	**102**	**98**	**103**	**98**	**103**
Number of segments substantially over-capacity (V/C > 1.2) that are expected to:								
Remain at a V/C > 1.2 (substantially over-capacity)	N/A	21	N/A	25	N/A	27	N/A	26
Improved to 1.0 < V/C ≤ 1.2 (over-capacity)	N/A	2	N/A	1	N/A	1	N/A	3
Improve to a V/C ≤ 1.0 (under or near capacity)	N/A	1	N/A	1	N/A	1	N/A	2
Number of segments over-capacity (1.0 < V/C ≤ 1.2) that are expected to:								
Deteriorate to a V/C > 1.2 (substantially over-capacity)(a)	N/A	1	N/A	1	N/A	3	N/A	6
Remain at 1.0 < V/C ≤ 1.2 (substantially over-capacity)	N/A	10	N/A	16	N/A	3	N/A	0
Improve to a V/C ≤ 1.0	N/A	2	N/A	4	N/A	3	N/A	2
Number of segments under or near capacity (V/C ≤ 1.0) that are expected to:								
Deteriorate to V/C > 1.0 (over-capacity)(a)	N/A	0	N/A	0	N/A	5	N/A	7
Number significantly impacted (based on threshold of significance)		**1**		**1**		**8**		**13**

Note: (a) Threshold of Significance criteria
N/A = Not Applicable

5.3.3.1 Construction Phase I

Original Schedule

Alternative A – No Action

The No Action Alternative (Alternative A) intersection performance in **Table 5.3-8** and the No Action Alternative (Alternative A) roadway V/C ratios in **Table 5.3-9** show that traffic is expected to be congested (e.g. exceeds V/C of 1.0, or LOS of E or F) at numerous locations in Construction Phase I. As summarized in **Table 5.3-6**, of the total of 33 signalized intersections that were analyzed, 11 are expected to operate at a LOS of E or F. Seven of those 11 intersections are expected to experience delays of more than 80 seconds per vehicle (LOS F), which is considered a total breakdown condition with stop-and-go operations. Of the total of 11 signalized intersections that are expected to operate at a LOS of E or F with the No Action Alternative (Alternative A) in Construction Phase I, five are expected to deteriorate from a LOS of D or better (i.e. LOS of A, B, or C) in the 2002 Baseline.

Of the total of 98 directional roadway segments that were analyzed, 37 are expected to operate at a V/C ratio of greater than 1.0. Twenty-four of those are expected to operate at a V/C ratio of greater than 1.2. Of the total of 37 directional roadway segments that are expected to operate at a V/C ratio of greater than 1.0 with the No Action Alternative (Alternative A), three are expected to deteriorate from a V/C ratio of 1.0 or less in the 2002 Baseline.

Alternatives C, D, and G

The intersection performance of the Build Alternatives (C, D, and G) was compared with the No Action Alternative (Alternative A) in **Table 5.3-8**, and the roadway V/C ratios of these alternatives are compared in **Table 5.3-9**. As summarized in **Table 5.3-7**, of the 11 out of 33 signalized intersections that are expected to operate at a LOS of E or F with the No Action Alternative (Alternative A), three intersections are expected to experience slight improvement in LOS with the Build Alternatives in Construction Phase I. No additional intersections that operate at a LOS of D or better for the No Action Alternative (Alternative A) deteriorate to a LOS of E or F with any of the Build Alternatives.

Of the 37 out of 102 total directional roadway segments that are expected to operate at a V/C ratio of greater than 1.0 with the No Action Alternative (Alternative A) in Construction Phase I, 22 are expected to be substantially over-capacity in both the No Action Alternative (Alternative A) and Alternatives C, D or G. Two of the roadway segments that are substantially over-capacity (V/C > 1.2) with the No Action Alternative (Alternative A) are expected to improve to a lower, over-capacity condition (V/C between 1.0 and 1.2) with Alternatives C, D or G. Only one of the 22 that are substantially over-capacity is expected to improve to a V/C ratio of less than 1.0. One other segment that is over-capacity is expected to improve to a V/C ratio of less than 1.0.

Only one of the roadway segments analyzed for Construction Phase I are expected to deteriorate from an over-capacity condition (V/C between 1.0 and 1.2) with the No Action Alternative (Alternative A) to a substantially over-capacity (V/C > 1.2) condition with

Alternative C, D or G. The southbound direction of roadway segment AH (York Road between I-290 and Irving Park Road) is the only segment that is expected to exceed the project's threshold of significance for surface transportation in Construction Phase I. The location of this roadway segment is shown on **Exhibit 5.3-5**.

Alternatives C, D or G, when compared to the No Action Alternative (Alternative A), are expected to have no impact on the number of signalized intersections and minimal impact on the number of roadway links that are expected to deteriorate in Construction Phase I. The operation of a small number of the signalized intersections and roadway links are expected to improve with the implementation of any of the Build Alternatives under Construction Phase I.

TABLE 5.3-8
CONSTRUCTION PHASE I
PEAK HOUR INTERSECTION PERFORMANCE
FOR NO ACTION AND BUILD ALTERNATIVES

Id. Number	Intersection Location	Construction Phase I			
		No Action (Alternative A)		Build Alternatives (Alternative C, D, or G)	
		LOS(a)	Delay(b)	LOS(a)	Delay(b)
1	Touhy Avenue & Elmhurst Road	E	77.4	E	64.6
2	Touhy Avenue & Mount Prospect Road	E	57.8	D	52.1
3	Touhy Avenue & Wolf Road	F	98.2	F	87.3
4	Touhy Avenue & Lee Street (West)	E	56.7	D	39.6
5	Touhy Avenue & Lee Street (East)	B	15.6	B	13.5
6	Bessie Coleman Drive & Higgins Road	NA	NA	D	54.4
7	Mannheim Road & Higgins Road	F	201.9	F	212.7
8	Bessie Coleman Drive & Johnson Road	NA	NA	NA	NA
9	Bessie Coleman Drive & Zemke Road	NA	NA	A	8.9
10	Mannheim Road & Zemke Road	F	143.5	F	115.2
11	Bessie Coleman Drive & Mannheim Flyover	B	14.0	B	13.3
12	Bessie Coleman Drive & Northern Rental Car Road	A	5.7	NA	NA
13	Bessie Coleman Drive & Commercial Vehicle Holding Area	B	18.7	C	22.1
14	Bessie Coleman Drive & I-190 Westbound Ramps	C	34.7	B	13.1
15	Bessie Coleman Drive & I-190 Eastbound Ramps	C	24.5	C	22.7
16	Balmoral Avenue & Des Plaines River Road	B	18.9	C	29.8
17	Mannheim Road & Lawrence Avenue	F	163.3	F	112.4
18	Bessie Coleman Drive & Lot E South	C	23.0	NA	NA
19	Mannheim Road & Montrose Avenue	B	17.2	B	18.1
20	Mannheim Road & Irving Park Road	E	73.1	E	76.9
21	Irving Park Road & Main Cargo Road	C	20.2	C	27.5
22	York Road & Irving Park Road	F	179.3	F	176.2
23	Bessie Coleman Drive & Lot E North	NA	NA	B	10.8
24	York Road & Green Street	D	39.5	D	41.0
25	York Road & Thorndale Avenue	B	19.7	C	20.9
26	Thorndale Avenue & Busse Road	D	39.4	D	38.8
27	Thorndale Avenue & Wood Dale Road	D	43.1	D	45.3
28	Thorndale Avenue & Prospect Avenue	D	54.2	D	52.2
29	Thorndale Avenue & Arlington Heights Road	F	109.8	F	108.4
30	Devon Avenue & Elmhurst Road	C	23.8	C	22.1
31	Elmhurst Road & Pratt Boulevard	C	20.8	B	19.9
32	Devon Avenue & Wood Dale Road	D	46.9	D	41.3
33	Devon Avenue & Arlington Heights Road	F	87.5	E	66.5
34	Irving Park Road & Prospect Avenue	D	51.5	D	52.1
35	Irving Park Road & Addison Road	C	28.1	C	29.1
36	Church Road & West Grand Avenue	C	24.6	C	24.7
37	York Road & Irving Park Road Ramp	NA	NA	NA	NA
38	Irving Park Road & York Road Ramp	NA	NA	NA	NA
39	Irving Park Road & Wood Dale Road	D	50.2	D	48.8

Notes: (a) LOS = Level of Service.

(b) Delay is measured in average seconds of delay per vehicle.

NA = Not applicable; intersection will not exist or will not be signalized.

Source: Jacobs Engineering Group, Inc. [TPC] review of information received from Kimley-Horn and Associates, Inc. [CCT], 2004.

TABLE 5.3-9
CONSTRUCTION PHASE I
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Construction Phase I	
				No Action (Alternative A)	Build (Alternative C, D, or G)
A	Touhy Avenue	Elmhurst Road and Mt. Prospect Road	WB	1.19	1.09
			EB	1.30	1.19
B	Touhy Avenue	Mt. Prospect Road and Wolf Road	WB	1.20	1.07
			EB	1.52	1.40
C	Touhy Avenue	Wolf Road and Lee Street	WB	2.17	1.95
			EB	1.84	1.75
D	Mannheim Road	Higgins Road and Zemke Boulevard	NB	1.17	1.00
			SB	1.49	1.55
E	Mannheim Road	South of Zemke Boulevard	NB	1.12	1.07
			SB	1.71	1.82
F	Mannheim Road	Balmoral Ramps and Lawrence Avenue	NB	1.34	1.41
			SB	1.73	1.80
G	Mannheim Road	Montrose Avenue and Irving Park Road	NB	1.10	1.11
			SB	1.50	1.52
H	Mannheim Flyover		WB	0.33	0.39
			EB	0.27	0.31
I	Bessie Coleman Drive	South of Zemke	NB	0.18	0.32
			SB	0.20	0.28
J	Bessie Coleman Drive	South of Mannheim Flyover	NB	0.30	0.39
			SB	0.55	0.45
K	Bessie Coleman Drive	North of CVHA Lot	NB	0.39	0.39
			SB	0.54	0.47
L	Bessie Coleman Drive	North of I-190 WB Ramps	NB	0.96	0.58
			SB	0.90	0.52
M	Lee Street / Higgins Road	I-90 Ramps	NB / WB	1.41	1.23
			SB / EB	1.92	1.79
N	Lee Street / Higgins Road	I-90 Ramps and Mannheim Road	NB / WB	1.49	0.86
			SB / EB	1.82	1.87
O	Zemke Road	West of Bessie Coleman Drive	WB	NA	0.02
			EB	NA	0.05
P	Zemke Road	Bessie Coleman and Mannheim	WB	NA	0.11
			EB	NA	0.16
Q	Zemke Road	East of Mannheim	WB	0.48	0.46
			EB	0.18	0.21
R	Access to Lot E South from Bessie Coleman Drive		WB	0.21	NA
			EB	0.11	NA
S	Access to Limo Service Center		WB	0.31	0.30
			EB	0.32	0.31
T	Access to CVHA at Bessie Coleman Drive		WB	0.33	0.32
			EB	0.14	0.13
U	Rental Car Entrance	East of Bessie Coleman Drive		0.37	0.32

TABLE 5.3-9
CONSTRUCTION PHASE I
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Construction Phase I	
				No Action (Alternative A)	Build (Alternative C, D, or G)
V	CVHA Exit and Return Roadway	To / From Core Terminals	WB	0.44	0.42
			EB	0.12	0.12
W	Balmoral Avenue	East of Bessie Coleman Drive	WB	0.10	0.05
			EB	0.77	0.25
X	Balmoral Avenue	Over Mannheim Road	WB	0.13	0.06
			EB	0.22	0.08
Y	Balmoral Avenue	East of Mannheim Road	WB	0.05	0.06
			EB	0.16	0.17
Z	Montrose Avenue	West of Mannheim Road	WB	0.20	0.20
			EB	0.38	0.38
AA	Irving Park Road	Busse Road and York Road	WB	1.25	1.27
			EB	1.61	1.57
AB	Irving Park Road	East of York Road	WB	1.25	1.27
			EB	1.35	1.29
AC	Irving Park Road	Mannheim Road and Main Cargo Road / Taft Road	WB	1.25	1.31
			EB	1.64	1.68
AD	Elmhurst Road	Touhy Avenue and I-90	NB	1.07	1.06
			SB	0.89	0.87
AE	Elmhurst Road	South of Touhy Avenue	NB	1.51	1.43
			SB	1.27	1.25
AF	Elmhurst Road	North of Thorndale Ave	NB	0.76	0.79
			SB	0.94	0.95
AG	York Road	Irving Park Road and Thorndale Avenue	NB	1.25	1.25
			SB	1.08	1.10
AH	York Road	I-290 and Irving Park Road	NB	1.07	1.05
			SB	1.19	1.22
AI	Busse Road	I-290 and Irving Park Road	NB	0.82	0.82
			SB	1.12	1.10
AJ	Busse Road	Irving Park Road and Thorndale	NB	0.55	0.55
			SB	0.89	0.87
AK	Thorndale Avenue	Wood Dale Road and Prospect Avenue	WB	1.42	1.42
			EB	0.98	0.98
AL	Thorndale Avenue	Wood Dale Road and Busse Road	WB	0.54	0.59
			EB	0.79	0.80
AM	Thorndale Avenue	Busse Road and York Road	WB	0.32	0.31
			EB	0.54	0.58
AN	I-190	at Taxiway Bridge	WB	0.52	0.48
			EB	0.67	0.63
AO	Ramp from Bessie Coleman Drive to WB I-190			0.74	0.66

TABLE 5.3-9
CONSTRUCTION PHASE I
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Construction Phase I	
				No Action (Alternative A)	Build (Alternative C, D, or G)
AP	Ramp from WB I-190 to Bessie Coleman Drive			0.61	0.54
AQ	Free-Flow Ramp from WB I-190 to T5/T6			NA	NA
AR	Ramp from EB I-190 to Bessie Coleman Drive			0.66	0.55
AS	Ramp from T5/T6 to EB I-190			0.51	0.48
AT	Ramp from SB Bessie Coleman Drive to EB I-190			0.13	0.11
AU	ID Not Used			NA	NA
AV	Ramp from WB I-190 to NB Mannheim Road/Mannheim Flyover			0.38	0.38
AW	Ramp from SB Mannheim Road to WB I-190			0.08	0.06
AX	Ramp from NB Mannheim Road to WB I-190			0.12	0.09
AY	Ramp from SB I-294 and EB I-90 to NB Mannheim Road/Mannheim Flyover			0.28	0.17
AZ	ID Not Used			NA	NA
BA	ID Not Used			NA	NA
BB	Ramp from NB Mannheim to EB I-190			0.09	0.12
BC	ID Not Used			NA	NA
BD	Ramp from NB Mannheim Road to Balmoral Avenue			0.12	0.12
BE	Ramp from Balmoral Avenue to NB Mannheim Road			0.04	0.03
BF	Ramp from NB I-294 to WB I-190			0.76	0.75
BG	Ramp from WB I-190 to SB I-294			1.09	1.09
BH	Ramp from SB I-294 and EB I-90 to WB I-190 and Mannheim Road			1.11	0.99
BI	Ramp from EB I-190 to SB I-294			1.00	0.99
BJ	ID Not Used			NA	NA
BK	Thorndale Avenue	Arlington Heights and I-290	WB EB	1.84 1.02	1.83 1.02
BL – BN	IDs Not Used			NA	NA
BO	Ramp from WB I-190, EB I-90 and SB I-294 to SB Mannheim Road			0.57	0.57
BP	Ramp from SB Mannheim Road to EB I-190			0.59	0.72

TABLE 5.3-9
CONSTRUCTION PHASE I
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Construction Phase I	
				No Action (Alternative A)	Build (Alternative C, D, or G)
BQ	Ramp from NB Mannheim Road to EB I-190			0.36	0.35
BR	Ramp from EB I-190 to NB I-294			0.72	0.65
BS	Access to Lot E North from Bessie Coleman Drive		WB	NA	0.31
			EB	NA	0.22
BT	Balmoral Avenue Ramp to SB Mannheim			0.27	0.24

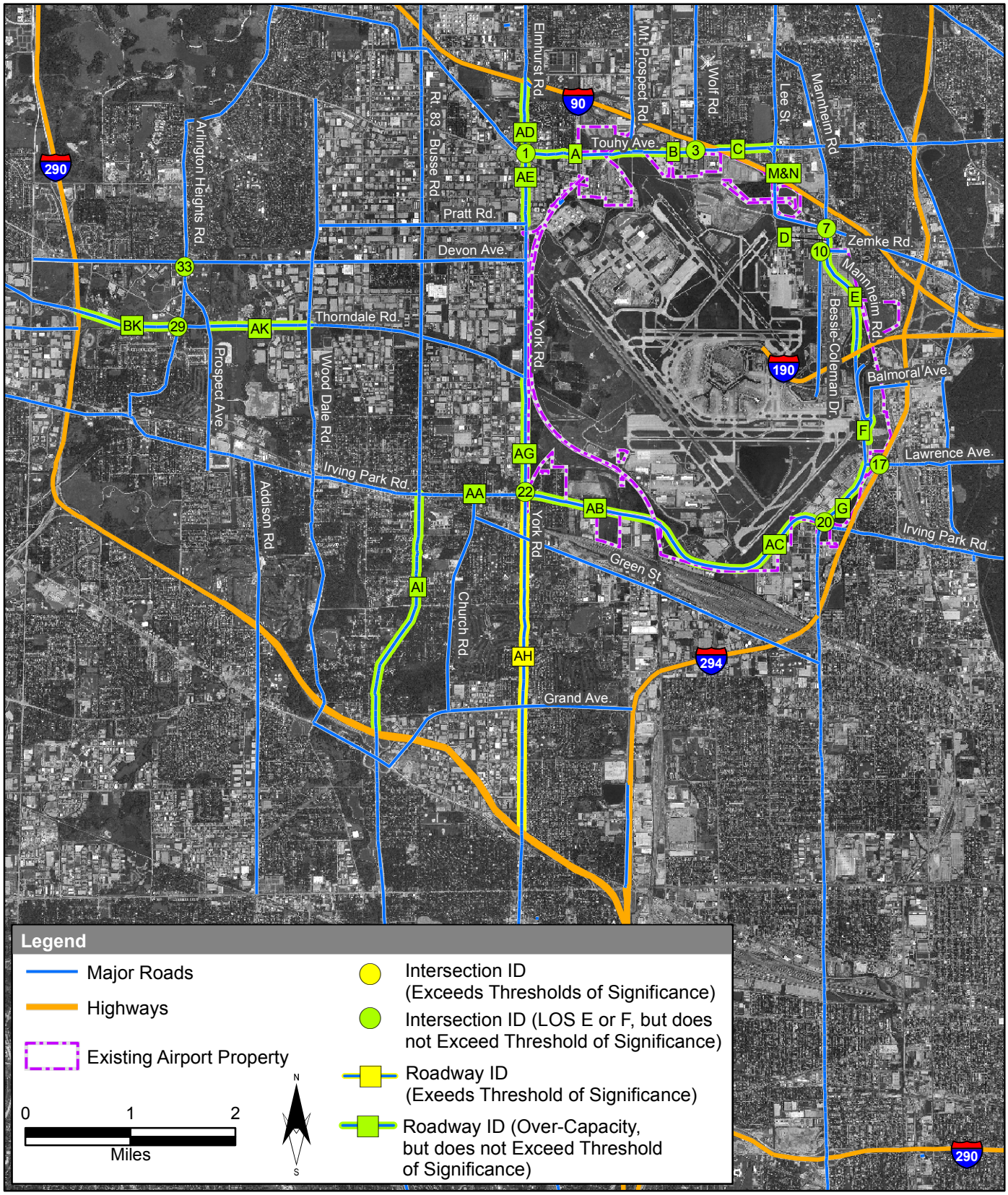
Notes: (a) Reference letters refer to locations on figures in **Exhibit 5.3-5**.

(b) NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

NA = Not applicable; road segment is not yet built.

Shaded rows indicate conditions exceed threshold of significance.

Source: Jacobs Engineering Group, Inc. [TPC] review of information received from Kimley-Horn and Associates, Inc. [CCT], 2004.



Source: AerialsExpress, September 2002. StreetmapUSA, ESRI 2003. Jacobs Engineering [TPC], 2004.

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Performance of Roadway Links and Intersections for Construction Phase I

▶ Exhibit 5.3-5

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Compressed Schedule

Alternative A – No Action

Under Alternative A, the compressed construction schedule would not change the potential surface transportation impacts described above.

Alternatives C, D, and G

With the Compressed Schedule, the forecast number of daily and peak hour construction employee trips is expected to be equal to or less than the corresponding number of trips expected to occur with the Original Schedule, which was used to prepare the Construction Phase I surface transportation analysis. This is because there are expected to be 1,821 daily construction related employee trips during Years 1 through 3 of the Compressed Schedule to compensate for the delayed construction start, compared to the estimated 3,561 daily construction-related employee trips used to prepare the Build Alternative surface transportation analysis for the Original Schedule. Therefore, because the estimated daily construction-related trips for the Original Schedule was conservatively high, the construction generated surface transportation volumes and impacts expected to occur with the Compressed Schedule are expected to be the same as those occurring with the Original Schedule which are described above.

Delayed Schedule

Alternative A – No Action

Under Alternative A, the delayed construction schedule would not change the potential surface transportation impacts described above.

Alternatives C, D, and G

Analyses of the most congested intersections (ranked according to the amount of delay) indicate that the estimated LOS at these intersections would remain unchanged from those estimated to occur during Construction Phase I with the original construction schedule. However, an expected decrease in the amount of delay at the intersection of Bessie Coleman Drive and Higgins Road (Location 6) and an increase at the intersection of Devon Avenue and Arlington Heights Road (Location 33) causes Location 33 to ranked among the top ten most congested and location 6 to be ranked 11th.[14]

[14] Memorandum from Jennifer Bihl, Kimley-Horn and Associates, Inc. [CCT], to Lisa Reznar, Ricondo & Associates [CCT], December 3, 2004 (included as **Attachment G-5** in **Appendix G, Surface Transportation**).

5.3.3.2 Construction Phase II

Original and Compressed Schedule

Alternative A – No Action

The No Action Alternative (Alternative A) intersection performance in **Table 5.3-10** and the No Action Alternative (Alternative A) roadway V/C ratios in **Table 5.3-11** show that traffic is expected to be congested (e.g. exceeds V/C of 1.0, or LOS of E or F) at numerous locations in Construction Phase II. As summarized in **Table 5.3-6**, of the total of 34 signalized intersections that were analyzed, 14 are expected to operate at a LOS of E or F. Eight of those 14 intersections are expected to experience delays of more than 80 seconds per vehicle, which is considered a total breakdown condition with stop-and-go operations. Of the total of 13 signalized intersections that are expected to operate at a LOS of E or F with the No Action Alternative (Alternative A) in Construction Phase II, six are expected to have deteriorated from a LOS of D or better (i.e. LOS of A, B, or C) in the 2002 Baseline.

Of the total of 98 directional roadway segments that were analyzed, 38 are expected to operate at a V/C ratio of greater than 1.0. Twenty-seven of those are expected to operate at a V/C ratio of greater than 1.2. Of the total of 38 directional roadway segments that are expected to operate at a V/C ratio of greater than 1.0 with the No Action Alternative (Alternative A), four are expected to deteriorate from a V/C ratio of 1.0 or less in the 2002 Baseline.

Alternatives C, D, and G

The intersection performance of the Build Alternatives (C, D, and G) is compared with the No Action Alternative (Alternative A) in **Table 5.3-10,** and the roadway V/C ratios of these alternatives are compared in **Table 5.3-11**. As summarized in **Table 5.3-7**, of the 13 out of 34 signalized intersections that are expected to operate at a LOS of E or F with the No Action Alternative (Alternative A), only the intersection of Touhy Avenue and Lee Street (West) is expected to improve to a LOS of D with any of the Build Alternatives in Construction Phase II. Out of the 12 remaining intersections that are expected to operate at a LOS of E or F with the Build Alternatives in Construction Phase II, 10 are expected to have decreased delay per vehicles and two are expected to have increased delay per vehicle compared to the No Action Alternative (Alternative A). There are no intersections that are significantly impacted by the projects based on the project's threshold of significance for surface transportation.

Of the 38 out of 102 total directional roadway segments that are expected to operate at a V/C ratio of greater than 1.0 with the No Action Alternative (Alternative A) in Construction Phase II, 25 are expected to be substantially over-capacity with both the No Action Alternative (Alternative A) and Alternative C, D or G. One of the roadway segments that is substantially over-capacity (V/C > 1.2) with the No Action Alternative (Alternative A) are expected to improve to a lower, over-capacity condition (V/C between 1.0 and 1.2) with Alternative C, D or G. Only one that is substantially over-capacity in the No Action Alternative (Alternative A) is expected to improve to a V/C ratio of less than 1.0. One other segment that is over-capacity is expected to improve to a V/C ratio of less than 1.0.

None of the roadway segments analyzed are expected to deteriorate from a below capacity condition (V/C < 1.0) with the No Action Alternative (Alternative A), to an over-capacity condition (V/C between 1.0 and 1.2) with Alternative C, D or G. The northbound roadway segment AD (Elmhurst Road between Touhy and I-90) is expected to worsen from an over-capacity condition (V/C between 1.0 and 1.2) to a substantially over-capacity (V/C > 1.2) condition. This roadway segment is expected to exceed the project's threshold of significance for surface transportation. The location of this segment is shown in **Exhibit 5.3-6**.

Alternatives C, D or G, when compared to the No Action Alternative (Alternative A), are expected to have no impact on the number of signalized intersections and minimal impact on the number of roadway links that are expected to deteriorate in Construction Phase II. The operation of a small number of the signalized intersections and roadway links are expected to improve with the implementation of any of the Build Alternatives under Construction Phase II.

TABLE 5.3-10
CONSTRUCTION PHASE II
PEAK HOUR INTERSECTION PERFORMANCE
FOR NO ACTION AND BUILD ALTERNATIVES

Id. Number	Intersection Location	Construction Phase II			
		No Action (Alternative A)		Build Alternatives (Alternative C, D or G)	
		LOS(a)	Delay(b)	LOS(a)	Delay(b)
1	Touhy Avenue & Elmhurst Road	F	81.2	E	71.3
2	Touhy Avenue & Mount Prospect Road	E	67.2	E	56.1
3	Touhy Avenue & Wolf Road	F	102.1	E	79.3
4	Touhy Avenue & Lee Street (West)	F	81.5	D	43.6
5	Touhy Avenue & Lee Street (East)	B	14.6	B	16.1
6	Bessie Coleman Drive & Higgins Road	NA	NA	D	47.0
7	Mannheim Road & Higgins Road	F	213.6	F	184.5
8	Bessie Coleman Drive & Johnson Road	NA	NA	B	17.1
9	Bessie Coleman Drive & Zemke Road	NA	NA	B	11.5
10	Mannheim Road & Zemke Road	F	180.9	F	109.1
11	Bessie Coleman Drive & Mannheim Flyover	B	14.4	B	18.6
12	Bessie Coleman Drive & Northern Rental Car Road	A	5.7	NA	NA
13	Bessie Coleman Drive & Commercial Vehicle Holding Area	B	19.6	C	22.4
14	Bessie Coleman Drive & I-190 Westbound Ramps	D	36.3	B	14.2
15	Bessie Coleman Drive & I-190 Eastbound Ramps	C	25.2	C	22.7
16	Balmoral Avenue & Des Plaines River Road	C	22.9	C	28.3
17	Mannheim Road & Lawrence Avenue	F	159.2	F	114.1
18	Bessie Coleman Drive & Lot E South	C	27.0	NA	NA
19	Mannheim Road & Montrose Avenue	B	18.6	B	19.4
20	Mannheim Road & Irving Park Road	F	81.9	E	76.3
21	Irving Park Road & Main Cargo Road	C	22.1	D	43.2
22	York Road & Irving Park Road	NA	NA	NA	NA
23	Bessie Coleman Drive & Lot E North	NA	NA	B	12.5
24	York Road & Green Street	D	43.3	D	40.6
25	York Road & Thorndale Avenue	C	21.2	B	19.7
26	Thorndale Avenue & Busse Road	D	41.4	D	38.9
27	Thorndale Avenue & Wood Dale Road	D	45.7	D	43.2
28	Thorndale Avenue & Prospect Avenue	E	58.6	E	56.0
29	Thorndale Avenue & Arlington Heights Road	F	135.9	F	116.3
30	Devon Avenue & Elmhurst Road	C	23.7	C	23.0
31	Elmhurst Road & Pratt Boulevard	C	21.3	C	22.1
32	Devon Avenue & Wood Dale Road	D	48.8	D	49.2
33	Devon Avenue & Arlington Heights Road	F	91.3	E	79.6
34	Irving Park Road & Prospect Avenue	D	54.8	D	52.5
35	Irving Park Road & Addison Road	C	27.8	C	28.9
36	Church Road & West Grand Avenue	C	25.5	C	24.6
37	York Road & Irving Park Road Ramp	E	67.9	F	80.2
38	Irving Park Road & York Road Ramp	E	69.3	E	77.3
39	Irving Park Road & Wood Dale Road	D	53.2	D	49.0

Notes: (a) LOS = Level of Service.

(b) Delay is measured in average seconds of delay per vehicle.

NA = Not applicable; intersection will not exist or will not be signalized.

Source: Jacobs Engineering Group, Inc. [TPC] review of information received from Kimley-Horn and Associates, Inc. [CCT], 2004.

TABLE 5.3-11
CONSTRUCTION PHASE II
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Construction Phase II	
				No Action (Alternative A)	Build (Alternative C, D, or G)
A	Touhy Avenue	Elmhurst Road and Mt. Prospect Road	WB	1.21	1.26
			EB	1.30	1.22
B	Touhy Avenue	Mt. Prospect Road and Wolf Road	WB	1.22	1.22
			EB	1.53	1.39
C	Touhy Avenue	Wolf Road and Lee Street	WB	2.23	2.13
			EB	1.86	1.70
D	Mannheim Road	Higgins Road and Zemke Boulevard	NB	1.19	0.99
			SB	1.47	1.51
E	Mannheim Road	South of Zemke Boulevard	NB	1.16	1.06
			SB	1.76	1.79
F	Mannheim Road	Balmoral Ramps and Lawrence Avenue	NB	1.32	1.40
			SB	1.79	1.82
G	Mannheim Road	Montrose Avenue and Irving Park Road	NB	1.11	1.14
			SB	1.53	1.55
H	Mannheim Flyover		WB	0.35	0.51
			EB	0.28	0.59
I	Bessie Coleman Drive	South of Zemke	NB	0.18	0.37
			SB	0.20	0.44
J	Bessie Coleman Drive	South of Mannheim Flyover	NB	0.31	0.39
			SB	0.57	0.48
K	Bessie Coleman Drive	North of CVHA Lot	NB	0.39	0.39
			SB	0.55	0.48
L	Bessie Coleman Drive	North of I-190 WB Ramps	NB	0.99	0.59
			SB	0.93	0.53
M	Lee Street / Higgins Road	I-90 Ramps	NB / WB	1.39	1.18
			SB / EB	1.98	1.65
N	Lee Street / Higgins Road	I-90 Ramps and Mannheim Road	NB / WB	1.52	0.82
			SB / EB	1.91	1.88
O	Zemke Road	West of Bessie Coleman Drive	WB	NA	0.03
			EB	NA	0.11
P	Zemke Road	Bessie Coleman and Mannheim	WB	NA	0.12
			EB	NA	0.19
Q	Zemke Road	East of Mannheim	WB	0.59	0.48
			EB	0.19	0.23
R	Access to Lot E South from Bessie Coleman Drive		WB	0.21	NA
			EB	0.11	NA
S	Access to Limo Service Center		WB	0.33	0.31
			EB	0.33	0.31
T	Access to CVHA at Bessie Coleman Drive		WB	0.34	0.33
			EB	0.15	0.13
U	Rental Car Entrance	East of Bessie Coleman Drive		0.38	0.35

TABLE 5.3-11
CONSTRUCTION PHASE II
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Construction Phase II	
				No Action (Alternative A)	Build (Alternative C, D, or G)
V	CVHA Exit and Return Roadway	To / From Core Terminals	WB	0.45	0.44
			EB	0.13	0.12
W	Balmoral Avenue	East of Bessie Coleman Drive	WB	0.11	0.05
			EB	0.81	0.26
X	Balmoral Avenue	Over Mannheim Road	WB	0.12	0.06
			EB	0.24	0.10
Y	Balmoral Avenue	East of Mannheim Road	WB	0.06	0.05
			EB	0.17	0.17
Z	Montrose Avenue	West of Mannheim Road	WB	0.20	0.19
			EB	0.38	0.35
AA	Irving Park Road	Busse Road and York Road	WB	1.30	1.30
			EB	1.63	1.57
AB	Irving Park Road	East of York Road	WB	1.26	1.38
			EB	1.35	1.33
AC	Irving Park Road	Mannheim Road and Main Cargo Road / Taft Road	WB	1.27	1.34
			EB	1.65	1.66
AD	Elmhurst Road	Touhy Avenue and I-90	NB	1.09	1.27
			SB	0.86	0.97
AE	Elmhurst Road	South of Touhy Avenue	NB	1.49	1.53
			SB	1.30	1.30
AF	Elmhurst Road	North of Thorndale Ave	NB	0.79	0.81
			SB	0.96	0.96
AG	York Road	Irving Park Road and Thorndale Avenue	NB	1.27	1.29
			SB	1.12	1.10
AH	York Road	I-290 and Irving Park Road	NB	1.09	1.03
			SB	1.23	1.22
AI	Busse Road	I-290 and Irving Park Road	NB	0.87	0.82
			SB	1.18	1.12
AJ	Busse Road	Irving Park Road and Thorndale	NB	0.59	0.57
			SB	0.90	0.88
AK	Thorndale Avenue	Wood Dale Road and Prospect Avenue	WB	1.45	1.40
			EB	0.95	0.95
AL	Thorndale Avenue	Wood Dale Road and Busse Road	WB	0.57	0.53
			EB	0.81	0.79
AM	Thorndale Avenue	Busse Road and York Road	WB	0.33	0.31
			EB	0.57	0.55
AN	I-190	at Taxiway Bridge	WB	0.54	0.49
			EB	0.67	0.64
AO	Ramp from Bessie Coleman Drive to WB I-190			0.77	0.69

TABLE 5.3-11
CONSTRUCTION PHASE II
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Construction Phase II	
				No Action (Alternative A)	Build (Alternative C, D, or G)
AP	Ramp from WB I-190 to Bessie Coleman Drive			0.63	0.59
AQ	Free-Flow Ramp from WB I-190 to T5/T6			NA	NA
AR	Ramp from EB I-190 to Bessie Coleman Drive			0.68	0.55
AS	Ramp from T5/T6 to EB I-190			0.53	0.49
AT	Ramp from SB Bessie Coleman Drive to EB I-190			0.13	0.11
AU	ID Not Used			NA	NA
AV	Ramp from WB I-190 to NB Mannheim Road/Mannheim Flyover			0.42	0.50
AW	Ramp from SB Mannheim Road to WB I-190			0.08	0.05
AX	Ramp from NB Mannheim Road to WB I-190			0.13	0.09
AY	Ramp from SB I-294 and EB I-90 to NB Mannheim Road/Mannheim Flyover			0.27	0.13
AZ	ID Not Used			NA	NA
BA	ID Not Used			NA	NA
BB	Ramp from NB Mannheim to EB I-190			0.08	0.12
BC	ID Not Used			NA	NA
BD	Ramp from NB Mannheim Road to Balmoral Avenue			0.13	0.11
BE	Ramp from Balmoral Avenue to NB Mannheim Road			0.06	0.04
BF	Ramp from NB I-294 to WB I-190			0.80	0.77
BG	Ramp from WB I-190 to SB I-294			1.05	1.00
BH	Ramp from SB I-294 and EB I-90 to WB I-190 and Mannheim Road			1.13	0.95
BI	Ramp from EB I-190 to SB I-294			1.04	1.07
BJ	ID Not Used			NA	NA
BK	Thorndale Avenue	Arlington Heights and I-290	WB EB	1.93 1.01	1.86 1.00
BL – BN	Ids Not Used			NA	NA
BO	Ramp from WB I-190, EB I-90 and SB I-294 to SB Mannheim Road			0.63	0.50
BP	Ramp from SB Mannheim Road to EB I-190			0.55	0.83

TABLE 5.3-11
CONSTRUCTION PHASE II
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Construction Phase II	
				No Action (Alternative A)	Build (Alternative C, D, or G)
BQ	Ramp from NB Mannheim Road to EB I-190			0.33	0.34
BR	Ramp from EB I-190 to NB I-294			0.75	0.58
BS	Access to Lot E North from Bessie Coleman Drive		WB	NA	0.33
			EB	NA	0.24
BT	Balmoral Avenue Ramp to SB Mannheim			0.27	0.31

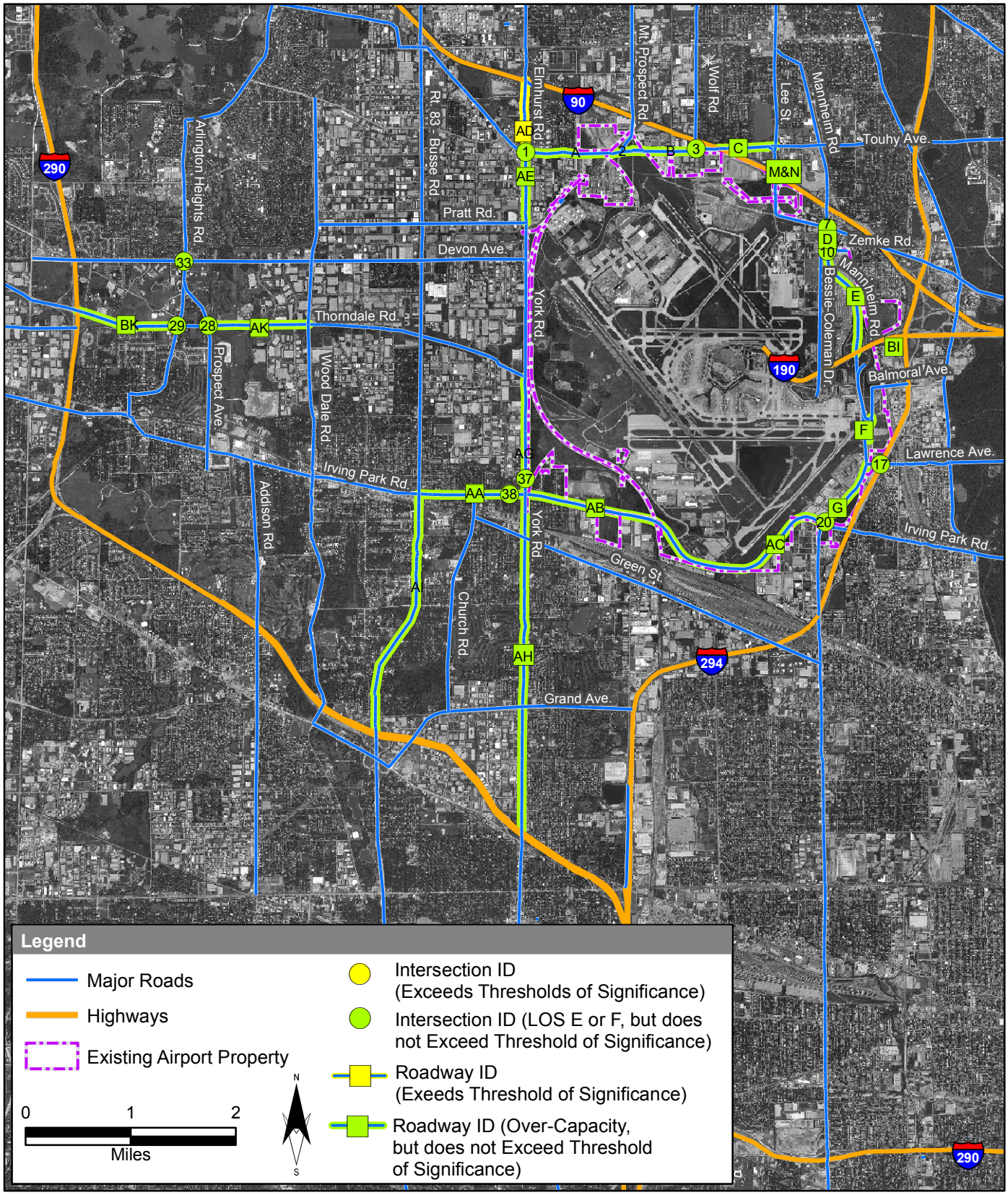
Notes: (a) Reference letters refer to locations on figures in **Exhibit 5.3-6**.

(b) NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

NA = Not applicable; road segment is not yet built.

Shaded rows indicate conditions exceed threshold of significance.

Source: Jacobs Engineering Group, Inc. [TPC] review of information received from Kimley-Horn and Associates, Inc. [CCT], 2004.



Source: AerialsExpress, September 2002. StreetmapUSA, ESRI 2003. Jacobs Engineering [TPC], 2004.

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Performance of Roadway Links and Intersections for Construction Phase II

▶ Exhibit 5.3-6

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Delayed Schedule

Alternative A – No Action

Under Alternative A, the delayed construction schedule would not change the potential surface transportation impacts occurring in Construction Phase II, as described above.

Alternatives C, D, and G

Analyses of the most congested intersections (ranked according to the amount of delay) indicate that the level of service at these intersections remains unchanged, or shifts slightly, from those estimated to occur during Construction Phase II with the original construction schedule. The levels of service at the intersections of Touhy Avenue and Wolf Road (Location 3), Mannheim Road and Irving Park Road (Location 20), Devon Avenue and Arlington Heights Road (Location 33), and Irving Park Road and York Road Ramp (Location 38), shift from an LOS of E to F. However, the increase in the estimated delays at Location 33 and at the intersection of York Road and Irving Park Road Ramp (Location 37) cause Location 37 to be ranked higher and Location 33 to be ranked 11th.[15]

5.3.3.3 Build Out

Original and Compressed Schedule

Alternative A – No Action

The No Action Alternative (Alternative A) intersection performance in **Table 5.3-12** and the No Action Alternative (Alternative A) roadway V/C ratios in **Table 5.3-13** show that traffic is expected to be congested (e.g. exceeds V/C of 1.0, or LOS of E or F) at numerous locations in the Build Out phase. As summarized in **Table 5.3-6**, of the total of 34 signalized intersections that were analyzed, 14 are expected to operate at a LOS of E or F. Ten of those 14 intersections are expected to experience delays of more than 80 seconds per vehicle, which is considered a total breakdown condition with stop-and-go operations. Of the total of 15 signalized intersections that are expected to operate at a LOS of E or F with the No Action Alternative (Alternative A) in the Build Out phase, seven are expected to have deteriorated from a LOS of D or better in the 2002 Baseline.

Of the total of 98 directional roadway segments that were analyzed, 38 are expected to operate at a V/C ratio of greater than 1.0. Twenty-nine of those are expected to operate at a V/C ratio of greater than 1.2. Of the total of 38 directional roadway segments that are expected to operate at a V/C ratio of greater than 1.0 with the No Action Alternative (Alternative A), two are expected to deteriorate from a V/C ratio of 1.0 or less in the 2002 Baseline.

[15] Memorandum from Jennifer Bihl, Kimley-Horn and Associates, Inc. [CCT], to Lisa Reznar, Ricondo & Associates [CCT], December 3, 2004 (included as **Attachment G-5** in **Appendix G, Surface Transportation**).

Alternatives C, D, and G

The intersection performance of the Build Alternatives (C, D, and G) is compared with the No Action Alternative (Alternative A) in **Table 5.3-12,** and the roadway V/C ratios of these alternatives are compared in **Table 5.3-13**. None of the signalized intersections that are expected to operate at a LOS of E or F with the No Action Alternative (Alternative A) are expected to improve with the Build Alternatives in the Build Out phase. As summarized in **Table 5.3-7**, in addition to the 14 intersections that operate at a LOS of E or F for both the No Action Alternative (Alternative A) and any Build Alternative, six intersections are expected to go from a LOS of D or better to a LOS of E or F. Furthermore, the intersection of Bessie Coleman Drive and Higgins Road, that does not exist in the No Action Alternative (Alternative A), is expected to be operating at a LOS of F with the Build Alternatives in the Build Out phase. These six intersections exceed the established threshold of significance for surface transportation. Four of these six intersections are on the west side of the airport. Four of the six intersections are expected to experience delays of more than 80 seconds per vehicle, which is considered a total breakdown condition with stop-and-go operations.

Out of the seven intersections that are expected to exceed the threshold of significance, three are along Irving Park Road at Main Cargo Road, Prospect Avenue, and Wood Dale Road; two are along Thorndale Avenue at Busse Road and Wood Dale Road; one is at Bessie Coleman Drive and Higgins Road; and one is at Balmoral Avenue and Des Plaines River Road. The locations of these intersections are shown in **Exhibit 5.3-7**.

Of the 38 out of 103 total directional roadway segments that are expected to operate at a V/C ratio of greater than 1.0 with the No Action Alternative (Alternative A) in the Build Out phase, 26 are expected to be substantially over-capacity in the No Action Alternative (Alternative A) and Alternatives C, D, and G. Two of the roadway segments that are substantially over-capacity (V/C > 1.2) with the No Action Alternative (Alternative A) are expected to improve to a lower, over-capacity condition (V/C between 1.0 and 1.2) with Alternative C, D and G. Only two of the 36 are expected to improve to a V/C ratio of less than 1.0.

Five of the roadway segments analyzed are expected to deteriorate from a below capacity condition (V/C < 1.0) with the No Action Alternative (Alternative A), to an over-capacity condition (V/C between 1.0 and 1.2) with Alternative C, D and G. Three segments are expected to worsen from an over-capacity condition (V/C between 1.0 and 1.2) to a substantially over-capacity (V/C > 1.2) condition. These eight roadway segments are expected to exceed the project's threshold of significance for surface transportation. The locations of these roadway segments are shown in **Exhibit 5.3-7**.

Alternatives C, D and G, when compared to the No Action Alternative (Alternative A), are expected to increase the number of signalized intersections and roadway links that are expected to deteriorate by the Build Out phase. The operation of a small number of the signalized intersections and roadway links are expected to improve with the implementation of any of the Build Alternatives. As compared to the No Action Alternative (Alternative A), a total of seven intersections and eight directional roadway segments are expected to exceed the threshold of significance in the Build Out phase for the Build Alternatives.

TABLE 5.3-12
BUILD OUT
PEAK HOUR INTERSECTION PERFORMANCE
FOR NO ACTION AND BUILD ALTERNATIVES

Id. Number	Intersection Location	Build Out			
		No Action (Alternative A)		Build Alternatives (Alternative C, D, or G)	
		LOS(a)	Delay(b)	LOS(a)	Delay(b)
1	Touhy Avenue & Elmhurst Road	F	85.6	F	85.5
2	Touhy Avenue & Mount Prospect Road	F	87.3	E	77.3
3	Touhy Avenue & Wolf Road	F	106.9	F	106.9
4	Touhy Avenue & Lee Street (West)	E	72.8	E	65.6
5	Touhy Avenue & Lee Street (East)	B	16.2	B	16.7
6	Bessie Coleman Drive & Higgins Road	NA	NA	F	119.1
7	Mannheim Road & Higgins Road	F	186.4	F	236.7
8	Bessie Coleman Drive & Johnson Road	NA	NA	C	28.4
9	Bessie Coleman Drive & Zemke Road	NA	NA	A	10.0
10	Mannheim Road & Zemke Road	F	259.4	F	165.3
11	Bessie Coleman Drive & Mannheim Flyover	B	15.1	C	21.1
12	Bessie Coleman Drive & Northern Rental Car Road	A	5.9	NA	NA
13	Bessie Coleman Drive & Commercial Vehicle Holding Area	C	25.9	B	20.0
14	Bessie Coleman Drive & I-190 Westbound Ramps	D	54.9	B	14.6
15	Bessie Coleman Drive & I-190 Eastbound Ramps	C	30.2	B	15.6
16	Balmoral Avenue & Des Plaines River Road	D	43.5	F	146.1
17	Mannheim Road & Lawrence Avenue	F	182.7	F	176.1
18	Bessie Coleman Drive & Lot E South	C	33.0	NA	NA
19	Mannheim Road & Montrose Avenue	B	17.6	D	54.6
20	Mannheim Road & Irving Park Road	F	86.5	F	132.9
21	Irving Park Road & Main Cargo Road	C	22.2	F	95.7
22	York Road & Irving Park Road	NA	NA	NA	NA
23	Bessie Coleman Drive & Lot E North	NA	NA	D	44.4
24	York Road & Green Street	D	44.5	D	50.6
25	York Road & Thorndale Avenue	C	20.7	D	38.8
26	Thorndale Avenue & Busse Road	D	40.6	E	68.5
27	Thorndale Avenue & Wood Dale Road	D	49.0	E	55.6
28	Thorndale Avenue & Prospect Avenue	E	58.5	E	60.7
29	Thorndale Avenue & Arlington Heights Road	F	164.3	F	180.6
30	Devon Avenue & Elmhurst Road	C	23.6	C	23.8
31	Elmhurst Road & Pratt Boulevard	C	22.8	C	28.1
32	Devon Avenue & Wood Dale Road	F	90.1	E	63.3
33	Devon Avenue & Arlington Heights Road	F	137.1	F	115.3
34	Irving Park Road & Prospect Avenue	D	54.2	F	89.4
35	Irving Park Road & Addison Road	C	27.6	D	35.1
36	Church Road & West Grand Avenue	C	25.7	C	28.1
37	York Road & Irving Park Road Ramp	E	63.1	F	179.8
38	Irving Park Road & York Road Ramp	E	69.8	F	159.9
39	Irving Park Road & Wood Dale Road	D	54.0	E	75.9

Notes: (a) LOS = Level of Service.

(b) Delay is measured in average seconds of delay per vehicle.

Shaded rows indicate conditions exceed threshold of significance.

NA = Not applicable; intersection will not exist or will not be signalized.

Source: Jacobs Engineering Group, Inc. [TPC] review of information received from Kimley-Horn and Associates, Inc. [CCT], 2004.

TABLE 5.3-13
BUILD OUT
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Build Out	
				No Action (Alternative A)	Build (Alternative C, D, or G)
A	Touhy Avenue	Elmhurst Road and Mt. Prospect Road	WB	1.26	1.25
			EB	1.32	1.36
B	Touhy Avenue	Mt. Prospect Road and Wolf Road	WB	1.28	1.28
			EB	1.57	1.52
C	Touhy Avenue	Wolf Road and Lee Street	WB	2.32	2.27
			EB	1.88	1.85
D	Mannheim Road	Higgins Road and Zemke Boulevard	NB	1.20	0.99
			SB	1.46	1.63
E	Mannheim Road	South of Zemke Boulevard	NB	1.18	1.07
			SB	1.85	1.95
F	Mannheim Road	Balmoral Ramps and Lawrence Avenue	NB	1.35	1.85
			SB	1.73	2.14
G	Mannheim Road	Montrose Avenue and Irving Park Road	NB	1.10	1.44
			SB	1.51	1.85
H	Mannheim Flyover		WB	0.40	0.67
			EB	0.28	0.93
I	Bessie Coleman Drive	South of Zemke	NB	0.23	0.39
			SB	0.22	0.56
J	Bessie Coleman Drive	South of Mannheim Flyover	NB	0.37	0.43
			SB	0.63	0.49
K	Bessie Coleman Drive	North of CVHA Lot	NB	0.47	0.38
			SB	0.61	0.51
L	Bessie Coleman Drive	North of I-190 WB Ramps	NB	1.17	0.50
			SB	1.04	0.56
M	Lee Street / Higgins Road	I-90 Ramps	NB / WB	1.41	1.42
			SB / EB	1.95	1.90
N	Lee Street / Higgins Road	I-90 Ramps and Mannheim Road	NB / WB	1.51	1.04
			SB / EB	1.88	2.23
O	Zemke Road	West of Bessie Coleman Drive	WB	NA	0.01
			EB	NA	0.13
P	Zemke Road	Bessie Coleman and Mannheim	WB	NA	0.18
			EB	NA	0.30
Q	Zemke Road	East of Mannheim	WB	0.76	0.60
			EB	0.31	0.37
R	Access to Lot E South from BCD		WB	0.28	NA
			EB	0.14	NA
S	Access to Limo Service Center		WB	0.38	0.29
			EB	0.38	0.29
T	Access to CVHA at Bessie Coleman Drive		WB	0.41	0.24
			EB	0.21	0.11
U	Rental Car Entrance	East of Bessie Coleman Drive		0.43	0.24

TABLE 5.3-13
BUILD OUT
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Build Out	
				No Action (Alternative A)	Build (Alternative C, D, or G)
V	CVHA Exit and Return Roadway	To / From Core Terminals	WB	0.50	0.30
			EB	0.14	0.08
W	Balmoral Avenue	East of Bessie Coleman Drive	WB	0.14	0.09
			EB	0.83	0.45
X	Balmoral Avenue	Over Mannheim Road	WB	0.21	0.11
			EB	0.29	0.08
Y	Balmoral Avenue	East of Mannheim Road	WB	0.10	0.07
			EB	0.17	0.27
Z	Montrose Avenue	West of Mannheim Road	WB	0.21	0.19
			EB	0.39	0.33
AA	Irving Park Road	Busse Road and York Road	WB	1.34	1.55
			EB	1.61	1.74
AB	Irving Park Road	East of York Road	WB	1.29	2.06
			EB	1.33	1.71
AC	Irving Park Road	Mannheim Road and Main Cargo Road / Taft Road	WB	1.29	1.82
			EB	1.65	2.09
AD	Elmhurst Road	Touhy Avenue and I-90	NB	1.05	1.27
			SB	0.88	1.13
AE	Elmhurst Road	South of Touhy Avenue	NB	1.48	1.63
			SB	1.34	1.37
AF	Elmhurst Road	North of Thorndale Ave	NB	0.78	1.06
			SB	0.97	1.05
AG	York Road	Irving Park Road and Thorndale Avenue	NB	1.26	1.62
			SB	1.12	1.23
AH	York Road	I-290 and Irving Park Road	NB	1.10	1.19
			SB	1.24	1.27
AI	Busse Road	I-290 and Irving Park Road	NB	0.86	0.90
			SB	1.21	1.12
AJ	Busse Road	Irving Park Road and Thorndale	NB	0.58	0.56
			SB	0.92	0.81
AK	Thorndale Avenue	Wood Dale Road and Prospect Avenue	WB	1.47	1.46
			EB	0.93	0.93
AL	Thorndale Avenue	Wood Dale Road and Busse Road	WB	0.53	0.70
			EB	0.78	0.71
AM	Thorndale Avenue	Busse Road and York Road	WB	0.31	0.72
			EB	0.56	0.92
AN	I-190	at Taxiway Bridge	WB	0.58	0.48
			EB	0.71	0.61
AO	Ramp from Bessie Coleman Drive to WB I-190			0.81	0.76
AP	Ramp from WB I-190 to Bessie Coleman Drive			0.79	0.25

TABLE 5.3-13
BUILD OUT
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Build Out	
				No Action (Alternative A)	Build (Alternative C, D, or G)
AQ	Free-Flow Ramp from WB I-190 to T5/T6			NA	0.42
AR	Ramp from EB I-190 to Bessie Coleman Drive			0.71	0.63
AS	Ramp from T5/T6 to EB I-190			0.69	0.51
AT	Ramp from SB Bessie Coleman Drive to EB I-190			0.15	0.10
AU	ID Not Used			NA	NA
AV	Ramp from WB I-190 to NB Mannheim Road/Mannheim Flyover			0.45	0.47
AW	Ramp from SB Mannheim Road to WB I-190			0.09	0.03
AX	Ramp from NB Mannheim Road to WB I-190			0.14	0.26
AY	Ramp from SB I-294 and EB I-90 to NB Mannheim Road/Mannheim Flyover			0.31	0.15
AZ	ID Not Used			NA	NA
BA	ID Not Used			NA	NA
BB	Ramp from NB Mannheim to EB I-190			0.10	0.20
BC	ID Not Used			NA	NA
BD	Ramp from NB Mannheim Road to Balmoral Avenue			0.12	0.18
BE	Ramp from Balmoral Avenue to NB Mannheim Road			0.08	0.03
BF	Ramp from NB I-294 to WB I-190			0.86	0.72
BG	Ramp from WB I-190 to SB I-294			0.88	1.08
BH	Ramp from SB I-294 and EB I-90 to WB I-190 and Mannheim Road			1.29	0.84
BI	Ramp from EB I-190 CD to SB I-294			1.15	1.11
BJ	ID Not Used			NA	NA
BK	Thorndale Avenue	Arlington Heights and I-290	WB EB	2.01 0.98	2.03 0.95
BL – BN	IDs Not Used			NA	NA
BO	Ramp from WB I-190, EB I-90 and SB I-294 to SB Mannheim Road			0.54	0.52
BP	Ramp from SB Mannheim Road to EB I-190			0.59	1.04

TABLE 5.3-13
BUILD OUT
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Build Out	
				No Action (Alternative A)	Build (Alternative C, D, or G)
BQ	Ramp from NB Mannheim Road to EB I-190			0.33	0.52
BR	Ramp from EB I-190 to NB I-294			0.87	0.60
BS	Access to Lot E North from Bessie Coleman Drive		WB	NA	0.26
			EB	NA	0.19
BT	Balmoral Avenue Ramp to SB Mannheim			0.29	0.68

Notes: (a) Reference letters refer to locations on figures in **Exhibit 5.3-7**.

(b) NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

NA = Not applicable; road segment is not yet built.

Shaded rows indicate conditions exceed threshold of significance.

Source: Jacobs Engineering Group, Inc. [TPC] review of information received from Kimley-Horn and Associates, Inc. [CCT], 2004.

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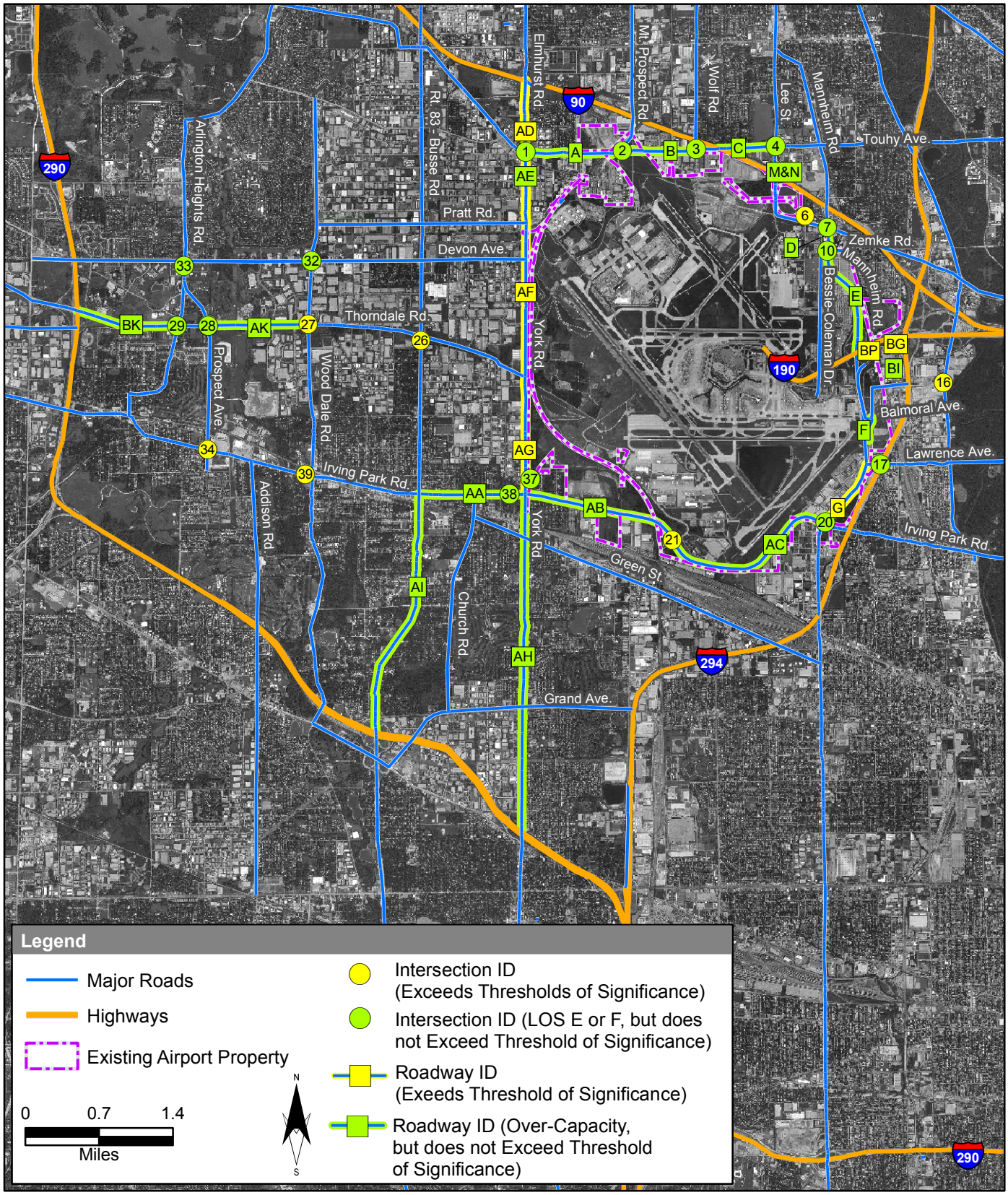

Source: AerialsExpress, September 2002. StreetmapUSA, ESRI 2003. Jacobs Engineering [TPC], 2004.

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Performance of Roadway Links and Intersections for the Build Out Phase

▶ Exhibit 5.3-7

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Delayed Schedule

Alternative A – No Action

Under Alternative A, the delayed construction schedule would not change the potential surface transportation impacts occurring in Build Out, as described above.

Alternatives C, D, and G

Analyses of the most congested intersections (ranked according to the amount of delay) indicate that the level of service at these intersections remains unchanged from those estimated to occur during Build Out with the original construction schedule. No other intersection is estimated to experience increased delays such that it would be ranked among the top ten most congested intersections.[16]

5.3.3.4 Build Out + 5

Original and Compressed Schedule

Alternative A – No Action

The No Action Alternative (Alternative A) intersection performance in **Table 5.3-14** and the No Action Alternative (Alternative A) roadway V/C ratios in **Table 5.3-15** show that traffic is expected to be congested (e.g. exceeds V/C of 1.0, or LOS of E or F) at numerous locations in the Build Out + 5 phase. As summarized in **Table 5.3-6**, of the total of 38 signalized intersections that were analyzed, 15 are expected to operate at a LOS of E or F. Twelve of those 15 intersections are expected to experience delays of more than 80 seconds per vehicle, which is considered a total breakdown condition with stop-and-go operations. Of the total of 15 signalized intersections that are expected to operate at a LOS of E or F with the No Action Alternative (Alternative A) in the Build Out + 5 phase, nine are expected to deteriorate from a LOS of D or better in the 2002 Baseline.

Of the total of 98 directional roadway segments that were analyzed, 38 are expected to operate at a V/C ratio of greater than 1.0. Thirty-one of those are expected to operate at a V/C ratio of greater than 1.2. Of the total of 38 roadway segments that are expected to operate at a V/C ratio of greater than 1.0 with the No Action Alternative (Alternative A), 17 are expected to have deteriorated from a V/C ratio of 1.0 or less in the 2002 Baseline.

Alternatives C, D, and G

The intersection performance of the Build Alternatives (C, D, and G) was compared with the No Action Alternative (Alternative A) in **Table 5.3-14,** and the roadway V/C ratios of these alternatives are compared in **Table 5.3-15**. As summarized in **Table 5.3-7**, of the 15 out of 38 signalized intersections that are expected to operate at a LOS of E or F with the No Action Alternative (Alternative A), only the intersection of Bessie Coleman Drive and the I-190

[16] Memorandum from Jennifer Bihl, Kimley-Horn and Associates, Inc. [CCT], to Lisa Reznar, Ricondo & Associates [CCT], December 3, 2004 (included as **Attachment G-5** in **Appendix G, Surface Transportation**).

westbound ramps are expected to improve with any of the Build Alternatives in the Build Out + 5 phase. In addition to the 14 intersections that operate at a LOS of E or F for both the No Action Alternative (Alternative A) and any Build Alternative, an additional eight intersections are expected to deteriorate from a LOS of D or better to a LOS of E or F. These eight intersections exceed the established threshold of significance for surface transportation. Five of these eight intersections are on the west side of the airport. Four of the eight intersections are expected to experience delays of more than 80 seconds per vehicle, which is considered a total breakdown condition with stop-and-go operations. Two additional intersections that do not exist in the No Action Alternative (Alternative A) are expected to operate at a LOS of E or F with Alternative C, D or G.

Three of the intersections that are expected to exceed the threshold of significance are along Irving Park Road at Main Cargo Road, Prospect Avenue, and Wood Dale Road. Another is at the Irving Park Road ramp to York Road, where the delay is projected to increase from 53.7 seconds per vehicle with the No Action Alternative (Alternative A) to 201.8 seconds per vehicle with any Build Alternative.

Of the 38 out of 103 total directional roadway segments that are expected to operate at a V/C ratio of greater than 1.0 with the No Action Alternative (Alternative A) in the Build Out + 5 phase, 27 are expected to be substantially over-capacity in both the No Action Alternative (Alternative A) and Alternative C, D or G. Two of the roadway segments that are substantially over-capacity (V/C > 1.2) with the No Action Alternative (Alternative A) are expected to improve to a lower, over-capacity condition (V/C between 1.0 and 1.2) with Alternative C, D or G. Only three of the 38 are expected to improve to a V/C ratio of less than 1.0.

Seven of the roadway segments analyzed are expected to deteriorate from a below capacity condition (V/C ≤ 1.0) with the No Action Alternative (Alternative A), to an over-capacity condition (V/C between 1.0 and 1.2) with Alternative C, D or G. An additional six intersections are expected to worsen from an over-capacity condition (V/C between 1.0 and 1.2) to a substantially over-capacity (V/C > 1.2) condition. These 13 roadway segments are expected to exceed the project's threshold of significance for surface transportation.

The locations of these roadway segments and intersections that are expected to exceed the threshold of significance for surface transportation are shown in **Exhibit 5.3-8**.

Alternatives C, D or G, when compared to the No Action Alternative (Alternative A), are expected to increase the number of signalized intersections and roadway links that are expected to deteriorate by the Build Out + 5 phase. The operation of a small number of the signalized intersections and roadway links are expected to improve with the implementation of any of the Build Alternatives under Build Out + 5.

TABLE 5.3-14
BUILD OUT + 5 PHASE
PEAK HOUR INTERSECTION PERFORMANCE
FOR NO ACTION AND WITH BUILD ALTERNATIVES

Id. Number	Intersection Location	Build Out + 5			
		No Action (Alternative A)		Build Alternatives (Alternative C, D, or G)	
		LOS(a)	Delay(b)	LOS(a)	Delay(b)
1	Touhy Avenue & Elmhurst Road	F	100.9	F	106.5
2	Touhy Avenue & Mount Prospect Road	F	139.4	F	103.9
3	Touhy Avenue & Wolf Road	F	134.5	F	114.1
4	Touhy Avenue & Lee Street (West)	F	124.4	F	94.7
5	Touhy Avenue & Lee Street (East)	B	16.5	B	16.5
6	Bessie Coleman Drive & Higgins Road	NA	NA	F	107.6
7	Mannheim Road & Higgins Road	F	192.5	F	213.4
8	Bessie Coleman Drive & Johnson Road	NA	NA	D	35.9
9	Bessie Coleman Drive & Zemke Road	NA	NA	B	10.1
10	Mannheim Road & Zemke Road	F	296.2	F	172.9
11	Bessie Coleman Drive & Mannheim Flyover	B	14.8	C	22.8
12	Bessie Coleman Drive & Northern Rental Car Road	A	6.1	NA	NA
13	Bessie Coleman Drive & Commercial Vehicle Holding Area	D	35.5	C	24.7
14	Bessie Coleman Drive & I-190 Westbound Ramps	F	86.9	B	19.7
15	Bessie Coleman Drive & I-190 Eastbound Ramps	D	39.1	B	18.5
16	Balmoral Avenue & Des Plaines River Road	C	22.3	F	118.0
17	Mannheim Road & Lawrence Avenue	F	186	F	217.3
18	Bessie Coleman Drive & Lot E South	D	46.1	NA	NA
19	Mannheim Road & Montrose Avenue	C	23	E	64.2
20	Mannheim Road & Irving Park Road	F	87.8	F	143.1
21	Irving Park Road & Main Cargo Road	B	19.9	E	74.9
22	ID Not Used	NA	NA	NA	NA
23	Bessie Coleman Drive & Lot E North	NA	NA	E	55.0
24	York Road & Green Street	D	50.2	E	61.2
25	York Road & Thorndale Avenue	C	23.4	D	47.6
26	Thorndale Avenue & Busse Road	D	42.7	E	56.6
27	Thorndale Avenue & Wood Dale Road	E	60.8	F	115.4
28	Thorndale Avenue & Prospect Avenue	E	76.6	F	107.3
29	Thorndale Avenue & Arlington Heights Road	F	220.5	F	229.2
30	Devon Avenue & Elmhurst Road	C	23.9	C	29.5
31	Elmhurst Road & Pratt Boulevard	C	31.8	D	45.7
32	Devon Avenue & Wood Dale Road	F	105.3	E	70.4
33	Devon Avenue & Arlington Heights Road	F	167.6	F	108.0
34	Irving Park Road & Prospect Avenue	D	51	F	90.1
35	Irving Park Road & Addison Road	C	28	D	35.6
36	Church Road & West Grand Avenue	C	27.7	C	34.4
37	York Road & Irving Park Road Ramp	D	53.7	F	201.8
38	Irving Park Road & York Road Ramp	E	61.1	F	181.3
39	Irving Park Road & Wood Dale Road	D	49.9	E	76.4

Notes: (a) LOS = Level of Service.

(b) Delay is measured in average seconds of delay per vehicle.

Shaded rows indicate conditions exceed threshold of significance.

NA = Not applicable; intersection will not exist or will not be signalized.

Source: Jacobs Engineering Group, Inc. [TPC] review of information received from Kimley-Horn and Associates, Inc. [CCT], 2004.

TABLE 5.3-15
BUILD OUT + 5 PHASE
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Build Out + 5	
				No Action (Alternative A)	Build (Alternative C, D, or G)
A	Touhy Avenue	Elmhurst Road and Mount Prospect Road	WB	1.37	1.37
			EB	1.37	1.37
B	Touhy Avenue	Mt. Prospect Road and Wolf Road	WB	1.47	1.41
			EB	1.66	1.53
C	Touhy Avenue	Wolf Road and Lee Street	WB	2.61	2.48
			EB	1.95	1.85
D	Mannheim Road	Higgins Road and Zemke Boulevard	NB	1.35	1.07
			SB	1.47	1.57
E	Mannheim Road	South of Zemke Boulevard	NB	1.33	1.20
			SB	1.93	1.96
F	Mannheim Road	Balmoral Ramps and Lawrence Avenue	NB	1.47	1.88
			SB	1.75	2.19
G	Mannheim Road	Montrose Avenue and Irving Park Road	NB	1.14	1.51
			SB	1.60	1.92
H	Mannheim Flyover		WB	0.44	0.65
			EB	0.27	0.94
I	Bessie Coleman Drive	South of Zemke	NB	0.24	0.38
			SB	0.24	0.57
J	Bessie Coleman Drive	South of Mannheim Flyover	NB	0.38	0.48
			SB	0.69	0.54
K	Bessie Coleman Drive	North of CVHA Lot	NB	0.48	0.43
			SB	0.66	0.57
L	Bessie Coleman Drive	North of I-190 WB Ramps	NB	1.28	0.56
			SB	1.13	0.64
M	Lee Street / Higgins Road	I-90 Ramps	NB / WB	1.65	1.62
			SB / EB	2.05	1.84
N	Lee Street / Higgins Road	I-90 Ramps and Mannheim Road	NB / WB	1.63	1.07
			SB / EB	1.86	2.03
O	Zemke Road	West of Bessie Coleman Drive	WB	NA	0.02
			EB	NA	0.13
P	Zemke Road	Bessie Coleman and Mannheim	WB	NA	0.20
			EB	NA	0.33
Q	Zemke Road	East of Mannheim	WB	0.88	0.73
			EB	0.29	0.47
R	Access to Lot E South from Bessie Coleman Drive		WB	0.28	NA
			EB	0.14	NA
S	Access to Limo Service Center		WB	0.43	0.32
			EB	0.43	0.32
T	Access to CVHA at Bessie Coleman Drive		WB	0.48	0.27
			EB	0.25	0.15
U	Rental Car Entrance	East of Bessie Coleman Drive		0.46	0.27

TABLE 5.3-15
BUILD OUT + 5 PHASE
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Build Out + 5	
				No Action (Alternative A)	Build (Alternative C, D, or G)
V	CVHA Exit and Return Roadway	To / From Core Terminals	WB	0.59	0.32
			EB	0.17	0.10
W	Balmoral Avenue	East of Bessie Coleman Drive	WB	0.15	0.10
			EB	1.02	0.52
X	Balmoral Avenue	Over Mannheim Road	WB	0.21	0.12
			EB	0.39	0.08
Y	Balmoral Avenue	East of Mannheim Road	WB	0.10	0.09
			EB	0.17	0.26
Z	Montrose Avenue	West of Mannheim Road	WB	0.22	0.21
			EB	0.40	0.36
AA	Irving Park Road	Busse Road and York Road	WB	1.23	1.59
			EB	1.54	1.79
AB	Irving Park Road	East of York Road	WB	1.22	2.25
			EB	1.21	1.80
AC	Irving Park Road	Mannheim Road and Main Cargo Road / Taft Road	WB	1.20	1.93
			EB	1.56	2.12
AD	Elmhurst Road	Touhy Avenue and I-90	NB	1.13	1.36
			SB	0.90	1.10
AE	Elmhurst Road	South of Touhy Avenue	NB	1.61	1.75
			SB	1.45	1.51
AF	Elmhurst Road	North of Thorndale Ave	NB	0.96	1.06
			SB	0.99	1.17
AG	York Road	Irving Park Road and Thorndale Avenue	NB	1.30	1.72
			SB	1.09	1.24
AH	York Road	I-290 and Irving Park Road	NB	1.13	1.24
			SB	1.32	1.37
AI	Busse Road	I-290 and Irving Park Road	NB	0.89	0.98
			SB	1.18	1.23
AJ	Busse Road	Irving Park Road and Thorndale	NB	0.66	0.59
			SB	0.99	0.86
AK	Thorndale Avenue	Wood Dale Road and Prospect Avenue	WB	1.58	1.83
			EB	0.90	1.16
AL	Thorndale Avenue	Wood Dale Road and Busse Road	WB	0.50	0.87
			EB	0.73	0.94
AM	Thorndale Avenue	Busse Road and York Road	WB	0.33	0.92
			EB	0.66	0.91
AN	I-190	at Taxiway Bridge	WB	0.64	0.53
			EB	0.79	0.66
AO	Ramp from Bessie Coleman Drive to WB I-190			0.88	0.82

TABLE 5.3-15
BUILD OUT + 5 PHASE
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Build Out + 5	
				No Action (Alternative A)	Build (Alternative C, D, or G)
AP	Ramp from WB I-190 to Bessie Coleman Drive			0.92	0.29
AQ	Free-Flow Ramp from WB I-190 to T5/T6			NA	0.51
AR	Ramp from EB I-190 to Bessie Coleman Drive			0.76	0.68
AS	Ramp from T5/T6 to EB I-190			0.8	0.66
AT	Ramp from SB Bessie Coleman Drive to EB I-190			0.16	0.13
AU	ID Not Used			NA	NA
AV	Ramp from WB I-190 to NB Mannheim Road/Mannheim Flyover			0.49	0.54
AW	Ramp from SB Mannheim Road to WB I-190			0.1	0.06
AX	Ramp from NB Mannheim Road to WB I-190			0.16	0.30
AY	Ramp from SB I-294 and EB I-90 to NB Mannheim Road/Mannheim Flyover			0.31	0.17
AZ	ID Not Used			NA	NA
BA	ID Not Used			NA	NA
BB	Ramp from NB Mannheim to EB I-190			0.09	0.09
BC	ID Not Used			NA	NA
BD	Ramp from NB Mannheim Road to Balmoral Avenue			0.12	0.17
BE	Ramp from Balmoral Avenue to NB Mannheim Road			0.12	0.04
BF	Ramp from NB I-294 to WB I-190			0.98	0.78
BG	Ramp from WB I-190 to SB I-294			0.90	1.04
BH	Ramp from SB I-294 and EB I-90 to WB I-190 and Mannheim Road			1.37	0.92
BI	Ramp from EB I-190 to SB I-294			1.28	1.14
BJ	ID Not Used			NA	NA
BK	Thorndale Avenue	Arlington Heights and I-290	WB	2.26	2.38
			EB	0.96	1.16
BL – BN	IDs Not Used			NA	NA
BO	Ramp from WB I-190, EB I-90 and SB I-294 to SB Mannheim Road			0.55	0.52
BP	Ramp from SB Mannheim Road to EB I-190			0.63	1.03

TABLE 5.3-15
BUILD OUT + 5 PHASE
PEAK HOUR VOLUME-TO-CAPACITY RATIOS
NO ACTION AND BUILD ALTERNATIVES

Reference Id.(a)	Roadway	Between	Direction (b)	Build Out + 5	
				No Action (Alternative A)	Build (Alternative C, D, or G)
BQ	Ramp from NB Mannheim Road to EB I-190			0.33	0.57
BR	Ramp from EB I-190 to NB I-294			0.96	0.61
BS	Access to Lot E North from Bessie Coleman Drive		WB	NA	0.30
			EB	NA	0.21
BT	Balmoral Avenue Ramp to SB Mannheim			0.32	0.72

Notes: (a) Reference letters refer to locations on figures in **Exhibit 5.3-8**.

(b) NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

NA = Not applicable; road segment is not yet built.

Shaded rows indicate conditions exceed threshold of significance.

Source: Jacobs Engineering Group, Inc. [TPC] review of information received from Kimley-Horn and Associates, Inc. [CCT], 2004.

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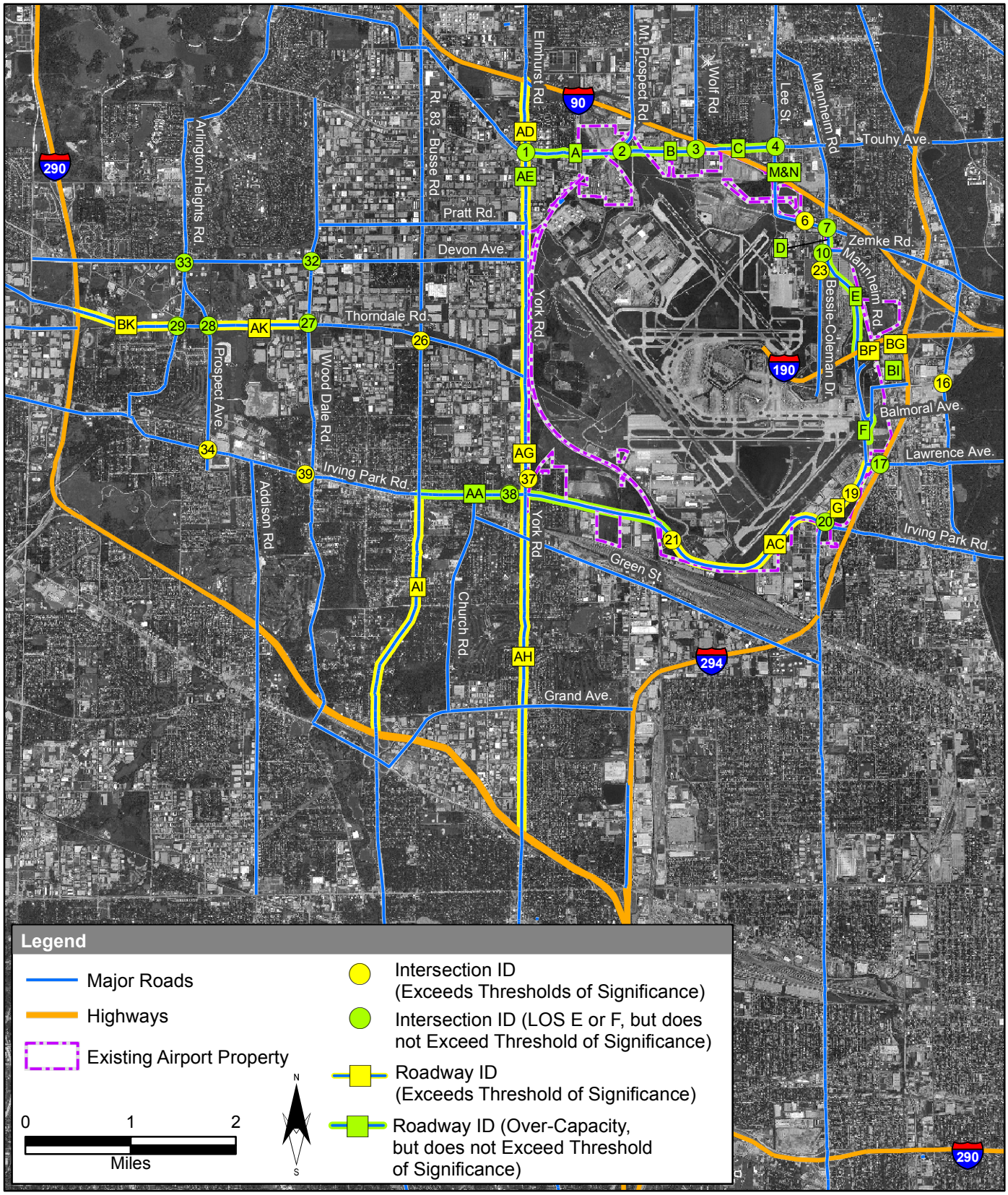

Source: AerialsExpress, September 2002. StreetmapUSA, ESRI 2003. Jacobs Engineering [TPC], 2004.

Chicago O'Hare International Airport

O'Hare Modernization Environmental Impact Statement

Performance of Roadway Links and Intersections for the Build Out +5 Phase

▶ Exhibit 5.3-8

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Delayed Schedule

Alternative A – No Action

Under the No Action Alternative (Alternative A), the delayed construction schedule would not change the potential surface transportation impacts occurring during Build Out +5 as described above.

Alternatives C, D, and G

Analyses of the most congested intersections (ranked according to the amount of delay) indicate that the level of service at these intersections remains unchanged from those estimated to occur during Build Out +5 with the original construction schedule. No other intersection is estimated to experience increased delays such that it would be ranked among the top ten most congested intersections.[17]

5.3.4 Potential Mitigation Measures

The following section outlines potential mitigation measures that would be implemented for any of the Build Alternative impacts in the Build Out + 5 phase. The potential mitigation measures would be the same for all Build Alternatives, and in each case would contribute to the improvement of the LOS and V/C for each significantly impacted intersection and roadway segment, respectively.

Intersection of Bessie Coleman Drive and Lot E North (Location 23): This intersection will be further evaluated by the City. The ultimate re-design and improvement of the intersection would produce a LOS of D or better, and could be incorporated as part of the proposed projects in each Build Alternative during Construction Phase I. The improvements may include additional turn lanes, adjustments to total cycle length, the addition of additional through turn lanes, or other modifications.

Intersection of Irving Park Road and Main Cargo Road (Location 21): Improvements that enhance capacity and improve the LOS of this intersection to D or better could potentially require the acquisition of additional right-of-way (ROW) by IDOT, the jurisdictional agency of Irving Park Road. Adjacent land that would need to be acquired for the additional ROW is currently owned by the Airport. The City has committed to participate in cooperative planning with IDOT to address future improvements to this intersection required to improve the intersection LOS, which may include additional turn lanes or through lanes on Irving Park Road. Additionally, the City has committed to make available adjacent Airport-owned land that would need to be acquired by IDOT for ROW to facilitate these future improvements to the intersection and Irving Park Road.

Intersection of Bessie Coleman Drive and Higgins Road (Location 6): Improvements that enhance capacity and improve the LOS of this intersection to D or better could potentially

[17] Memorandum from Jennifer Bihl, Kimley-Horn and Associates, Inc. [CCT], to Lisa Reznar, Ricondo & Associates [CCT], December 3, 2004 (included as **Attachment G-5** in **Appendix G, Surface Transportation**).

require the acquisition of additional ROW by IDOT, the jurisdictional agency of Higgins Road. Adjacent land that would need to be acquired for the additional ROW is currently owned by the Airport. The City has committed to participate in cooperative planning with IDOT to address future improvements to this intersection required to improve the intersection LOS, which may include additional through lanes or turn lanes on Higgins Road. Additionally, the City has committed to make available adjacent Airport-owned land that would need to be acquired by IDOT for ROW to facilitate these future improvements to the intersection and Higgins Road.

Intersection of York Road and Irving Park Road Ramp (Location 37): There is an existing Intergovernmental Agreement between the City of Chicago, IDOT, ISTHA, and DuPage County for Preliminary Phase I engineering services related to the proposed relocation of this intersection. As part of these preliminary engineering services which are currently underway, an intersection design study (IDS) will be completed which will be reviewed by the City, IDOT, ISTHA, and DuPage County to ensure that upon implementation of the improvements, the relocated intersection would operate at LOS of D or better.

All other significantly impacted intersections and roadway segments (Build Out + 5): In addition to the four intersections listed above, the City is reviewing the feasibility of providing mitigation for the project-related impacts to the significantly impacted intersections and roadway segments. As part of this effort, the FAA is continuing discussions with the City to further identify appropriate mitigation initiatives to address the project-related surface traffic for the Build Alternatives. For example, the City could (1) establish and fund time-delimited escrow accounts to be controlled by the responsible transportation agency that owns and operates the significantly impacted intersection and roadway segment, or (2) contribute a prorated share of the project-related mitigation costs, including the total estimated costs of planning, designing, and constructing the required improvements, to the significantly impacted roadway segments and intersections. The prorated contribution could be based on the increase in project-related traffic at each location.

As a result of potential mitigation initiatives, a Memorandum of Agreement (MOA) could be developed between the City and each responsible transportation agency, which could include the following:

- Documentation of the percent of project-generated traffic (for the No Action and Build Alternatives) at the significantly impacted intersections and roadway segments.
- Identification of the mitigation measures required.
- Estimates of the implementation costs of mitigation measures for the group of significantly impacted intersections and roadway segments.
- Identification of the events that would trigger the contribution of project-related mitigation funds.

Another option for providing mitigation for the project related impacts could be for the City to participate in cooperative planning with the entities having jurisdictional responsibilities over the facilities to address their respective share of intersection and roadway capacity

improvements, and other potential mitigation measures, for each significantly impacted intersection and roadway segment.

5.3.5 Future Roadway Projects by Others

During the development of this EIS, assumptions were made regarding surface transportation improvements that would be in place for each of the construction phase years, based on the TIP for the Chicago metropolitan area. It is recognized that regional transportation planning is an ongoing and fluid process, and that implementation of any of the Build Alternatives would be expected to facilitate advancement of that planning. It is anticipated that a number of the adverse impacts that have been identified in this EIS could be reduced as a result of some of the surface transportation initiatives that are under consideration. However, specific impacts of the following projects will not be known unless and until sufficient information is available to allow a detailed study. Some of these projects that are known to be in the early stages of planning at this point are summarized as follows:

West O'Hare Bypass: This project has been included in the Long Range Plan for ISTHA that was approved on September 30, 2004. It was included in the Plan as an "optional" project, contingent upon Federal approval and funding. The project, which has yet to be programmed for funding, would provide a six-lane expressway extending from I-94/I-294 south of the airport, and terminating near Thorndale Avenue west of the airport. This project has the potential to lessen some of the potential impacts of the alternatives occurring along York Road, Irving Park Road, Mannheim Road, and Thorndale Avenue.

York Road / Irving Park Road / UPRR / CNRR – Grade Separation: This project is included as part of this EIS surface transportation analysis as a project that was anticipated to be completed by others. Some very basic geometric assumptions were made to maintain connectivity between York Road and Irving Park Road, but it is anticipated that the preliminary engineering to be done by the sponsoring agency will more thoroughly analyze the need and potential impacts. This project has the potential to lessen some of the potential impacts of the alternatives occurring along York Road and Irving Park.

Elgin-O'Hare Expressway – East Extension: This project is part of the CATS 2030 RTP, but has yet to be programmed by IDOT. It would extend the Elgin-O'Hare Expressway from its existing east terminus at I-290 to the proposed west access to O'Hare, by converting existing Thorndale Avenue from a DuPage County arterial route to a limited access freeway. This project has the potential to lessen some of the potential impacts of the alternatives occurring along York Road, Irving Park Road, and Thorndale Avenue.

Metra STAR Line: The Northwest Corridor Segment of the STAR Line would provide commuter rail service on new alignment, connecting Hoffman Estates to O'Hare airport along I-90, then south along an existing freight railroad corridor. This project has the potential to lessen some of the potential impacts of the alternatives occurring on the west side and south side of O'Hare airport by providing an alternative to driving for airport trips from the west to the main and western terminals at the Airport.

CTA Blue Line - O'Hare Express: A feasibility study is underway for this project which would provide express service between downtown Chicago and O'Hare along the existing Blue Line corridor. It would include passenger terminals that can accommodate baggage handling, and improvements to tracks and signals to allow express trains to bypass local trains. Depending on the location of the express train terminal at O'Hare, this project has the potential to lessen some of the potential impacts of the alternatives occurring on the east side and south side of O'Hare by providing an alternative to driving for airport trips from the east to the main and western terminals at O'Hare.

DuPage County "J" Route Bus Rapid Transit: This project, which is included as part of the DuPage Area Transit Plan 2020, is intended to provide fully integrated multi-modal and regionally coordinated express bus transit service to serve DuPage County. It would provide a high-speed link from O'Hare and Schaumburg through Oak Brook, to Naperville and Aurora and to the proposed outer circumferential commuter rail service. The line would operate initially in priority lanes on surface streets. However, at full operation, the "J" route will provide high-speed service operating on an exclusive bus way. This project has the potential to lesson some of the potential impacts of the alternatives occurring on the west side and south side of O'Hare by providing an alternative to driving for airport trips from the west to the main and western terminals at O'Hare. Routes with impacts that could be affected include York Road/Elmhurst Road, Irving Park Road, and Thorndale Avenue.

5.3.6 Summary

Traffic congestion is already present within the surface transportation study area. This situation is expected to become worse with the No Action Alternative (Alternative A) for each of the four future years of analysis. When comparing the Build Alternatives to the No Action Alternative (Alternative A) for each of the construction phases analyzed, there is a pattern of an increasing congestion at a number of intersections and directional roadway segments. Under the Build Alternatives for Construction Phase I and Phase II, when compared to the No Action Alternative (Alternative A), no intersections are expected to deteriorate such that they would exceed the threshold of significance, and only one directional roadway segment is expected to deteriorate such that it exceeds the threshold of significance (see **Table 5.3-6** and **Table 5.3-7**). Under the Build Alternatives for the Build Out phase, when compared to the No Action Alternative, seven intersections and eight directional roadway segments are expected to deteriorate such that they would exceed the threshold of significance. Under the Build Alternatives for the Build Out + 5 phase, when compared to the No Action Alternative, there are 10 intersections and 13 directional roadway segments that are expected to deteriorate such that they would exceed the threshold of significance.

Since the impact patterns do not change significantly from phase to phase, and the impacts would be most pronounced in the Build Out + 5 phase, the following summary of delay figures are provided for the Build Out + 5 phase to support the qualitative observations. The surface traffic impact of the No Action and Build Alternatives on various major roads within the surface transportation study area is summarized as follows:

Irving Park Road: Traffic conditions on Irving Park Road from Mannheim Road to the western boundary of the study area at Prospect Avenue would be consistently and significantly worse with the Build Alternatives than with the No Action Alternative (Alternative A). Delays for the No Action Alternative (Alternative A) and Build Alternatives at the intersection with Mannheim Road are 87.8 seconds/vehicle and 143.1, seconds/vehicle (both are LOS F), respectively. The delay at the Main Cargo Road intersection increases from 19.9 seconds/vehicle (LOS B) in the No Action, to 74.9 seconds/vehicle (LOS E), with each of the Build Alternatives. Similar observations are found at intersections with York and Wood Dale Road. The worsening of the LOS with the Build Alternatives on Irving Park Road is due to an almost uniform increase in traffic on the entire length of Irving Park Road within the study area, west of the Mannheim Road intersection.

Thorndale Avenue: Traffic conditions on Thorndale Avenue would be slightly worse with the Build Alternatives than with the No Action Alternative (Alternative A). Delays at the intersection with Busse Road for the No Action and Build Alternatives are 42.7 seconds/vehicle (LOS D) and 56.6 seconds/vehicle (LOS E), respectively. Delays at the intersections with Prospect Avenue and Wood Dale Road increase from 76.6 seconds/vehicle (LOS E) in the No Action, to 107.3 seconds/vehicle (LOS F), with each of the Build Alternatives, and from 60.8 seconds/vehicle (LOS E), to 115.4 seconds/vehicle (LOS F) with the Build Alternatives, respectively. The worsening of the LOS with the Build Alternatives on Thorndale Avenue is primarily due to the introduction of vehicles that would access O'Hare from the west side.

York Road / Elmhurst Road: Some intersections on this road experience a worse LOS with the Build Alternatives than with the No Action Alternative (Alternative A). However, there is no uniform pattern of increase. For example, the performance at the intersection at Devon Avenue is LOS C in both the No Action (delay of 23.9 seconds/vehicle) and Build Alternative (delay of 29.5 seconds/vehicle) scenarios. However, due to a very high volume on Irving Park Road, and a slightly higher volume on Thorndale Avenue with the Build Alternatives, with respect to the No Action Alternative (Alternative A), the LOS at these intersections are lower in the Build Alternative cases.

Mannheim Road: All intersections on Mannheim road, except that with Zemke Road, would experience higher delays with the Build Alternatives than with the No Action Alternative (Alternative A). In both scenarios, most intersections operate at LOS F.

Bessie Coleman Drive: There would be some changes in geometric configuration from the No Action Alternative (Alternative A) to the Build Alternatives, and hence the comparison is not as straightforward as above. Furthermore, the change in LOS from the No Action Alternative (Alternative A) to the Build Alternative scenarios is not uniform, as evidenced by some intersections experiencing an improved LOS, while others experience a deteriorated LOS.

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