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## 5.20 CONSTRUCTION IMPACTS

This section identifies potential construction impacts of the alternatives and methods to minimize any impacts of the alternatives using mitigation procedures. Construction impacts would result from building runways, taxiways, roads, terminal improvements, and other activities, and are commonly short-term and temporary in nature. Typical construction impacts may include air, water, and noise pollution and disposal of construction debris. Surface transportation traffic patterns, both on and off the airport, may be altered during construction in addition to other social and socioeconomic impacts. Airfield construction will alter normal aircraft taxi patterns and runway usage.

### 5.20.1 Background and Methodology

A number of reports and related resources have been reviewed to define the proposed scope and implementation of the alternatives and concurrent projects. The reviewed reports and documents include:

- World Gateway Program Environmental Assessment, June 2002
- OMP Project Definition Report, January 2003
- O'Hare International Airport Master Plan, February 2004
- Draft Airport Layout Plan, October 2003
- Construction Impacts Draft Technical Working Report, September 2004

The Construction Impacts Draft Technical Working Report,<sup>1</sup> is the summary of a substantial work effort to quantify the scope of the City of Chicago's O'Hare Modernization Program (OMP) and other projects, and includes an integrated schedule. That report provides the foundation for the construction impact evaluation in this section.

#### 5.20.1.1 Regulatory Context

Numerous Federal and state regulations govern construction activities. The primary set of standards applicable to all projects is FAA Advisory Circular (AC) 150/5370-10A, *Standards for Specifying Construction of Airports*. The Occupational Safety and Health Administration's (OSHA) construction safety and health regulations also apply to all construction projects.<sup>2</sup> These OSHA regulations establish a variety of safety standards relating to demolition practices, construction equipment, construction practices on site, storage of materials, use of tools, and fire protection. Construction work necessary for any alternative will comply with all regulations generally applicable to construction. Additional regulations specifically applying to projects involving the handling, transport, loading, unloading, and storage incidental to transportation

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<sup>1</sup> Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004.

<sup>2</sup> 29 CFR Part 1926, Construction Safety and Health Regulations.

of any hazardous materials are administered by the U.S. Department of Transportation (DOT).<sup>3</sup> The U.S. Environmental Protection Agency (USEPA) administers regulations relating to the disposal of hazardous wastes. See **Section 5.19, Solid Waste and Hazardous Materials** for further information.

Three Federal agencies have regulatory jurisdiction over asbestos removal and handling: DOT, USEPA, and OSHA. DOT regulations potentially applicable to the Airport for this project are included in the Hazardous Materials Regulations (49 CFR Parts 171, 172, 173, and 177). OSHA regulations applicable to contractors working at the Airport are related to hazard communication, construction standards, and general industry standards, and are included in 29 CFR Parts 1910.1001, 1910.1200 and 1910.134. USEPA regulations applicable to the Airport are included in the asbestos portion of the National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR Part 61), and Toxic Substances Control Act (TSCA) (40 CFR Part 763), and the Asbestos Hazard Emergency Response Act (AHERA). The Illinois statute that pertains to asbestos is the Illinois Environmental Protection Act. The City of Chicago Department of Environment also monitors asbestos abatement activities.

Sections 402 and 404 of the Clean Water Act are also applicable to construction activities. Section 402 requires that a storm water control permit (National Pollutant Discharge Elimination System (NPDES)) be obtained from the designated permit issuance authority, Illinois Environmental Protection Agency (IEPA), for any construction that may result in discharges to navigable waters of the United States. The Phase II of the NPDES stormwater program includes General Storm Water Permits for Small Municipal Separate Storm Sewer Systems (MS4s). The permits are intended to ensure protection from soil erosion. Section 404 requires that permits be obtained from the U.S. Army Corps of Engineers (USACE) for the dredging or filling of jurisdictional wetlands or other non-wetland Waters of the United States (WUS).

#### **5.20.1.2 Thresholds of Significance**

FAA Order 1050.1E (Appendix A, 5.3) states the following with regard to the significance of construction impacts:

Construction impacts alone are rarely significant pursuant to NEPA. Refer to the air quality, water, fish, plants and wildlife, and other relevant impact categories for further guidance in assessing the significance of the potential construction impacts.

#### **5.20.2 Alternatives Analysis**

The alternatives that have been considered and evaluated are discussed in **Chapter 3, Alternatives**. Following are general comments relating to the comparative construction impacts of the alternatives.

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<sup>3</sup> 49 CFR Part 172 and 49CFR Part 177, Carriage by Public Highway.

### 5.20.2.1 Alternative A - No Action

Under this alternative, previously approved projects at the Airport, including the World Gateway Program (WGP) and additional projects in the vicinity of the Airport, could be built off the Airport through private development efforts. The elements of the proposed Eastside Collateral Development, previously approved in the WGP Environmental Assessment, involving a variety of office and commercial development, would likely be undertaken on undeveloped or underdeveloped property in the surrounding area. It is also possible that the car rental companies on the Airport could be forced to relocate off the Airport or to establish satellite facilities off the Airport to meet future needs for storage and maintenance facilities. If additional public auto parking is not provided on the Airport, it is likely that private developers would meet at least some of the parking demand through construction of lots or structures off the Airport.

The Airport's ongoing maintenance and operational needs will require routine improvements under their Capital Improvement Program (CIP), which includes pavement rehabilitation, and terminal refurbishment through the years. A detailed list of project components for each Build Alternative and the No Action Alternative (Alternative A), is provided in **Table E-19 of Appendix E, Alternatives**. Detailed layouts of each alternative are also provided in **Appendix E**. While it is probable that some construction-related impacts would occur with the No Action Alternative (Alternative A), the specific nature of those impacts is difficult to project. The total construction activity under the No Action Alternative, however, would be substantially smaller in scope than for any of the Build Alternatives. Because of this, there is a comparison between the relative impacts of the Build Alternatives to each other.

### 5.20.2.2 Alternative C

Alternative C is described in **Chapter 3, Alternatives**, and in greater detail in **Appendix E**. As in other sections, Alternative C is utilized as the Build Alternative against which other alternatives are compared. The City has prepared detailed reports related to their proposed O'Hare Modernization Program (OMP). FAA utilized this information and modified the dataset as appropriate to identify potential impacts related to Alternatives D and G. Thus, this section provides detailed information on potential construction impacts of Alternative C. Alternatives D and G are also discussed and compared to Alternative C. **Table 5.20-1** lists the major individual projects in Alternative C. Also listed are a number of previously approved projects, including the WGP and ALP-related projects, which are included in this construction impact review to assess the cumulative effect of all concurrent projects.

### 5.20.2.3 Alternative D

Alternative D is similar to Alternative C, except that Runway 10R/28L is not included in the program. Based on an analysis of the dataset, FAA determined that Alternative D would result in:

- Slightly less land acquisition as compared to Alternative C, and
- Less airfield construction (i.e., no construction of Runway 10R/28L) as compared to Alternative C

Alternative D would result in less potential construction impacts than Alternative C because of a reduced project scope.

#### 5.20.2.4 Alternative G

Alternative G is similar to Alternative C, except that Runway 10R/28L is extended 9,946 feet, and reoriented to a 12/30 alignment. However, the rest of the proposed airfield and associated development for Alternative C and G are essentially the same. Based on an analysis of the dataset, FAA determined that Alternative G would result in:

- Slightly less land acquisition as compared to Alternative C, and
- Relocation of more buildings and infrastructure in the Southwest Cargo area, including relocation of the U.S. Post Office facility, due to the construction of new Runway 12/30.

The potential construction impacts of Alternative G would be greater than Alternatives C and D due to the relocation of more buildings, construction of an additional runway (compared to Alternative D), and construction of a longer runway (as compared to Alternative C).

#### 5.20.3 Construction Plan

As discussed in **Section 5.0, Introduction**, an EIS should allow flexibility in implementation of a proposed project, given the uncertainties that abound regarding construction implementation. Therefore, in an effort to provide this flexibility and bound the potential timeframe under which construction could commence or be completed, the following potential construction schedule scenarios were considered:

- Original Construction Schedule – As described earlier in **Section 5.0**, the original construction schedule submitted to the FAA by the City called for construction to begin in mid-2004. For reasons already identified, it is now evident that this schedule was unduly optimistic. Details of the original schedule are presented below.
- Compressed Schedule – This construction schedule would compress the construction that was originally scheduled between July 2004 (Year 1 of the Original Schedule) and September 2007 (Year 4 of the Original Schedule) into the time period of September 2005 (Year 1 of the Compressed Schedule) to September 2007 (Year 3 of the Compressed Schedule). Unlike the original schedule, the City's proposed Runway 9R/27L would be fully operational in October 2007 (Year 3 of the Compressed Schedule) instead of January 2007. All other future years of analysis would remain the same as those assessed in the original schedule.

- Delayed Schedule – This construction schedule is the same as the original construction schedule, but delayed by 14 months. Instead of construction beginning in July 2004 (Year 1 of the Original Schedule), it would begin in September 2005 (Year 1 of the Delayed Schedule). For all other future years of analysis, there would be a one-year delay (i.e. 2008, 2010, 2014, and 2019 are analyzed instead of 2007, 2009, 2013, and 2018). However, reference will continue to be made to the construction start year for each potential construction schedule (i.e. Year 1, Year 2, etc...)

These potential construction schedules, and their analyses, are further discussed in the following sections, in addition to the Original Schedule. Where the construction schedules result in varying impacts, those distinctions are identified and discussed in the text below.

### 5.20.3.1 Construction Projects

#### Original Schedule

Development of the Build Alternatives would potentially occur in two major phases. Each phase is comprised of three primary airfield components as well as the West Terminal Concourse. General descriptions of Phase 1 and Phase 2 projects are provided below. See **Table 5.20-1** for a proposed schedule of major Build Alternative projects. See **Table 5.20-4** for a detailed list of the projects that fall under each phase.

- Phase 1: Phases 1A, 1B, and 1C consist of the construction of one new runway, the extension of an existing runway, and the realignment of an existing runway, respectively. For the purposes of this EIS, realignment involves decommissioning of an existing runway and construction of a replacement runway. In response to demand for additional gate facilities, implementation of the West Terminal Complex Satellite Concourse is also expected to be initiated during this period; however, it is independent of other Phase 1 components.
- Phase 2: Phases 2A, 2B, and 2C consist of the extension of an existing runway and the realignment of two existing parallel runways, Runway 14R/32L and Runway 14L/32R. As previously mentioned, a realignment involves decommissioning of an existing runway and construction of a replacement runway. In response to demand for additional gate facilities, implementation of the West Terminal Building and the previously approved components of WGP terminal development is also proposed to be completed during this period.
- Additional projects, which are similar to certain project components of the WGP, are also a part of the Build Alternatives. These projects include such elements as improvements to existing Terminal 3, redevelopment of existing Terminal 5, the construction of a consolidated rental car facility, and the construction of a new police facility. These projects are listed in **Table 5.20-4**.

**TABLE 5.20-1  
PROPOSED SCHEDULE (ORIGINAL)**

<b>Proposed Project</b>	<b>Phase</b>	<b>First Year of Operation</b>
<b>Build Alternative Runway Components</b>		
New future Runway 9L/27R	1A	Year 4
Extension of existing Runway 9R/27L (future 10L/28R)	1B	Year 6
New future Runway 10C/28C	1C	Year 6
Extension of existing Runway 9L/27R (future 9R/27L)	2A	Year 10
New future Runway 9C/27C	2B	Year 10
New future Runway 10R/28L (Alternative C only)	2C	Year 10
New future Runway 12/30 (Alternative G only)	2C	Year 10
<b>Previously Approved World Gateway Program Components</b>		
Concourse K	-	Year 6
Terminal 4	-	Year 10
Terminal 6	-	Year 10
<b>West Terminal Complex Components</b>		
Satellite concourse	1	Year 6
Terminal building/concourse	2	Year 10
West Terminal ground access	2	Year 10

Source: Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004.

### **Compressed Schedule**

Under this potential construction schedule, the development of the Build Alternatives would be compressed in the early stages, as compared to the Original Schedule. Work originally scheduled for July 2004 thru September 2007 would be compressed into the time period between September 2005 and September 2007. Unlike the original schedule, the City's proposed Runway 9R/27L would be fully operational in October 2007 (in Year 3 of the Compressed Schedule) instead of January 2007 (in Year 4 of the Original Schedule), which would essentially be the completion of Phase 1A. However, beyond this date, the first "calendar" year of operation for the major projects would not change (see **Table 5.20-2**).

**TABLE 5.20-2  
PROPOSED SCHEDULE (COMPRESSED)**

<b>Proposed Project</b>	<b>Phase</b>	<b>First Year of Operation</b>
<b>Build Alternative Runway Components</b>		
New future Runway 9L/27R	1A	Year 3
Extension of existing Runway 9R/27L (future 10L/28R)	1B	Year 5
New future Runway 10C/28C	1C	Year 5
Extension of existing Runway 9L/27R (future 9R/27L)	2A	Year 9
New future Runway 9C/27C	2B	Year 9
New future Runway 10R/28L (Alternative C only)	2C	Year 9
New future Runway 12/30 (Alternative G only)	2C	Year 9
<b>Previously Approved World Gateway Program Components</b>		
Concourse K	-	Year 5
Terminal 4	-	Year 9
Terminal 6	-	Year 9
<b>West Terminal Complex Components</b>		
Satellite concourse	1	Year 4
Terminal building/concourse	2	Year 9
West Terminal ground access	2	Year 9
Source: Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004. First years of operation revised by Crawford, Murphy and Tilly, Inc. [TPC], December 2004.		

### **Delayed Schedule**

This potential construction schedule is essentially the same as the Original Schedule for the Build Alternatives, but delayed by 14 months. Instead of construction beginning in July 2004, it would begin in September 2005. As a result, the first year of operation of every major phase of development would be delayed by approximately one year. However, since the construction dates presented in this section are shown relative to the overall start date of the associated construction schedule, the construction dates would be nearly identical to those depicted in the Original Schedule (see **Table 5.20-3**).

**TABLE 5.20-3  
PROPOSED SCHEDULE (DELAYED)**

Proposed Project	Phase	First Year of Operation
<b>Build Alternative Runway Components</b>		
New future Runway 9L/27R	1A	Year 4
Extension of existing Runway 9R/27L (future 10L/28R)	1B	Year 6
New future Runway 10C/28C	1C	Year 6
Extension of existing Runway 9L/27R (future 9R/27L)	2A	Year 10
New future Runway 9C/27C	2B	Year 10
New future Runway 10R/28L (Alternative C only)	2C	Year 10
New future Runway 12/30 (Alternative G only)	2C	Year 10
<b>Previously Approved World Gateway Program Components</b>		
Concourse K	-	Year 6
Terminal 4	-	Year 10
Terminal 6	-	Year 10
<b>West Terminal Complex Components</b>		
Satellite concourse	1	Year 6
Terminal building/concourse	2	Year 10
West Terminal ground access	2	Year 10
Source: Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004. First years of operation revised by Crawford, Murphy and Tilly, Inc. [TPC], December 2004.		

### 5.20.3.2 Proposed Construction Schedule

#### Original Schedule

This proposed construction plan<sup>4</sup> is based on a year round working schedule, with weather sensitive activities such as pavement and earthwork operations occurring primarily in April through November. **Table 5.20-4** is a complete listing of individual projects in Alternative C, which includes previously identified WGP projects. The listing also includes the proposed start and completion dates for each project. The proposed schedule is based upon a construction start date in July of Year 1 with completion in December of Year 10 (Build Out). Even noting differences associated with construction, the proposed construction schedules for Alternatives D and G are anticipated to be comparable to Alternative C.

<sup>4</sup> Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004.

**TABLE 5.20-4  
OVERVIEW OF PROPOSED CONSTRUCTION PLAN (ORIGINAL)**

Proposed Project	Preliminary Construction Schedule	
	Start Date	End Date
<b>PHASE 1A – New North Runway 9L/27R and Associated Taxiway Construction</b>		
JAWA Water Main Relocation	July Year 1	May Year 2
Security Related Improvements	July Year 1	December Year 2
Willow Higgins Creek Relocation	July Year 1	June Year 3
Runway Pavement and Shoulders	July Year 2	November Year 3
Taxiway Pavement and Shoulders	July Year 2	November Year 3
New Roadways and Related Infrastructure	April Year 3	November Year 3
North Airfield Lighting Vault	November Year 1	October Year 3
FAA Control Tower	October Year 1	October Year 3
North Basin Expansion	May Year 2	November Year 2
<b>PHASE 1B – Extension to Existing Runway 9R/27L (New Runway 10L/28R) and Associated Taxiway</b>		
Runway Pavement and Shoulders Extension	April Year 4	November Year 4
Taxiway Pavement and Shoulders Extension	April Year 4	November Year 4
Irving Park/York Road Construction	September Year 1	June Year 3
Union Pacific Railroad Relocation	June Year 1	June Year 3
<b>PHASE 1C – New Closely-Spaced South Runway 10C/28C and Associated Taxiways and Holdpads</b>		
St. Johannes Cemetery and Resthaven Cemetery Relocations	June Year 3	November Year 5
Cargo and Maintenance Facility Relocation	July Year 1	December Year 4
South Detention Basin	July Year 1	August Year 3
Runway Pavement, Shoulders, and Holdpads	September Year 2	November Year 5
Taxiway Pavement and Shoulders	September Year 2	November Year 5
South Airfield Lighting Vault	July Year 2	July Year 4
New Roadways and Related Infrastructures	July Year 2	August Year 5
New Central Basin	March Year 4	July Year 5
Bensenville Ditch Relocation	July Year 1	March Year 3
Demolition: Buildings: fire station (602), cargo simulation (603), lighting vault (604), fueling station (606), electrical utilities (608), UAL Cargo (610), basement fill-in (610), Fed Ex metroplex (611), Fed Ex freight (612), MW Cargo (613)	March Year 2	August Year 2
<b>PHASE 1 – West Terminal – West Satellite Concourse</b>		
West Satellite Concourse (T4)	March Year 4	November Year 5
Energy Facility	July Year 4	February Year 5
ATS Station (Active AOA)	December Year 2	February Year 5
ATS Station (West Terminal)	December Year 2	August Year 4
ATS Station (Terminal No. 7)	April Year 3	April Year 4
ATS Tunnel (Bored)	March Year 3	October Year 3
ATS Maintenance Center	June Year 3	June Year 4
ATS System	July Year 4	January Year 6
Fuel Farm Improvements	July Year 1	October Year 3
<b>PHASE 2A – Extension to Existing Runway 9L/27R (New Runway 9R/27L) and Associated Taxiway</b>		
Runway Pavement and Shoulders Extension	July Year 7	November Year 9
Taxiway Pavement and Shoulders Extension	July Year 7	November Year 9

**TABLE 5.20-4  
OVERVIEW OF PROPOSED CONSTRUCTION PLAN (ORIGINAL)**

Proposed Project	Preliminary Construction Schedule	
	Start Date	End Date
<b>PHASE 2B – New Closely-Spaced North Runway 9C/27C and Associated Taxiways and Holdpad</b>		
GPS Antenna	July Year 1	September Year 1
Cargo and Maintenance Facility Relocation – Site work, parking lots, concrete aprons for and including the construction of the following replacement buildings: Fire Station (702), Flight Kitchen (741), AAL Hangar Maintenance (725), UAL Hangar Maintenance (750), UAL Ground Maintenance (744), AAL Ground Maintenance (723), Flight Kitchen (742), UAL Personnel Building (746), Lift Station (728)	October Year 3	October Year 5
Demolition – moving from old bldgs to new buildings and demo of the old following bldgs: Fire Station (702), Flight Kitchen (741), AAL Hangar Maintenance (725), Lift Station (728) AAL Ground Maintenance (723), UAL Personnel Bldg (746), UAL Hangar Maintenance (750), Flight Kitchen (742) and UAL Ground Maintenance (744)	September Year 4	February Year 5
Runway Pavement and Shoulders and Holdpad	June Year 7	November Year 9
Taxiway Pavement and Shoulders	June Year 7	November Year 9
Runway 14R/32L Demolition	April Year 9	October Year 9
Runway 14R/32L Taxiway Pavement and Shoulder Demolition	April Year 9	October Year 9
New Roadways and Related Infrastructure	September Year 7	October Year 9
Willow Creek Relocation	April Year 6	November Year 7
New North Detention Basin	May Year 6	August Year 8
Future Airport Building move to OMP 9C/27C	July Year 7	October Year 9
New Roads and Related Parking	June Year 8	September Year 9
<b>PHASE 2C – New South Runway 10R/28L</b>		
Security Related Improvements	January Year 7	March Year 7
Runway Pavement and Shoulders	April Year 8	November Year 9
Taxiway Pavement and Shoulders	April Year 8	November Year 9
New Roadways and Related Infrastructure	August Year 8	July Year 9
FAA Control Tower	September Year 7	September Year 9
Rotating Beacon	July Year 1	September Year 1
Delta Cargo Facility	July Year 8	November Year 9
Apron Pavement	February Year 9	June Year 9
<b>PHASE 2 – West Terminal</b>		
Main West Terminal	April Year 6	October Year 10
Baggage Handling System	April Year 7	January Year 9
Parking Lot at Irving Park Road and York Road	July Year 7	April Year 9
Parking Structure	March Year 9	April Year 10
Western Terminal Access Roadway	June Year 6	January Year 8
Parking Lot	April Year 10	September Year 10
<b>PHASE 2 – Projects Previously Approved Through the World Gateway Program</b>		
Terminal 3, Concourse K Extension	July Year 4	December Year 5
Taxiway A and B Reconfiguration at Terminal 3	December Year 4	December Year 5
Reconstruction of Terminal 1/2 Connector	December Year 4	December Year 5
Terminal 4 – Demolition of Existing Concourse L	October Year 10	December Year 10
Construction of Terminal 4	August Year 7	December Year 10
Construction of Terminal 6	January Year 6	December Year 9
Redevelopment of Terminal 5	July Year 8	December Year 9
Construction of ATS Station at Terminal 6 and ATS Realignment at Terminal 5/6	July Year 8	December Year 9
Construction of Terminal 6 Access Road	January Year 8	December Year 9

**TABLE 5.20-4  
OVERVIEW OF PROPOSED CONSTRUCTION PLAN (ORIGINAL)**

Proposed Project	Preliminary Construction Schedule	
	Start Date	End Date
<b>PHASE 2 – Projects Previously Approved Through the World Gateway Program (Continued)</b>		
Terminal 5 & 6 Parking	August Year 9	December Year 9
Taxiway B East Extension	April Year 5	December Year 5
Construction of new Delta Air Freight and Related Facilities	October Year 8	December Year 9
Demolition of Existing Delta Air Freight and Related Facilities	November Year 9	December Year 9
Demolition of existing Lynxs Cargo and Related Facilities	November Year 9	December Year 9
Construction of new Skychef's Flight Kitchen and Related Facilities	July Year 8	December Year 9
Construction of Skychef's Parking Garage	September Year 8	December Year 9
Demolition of existing Skychef's Flight Kitchen and Related Facilities	November Year 9	December Year 9
Snow Dump Relocation	September Year 9	November Year 9
New Police Facility Construction	January Year 3	August Year 3
Old Police/Warehouse Demo	November Year 9	December Year 9
Construction of new H & R Plant and Related Facilities	December Year 9	December Year 9
Demolition of existing H & R Plant and Related Facilities	August Year 9	December Year 9
Parking Structures in Terminal Core	July Year 3	December Year 4
North LTP2 Construction	September Year 8	December Year 9
Construction of ATS Station at North LTP2	May Year 9	December Year 9
Construction of ATS Extension to North LTP2	May Year 9	December Year 9
Consolidated Rental Car Facility – Demolition of Existing Facilities	November Year 3	December Year 3
Construction of Consolidated Rental Car Facility	July Year 3	December Year 3
Construction of Mannheim Bridge	September Year 2	December Year 3
Construction of Rental Car Storage	March Year 3	December Year 3
ATS Station at New CONRAC	February Year 3	December Year 3
Construction of Balmoral Ave. (Phases II and III)	May Year 2	December Year 3
Construction of Commercial Vehicle Tunnel under I-190	January Year 3	December Year 3
Construction of Road Structure of Commercial Vehicle Tunnel under I-190	January Year 3	December Year 3
New ATS Maintenance Yard Construction	May Year 8	April Year 10
Old ATS Maintenance Yard Demolition	July Year 9	December Year 9
Construction of ATS Extension to new Maintenance Yard	May Year 8	April Year 10
Construction of Mannheim Lot E Fly over Northern Access Roads	October Year 2	February Year 4
Construction of Mannheim Lot E Fly over Southern Access Roads	February Year 3	January Year 4
Construction of Expansion of I-90 Interchange at Lee Street	May Year 2	December Year 3
Construction of Realignment of Bessie Coleman Drive	May Year 3	December Year 3
Zemke Road Extension	April Year 3	January Year 4
Fuel Farm Development in NW Airfield	February Year 3	January Year 4
Military Site Demo per Building #8001	June Year 3	December Year 3
Military Site Demo per Building #0001	November Year 2	December Year 3
Military Site Demo per Building #8023	October Year 3	December Year 3
Military Site Demo per Building #0060	February Year 3	December Year 3
Military Site Demo per Building #0002	July Year 3	December Year 3
Military Site Demo per Building #8002	August Year 3	December Year 3
Eastside Collateral Development pre 2007	May Year 4	April Year 6
Eastside Collateral Development post 2007	May Year 4	December Year 5
Parking Lots South of Zemke & North of I-190	July Year 1	December Year 3
Arterial Roadway Improvements, Bessie Coleman, I-190, Mannheim Rd – Includes all slip ramps, access roads and required secondary roads	July Year 1	December Year 3
Aircraft Apron at Terminal 4	March Year 9	December Year 9
Terminal Upper & Lower level Roadways at Terminal 4 & 6	July Year 8	September Year 9

**TABLE 5.20-4  
OVERVIEW OF PROPOSED CONSTRUCTION PLAN (ORIGINAL)**

Proposed Project	Preliminary Construction Schedule	
	Start Date	End Date
ALP Redevelopment Projects		
Future Employee Parking at Touhy Ave.	July Year 7	April Year 9
Source: Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004.		

### Compressed Schedule

This proposed construction plan is also based on a year round working schedule, with weather sensitive activities such as pavement and earthwork operations occurring primarily in April through November. However, in order to meet the "compressed" part of the overall schedule (Year 1 through Year 3), the level of construction effort would need to be increased, as compared to the Original Schedule, as follows:

- Increase daily production from 18 hours per day to 24 hours per day.
- Expand work week from 6 days to 7 days.
- Increase average scheduled working days per month from 23 days to 30 days.

Beyond Year 3 and the completion of Phase 1A in particular, the level of construction effort would return to the normal rates and volumes as assumed in the Original Schedule. As a result, two of the major phases of the Build Alternatives would be significantly compressed as follows:

- Phase 1A (Runway 9L/27R) construction time reduced 20 percent from 30 months to 24 months.
- Phase 1C (Runway 10C/28C) construction time reduced 26 percent from 53 months to 39 months.

**Table 5.20-5** is a complete listing of individual projects in Alternative C with the Compressed Schedule. This proposed schedule is based upon a construction start date in September of Year 1, with completion in December of Year 9 (Build Out). Even noting differences associated with construction, the proposed construction schedules for Alternatives D and G are anticipated to be comparable to Alternative C.

**TABLE 5.20-5  
OVERVIEW OF PROPOSED CONSTRUCTION PLAN (COMPRESSED)**

Proposed Project	Preliminary Construction Schedule	
	Start Date	End Date
<b>PHASE 1A – New North Runway 9L/27R and Associated Taxiway Construction</b>		
JAWA Water Main Relocation	September Year 1	March Year 2
Security Related Improvements	September Year 1	February Year 3
Willow Higgins Creek Relocation	September Year 1	November Year 2
Runway Pavement and Shoulders	July Year 2	September Year 3
Taxiway Pavement and Shoulders	July Year 2	September Year 3
New Roadways and Related Infrastructure	May Year 3	September Year 3
North Airfield Lighting Vault	January Year 2	March Year 3
FAA Control Tower	December Year 1	January Year 3
North Basin Expansion	July Year 2	October Year 2
<b>PHASE 1B – Extension to Existing Runway 9R/27L (New Runway 10L/28R) and Associated Taxiway</b>		
Runway Pavement and Shoulders Extension	June Year 4	April Year 5
Taxiway Pavement and Shoulders Extension	June Year 4	April Year 5
Irving Park/York Road Construction	November Year 1	August Year 3
Union Pacific Railroad Relocation	September Year 1	September Year 3
<b>PHASE 1C – New Closely-Spaced South Runway 10C/28C and Associated Taxiways and Holdpads</b>		
St. Johannes Cemetery and Resthaven Cemetery Relocations	March Year 3	November Year 4
Cargo and Maintenance Facility Relocation	September Year 1	April Year 4
South Detention Basin	September Year 1	October Year 3
Runway Pavement, Shoulders, and Holdpads	September Year 2	November Year 4
Taxiway Pavement and Shoulders	September Year 2	November Year 4
South Airfield Lighting Vault	September Year 2	March Year 4
New Roadways and Related Infrastructures	July Year 2	April Year 4
New Central Basin	March Year 3	July Year 4
Bensenville Ditch Relocation	September Year 1	December Year 2
Demolition: Buildings: fire station (602), cargo simulation (603), lighting vault (604), fueling station (606), electrical utilities (608), UAL Cargo (610), basement fill-in (610), Fed Ex metroplex (611), Fed Ex freight (612), MW Cargo (613)	May Year 2	March Year 4
<b>PHASE 1 – West Terminal – West Satellite Concourse</b>		
West Satellite Concourse (T4)	March Year 3	November Year 4
Energy Facility	July Year 3	February Year 4
ATS Station (Active AOA)	January Year 2	February Year 4
ATS Station (West Terminal)	January Year 2	August Year 3
ATS Station (Terminal No. 7)	May Year 2	April Year 3
ATS Tunnel (Bored)	March Year 2	October Year 2
ATS Maintenance Center	June Year 2	June Year 3
ATS System	July Year 3	January Year 5
Fuel Farm Improvements	September Year 1	June Year 3
<b>PHASE 2A – Extension to Exiting Runway 9L/27R (New Runway 9R/27L) and Associated Taxiway</b>		
Runway Pavement and Shoulders Extension	April Year 7	November Year 8
Taxiway Pavement and Shoulders Extension	April Year 7	November Year 8

**TABLE 5.20-5  
OVERVIEW OF PROPOSED CONSTRUCTION PLAN (COMPRESSED)**

Proposed Project	Preliminary Construction Schedule	
	Start Date	End Date
<b>PHASE 2B – New Closely-Spaced North Runway 9C/27C and Associated Taxiways and Holdpad</b>		
GPS Antenna	September Year 1	November Year 1
Cargo and Maintenance Facility Relocation – Site work, parking lots, concrete aprons for and including the construction of the following replacement buildings: Fire Station (702), Flight Kitchen (741), AAL Hangar Maintenance (725), UAL Hangar Maintenance (750), UAL Ground Maintenance (744), AAL Ground Maintenance (723), Flight Kitchen (742), UAL Personnel Building (746), Lift Station (728)	October Year 2	October Year 4
Demolition – moving from old bldgs to new buildings and demo of the old following bldgs: Fire Station (702), Flight Kitchen (741), AAL Hangar Maintenance (725), Lift Station (728) AAL Ground Maintenance (723), UAL Personnel Bldg (746), UAL Hangar Maintenance (750), Flight Kitchen (742) and UAL Ground Maintenance (744)	September Year 3	December Year 4
Runway Pavement and Shoulders and Holdpad	June Year 6	November Year 8
Taxiway Pavement and Shoulders	June Year 6	November Year 8
Runway 14R/32L Demolition	April Year 8	October Year 8
Runway 14R/32L Taxiway Pavement and Shoulder Demolition	April Year 8	October Year 8
New Roadways and Related Infrastructure	September Year 6	October Year 8
Willow Creek Relocation	May Year 2	November Year 6
New North Detention Basin	May Year 5	August Year 7
Future Airport Building move to OMP 9C/27C	July Year 6	October Year 8
New Roads and Related Parking	September Year 6	October Year 8
<b>PHASE 2C – New South Runway 10R/28L</b>		
Security Related Improvements	January Year 6	March Year 6
Runway Pavement and Shoulders	April Year 7	November Year 8
Taxiway Pavement and Shoulders	April Year 7	November Year 8
New Roadways and Related Infrastructure	August Year 7	July Year 8
FAA Control Tower	September Year 6	September Year 8
Rotating Beacon	September Year 1	November Year 1
Delta Cargo Facility	July Year 7	November Year 8
Apron Pavement	April Year 7	November Year 8
<b>PHASE 2 – West Terminal</b>		
Main West Terminal	April Year 5	October Year 9
Baggage Handling System	April Year 6	January Year 8
Parking Lot at Irving Park Road and York Road	July Year 6	April Year 8
Parking Structure	March Year 8	March Year 9
Western Terminal Access Roadway	June Year 5	January Year 7
Parking Lot	April Year 9	September Year 9
<b>PHASE 2 – Projects Previously Approved Through the World Gateway Program</b>		
Terminal 3, Concourse K Extension	July Year 3	December Year 4
Taxiway A and B Reconfiguration at Terminal 3	December Year 3	December Year 4
Reconstruction of Terminal 1/2 Connector	December Year 3	December Year 4
Terminal 4 – Demolition of Existing Concourse L	October Year 9	December Year 9
Construction of Terminal 4	August Year 6	December Year 9

**TABLE 5.20-5  
OVERVIEW OF PROPOSED CONSTRUCTION PLAN (COMPRESSED)**

Proposed Project	Preliminary Construction Schedule	
	Start Date	End Date
<b>PHASE 2 – Projects Previously Approved Through the World Gateway Program (Continued)</b>		
Construction of Terminal 6	January Year 5	December Year 8
Redevelopment of Terminal 5	July Year 7	December Year 8
Construction of ATS Station at Terminal 6 and ATS Realignment at Terminal 5/6	July Year 7	December Year 8
Construction of Terminal 6 Access Road	January Year 7	December Year 8
Terminal 5 & 6 Parking	August Year 8	December Year 8
Taxiway B East Extension	April Year 4	December Year 4
Construction of new Delta Air Freight and Related Facilities	October Year 7	December Year 8
Demolition of Existing Delta Air Freight and Related Facilities	November Year 8	December Year 8
Demolition of existing Lynxs Cargo and Related Facilities	November Year 8	December Year 8
Construction of new Skychef's Flight Kitchen and Related Facilities	July Year 8	December Year 8
Construction of Skychef's Parking Garage	September Year 7	December Year 8
Demolition of existing Skychef's Flight Kitchen and Related Facilities	November Year 8	December Year 8
Snow Dump Relocation	September Year 8	December Year 8
New Police Facility Construction	January Year 2	December Year 2
Old Police/Warehouse Demo	November Year 8	December Year 8
Construction of new H & R Plant and Related Facilities	December Year 8	December Year 8
Demolition of existing H & R Plant and Related Facilities	August Year 8	December Year 8
Parking Structures in Terminal Core	July Year 2	December Year 3
North LTP2 Construction	September Year 7	December Year 8
Construction of ATS Station at North LTP2	May Year 8	December Year 8
Construction of ATS Extension to North LTP2	May Year 8	December Year 8
Consolidated Rental Car Facility – Demolition of Existing Facilities	November Year 2	December Year 2
Construction of Consolidated Rental Car Facility	July Year 2	December Year 2
Construction of Mannheim Bridge	September Year 1	December Year 2
Construction of Rental Car Storage	March Year 2	December Year 2
ATS Station at New CONRAC	January Year 2	December Year 2
Construction of Balmoral Ave. (Phases II and III)	June Year 2	January Year 4
Construction of Commercial Vehicle Tunnel under I-190	April Year 2	December Year 2
Construction of Road Structure of Commercial Vehicle Tunnel under I-190	January Year 2	December Year 2
New ATS Maintenance Yard Construction	May Year 7	April Year 9
Old ATS Maintenance Yard Demolition	July Year 8	December Year 8
Construction of ATS Extension to new Maintenance Yard	May Year 7	April Year 9
Construction of Mannheim Lot E Fly over Northern Access Roads	October Year 1	February Year 3
Construction of Mannheim Lot E Fly over Southern Access Roads	February Year 2	January Year 3
Construction of Expansion of I-90 Interchange at Lee Street	July Year 2	February Year 4
Construction of Realignment of Bessie Coleman Drive	May Year 2	December Year 2
Zemke Road Extension	April Year 2	January Year 3
Fuel Farm Development in NW Airfield	February Year 2	January Year 3
Military Site Demo per Building #8001	June Year 2	December Year 2
Military Site Demo per Building #0001	November Year 1	December Year 2
Military Site Demo per Building #8023	October Year 2	December Year 2
Military Site Demo per Building #0060	February Year 2	December Year 2
Military Site Demo per Building #0002	July Year 2	December Year 2
Military Site Demo per Building #8002	August Year 2	December Year 2
Eastside Collateral Development pre 2007	May Year 3	April Year 5
Eastside Collateral Development post 2007	May Year 3	April Year 5
Parking Lots South of Zemke & North of I-190	September Year 1	August Year 3

**TABLE 5.20-5  
OVERVIEW OF PROPOSED CONSTRUCTION PLAN (COMPRESSED)**

Proposed Project	Preliminary Construction Schedule	
	Start Date	End Date
<b>PHASE 2 – Projects Previously Approved Through the World Gateway Program (Continued)</b>		
Arterial Roadway Improvements, Bessie Coleman, I-190, Mannheim Rd – Includes all slip ramps, access roads and required secondary roads	September Year 1	May Year 4
Aircraft Apron at Terminal 4	March Year 8	December Year 8
Terminal Upper & Lower level Roadways at Terminal 4 & 6	July Year 7	September Year 8
<b>ALP Redevelopment Projects</b>		
Future Employee Parking at Touhy Ave.	July Year 6	April Year 8
Sources: Crawford, Murphy, and Tilly, Inc. [TPC], analysis of information received from the AOR/TOK, December 2004.		

### Delayed Schedule

This proposed construction plan is also based on a year round working schedule, with weather sensitive activities such as pavement and earthwork operations occurring primarily in April through November. But compared to the Original Schedule, the start and completion dates of all the projects would be delayed by 14 months. However, the level of construction effort would be similar to the estimates for the Original Schedule.

**Table 5.20-6** is a complete listing of individual projects in Alternative C with the Delayed Schedule. The listing also includes the proposed start and completion dates for each project. This proposed schedule is based upon a construction start date in September of Year 1 with completion in December of Year 10 (Build Out). Even noting differences associated with construction, the proposed construction schedules for Alternatives D and G are anticipated to be comparable to Alternative C.

**TABLE 5.20-6  
OVERVIEW OF PROPOSED CONSTRUCTION PLAN (DELAYED)**

Proposed Project	Preliminary Construction Schedule	
	Start Date	End Date
<b>PHASE 1A – New North Runway 9L/27R and Associated Taxiway Construction</b>		
JAWA Water Main Relocation	September Year 1	July Year 2
Security Related Improvements	September Year 1	February Year 3
Willow Higgins Creek Relocation	September Year 1	August Year 3
Runway Pavement and Shoulders	September Year 2	January Year 4
Taxiway Pavement and Shoulders	September Year 2	January Year 4
New Roadways and Related Infrastructure	June Year 3	January Year 4
North Airfield Lighting Vault	January Year 2	December Year 3
FAA Control Tower	December Year 1	December Year 3
North Basin Expansion	July Year 2	January Year 3
<b>PHASE 1B – Extension to Existing Runway 9R/27L (New Runway 10L/28R) and Associated Taxiway</b>		
Runway Pavement and Shoulders Extension	June Year 4	January Year 5
Taxiway Pavement and Shoulders Extension	June Year 4	January Year 5
Irving Park/York Road Construction	November Year 1	August Year 3
Union Pacific Railroad Relocation	August Year 1	August Year 3
<b>PHASE 1C – New Closely-Spaced South Runway 10C/28C and Associated Taxiways and Holdpads</b>		
St. Johannes Cemetery and Resthaven Cemetery Relocations	August Year 3	January Year 6
Cargo and Maintenance Facility Relocation	September Year 1	February Year 5
South Detention Basin	September Year 1	October Year 3
Runway Pavement, Shoulders, and Holdpads	November Year 2	January Year 6
Taxiway Pavement and Shoulders	November Year 2	January Year 6
South Airfield Lighting Vault	September Year 2	September Year 4
New Roadways and Related Infrastructures	September Year 2	October Year 5
New Central Basin	May Year 4	September Year 5
Bensenville Ditch Relocation	September Year 1	May Year 3
Demolition: Buildings: fire station (602), cargo simulation (603), lighting vault (604), fueling station (606), electrical utilities (608), UAL Cargo (610), basement fill-in (610), Fed Ex metroplex (611), Fed Ex freight (612), MW Cargo (613)	May Year 2	March Year 5
<b>PHASE 1 – West Terminal – West Satellite Concourse</b>		
West Satellite Concourse (T4)	May Year 4	January Year 6
Energy Facility	September Year 4	June Year 6
ATS Station (Active AOA)	February Year 3	June Year 6
ATS Station (West Terminal)	February Year 3	October Year 4
ATS Station (Terminal No. 7)	June Year 3	June Year 4
ATS Tunnel (Bored)	May Year 3	December Year 3
ATS Maintenance Center	August Year 3	August Year 4
ATS System	September Year 4	March Year 6
Fuel Farm Improvements	September Year 1	December Year 3
<b>PHASE 2A – Extension to Existing Runway 9L/27R (New Runway 9R/27L) and Associated Taxiway</b>		
Runway Pavement and Shoulders Extension	September Year 7	January Year 10
Taxiway Pavement and Shoulders Extension	September Year 7	January Year 10

**TABLE 5.20-6  
OVERVIEW OF PROPOSED CONSTRUCTION PLAN (DELAYED)**

Proposed Project	Preliminary Construction Schedule	
	Start Date	End Date
<b>PHASE 2B – New Closely-Spaced North Runway 9C/27C and Associated Taxiways and Holdpad</b>		
GPS Antenna	September Year 1	November Year 1
Cargo and Maintenance Facility Relocation – Site work, parking lots, concrete aprons for and including the construction of the following replacement buildings: Fire Station (702), Flight Kitchen (741), AAL Hangar Maintenance (725), UAL Hangar Maintenance (750), UAL Ground Maintenance (744), AAL Ground Maintenance (723), Flight Kitchen (742), UAL Personnel Building (746), Lift Station (728)	December Year 3	December Year 5
Demolition – moving from old bldgs to new buildings and demo of the old following bldgs: Fire Station (702), Flight Kitchen (741), AAL Hangar Maintenance (725), Lift Station (728) AAL Ground Maintenance (723), UAL Personnel Bldg (746), UAL Hangar Maintenance (750), Flight Kitchen (742) and UAL Ground Maintenance (744)	November Year 4	June Year 6
Runway Pavement and Shoulders and Holdpad	August Year 7	January Year 10
Taxiway Pavement and Shoulders	August Year 7	January Year 10
Runway 14R/32L Demolition	June Year 9	December Year 9
Runway 14R/32L Taxiway Pavement and Shoulder Demolition	June Year 9	December Year 9
New Roadways and Related Infrastructure	November Year 7	December Year 9
Willow Creek Relocation	June Year 6	January Year 8
New North Detention Basin	July Year 6	October Year 8
Future Airport Building move to OMP 9C/27C	Sep Year 7	December Year 9
New Roads and Related Parking	August Year 8	November Year 9
<b>PHASE 2C – New South Runway 10R/28L</b>		
Security Related Improvements	March Year 7	May Year 7
Runway Pavement and Shoulders	June Year 8	January Year 10
Taxiway Pavement and Shoulders	June Year 8	January Year 10
New Roadways and Related Infrastructure	October Year 8	September Year 9
FAA Control Tower	November Year 7	November Year 9
Rotating Beacon	September Year 1	November Year 1
Delta Cargo Facility	September Year 8	January Year 10
Apron Pavement	April Year 9	August Year 9
<b>PHASE 2 – West Terminal</b>		
Main West Terminal	June Year 6	December Year 10
Baggage Handling System	June Year 7	March Year 9
Parking Lot at Irving Park Road and York Road	September Year 7	June Year 9
Parking Structure	May Year 9	June Year 10
Western Terminal Access Roadway	August Year 6	March Year 8
Parking Lot	June Year 10	November Year 10
<b>PHASE 2 – Projects Previously Approved Through the World Gateway Program</b>		
Terminal 3, Concourse K Extension	September Year 4	February Year 6
Taxiway A and B Reconfiguration at Terminal 3	February Year 5	February Year 6
Reconstruction of Terminal 1/2 Connector	February Year 5	February Year 6
Terminal 4 – Demolition of Existing Concourse L	December Year 10	February Year 11
Construction of Terminal 4	October Year 7	February Year 11
Construction of Terminal 6	Mar Year 6	February Year 10

**TABLE 5.20-6  
OVERVIEW OF PROPOSED CONSTRUCTION PLAN (DELAYED)**

Proposed Project	Preliminary Construction Schedule	
	Start Date	End Date
<b>PHASE 2 – Projects Previously Approved Through the World Gateway Program (Continued)</b>		
Redevelopment of Terminal 5	September Year 8	February Year 10
Construction of ATS Station at Terminal 6 and ATS Realignment at Terminal 5/6	September Year 8	February Year 10
Construction of Terminal 6 Access Road	March Year 8	February Year 10
Terminal 5 & 6 Parking	October Year 9	February Year 10
Taxiway B East Extension	June Year 5	February Year 6
Construction of new Delta Air Freight and Related Facilities	December Year 8	February Year 10
Demolition of Existing Delta Air Freight and Related Facilities	January Year 10	February Year 10
Demolition of existing Lynxs Cargo and Related Facilities	January Year 10	February Year 10
Construction of new Skychef's Flight Kitchen and Related Facilities	September Year 8	February Year 10
Construction of Skychef's Parking Garage	November Year 8	February Year 10
Demolition of existing Skychef's Flight Kitchen and Related Facilities	January Year 10	February Year 10
Snow Dump Relocation	November Year 9	January Year 10
New Police Facility Construction	March Year 3	October Year 3
Old Police/Warehouse Demo	January Year 10	February Year 10
Construction of new H & R Plant and Related Facilities	February Year 8	February Year 10
Demolition of existing H & R Plant and Related Facilities	October Year 9	February Year 10
Parking Structures in Terminal Core	September Year 3	February Year 5
North LTP2 Construction	November Year 8	February Year 10
Construction of ATS Station at North LTP2	July Year 9	February Year 10
Construction of ATS Extension to North LTP2	July Year 9	February Year 10
Consolidated Rental Car Facility – Demolition of Existing Facilities	January Year 4	February Year 4
Construction of Consolidated Rental Car Facility	September Year 3	February Year 4
Construction of Mannheim Bridge	November Year 2	February Year 4
Construction of Rental Car Storage	May Year 3	February Year 4
ATS Station at New CONRAC	April Year 3	February Year 4
Construction of Balmoral Ave. (Phases II and III)	July Year 2	February Year 4
Construction of Commercial Vehicle Tunnel under I-190	March Year 3	February Year 4
Construction of Road Structure of Commercial Vehicle Tunnel under I-190	March Year 3	February Year 4
New ATS Maintenance Yard Construction	July Year 8	June Year 10
Old ATS Maintenance Yard Demolition	September Year 9	February Year 10
Construction of ATS Extension to new Maintenance Yard	July Year 8	June Year 10
Construction of Mannheim Lot E Fly over Northern Access Roads	December Year 2	April Year 4
Construction of Mannheim Lot E Fly over Southern Access Roads	April Year 3	March Year 4
Construction of Expansion of I-90 Interchange at Lee Street	July Year 2	February Year 4
Construction of Realignment of Bessie Coleman Drive	July Year 3	February Year 4
Zemke Road Extension	June Year 3	March Year 4
Fuel Farm Development in NW Airfield	April Year 3	March Year 4
Military Site Demo per Building #8001	August Year 3	February Year 4
Military Site Demo per Building #0001	January Year 3	February Year 4
Military Site Demo per Building #8023	December Year 3	February Year 4
Military Site Demo per Building #0060	April Year 3	February Year 4
Military Site Demo per Building #0002	September Year 3	February Year 4
Military Site Demo per Building #8002	October Year 3	February Year 4
Eastside Collateral Development pre 2007	July Year 4	June Year 6
Eastside Collateral Development post 2007	July Year 4	February Year 6
Parking Lots South of Zemke & North of I-190	September Year 1	February Year 4

**TABLE 5.20-6  
OVERVIEW OF PROPOSED CONSTRUCTION PLAN (DELAYED)**

Proposed Project	Preliminary Construction Schedule	
	Start Date	End Date
<b>PHASE 2 – Projects Previously Approved Through the World Gateway Program (Continued)</b>		
Arterial Roadway Improvements, Bessie Coleman, I-190, Mannheim Rd – Includes all slip ramps, access roads and required secondary roads	September Year 1	February Year 4
Aircraft Apron at Terminal 4	May Year 9	February Year 10
Terminal Upper & Lower level Roadways at Terminal 4 & 6	September Year 8	November Year 9
<b>ALP Redevelopment Projects</b>		
Future Employee Parking at Touhy Ave.	September Year 7	June Year 9
Sources: Crawford, Murphy, and Tilly, Inc. [TPC], analysis of information received from the AOR/TOK, December 2004.		

### 5.20.3.3 Structure Demolition

The proposed construction plan for Alternative C also provides for the demolition of 62 buildings and facilities on the Airport, which are listed in **Table 5.20-7**. Six additional buildings would be required to be demolished for Alternative G. The City has begun planning for potential demolition in advance of any FAA Record of Decision. In this regard, inspections were completed on the 62 airport buildings and facilities proposed for demolition as part of Phase I Environmental Site Assessments<sup>5</sup> (ESAs). The Airport would comply with all applicable laws and regulations regarding the remediation of any contamination associated with either structure demolition or underground storage tanks found during the course of the Phase I investigation.

If a Build Alternative is selected, any structure to be demolished or renovated will have all friable asbestos-containing materials abated before demolition activities begin.

All painted surfaces are assumed to contain lead-based paint, until proven otherwise, and will be disposed of as general construction waste. Materials with lead-based paint may not be blowtorched, sandblasted, chemically stripped, or otherwise handled except in a manner ensuring that the substrate material is disposed of by licensed lead-based paint workers. Any and all abatement procedures for asbestos-containing materials and lead-based paint, if needed, would be completed in accordance with all applicable Federal and state rules and regulations.

In addition, the FAA is completing Phase I ESA's in accordance with ASTM 1527-2000 and FAA Order 1010.19, *Environmental Due Diligence Audits in the Conduct of Real Property Transactions*, on behalf of proposed and existing offsite navaid locations to assess the presence of "recognized environmental conditions" associated with the prior use of the properties. Additional environmental investigations may be required to locate and quantify potential subsurface contamination associated with the prior use of the properties. All applicable Federal and state laws and regulations regarding the remediation of any contamination associated with

<sup>5</sup> Phase I Environmental Site Assessment Reports for On-Airport Facilities to be Demolished at O'Hare (3 CD's), Environmental Design International, Inc. [CCT], received August 2, 2004.

underground storage tanks found during the course of the Phase I investigations will be complied with. Additionally, Phase I ESA's would be completed for proposed onsite navigational locations, if a Build Alternative is selected.

Phase I ESA's were previously completed on the majority of properties in the potential acquisition areas. As a result of the findings of the Phase I's, some properties were required to have Phase II ESA's completed. The required Phase II ESA would be completed according to ASTM standards prior to construction, as well as the Phase I's, yet to be completed on the remaining properties. If during construction a hazardous waste site or materials are discovered, the site and/or disposal of materials will be mitigated/disposed of according to all applicable Federal and state statutes and regulations. In addition, where required, a report will be submitted to the National Response Center.

Non-hazardous and uncontaminated building materials will be salvaged to the extent practical. Demolition debris disposal is discussed in **Section 5.20.3.10, Construction Generated Surface Traffic**.

**TABLE 5.20-7  
FACILITIES SCHEDULED FOR DEMOLITION**

No.	Airport Building ID Number	Building Description	Construction Date
1	601	Post 5 Guardhouse	1980s
2	602	ARFF Station #1	1986
3	603	Air Cargo Simulation	1987
4	604	Lighting Utility	1986
5	605	Post 5A Guardhouse	1980s
6	606	Fueling Utility	1988
7	608	Electrical Utilities	1986
8	610	United Airlines Cargo	1988
9	611	Federal Express Metroplex	1989
10	612	Federal Express Freight Building	1989
11	613	Northwest Cargo Building	1989
12	619	Federal Express Guardhouse	June-96
13	620	Federal Express Fueling System	June-96
14	621	Federal Express Maintenance	1989
15	700	Post 1 Guardhouse	May-92
16	701	DOA Communications Service Center	1970s
17	705	Post 2 Guardhouse	Jul-97
18	706	Explosive Chamber	Jul-89
19	723	AAL Ground Equipment Maintenance Building	Jan-92
20	725	AAL Maintenance Hangar No. 2	Mar-63
21	728	Sanitary Lift Station	June-81
22	732	AAL Fire Pump House	Jan-97
23	741	UAL Flight Kitchen	Apr-64
24	742	UAL Flight Kitchen	Mar-59
25	744	UAL Ground Equipment Maintenance	1960s
26	746	UAL Office and Medical Personnel Bldg.	Apr-64
27	750	UAL Hangar 5/5A	Dec-63
28	761	Ground Run-up Enclosure	1997
29	798	Airport Repair and Construction (ARC) Complex	Jul-65
30	904	FAA Localizer Transmitter (14L)	Apr-73
31	905	FAA Localizer Building Site (14L)	Apr-63
32	921	Power Vault	1950s
33	922	FAA VORTAC Site	Mar-74
34	925	FAA Glide Slope Site (14L)	Jan-78
35	927	ALS Substation (14L) 32R Localizer Bldg.	1960s
36	928	FAA Middle Marker (14L)	Oct-72
37	930	FAA Glide Slope Site (9L)	Jan-75
38	933	FAA Localizer Building Site (32L)	1960s
39	935	FAA Glide Slope Site (14R)	Oct-72
40	936	Radar Building and Tower (ASR-9)	1960s
41	938	FAA Bldg.	1960s
42	940	FAA Localizer (27R)	1960s
43	954	Middle Marker (9R)	Jul-75
44	956	FAA Remote Transmitter/Receiver	1970s
45	957	FAA Localizer (22R)	Jul-81
46	958	FAA Glide Slope Site (9R)	Jul-80
47	962	FAA Glide Slope Site (32L)	Aug-69
48	963	Sump Pump Motor Shed	1970s

**TABLE 5.20-7  
FACILITIES SCHEDULED FOR DEMOLITION**

No.	Airport Building ID Number	Building Description	Construction Date
49	964	FAA Remote Transmitter/Receiver A	1970s
50	966	FAA Localizer Building Site (14R)	May-81
51	967	Substation	1960s
52	971	Oil Separator No. 1	Oct-71
53	973	Oil Separator No. 2	1970s
54	975	AA - Ground Service Equipment	1983
55	979	Aeration System Blower House	Apr-72
56	980	Oil Separator No. 4	Oct-71
57	981	Pump House	Oct-71
58	984	FAA Remote Transmitter/Receiver B	1970s
59	987	Lockheed Maintenance Facility	1983
60	988	Truck Fuel Stand & Airline Glycol Facility	1980s
61	989	Super Fuel Satellite	1980s
62	Signature	Signature Aviation Facility	2002
63	600	U.S. Post Office (Alternative G only)	NA
64	609	American Airlines Cargo Building (Alternative G only)	NA
65	614	United Parcel Service (Alternative G only)	NA
66	616	Lufthansa Cargo Building (Alternative G only)	NA
67	617	Air France Cargo Building (Alternative G only)	NA
68	618	KLM Royal Dutch Cargo Building (Alternative G only)	NA

Note: NA = Not Available

Sources: City of Chicago O'Hare Modernization Program, 2004.

Crawford, Murphy, and Tilly, Inc. [TPC], analysis of information received from the AOR/TOK, June 2005.

As shown in **Table 5.20-7**, the on-Airport facilities proposed for demolition range in age from two to forty-five years, with the majority built in the 1970s and 1980s. The oldest facility proposed for demolition is #742, the United Airlines Flight Kitchen and was constructed in March 1959. The Signature Aviation Flight Facility, which was constructed in 2002, is the newest facility scheduled for demolition.

#### 5.20.3.4 Pavement Removal

There are two general categories of pavement removal, airfield and non-airfield. Airfield pavement removal consists primarily of Portland Cement Concrete (PCC), asphalt concrete (AC), and granular bases and subbases.

The drawing entitled "Future Airport Drawing - Implementation Phases"<sup>6</sup> delineates the demolition areas tabulated in **Table 5.20-8**.

<sup>6</sup> Future Airport Drawing - Implementation Phases, Ricondo & Associates [CCT], February 2004.

**TABLE 5.20-8  
AIRFIELD PAVEMENT DEMOLITION**

Phase	Demolition Area (Sq. Ft.)
1C	1,532,163
2A	30,779
2B	2,753,238
2C	1,050,197
<b>Total (4 Phases)</b>	<b>5,366,377</b>

Source: Crawford, Murphy, and Tilly, Inc. [TPC] analysis of Future Airport Drawing – Implementation Phases, Ricondo & Associates [CCT], February 2004.

These demolition quantities are for concrete runway, taxiway and apron pavements. The asphalt shoulders that would be removed, in addition to the above quantities, may total over 2,000,000 square feet. There would also be miscellaneous roadways and automobile parking pavement removal.

#### 5.20.3.5 Site Clearing

Site clearing would be required for both development of undeveloped areas, and developments on areas cleared of existing facilities.

The proposed building demolition on airport property and newly acquired property required for the Build Alternatives would leave site facilities such as pavement, sidewalks, utilities, etc. which also require clearing. Undeveloped property to be cleared for development would also require some clearing of trees, shrubs, roadways and other materials. It may not be practical to salvage or recycle much of the site clearing debris so unsalvageable material will be disposed of off-airport. See **Section 5.20.3.10, Construction Generated Surface Traffic**.

#### 5.20.3.6 Earthwork

Essentially every construction project has some form of earthwork which varies in volume from minor grading to major excavation projects such as the storm water detention basins. The Construction Impacts Draft Technical Working Report<sup>7</sup> estimates that up to 21.2 million cubic yards (MCY) of excavation would be required. As much as approximately 5.4 MCY would be disposed of off the airport, which was reduced from 9.4 MCY due to the reevaluation of the Build Alternatives earthwork program. Efforts to reduce the volume of offsite earthwork haul even further would be ongoing throughout the design and construction of the Build Alternatives. The 15.8 MCY to remain on the airport would be initially placed in temporary storage areas and subsequently be redistributed to permanent embankment areas on the airport resulting in the movement of 31.6 MCY of earth onsite. The off-airport disposal hauling and the on-airport hauling of excavated soil are discussed in **Section 5.20.3.10**.

<sup>7</sup> Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004.

### 5.20.3.7 Airfield Construction

#### Pavements

Extensive asphalt and concrete pavement construction is included in the Build Alternatives. The asphalt and concrete would probably be mixed on-site with contractor owned portable batch plants. The raw materials, aggregates, Portland cement, and asphalt will be hauled on to the Airport to the batch plant sites. The proposed locations, operating duration, operating days, and average and peak production rates for the Original Schedule are all tabulated on **Table 5.20-9**. The total estimated production for Alternative C is tabulated on **Tables 5.20-10** and **5.20-11**. The total estimated production for Alternative D is anticipated to be slightly lower when compared to Alternative C. The total estimated production for Alternative G is anticipated to be slightly higher when compared to Alternative C. Total estimated production for paving concrete is 2,355,689 cubic yards with paving asphalt estimated at 2,616,003 tons. The production of these quantities of paving materials would result in an estimated 2,500,000 tons of aggregate for asphalt and 4,100,000 tons for concrete, with the total estimated aggregate required at 6,600,000 tons. This does not include aggregate for base and subbase courses. The aggregate for pavement surfaces would require approximately 330,000 loads delivered to the Airport. There are six proposed locations for batch plants on the Airport as listed on **Table 5.20-9**. The dispersed locations of the batch plants would place paving material production in close proximity to the individual project sites and reduce on-airport trip lengths for material hauling. The peak batch plant operation occurs in late Year 8 and in Year 9 for the Original and Delayed Schedules (Year 7 and Year 8 for the Compressed Schedule), when it is estimated that eight batch plants would be in operation. The proposed locations of the batch plants and paving material storage are shown graphically on **Exhibits Q-1** through **Q-11** (Original and Delayed Schedule), and **Q-12** through **Q-20** (Compressed Schedule) in **Appendix Q, Construction**.

#### Airfield Work Other Than Pavements

A wide range of projects, in addition to runway/taxiway pavements, would be necessary for an operational airfield. These projects include airfield lighting and controls, navigational aids, pavement marking, drainage, directional and information signage, and turfing. The equipment, hauling and employee activity for this work is included in this evaluation of impacts.

**TABLE 5.20-9  
POTENTIAL BATCH PLANT SITES AND LIFE SPAN SUMMARY  
(ORIGINAL SCHEDULE)(a)**

Runway Component/ Potential Plant Location	Designation	Location	Material Produced	Total Duration(a)	Operating Duration (Days)(a)	Estimated Average Production /Unit	Estimated Peak Production /Unit
Runway 9L-27R	Plant No. 1	Touhy Avenue	Concrete	August 1, Year 2 – November 1, Year 3	236	704 cy	2,500 cy
	Plant No. 2	Touhy Avenue	Asphalt	August 1, Year 2 – December 1, Year 3	266	907 ton	2,000 ton
	Plant No. 3	Touhy Avenue	Asphalt	April 1, Year 3 – November 1, Year 3	150	1,088 ton	2,000 ton
Runway 9C-27C	Plant No. 1	Bessie Coleman	Concrete	June 1, Year 9 – November 1, Year 9	428	1071 cy	2,500 cy
	Plant No. 2	Bessie Coleman	Asphalt	June 1, Year 7 – November 1, Year 9	428	1,543 ton	2,000 ton
Runway 9R-27L Extension	Plant No. 1	Bessie Coleman	Concrete	April 1, Year 8 – November 1, Year 9	321	329 cy	2,500 cy
	Plant No. 2	Bessie Coleman	Asphalt	April 1, Year 8 – November 1, Year 9	321	479 ton	2,000 ton
Runway 14R-32L	Plant No. 1	Thorndale	Concrete	June 1, Year 9 – December 1, Year 9	107	489 cy	2,500 cy
	Plant No. 2	Thorndale	Asphalt	June 1, Year 9 – December 1, Year 9	107	709 ton	2,000 ton
Runway 10L-28R Extension	Plant No. 1	Thorndale	Concrete	April 1, Year 4 – November 1, Year 4	150	572 cy	2,500 cy
	Plant No. 2	Thorndale	Asphalt	April 1, Year 4 – November 1, Year 4	150	846 ton	2,000 ton
Runway 10C-28C	Plant No. 1	Thorndale	Concrete	September 1, Year 2 – November 1, Year 5	556	943 cy	2,500 cy
	Plant No. 2	Thorndale	Asphalt	September 1, Year 2 – November 1, Year 5	556	1,362 ton	2,000 ton
Runway 10R-28L (Alt. C only)	Plant No. 1	Irving Park	Concrete	April 1, Year 8 – November 1, Year 9	321	617 cy	2,500 cy
	Plant No. 2	Irving Park	Asphalt	April 1, Year 8 – November 1, Year 9	321	967 ton	2,000 ton
West Terminal Concourse	Plant No. 1	W. Term	Concrete	April 1, Year 3 – November 1, Year 5	492	703 cy	2,500 cy
	Plant No. 2	W. Term	Asphalt	April 1, Year 3 – November 1, Year 5	492	150 ton	2,000 ton
West Terminal	Plant No. 1	W. Term	Concrete	July 1, Year 6 – June 1, Year 9	492	852 cy	2,500 cy
	Plant No. 2	W. Term	Asphalt	July 1, Year 6 – June 1, Year 9	492	108 ton	2,000 ton

Note: (a) The total number of batch plant operation days and durations estimated for the Original Schedule would be similar to the Compressed and Delayed Schedules.

Source: Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004.

Concrete	Year							
	2005	2006	2007	2008	2009	2010	2011	2012
9L-27R	704cy ← Touhy							
9C-27C					1071cy ← *B. Coleman			
9R-27L						329cy ← B. Coleman		
14R-32L							Thorndale 489cy ←	
10L-28R		Thorndale 572cy ←						
10C-28C		*Thorndale		943cy				
10R-28L						617cy ← *Irving Park		
W. Term. Conc		West Terminal		852cy				
W. Term.						West Terminal		852cy
<b>Asphalt</b>								
9L-27R (PL#1)	907 T ← Touhy							
9L-27R (PL#2)	1,088 T ← Touhy							
9C-27C					1,543 T ← B. Coleman			
9R-27L						479 T ← B. Coleman		
14R-32L							Thorndale 709 T ←	
10L-28R		Thorndale 846T ←						
10C-28C		Thorndale		1,362 T				
10R-28L						967 T ← Irving Park		
W. Term. Conc		West Terminal		150 T				
W. Term.						West Terminal		108 T

Max Avg. Daily Concrete Production = 2011/2012 with 4 Plants Operating = 2,869 cu yd/day

Max Avg. Daily Asphalt Production, 2006 = 3,507 Tons

\* Co-located crushing plant for pavement recycling

Source: Prepared by Crawford, Murphy and Tilly Inc. October 2004



Chicago O'Hare International Airport

**O'Hare Modernization  
Environmental Impact Statement**

**Concrete/Asphalt Batch Plant  
Location and Estimated Life Span**

► Exhibit 5.20-1

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**TABLE 5.20-10  
ASPHALT CONCRETE PRODUCTION (ORIGINAL SCHEDULE)(a)**

Project	Batch Plant Operation Days	Average Daily Production Tons	Total Production Tons
9L-27R	266	907	241,262
	150	1,088	163,200
9C-27C	428	1,543	660,404
9R-27L	321	479	153,759
14R-32L	107	709	75,863
10L-28R	150	846	126,900
10C-28C	556	1,362	757,272
10R-28L (Alternative C only)	321	967	310,407
West Terminal Concourse	492	150	73,800
West Terminal	492	108	53,136
<b>Total Asphalt Concrete Production (Tons)</b>			<b>2,616,003</b>
<b>Assume 20T/Truck Load = 130,800 Loads</b>			

Note: (a) The total number of batch plant operation days and production rates estimated for the Original Schedule would be similar to the Compressed and Delayed Schedules.

Source: Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004.

**TABLE 5.20-11  
P.C. CONCRETE PRODUCTION (ORIGINAL SCHEDULE)(a)**

Project	Batch Plant Operation Days	Average Daily Production	Total Production
		Cu. Yd.	Cu. Yd.
9L-27R	236	704	166,144
9C-27C	428	1,071	458,388
9R-27L	321	329	105,609
14R-32L	107	489	52,323
10L-28R	150	572	85,800
10C-28C	556	943	524,308
10R-28L (Alternative C only)	321	617	198,057
West Terminal Concourse	492	703	345,876
West Terminal	492	852	419,184
<b>Total P.C. Concrete (Cu. Yd.)</b>			<b>2,355,689</b>
<b>Assume 10 Cu. Yd./Load = 235,600 Loads</b>			

Notes: (a) The total number of batch plant operation days and production rates estimated for the Original Schedule would be similar to the Compressed and Delayed Schedules

Source: Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004.

### 5.20.3.8 Structure Construction

Table 5.20-4 includes the building and infrastructure projects that would be completed under Alternative C, which includes components of the WGP, and also includes the West Terminal development that would be accomplished in two phases. The first phase consists of the West Concourse, apron and taxiways, and the ATS connecting the West Terminal Concourse to Terminal 1. The second phase includes the West Terminal, aprons, taxiways and the land access from the west. Since the Build Alternatives include most of the project components of the WGP,

the construction activities of the WGP, Build Alternative airfield, and West Terminal are all included in this assessment of construction impacts. **Table 5.20-4** lists all individual projects in the integrated programs.

### **5.20.3.9 Construction Staging**

#### **Original and Delayed Schedule**

**Exhibits Q-1 through Q-11 in Appendix Q, Construction**, depict the conceptual construction staging areas for the duration of Alternative C, with both the Original and Delayed construction schedules. The anticipated construction activity/staging areas for Alternatives D and G would be similar for each potential construction schedule. There is an exhibit for each year of the project that shows the projected location of:

- Batch Plant Facilities
- Equipment Staging Areas
- Contractor Employee Parking
- Office Trailers
- Temporary Aircraft Operation Area (AOA) Gates
- Contractor Staging Areas
- Material Handling and Storage
- Temporary Displaced Employee Parking
- Construction Vehicle Inspection Locations
- Access Roads
- Temporary AOA Fence

#### **Compressed Schedule**

**Exhibits Q-12 through Q-20 in Appendix Q** depict the conceptual construction staging areas for the duration of Alternative C with the Compressed construction schedule. The anticipated construction activity/staging areas for Alternatives D and G would be similar for this construction schedule. During the compressed construction years (Year 1 through Year 3 of the Compressed Schedule), and for all other years, there would be enough room on the Airport property to provide adequate construction staging areas for implementation of any of the Build Alternatives.

### **5.20.3.10 Construction Generated Surface Traffic**

Issues concerning construction traffic can be broken into on-site and off-site. Many different types of equipment, such as paving machines, dump trucks, dozers, scrapers, pickup trucks, cranes, and backhoes generate on-site construction traffic. Airport construction projects generate off-site vehicular traffic from both construction activities and commuting employees.

Employee commuter traffic consists mainly of private cars and trucks. Detailed information about the anticipated off-site and on-site construction volumes to surface transportation is included in this section and is shown in **Table 5.20-12**.

### **On-Site Construction Traffic outside the Aircraft Operations Area**

For the on-site movement of materials, "off-road" vehicles capable of carrying loads in excess of 30 tons per truck would be utilized. Such vehicles would only be used on-site due to weight limitations for off-site, public roadways. O'Hare's existing interior roadway network would be used to transport all materials that are to remain on Airport property. The interior roadway network at O'Hare consists of a combination of permanent and temporary access roadways that have been constructed over the last 40 years. New temporary dirt or gravel haul roads would also be constructed as part of the Build Alternatives, as necessary, to provide access to various work sites.

Permanent on-site haul roads at O'Hare are capable of supporting a wide variety of construction vehicles and material load weights. In addition, on-site Airport roadways allow for greater amounts of material to be transported in fewer loads because they do not have weight limits.

The permanent on-site roadway network outside the Aircraft Operations Area (AOA) is also designed to handle construction vehicle traffic without interfering with aircraft or airport vehicle operations, making it unnecessary to use off-site roadways to transport materials from one part of the Airport to another. When traveling on existing permanent on-site roadways, construction vehicles remain outside of sensitive operations areas and, therefore, are not required to coordinate their movement with FAA Air Traffic Control.

The use of on-site haul roads would be maximized in order to transport materials quickly and directly from one part of the airfield to another. For example, dirt excavated on the north airfield would be transported for fill at the south airfield quicker and more directly via on-site airport roadways than by exiting Airport property at the north and traveling on state roadways to reach the south airfield.

See **Appendix Q, Construction**, for anticipated on-site truck haul routes by year.

### **On-Site Construction Traffic within the Aircraft Operations Area**

Principal elements of the Build Alternatives are the proposed runway/taxiway/apron construction and modifications. These projects would result in construction vehicle traffic within the Aircraft Operations Area (AOA), with the possibility of aircraft/vehicle interferences. Some major items of traffic generating airfield work for Alternative C are:

- Excavation of an estimated 21.2 MCY of earth and hauling to temporary storage with redistribution of 15.8 MCY.
- Hauling 5,366,000 square feet of pavement demolition to the crushing plants.
- Hauling granular base and subbase material for placement in the pavement structure.

- Hauling 2,355,700 cubic yards of concrete and 2,616,003 tons of asphalt for placement as pavement surfaces.
- Movement through the runway/taxiway construction zones of construction equipment and light vehicles.

**TABLE 5.20-12  
SURFACE TRAFFIC VOLUMES FOR 5.4 MCY HAUL-OFF  
(ORIGINAL SCHEDULE)(a)**

Year	Month	Type of Traffic			Grand Total (Total Average Daily Trips)
		On-Site Construction Equipment	Off-Site Equipment. Hauling & Material Transport	Off-Site On-Road Employee Vehicles	
1	June	14	10	35	59
	July	449	394	407	1,250
	August	507	513	407	1,427
	September	555	547	498	1,600
	October	544	539	489	1,572
	November	530	541	528	1,599
	December	480	544	524	1,548
	2	January	169	127	358
February		174	128	347	649
March		205	144	348	697
April		568	440	532	1,540
May		659	541	586	1,786
June		672	546	579	1,797
July		937	648	701	2,286
August		927	608	667	2,202
September		937	552	822	2,311
October		997	561	822	2,380
November		1,066	568	825	2,459
December		788	577	849	2,214
3	January	444	275	708	1,467
	February	467	295	675	1,437
	March	440	300	783	1,523
	April	1,113	635	1,173	2,921
	May	1,185	549	1,378	3,112
	June	1,058	549	1,313	2,920
	July	1,047	477	1,335	2,859
	August	1,038	482	1,359	2,879
	September	965	285	1,304	2,554
	October	760	274	1,116	2,150
	November	726	283	1,297	2,306
	December	473	260	1,214	1,947
4 (Construction Phase I)	January	185	135	769	1,089
	February	164	140	665	969
	March	212	169	775	1,156
	April	585	397	1,046	2,028
	May	693	489	1,429	2,611
	June	815	505	1,543	2,863
	July	854	513	1,549	2,916
	August	866	532	1,685	3,083
	September	703	263	1,626	2,682
	October	759	279	1,595	2,633
	November	748	270	1,663	2,661
	December	554	286	1,439	2,279

**TABLE 5.20-12  
SURFACE TRAFFIC VOLUMES FOR 5.4 MCY HAUL-OFF  
(ORIGINAL SCHEDULE)(a)**

Year	Month	Type of Traffic			Grand Total (Total Average Daily Trips)
		On-Site Construction Equipment	Off-Site Equipment. Hauling & Material Transport	Off-Site On-Road Employee Vehicles	
5	January	401	175	1,329	1,905
	February	468	217	1,386	2,071
	March	354	153	1,368	1,875
	April	510	259	1,691	2,460
	May	510	262	1,804	2,576
	June	547	263	1,708	2,518
	July	530	171	1,644	2,345
	August	525	131	1,393	2,049
	September	451	93	1,212	1,756
	October	431	80	1,158	1,669
	November	369	46	793	1,208
	December	67	13	266	346
6 (Construction Phase II)	January	29	30	209	268
	February	40	43	208	291
	March	42	40	202	284
	April	100	97	240	437
	May	190	250	264	704
	June	243	250	310	803
	July	278	250	359	887
	August	259	204	329	792
	September	235	204	306	745
	October	223	192	295	710
	November	265	192	367	824
	December	226	192	321	739
7	January	117	55	289	461
	February	117	55	280	452
	March	99	55	273	427
	April	251	234	345	830
	May	388	433	485	1,306
	June	488	433	506	1,517
	July	532	532	729	1,793
	August	538	534	879	1,951
	September	590	598	876	2,064
	October	551	590	877	2,016
	November	576	601	925	2,101
	December	495	587	860	1,942
8	January	199	84	622	905
	February	199	87	614	900
	March	251	114	760	1,131
	April	728	583	1,222	2,533
	May	794	410	1,530	2,734
	June	814	420	1,542	2,776
	July	796	503	1,610	2,909

**TABLE 5.20-12  
SURFACE TRAFFIC VOLUMES FOR 5.4 MCY HAUL-OFF  
(ORIGINAL SCHEDULE)(a)**

Year	Month	Type of Traffic			Grand Total (Total Average Daily Trips)
		On-Site Construction Equipment	Off-Site Equipment. Hauling & Material Transport	Off-Site On-Road Employee Vehicles	
	August	780	550	1,908	3,238
	September	736	455	1,897	3,088
	October	688	522	1,821	3,031
	November	596	391	1,714	2,701
	December	468	411	1,975	2,854
<b>9</b>	January	203	270	2,206	2,679
	February	199	230	2,186	2,615
	March	240	264	2,384	2,888
	April	697	466	2,971	4,134
	May	703	340	3,018	4,061
	June	633	343	2,787	3,763
	July	626	303	2,895	3,824
	August	570	270	2,667	3,507
	September	562	263	3,413	4,238
	October	538	239	3,561	4,338
	November	427	220	2,683	3,330
	December	185	220	2,414	2,819
<b>10 (Build Out)</b>	January	59	92	1,632	1,783
	February	58	91	1,401	1,550
	March	46	79	1,117	1,242
	April	39	79	882	1,000
	May	27	59	314	400
	June	29	78	590	647
	July	33	84	970	1,087
	August	33	80	994	1,107
	September	28	80	712	825
	October	19	59	110	188
	November	12	34	24	70
	December	10	24	10	44

Note: (a) Surface traffic volumes generated from construction operations for the Compressed and Delayed schedules would be similar to those presented in this table.

Source Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004.

### Off-Site Construction Impacts to Surface Transportation

This and the following subsections provide technical data and background information that address the anticipated construction impacts to surface transportation associated with Alternative C. It is anticipated that the construction impacts associated with Alternative D and G would be comparable to Alternative C. The number of trips used in this analysis represents the maximum (most conservative) case, considering all construction years.

The methodology used for the surface transportation analysis for the Build Alternatives accounts for construction employee trips and truck haul trips to and from the Airport. This

methodology is applied to Construction Phase I, Construction Phase II, and the Build Out phase, and represents the maximum case, upon analysis of the construction related traffic generated for every construction year. The Build Alternative trips are considered in addition to the normal construction traffic that occurs at the Airport. The following summaries are included in this section:

- Construction employee trips
- Truck haul trips
- Intersection analysis
- Temporary roadway modifications
- Roadway management and maintenance

See also **Appendix Q, Construction**, for an overview of anticipated construction activity by year.

#### *Construction Employee Trips Summary*

Construction associated with the Build Alternatives would potentially be performed during three daily shifts: 1) First Shift: 6:00 AM to 2:00 PM, estimated 80 percent of construction employees; 2) Second Shift: 2:00 PM to 10:00 PM, estimated 10 percent of construction employees; and 3) Third Shift: 10:00 PM to 6:00 AM, estimated 10 percent of construction employees.

The main employee shift change will potentially occur between 2:00 PM and 3:00 PM. Designated employee parking lots would be located at the north and south construction areas, with shuttle buses used to transport employees from the designated parking lots to the appropriate work sites. The entrance to construction employee parking for the north construction area would be located on Touhy Avenue at Mount Prospect Road. The parking entrance for construction employees at the south construction area would be located on Irving Park Road at the South Cargo Road.

The estimate for the peak day construction employee trips for the Build Alternatives is 3,561, with the peak hour occurring between 2:00 PM and 3:00 PM, as shown in **Table 5.20-13**. Each trip consists of one movement onto and one movement off of the Airport. The Airport entrance and exit locations for construction employees, with project percentages of use are shown in **Exhibit 5.20-4**.

Based on the 24-hour data shown in **Table 5.20-13**, 1,353 daily construction employee trips (38.0 percent) will exit during the peak hour of 2:00 PM through 3:00 PM with the Build Alternatives, and 178 daily construction employee trips (5.0 percent) will enter the Airport during the peak hour with the Build Alternatives. Of these trips, 40 percent (71 entering trips and 541 exiting trips) will travel to and from the designated employee parking lots at the north construction area and 60 percent (107 entering trips and 812 exiting trips) will travel to and from the designated employee parking lots at the south construction area. The entrance to construction employee parking for the north construction area is on Touhy Avenue at Mount Prospect Road,

and the parking entrance for construction employees at the south construction area is on Irving Park Road at the South Cargo Road. The construction employee parking lots are located outside the AOA and will not require access through security gates. The construction employees will be transported to the work site by bus with identities checked as the employees board the bus. The lack of need for security checks at the construction employee parking lot access point will minimize vehicle congestion during peak employee shift changes.

For the Delayed Schedule, the number of construction employee trips would be similar to the estimates for the Original Schedule.

For the Compressed Schedule, there would be 1,821 redistributed construction related employee trips per day over Year 1 through Year 3 to make up for the delayed construction start. However, the estimate used for the peak day construction related employee trips is 3,561. Therefore, the construction generated surface transportation volumes discussed for the Original Schedule would still represent the maximum case.

**TABLE 5.20-13  
CONSTRUCTION EMPLOYEE TRIPS 24 HOUR DISTRIBUTION  
(ORIGINAL SCHEDULE)**

Hour Beginning	Trips IN		Trips OUT	
	Number of Trips	Percentage of Trips	Number of Trips	Percentage of Trips
Midnight	7	0.2%	18	0.5%
1	7	0.2%	18	0.5%
2	14	0.4%	11	0.3%
3	36	1.0%	11	0.3%
4	285	8.0%	36	1.0%
5	1,246	35.0%	178	5.0%
6	285	8.0%	107	3.0%
7	132	3.7%	36	1.0%
8	107	3.0%	18	0.5%
9	107	3.0%	18	0.5%
10	71	2.0%	18	0.5%
11	107	3.0%	18	0.5%
Noon	178	5.0%	107	3.0%
13	178	5.0%	178	5.0%
14(a)	178	5.0%	1,353	38.0%
15	71	2.0%	534	15.0%
16	71	2.0%	214	6.0%
17	71	2.0%	192	5.4%
18	36	1.0%	71	2.0%
19	36	1.0%	36	1.0%
20	71	2.0%	36	1.0%
21	142	4.0%	107	3.0%
22	107	3.0%	178	5.0%
23	18	0.5%	71	2.0%
Weekday Total	3,561	100%	3,564	100%

Note: (a) Main construction employee shift change: 2:00 - 3:00 PM. Alternative C Peak Hour: 4:30 - 5:30 PM.  
Source: Jacobs Engineering Group, Inc. [TPC] review of information received from Kimley-Horn and Associates, Inc. [CCT], 2004.

### *Truck Haul Trips Summary*

Haul trucks are free to operate without restriction and without prior state, county, or local approval on any interstate, tollway, or state highway, or county road if they are not heavier than 74,000 pounds (37 tons), including the weight of the tractor-trailer, and are not wider than 9 feet. The existing U.S. and State roadway/tollway infrastructure, consisting of Interstates 55, 90, 94, 290, and 294, as well as Mannheim Road (US Highway 45/12/20), Higgins Road and Touhy Avenue (State Highway 72), Elmhurst Road (State Highway 83), Irving Park Road (State Highway 19), and Archer Avenue (State Highway 171) would be used for travel to and from O'Hare. In addition, portions of Joliet Road and Thorndale Avenue, which are County Roads outside of state jurisdiction, could potentially be used to access state and Interstate Highways.

The Illinois Department of Transportation (IDOT) governs the use of State Highways (i.e. non-residential streets) for construction vehicles. Approval from IDOT is required if construction vehicles are expected to be "oversize," i.e. wider than 9 feet or in excess of 74,000 pounds (37

tons), including the weight of the tractor-trailer. The City's Contractor is responsible for acquiring and maintaining IDOT approval for use of oversize construction equipment. Local municipalities and counties do not require approvals or permits of their own for use of State Highways and County Roads that travel through their boundaries, but they do recognize and enforce the restrictions set forth by IDOT. For example, local municipalities have the authority to police haul routes and randomly select trucks to verify that weights are within legal limits.

Heavy-duty diesel semi-tractor trailers, which are commonly known as "18 wheel dump trucks," and can legally haul 18 to 22 tons of material per truck, would be used to transport materials to and from O'Hare. Street-legal "Low-Boy" tractor-trailers would be used for the movement of heavy construction equipment on and off the site.

Two types of truck trips associated with the Build Alternative construction activities are; 1) haul trips bringing construction materials to the Airport; and 2) haul trips removing materials from the Airport. Haul trucks are expected to enter and exit the Airport at the following four locations, as shown in **Exhibit 5.20-2**.

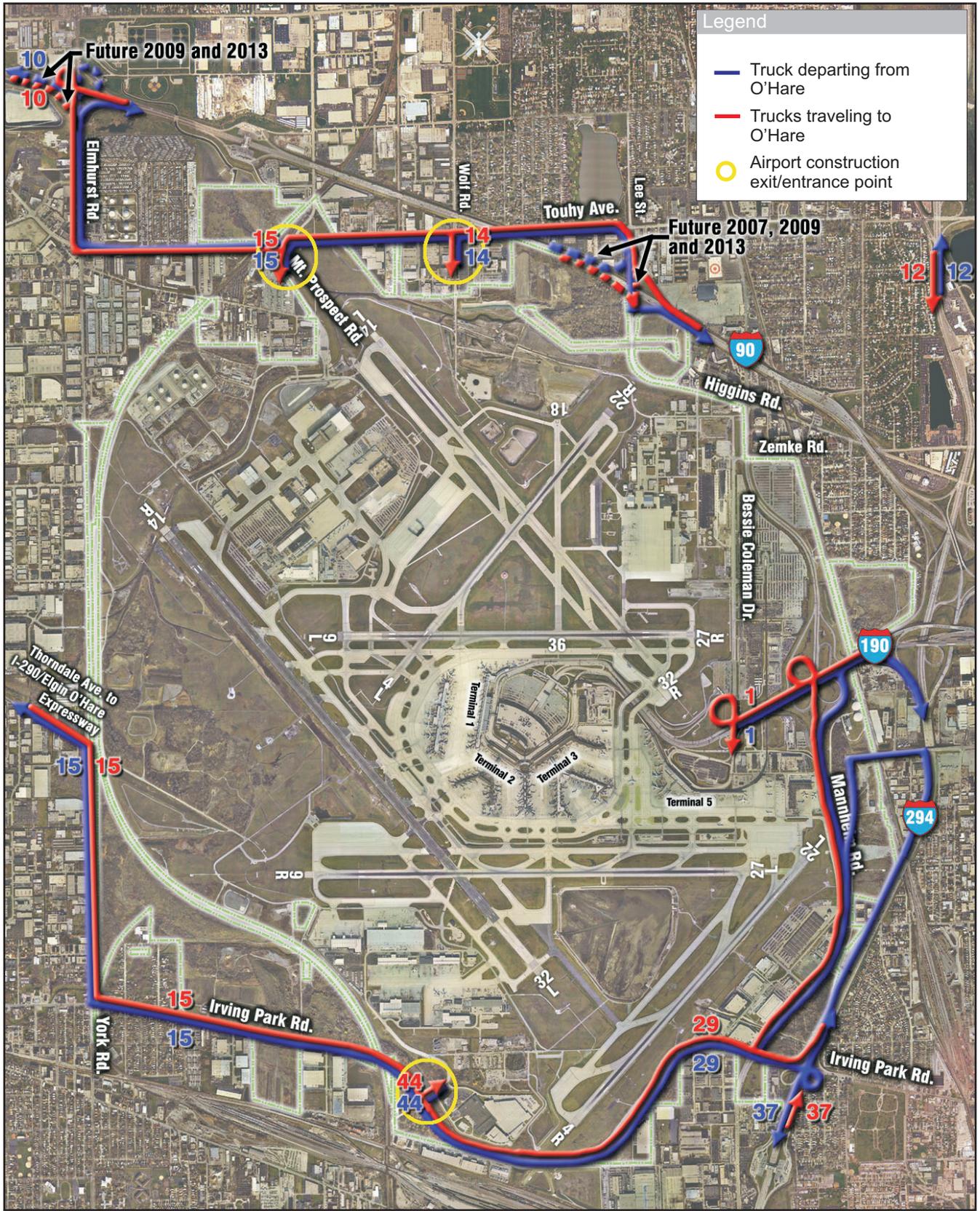
- Mount Prospect Road for the north construction area
- Wolf Road for the north construction area
- South Cargo Road for the south construction area (access provided by both Irving Park Road and Thorndale Avenue)
- Bessie Coleman Drive for the east construction area

It is expected that 1,185 haul trips into and out of the site would occur each day, which would be spread out evenly over the first two shifts (i.e. sixteen hours between 6:00 AM and 10:00 PM).

For the Delayed Schedule, the number of truck haul trips would be similar to the estimates for the Original Schedule.

For the Compressed Schedule, there would be approximately 680 redistributed construction related truck haul trips per day over Year 1 through Year 3 to make up for the delayed construction start. However, the estimate used for the peak day construction related truck haul trips is 1,185. Therefore, the construction generated surface transportation volumes discussed for the Original Schedule would still represent the maximum case.

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Source: Landrum and Brown, Inc. [CCT] 2003.



Chicago O'Hare International Airport

**O'Hare Modernization  
Environmental Impact Statement**

**Truck Haul Routes and  
Volumes for Build Alternatives  
(Peak Hour)**

► Exhibit 5.20-2

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Several potential sites throughout the Chicago metropolitan area are available to supply aggregate. For example, Vulcan McCook Quarry, which is located approximately 22 miles southeast of the Airport in McCook, Illinois, could provide aggregate and also accepts clean fill.

Haul trucks bringing aggregate to the construction site would arrive full from Vulcan McCook Quarry and return empty. The designated haul route from Vulcan McCook Quarry to O'Hare would be Joliet Road to Archer Road to I-55 South to I-294 North to I-190 West, to Mannheim Road. Haul trucks would then travel either north or south on Mannheim Road to reach the appropriate construction area. The same route in reverse would be used to travel from the Airport back to the quarry. Haul trucks removing material from the Airport would travel to potential designated dumpsites located within a 50-mile radius of O'Hare. For example, the waste management facilities listed in the **Table 5.20-14** are located within 50 miles of the Airport and can be easily accessed through existing Interstates, Tollways, and State Highways. See also **Exhibit 5.20-3**.

**TABLE 5.20-14  
POTENTIAL CONSTRUCTION MATERIAL DUMP SITES WITHIN A 50-MILE  
RADIUS**

<u>Facility Name and Location</u>	<u>Direction &amp; Distance from O'Hare</u>	<u>Types of Materials Provided and Accepted(a)</u>
Vulcan McCook Quarry - McCook, Illinois	22 miles southeast	Provides aggregate stone Accepts clean fill
Settler's Hill Waste Management - Batavia, Illinois	31 miles southwest	Accepts clean fill and special waste
CID Waste Management - Calumet City, Illinois	40 miles southeast	Accepts hazardous waste
Countryside Waste Management - Grayslake, Illinois	35 miles north	Accepts clean fill and special waste
Pheasant Run Waste Management - Bristol, Wisconsin	48 miles north	Accepts clean fill and special waste

Notes: (a) USEPA definitions:  
 Clean Fill - non-hazardous, man-made deposits of natural soils or rock products and waste materials  
 Special Waste - does not fall into the category of hazardous or non-hazardous waste  
 Hazardous Waste - materials that can pose a substantial or potential hazard to human health or the environment when improperly managed, and possess at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appears on special EPA lists

Source: Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004.

The proposed Airport exit points for the north construction area are at Mount Prospect Road and Wolf Road. The proposed exit point for the south construction area is at South Cargo Road.

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Source: Landrum and Brown, Inc. 2003.



Chicago O'Hare International Airport

**O'Hare Modernization  
Environmental Impact Statement**

**Potential Truck Haul Routes  
within a 50-Mile Radius  
for Build Alternatives**

► Exhibit 5.20-3

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### *Intersection Analysis*

The purpose of the Intersection Analysis is to analyze key roadway intersections for traffic directly related to the Build Alternatives during the Build Alternative peak hour and the construction employee shift change peak hour. The estimate for the peak day construction employee trips for proposed Alternative C-related construction for the Original Schedule is 3,561, with the peak construction employee shift change occurring between 2:00 PM and 3:00 PM, as shown in **Table 5.20-13**.

Results of the surface analysis include the average delay per vehicle (in seconds) and the Level-of-Service (LOS) for the No Action Peak Hour (4:30 – 5:30 PM), Build Alternative Peak Hour (4:30 – 5:30 PM), No Action Construction Employee Shift Change (2:00 – 3:00 PM), and Build Alternative Construction Employee Shift Change (2:00 – 3:00 PM) for Construction Phase I, Construction Phase II, and the Build Out phase, as shown in **Table 5.20-12**. The following intersections were selected for analysis due to their provision of direct access into and out of the Airport for the Build Alternative construction employees' vehicles and haul trucks.

- Touhy Avenue and Elmhurst Road
- Touhy Avenue and Mount Prospect Road
- Touhy Avenue and Lee Street (West)
- Touhy Avenue and Wolf Road
- Mannheim Road and Higgins Road
- Irving Park Road and York Road Ramp
- Irving Park Road and Main Cargo Road
- Irving Park Road and Mannheim Road

The construction employees' vehicles and haul trucks included in this analysis are in addition to normal construction traffic that already occurs at the Airport.

**TABLE 5.20-15  
INTERSECTION ANALYSIS: AVERAGE DELAY PER VEHICLE (IN SECONDS) AND LEVEL-OF-SERVICE FOR THE NO ACTION  
ALTERNATIVE (ALTERNATIVE A) AND BUILD ALTERNATIVES(a) (ORIGINAL SCHEDULE)**

Intersection	Construction Phase I						Construction Phase II						Build Out								
	No Action			Build			No Action			Build			No Action			Build					
	Peak Hour	Alternative	Construction	Employee	Shift Change	Peak Hour	Alternative	Construction	Employee	Shift Change	Peak Hour	Alternative	Construction	Employee	Shift Change	Peak Hour	Alternative	Construction	Employee	Shift Change	
Touhy Ave. & Elmhurst Rd.	77.4 (E)	64.6 (E)	35.7 (D)	36.2 (D)	81.2 (F)	71.3 (E)	36.3 (D)	38.1 (D)	85.6 (F)	85.5 (F)	38.6 (D)	40.1 (D)									
Touhy Ave. & Mt. Prospect Rd.	57.8 (E)	52.1 (D)	89.1 (F)	159.4 (F)	67.2 (E)	56.1 (E)	93.7 (F)	168.6 (F)	87.3 (F)	77.3 (E)	133.3 (F)	209.8 (F)									
Touhy Ave. & Lee St. (West)	98.2 (F)	87.3 (F)	29.8 (C)	34.4 (C)	102.1 (F)	79.3 (E)	28.3 (C)	31.9 (C)	106.9 (F)	106.9 (F)	30.6 (C)	36.2 (D)									
Touhy Ave. & Wolf Rd.	56.7 (E)	39.6 (D)	11.2 (B)	12.5 (B)	81.5 (F)	43.6 (D)	12.1 (B)	12.6 (B)	72.8 (E)	65.6 (E)	15.0 (B)	16.4 (B)									
Mannheim Rd. & Higgins Rd.	201.9 (F)	212.7 (F)	106.9 (E)	124.6 (E)	213.6 (F)	184.5 (F)	96.5 (F)	112.7 (F)	186.4 (F)	236.7 (F)	128.3 (F)	146.2 (F)									
Irving Park Rd. & York Rd. Ramp	179.3 (F)	176.2 (F)	140.7 (E)	159.2 (E)	69.3 (E)	77.3 (E)	26.9 (C)	28.6 (C)	69.8 (E)	159.9 (F)	60.9 (E)	67.5 (E)									
Irving Park Rd. & Main Cargo Rd.	20.2 (C)	27.5 (C)	22.1 (C)	48.8 (D)	22.1 (C)	43.2 (D)	30.8 (C)	142.2 (F)	22.2 (C)	95.7 (F)	46.5 (D)	201.0 (F)									
Irving Park Rd. & Mannheim Rd.	73.1 (E)	76.9 (E)	39.0 (D)	54.8 (D)	81.9 (F)	76.3 (E)	38.9 (D)	54.5 (D)	86.5 (F)	132.9 (F)	52.0 (D)	99.8 (F)									

Notes: (a) The number shown in parentheses after the delay number is the Level of Service (LOS) for the intersection.

Peak Hour: 4:30 – 5:30 PM / Construction Employee Shift Change: 2:00 – 3:00 PM

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

As previously discussed for the Compressed Schedule, there would be 1,821 redistributed construction related employee trips per day over Year 1 through Year 3 to make up for the delayed construction start. However, the estimate used for the peak day construction related employee trips for all potential construction scenarios is 3,561. Therefore, the construction generated surface transportation volumes discussed for the Original Schedule would still represent the maximum case, and it is not expected that the average delay per vehicle and associated LOS for the Compressed Schedule would be worse.

With the Delayed Schedule, the peak hour and construction employee shift change peak hour would not change significantly from the estimates for the Original Schedule, given that the only factor would be the increase in "background" traffic (non-construction related) as a result of the 14 month delay and the regional surface transportation yearly growth, which would be approximately 1 percent per year. See **Section 5.3.3, Alternatives Analysis**, for additional analysis of the effects of the Delayed Schedule on intersection LOS and delay.

### *Temporary Roadway Modifications*

Haul road flow control in the vicinity of O'Hare would be achieved through the maximized use of roadway intersections with existing traffic signals. Examples of such intersections are listed below.

- Mannheim Road (US Highway 45/12/20) and Higgins Road (State Highway 72)
- Higgins Road (US Highway 45) and Touhy Avenue (State Highway 72)
- Lee Street (US Highway 45) and Touhy Avenue (State Highway 72)
- Touhy Avenue (State Highway 72) and Wolf Road
- Touhy Avenue (State Highway 72) and Mt. Prospect Road
- Touhy Avenue (State Highway 72) and Elmhurst Road (State Highway 83)
- Elmhurst Road (State Highway 83) and Pratt
- Elmhurst Road (State Highway 83) and Thorndale Avenue
- Elmhurst Road (State Highway 83) and Irving Park Road (State Highway 19)
- Irving Park Road (State Highway 19) and Taft Avenue
- Irving Park Road (State Highway 19) and Mannheim Road (US Highway 45/12/20)
- Mannheim Road (US Highway 45/12/20) and Montrose
- Mannheim Road (US Highway 45/12/20) and Lawrence Avenue
- Mannheim Road (US Highway 45/12/20) and Zemke

Temporary roadway modifications, such as the installation of temporary traffic signals, lane closures, and detours may also be necessary to maintain haul road flow control during various construction activities. In the event that a lane closure is required, the City's Contractor would be responsible for obtaining the proper permit from the IDOT Bureau of Traffic (local area office

located in Schaumburg, Illinois) prior to the start of construction. Signage identifying roadway access to and from the Airport for construction traffic and for lane closures is required, following procedures set forth by IDOT. Potential temporary roadway modifications and the associated projects that are known at this time are listed in the **Table 5.20-16**.

**TABLE 5.20-16  
POTENTIAL TEMPORARY ROADWAY MODIFICATIONS BY PROJECT**

<b>Proposed Project</b>	<b>Potential Temporary Roadway Modification</b>	<b>Expected Total Duration</b>	<b>Expected Daily Duration</b>
90" Water Main (JAWA)	Lane Closure: Eastbound lane of Higgins Rd. between Mannheim Rd. and Lee St.	10 months	24 hours a day
Relocated Mt. Prospect Rd./Guard Post 1	Lane Closure at intersection of Mount Prospect Rd. and Touhy Ave.	15 months	24 hours a day
Bensenville Ditch Relocation	Detours: -Irving Park Rd., east of Garden Ave. in Bensenville for approx. 1,300 feet (two lanes in both directions would be maintained) -Irving Park Rd., between Taft Ave. and the Union Pacific Railroad – Stage 1 (two lanes in both directions would be maintained) - Irving Park Rd., between Taft Ave. and the Union Pacific Railroad – Stage 2 (two lanes in both directions would be maintained)	20 months	24 hours a day
90" Water Main (JAWA), Creek Relocation, Runway 9L/27R	Temporary traffic signal on Higgins Rd. at the Lee St. Curve, south of the I-90 overpass(a)	30 months	24 hours a day
Movement of existing berm material located at the Forestry Site	Temporary traffic signal at intersection of Irving Park Rd. and O'Leary St. (Note: this temporary traffic signal is already in place)(a)	66 months	24 hours a day
Notes: (a) Potential temporary traffic signals would be activated by contractors, as needed, to provide temporary roadway access for construction vehicles.			
Source: Construction Impacts Draft Technical Working Report, AOR/TOK [CCT], September 2004.			

### *Roadway Management and Maintenance*

The following methods for maintaining the physical condition of on-site and off-site roadways during construction are commonly included in City of Chicago contract language, or are common contractor practices during construction activities at O'Hare.

- Complete pre-work inspection/survey and photographic record of roadways with IDOT State Engineer to determine existing condition of roadways prior to use as truck haul route.
- Pavement repair in the event of pavement failure as a result of hauling activities. The City of Chicago typically sets aside funds in construction contracts for roadway improvements.

### *Alternatives to Truck Transport*

The possibility of using rail and/or conveyors to deliver and remove materials such as dirt, aggregate, etc. to/from the work site, as potential alternatives to truck transport, is discussed in the following sections.

The possibility of using rail as an alternative to truck transport for the Build Alternative projects was considered through the use of existing and potential future rail spurs at O'Hare. Use of rail as an alternative is no longer being considered due to: O'Hare's close proximity to several fill/dump sites that could be easily accessed via the existing interstate, tollway, and state highway system (as shown in **Exhibit 5.20-3**); the City's desire that the majority of excavated material at O'Hare would remain on-site for use with other proposed Build Alternative construction activities; and the additional cost and time that would be associated with the use of rail.

If rail was used as an alternative to truck transport, rail lines and security Guard Posts would have to be installed prior to construction. Those facilities would then need to be relocated throughout construction to accommodate the proposed construction sites. Additionally, the rail lines and Guard Posts would have to be dismantled and removed when construction ends. This process would add additional overall cost, as well as time to the construction schedule. Airport Guard Posts and Construction Vehicle Inspection Areas (CVIAs) are already in place at O'Hare and ready for use today.

Conveyor systems have been used successfully for recent construction activities at major airports, most notably the recent construction activities at Atlanta's Hartsfield-Jackson International Airport (ATL). The difference between construction at ATL and O'Hare include the amount of fill transported to the site and the consistency of the soil itself.

Construction at ATL required a much greater amount of fill to be transported to the work site than would be required with the Build Alternative projects. The construction plan at ATL called for raising the fifth runway to an elevation above Interstate 285 surrounding the Airport. The amount of fill needed at ATL far exceeded the amount excavated on-site, which required large amounts of extra fill to be delivered to the Airport. By way of contrast, the majority of excavated material at O'Hare would remain on-site for use for other construction projects within the Build Alternative, effectively reducing the amount of material that would need to be delivered to and removed from the work site.

Additionally, the sandy-based soil at ATL was more conducive to large-scale addition to the work site via conveyor systems. The clay-based soil at O'Hare is less conducive to conveyor transport because its "sticky" nature tends to stop conveyor gears from working properly, potentially requiring the conveyor to be shut down and cleaned before continuing use, adding additional overall cost and time to the construction schedule. Although concrete debris travels well on conveyors, it must first be crushed to a sandy consistency, which would add additional overall cost and time to the construction schedule.

Truck transport between fill/dump sites and O'Hare is preferred because the majority of excavated material at O'Hare would remain on-site for use for other construction activities

within the Build Alternative, as well as the fact that several fill/dump sites are located within a 50-mile radius of O'Hare and can be easily accessed through existing Interstates, tollways, and highways, as shown in **Exhibit 5.20-3**. Individual contractors could potentially use small conveyor systems for on-site material movement, but large-scale conveyor operations as part of the Build Alternative projects as a whole may not prove practicable.

#### **5.20.4 Mitigation Measures**

The City of Chicago will formulate, implement, and monitor a program of construction environmental impact mitigation to eliminate or reduce construction impacts. There are three entities responsible for construction impact mitigation: the City, the City's Project Designer, and the City's Contractor.

##### **5.20.4.1 City of Chicago**

The City of Chicago Department of Aviation (DOA) has established operational requirements for the mitigation of construction impacts on past and current projects. The City of Chicago will ensure that these requirements will be conveyed to the City's Project Designers for inclusion in bidding and contract documents. The DOA has prepared an OMP Best Management Practices (BMP) Manual, and an OMP Sustainable Design Manual. These two manuals provide procedures that will become requirements for construction impact mitigation as appropriate for each individual project, and are both included in **Appendix Q, Construction**. The DOA will also review bidding documents for environmental protection requirements and monitor construction to assure compliance.

##### **5.20.4.2 City's Project Designer**

The Project Designer will include applicable Best Practices and Sustainable Design procedures in all bidding and contract documents, as well as all requirements of local, State and Federal ordinances, regulations and permits. The Designer will include in project specifications, where applicable, the provisions of FAA AC 150/5370-10A, *Standards for Specifying Construction of Airports* that pertain to the reduction of construction impact. AC 150/5370-10A requires the Contractor to submit:

- Schedules for accomplishing erosion control work
- Plan for erosion and dust control on haul roads and at borrow pits
- Plan for disposal of waste materials

In addition, the Designer will require the Contractor to submit, prior to construction and implementation, the following plans for the City of Chicago's review and approval:

- Construction and Demolition Waste Management Plan
- Recycling and Salvage Plan
- Pollution Prevention Plan
- Hazardous Waste Disposal Plan

- Spill Prevention and Mitigation Plan
- Air Pollution Control Plan
- Fuel and Lubricants Control Plan

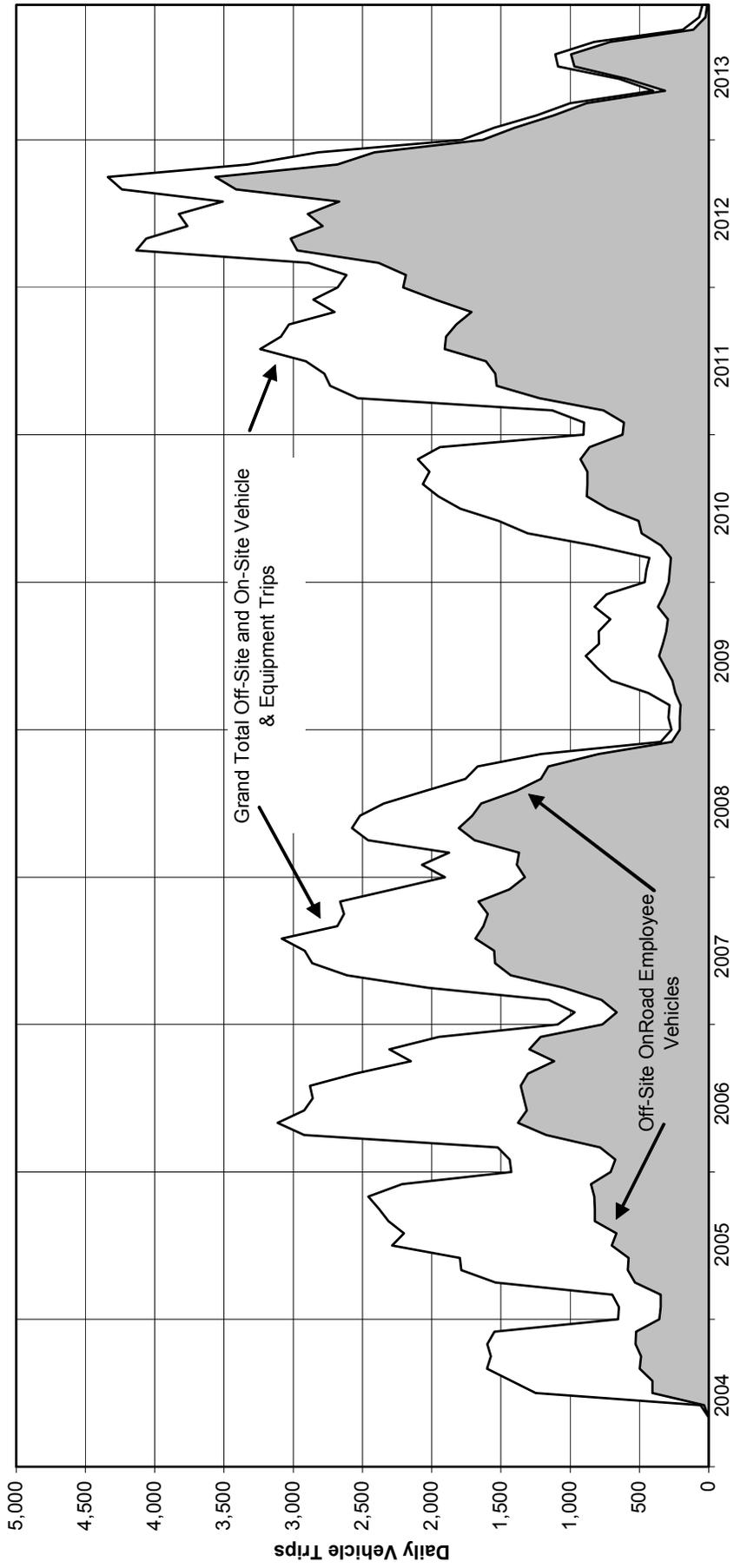
#### **5.20.4.3 City's Contractor**

The City's Contractors will be responsible for compliance with all permits and all contractual environmental requirements for both the Contractor operations and all work by subcontractors if a Build Alternative is selected.

#### **5.20.4.4 Project Schedule**

The projected construction traffic for the project duration (Original Schedule) is tabulated in **Table 5.20-12**. The Grand Total and Employee Commuter Trips have been plotted on **Exhibit 5.20-4**. The employee trips were based upon one vehicle per employee. The volume of employee traffic is a good indication of the construction effort at any time. **Exhibit 5.20-4** indicates there will be a substantial reduction in construction activity during Year 6, and part of Year 7, with a high level of construction in Year 9, of the Original Schedule. A review of the proposed implementation schedule indicates there would be no runway construction during Year 6, and three runways would be under construction in Year 9, of the Original Schedule. **Table 5.20-17** lists the proposed schedule for the Alternative C runway projects. The DOA will review the proposed schedules to evaluate schedule revisions to better balance the construction effort from Year 5 through Year 9. A better balance of construction will not eliminate potential impacts, but will mitigate the severity of some potential impacts such as traffic volumes. Even noting differences associated with construction, the proposed construction schedules for Alternatives D and G are anticipated to be comparable to Alternative C.

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Source: Appendix A, Construction Impacts Sept. 2004 By AOR/TOK. Note: Traffic volumes shown are round-trips.

Chicago O'Hare International Airport

**Grand Total and Employee Commuter Trips  
(Original Schedule)**



**O'Hare Modernization  
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**TABLE 5.20-17  
SCHEDULE FOR RUNWAY/TAXIWAY CONSTRUCTION (ORIGINAL SCHEDULE)**

<b>Runway</b>	<b>Start</b>	<b>Complete</b>
9L/27R	July Year 2	November Year 3
10L/28R	April Year 4	November Year 4
10C/28C	September Year 2	November Year 5
No Runway/Taxiway Construction in 2009		
9R/27L	June Year 7	November Year 9
9C/27C	June Year 7	November Year 9
10R/28L (Alternative C only)	April Year 8	November Year 9
Source Construction Impacts Draft Technical Working Report, Table 1-2, AOR/TOK [CCT], September 2004.		

#### **5.20.4.5 Construction Coordination with Residents, Motorists, Municipalities, and Local Agencies**

The example practices listed below have been used in the past for various DOA and City of Chicago construction activities, and are included in the City of Chicago's Construction Outreach Program<sup>8</sup> for the O'Hare Modernization. These practices will be used as public-coordination devices for the Build Alternative projects.

##### **Communication Outreach to General Public**

- Post construction-related information on the OMP public web site at [www.OhareModernization.org](http://www.OhareModernization.org).)
- Issue traffic alert bulletins to OMP public website to alert subscribers.
  - The OMP website currently has more than 550 individuals and organizations, including media outlets, signed up to receive updated news and information about the City's OMP. The OMP will conduct further outreach to alert the public of its existence and encourage them to sign up for the service.
- Display construction traffic information on static and dynamic signage for motorists to view as they travel near and enter the Airport roadways.
  - Such practices have already been implemented upon entering the O'Hare roadway system, along I-190 westbound, which displays construction and parking updates.
  - The OMP will coordinate with IDOT and ISTHA to utilize their communication tools to alert drivers about construction zones.
- Distribute information to area City Halls and libraries, as well as providing construction information kiosks, for passengers traveling through the terminals at O'Hare.
  - Brochures will be updated frequently with accurate information.

<sup>8</sup> Construction Outreach Program for the O'Hare Modernization Program, City of Chicago, July 8, 2005 (included as Attachment Q-3 in Appendix Q, Construction).

- Continue to issue quarterly print or online editions of *O'Hare Modernization New* newsletter to residents and businesses near O'Hare.

#### **Communication Outreach for Elected Officials, Area Businesses, and Local Governments**

- Hold meetings with delivery companies, ground transportation companies, and the airlines at O'Hare to discuss O'Hare Modernization construction activities.
- Hold public outreach meetings to discuss O'Hare Modernization construction activities and answer questions.
  - Meetings will be held with local elected officials, community leaders, Rotary Clubs, Chambers of Commerce, and other business groups, allowing for feedback from the public.
- Work closely with area police and fire departments, notifying them of any road closures or heavy construction traffic.

#### **Media Communication**

- Work with local radio affiliates to include O'Hare Modernization construction updates, as necessary, during morning and afternoon traffic reports.
  - Radio stations include WBBM AM, WGN AM, and WYLL AM.
- Broadcast continuous construction traffic reports on dedicated O'Hare AM radio "station."
  - Options include 800 AM or a new dedicated station.
- Release O'Hare Modernization construction project outlook report at start of construction season to local media outlets.
  - Media outlets include *Chicago Tribune*, *Daily Herald*, *Chicago Sun-Times*, WLS TV, WMAQ TV, WBBM TV, WFLD TV, WGN TV, and WTTW TV.
- Work with the City of Chicago's Traffic Management Authority to post regular traffic updates.
- Hold press conferences and issue press releases in conjunction with construction changes and milestones.
- Coordinate special events (i.e., ribbon-cutting ceremonies) to announce project completions.

#### **5.20.4.6 Pavement Recycling and Salvage**

**Table 5.20-8** lists approximate areas of concrete pavement demolition. Assuming the average thickness of pavement is 12 inches, crushing the removed pavement would produce up to 400,000 tons of recycled aggregate for use in pavement, bases and subbases. In addition, crushing the removed asphalt pavement would produce recycled asphalt material that can be used in asphalt concrete production. Recycling pavements will be a requirement that will conserve natural resources and reduce off-site waste hauling and hauling in new aggregates.

Demolition of structures and infrastructure would be conducted using techniques that would result in salvage of construction materials to the maximum extent practical. Salvage of demolition materials will reduce off-site disposal, hauling and the volume of landfill waste and conserve resources such as structural steel.

#### 5.20.4.7 Airfield Operation

Airfield construction projects are proposed within the Aircraft Operations Area (AOA). Careful planning and project implementation would be required to prevent construction/aircraft traffic conflicts. Some procedures that would minimize the volume of construction traffic in the AOA are:

- Maximum use of airport roads located outside the AOA for transport of material, personnel and equipment. See **Appendix Q, Construction**.
- Temporary fencing to exclude as much of the Build Alternative projects from the AOA as possible. See **Appendix Q**.
- Location of batch plants and material storage close to larger projects.
- Remote construction employee parking lots with bus transport to the jobsite.
- Construction gates at AOA entry points to limit traffic to only essential construction vehicles. See **Appendix Q**.

Construction operations in, adjacent to, or requiring construction traffic through the AOA will require a phasing plan. The purpose of the plan is to establish guidelines and constraints the Contractor must follow during construction within the AOA. The plan will be developed by the DOA and the Project Designer and will be included in the bidding and contract documents. The basic information in the phasing plan includes:

- AOA facilities that will be closed or partially closed during construction.
- Phasing that is required to maintain aircraft operations adjacent to or through the construction area, with those airfield facilities identified that will be opened and closed during each phase.
- Maximum duration of each phase (or closure).
- Time allowance between phases for preparation to redirect aircraft traffic.
- Requirements for temporary marking, lighting and signage.

Only the DOA can close, open, or restrict the use of any part of the O'Hare airfield. Any conditions that would prevent, restrict or present a potential hazard to arriving or departing aircraft requires notification to pilots. This notification to aircraft operators is accomplished by the Notice to Airmen (NOTAM) system. NOTAMS are submitted to the FAA for publication. Any change to facilities within the AOA caused by construction operations will be preceded by publication of a NOTAM to advise aircraft operators of a change in airfield conditions.

#### 5.20.4.8 Noise

Noise caused by construction vehicles and equipment will temporarily increase at the sites of the Build Alternative projects. The construction activity is not expected to add significantly to current ambient noise levels attributable to Airport operations and traffic on the surrounding expressways and arterial streets. Given the relatively high traffic volumes already present along these roads, the additional temporary construction operations will not have a noticeable effect. However, the OMP Best Management Practices<sup>9</sup> recommendation to require mufflers for construction equipment will be followed.

#### 5.20.4.9 Surface Transportation

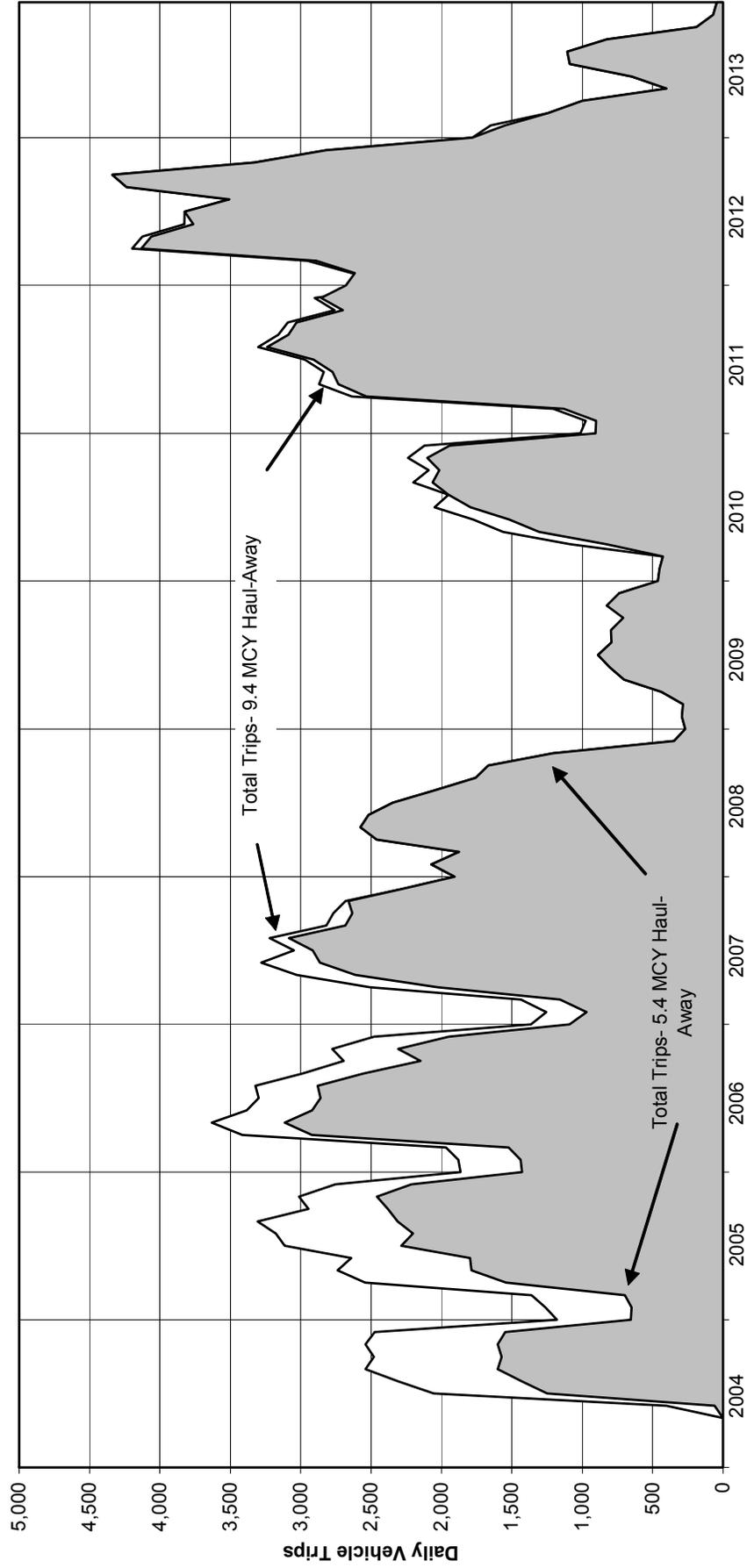
Measures have been identified to provide mitigation of potential impacts of the Build Alternative surface traffic on area expressways, arterial streets and intersections for any of the potential construction schedules.

- The public information program discussed in **Section 5.20.4.5** provides advance notice of any modifications to existing streets and intersections by the Build Alternative and provides information regarding truck haul routes in use.
- The earth haul-away from the Airport was reduced from 9.4 MCY to 5.4 MCY. This reduction was possible due to a reevaluation of the Build Alternative earthwork program. **Exhibit 5.20-5** illustrates the reduction of daily haul trips of up to 800 per day.
- The DOA will review the schedule as discussed in **Section 5.20.4.4, Project Schedule**, and the other potential construction schedules, to evaluate the potential to more evenly distribute the work activities, which may result in a decrease in peak Build Alternative traffic.

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<sup>9</sup> Best Management Practices Manual, Chicago O'Hare International Airport, City of Chicago – Department of Aviation, March 2003.

Exhibit 5.20-5



Source: Appendix A, Construction Impacts Sept. 2004 By AOR/TOK

Chicago O'Hare International Airport

Daily Haul Trip Comparison  
(Original Schedule)



O'Hare Modernization  
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#### 5.20.4.10 Secondary (Induced) Impacts

There will be significant socioeconomic benefits associated with construction operations because of temporary construction job creation and purchase of materials from area manufacturers and suppliers. See **Section 5.5, Secondary (Induced) Impacts**, for further information.

#### 5.20.4.11 Air Quality

See **Section 5.6, Air Quality**, for an analysis of potential air quality impacts due to construction emissions, both on- and off-Airport, and potential mitigation measures.

#### 5.20.4.12 Solid Waste and Hazardous Materials

The collection and disposal of solid waste and hazardous materials are discussed in **Section 5.19, Solid Waste and Hazardous Materials**.

#### 5.20.4.13 Water Quality and Soil Erosion

The construction process exposes surface waters to the risk of pollution through the erosion of soils exposed during excavations. Both surface and groundwater could be affected if fuels and solvents used in construction are spilled. The contractor implementation of the construction practices addressed in the Fuel and Lubricant Control Plan (see **Section 5.20.4.2, Project Designer**) will reduce the potential for any fuel/lubricant spills and address the mitigation/remediation measures in the event of a spill. FAA AC 150/5370-10A, *Standards for Specifying Construction of Airports, Change 10, Item P-156 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control* describes Best Management Practices (BMP) for the control of erosion and water pollution during construction. These measures, supplemented by guidelines set forth in the BMP manual for O'Hare and the OMP Sustainable Design Manual,<sup>10</sup> would be incorporated into the construction process to minimize the risks of soil erosion and water pollution. See **Appendix Q, Construction**.

Current and potential future construction activities at the Airport are covered under the City of Chicago's General Storm Water Permit for Small Municipal Separate Storm Sewer Systems (MS4). The IEPA received the MS4 permit application from the City on March 10, 2003 and after review and acceptance, issued the permit to the City on September 20, 2004. This permit is valid until February 29, 2008, before which time the City would seek to renew the permit.

Certain aspects of the Build Alternatives will require the relocation of storm water facilities and oil/water separators. The City will ensure that all water quality control facilities, including oil/water separators, remain in service during construction, or satisfactory temporary replacement facilities are installed to ensure that water quality is protected. To address these

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<sup>10</sup> Sustainable Design Manual, City of Chicago O'Hare Modernization Program, December, 2003.

temporary floodplain impacts, the City will provide temporary flood storage capacity for use until the project elements are completed.

Areas impacted by mass grading would be accompanied by soil erosion and dust controls in order to minimize the potential for adverse air quality impacts.

The following is a list of potential BMPs that would be used, as appropriate, to improve water quality, reduce soil erosion, and reduce the amount of dust created in association with construction activities for the Build Alternative projects.

- Temporary oil-water separators
- Avoid paving operations during ongoing or intermittent rain
- Temporary covers or dikes for storm drains
- Re-plant disturbed vegetation as soon as possible
- Temporary mulching with or without seeding
- Rolled erosion control products (also known as erosion control blankets or mats) - Protects denuded soils from erosion and to create conditions to assist in vegetation establishment.
- Temporary seeding - Temporarily stabilizes disturbed soils that are not at final grade or that will sit idle for longer than 14 days; also used to reduce runoff and erosion until permanent vegetation or other erosion control measures can be established.
- Permanent seeding (vegetation) - Permanently stabilizes final graded or cleared areas to minimize erosion and decrease sediment from disturbed areas
- Sediment containment filter bag - Filters larger-diameter particles from sediment-laden water
- Silt fence barrier - Temporary containment structure on construction sites until disturbed areas are stabilized
- Rock-barrier check structure - Temporary containment structure during construction to reduce runoff velocities in drainage channels and to capture sediment
- Geosynthetic-check structure - Temporary containment structure during construction to reduce runoff velocities in drainage channels and to capture sediment
- Vehicle tracking pad - Temporary structure at the entrance/exit of a construction site to minimize or eliminate tracking of sediment onto public streets or right-of-ways
- Diversion dike - Intercepts and diverts storm water runoff away from disturbed areas towards a stabilized outlet or into a sediment trapping facility to minimize erosion
- Slope drain - Conveys concentrated runoff down the face of an erodible cut or fill slope to prevent erosion on or below the slope

- Rolled erosion control products (also known as erosion control blankets or mats) - Protects denuded soils from erosion and to create conditions to assist in vegetation establishment
- Inlet filters - Catches large-diameter suspended particles and reduce the amount of sediment entering the storm-sewer system
- Sediment basin with chemical treatment - Prevents and/or minimizes off-site sedimentation by intercepting storm water runoff and trapping sediments. A chemical flocculent agent may be added to help fine silts and clays settle-out
- Cellular confinement systems - Erosion protection from concentrated flow conditions on hillsides or in drainage channels or to act as a temporary stream crossing
- Mechanically stabilized earth walls (e.g., gabions, etc.) - Stabilizes stream banks and reduces erosion caused by erosive flowing water
- Vertical walls - Stabilizes stream banks and reduces erosion caused by erosive flowing water
- Lined aprons (also known as rock outlet protection) - Protects outlet structures, reduces scour erosion at the outlet, and reduces the likelihood of downstream erosion by dissipating runoff velocity and energy of concentrated storm water flows; also minimizes the effects of downstream sedimentation and turbidity
- Dust control - Reduces the blowing and movement of wind-born particles from disturbed soil areas, minimize on and off site damage, reduce health hazards, and improve traffic safety through the following actions
  - Regular street sweeping of interior airport roadways
  - Regular washing of construction vehicle tires
  - Cover or wet loose materials and exposed earth
  - Cover truck beds
  - Installation of pavement rumble strips to knock debris from truck wheels before leaving the work site
  - Temporary and/or permanent soil stabilization to reduce amount of debris reaching roadways and carried off-site by vehicles
  - Immediate on-site spill control to prevent debris from reaching roadways and/or being carried off-site by vehicles
  - Cover waste receptacles
  - Temporary fencing
  - Keep airport property grounds free of litter and debris through "good-housekeeping" practices.

#### 5.20.4.14 Security and Screening

Project logistics will be planned to maximize the amount of traffic that can be handled outside the AOA and thereby, minimize the Airport security required. Current personnel and vehicle security regulations, as defined by the Transportation Security Administration (TSA), will be enforced throughout the construction process.

On-site vehicles that will operate outside of the staging and parking areas will be limited to commercial vehicles and equipment that permanently bear the name, address (City), and phone number of the contractor, material supplier, or rental agency. Other vehicles and those not meeting this requirement will be subject to removal.

Perimeter fencing around construction areas will be installed in order to provide a security boundary deterring entry by traffic other than that required for construction activities. Security gates are to be provided and maintained by the Construction Manager. The Construction Manager would also be responsible for locking the gates when there is no work on the site, when the crew is minimal, and when no deliveries are anticipated. **Appendix Q, Construction**, contains exhibits that depict anticipated perimeter fencing by year.

All personnel and vehicles entering the AOA will be required to pass through a Guard Post and/or Construction Vehicle Inspection Area (CVIA).

CVIAs are multi-lane construction vehicle inspection areas, similar in appearance to a toll-plaza, that are staffed by unarmed security guards. Examples of security screenings performed at CVIAs include inspection of the underside of haul trucks using mirrors and checking haul trucks/loads against a delivery roster previously provided to security personnel by construction managers.

Ample paved areas are provided at CVIAs to ensure that trucks awaiting security screening are able to pull into the CVIA area and are not lined up on area roadways, causing congestion. In addition, security personnel are given advance warning if large numbers of haul trucks and/or large amounts of material are expected to arrive at a CVIA at the same time, allowing adequate security staff to be present for inspections and thereby reducing truck wait-time.

Existing DOA CVIA facilities will be used to the greatest extent possible for the Alternative C Projects, provided that construction traffic does not affect ongoing Airport operations. If necessary, DOA will construct temporary Guard Posts or CVIAs either due to the location of the work area or operational limitations at existing facilities. In some expected instances, where space would permit, existing Guard Posts will be expanded and used as temporary facilities dedicated to construction related vehicles. As construction work progressed and access points changed, elements of temporary facilities will be reused to the greatest extent possible. **Appendix Q** contains exhibits that depict anticipated CVIA locations by year.

All personnel and vehicles entering through a Guard Post or CVIA will be required to display proper identification. In the case of construction personnel, proper identification will be a DOA-issued badge. As is the current practice, construction employees at O'Hare will be required to display their DOA-issued badge prior to gaining access to the bus transporting them from the parking area to the worksite. In addition, employee names will be checked against the

personnel roster provided to security personnel by construction managers each day. Employees without a valid DOA-issued badge would be denied access to the work site, as would employees not listed on the daily personnel roster, even though he or she might have a valid DOA-issued badge. Vehicles would require a DOA-issued placard.

The O'Hare Central Field Office (CFO) currently houses a remote badge screening facility for contractors performing work at the Airport. This DOA facility will be expanded to accommodate ID Badging for O'Hare Modernization construction personnel and vehicles.

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