

4. 2030 Baseline Transportation System

This section describes the 2030 baseline transportation system, or “No-Action Alternative.” The baseline system represents a level of improvement that corresponds to a typical level of investment but does not include the major improvements being considered for this study. It serves as a basis for evaluating the performance of the system improvement alternatives. This section also describes the expected socioeconomic characteristics of the study area under the baseline condition. It also summarizes predicted demographic characteristics and expected transportation system improvements (roadway, transit, and airport) for the 2030 baseline transportation system. The baseline transportation system was established with input from area transportation agencies, including consideration of ongoing project development. It includes projects that the agencies expect to be in place by 2030. The baseline transportation system consists of the existing transportation network plus the following:

- Roadway and transit improvements identified in the 2030 RTP, excluding the major improvements being considered for this study
- Programmed roadway, transit, and aviation improvements within the study area included in current transportation improvement programs
- Roadway, transit, and aviation improvements located within the study area anticipated to be completed beyond the end date of current TIPs through 2030.

4.1 2030 Baseline Demographics

Population and employment forecasts were developed to specifically reflect the socioeconomic characteristics that correspond to the configuration of the 2030 baseline transportation system. The starting point for the development of the 2030 baseline demographics was the population and employment allocation contained in the 2030 RTP. Using the 2030 baseline transportation system, CMAP developed an initial forecast for the study area using a land use accessibility LOGIT model. The model used changes in accessibility from the 2030 RTP to reallocate population and employment for the 2030 baseline. Following the completion of the initial reallocation model run, the results were reviewed with CMAP staff and DuPage County staff to assess its reasonableness, within the context of a regional model. Based on the outcome of the review, the final population and employment allocations were assembled and transmitted to CMAP. A full regional travel model run using consistent baseline 2030 demographics and transportation network was carried out by CMAP for analysis of the baseline case.

4.2 2030 Baseline Roadway Network

The 2030 baseline roadway network identifies roadway capacity improvement projects that are to be in place by 2030, excluding the major transportation improvements to be considered by this study. For the purpose of this study, the 2030 baseline roadway network was developed with input from each transportation agency in the study area (IDOT, ISTHA, Cook County, DuPage County, CDOT) and a review of regional and agency plan information. The 2030 baseline roadway network consists of the existing transportation network plus the following:

- Roadway improvements identified in the 2030 RTP, excluding the extension of the Elgin O'Hare Expressway and West O'Hare Bypass
- Programmed roadway capacity improvements located within the study area and included in published Transportation Improvement Programs
- Roadway capacity or access improvements within the study area expected to be built and funded beyond the end date of current Agency Transportation Improvement Programs through 2030

Development of the 2030 baseline roadway network began by identifying roadway capacity improvement projects that are included in the 2030 RTP. The 2030 baseline roadway network includes both federal and nonfederal projects cited in IDOT's FY 2008–2013 Highway Improvement Program and CMAP's 2007–2012 Transportation Improvement Program based on project status, funding commitments, and air quality conformity status. The project team then contacted each transportation agency to validate the implementation status and scope of the listed roadway improvement projects and to identify any other roadway capacity or access improvements within the study area expected to be built and funded beyond the end date of their respective Transportation Improvement Programs through 2030. For the purpose of this analysis, major roadway improvements identified in the 2030 RTP known as the easterly extension of the Elgin O'Hare Expressway and a West O'Hare Bypass roadway facility were not included in the baseline network.

Programmed and expected roadway projects within the 2030 baseline roadway network are listed in Table 4-1 and depicted in the 2030 baseline roadway projects map (Exhibit 4-1).

TABLE 4-1
2030 Roadway Baseline Projects

Name	Project Type	To	From
Balmoral Avenue	New interchange, extend roadway	Bessie Coleman Drive	East of US Route 12/20/45
Des Plaines River Road	Bidirectional turn lane, utility/drainage relocation	River Street	Lawrence Avenue
IL Rte 53 (Rohlwing Road)	Add lanes, bridge replacement	Elgin O'Hare Expressway	Army Trail Road
I-290	Corridor improvement, high occupancy vehicle, auxiliary lanes	St. Charles Road	IL Route 50 (Cicero Avenue)
I-294 (Tri-State Tollway)	Widening, reconstruction	Balmoral Avenue	Dempster Street
I-90 (Jane Addams Tollway)	Add lane, reconstruction	I-294 (Tri-State Tollway)	IL Route 53
Meacham Road	Add lanes	IL Rte 62 (Algonquin Road)	Old Plum Grove Road
Meacham Road	Add lanes, traffic signals	IL Rte 62 (Algonquin Road)	IL Route 72 (Higgins Road)
Meacham Road	Add lanes, reconstruction w/change lane width	Kirchoff Road	IL Route 62 (Algonquin Road)
Medinah Road	Reconstruction, bidirectional turn lanes, channelization	IL Rte 19 (Irving Park Road)	US Route 20 (Lake Street)
Thorndale Avenue	Add lane	I-290	York Road
US 12/20/45 (Mannheim Road)	Widen Mannheim to three lanes in each direction	IL Rte 19 (Irving Park Road)	IL Route 72 (Higgins Road)
Wood Dale Road	Reconstruction, channelization	Montrose Avenue	N of US 20 (Lake Street)
Arlington Heights Road	Intersection improvement	Landmeier Road	
Arlington Heights Road	Intersection improvement	Oakton Avenue	
Devon Avenue	Intersection improvement	Arlington Heights Road	
Grand Avenue	Intersection improvement	York Road	
IL Rte 58 (Golf Road)	Intersection improvement	New Wilke Road	
IL Rte 62 (Algonquin Road)	Intersection improvement	New Wilke Road	
York Road	Intersection improvement	IL Rte 19 (Irving Park Road)	
West Terminal Entrance	Intersection improvement	Thorndale Avenue	
Wood Dale Road	Intersection improvement	IL Rte 19 (Irving Park Road)	
I-294 (Tri-State Tollway)	Add interchange ramp	Balmoral Road	

4.3 2030 Baseline Transit Network

The baseline transit network was developed by review of long-range transit projects identified in the 2030 RTP. Candidate baseline projects were then evaluated by transit providers on the basis of current agency priorities and anticipated funding viability. Programmed and expected transit projects within the 2030 baseline transit network are listed in Table 4-2 and depicted in the 2030 baseline transit projects map (Exhibit 4-2).

TABLE 4-2
2030 Transit Baseline Projects

CTA	Pace	Metra	Other
Blue Line service from Block 37 to O'Hare; no dedicated rail	<i>Note:</i> Pace projects will be examined as alternatives in a later phase of this study.	UPW line capacity upgrades UPNW line capacity upgrades and extension STAR LINE: O'Hare to Joliet segment	CREATE—New crossovers and signals in Franklin Park; track additions to the UP Line in Bellwood and track additions to the UP Line in Melrose Park (projects programmed and in process)

Note: The projects listed were compiled from both the 2030 RTP (as revised in 2006) and from feedback from the Transit Service Agencies.

4.4 Proposed Modernization of O'Hare International Airport

In October 2005, the Federal Aviation Administration approved the City of Chicago's Airport Layout Plan for O'Hare International Airport. Immediately following this action was the signing of the Final EIS for the OMP and initiation of design and construction of program improvements. In light of the approval and implementation status of the OMP, all improvements associated with it are assumed to be in place with the 2030 baseline transportation system.

The proposed OMP will replace the seven-runway configuration with an eight-runway configuration, in which six runways will be oriented east-west, and northeast-southwest oriented runways (4L-22R, 4R-22L) will remain. In the ultimate configuration runways 14L-32R, 14R-32L, and 18-36 will be closed. The major improvements associated with the OMP are shown in Exhibit 4-3 and described in Table 4-3.

The OMP will be developed in two phases. Phase I, which began in late October 2005, includes construction of Runways 9L-27R and 10C-28C, extension of 10L-28R, and various enabling projects. Phase II will include construction of Runways 9R-27L and 10R-28L, extension of 9C-27C, and other enabling projects. Table 4-4 summarizes the construction schedule for the OMP as defined in the Final EIS.

TABLE 4-3
O'Hare Modernization Program Major Improvements

	ID	Improvement	Description
Runways	A1	Runway 9R-27L Extension	3,600-foot extension to Aircraft Design Group (ADG) V runway.
	A2	Runway 10L-28R Extension	2,869-foot extension to ADG V runway.
	A3	Runway 9L-27R	New ADG V runway with Category II/III operations.
	A4	Runway 9C-27C	ADG VI runway relocated northward to protect for dual parallel taxiways around the northern part of the terminal area.
	A5	Runway 10C-28C	New ADG VI runway, 10,600 by 200 feet, with Category II/III operations.
	A6	Runway 10R-28L	New 8,200-foot ADG V runway with Category II/III operations.
	A7	Runway 14L Threshold Relocation	Threshold relocated 2,000 feet southeast to avoid a terminal instrument procedure (TERPS) obstruction caused by construction of the North Airport Traffic Control Tower.
	A8	Runway 32L Threshold Relocation	Threshold relocated to meet proposed grades.
Roadways	B1	Mount Prospect Road	Mount Prospect Road, south of Touhy Avenue will be relocated to the west along the east right-of-way line of the UP Railroad.
	B2	Irving Park Road Relocation	Relocation begins south of the post office, runs south of the relocated Bensenville Ditch, and ties back to its existing exit from the airport at York Road.
Facilities	C1	United Airlines Cargo Facility	Relocated because facility lies on future Runway 10C-28C pavement.
	C2	North Airfield Traffic Control Tower	New facility to direct future North Airfield runway operations.
	C3	Western Terminal	New terminal.
	C4	Employee Parking Lot	Roughly 100 acres of surface parking.
	C5	Long Term Parking Lot	Roughly 100 acres of surface parking and one parking structure.
	C6	Car Rental Facility	New facility on eastern end of airfield, east of Canadian National Railway.
	C7	United Airlines Hangar 5/5A	Relocated because facility lies on future Runway 9C-27C taxiway pavement.
	C8	American Airlines Maintenance Hangar #2	Relocated because facility lies on future Runway 9C-27C pavement.
	C9	Federal Express Metroplex Relocation	Relocated because facility lies on future Runway 10C-28C pavement.
	C10	Signature Flight Services Terminal	Relocated to avoid future Runway 9C-27C pavement.
Utilities/Other	D1	UP Railroad Relocation	Relocated between Green Street and CP Bryn Mawr (3.9 miles).
	D2	North Drainage Facilities	New north basin provides 773 ac-ft of storage and has one new pump station.
	D3	South Drainage Facilities	Central basin has 551 ac-ft of storage and one pump station and south basin 1,554 ac-ft of storage and two pump stations.
	D4	Bensenville Ditch Relocation	Reaches from where it enters airfield to its outlet at Taft Road.
	D5	Willow-Higgins Creek Relocation	Relocation begins west of Wolf Road and reconnects with the creek alignment just upstream of the Lee Street Bridge.

The runway layout presented in the Airport Layout Plan will be supported by the following improvements:

- A new western terminal and parking facilities, and a western airport entrance
- Two new air traffic control towers
- Modification of access roads and guard posts in the North and South Airfield
- New navigation aids supporting new and reconfigured runways and taxiways
- Relocation of water courses, including Willow-Higgins Creek and Bensenville Ditch
- Relocation of cargo facilities
- Extension of underground (secured) rail transit between the existing east terminal and proposed west terminal
- The development of 3,000 acre-feet of onsite stormwater detention
- Relocation and expansion of utilities (stormwater collection and detention waterlines, electrical, sanitary sewer system, fuel systems, etc.)
- Relocation of two roadways (Irving Park Road and Mount Prospect Road) and of the UP Railroad

OMP improvements require acquisition of 433 acres of land adjacent to the northwest and southwest boundaries of the airport (Exhibit 4-4). In the northwest, acquisition will occur in Des Plaines and Elk Grove Village. The land affected by acquisition is primarily light industrial. In the southwest, acquisition largely will occur in Bensenville, the affected lands being a mix of residential and industrial uses.

TABLE 4-4
O'Hare Modernization Program Implementation Schedule

	First Full Year of Operation	Construction Phase
Runway Components		
Construction of Future Runway 9L/27R	2009	I
Extension of Existing Runway 9R/27L (Future Runway 10L/28R)	2009	I
Construction of Future Runway 10C/28C	2011	I
Extension of Existing Runway 9L/27R (Future Runway 9R/27L)	2015	II
Construction of Future Runway 9C/27C	2015	II
Construction of Future Runway 10R/28L	2015	II
West Terminal Complex Components		
Satellite Concourse	2015	II
Terminal Building/Concourse	2015	II
West Terminal Ground Access	2015	II

4.5 Projected Roadway Travel Growth

The 2030 baseline roadway network does not constitute any significant changes to the existing roadway system within the study area boundary. Within the study area boundary, the 2030 baseline roadway network adds 74 lane miles to the existing freeway, tollway, and major arterial system, an increase of less than 6 percent from existing conditions.

As with the estimation of existing travel demand described in Section 3.1.3, projected future travel demand in the study area was developed using the subarea focus travel demand model with assistance from CMAP. Specifically, CMAP provided the 2030 baseline travel forecasts generated for the project at a regional level with project specific socioeconomic data for the no-action (baseline) scenario. A detailed description of the development of the 2030 baseline travel demand model is described in the *Travel Demand Modeling and Travel Forecasting Technical Report*.

4.5.1.1 2030 Baseline Traffic Volume

The 2030 baseline VMT and VHT for the study area by functional classification and time period are shown in Table 4-5. This represents a daily VMT growth of 2,923,000 (18 percent) and a growth in daily VHT of 104,300 (22 percent), as compared to current demand on the existing roadway system.

As depicted in Table 4-5, freeways account for about 70 percent of total VMT, but, because speeds are highest on freeways, that classification accounts for more than 40 percent of VHT. Of the total VMT, roughly 14 percent occurs in each of the A.M. and P.M. peak periods, 7 A.M. to 9 A.M., and 4 P.M. to 6 P.M. The percentage of VHT during the 4 hours of peak periods accounts for a significant portion of the overall daily VHT (13 percent: A.M. peak period; 15 percent: P.M. peak period) because of peak period congestion.

TABLE 4-5

Vehicle Miles of Travel and Vehicle Hours of Travel in the Study Area by Functional Class and Time Period—2030 Baseline

Functional Class	A.M. Peak Period (7 A.M.–9 A.M.)		P.M. Peak Period (4 P.M.–6 P.M.)		Daily	
	miles	hours	miles	hours	miles	hours
Freeway ^a	1,864,000	34,100	1,871,000	34,200	13,209,000	242,900
Principal arterial	313,000	17,600	359,000	20,300	2,478,000	139,700
Minor arterial	281,000	17,900	356,000	22,800	2,375,000	152,100
Collector	100,000	6,500	125,000	8,300	814,000	53,500
Total	2,558,000	76,100	2,711,000	85,600	18,876,000	588,200

^a Includes ramps.

4.5.1.2 2030 Baseline Trip Origins and Destinations

Future travel patterns are important to understanding gaps in the transportation system. As discussed previously, travel in the study area is a component of total travel in the metropolitan region and, as such, is a function not only of trips having origins and destinations within the study area (internal trips), but also by trips beginning in the study area then traveling outside it, traveling to the study area from points outside the side area or passing through the study area without stopping.

Table 4-6 summarizes projected (2030) baseline daily vehicle travel pattern for the study area. The baseline travel pattern is similar to the existing (2007) trip distribution patterns in Table 3-4. The most significant change between 2007 and 2030 baseline is in through trips, with through autos growing from 22 to 27 percent. In 2007 the internal travel market represented 30 percent of all travel in the study area and through travel 22 percent. The projected 2030 baseline travel pattern indicates these two markets will become nearly equal (28 percent internal and 27 percent through). The total volume of through trips is projected to increase by over 320,000 by 2030. This underscores the importance of the study area as a regional transportation hub in the Chicago metro area.

Exhibit 4-6 represents the proportion of origin and destination trips for daily travel and during the A.M. and P.M. peak periods for the 2030 baseline scenario. Exhibit 4-7 illustrates the proportion of internal-internal trips versus combined internal-external and external-internal trips for each analysis district in the study area.

TABLE 4-6
Study Area Trips by Trip Origin and Destination—
2030 Baseline

Trip Origin–Destination	Trips	%
Internal-Internal	1,242,600	28
Internal-External	1,016,250	23
External-Internal	963,650	22
External-External	1,153,550	27
Total	4,376,050	100

4.6 Projected Transit Travel Growth

Table 4-2 lists the 2030 baseline transit projects, which include substantial expansions of the commuter rail system, as well as a change in CTA's Blue Line that will improve the quality of service by facilitating transfers to other rapid transit services for riders whose O'Hare bound trips begin or end in downtown Chicago. Projected increases in ridership resulting from these investments are not available for all projects. However, various available studies from transit providers have been examined and reviewed for the latest information. One important point in addressing changes in mode share is the impact of projected population growth in the region. While mode split projections may show only incremental or small changes, the actual numbers of people who are served by the system may increase significantly.

For trips that begin and end within the study area, Table 4-7 shows that by 2030, the transit mode share is projected to increase approximately 1 percent. However, many of the trips that affect the study area are either through trips, or trips that originate or end elsewhere. In this context, it is important to compare the figures in Table 4-7 to the regional forecasts. The 2030 RTP addresses five scenarios for future improvements to the region's system:

- The most basic "System Commitments" scenario includes only approved capital projects and new starts.
- "Service Intensive" introduces strategies like demand management and intermodal coordination to enhance the effectiveness of the existing system.
- "System Intensive" includes limited capital improvements and operational changes to the existing system.
- "System Additions" incorporates capacity additions.
- "System Expansion" includes the addition of substantial new segments.

TABLE 4-7
Transit Mode Shares, 2007 and 2030 Transit Mode Share Estimates
(with-in study area zones only based on CMAP trip tables)

Person Trips	Existing (2007)		% Existing Transit Mode Share	2030 RTP		% Forecast Transit Mode Share
	Auto	Transit		Auto	Transit	
Home-based work trips	217,838	3,203	1.45	225,294	5,275	2.29
Home-based other trips	438,115	31,610	6.73	458,560	37,461	7.55
Non-home-based trips	296,137	8,296	2.73	329,781	13,054	3.81
Total	952,090	43,109		1,013,635	55,790	
	Total Transit Mode Share		4.33			5.22

Note: The 2030 final baseline transit network and transit assignment is the same as the 2030 RTP scenario and can expect to have similar mode share characteristics within the project study area.

Mode split is projected for each scenario, with transit's share as follows:

- For work trips, transit's share of the total ranges from 13 to 21 percent, with the 21 percent share achieved by the "System Intensive" scenario.

- For all trips, transit’s share of the total ranges from 8 to 11 percent. In this case the 8 percent is achieved by the “System Commitments” scenario. Otherwise, the mode share for transit does not change substantially among the remaining four scenarios; it varies by just 1 percent (10 percent instead of 11) for the “System Additions” scenario.

Metra’s recently completed alternatives analysis studies for two projects in the study area with locally preferred alternatives – the UP-W and UP-NW – address 2030 transit ridership growth (Table 4-8). These studies show that implementation of the locally preferred alternative for the entire line result in ridership growth of 32 percent on the UP-NW line and 46 percent on the UP-W line. The part of the line within the study area shows growth to be smaller, but significant: 17 percent on the UP-NW and 32 percent on the UP-W.

TABLE 4-8
Ridership Projections for Metra AA Projects

Line	2002 Observed Counts	Modeled Daily Boardings for 2030		Projected Change		Percent Change	
		No-Build Alternative	Locally Preferred Alternative (LPA)	No-Build v. 2002	LPA v. 2002	No-Build v. 2002	LPA v. 2002
Union Pacific Northwest Line							
Total line	18,261	19,773	24,128	1,512	5,867	8.3	32.1
Mount Prospect to Palatine segment ^a	9,154	8,697	10,672	-457	1,518	-5.0	16.6
Union Pacific West Line							
Total line	12,775	15,307	18,696	2,532	5,921	19.8	46.3
Maywood to Lombard segment ^b	4,497	4,771	5,928	274	1,431	6.1	31.8

^aThe part of the line in the study area

^bDiscrete segment identified in the alternatives analysis study that parallels and approximates the study area.

Although the transit share of the travel market is much lower than the auto share, confining projections simply to trips made wholly within the study area may underestimate the transit proportion of trips. Projections developed by CMAP in 2006 for the region’s 2030 RTP Conformity Analyses indicate that, regionwide, the transit share of home-based work trips remains constant through 2030, but the actual number of such daily trips is estimated to increase by about 120,000.