3. Existing Transportation System

An important prerequisite to transportation planning is an understanding of the components and operations of the existing transportation system. This section describes the roadway, transit, freight, and bicycle and pedestrian systems in the study area. Each system component and its travel demand, desire, and characteristics is discussed below.

3.1 Existing Roadway System

The roadway system in the study area consists of an extensive network of roads that serve various trips. The system includes facilities with different functional classifications, each with a unique intended function. This subsection describes the roadway transportation system in the study area and summarizes its basic characteristics.

3.1.1 Functional Classification

Creation of a traffic circulation system on a roadway network requires careful planning of the intended purpose and required design characteristics of each link in the system. The purpose of having a functionally classified highway system is to recognize existing travel patterns, and to reinforce and control them so that there is some established order of traffic flow.

Roadways vary in width, design, and function. Exhibit 3-1 depicts the relationship between the access and mobility functions of streets and highways. The highest classification (freeways) is intended solely for traffic movement and does not provide access to adjoining land uses except at interchanges. The lowest category (local streets) allows unrestricted access and is not intended to accommodate through traffic. The roadway designations referred to in this study are based on the following functional classification categories described in IDOT's Illinois Roadway Information System:

- **Freeway—**The freeway system consists of a connected network of continuous routes that are access controlled and constructed for higher design speeds. In the study area, the freeway system consists of both freeway routes and tollways, most of which are on the National System of Interstate and Defense Highways.
- **Principal and Minor Arterial—**Arterial highways move large volumes of traffic relatively quickly but often with restricted capacity to serve adjoining properties. The arterial system typically accommodates high travel speeds and long trip movements.
- **Collector—**Collector routes are characterized by even distribution of access and mobility functions. Traffic volumes and speeds typically are lower than those for arterials.
- **Local—**Public roads and streets that are not arterials or collectors are classified as local roads and streets. Local roads and streets are characterized by the many points of direct access to adjacent properties and the relatively minor value in accommodating mobility. Speeds and volumes usually are low and trip distances short.

Exhibit 3-2 depicts roadway functional classifications within the study area.

Access-controlled facilities such as freeways are intended to accommodate through traffic rather than adjoining land uses. In the study area, the primary facilities in this category are I-294, I-90, I-190, I-290/IL 53, I-355 and the Elgin-O'Hare Expressway.

Arterials are major arteries that carry large volumes of traffic from place to place within the study area, and provide access to freeways and expressways. While the key function of an arterial is the movement of traffic, this type of roadway also serves abutting land uses. In the EO-WB study area, many arterials are designated as Strategic Regional Arterials (SRAs). The SRA system was developed to serve as a second tier to the freeway system to carry some of the region's longer-distance trips. The SRAs provide access to freeways and expressways, an alternative to freeway travel, access to rail stations, and routes for bus operations. There are eight SRAs either fully or partially within the EW-OB study area with a total length of roughly 50 miles (see Exhibit 3-3).

Collector and local streets provide the final connection between the traveler's origin and destination and the remainder of the highway system. These roads tend to be narrower and less continuous than the other classifications, and generally carry a lighter volume of traffic.

3.1.2 Characteristics of the Existing Roadway System

The number of route-miles and lane-miles of study area roadway in various functional classifications as defined by the CMAP transportation planning model is tabulated in Table 3-1 and depicted in Exhibit 3-4. Forty-eight percent of route miles and 50 percent of lane-miles are freeways, expressways, or principal arterials. These higher classes of highway account for roughly 84 percent of travel miles in the A.M. peak period and 80 percent in P.M. peak period. For an entire weekday, higher class roadways account for roughly 81 percent of daily vehicle miles of travel.

TABLE 3-1
Mileage of Study Area Highways by Functional Class—2007

Functional Class	Route Miles	Lane Miles
Freeway[a]	119.4	385.3
Principal arterial	65.0	284.9
Minor arterial	126.5	444.0
Collector	78.9	212.6
Total	**389.8**	**1,326.8**

[a] Includes ramps.

Exhibit 3-5 shows the designated truck routes in the study area. Along with the freeways, arterials designated by IDOT as truck routes include US 12/45 (Mannheim Road), US 20, IL 83, IL 53, and IL 72.

3.1.3 Existing Travel Characteristics

This subsection summarizes existing (2007) roadway travel characteristics in the study area. The data herein are derived from the CMAP regional travel demand model, augmented by the more detailed focus-area travel demand model developed specifically for the EO-WB study. The data include total vehicular travel, trips by vehicle type, difference in travel characteristics by time period and by the location where trips end.

The CMAP regional travel demand model serves as the basis for estimating current and projected future travel demand in the study area. For use in its regional transportation planning model, CMAP has divided the region into 1,891 traffic analysis zones. To add greater specificity within the study area, the CMAP zones were further subdivided for purposes of this study, increasing the number of zones in the study area from 119 zones to

542. A detailed explanation of the traffic analysis zone splitting process is contained in the *Travel Demand Modeling and Travel Forecasting Technical Report.*

3.1.3.1 Daily Travel

The study area accounts for roughly 7 percent of the total vehicle miles of travel (VMT) and 5 percent of vehicle hours of travel (VHT) in the 6-county Chicago metropolitan region. The 2007 VMT and VHT for the study area by functional classification and time period are shown in Table 3-2 and Exhibit 3-6. Freeways account for about 66 percent of total VMT, but because speeds are highest on freeways, that classification accounts for only 39 percent of VHT. Of the total VMT, 28 percent occurs in the combined 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 peak periods accounts for a significant part of the overall daily VHT (13 percent A.M. peak period, 15 percent P.M. peak period) because of peak period congestion.

TABLE 3-2
Vehicle Miles of Travel and Vehicle Hours of Travel in the Study Area by Functional Class and Time Period—2007

Functional Class	A.M. Peak (7 A.M.–9 A.M.)		P.M. Peak (4 P.M.–6 P.M.)		Daily	
	miles	hours	Miles	hours	miles	hours
Freeway[a]	1,532,000	27,800	1,501,000	27,300	10,536,000	190,300
Principal arterial	319,000	15,700	352,000	17,800	2,445,000	122,000
Minor arterial	272,000	15,500	342,000	19,700	2,272,000	130,000
Collector	88,000	5,200	107,000	6,400	700,000	41,600
Total	**2,211,000**	**64,200**	**2,302,000**	**71,200**	**15,953,000**	**483,900**

[a] Includes ramps.

3.1.3.2 Traffic Volume

Peak period travel flow is one factor used to plan future roadway improvements. Within the study area, traffic volumes across the system are generally highest in the P.M. peak period. Exhibit 3-7 depicts the current (2007) range of P.M. peak period volume of travel on roadways in the study area.

Commercial vehicle (truck) traffic is also an important consideration in the analysis of transportation facilities and in developing future plans. Because large trucks have different operating characteristics than autos or light trucks, roadways carrying significant heavy truck traffic need to be planned specially for their use. The volume range of daily heavy truck travel in the study area for 2007 is shown in Exhibit 3-8. The routes with the highest concentration of heavy truck trips generally correspond with the designated truck routes shown in Exhibit 3-5.

3.1.3.3 Trip Origins and Destinations

An understanding of regional and local travel patterns is vital to understanding current traffic routing choices, and to identifying the causes of current system performance issues. 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 of those with one or both trip ends outside the study area ("external" trips). For analysis purposes, travel may be described as follows:

- Internal-Internal—Trips with both origin and destination within the study area
- Internal-External—Trips originating in the study area with a destination outside the area
- External-Internal—Trips originating outside the study area with a destination within it
- External-External—Through trips with neither origin nor destination within the study area

The distribution of daily trips (2007) in each of these categories is shown in Exhibit 3-9 and summarized in Table 3-3. Exhibit 3-10 depicts the proportion of trips in each category for daily travel and during the A.M. and P.M. peak periods.

TABLE 3-3
Study Area Trips by Autos and Truck by Trip Origin and Destination—2007

Trip Origin–Destination	Trips	%
Internal-Internal	1,102,400	30
Internal-External	884,600	24
External-Internal	897,000	24
External-External	827,800	22
Total	**3,711,800**	**100**

The number and percentage of daily trips having either origin or destination outside the study area varies widely for different locations within the area. For purposes of evaluating the relative amount of internal versus external trips, the study area was divided into 22 smaller analysis districts. Exhibit 3-11 illustrates the proportion of internal-internal trips versus combined internal-external and external-internal trips for each analysis district in the study area. The districts, created for ease of examination, are each an aggregate of smaller traffic analysis zones. Exhibit 3-11 shows that there is a wide range in the proportion of trips made wholly within the study area versus those with one trip end outside the area. In the analysis district containing O'Hare International Airport and many of the highly industrialized districts in the easternmost part of the study area, a high percentage of trips are made from/to places outside the study area, rather than from other internal districts within the area boundary. Conversely, predominantly residential districts located more centrally within the study area draw most trips from other internal districts.

O'Hare International Airport draws traffic from throughout the metropolitan area and beyond. Exhibit 3-12 depicts the daily traffic flow to and from the airport. The orientation of the regional freeway system contributes to excellent accessibility to and from the airport for travelers from the north, south or east. The primary travel routes to the airport, as expected, are along the regional freeways, with the Kennedy Expressway (I-90/I-94)/Dan Ryan Expressway corridor accounting for 35 percent of daily trips. The Tri-State Tollway (I-294) is the route used by 12 percent of daily O'Hare trips to and from the north, and 15 percent of trips to and from the south. The I-90 corridor to the west accounts for 12 percent of daily traffic demand at O'Hare. US 12/45 (Mannheim Road) contributes a total of about 19 percent of daily traffic demand from both directions.

Travel desire bands are another method used to illustrate trip characteristics. Basically, travel desire bands represent the desired travel path between a trip origin and destination across a broad roadway network. As depicted in Exhibit 3-13, the two prevalent travel desire patterns in the study area are north-south and northwest-southeast.

The travel desire patterns in the study area show that the area serves as a key juncture between the circumferential and radial travel patterns to and around the Chicago metropolitan region. The predominant bands shown in Exhibit 3-13 are concentrated along the interstate system. I-294 is the principal north-south beltway around the Chicago core and carries the highest traffic volumes of the interstate facilities in the study area. I-355 is a major north-south corridor, a key transportation link between communities and employment centers in the northwest, west, and southwest suburbs. I-90 is a principal radial east-west corridor in the northwest Chicago metropolitan area serving travel to and from the Chicago core area. I-290 is another principal radial east-west corridor that connects west and northwest suburban areas with downtown Chicago. With this confluence of routes serving major regional travel patterns, it is not surprising that 66 percent of travel in the study area is on the interstate system.

The analysis of internal and external travel conclusively underlines the strong interrelationships between trip making in the study area and travel demand outside the area.

3.2 Public Transit System

The public transportation system serving the study area is extensive. It includes services provided by all of the Regional Transportation Authority's operating agencies: the Chicago Transit Authority (CTA); Metra, the region's commuter rail operator; and Pace, the suburban bus operator. In defining the services to be considered with this analysis, there are some instances where it is appropriate to incorporate rail stations or bus routes that are beyond the boundaries of the study area because these facilities have current or potential capability of impacting travel within the area. Conversely, short segments of some bus routes that operate in the study area are not included in the analysis because they do not serve the area's major trip generators. Yet another system, the airport "people mover," provides circulation and distribution within O'Hare International Airport. This highly localized system is not incorporated into this analysis because it affects only trips within the airport boundary.

3.2.1 Existing CTA Rapid Transit

3.2.1.1 CTA System Description

CTA provides rapid transit service in the study area through its Blue Line. This study focuses on the five Blue Line O'Hare Branch stations between Jefferson Park and O'Hare International Airport and includes three intermediate stations: Harlem, Cumberland, and Rosemont (Exhibit 3-14). Although the Jefferson Park and Harlem stations are outside the study area, the analysis is extended as far as Jefferson Park because at that location, Metra's UP-NW riders can transfer to the Blue Line and access O'Hare International Airport by rapid transit. Pace routes also connect to the CTA system at Jefferson Park. Bidirectional Blue Line service is provided 24 hours a day, with frequencies ranging from 4 minutes during the evening peak period to 30 minutes in the middle of the night. During most periods, trains operate on average at 7- to 8-minute intervals. Not only does the Blue Line connect the Chicago Central Business District (CBD) to O'Hare International Airport; it also serves Forest Park, Oak Park, west-central Chicago in the I-290 corridor, and downtown Chicago. It then extends northwest through the city, serving neighborhoods with either elevated or subway lines before entering the I-90 and I-190 corridors to complete the route to O'Hare. Thus, the line connects several communities and corridors to the study area.

The operating facilities are characterized by dedicated double-track rail line located in the median of I-90 and I-190 between Jefferson Park and River Road. West of River Road, the line descends into a subway to the O'Hare International Airport terminal. At River Road, there are storage yards and maintenance shops that handle daily maintenance and repairs for the rapid transit cars.

Service is operated with rapid transit cars, which are inseparable "married pairs." The minimum train length, therefore, is two cars, but the trains usually have eight cars. To conform to the curve radii on the CTA system, each car is only 48 feet long, and seating capacity ranges from 39 to 46 seats per car.

Parking facilities for park-and-ride users are available at the Harlem, Cumberland, and Rosemont stations. At Jefferson Park, commuter parking with special rates is available only at privately operated facilities. Table 3-4 lists the parking spaces available at each station. Parking specifically designated for transit riders, and priced accordingly, is not available at the O'Hare station.

TABLE 3-4
CTA Parking: Blue Line

Station	Parking Spaces
O'Hare Airport	n.a.
Rosemont	798
Cumberland	1,633
Harlem	53
Jefferson Park	n.a.

Jefferson Park was one of the system's earliest intermodal transfer locations, allowing easy transfer between the Metra UP-NW line, the CTA systems, and Pace bus service. West of Jefferson Park, most CTA bus routes are designed to provide more localized service that feeds into the Blue Line stations for those requiring longer trips. The Rosemont station located at River Road is an important Pace service hub where many suburban bus routes originate or terminate.

3.2.1.2 CTA Ridership

Between 2002 and 2006, total weekday ridership at the Blue Line stations in the study area increased. (Table 3-5) The greatest increase, over 19 percent, is at the O'Hare station. Ridership studies completed in 1994 and 1998 for the Blue Line–O'Hare Branch indicate that 80 to 86 percent of all trips on that Branch were work or work-related trips, and that 1 to 4 percent of trips were for air travel.

TABLE 3-5
CTA Blue Line Ridership at Study Area Stations

	Average Weekday Boardings (November)			Change in Boardings 1999–2006		Change in Boardings 2002–2006	
Station	1999	2002	2006	Total	%	Total	%
O'Hare Airport	7,768	8,233	9,819	2,051	26.4	1,586	19.3
Rosemont	5,513	4,967	5,166	-347	-6.3	199	4.0
Cumberland	4,741	4,978	5,367	626	13.2	389	7.8
Harlem	3,097	2,783	2,934	-163	-5.3	151	5.4
Jefferson Park	6,899	6,384	6,576	-323	-4.7	192	3.0
Total	28,018	27,345	29,862	1,844	6.6	2,517	9.2

Source: Rail Ridership by Branch and Entrance, Chicago Transit Authority, November 1999, November 2002, and November 2006.

CTA's *O'Hare Airport Customer Travel Survey* (2000) focused on the service to O'Hare International Airport. The study indicated that 58 percent of all riders using the O'Hare station were airport employees and that 30 percent of all riders to or from the O'Hare station were air travelers. At peak air travel times, including weekday and Sunday afternoons, Friday evening and Saturday morning, air travelers represented between 58 and 66 percent of those using the station. If 30 percent of all passengers boarding at the O'Hare station are air travelers, those riders continue to represent only 4 percent of the total Blue Line (O'Hare Branch) riders. Thus, it appears that increasing the proportion of air travelers who access the airport using the Blue Line is an important growth market opportunity for CTA.

3.2.2 Metra Commuter Rail System

This section describes Metra service in the study area and presents an overview of ridership data and characteristics.

3.2.2.1 Metra System Description

Four Metra lines, all connecting to the Chicago CBD, serve the study area (Exhibit 3-15). They are the North Central Service (NCS), UP-Northwest (NW), Milwaukee District West (MDW), and UP-West (W). Service on these and all Metra lines is configured to bring large numbers of suburban residents to work in downtown Chicago in the A.M. peak period, and to transport them to the suburbs in the P.M. peak. This configuration entails frequently scheduled inbound and express trains in the morning, complemented by the reverse pattern in the evening. Data from the 2006 Metra counts show that 94 percent of those riding the 4 lines in the study area are destined for the CBD terminal in the morning and are boarding at the terminals in the evening. An exception to that pattern occurs on the North Central Service where only 80 percent alight at Union Station in the morning and 86 percent board in the evening.

NCS has five stations from O'Hare Transfer to River Grove. River Grove is incorporated into the analysis because it is possible to transfer between the NCS and the MDW lines at this station. If service is added to the NCS, which has an O'Hare Transfer station, the now limited transfer opportunities should increase. Three NCS stations (Rosemont, Schiller Park, and Belmont Ave/Franklin Park) are new to the system. The line runs north-south and terminates near the Wisconsin border. All tracks used by the NCS within the study area are owned by the Canadian National (CN) Railway. Table 3-6 enumerates the tracks and grade crossings.

TABLE 3-6
North Central Service Tracks and Grade Crossings

Station	Tracks	Grade Crossings
O'Hare Transfer Station zone	2	0
Between O'Hare Transfer and Rosemont	2	0
Rosemont Station zone	2	0
Between Rosemont and Schiller Park	2	1
Schiller Park Station zone	2	0
Between Schiller Park and Belmont Ave.	2	0
Belmont Ave. (Franklin Park) Station	2	1
Total		**2**

UP-NW has 12 stations between Palatine and Jefferson Park in Chicago. Eight are immediately north of the study area boundaries; the other four are in the zone to the east that terminates at the Jefferson Park station where riders can transfer to the CTA Blue Line. The commuter rail line serves the entire northwest corridor of the Chicago metropolitan region, terminating in Harvard in McHenry County. UP owns the tracks and operates the passenger service under a purchase of service agreement with Metra. Table 3-7 lists the tracks and grade crossings on the line. The UP-NW stations that are considered in this analysis account for more than half the commuter rail ridership addressed by this study.

TABLE 3-7
Union Pacific Northwest Line Tracks and Grade Crossings

Station	Tracks	Grade Crossings
Palatine Station zone	3	5
Between Palatine and Arlington Park	3	2
Arlington Park Station zone	3	0
Between Arlington Park and Arlington Heights	3	2
Arlington Heights Station zone	3	4
Between Arlington Heights and Mt. Prospect	3	2
Mount Prospect Station zone	3	2
Between Mt. Prospect and Cumberland	3	1
Cumberland Station zone	3	0
Between Cumberland and Des Plaines	3	0
Des Plaines Station zone	3	3
Between Des Plaines and Dee Road	3	0
Dee Road Station zone	3	2
Between Dee Road and Park Ridge	3	1
Park Ridge Station zone	3	1
Between Park Ridge and Edison Park	3	0
Edison Park Station zone	3	2
Between Edison Park and Norwood Park	3	3
Norwood Park Station zone	3	1
Between Norwood Park and Gladstone Park	3	2
Gladstone Park Station zone	3	0
Between Gladstone and Jefferson Park	3	0
Jefferson Park Station zone	3	0
Total		**33**

The MDW line has eight stations between Roselle and River Grove. Two stations on the line, are west (Roselle) and east (River Grove) of the study area; however, these stations serve riders whose trips may begin or end in the study area. The MDW line terminates west of Elgin, at Big Timber Road, in a rapidly developing part of the region. Metra owns the railroad, but CP has operating rights on it and operates the interlocking plants. The numbers of tracks and grade crossings are listed in Table 3-8.

The UP-W serves the area with four stations between Villa Park and Bellwood. Two stations, Villa Park and Bellwood, are outside the study area but very close to its boundaries. Thus, people using those stations may be beginning or ending their trips within the study area. The UP-W line serves the west central part of the Chicago metropolitan region, terminating in Kane County's rapidly growing community of Elburn. As with the UP-NW, the Union Pacific Railroad owns the tracks and operates the passenger service under a purchase of service agreement with Metra.

Metra recently submitted a locally preferred alternative to the Federal Transit Administration that addresses the issue of capacity expansion. An important element of the proposed expansion is increasing to three the number of mainline tracks throughout the study area. Table 3-9 lists the numbers of tracks and grade crossings.

3.2.2.2 Metra Ridership

Every few years, Metra counts riders at the station level and reports the results by time of day and by direction of travel. This is done to gain greater insight into the characteristics and travel patterns of rail commuters (Table 3-10), and to complement Metra's market studies. According to the 2005 Metra Rider Survey, a market study, 87 percent of trips on the 4 lines serving the study area are work or work-related trips, most of which are made during the peak period. Thus, it is important to understand this market and its corresponding travel needs.

While the ridership analysis for this study focuses on the number of riders who board or alight at the study area stations in the A.M. peak period, Table 3-10 presents data for both peak periods, as well as for average weekdays. The reasons for focusing on the A.M. peak are as follows:

- The various markets studies performed

TABLE 3-8
Milwaukee District West Line Tracks and Crossings

Station	Tracks	Grade Crossings
Roselle Station zone	2	0
Between Roselle and Medinah	2	0
Medinah Station zone	2	1
Between Medinah and Itasca	2	1
Itasca Station zone	2	2
Between Itasca and Wood Dale	2	1
Wood Dale Station zone	2	2
Between Wood Dale and Bensenville	2	2
Bensenville Station zone	2	3
Between Bensenville and Mannheim	2	4
Mannheim Station zone	2	0
Between Mannheim and Franklin Park	2	1
Franklin Park Station zone	2	3
Between Franklin Park and River Grove	2	2
River Grove Station zone	3	1
Total		**23**

TABLE 3-9
Union Pacific West Line Existing Tracks and Grade Crossings

Station	Number of Tracks	Number of Grade Crossings
Villa Park Station zone	3	1
Between Villa Park and Elmhurst	3	3
Elmhurst Station zone	3	3
Between Elmhurst and Berkeley	3	2
Berkeley Station zone	2	0
Between Berkeley and Bellwood	2	1
Bellwood Station zone	2	0
Total		**10**

periodically by Metra provide detailed valuable information and insights into ridership characteristics and customer satisfaction. Most of these studies are conducted in the A.M. period only.

- Identifying the number of passengers boarding or alighting at outlying stations (those stations beyond the CBD) in the A.M. peak period permits identification of markets for connecting bus services or improved pedestrian or bikeway connections.
- Identifying alternatives to the auto for station access and egress can affect travel volumes on the roadways at peak travel times.

Between 1999 and 2002, the number of riders declined throughout the entire Metra system but it rebounded between 2002 and 2006.

- Excluding the South Shore Railroad, total riders boarding on an average weekday decreased more than 3 percent, from 277,281 in 1999 to 267,975 in 2002.
- In 2006, ridership had reached 281,915. Compared to 1999, was up 1.7 percent, and compared to 2002, it increased 5.2 percent.
- Within the study area, ridership followed the systemwide pattern but declined more between 1999 and 2002. The recovery between 2002 and 2006 was 2.4 percent, less robust than the system's, which means that in the study area, ridership in 2006 continued to be lower than 1999 levels. One explanation for the difference relates to the region's settlement patterns, with more people now living and working farther from the CBD. This pattern is reflected in the fact that passenger boardings at stations more than 40 miles from the CBD have increased at a much greater rate than at stations closer to downtown Chicago. Between 1997 and 2006, Metra's counts a 38 percent increase in riders who board at stations located more than 50 miles from the CBD, and a 52 percent increase in boardings at stations located between 40 and 50 miles from the CBD. These remarkable changes in a period of less than 10 years compare to an increase of just under 2 percent for stations located between 11 and 27 miles from downtown Chicago, the distance incorporated by stations in our study area.

As noted, since 1999, the number of riders boarding at stations in the study area has decreased. The total average decrease in weekday boardings is 6.6 percent, but higher, about 12.3 percent, during the A.M. peak period. However, the number of riders alighting at the study area stations during the A.M. peak period increased 3.9 percent. Stations with more than 100 alightings during the A.M. peak periods are Elmhurst on the UP-W line and Palatine, Arlington Park, Arlington Heights, Mount Prospect, Des Plaines, Park Ridge and Arlington Heights on the UP-NW line. Table 3-10 summarizes boardings and alightings at Metra stations in the study area. Alighting increases can be attributed both to Chicago residents commuting to suburban jobs and to more suburban residents commuting to suburban jobs. In fact, the 2006 count shows that, on a typical weekday, 980 riders alit from inbound trains at study area stations during the A.M. peak period. These individuals are suburb-to-suburb commuters. While they comprise only about 3 percent of all inbound commuters on the 4 lines serving the area, the actual number is significant. At the same time, 1,057 reverse commuters, or 51 percent of all A.M. peak period outbound riders on these four lines get off outbound trains at study area stations.

TABLE 3-10
Elgin -O'Hare West Bypass Study Area: Commuter Rail Ridership Analysis

Line	Station	AM Peak Boardings (October)			PM Peak Boardings (October)			AM Peak Alightings (October)			PM Peak Alightings (October)			Change in AM Peak Boardings 1999-2006		Change in PM Peak Boardings 1999-2006		Change in AM Peak Alightings 1999-2006		Change in PM Peak Alightings 1999-2006		Total Average Weekday Boardings			Change in Average Weekday Boardings 1999-2006		Change in Average Weekday Boardings 2002-2006	
		1999	2002	2006	1999	2002	2006	1999	2002	2006	1999	2002	2006	Total	%	Total	%	Total	%	Total	%	1999	2002	2006	Total	%	Total	%
NCS	O'Hare Transfer	9	3	9	70	50	76	68	58	100	20	14	29	0	0.0%	6	8.6%	32	47.1%	9	45.0%	83	55	106	23	27.7%	51	92.7%
	Rosemont	--	--	1	--	--	21	--	--	28	--	--	3	--	--	--		--	--	--	--	--	--	23	--	--	--	--
	Schiller Park	--	--	20	--	--	4	--	--	6	--	--	13	--	--	--		--	--	--	--	--	--	29	--	--	--	--
	Belmont Ave./Franklin Park	--	--	5	--	--	15	--	--	24	--	--	10	--	--	--		--	--	--	--	--	--	25	--	--	--	--
	River Grove	137	142	105	30	28	16	27	33	16	85	87	35	-32	n.a.	-14	-46.7%	-11	n.a.	-50	-58.8%	176	172	124	-52	-29.5%	-48	
	Subtotal	**146**	**145**	**140**	**100**	**78**	**132**	**95**	**91**	**174**	**105**	**101**	**90**	**-6**	**-4.1%**	**-8**	**32.0%**	**79**	**83.2%**	**-41**	**-14.3%**	**259**	**227**	**307**	**48**	**18.5%**	**80**	**35.2%**
UPNW	Palatine	1,696	1,411	1,551	158	187	208	124	107	167	1,601	1,347	1,466	-145	-8.5%	50	31.6%	43	34.7%	-135	-8.4%	2,091	1,894	2,105	14	0.7%	211	11.1%
	Arlington Park	1,499	1,228	1,194	180	205	192	209	168	184	1,371	1,216	1,174	-305	-20.3%	12	6.7%	-25	-12.0%	-197	-14.4%	1,904	1,665	1,614	-290	-15.2%	-51	-3.1%
	Arlington Heights	2,033	1,860	1,676	198	249	189	232	224	218	1,930	1,742	1,634	-357	-17.6%	-9	-4.5%	-14	-6.0%	-296	-15.3%	2,579	2,496	2,317	-262	-10.2%	-179	-7.2%
	Mount Prospect	1,475	1,335	1,226	120	118	154	100	110	134	1,376	1,205	1,158	-249	-16.9%	34	28.3%	34	34.0%	-218	-15.8%	1,804	1,655	1,590	-214	-11.9%	-65	-3.9%
	Cumberland	431	285	268	43	50	68	48	89	73	399	240	256	-163	-37.8%	25	58.1%	25	52.1%	-143	-35.8%	523	393	393	-130	-24.9%	0	0.0%
	Des Plaines	804	633	748	181	175	194	192	186	200	721	611	621	-56	-7.0%	13	7.2%	8	4.2%	-100	-13.9%	1,148	991	1,085	-63	-5.5%	94	9.5%
	Dee Road	355	317	372	32	32	30	47	34	21	296	282	291	17	4.8%	-2	-6.3%	-26	-55.3%	-5	-1.7%	438	388	446	8	1.8%	58	14.9%
	Park Ridge	711	692	644	98	123	122	96	106	99	677	603	565	-67	-9.4%	24	24.5%	3	3.1%	-112	-16.5%	922	932	897	-25	-2.7%	-35	-3.8%
	Edison Park	463	501	450	20	27	19	14	20	13	453	435	367	-13	-2.8%	-1	-5.0%	-1	-7.1%	-86	-19.0%	547	593	536	-11	-2.0%	-57	-9.6%
	Norwood Park	261	225	209	28	18	26	37	16	35	206	196	216	-52	-19.9%	-2	-7.1%	-2	-5.4%	10	4.9%	329	269	289	-40	-12.2%	20	7.4%
	Gladstone Park	121	115	102	8	8	0	26	4	10	113	126	48	-19	-15.7%	-8	-100.0%	-16	-61.5%	-65	-57.5%	129	124	103	-26	-20.2%	-21	-16.9%
	Jefferson Park	475	513	525	104	112	105	109	101	112	424	441	427	50	10.5%	1	1.0%	3	2.8%	3	0.7%	719	749	786	67	9.3%	37	4.9%
	Subtotal	**10,324**	**9,115**	**8,965**	**1,170**	**1,304**	**1,307**	**1,234**	**1,165**	**1,266**	**9,567**	**8,444**	**8,223**	**-1,359**	**-13.2%**	**137**	**11.7%**	**32**	**2.6%**	**-1,344**	**-14.0%**	**13,133**	**12,149**	**12,161**	**-972**	**-7.4%**	**12**	**0.1%**
MDW	Roselle	1,398	1,108	1,199	62	60	110	67	57	61	1,299	1,039	1,145	-199	-14.2%	48	77.4%	-6	-9.0%	-154	-11.9%	1,617	1,298	1,500	-117	-7.2%	202	15.6%
	Medinah	426	321	365	32	19	52	26	25	24	356	313	350	-61	-14.3%	20	62.5%	-2	-7.7%	-6	-1.7%	529	399	501	-28	-5.3%	102	25.6%
	Itasca	432	411	381	104	56	78	91	55	60	419	380	351	-51	-11.8%	-26	-25.0%	-31	-34.1%	-68	-16.2%	642	518	546	-96	-15.0%	28	5.4%
	Wood Dale	509	393	426	96	83	100	94	73	65	445	373	422	-83	-16.3%	4	4.2%	-29	-30.9%	-23	-5.2%	719	551	639	-80	-11.1%	88	16.0%
	Bensenville	342	301	271	53	82	83	85	59	63	297	299	223	-71	-20.8%	30	56.6%	-22	-25.9%	-74	-24.9%	498	458	450	-48	-9.6%	-8	-1.7%
	Mannheim	21	6	31	18	7	6	10	7	10	32	7	7	10	47.6%	-12	-66.7%	0	0.0%	-25	-78.1%	39	13	37	-2	-5.1%	24	184.6%
	Franklin Park	329	344	290	84	89	69	75	95	72	328	313	238	-39	-11.9%	-15	-17.9%	-3	-4.0%	-90	-27.4%	499	506	461	-38	-7.6%	-45	-8.9%
	River Grove	112	102	111	31	26	28	23	21	14	149	124	154	-1	-0.9%	-3	-9.7%	-9	-39.1%	5	3.4%	184	164	174	-10	-5.4%	10	6.1%
	Subtotal	**3,569**	**2,986**	**3,074**	**480**	**422**	**526**	**471**	**392**	**369**	**3,325**	**2,848**	**2,890**	**-495**	**-13.9%**	**46**	**9.6%**	**-102**	**-21.7%**	**-435**	**-13.1%**	**4,727**	**3,907**	**4,308**	**-419**	**-8.9%**	**401**	**10.3%**
UPW	Villa Park	791	768	655	62	45	61	32	25	41	748	690	627	-136	-17.2%	-1	-1.6%	9	28.1%	-121	-16.2%	949	914	835	-114	-12.0%	-79	-8.6%
	Elmhurst	1,418	1,497	1,409	149	113	186	108	103	155	1,277	1,290	1,355	-9	-0.6%	37	24.8%	47	43.5%	78	6.1%	1,776	1,785	1,833	57	3.2%	48	2.7%
	Berkeley	170	129	132	12	10	6	10	17	22	146	113	132	-38	-22.4%	-6	-50.0%	12	120.0%	-14	-9.6%	194	162	176	-18	-9.3%	14	8.6%
	Bellwood	172	197	175	11	13	11	11	8	10	176	174	160	3	1.7%	0	0.0%	-1	-9.1%	-16	-9.1%	205	221	215	10	4.9%	-6	-2.7%
	Subtotal	**2,551**	**2,591**	**2,371**	**234**	**181**	**264**	**161**	**153**	**228**	**2,347**	**2,267**	**2,274**	**-180**	**-7.1%**	**30**	**12.8%**	**67**	**41.6%**	**-73**	**-3.1%**	**3,124**	**3,082**	**3,059**	**-65**	**-2.1%**	**-23**	-0.7%
	Total: All Stations	**16,590**	**14,837**	**14,550**	**1,984**	**1,985**	**2,229**	**1,961**	**1,801**	**2,037**	**15,344**	**13,660**	**13,477**	-2,040	-12.3%	**205**	**12.3%**	**76**	**3.9%**	**-1,893**	-12.2%	**21,243**	**19,365**	**19,835**	**-1,408**	-6.6%	**470**	**2.4%**

Source: Commuter Rail System Station Boarding Counts: 1999, 2002, 2006

Note: for NCS, percentage changes by station are not calculated because there is only one year of data for 3 new stations. The new stations may have diverted riders who were counted at the O'Hare Transfer and River Grove stations in 1999 and 2002.

The following important factors need to be considered in this regard:

- Making last-mile connections in areas surrounding the outlying stations presents an important opportunity for increasing transit's market share, which is discussed further in Section 5.2.2.2.1.
- Metra is planning to correct operational problems, and improve travel times and schedule reliability which should result in ridership gains. These improvements are elaborated in Section 5.2.2.2.

Another important feature of the Metra system is station parking accommodations. The recent surveys of Metra riders indicate that more than 55 percent of them drive to the commuter station and park. In the study area, that percentage increases to 66 on the Milwaukee West Line and 61 on the NCS. Although the percentage of parking use at newly opened stations on the NCS is quite low at present, it is likely, based on experience throughout the system, that the added capacity will soon be more fully used. Generally, available capacity is heavily used throughout the area, with use exceeding 90 percent at some stations (Table 3-11). Metra stations are also accessed by pedestrians (21 percent) and passengers arriving in other vehicles (14 percent).

3.2.3 Pace Bus System

This subsection presents a description of Pace service within the study area and an overview of available ridership data and characteristics.

3.2.3.1 Pace System Description

Pace classifies its bus routes according to the type of service they provide. In the study area, there are 33 Pace routes consisting of 24 CTA connectors, 3 suburban links, 3 community-based routes, 2 Metra feeder services, and 1 intracommunity route (Exhibit 3-16). The density or route coverage is greatest in the eastern part of the study area. CTA's Blue Line

TABLE 3-11
Metra Parking Capacity and Utilization (2003, updated in 2007 for NCS only)

Line	Station	Parking Capacity	% Use
NCS	O'Hare Transfer	0	
	Rosemont	100	1
	Schiller Park	102	14
	Belmont Ave./Franklin Park	97	8
	River Grove	168	92
	Subtotal	*467*	
UPNW	Palatine	1,327	88
	Arlington Park	1,098	73
	Arlington Heights	2,029	88
	Mount Prospect	763	91
	Cumberland	268	83
	Des Plaines	246	73
	Dee Road	130	95
	Park Ridge	549	86
	Edison Park	263	88
	Norwood Park	93	73
	Gladstone Park	32	75
	Jefferson Park	147	95
	Subtotal	*6,945*	
MDW	Roselle	1,068	94
	Medinah	415	61
	Itasca	387	61
	Wood Dale	483	81
	Bensenville	192	69
	Mannheim	30	7
	Franklin Park	300	75
	River Grove	see NCS	
	Subtotal	*2,875*	
UPW			
	Villa Park	506	98
	Elmhurst	1,274	93
	Berkeley	139	61
	Bellwood	213	62
	Subtotal	*2132*	
Total		**12,419**	

stations at Harlem, Cumberland, and Rosemont serve as terminals for numerous Pace bus routes, with the station at Rosemont functioning as an important Pace transportation center. Many routes, including express services to employment sites at Schaumburg and Prairie Stone, originate there. Another important facility is Pace's Northwest Transit Center in Schaumburg where nine routes including express services intersuburban connector and local routes converge, and where there are park and ride facilities.

The name convention of the Pace bus route often describes the frequency of stops. For example, express services operate from terminal to terminal; limited services make infrequent, widely spaced stops; other routes stop at major intersections or marked bus stops. In addition, drivers on local routes will stop on demand, if flagged by the rider.

3.2.3.2 Pace Ridership

Pace continually adjusts service throughout the system to improve its effectiveness. Routes that connect to the CTA system often produce the highest ridership and are among Pace's most productive. Overall ridership trend on routes serving the study area has decreased by roughly 7 percent since 1999 (see Table 3-12; see next page). Ridership dropped 16 percent between 1999 and 2002, but since 2002 it has increased more than 10 percent, similar to the Metra system's ridership patterns.

TABLE 3-12
Pace: Average Weekday Ridership, Month of October

Name	Route Number	Service Type	Year 1999	2002	2006	Change in Ridership 1999-2006 Total	%
Woodfield Shuttle—Golf Rd	205	Community based	n.a	n.a.	32	32	n.a
Woodfield Shuttle—Woodfield Rd	206	Community based	n.a	n.a.	77	77	n.a
Woodfield Shuttle—Martingale	207	Community based	n.a	n.a.	2	2	n.a
Golf Rd	208	CTA connector	1,130	1,036	2,524	1,394	123.4
Busse Highway	209	CTA connector	1,876	1,481	743	-1,133	-60.4
Wolf Road	221	CTA connector	1,049	909	1,037	-12	-1.1
Elk Grove—Rosemont Station	223	CTA connector	2,867	2,118	2,204	-663	-23.1
Oakton	226	CTA connector	1,204	918	788	-416	-34.6
South Des Plaines	230	CTA connector	770	525	540	-230	-29.9
Dee Road	240	CTA connector	907	763	743	-164	-18.1
Dempster	250	CTA connector	2,762	2,459	3,075	313	11.3
Lake Street	309	CTA connector	1,314	952	1,188	-126	-9.6
West North Avenue	318	CTA connector	2,037	1,849	2,214	177	8.7
Grand Avenue	319	CTA connector	825	703	699	-126	-15.3
25th Avenue	325	CTA connector	562	555	515	-47	-8.4
West Irving Park	326	CTA connector	351	330	334	-17	-4.9
Mannheim—LaGrange Road	330	CTA connector	1,658	1,464	1,402	-256	-15.4
Cumberland—5th Avenue	331	CTA connector	1,227	1,221	1,221	-16	-1.3
River—York Road	332	CTA connector	694	537	645	-49	-7.1
Little Village UPS	392	CTA connector	n.a	99	102	102	n.a
Melrose Park—Addison UPS	393	Suburban link	n.a	18	26	26	n.a

3.3 Freight System

The Chicago region is a major junction for transcontinental freight systems, and a critical element of the continental land bridge connecting the Pacific and Atlantic coasts. Exhibit 3-17 illustrates the network of rail freight traffic that passes through the region. Table 3-13 shows daily scheduled freight and passenger train volumes through the study area.

At Chicago facilities, the eastern and western railroads meet and transfer loads. This region is also the location of many intermodal facilities, where trucks collect to deliver or receive and distribute freight containers. Freight facilities in the study area are displayed in Exhibit 3-18. Intermodal operations occur at two freight yards: CP's yard in Schiller Park and UP's Proviso yard spanning Melrose Park and Berkeley.

3.3.1 Freight System Capacity

The Chicago freight system is in need of efficiency improvements. The 2002 Business Leaders for Transportation report *Critical Cargo* noted that it takes longer for freight to move through the Chicago freight system than it does for rail freight to come to Chicago from west coast ports. Compounding this problem is the fact that freight railroads also affect the efficiency of the other transport systems. Grade crossings on high volume roadways increase vehicle travel times, while shared use of rail tracks by freight and passenger rail can affect the capacity, reliability and travel times on those systems. In the study area, all Metra lines share tracks with freight railroads.

TABLE 3-13
Daily Scheduled Freight and Passenger Trains, 2007

Railroad Line	Average Daily Train Count	
	Passenger	Freight
Metra—Milwaukee West Line (Elgin Sub)—CPR	72	18
CN—Former WCL (Waukesha Sub)	22	26
CN—Former CCP	0	8
UP—West Line (Geneva Sub)	70	80
UP—Milwaukee Sub (to Bryn Mawr and Proviso North Yard)	0	38

Retaining the region's preeminence as the nation's rail hub is important to the Chicago area's economy. Failure to provide for the necessary facilities may, over the long term, result in railroads relocating many of their operations to other metro centers that can accommodate their needs. It is critical, therefore, to identify and preserve strategic rail right-of-way and yard facilities. The Elgin Joliet & Eastern Railroad (EJ&E) serves as an example of the merits of this approach. For years, this circumferential rail line, which runs more than 100 miles from Waukegan to Indiana Harbor, has been underused but maintained. Metra plans to use parts of the right-of-way for its new STAR line.

3.3.2 Freight System Functionality Improvement Needs

To improve efficiencies in the system, railroads have planned or developed several new intermodal facilities throughout the region. They have also entered into a public-private partnership, called CREATE (Chicago Region Environmental and Transportation Efficiency Program) to finance capital improvements that will speed connections between railroads and improve efficiencies in the yards.

Three CREATE projects located in the study area are indicated on the 2030 Baseline–Transit Projects Map (see Exhibit 4-2). They are:

- New crossovers and signals in Franklin Park that affect both Metra's MDW line and the freight operations on the Milwaukee West Subdivision.
- Track additions on the UP line (UP-W) in Bellwood and Berkeley that impact the Proviso Yard and freight operations on the UP-Geneva Subdivision.
- Track additions and signal improvements to add capacity on the Indiana Harbor Belt (IHB) mainline, affecting CP operations. The IHB is a freight-only railroad.

Two other CREATE projects south of the study area (capacity and signal improvements in the IHB mainline between LaGrange and Bellwood) will improve the capacity of the freight railroads within the study area. CREATE also incorporates five grade separation projects in or near the study area. Two are within the study area boundaries: one at Franklin Park where the IHB mainline crosses the CN Waukesha Subdivision, which is also the NCS; and one at Bensenville, crossing Irving Park Road. Two others are at Maywood (1st Avenue and 5th Avenue crossings), and the fifth project is the St. Charles Road crossing in Melrose Park. All three are on the UP-Geneva Subdivision. As of October 2007, four of the five capacity enhancement and signal improvement projects had progressed through various stages of environmental analysis and engineering. It is expected that the grade separation projects will move toward implementation as funding becomes available.

Another of the region's major initiatives that affects freight facilities in the study area is the OMP. As improvements are implemented at O'Hare, there will be temporary railroad relocation, followed by a permanent relocation when the airport project is complete. Those relocations are displayed in Exhibit 3-19.

3.4 Bicycle and Pedestrian System

Bicycle and pedestrian systems are an important element in the urban and suburban transportation system. Trails, sidewalks, and shared use facilities provide connections between residential areas and community centers, and to area transit stations. This section describes the general characteristics of the bicycle and pedestrian accommodations in the study area.

The region's bicycle system consists of roadways available for shared use with autos and dedicated trails available for shared use with pedestrians. There are no bicycle-only lanes within the area; most bicycle lanes are located closer to the CBD within the City of Chicago. To keep cyclists informed of available travel routes, IDOT produces a map showing bicycle routes, paths and trails. This map also displays roadway biking conditions, rating them "suitable," "caution advised," and "not recommended." Information pertaining to conditions within the study area has been extracted from the *Illinois Official Bicycle Map, Chicago/Northeastern Illinois Map 1,* and is shown in Exhibit 3-20.

There are roughly 71.1 miles of dedicated bicycle trails, 40.2 miles of shared roadways rated "suitable" for biking, and 204.8 miles of shared roadways rated "caution advised" for bicycles traveling through the study area and near rail stations that are included in the analysis. A review of the data indicates that there are numerous locations where bicycle access is not readily available at transit stations or between various community centers in the study area.

Operators of the regional transit system had not encouraged bicycle use as a mode of access to the transit system, nor did they permit bicycles on trains or buses. In response to public demand, however, these policies have changed. All CTA and Pace buses are now equipped with bicycle racks that can accommodate two bicycles, and bicycles are now allowed on Metra and CTA trains. However, both CTA and Metra restrict bicycle access on their rail service during the peak A.M. and P.M. travel times, although Metra's restriction pertains only to peak period, peak direction.

Bicycle racks are provided at all five CTA Blue Line stations in the study area, although Jefferson Park is the only CTA station that provides covered bicycle parking. Twenty-four of the 28 Metra stations in the analysis area have either bicycle racks or lockers; Exhibit 3-21 depicts use of the Metra facilities, with the greatest use at UP-NW and UP-W stations.

Access to the rail stations by bicycle is relatively infrequent. The 2005 Metra Rider Survey shows that as a proportion of total passengers accessing these stations, only 2 percent, on average, arrive by bicycle. At two study area stations, the proportion rises to 3 percent, and at Jefferson Park, 5 percent of Metra riders arrive by bicycle. Also, according to this same study, the highest frequency of bicycle access is among persons between the ages of 30 and 49 years who are traveling to work.

Pedestrian facilities include sidewalks, signalized and marked crossings, and designated trails or paths. Within the study area as a whole, sidewalks are available, particularly in the traditional communities. However, in newer subdivisions, or at employment sites, sidewalk systems may not be available. Another area of concern in the study area is the lack of a direct route for pedestrian access to a rail station, where pedestrians must take an indirect path to find a safe crossing. Pedestrian accommodations at transit stations generally are good, but access to those facilities from nearby residential and commercial locations is often lacking.