I-290

Environmental Impact Statement

West of Mannheim Road to Racine Avenue

Purpose and Need

April 2013

Draft

Illinois Department of Transportation

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1.0 Purpose and Need for Action

The Interstate 290 (I-290) Eisenhower Expressway provides the primary east-west roadway access to the Chicago central business district. It serves northwest Cook County and DuPage County, connecting to the Reagan Memorial Tollway (I-88) and the Tri-State Tollway (I-294) on the west, and I-90/94 (Kennedy and Dan Ryan Expressways) on the east. A parallel Chicago Transit Authority (CTA) rail transit facility, the Blue Line Forest Park branch is co-located in the eastern portion of the I-290 corridor, serving transit passenger travel between Forest Park and Chicago. CSX Transportation also has freight railroad right-of-way co-located in the western portion of the corridor.

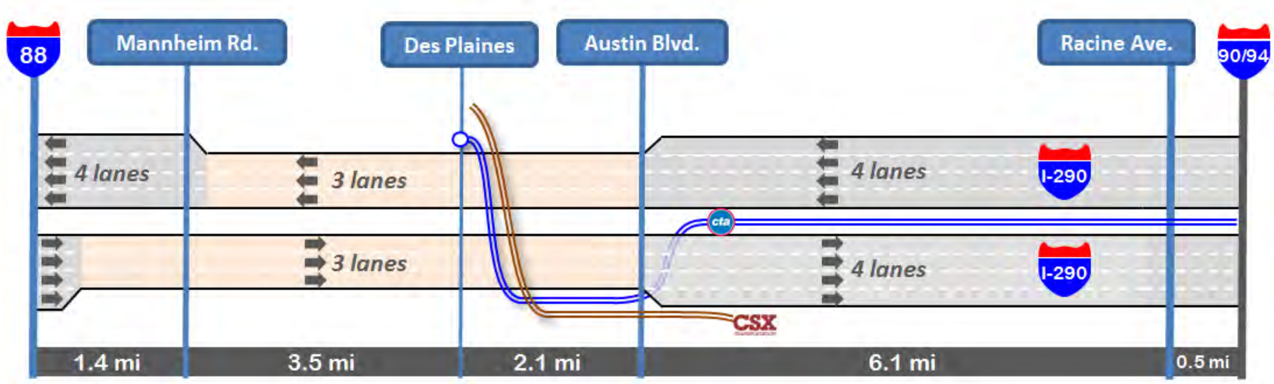
1.1 Project Background

The Eisenhower Expressway (I-290), originally constructed as the Congress Expressway, was one of the first multi-modal facilities in the United States. Opened to traffic in sections beginning in the mid to late 1950s, this facility was designed and constructed according to early standards that were newly created for the interstate highway system.

During the original construction of the Eisenhower Expressway, the CTA Garfield Park rapid transit branch was removed and replaced with what is now known as the "Blue Line" Forest Park branch. This heavy rail transit line was constructed parallel to the Eisenhower Expressway, running along the south side of the roadway or in the median. Prior to the construction of the Eisenhower Expressway, the freight railroad owned by Baltimore & Ohio Chicago Terminal Railroad, which ran at-grade along the current alignment of the Expressway, was grade-separated and relocated adjacent to the south side of the CTA tracks from east of Des Plaines Avenue to Central Avenue, and is now operated by CSX Transportation. This section of rail is part of CSX's Altenheim Subdivision and includes the right-of-way for three tracks, including two continuous tracks and a third intermittent track.

West of Mannheim Road, and east of Austin Boulevard, I-290 has four basic lanes in each direction. Between Mannheim Road and Austin Boulevard, I-290 has three basic lanes in each direction. This lane configuration has been a long standing source of safety, operational and capacity concerns.

Figure 1-1 – I-290 Existing Configuration



Since its original construction, I-290 has undergone periodic resurfacing and maintenance throughout the corridor. In 2001, the Hillside Interchange Reconstruction Project, located on the west end of the study area, was completed. This project was essentially a spot improvement that addressed the Mannheim Road interchange, and in doing so, addressed safety and operations at I-88's connection with I-290 and improved connections with Mannheim Road, but did not address capacity needs along mainline I-290. In 2010, 27 miles of I-290 from Thorndale Avenue to I-90/94 were resurfaced and 37 bridges were repaired. In 2012, IDOT initiated a Phase I preliminary engineering study for the I-90/94 and I-290 Circle Interchange, whose western study limits extend to Racine Avenue on I-290.

The I-290 Eisenhower Expressway Multimodal Corridor is identified as a fiscally constrained priority project in the Chicago Metropolitan Agency for Planning (CMAP) GO TO 2040 Comprehensive Regional Plan.

1.2 Project Purpose

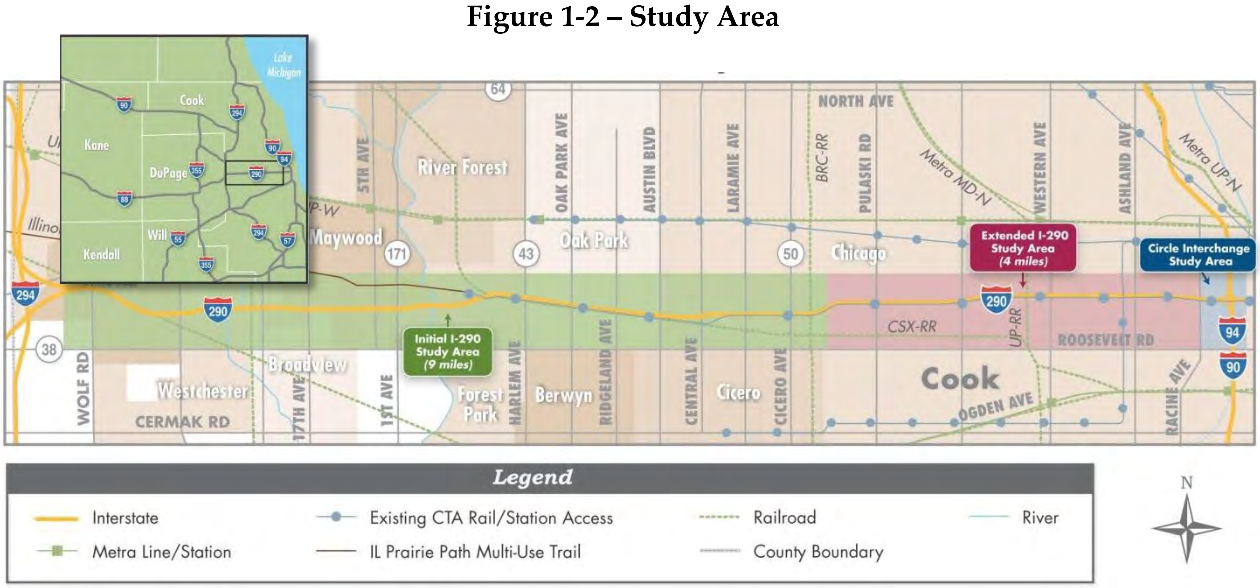
The purpose of this proposed action is to provide an improved transportation facility along the I-290 Eisenhower Expressway multi-modal corridor. The specific needs identified for the project include: improve mobility for regional and local travel, improve access to employment, improve safety, improve modal connections and opportunities, and improve facility deficiencies.

1.3 Study Area

The I-290 study area is centered along I-290 in Cook County, extending from west of Mannheim Road to Racine Avenue. The northern boundary of the study area is North Avenue, and the southern boundary is Cermak Road, an area of approximately 55 square miles.

The study area **Figure 1-2** includes adjacent transit and freight railroads, interchanges, cross streets and other parallel and crossing features that are within or in close proximity to I-290.

Figure 1-2 – Study Area



The logical termini for the I-290 study are identified as I-290 west of Mannheim Road to Racine Avenue. These rational end points were selected to evaluate a continuous section of the expressway corridor between two system interchanges. The scope of the I-90/94 at I-290 Circle Interchange project is to improve operations and safety without adding capacity to I-290. In addition, the CTA, in cooperation with IDOT, is conducting a Vision Study of the Blue Line Forest Park branch and associated facilities. The purpose of this study is to determine the CTA's near and long term vision for the Blue Line corridor and coordinate those objectives with the I-290 study.

1.4 Project Need

A transportation system improvement(s) is needed in the study area to address the following needs:

1. Improve Regional and Local Travel
2. Improve Access to Employment
3. Improve Safety for All Users
4. Improve Modal Connections and Opportunities
5. Improve Facility Deficiencies

These five principal needs were identified in the technical analysis documented in the Existing Transportation System Performance Report (2010) and Addenda (2013), and through stakeholder and public input.

1.4.1 Improve Regional and Local Travel

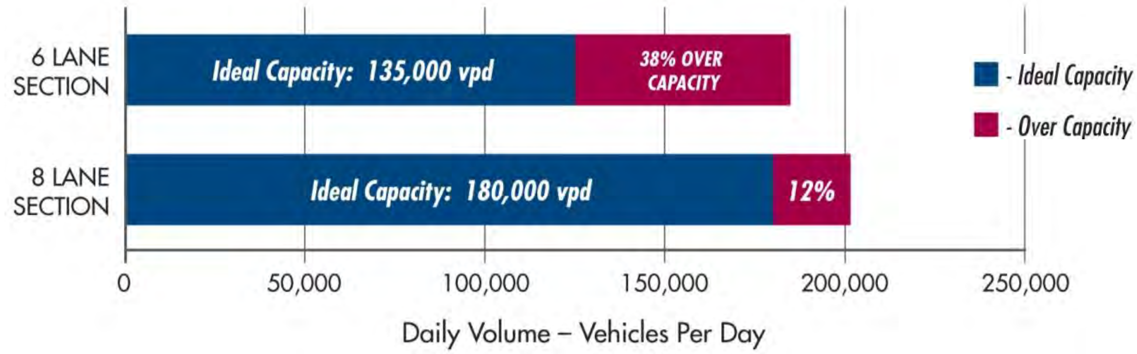
This section addresses the identified need to improve mobility, or the movement of people and goods, within the region and the study area. For this study, regional travel is considered as travel that begins and ends outside the study area. Local travel is travel that either begins, ends or occurs entirely within the study area.

1.4.1.1 Improve Regional Travel

There is substantial travel and congestion in the study area that reduces the corridor's ability to serve regional travel. One of the primary factors contributing to congestion in the corridor is that traffic demand exceeds the capacity on I-290. I-290 generally carries up to 203,300 and 225,200 vehicles per day, including approximately 5 percent trucks, on its six and eight lane freeway sections, respectively, according to 2009 traffic data. Based on the existing calculated ideal capacity of 138,000 vehicles per day for the six-lane section of the study area and 187,000 vehicles per day for the eight-lane section of the study area for orderly traffic flow[1], the existing mainline traffic exceeds its ideal capacity by 38 percent in the six-lane section and 12 percent in the eight-lane section (**Figure 1-3**). Estimated year 2040 traffic on I-290 is projected to increase by an average of 5.6 percent over the existing traffic volumes. This relatively smaller forecasted increase in traffic reflects both the lack of available capacity on I-290 to accommodate additional traffic, and the fully developed land uses and transportation network throughout the corridor.

[1] From 2000 Highway Capacity Manual, Exhibit 13-6 using volume at 10% of ADT at LOS E

Figure 1-3 – Existing I-290 Capacity



Level of Service (LOS) is a congestion measure represented by six levels-of-service, ranging from A to F. LOS A represents the best (free flow) operating conditions and LOS F the worst (breakdown) conditions. According to Federal Highway Administration (FHWA) policy, LOS C is desirable for interstate freeway operations. In comparison, traffic operations analysis of the existing I-290 mainline[2] revealed that it experienced congested conditions, LOS D or worse, for 17 hours per day in the six-lane section of the study area, with approximately 87 percent of this section operating at LOS F (breakdown condition) during peak travel periods. In the eight lane section, mainline I-290 is relatively less congested, with LOS D or worse for 14 hours per day, with 36 percent of the eight lane section operating at LOS F during peak travel periods.

Peak period travel speeds in the six-lane section of the study area are estimated to be as low as 24 mph in 2010, and are projected to slow down to as low as 12.0 mph for the 2040 no-build scenario. Estimated average peak period traffic speeds in the eight-lane section are projected to remain unchanged at 35 mph in 2040 for the no build scenario.

Much of the congestion in the eight-lane section occurs in the westbound direction, starting at Austin Boulevard and extending approximately 5 miles back towards the east[3]. This congestion is attributed to the high vehicular demand in the corridor and to the abrupt I-290 mainline lane reduction from 4 to 3 lanes where the left I-290 through lane becomes the westbound off ramp to Austin Boulevard.

This severe traffic congestion on I-290 impacts regional travel, both for eastbound travel towards Chicago, Chicago's central business district, as well as for westbound travel heading towards the western suburbs in Cook and DuPage County. This severe traffic congestion impacts through traffic, daily commuters, and commercial vehicles alike.

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[2] Existing Roadway Operations, I-290 Preliminary Engineering and Environmental (Phase I) Study, July 2010.

[3] CMAP 2011 Congestion Scan http://www.cmap.illinois.gov/cmp/scans/290-eisenhower-canal-to-wolf

1.4.1.2 *Improve Local Travel*

Local travel, which is regarded as travel that either begins, ends, or occurs entirely within the study area, is negatively affected by mainline I-290 congestion, poor I-290 interchange operations, and congested arterials.

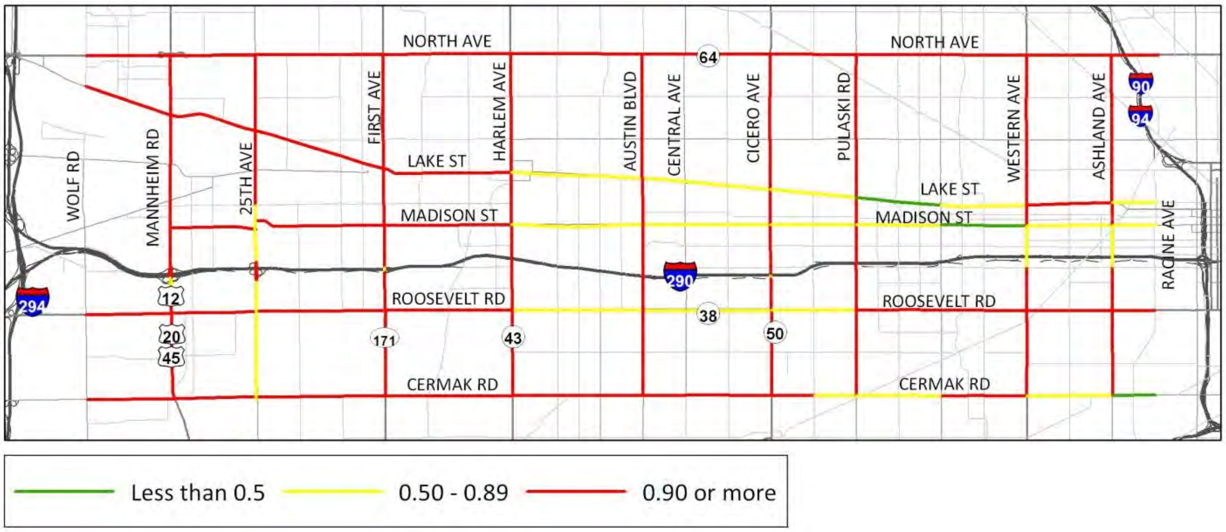
I-290 interchange operations are negatively affected by the inability of vehicles to efficiently perform "movements" at the ramp/cross-street intersections. These movements include left turns, right turns, and through-intersection travel. When an interchange cannot adequately convey the traffic volumes at an intersection, the movements will become congested, cause backups, and begin to operate at very low levels of service. For arterial highways, IDOT policy indicates LOS D is acceptable in urban areas. Four out of five interchanges in the six lane section of I-290 currently have one or more movements that are failing (LOS E or F), compared to one out of the eleven interchanges in the 8 lane section of the study area. Identified factors affecting intersection operations include traffic demand exceeding design capacity, inadequate turn lane storage length, overburdened signal timing and phasing, and constrained intersection geometry.

I-290 mainline traffic congestion in the study area causes traffic to divert to study area collector and arterial streets, placing additional burden on the local road network. The existing performance of east-west and north-south arterial streets in the study area was evaluated based on volume to capacity (v/c) ratios. In the volume to capacity ratio, the volume, "v," is the number of vehicles using the roadway, and the capacity, "c," is the number of vehicles the roadway can accommodate just before breakdown occurs. When the volume of vehicles (v) on a street reaches its breakdown capacity (c), the ratio is equal to one, and when volume to capacity ratio exceeds 1 ($v/c > 1$), operations become very unstable with closely spaced vehicles moving at slow, variable speeds. Minor disruptions within the traffic stream cannot be dissipated and result in operations that deteriorate to LOS F.

Figure 1-4 illustrates the 2010 peak period volume to capacity (v/c) analysis for arterial streets, based on the I-290 existing conditions travel model results. In 2010, 80 percent of the study area arterials corresponding to the 6 lane expressway section operated at very congested conditions with v/c ratios greater than 0.90 (corresponding to Levels of Service E and F[4]) compared with 59 percent of the arterials corresponding to the 8 lane section of the expressway.

[4] Transportation Research Board, Highway Capacity Manual, Special Report 209

Figure 1-4 – 2010 Existing Arterial Peak Period Volume to Capacity Ratios



1.4.2 Improve Access to Employment

This section addresses the need to improve mobility for workers who reside in, work within, or travel through the study area, as well as the needs of regional employers. Traffic congestion on I-290 and the major arterial roads in the study area, and the inability to adequately accommodate additional traffic, limit the ability of these facilities to serve additional growth in the traditional commute (travelers heading inbound to Chicago from western and northwestern Cook County, DuPage County, and Kane County during the morning peak period, and 'outbound' from Chicago in the evening), reverse commute (travelers heading 'outbound' in the morning peak period and 'inbound' in the evening peak), and other smaller commuter travel markets. Traffic congestion on I-290 and parallel routes negatively impacts bus transit travel times and reliability, and the ability to make modal connections, as well as access to transit by automobile.

The Regional Transportation Authority's (RTA) 2005 Cook-DuPage Corridor Travel Market Analysis, which evaluated the current travel market in the study area from Cicero Avenue out to DuPage County, found that traditional commuters are well served by the existing transit network and have access to virtually all destinations within Chicago via a combination of commuter rail, rapid transit and bus. For the Cook-DuPage travel markets within the I-290 study area, 33 percent of traditional commute work trips use public transit. For the reverse commute, The Cook-DuPage Corridor Travel Market Analysis found that: there are limited transit options to jobs in western Cook and eastern DuPage counties for workers in Cook County who live east of Cicero Avenue, that reverse commuters come from areas with less automobile ownership than the Cook-DuPage region as a whole, and that more reverse and other commute transit options are needed. For the Cook-DuPage travel markets within the I-290 study area, fifteen percent of the reverse commute work trips use public transit.

Study Area Access to Jobs: Heavy traffic congestion on I-290 and major arterial roads in the study area constrains connectivity to and from the study area in all directions (east-west and north-south). This results in longer travel times for highway trips from or to the study area, especially during peak periods, with traffic congestion continuing into the future. Job accessibility from the study area is depicted in **Table 1-1**. For example, using the 2010 highway network there are 449,000 regional 2040 jobs accessible within 15-30 minutes by automobile for a trip that begins from within the study area, versus 302,000 regional jobs accessible within 15-30 minutes for the 2040 no build scenario; a decrease of approximately 33 percent. The decrease in regional job accessibility between 2010 and 2040 are primarily due to increased traffic congestion.

Table 1-1 – Regional 2040 Jobs Accessible by Auto from a Central Study Area Location

Auto Travel Time	2010 Network	2040 No Build Network	Change
Up to 15 Minutes	107,000	79,000	-26%
15 – 30 Minutes	449,000	302,000	-33%
30 – 45 minutes	1,601,000	1,391,000	-13%
45 – 60 Minutes	1,760,000	1,613,000	-8%

Transit travel time to jobs includes in-vehicle (travel in the rail or bus vehicle) and out-of-vehicle travel time (access time, wait times, egress times). Job accessibility from the study area via transit is depicted in **Table 1-2**. As seen in this table, there is very little difference (less than 1%) in accessibility from the I-290 study area to work opportunities in the region for transit trips under 45 minutes. This can be attributed to the majority of the CTA rail and bus service in the greater I-290 corridor remaining stable between 2010 and 2040. However, for transit trips of between 45 minutes and 60 minutes, a 12 percent increase between 2010 and 2040 in the number of jobs accessible is forecasted, mainly due to the transit expansion projects identified in the CMAP GO TO 2040 Comprehensive Regional Plan outside the study area.

Table 1-2 – Regional 2040 Jobs Accessible by Transit from a Central Study Area Location

Transit Travel Time	2010 Network	2040 No Build Network	Change
Up to 15 Minutes	4,000	4,000	0%
15 – 30 Minutes	57,000	57,000	0%
30 – 45 minutes	796,000	786,000	-1%
45 – 60 Minutes	477,000	534,000	12%

1.4.3 Improve Safety for All Users

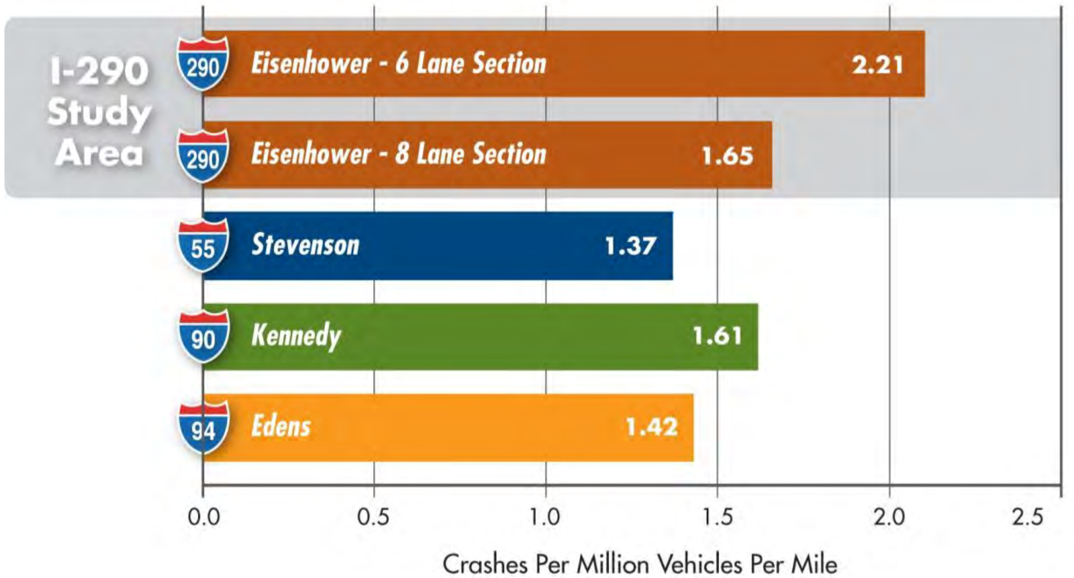
This section addresses the need to develop a transportation system improvement that contributes to reducing the overall frequency and severity of vehicular crashes in the I-290 study area, and also contributes to reducing conflicts between vehicles and pedestrians/bicyclists on facilities that accommodate these modes.

Crash analysis was performed for the 2006-2008 reporting period, using data that was available when the analysis was performed. A total of 6,177 crashes and 546 injuries were reported along I-290 during this period, for an average of 2,059 crashes and 182 injuries per year.

1.4.3.1 *Address High Crash Rate on I-290*

Within the six-lane section of the study area, I-290 experiences crash rates that are 34 percent to 61 percent higher than comparable Chicago-area freeways. Within the eight-lane section of the study area, I-290 experiences lower crash rates that are more comparable to other Chicago-area freeway sections, such as the Kennedy Expressway. **Figure 1-5** illustrates the comparison of crash rates for I-290 compared to other area expressways.

Figure 1-5 – Comparison of Chicago Freeway Mainline Crash Frequencies (2006-2008)



Crash rates vary along I-290 within the study area, with some sections experiencing much higher crash rates than others, especially in the six lane section of the study area. The section of westbound I-290 between Central Avenue and Austin Boulevard experienced crash rates of approximately 800 crashes per mile (3.5 crashes per million vehicle miles traveled – this measure considers traffic volumes), which was the highest of any portion of the study area. The high crash frequency at this location is attributed to extended periods of congestion and abrupt driving maneuvers due to the imposed traffic weave at the thru-lane drop associated with the mandatory left lane exit to Austin Boulevard.

As represented by **Figure 1-5,** I-290 in the eight-lane section of the study area does not experience the high crash occurrences typified by the six-lane portion to the west**.** The overall crash rate of 1.65 is indicative of the less frequent crash occurrences within this section.

Distributions of individual expressway crashes along I-290 in both the six- and eight-lane sections of the study area are represented by **Figure 1-8**, and **Figure 1-9**, respectively. In the eastbound direction of I-290, the highest incidence of crashes in the study area occurs in the vicinity of Mannheim Road. Because there are no mainline connections to or from Mannheim Road in the eastbound direction, these crashes are attributed to congestion-related traffic backups due to the collector-distributor road merge east of Mannheim Road and the lane drop prior to 25th Avenue. This crash experience is driven primarily by a high volume of travel demand funneling into 3 eastbound lanes. A second high spike in crashes occurs in relationship to the 25th Avenue interchange. Here, a short auxiliary lane connection between two closely spaced loop ramps introduces a complicated traffic weaving condition that increases the potential for an incident. Many of the remaining eastbound crash spikes correlate to areas adjacent to and immediately upstream and downstream of interchange ramps where vehicles are exiting and entering the expressway.

In the westbound direction of I-290, the highest incidence of crashes in the study area occurs between east of Central Avenue and the Austin Boulevard left hand entrance ramp. Here, traffic experiences severe congestion for extended periods of time each day due to four lanes of heavy traffic merging into three, as well as weaving traffic from the Central Avenue entrance ramp and Austin Boulevard entrance and exit ramps. Harlem Avenue also experiences a high occurrence of crashes that correlate to the left hand exit and entrance ramp locations.

All of the identified high crash locations occur within the six-lane section and contribute to the relatively high crash rate of 2.21 crashes per million vehicles per mile. The high eastbound spike in crashes that occurs in the eight-lane section from Ashland Avenue to Racine Avenue are crashes that are attributed to congestion associated with the I-90/94 and I-290 Circle Interchange, which is being addressed by the I-90/94 at I-290 Circle Interchange project.

1.4.3.2 Address Severity of Crashes

The overall predominant crash type along I-290 is rear end (62 percent overall on a 24-hour basis) with 96 percent of rear end crashes occurring during the peak period and midday congested travel periods between 6 AM to 11 PM. During congested periods, rear end collisions represent 69 percent of all crashes. National studies, as well as field observation of the I-290 corridor, indicate congestion as a primary cause of rear-end crashes due to erratic, stop and go traffic conditions with reduced space (headway) between vehicles that requires increased driver attentiveness to react to those conditions.

Figure 1-7 – Overall I-290 Crash Types

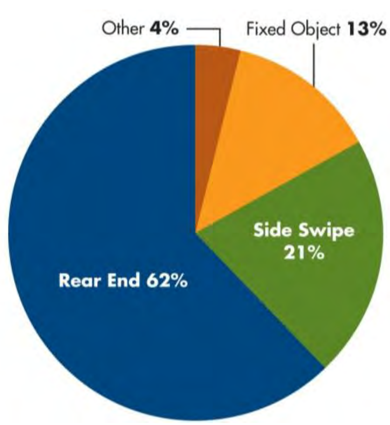
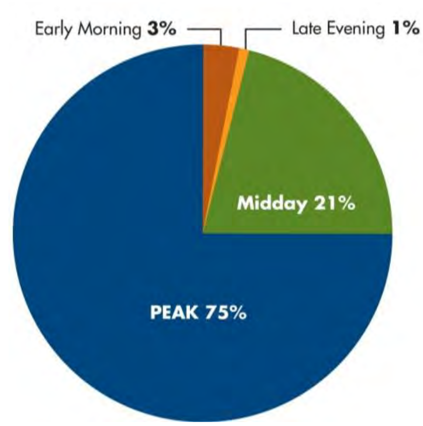


Figure 1-6 – Rear End Crash Time of Day



The other two prevalent crash types on the I-290 mainline are same-direction sideswipe and fixed object collisions off the roadway, which represent approximately 21 percent and 13 percent of overall crashes, respectively. Many same-direction sideswipes correlate to areas where there are numerous lane-changing and weaving movements, such as near entrance and exit ramps. Most of the same-direction sideswipes are also occurring during congested conditions.

Figure 1-8 and **Figure 1-9** also show the locations of fatal (Type K) and incapacitating injury (Type A) crashes as well as locations exhibiting the most severe safety needs in Illinois as documented in Illinois' Five Percent Summary Report to FHWA.

For the six-lane section of the study area, there were 9 fatal crashes and 58 incapacitating injury crashes on I-290 within the 2006-2008 reporting period; 33 percent of these severe crashes involved a collision with a fixed object, 27 percent involved a rear end collision, and 12 percent involved a same direction sideswipe. Three Five Percent Report locations are also located in the six-lane section of the study area, and slightly less than half of the fatal and severe crashes in the six lane section occurred during congested conditions.

For the eight-lane section of the study area, there were 5 fatal crashes (Type K) and 18 incapacitating injury crashes (Type A) on I-290 within the 2006-2008 reporting period; of the severe accidents 44 percent involved a same direction sideswipe, 28 percent involved a rear end collision, and approximately 17 percent involved a collision with a fixed object. There are no Five Percent Report locations identified in the eight-lane section of the study area, and a majority of the fatal and severe crashes occurred during uncongested conditions.

Overall, the 6 lane section of I-290 experiences a 34% higher crash rate, and a 2.9 times higher ramp crash rate than the 8 lane section; the six lane section also contains all three of identified 5% locations in the study area. Crash types in the section are predominantly rear-end crashes that occur in congested conditions and where congestion occurs, clustered around closely spaced interchange ramps, left hand ramps, and immediately upstream of the existing 4 to 3 lane expressway transitions.

Figure 1-8 – I-290 from I-88 to East of Cicero Ave.
3-Year Crash Totals at Every 1/10 Mile

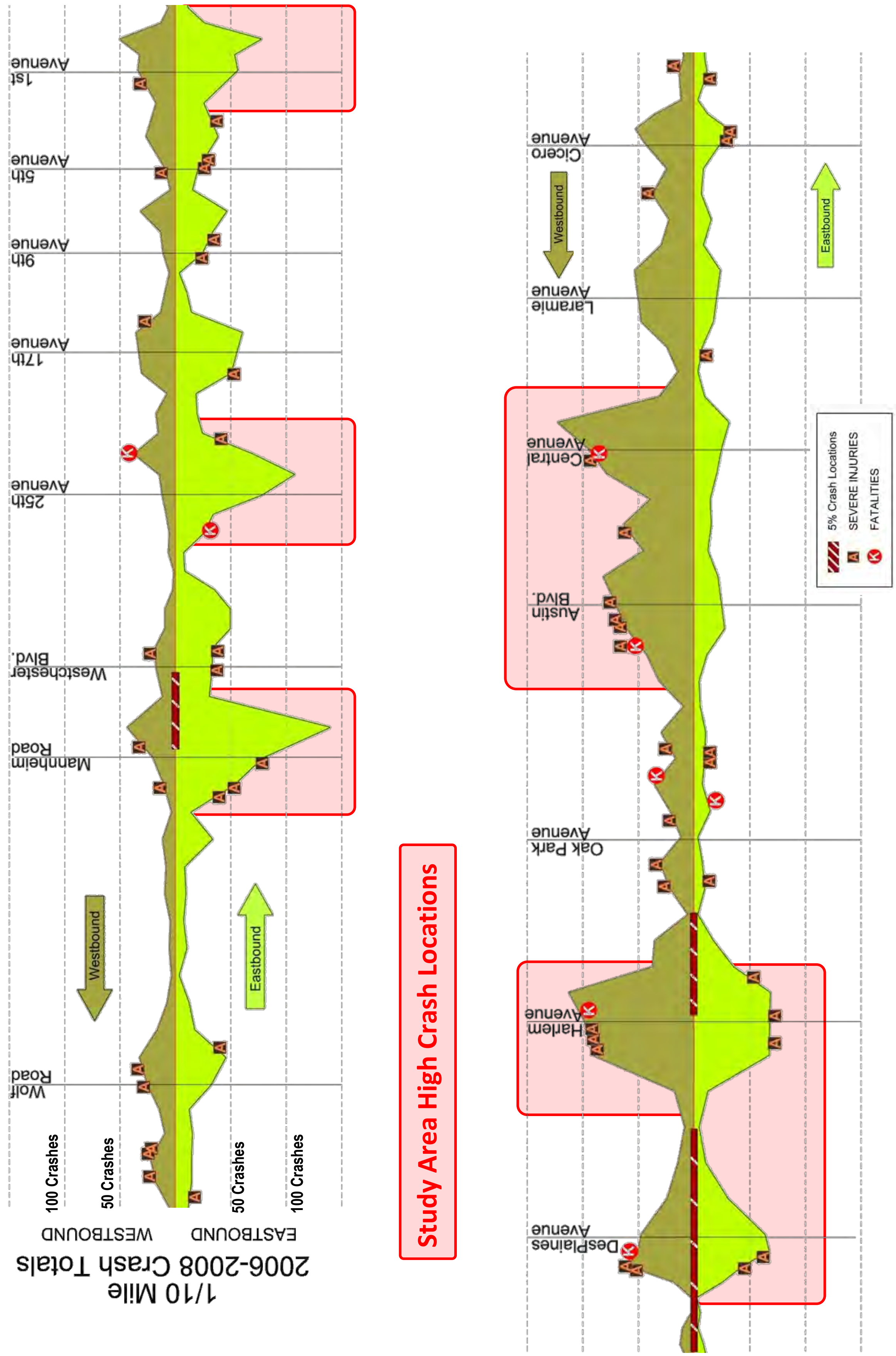
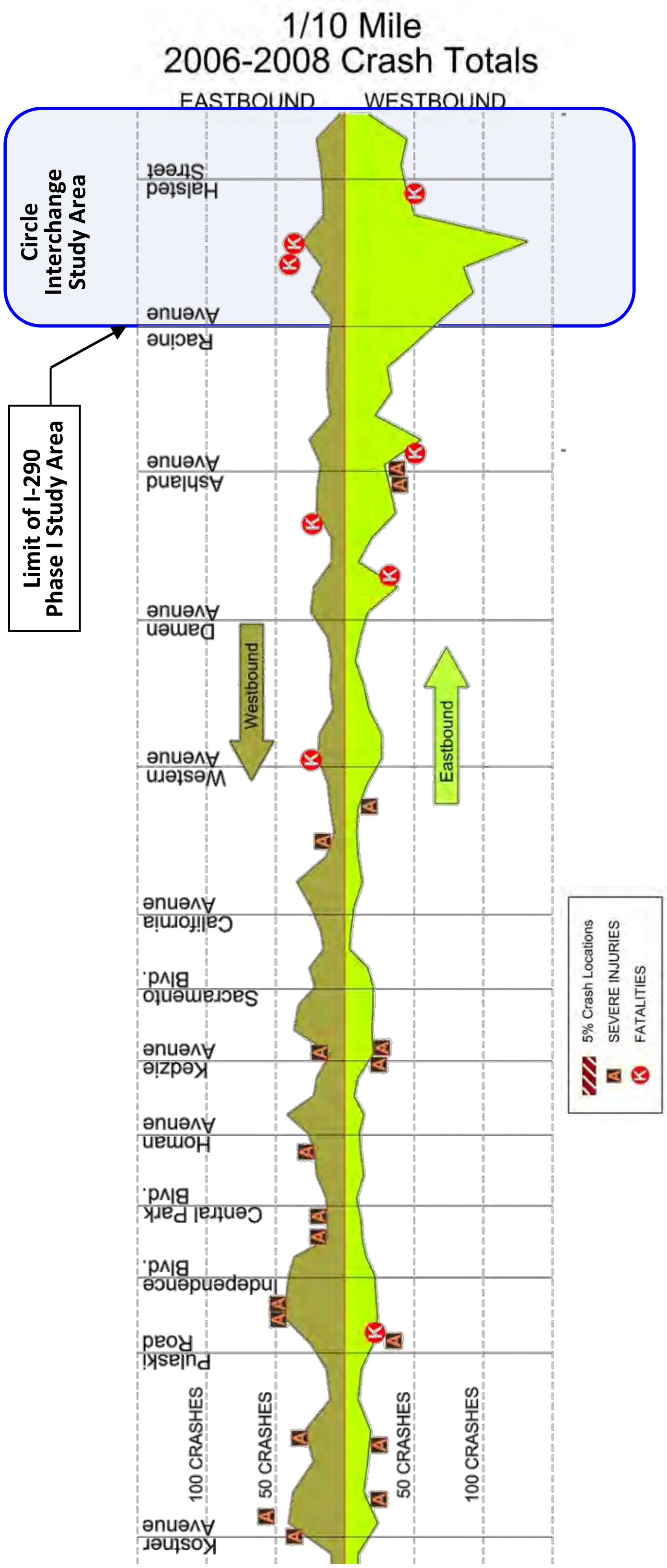


Figure 1-9 – I-290 from East of Cicero Ave. to Racine Ave.
3-Year Crash Totals at Every 1/10 Mile



1.4.4 Improve Modal Connections and Opportunities

This section addresses the need to improve connections between all modes, including non-motorized connections to transit, and improving opportunities to better accommodate all transportation modes through cooperation and joint planning with transit providers.

The study area has a well-developed and utilized public transportation system that carries 21 percent of study area home-to-work travel, compared to 12 percent for the Chicago region overall. Although usage of the existing transit facilities within the study area is higher than for the region as a whole, these transit facilities, particularly with respect to bus service and the Blue Line, do not operate at full capacity, and facility deficiencies hamper optimum provision of transit services.

1.4.4.1 Improve Access to Transit

With the location of the existing CTA Blue Line stations within the median or adjacent to I-290, and the original design of many of the bridge structures that serve the station entrances occurring in the 1950s, access deficiencies to the existing CTA Blue Line stations have been identified. These access deficiencies include all access modes, including pedestrian, bicycle, bus, and auto. The majority of existing Blue Line station entries are pedestrian trips. Pedestrian conflicts occur due in part to heavy traffic volumes and narrow sidewalks on the bridges that serve the station entrances. Bicycle access across I-290 is difficult due to lack of bicycle accommodations. Thus, non-motorized access to existing CTA Blue Line stations are in need of improvement.

Bus transfer connections from CTA and Pace bus routes to the existing CTA Blue Line stations are located on the overpasses over I-290 except for the Forest Park station. The bus routes serving these stations must stop on the bridge, blocking traffic in the curb lane. In addition, depending on their direction of travel, these bus transfers require pedestrians to cross to the opposite side of the bridge to reach these CTA Blue Line station entrances. Therefore, access to bus-to-Blue Line transfers sometimes requires riders to cross up to four lanes of arterial traffic.

For auto access, the only CTA Blue Line park-and-ride facility in the study area is at the Forest Park terminal station, which operates at 85 percent capacity[5]. Access to the CTA and Village of Forest Park park-and-ride facilities is constricted by the congested traffic patterns at the I-290 Des Plaines Avenue interchange, with backups caused by traffic waiting to enter the westbound I-290 entrance ramp. The closely-spaced traffic signals on Des Plaines Avenue and left turns required for egress/ingress for both Pace and CTA bus operations also results in delays to transit operations.

1.4.4.2 Improve Non-Motorized Connections

There is limited pedestrian and bicycle access across the I-290 corridor. Between the west end of the study area and east of Cicero Avenue there are two pedestrian/bicycle dedicated crossings along 9 miles of I-290, approximately one crossing every 4.5 miles. In addition, five major street crossings of I-290 in this section (Wolf Road, Mannheim Road, 1st Avenue, Des Plaines Avenue, and Cicero Avenue) are designated “Not Recommended for Bicycle Travel” by IDOT’s Bicycle

[5] CTA parking utilization as reported by RTA (www.rtams.org). Based on 1051 space parking capacity (2000 count).

Map, and the remainder of the I-290 street crossings in the six-lane section do not have bicycle accommodations that would provide safer, more comfortable operating zones for bicyclists. In the eight-lane section from east of Cicero Avenue to Racine Avenue, dedicated pedestrian crossings are more frequent with a dedicated bicycle/pedestrian crossing every mile, on average.

1.4.4.3 Improve Multi-modal Opportunities

The Cook-DuPage Corridor Study and the Existing Transportation System Performance Report identified several opportunities for improving transit facilities and services in the study area. These opportunities included the renewal of the existing rail and bus infrastructure in the study area, potential new transit services and facilities to better serve the reverse commute, and providing more convenient direct access to jobs for study area residents. The I-290 study is coordinating with the transit agencies and other stakeholders in the planning, design, and potential construction of future transit opportunities, for the purpose of accommodating future transit improvements within the footprint of the I-290 project.

1.4.5 Improve Facility Deficiencies

This section evaluates the need to address deficiencies: in pavement and structure condition; in the ability of the existing transportation system in meeting current design standards; related to pedestrian, bicycle and transit facilities; and in the existing drainage system. Opened to traffic in sections beginning in the mid to late 1950s, this facility was designed and constructed according to early standards that were newly created for the interstate highway system. As such, the existing pavement and bridges are now over 50 years old, exceeding their typical service life by approximately 30 years. Regular cycles of maintenance and rehabilitation have been successful in extending the service life, however maintenance cycles are becoming more frequent and don't address many of the underlying issues.

Most of the existing I-290 pavement structure in this corridor is original to the 1950 construction. Although the expressway was resurfaced with asphalt in 2010, over 90% of the underlying existing portland cement concrete pavement and sub-base in the study area are now over 50 years old, exceeding their typical service life by approximately 30 years.

The drainage system, also originally installed in the 1950s, is in need of improvement. A detailed hydrologic evaluation of the trunk sewer in the six lane section of the study area revealed that the I-290 pavement would be overtopped by a 100 year storm, as was evidenced by the July 2010 storm that flooded the roadway and forced closures of I-290 and CTA. The pump station located at the DesPlaines River is being replaced and expanded as part of a separate project.

Since the original construction of I-290, state and federal design standards for highway facilities have been updated to promote better operations and improved safety for the autos and trucks using the facility. As such, many existing design elements do not meet current standards, including ramp entrance and exit departure angles, shoulder widths, and vertical curves, as well as interchange geometrics, including turning radii and complete street requirements.

Like the existing mainline pavement, almost all of the existing cross road structures are original to the 1950's construction. Due to rehabilitations and regular maintenance, all the bridges in the study area are currently rated as structurally adequate; however, deterioration of the structures is resulting in more frequent maintenance cycles.

Having been constructed in the 1950’s before the requirements of the Americans with Disabilities Act were enacted, much of the original cross road construction that still exists in the study area does not meet established Americans with Disability Act (ADA) standards for sidewalk widths and pedestrian ramps. Improvements to meet ADA compliance and high-traffic sidewalk widths, addresses pedestrian safety needs, especially for persons with disabilities.

Overall, while it is desirous to reconstruct the expressway facility to current design standards, the study area is highly urbanized and contains numerous environmental constraints. As a means to balance good design practice with impact reduction, design will be made to fit within the context of its surroundings and the proposed project scope, while also enhancing safety.

The CTA Blue Line was constructed concurrently with I-290 in the 1950s and is also in need of renewal. The CTA Blue Line Vision Study being conducted by the CTA will be addressing the CTA’s near and long term needs, and coordinating those needs with this study.