

RTA/Pace I-294 Tri-State Market & Facilities Feasibility Study

Existing Traffic Conditions Report

Regional Transportation Authority and Pace Suburban Bus





October 2020 (rev 06/2021)

Prepared for:

Regional Transportation Authority and Pace Suburban Bus

Prepared by:

AECOM 303 East Wacker Drive, Suite 1400 Chicago, IL 60601

aecom.com

Prepared in association with:

Connetics Transportation Group, Inc.

Table of Contents

1. 1.1 1.2	Study Background and Purpose Study Area Task Overview	1
2.	Existing Traffic Conditions	
2.1 2.2	Travel Volumes	
3.	Programmed Improvements	
4.	Future Traffic Conditions	
Figu	ures	
	e 1-1. Pace I-294 Market and Facilities Feasibility Study Area	
	e 2-1. I-90 2019 AADT Schematic: Barrington Rd. to Devon Ave. (Toll Plazas 10-17)	
	e 2-3. I-294 2019 AADT Schematic: Dempster (Toll Plaza 29) to O'Hare Oasis	
	e 2-4. I-294 2019 AADT Schematic: IL 64 & US 20 to Reagan Memorial Tollway (I-88)	
	e 2-5. I-294 2019 AADT Schematic: Roosevelt Road (IL 38) to Hinsdale Oasis	
	e 2-6. I-294 2019 AADT Schematic: I-55 to Willow Springs Rd/75th St (Plazas 37, 34)	
	e 2-7. I-294 2019 AADT Schematic: Archer/79th St to I-57/147th Street (Toll Plaza 42)	
	e 2-8. I-294 2019 AADT Schematic: 159th St. to 163rd St. (Toll Plazas 40, 41)	
	e 3-1. Central Tri-State Tollway (I-294) Project Concept	
	e 3-2. Central Tri-State Tollway (I-294) Project Construction Timeline	
Figure	e 3-3. Central Tri-State Tollway (I-294) Project Flex Lane Concept	18
Tab	les	
	2-1. I-90 Average Daily Traffic Volumes Between Interchanges (Westbound)	
	2-2. I-90 Average Daily Traffic Volumes Between Interchanges (Eastbound)	
	2-3. I-294 Average Daily Traffic Volumes Between Interchanges (Northbound)	
	2-4. I-294 Average Daily Traffic Volumes Between Interchanges (Southbound)	
iable	2-5. 2019 Average Speed and Congestion by Section	14

Abbreviations

ATM	Active Traffic Management system
AADT	Annual Average Daily Traffic
IDOT	Illinois Department of Transportation
ISTHA	Illinois State Toll Highway Authority
LCS	Land Control Signals
SOP	Standard Operating Procedures
TOC	Traffic Operations Center

1. Study Background and Purpose

The Regional Transportation Authority (RTA) / Pace Bus I-294 Tri-State Market & Facilities Feasibility Study (Study) identified and evaluated ways that Pace buses can capitalize on roadway improvements being constructed by the Illinois State Toll Highway Authority (Illinois Tollway) on portions of the I-294 Tri-State Tollway.

The Tri-State Tollway is a north-south roadway in the Chicago region, providing access to major employment centers and O'Hare International Airport. In 2016, Illinois Tollway initiated its Central Tri-State (I-294) Project, which includes the 22-mile segment between Balmoral Avenue and 95th Street (Central Tri-State Project). This segment carries the heaviest volume of passenger and freight traffic and has twice the amount of congestion delays compared to the entire Tollway system. The Central Tri-State Project will incorporate a number of innovations, including Flex Lanes, which will be available to Pace buses to avoid congestion. Flex Lanes are the left inside shoulder of the roadway; Pace buses are directed to the Lane by the Illinois Tollway's traffic operations center. Pace has identified I-294 as a critical corridor because of its place as a primary travel corridor and the opportunity that Flex Lanes present.

From this study, the agencies identified and evaluated several options that will allow Pace buses to benefit from the Central Tri-State improvements. Pace bus use of the Flex Lanes when traffic is congested will help make service in this corridor a competitive and affordable alternative to driving.

Recommendations from this study include:

- Pace Express bus service concepts that primarily operate along the I-294 Tri-State Tollway
- Stations, roadways, and other infrastructure needed to support proposed bus services and provide improvements in passenger comfort, bus speeds, travel times, and access to jobs and other transit connections.
- A plan for implementing proposed bus services and associated support infrastructure

These recommendations were derived from a robust market analysis of existing and predicted travel patterns in the study area, computer modeling of concepts, and engineering assessments of potential site locations. Pace and RTA also coordinated with the Tollway throughout the study's development.

1.1 Study Area

As shown in **Error! Reference source not found.**, the study area covered a 5-mile radius c entered along the 48-mile I-294/I-90 corridor between Harvey and Schaumburg. The roadway study alignment also included I-490, which by 2025 will connect the I-90 Jane Addams Memorial Tollway, the IL-390 Elgin-O'Hare expressway, and the I-294 Tri-State Tollway along the west side of O'Hare Airport.

Highland Park Study Area (5-mile) I-294 / I-90 Barrington Hills Northbrook ■■■ I-490 O'Hare West Bypass* Palatine Pace Fixed Routes Pace Transportation Centers Arlington Glenview Park-n-Ride Facility Heights Metra Rail 90 Hoffman Estates *To open in 2025 Deg Plaines Schaumburg 390 Bartlett O'Hare 90 West Chicago 290 55 294/ Grove Naperville Burr Ridge P&R Midway 355 Bridgeview h T.C. 90 55 Bolingbrook Blue Romeoville Island P&R Orland Park **Homer Glen** Harvey T.C. 57 Tinley Park 80 80 Frankfort 2 3 4 5 NORTH

Figure 1-1. Pace I-294 Market and Facilities Feasibility Study Area

1.2 Task Overview

The Study involved the five tasks listed below, including the relevant sub-tasks for Tasks 1 and 2.

Task 1: Existing Conditions and Travel Market

- •1.1 Transit Service
- •1.2 Traffic Conditions
- •1.3 Market Analysis

Task 2: Conceptual Service Design and Infrastructure

- •2.1 Service Plans
- •2.2 Generic Infrastructure Concepts
- 2.3 Station Concepts & Capital Costs

Task 3: Implementation Plan

Task 4: Public Outreach and Marketing

Task 5: Summary Report

Task 1 (Existing Conditions and Travel Market) documented current and future demand and transit service in the Study Area. This information provided the foundation to formulate service and infrastructure recommendations in later tasks by understanding current and future travel markets in the I-294 corridor.

This Technical Memorandum covers Task 1.2, Traffic Conditions, which documented roadway travel conditions in the Study Area. This information was useful in the planning of express bus service given that the volume of traffic and level of congestion in the corridor will directly impact bus transit service performance. Sections include:

- Existing traffic conditions in the Study Area;
- Programmed improvements relevant to the Study; and
- Future traffic conditions and Pace bus use of I-294 Flex Lanes.

2. Existing Traffic Conditions

The Study Area is served by two Tollway Facilities: I-90 and I-294. A summary of the Annual Average Daily Traffic (AADT) volume on these facilities follows. The use of average daily traffic volumes smooths out variations that negatively or positively influence traffic flow on any given day (e.g., traffic incidents, inclement weather, holidays). In addition, major construction projects, either on- or off-system, that extend over months, seasons, or years can affect Tollway traffic volumes. Therefore, data have been extracted from the Illinois Tollway's annual *Traffic Data Report* for calendar years 2019, 2018, and 2017 to provide a recent snapshot of Tollway traffic.

COVID-19 Note: It is a challenging time for the transportation industry. The coronavirus pandemic has created many uncertainties and has significantly impacted motorists' current and near-term travel behavior. The impacts of the pandemic on travel demand and patterns are unknown at this time. As a result, traffic conditions from 2019, which reflect pre-pandemic conditions, are referenced herein.

2.1 Travel Volumes

Westbound traffic volumes on I-90 are shown in Table 2-1 and eastbound volumes in Table 2-2. More detailed AADT (2019) counts are shown in schematic form in Figure 2-1 and Figure 2-2 that present volumes between these major interchanges and Toll Plazas. Overall, westbound travel on I-90 is greater (about 16 percent on average) than eastbound in the Study Area during the 2017-2019 time period. Over the three-year period, volumes steadily increased on all segments except the Kennedy Expressway / River Road (Toll Plaza 19) and the Tri-State Interchange. Between 2017-2019, the westbound Barrington Road segment experienced the greatest increase (11 percent), followed by Roselle Road (10 percent) and Elmhurst Road (8 percent). Similarly, the eastbound Barrington Road segment experienced the greatest increase (12 percent) during this time period, followed by Roselle Road (11 percent) and Elmhurst Road (9 percent).

Table 2-1. I-90 Average Daily Traffic Volumes Between Interchanges (Westbound)

Interchange Location	2017	2018	2019	△ 2017 - 2019
Kennedy Expressway / River Road (Toll Plaza 19)	66,690	60,210	63,390	-5%
Tri-State Interchange	86,700	82,370	89,850	4%
Devon Avenue (Toll Plaza 17)	88,930	90,170	92,160	4%
Lee Street	82,710	84,440	86,200	4%
Des Plaines Oasis	82,710	84,440	86,200	4%
Elmhurst Road (Toll Plaza 18A)	73,420	77,460	79,600	8%
Arlington Heights Road (Toll Plaza 18)	72,330	75,430	77,270	7%
Illinois Route 53 / I-290 (Toll Plaza 15)	80,060	82,090	84,350	5%
Meacham Road (Toll Plaza 12A)	80,220	82,210	84,800	6%
Roselle Road (Toll Plaza 12)	70,150	74,090	77,460	10%
Barrington Road (Toll Plaza 10)	63,570	68,320	70,790	11%

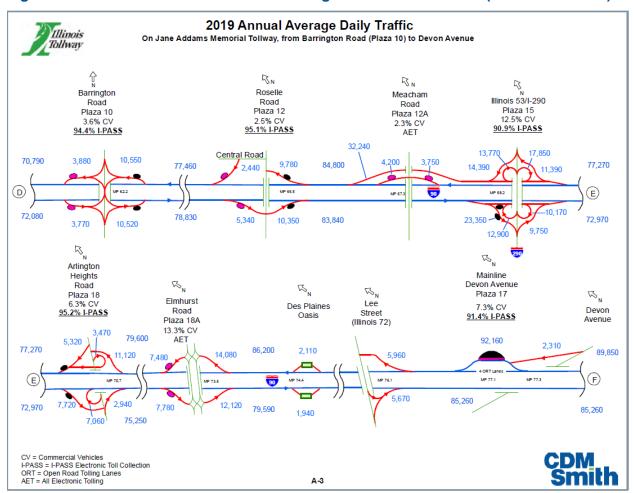
Source: Illinois Tollway Traffic Data Report, 2019, 2018, 2017.

Table 2-2. I-90 Average Daily Traffic Volumes Between Interchanges (Eastbound)

Interchange Location	2017	2018	2019	△ 2017 - 2019
Kennedy Expressway / River Road (Toll Plaza 19)	61,470	61,420	67,350	10%
Tri-State Interchange	81,310	81,410	85,260	5%
Devon Avenue (Toll Plaza 17)	81,310	81,410	85,260	5%
Lee Street	74,540	75,890	79,590	7%
Des Plaines Oasis	74,540	75,890	79,590	7%
Elmhurst Road (Toll Plaza 18A)	69,290	71,660	75,250	9%
Arlington Heights Road (Toll Plaza 18)	69,240	70,480	72,970	5%
Illinois Route 53 / I-290 (Toll Plaza 15)	77,810	79,930	83,840	8%
Roselle Road (Toll Plaza 12)	71,220	75,380	78,830	11%
Barrington Road (Toll Plaza 10)	64,290	68,980	72,080	12%

Source: Illinois Tollway Traffic Data Report, 2019, 2018, 2017.

Figure 2-1. I-90 2019 AADT Schematic: Barrington Rd. to Devon Ave. (Toll Plazas 10-17)



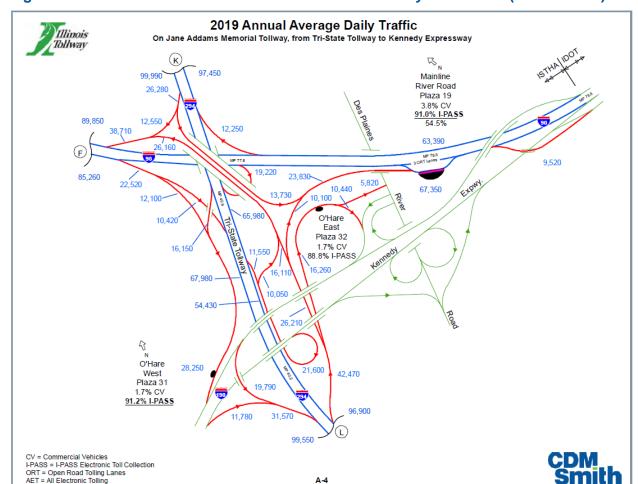


Figure 2-2. I-90 2019 AADT Schematic: Tri-State to Kennedy/River Road (Toll Plaza 19)

Northbound traffic volumes on I-294 are shown in Table 2-3 and southbound volumes in Table 2-4. More detailed AADT (2019) counts are shown in schematic form in Figure 2-3 through Figure 2-8 that illustrate volumes between these major interchanges and Toll Plazas. Overall, southbound travel on I-294 is greater (about 10 percent on average) than northbound in the Study Area during the 2017-2019 time period. Unlike I-90 where traffic volumes generally steadily increased in each direction, northbound and southbound volumes on I-294 fluctuated, and in many cases decreased, across various segments of I-294 over the three-year period.

Table 2-3. I-294 Average Daily Traffic Volumes Between Interchanges (Northbound)

				△ 2017
Interchange Location	2017	2018	2019	- 2019
163rd Street (Toll Plaza 41)	54,630	55,650	56,070	3%
159th Street (Toll Plaza 40)	54,930	55,980	55,980	2%
I-57/147th Street (Toll Plaza 42)	74,160	76,270	76,450	3%
Cicero Avenue (Illinois Route 50)	76,630	78,020	78,120	2%
95th St./83rd St. (Toll Plazas 38 & 39)	82,420	83,080	83,140	1%
79th Street/Archer Avenue	82,420	83,070	83,140	1%
Willow Springs Road/75th Street (Toll Plaza 34)	83,010	83,470	83,570	1%
I-55 EB	76,510	76,540	76,980	1%
Wolf Road & I-55 WB	64,420	63,630	64,700	0%
I-55 (Toll Plaza 37)	93,490	92,100	92,970	-1%
Hinsdale Oasis	97,050	95,620	96,510	-1%
Ogden Avenue (U.S. Route 34)	97,350	94,580	96,470	-1%
Reagan Connector	73,620	73,350	75,240	2%
Cermak Road (Toll Plaza 35)	78,700	78,200	79,680	1%
Roosevelt Road (Illinois Route 38)	74,510	73,730	75,950	2%
Reagan Memorial Tollway (I-88)	70,540	69,670	71,900	2%
Eisenhower Expressway (I-290)	78,860	76,980	79,840	1%
Illinois Route 64 & U.S. Route 20	94,350	90,580	94,610	0%
O'Hare Oasis	94,350	90,580	94,610	0%
Irving Park (Toll Plaza 33)	109,490	103,870	109,050	0%
Kennedy Expressway (I-190)	97,250	92,090	96,900	0%
Touhy Avenue (Toll Plaza 29)	99,940	97,160	97,450	-2%

Source: Illinois Tollway Traffic Data Report, 2019, 2018, 2017.

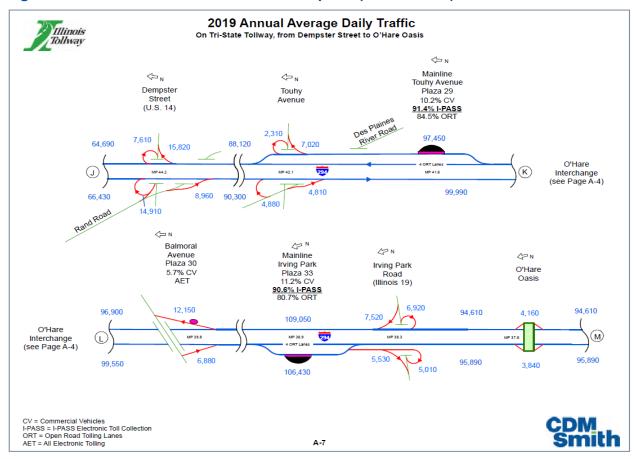
Table 2-4. I-294 Average Daily Traffic Volumes Between Interchanges (Southbound)

Interchange Location	2017	2018	2019	△ 2017 – 2019
163rd Street (Toll Plaza 41)	53,760	55,100	55,190	3%
159th Street (Toll Plaza 46)	53,560	55,110	54,910	3%
I-57/147th Street (Toll Plaza 42)	71,210	73,900	73,850	4%
Cicero Avenue (Illinois Route 50)	74,250	76,440	76,530	3%
95th St./82nd St. (Toll Plaza 36)	84,400	86,440	87,160	3%
79th Street/Archer Avenue	76,100	78,190	78,990	4%
Willow Springs Road/75th Street (Toll Plaza 34)	75,640	77,730	78,550	4%
Interstate 55 (No SB Ramps)	65,150	67,320	68,240	5%
Wolf Road & NB I-55 Entrance	65,150	67,320	68,240	5%

Interchange Location	2017	2018	2019	△ 2017 – 2019
I-55 (Toll Plaza 37)	97,330	99,750	99,980	3%
Hinsdale Oasis	97,330	99,750	99,980	3%
Ogden Avenue (U.S. Route 34)	95,110	97,670	98,080	3%
Reagan Connector	72,710	73,600	74,010	2%
Cermak Road (Toll Plaza 35)	77,470	78,160	78,210	1%
Roosevelt Road (Illinois Route 38)	71,920	72,380	72,480	1%
Reagan Memorial Tollway (I-88)	99,560	98,180	98,650	-1%
Eisenhower Expressway (I-290)	85,390	82,830	83,570	-2%
Illinois Route 64 & U.S. Route 20	98,130	95,030	95,890	-2%
O'Hare Oasis	98,130	95,030	95,890	-2%
Irving Park (Toll Plaza 33)	110,710	105,610	106,430	-4%
Kennedy Expressway (I-190)	102,630	98,510	99,550	-3%
Touhy Avenue (Toll Plaza 29)	98,040	97,190	99,990	2%

Source: ISHTA Traffic Data Report, 2019, 2018, 2017.

Figure 2-3. I-294 2019 AADT Schematic: Dempster (Toll Plaza 29) to O'Hare Oasis



2019 Annual Average Daily Traffic Illinois Tollway On Tri-State Tollway, from North Avenue / Lake Street to Reagan Memorial Tollway (I-88) $\Leftrightarrow_{\mathsf{N}}$ North Avenue Lake Street (U.S. 20) (Illinois 64) 14,770 94,610 79,840 2.340, 34,040 29,990 N MP 33.8 72,480 95,890 6,330 98,650 71,900 18 790 16,620 83,570 21,770 Also See Page A-18 CV = Commercial Vehicles I-PASS = I-PASS Electronic Toll Collection ORT = Open Road Tolling Lanes AET = All Electronic Tolling

A-8

Figure 2-4. I-294 2019 AADT Schematic: IL 64 & US 20 to Reagan Memorial Tollway (I-88)

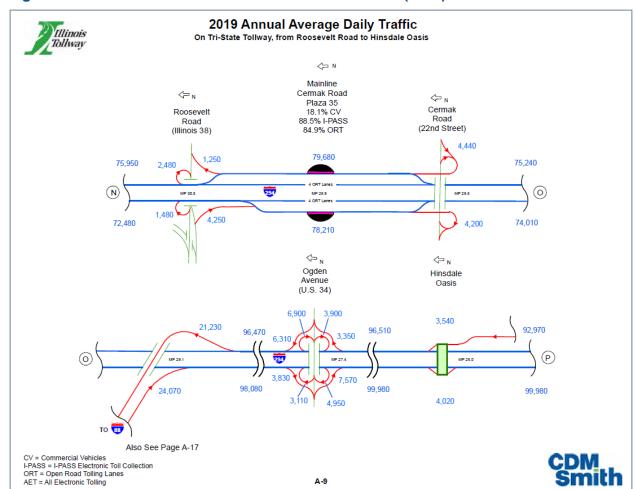


Figure 2-5. I-294 2019 AADT Schematic: Roosevelt Road (IL 38) to Hinsdale Oasis

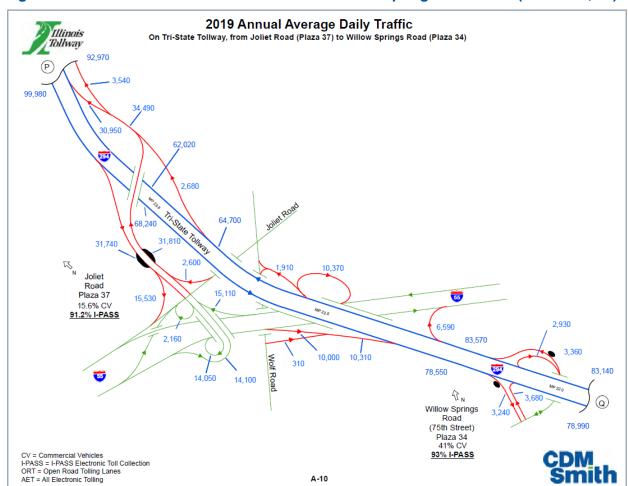


Figure 2-6. I-294 2019 AADT Schematic: I-55 to Willow Springs Rd/75th St (Plazas 37, 34)

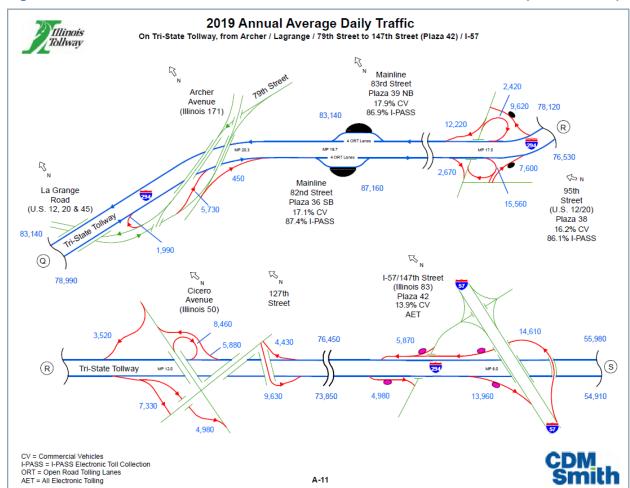


Figure 2-7. I-294 2019 AADT Schematic: Archer/79th St to I-57/147th Street (Toll Plaza 42)

2019 Annual Average Daily Traffic Illinois Tollway On Tri-State Tollway, from 159th Street (Plaza 40) to Bishop Ford / Kingery Expressway <> N ⟨□N ₹ N 660 2.320 I-80 56.070 Plaza 43 24.9% CV 79% I-PASS 56,070 \odot 36,440 **€** 2,630 54,910 55,190 620 Mainline 163rd Street Tri-State Tollway 159th Street (U.S 6) 22.5% CV 84.3% I-PASS Plaza 40 I-80 87.5% ORT 84.7% I-PASS Plaza 45 32,780 û 26.7% CV 79.6% I-PASS N☆ Halsted Street (Illinois 1) Plaza 47 û ₽ N Bishop Ford Ŷ N 10.4% CV 77.7% I-PASS Expressway Dixie Wood Street Highway Lincoln Oasis 10,910 4,100 91,820 10,320 87.510 2 730 10,840 91,820 Tri-State Tollway 80 294 MP 2.7 MP 0.00 11,070 9,670 89,580 32,630 84,920 89,580 Kingery 2,770 Expressway Illinois 394 CV = Commercial Vehicles I-PASS = I-PASS Electronic Toll Collection ORT = Open Road Tolling Lanes ISTHA IDOT

A-12

Figure 2-8. I-294 2019 AADT Schematic: 159th St. to 163rd St. (Toll Plazas 40, 41)

Source: Illinois Tollway Traffic Data Report, 2019

AET = All Electronic Tolling

RTA/Pace I-294 Tri-State Market & Facilities Feasibility Study | Existing Traffic Conditions Report

2.2 Roadway Performance

A key input to planning express bus service on these Tollway facilities will be to estimate the speed of bus operations and congestion. Table 2-5 shows average peak period speed and congestion levels for the eastern section of I-90 and the middle and south sections of I-294.

The Illinois Tollway measures roadway performance to illustrate congestion. Performance measures are tabulated for weekdays, and AM and PM peak hours are defined as 6:00-9:00 AM and 4:00-7:00 PM, respectively. Percent Congested Travel is based on the ratio of congested vehicle-miles-traveled to total vehicle-miles-traveled, where congestion is defined as any one-hour time period in which the actual travel time is greater than the free-flow travel time.

Table 2-5 shows that I-90 performs comparatively better than I-294, with faster speeds and lower congestion than I-294 sections, especially the South Central Section¹. I-90 performance outcomes are assumed to be attributable to the I-90 capacity improvements that were made between 2014 and 2016.

Table 2-5. 2019 Average Speed and Congestion by Section

			Average Speed (mph)		% Con Tra	gested vel
Section	Route	Limits	AM	PM	AM	PM
Eastern Jane Adams	I-90	Elgin - Rosemont	65	61	10%	16%
South Central Tri-State	I-294	Rosemont - I-55	50	39	50%	67%
Southern Tri-State	I-294	I-55 - Bishop Ford	56	58	23%	22%

¹ Note that the label "South Central" relates to the Tri-State section used in the Traffic Report.

3. Programmed Improvements

Following are the major roadway improvements that are currently programmed in the Study Area. Any on- or off-system roadway reconfiguration, such as a new interchange or major capacity improvement, may have temporary or even permanent impacts on traffic patterns and traffic volumes.

Central Tri-State Tollway (I-294) Project

The Central Tri-State Tollway (I-294) is being reconstructed and widened from Balmoral Avenue to 95th Street to provide congestion relief, reconstruct old infrastructure to meet current and future transportation demand and address regional needs. The Illinois Tollway will rebuild and widen parts of the roadway (see Figure 3-1) to add roadway capacity, as well as reconstruct shoulders including adding Flex Lanes. The overall project concept, including some of the major project elements described below, is shown in Figure 3-1. The project is scheduled from 2018 through 2026, with the preliminary phased timeline shown in Figure 3-2.

- Mile Long Bridge The Mile Long Bridge spans two major railroads, three water resources and local roads, and a major distribution center for UPS and BNSF Railway. The Mile Long Bridge Project constructs two new, wider bridge structures and stormwater and drainage improvements.
- Burlington Northern Santa Fe (BNSF) Railway Bridge Project The Tollway is
 reconstructing the BNSF Railway Bridge, which carries the triple-track railroad over I-294
 between Hinsdale and Western Springs, to accommodate the widening of I-294. In 2020,
 the Tollway will continue work to construct a bypass bridge that will allow for
 uninterrupted freight and commuter rail operations during bridge reconstruction. Once
 the bypass bridge is complete, the main bridge will be rebuilt with a new fourth track and
 lengthened.
- I-290/I-88 Interchange Project at I-294 This project includes reconfiguring the I-290/I-88 Interchange at I-294 to address a bottleneck in this important connection for commuter and local traffic. It is also an important part of the surface transportation freight network as it connects three Interstate roadways.
- Flex Lanes Flex Lanes will be integrated into the design of I-294. A Flex Lane is located on the left inside shoulder of the roadway and can be used to support safety as well as accommodate future needs and transit options. Figure 3-3 illustrates the potential uses of Flex Lanes on I-294.

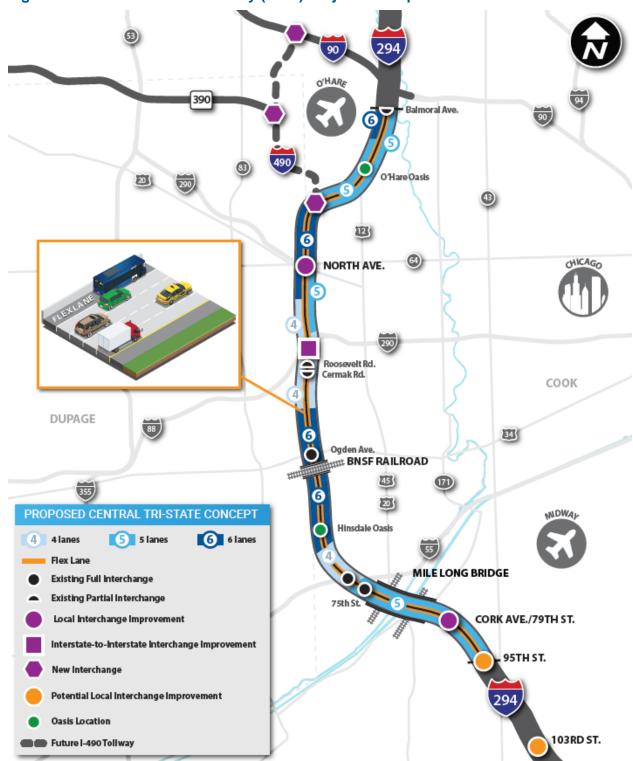


Figure 3-1. Central Tri-State Tollway (I-294) Project Concept

Source: Illinois Tollway.

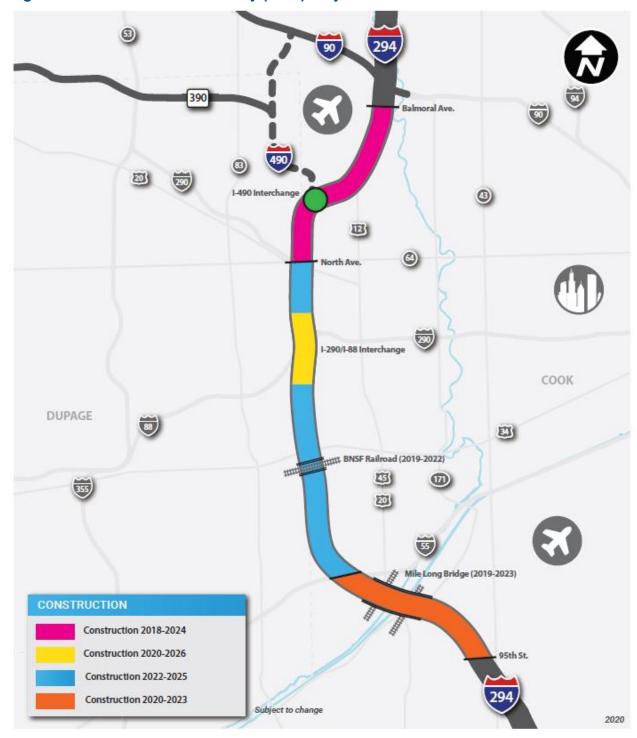
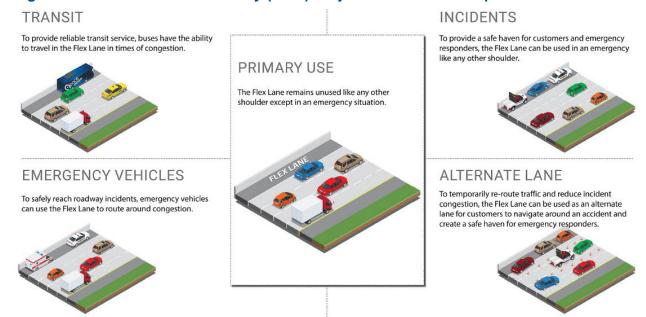


Figure 3-2. Central Tri-State Tollway (I-294) Project Construction Timeline

Source: Illinois Tollway.

Figure 3-3. Central Tri-State Tollway (I-294) Project Flex Lane Concept



Source: Illinois Tollway.

I-294/I-57 Interchange Project - Phase 2

The project creates an interstate-to-interstate connection and is a partnership between the Illinois Tollway and the Illinois Department of Transportation (IDOT). Phase 2 completes the I-294/I-57 Interchange, building four new ramps connecting southbound I-57 to I-294 and I-294 to northbound I-57. As part of this work, I-57 will be widened between I-294 and the CSX Railroad to accommodate added traffic entering and exiting the Tollway. Phase 2 began in 2019 and is scheduled to be complete by the end of 2022.

I-490 Tollway

I-490, also known as the Elgin O'Hare Western Access Project, is a new all-electronic Tollway that will carry north-south traffic around the western border of O'Hare Airport and also provide access to the Airport. The Tollway currently provides connections with O'Hare Airport via I-90, I-294, and I-390 in-part. I-490 is scheduled for completion in 2025. There are a number of project elements included as part of the I-490 Tollway Project:

- I-490/I-90 Interchange Project This a new, full-access interchange that will connect the new I-490 Tollway to I-90.
- I-490/IL-390 Interchange Project This a new, full-access interchange that will connect the new I-490 Tollway to the Illinois Route 390 Tollway that was completed in 2017, as well as providing access to York Road, Irving Park Road, O'Hare Airport.
- I-490/I-294 Interchange Project This a new, full-access interchange that will connect the new I-490 Tollway to I-294.
- North Avenue (Illinois Route 64) Interchange Project This project provides a new ramp from southbound I-294 to County Line Road and reconfigures the North Avenue (IL Route 64) and Lake Street (US Route 20) intersection to provide new direct access to eastbound North Avenue. The Cook County Department of Transportation and Highways is leading the project's design and will be constructing the project improvements.

•	Touhy Avenue Improvements – This project includes replacement of the at-grade crossing at the Union Pacific Railroad with a new bridge as well as roadway improvements to improve access to the north side of O'Hare Airport. The Cook County Department of Transportation and Highways is leading the project's design and will be constructing the project improvements.

4. Future Traffic Conditions

As indicated in Section 2.2, average peak period speeds were lower and congestion levels higher on the Tri-State I-294 south central section compared to the Jane Adams I-90. The Central Tri-State Project described in Section 3 is expected to address this situation as well as accommodate future traffic growth. To support the RTA/Pace I-294 Tri-State Market & Facilities Study, Illinois Tollway staff suggested that, for planning purposes, any section where a Flex Lane and gantries (i.e., overhead signage) are provided, the operation of Pace Tri-State service would be similar to current I-90 service. This assumption is useful for planning efforts to gauge potential traffic conditions after the completion of the Central Tri-State Project.

The I-90 Smart Road operations are governed by the Illinois Tollway's Standard Operating Procedures (SOP) for the Active Traffic Management (ATM) system. The Illinois Tollway's rules of operation associated with the I-90 Flex Lanes (*Traffic Operation and Maintenance Performance Evaluation and Enhancement Support, Systemwide, No. RR-14-9172, Active Traffic Management (ATM), Standard Operating Procedures (SOP), Illinois Tollway, May 2019) are listed as follows:*

- 1) There will be three predefined sections for Flex Lane operations, and each of these sections may be opened or closed independently of the others. For both EB and WB Pace buses, the three sections based on mileposts are 61-66.1, 66.2-72.1, and 72.2-77.3.
- 2) Sections can be opened to Pace when traffic congestion exceeds a tunable threshold for congestion (30 percent of section is congested < 35 MPH), AND
- 3) When the Left Shoulder is clear of incidents, debris, traffic stops, and maintenance activities as identified through CCTV monitoring at the TOC.
- 4) The display on the Flex Lane Control Signals (LCS) will be set by a system administrator and can only be overridden by Technicians with an event response plan.
- 5) When the lane is open to buses it will display "PACE BUS ONLY."
- 6) When the Flex Lane is closed to traffic, it will display a Red X. Flex Lane may be opened to general purpose traffic during severe conditions through Technician and supervisory response plan activation.
- 7) Flex Lane may be opened to general purpose traffic when an incident queue extends to at least one mile.

Illinois Tollway staff also noted that the SOP gives priority to Pace. Flex Lane enforcement for vehicles driving under the 'Red X' involves State troopers witnessing the violation and stopping the vehicle for enforcement action. Very few instances of vehicles driving in the Flex Lane while it was closed or open for Pace only have been observed by Illinois Tollway staff.

Internal Pace operating guidelines for use of the I-90 Flex Lanes include a maximum speed of 50 mph when general purpose lane traffic speeds are at 35 mph. Buses are not to exceed the speed of traffic by more than 15 mph. The general purpose lane speed limit is 70 mph between Des Plaines and Elgin and 60 mph between Rosemont and Des Plaines.

