

Ramp Reconfiguration Study

Scope of Work

A. Objective

To assess the current ramp configuration at two interchanges (I-490/I-590/NYS Route 590 and NYS Route 590/NYS Route 104) with the intent of investigating alternatives that address safety, efficiency, and congestion issues at those interchanges.

B. Background

The I-490/I-590/NYS Route 590 interchange links three principal arterials and serves commuter, freight, and recreational traffic. This project will address the recurring weekday morning congestion on NYS Route 590 southbound between East Ridge Road and Blossom Road, which is identified as a congested link in the regional Congestion Management Process. Within the interchange, I-490 carries an AADT of approximately 89,000 vehicles while I-590 and NYS Route 590 both carry approximately 90,000 vehicles.

The current interchange configuration was designed when the City of Rochester was the regional employment center, and it was expected that the ramp connecting I-490 eastbound to I-590 southbound would be the higher-volume ramp. However, as development expanded east and south from the central city and suburb-to-suburb commuting became increasingly common, traffic volumes on the ramp from I-490 westbound to I-590 southbound grew to overtake volumes on its counterpart ramp.

The most recent-available traffic count data indicate that the I-490 westbound to I-590 southbound ramp moves 120% of the peak travel movements as compared to the I-490 eastbound to I-590 southbound ramp. However, the current roadway configuration prioritizes movements from I-490 eastbound to I-590 southbound through a dedicated lane on I-590 southbound. Furthermore, traffic from I-490 westbound to I-590 southbound is required to merge, despite the latter movement having the higher AADT and peak movement counts.

The findings of this analysis will inform construction work associated with a Preventative Maintenance project (PIN 4490.41) for this location, which is currently funded in the regional Transportation Improvement Program (TIP). Information from this analysis will help New York State Department of Transportation (NYSDOT) personnel determine whether that project can proceed as originally planned or whether updates can be made to deliver a project that better meets community needs.

The NYS Route 104/NYS Route 590 interchange handles less traffic than the I-490/I-590/NYS Route 590 interchange, but it is still a critical junction in the regional transportation network. The AADT for NYS Route 104 within the project area ranges from approximately 61,000 to 65,000. The AADT on NYS Route 590 south of the interchange is approximately 86,000. North of the interchange, northbound traffic on NYS Route 590 is dispersed to NYS Route 104 westbound (AADT of about 18,400) and NYS Route 104 eastbound (AADT of about 15,300), as well as continuing north on NYS Route 590 (AADT of about 8,900) and exiting at East Ridge Road (AADT of about 7,400).

During recent construction activities, alternative pavement markings were installed at this interchange as part of a detour route. Based on traffic counts as well as this real-world experience, NYSDOT is interested in investigating whether making these temporary changes permanent would better serve the traveling public. This investigation is also based on recognizing recent population growth trends, particularly growth and development in the Town of Webster and the western towns of Wayne County along the NYS Route 104 corridor.

Additionally, the existing NYS Route 104/NYS Route 590 interchange, including ramps, was built at a time when consideration of environmental impacts was not given the emphasis that it is today. Reducing the interchange footprint through ramp realignment could free acres of property from pavement and clear-zone requirements, enabling an eventual return to a natural state. Reducing the amount of ground covered by pavement would increase permeable surfaces in the vicinity of the interchange, decrease the cost of annual maintenance operations such as snow clearing, salting, and road-painting, and minimize the cost of future maintenance activities such as pavement resurfacing projects.

C. Tasks

1. Establish a steering committee consisting of representatives from the following agencies: New York State Department of Transportation, Region 4; Monroe County Department of Transportation; City of Rochester; Towns of Irondequoit, Webster, Brighton, Penfield, and Pittsford; Genesee Transportation Council.
2. Develop and issue a Request for Proposals (RFP) for consultant services.
3. Inventory transportation assets within the vicinity of the two project interchanges: The I-490, I-590, and NYS Route 590 interchange and the NYS Route 104 and NYS Route 590 interchange.
4. Develop potential alternate lane reconfigurations for each interchange:
 - 4.a. At the I-490/I-590/NYS Route 590 interchange, focus on the possibility of reallocating pavement space from the I-490 Eastbound to I-590 Southbound movement to the NYS Route 590 Southbound to I-590 Southbound movement.
 - 4.b. At the NYS Route 590/NYS Route 104 interchange, focus on the possibility of reducing the interchange footprint through ramp realignment at NY-590 to NY 104.
5. Model current and projected future travel patterns and conduct model analyses to weigh the alternative concepts against each other. Compare the alternative lane reconfiguration concepts to a no-build concept.
6. Propose a preferred conceptual design alternative for each interchange.
7. Develop a Draft Report that documents the inventory, alternative development process and alternative options, and preferred alternatives.
8. Revise the Draft Report to produce a Final Report with associated Executive Summary and technical documentation.

D. Products

1. Draft Report
2. Final Report with associated Executive Summary and technical documentation
3. Steering Committee meeting materials

E. Public Participation Plan

Per the GTC Public Participation Policy, this project is classified as a Technical/Data Collection Project. Accordingly, no public input activities are required or will be undertaken.

F. Schedule

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| 1. Scope of work approved | July 2020 |
| 2. Consultant selection | September 2020 |
| 3. Project initiation meeting | October 2020 |
| 4. Inventory of assets completed | October-December 2020 |
| 5. Identify alternative configurations | December 2020-January 2021 |
| 6. Traffic modeling completed | February 2021 |
| 7. Propose preferred alternatives | March-April 2021 |
| 8. Draft report completed | May-June 2021 |
| 9. Final report completed | July-August 2021 |
| 10. Financial closeout | September 2021 |

G. Project Budget

Sources of Funds		Uses of Funds	
	<u>FY 2020-21</u>		<u>FY 2020-21</u>
<u>Federal Funds</u>		<u>GTC</u>	
FHWA	\$95,000	Staff	\$0
FTA	0	Contractual	0
Subtotal	\$95,000	Subtotal	\$0
<u>Matching Funds</u>		<u>Other Agency</u>	
State (In-kind)	\$0	Staff	\$0
Local (In-kind)	5,000	Contractual	95,000
Local (Cash)	0	In-kind Exp.	5,000
Subtotal	\$5,000	Subtotal	\$100,000
<u>Total</u>	<u>\$100,000</u>	<u>Total</u>	<u>\$100,000</u>