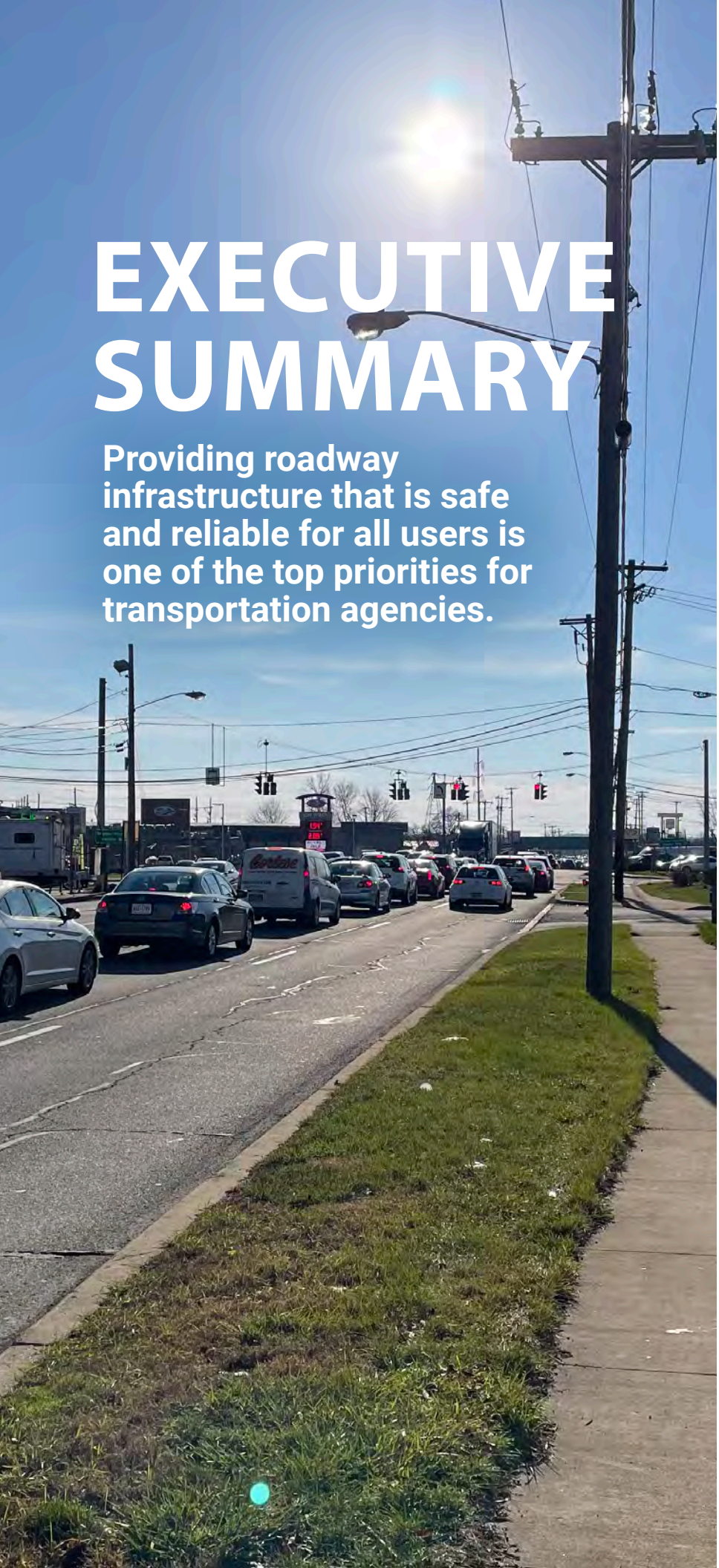
NYS Department of Transportation

NYSDOT Safety Investigations (UPWP #6232)

HIGHWAY SAFETY INVESTIGATIONS REPORT

December 2020



EXECUTIVE SUMMARY

Providing roadway infrastructure that is safe and reliable for all users is one of the top priorities for transportation agencies.

With this goal in mind the New York State Department of Transportation (NYSDOT) Region 4 in collaboration with the Genesee Transportation Council (GTC) completed a detailed Highway Safety Investigation (HSI) for a 1.7 mile stretch of West Henrietta Road (NYS Route 15) extending from Southland Drive (just south of I-390) to Jefferson Road (NYS Route 252) in order to:

1. **Develop a solid understanding of crash patterns by completing a detailed data analysis review; and**
2. **Identify infrastructure improvements and enhancements that minimize the potential for future crashes.**

The NYSDOT Highway Safety Improvement Program, Procedures and Techniques manual was used as a basis for the Safety Investigation Process methodology. This study along with the Active Transportation Plans for the Towns of Brighton and Town of Henrietta as well as the recent Roadway Safety Audit for the corridor, will ultimately serve as the framework for any future corridor safety improvements.

The accident rate for the study corridor was calculated and compared to the Statewide average rate for corridors with the same highway classification. Based on the timeframe studied the accident rate for West Henrietta Road is 9.73 ACC/MVM which exceeds the current statewide urban arterial average rate of 5.81 ACC/MVM. Based on its significant crash history NYSDOT has identified this segment of West Henrietta Road as a high accident location (HAL).

Figure 1: *West Henrietta Road Study Area (source: Bing Maps)*

West Henrietta Road (Route 15)

- 1.7-mile multi lane Urban Arterial
- Residential and Commercial Access
- Mixture of Signalized and Unsignalized Intersections
- Characterized by closely spaced commercial driveways, non-continuous sidewalk, and several transit stops.

BY THE NUMBERS

599
total crashes evaluated

3-year
Study Period from 11/1/2015 to 10/30/2018

9.73
ACC/MVM
accident rate

Of the 599 crashes evaluated, 108 involved injuries, 294 involved property damage only (≥ $1000 in value), 196 were non-reportable (≤$1000), and there were no fatalities recorded. Vulnerable user crashes involving pedestrians, bicyclists, and motorcyclists were also evaluated. There were eight (8) crashes involving pedestrians, five (5) crashes involving bicyclists, and six (6) crashes involving motorcyclists. Crash locations were then plotted on diagrams to identify specific clusters and patterns. Several patterns were identified at intersections, driveways, and mid-block locations.

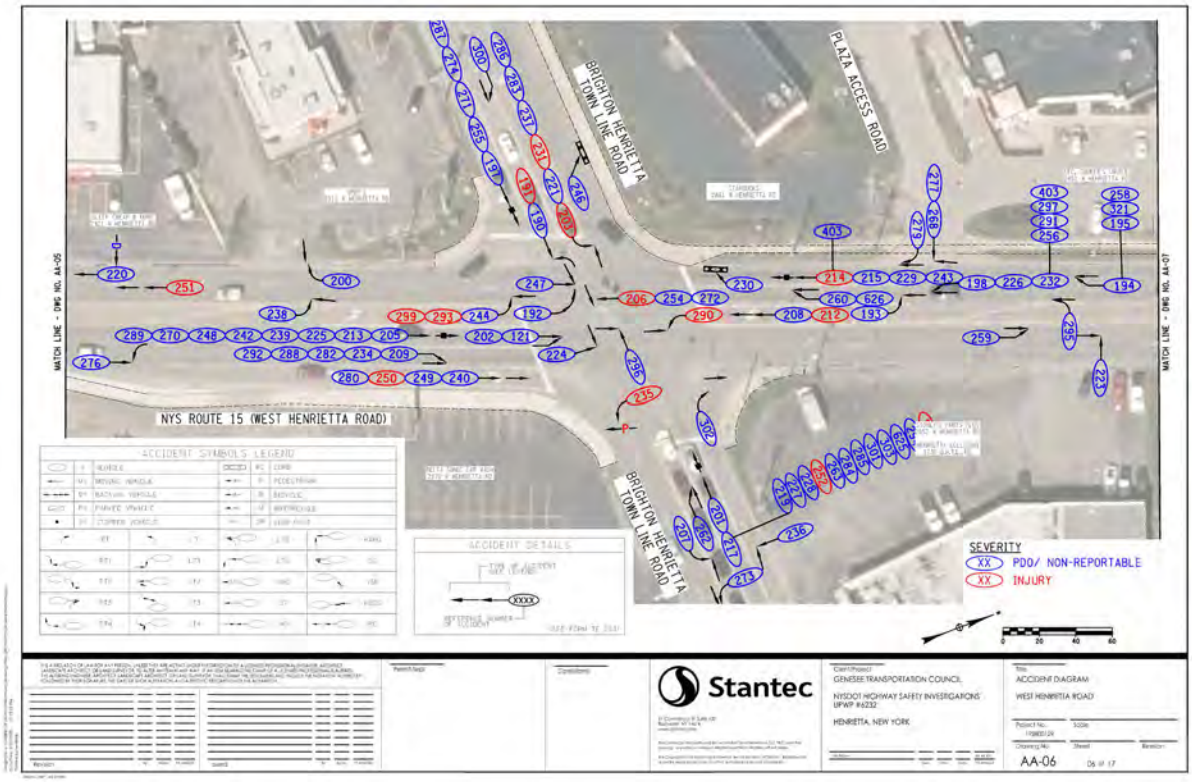


Figure 2: *West Henrietta Road Collision Diagram*

Within the study limits, both the signalized and unsignalized intersections were the largest contributors of crashes. Predominate intersection crash types included rear end, left turn, overtaking and right angle. Identified contributing factors for these crashes included visibility issues, distracted driving, aggressive behaviors, and excessive queuing. Corridor-wide, there were patterns related to courtesy crashes at various driveways. To validate these patterns and assess potential contributing factors , corridor field investigations were conducted during the weekday morning peak period (7:00 – 9:00AM) and during the evening peak period (4:00 – 6:00PM) on January 7, 2020 and February 11, 2020, respectively. These times reflect normal commuter periods and typically result in the heaviest traffic volumes and higher than average crash potential.

TABLE 1: WEST HENRIETTA ROAD CRASH BREAKDOWN

Number and % of Crashes															
Collision Type															
Road	**Rear End**	**Left Turn**	**Overtaking**	**Right Angle**	**Right Turn**	**Unknown**	**Fixed Object**	**Sideswipe**	**Pedestrian (1)**	**Bicycle**	**Head On**	**Animal**	**Backing**	**Driveway**	**Total**
West Henrietta Road	**235**	**124**	**98**	**68**	25	15	9	8	8	5	4	2	1	0	**599**
Percent of Total	**39%**	**21%**	**16%**	**11%**	4%	3%	2%	1%	1%	0.8%	0.7%	0.3%	0.2%	0%	**100%**

1. Includes crashes both directly and indirectly involving pedestrians

After reviewing each pattern and investigating possible causes, recommendations were then developed with the goal of reducing the future crash potential for all corridor users. These recommendations are consistent with both the Town of Henrietta (2016) and Town of Brighton (2012) Active Transportation plans as well as the West Henrietta Road Roadway Safety Audit (2018) and include improvements at both the intersection level and corridor wide. Both short term and long-term safety enhancements have been identified to allow for phased implementation as future project funding becomes available and corridor development is progressed.

Recommendations to Improve Safety for Vulnerable Users

Safety enhancements to provide a safer experience for vulnerable users such as pedestrians and bicyclists include improvements to the ped/bike network along the corridor to provide enhanced connectivity as well as establishing a continuous ADA accessible route per the guidance of the NYS Pedestrian Safety Action Plan.

- **Improve sidewalk networks, corridor lighting, and consider bicycle facilities per the most recent AASHTO guidance**
- **Upgrade pedestrian facilities to include hi-viability crosswalks and pedestrian signals**
- **Evaluate the location of transit stops to support the Reimagine RTS Route 14 as well as RIT and U of R services**

Example Pedestrian Facilities

Recommendations to Improve Intersection Safety

Intersections safety enhancements include both infrastructure and traffic signal improvements to address crash patterns such as rear end, left turns, right angle, and overtaking crashes.

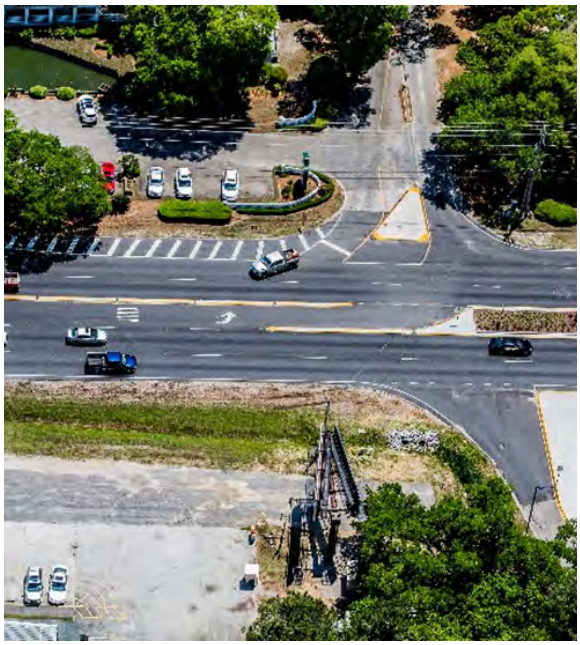
- **Install traffic signal backplates, additional signal heads, flashing yellow left turn arrows and/or replace existing signals with far side mast arm signals.**
- **Assess commercial driveway widths and evaluate side street alignments to improve visibility.**

Example Signal Backplates

Recommendations to Improve Corridor Safety

Outside of the intersection safety enhancements there are several corridor wide operations and safety improvements that should be evaluated.

- **Traffic signal coordination to improve progression and minimize peak hour congestion**
- **Access management practices to address crashes associated with the high density of commercial driveways**
- **Limit left turns into or out of driveways and/ or assess the feasibility of a center median in lieu of the center left turn lane**



Example left turn restrictions

Several future interchange configuration improvements at Jefferson Road were reviewed in light of the current crash patterns. These potential configurations include an at grade intersection (removal of the Jefferson Road Bridge), a Diverging Diamond interchange, a Median U-Turn interchange, and a Displaced Left turn intersection. While each option provides an opportunity to mitigate the current crash patterns, each also presents new challenges related to driver expectations, pedestrian safety, and operations.

Jefferson/Route 15 intersection