HOOSICK ROAD CORRIDOR STUDY

Draft Final Report

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Prepared for:

Town of Brunswick

Capital Region Transportation Council

By:

Creighton Manning

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Chapter 1 – Introduction

The Hoosick Road Corridor Study is funded by the Town of Brunswick and the Capital Region Transportation Council (Transportation Council) through the Transportation Council's 2022-2023 Community and Transportation Linkage Planning Program to identify transportation network improvements on Hoosick Road (NY Route 7) from Lake Avenue in the City of Troy to Sweetmilk Creek Road in the Town of Brunswick.

Hoosick Road is a heavily used, major roadway that is a fundamental component of both the local Brunswick street network and the greater Capital Region highway system. As a regional corridor, Hoosick Road serves as a primary route between Vermont and the New York State Thruway, facilitating interstate freight movement and tourism. However, Hoosick Road is also a local destination. As a commercial corridor, Hoosick Road provides access to numerous businesses of varying sizes ranging from local stores to national franchises. Commercial developments over the past decade have generated new traffic in the corridor, resulting in an increased need for Hoosick Road to serve both local traffic and a large amount of vehicular through traffic, totaling upwards of 25,000 vehicles per day in parts of the corridor. This need is compounded by the fact that although Route 2 may provide an alternate route for regional traffic, there are generally no parallel roads to provide alternative routes for local traffic.

IMAGE 1.1: TYPICAL CONGESTION EAST OF N. LAKE AVENUE

Due to increased traffic volumes and competing needs of mainline traffic progression and side-street access, Hoosick Road often experiences peak period traffic congestion. The Transportation Council Congestion Management Process identifies Hoosick Road as one of the most congested corridors in the

region with excessive peak hour delays. Likewise, Town of Brunswick staff observe that Hoosick Road users experience significant travel delay during peak hours and at intersections when making left turns onto Hoosick Road. These observations, combined with potential growth in the corridor from planned residential and commercial developments, result in a need for a comprehensive review of the Hoosick Road corridor.

This study will attempt to propose feasible recommendations that promote safety for all roadway users in a manner that balances the competing needs of different modes and enhances community quality of life. This study evaluates existing multi-modal conditions and needs, and a full range of concepts to recommend the most feasible and context appropriate improvements for this corridor. A robust stakeholder and community driven process is being used throughout the study and during development of the recommendations.

Study Approach

A Study Advisory Committee (SAC) was established to guide this study, and review and provide feedback on interim and final study products. SAC members included staff from the Town of Brunswick, Capital Region Transportation Council (Transportation Council), New York State Department of Transportation (NYSDOT) Region 1, Capital District Transportation Authority (CDTA), Capital District Regional Planning Commission (CDRPC), Rensselaer County, City of Troy, and residents of the adjacent neighborhoods. A Technical Advisory Committee (TAC) comprised of the Town Supervisor, the Transportation Council Project Manager, and NYSDOT, was also formed to review progress and advance the study. Specific SAC and TAC committee members are listed in the project's Public Participation Plan.

The goal of these committees is to share technical information, provide input on public outreach materials, enable informed decision-making, help shape the draft and final study recommendations, and provide overall guidance on the study as it progresses. The cross-section of agencies and interests on these committees, combined with the open public process, helps to ensure that diverse views are represented and the plan is comprehensive and publicly supported.

Recommendations presented in this study will use a Complete Streets approach to ensure consideration of all roadway users regardless of travel mode or ability. While recommendations will be evaluated to the extent possible for a planning study, they are conceptual and presented to characterize the types of improvements that are desirable, and that may be implemented as part of future land use and transportation improvement projects. All transportation concepts will require further engineering evaluation and review.

Study Purpose

At the outset of the study, the Study Advisory Committee (SAC) discussed and established the following Study Purpose Statement, which establishes the basis for consideration of concepts, and future expenditures.

Study Purpose:

The purpose of this study is to develop recommendations for reducing traffic congestion, improving safety, and improving multimodal mobility on Hoosick Road from Lake Avenue in the City of Troy to Sweetmilk Creek Road in the Town of Brunswick.

Study Area/Network Context

The primary study area is an approximate 2.5 mile segment of Hoosick Road (NYS Route 7) from the Lake Ave intersection (in the City of Troy) to Sweetmilk Creek Road in the Town of Brunswick. Beyond the Hoosick Road corridor, the secondary study area encompasses the adjacent neighborhoods, as shown in Figure 1.1. From a network standpoint, the study area lacks nearby parallel routes, so the majority of local traffic and through traffic is funneled to the corridor.

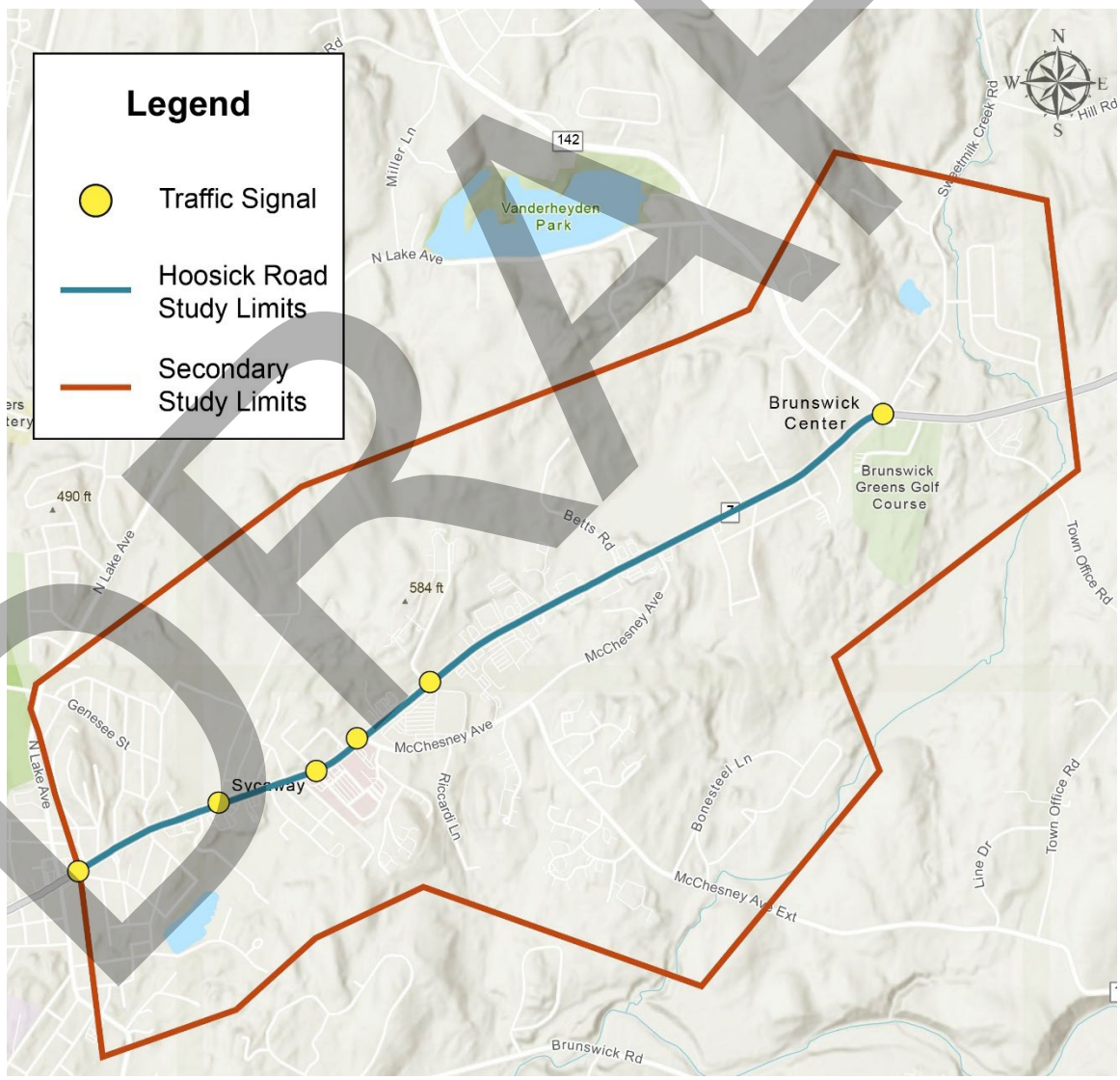


FIGURE 1.1 – STUDY AREA

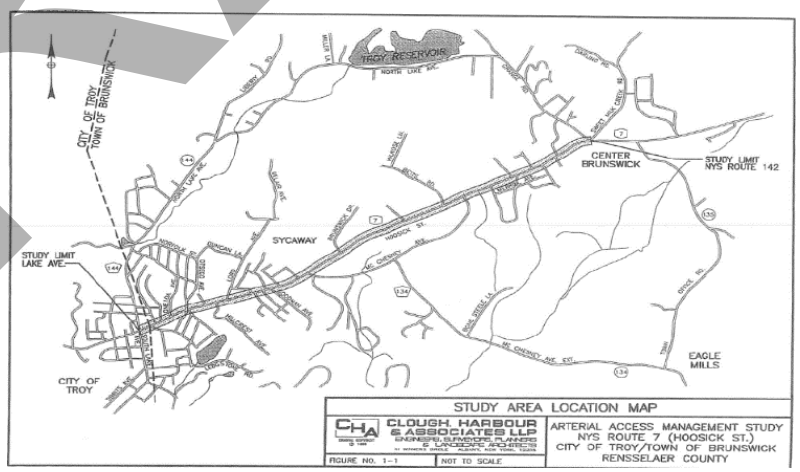
PREVIOUS STUDIES

A number of previous studies pertain to the corridor.

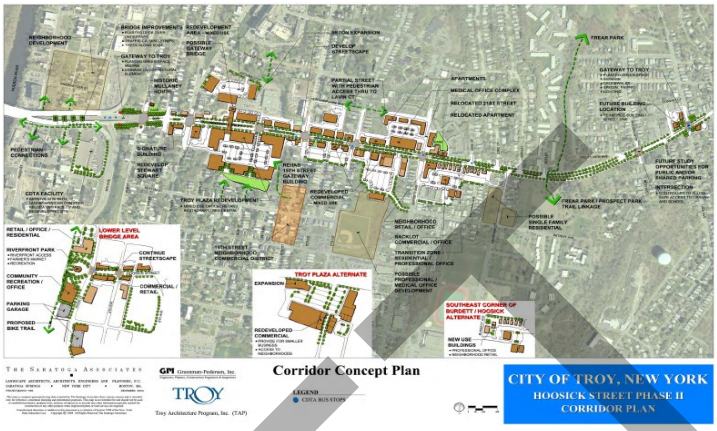
NYSDOT PIN 1306.53 Final Design Report/Environmental Assessment (1999). In 1999 NYSDOT published this report which documented the need for improvements to Hoosick Road, documented design alternatives and environmental considerations, and identified a preferred design alternative for the segment of NY Route 7 (Hoosick Road) from the Troy City Line to NY Route 142 (Grange Road). Based on the analysis and public comments, Hoosick Road was widened to accommodate construction of the cross-section that currently exists. The design report also examined a five-lane configuration on Hoosick Road, which was determined to be a non-feasible alternative due to excessive impacts and project costs due to ROW acquisition.

Town of Brunswick Comprehensive Plan (2013). In 2013, the Town published an updated comprehensive plan to guide development in the Town by establishing a framework for future public and private investments to achieve desired future land use and development patterns in line with the Town's vision of preserving its natural beauty and resources, agricultural heritage, and high quality of life for existing and future residents. Transportation goals identified in the plan include improving and maintaining the integrity and capacity of major arteries, addressing congestion issues, and improving accessibility for residents and business patrons, as well as encouraging the development of a safe and efficient transportation network that considers all modes of transportation to satisfy existing and future needs of the community. Specific recommendations that pertain to Hoosick Road include reducing traffic congestion, identifying access management solutions to improve traffic circulation, encouraging shared driveway access, and improving pedestrian circulation and safety.

NYSDOT Arterial Access Management Report, NYS Route 7, Lake Avenue to Route 142 (2000). This study was prepared to examine the existing land use and access patterns within the NYS Route 7 corridor from Lake Avenue to NYS Route 142 with the goal of applying access management principles to preserve the utility of the arterial. The study presents recommendations for long-term improvements to meet this objective. The long-term improvements include applications of transportation and land-use tools that may be implemented to further enhance traffic operations in the corridor and to reduce the dependence on Route 7 for direct access to adjacent land uses. These long-term strategies include recommendations for future signal placement, new collector/service roads, consolidation of access, and shared parking.



Hoosick Street Phase II Corridor Plan (2004). The City of Troy completed a Phase I Corridor Study of Hoosick Street in February 2000. This study concluded that physically enhancing the existing corridor to promote pedestrian safety, improve local traffic access and circulation, minimize impacts of arterial traffic, preserve the character of residential neighborhoods, and mitigate land use conflicts should be the preferred alternative. The Phase I study contained a series of broad recommendations for land use management, physical enhancement, and redevelopment in the corridor. The ideas generated in that initial study of the corridor served as a starting point for the Phase II Study, which provides a detailed implementation plan for moving forward with engineering and construction of the recommended improvements.



CDTC Regional Freight and Goods Movement Plan (2016). This report examined freight and goods movement in the Capital Region and established a Freight Priority Network (FPN). The FPN is a designated system of routes that facilitate efficient and safe truck mobility within, to, and from the region, and includes a hierarchy of route types ranging from major routes which are generally designed, operated, and constructed to accommodate significant truck volumes, minor routes which provide mobility between major industrial and logistics origins and destinations and the major routes, and connectors which provide access between major and minor routes and individual destinations or small clusters of logistics activities. The report classifies Hoosick Road as a minor route.

CDTC Capital District Trails Plan (2019). This plan developed an updated vision for a connected network of trails throughout the Capital District. Concepts developed in the plan are categorized into core trails which act as primary transportation highways for non-vehicular travel, often connecting to areas outside the four-county region and usually linking together multiple towns or population centers, and supporting trail networks which provide secondary connections serving lower population areas, providing alternative routes, choices, and access to the larger system. Although six core trails and 10 supporting trail network segments are identified in the plan for Rensselaer County. None are within the Hoosick Road study area.

Capital District Trails—Rensselaer

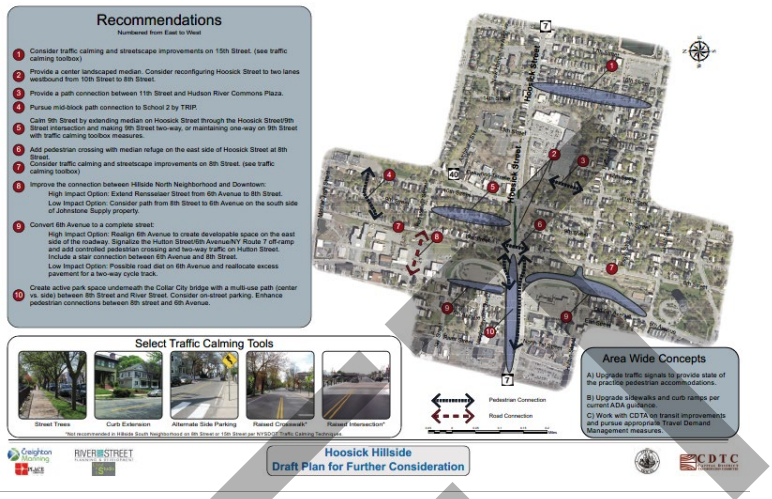
Core Trails

G	Albany Hudson Electric Trail (AHET)
H	Rensselaer Riverwalk/RPI Trail
I	South Troy Riverfront Bikeway
J	Uncle Sam Bike Trail
K	River Road
L	River to Ridge Path

Supporting Trail Network

15	Uncle Sam to Mahican Trail Link
16	Mahican Trail
17	Tomhannock North Ridge Run
18	Empire State – Rensselaer Plateau Link
19	Wynantskill Trolley Path
20	Rensselaer Plateau Ridge
21	Corkscrew Rail Trail
22	Nassau – Stephentown Path
23	Schodack—Papscanee Connection
24	Hoosick to Bennington

Hoosick Hillside Study (2020). This study identified improvements to connect the Hillside North and Hillside South neighborhoods, as well as the Hudson River and Downtown Troy to support the City of Troy's efforts to improve pedestrian and bicycle connectivity and calm traffic in these neighborhoods, promoting access to goods and services, and improving quality of life for neighborhood residents. The recommendations include traffic calming in the neighborhoods north and south of Hoosick Street, pedestrian connections to 6th Avenue and Hudson River Commons, and a concept for a raised median on Hoosick Street at 8th Avenue to facilitate pedestrian crossings and simplify traffic operations to and from the Collar City Bridge.



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Chapter 2 – Existing Conditions

ZONING

The purpose of zoning is to positively shape the community by regulating building size (height and width), lot coverage (placement of buildings), density, and land use by type. The study area zoning is shown on Figure 2.1, and is comprised of primarily commercial uses adjacent to the study corridor, with residential uses setback from the corridor.

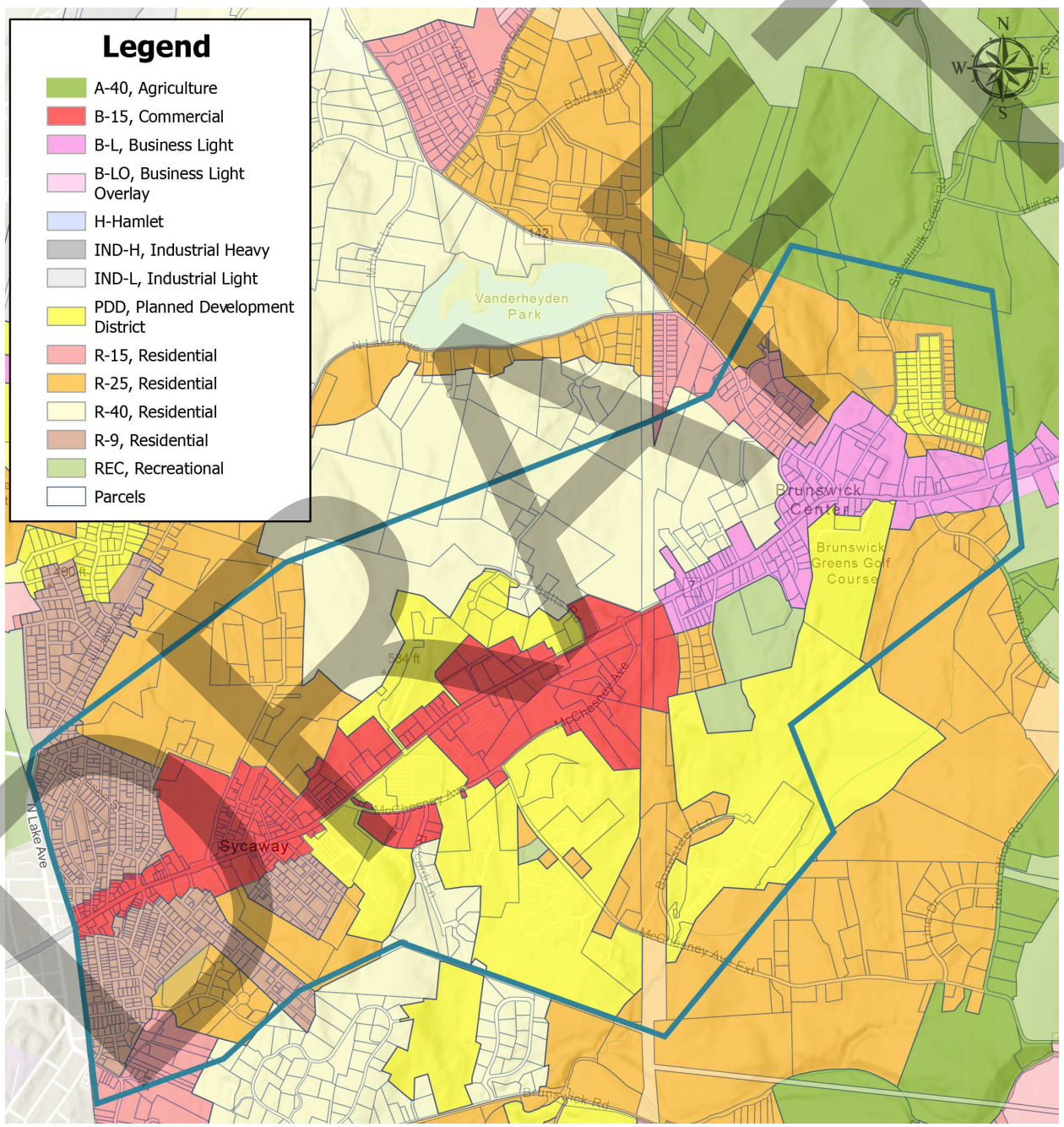


FIGURE 2.1 – EXISTING ZONING

LAND USE

Land use in the study area primarily consists of commercial uses on both sides of the corridor, although several residential uses are located along Hoosick Road, generally between Brunswick Drive and Grange Road (NY 142). Within the secondary study area, land use is primarily residential or agricultural. Figure 2.2 shows the variety of land uses within the corridor.

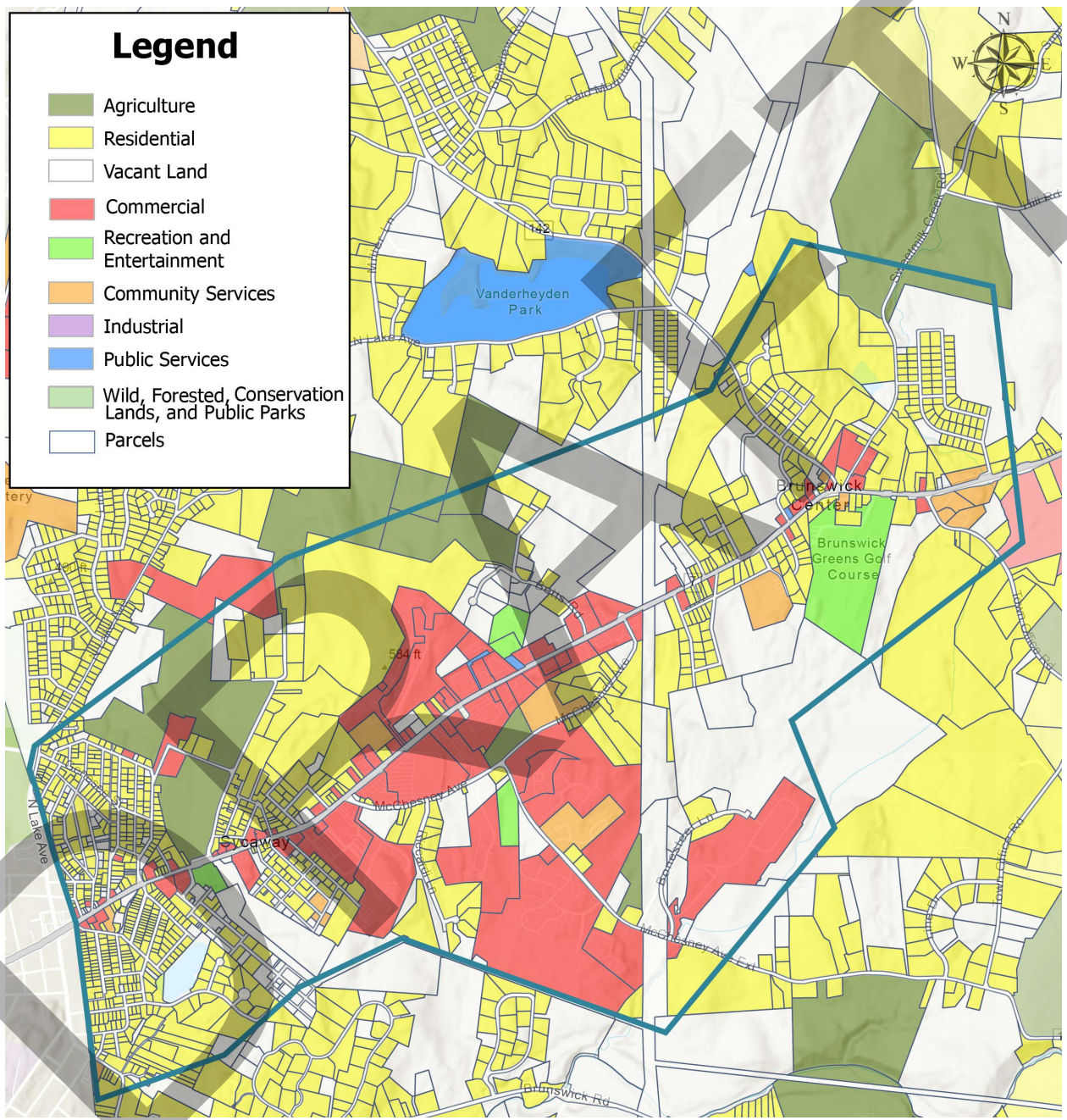


FIGURE 2.2 – EXISTING LAND USE

TRANSPORTATION INFRASTRUCTURE

Hoosick Road (NY Route 7) is an Urban Principal Arterial on the National Highway System (NHS) which provides east-west travel through the Town of Brunswick. In general, Hoosick Road is a 3-lane roadway with a 10 ½ foot wide travel lane in each direction, and a twelve-foot wide two-way left turn lane. The roadway widens between Roosevelt Avenue and Brunswick Drive to provide an additional eastbound travel lane; resulting in a 4-lane cross section. The typical right of way width is approximately 60 to 70 feet +/- from back of sidewalk to back of sidewalk.

IMAGE 2.1 – TYPICAL VIEW OF HOOSICK ROAD IN THE STUDY AREA

Sidewalks are present along both sides of Hoosick Road from North Lake Avenue to the eastern intersection with McChesney Avenue. East of the eastern McChesney Avenue intersection, sidewalks are provided on the south side only. Sidewalks vary in width from four to five feet wide for most of the corridor. Marked crosswalks with pedestrian push buttons are present at each of the signalized intersections.

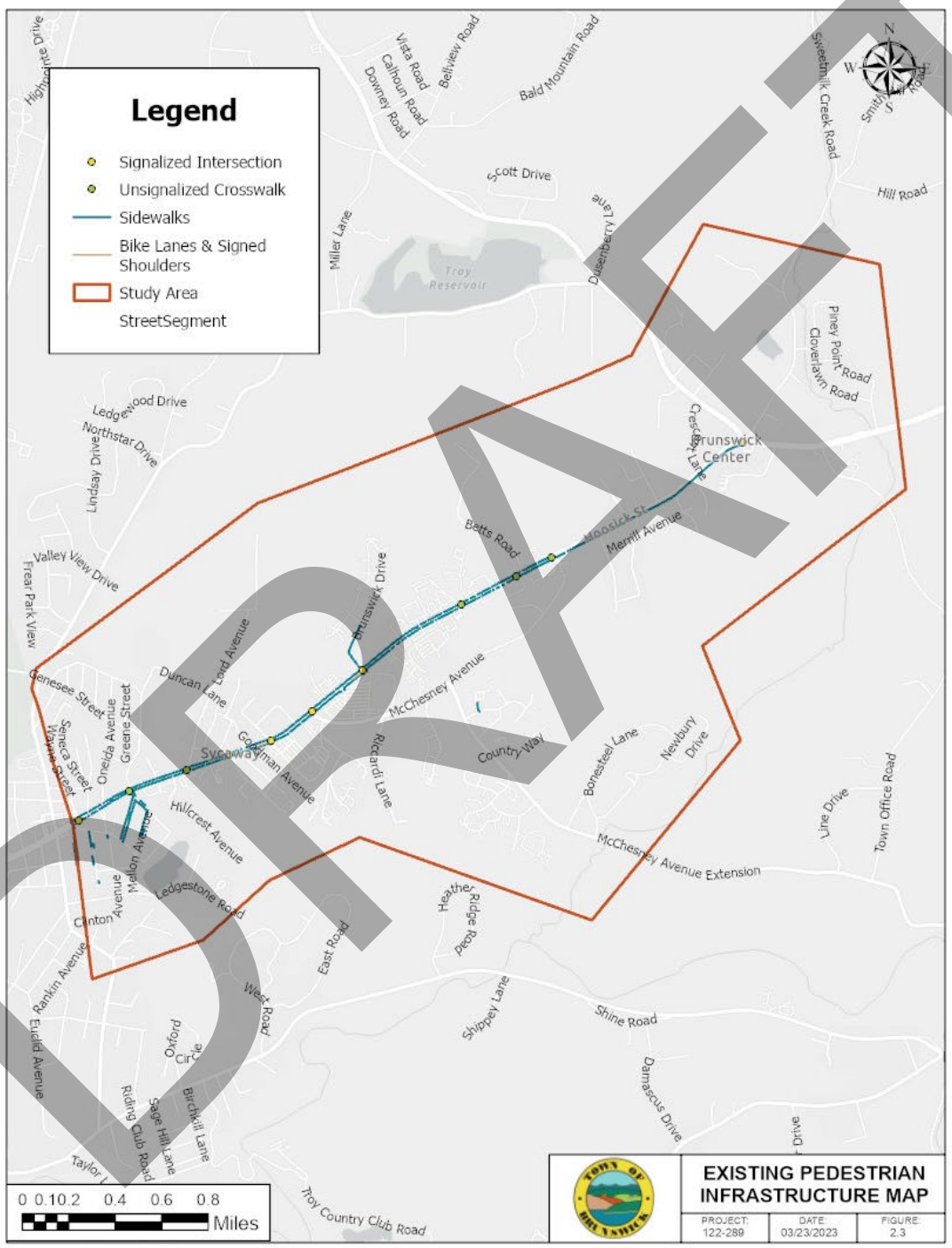


FIGURE 2.3 – EXISTING PEDESTRIAN INFRASTRUCTURE

Traffic signal timing and phasing data provided by NYSDOT indicates that signal coordination varies within the corridor. Specifically, the Roosevelt Avenue and McChesney Avenue (west) signals are coordinated during the morning, midday, and evening peak periods to prioritize eastbound traffic progression. Additionally, these signals are coordinated with the Brunswick Drive signal during the morning peak hour, although Brunswick Drive operates in free mode during other periods of the day. The remaining signals in the corridor are operating in free mode (not coordinated.) Signal coordination will be explored further during the concept development phase of this study.

Data published by the New York State Department of Transportation in the *2021 Pavement Data Report* indicates that the pavement on Hoosick Road in the study area is generally in good condition (Rated 7 or 8) with distress beginning to show. It is noted that pavement condition in the west end of the study area is generally worse (Rated 6) while areas adjacent to new construction or recent roadwork are in excellent condition (Rated 9).

TRAFFIC DATA COLLECTION

Due to the variable nature of the Hoosick Road corridor, traffic observations were conducted in two phases, with the first phase intended to assess typical travel patterns and peak periods, while the second phase focused on collecting more detailed data for traffic modeling.

The first phase of traffic data collection was conducted in December 2022 and included the installation of automatic traffic recorders (ATRs) at three locations on Hoosick Road to identify peak travel periods for further analysis and traffic modeling. Specifically, ATRs were installed on the segments of Hoosick Road west of Hillcrest Avenue, west of Brunswick Drive, and west of Grange Road (NY 142) for a one-week period to record daily traffic volumes, peak travel times, and travel speed information. Figure 2.4 illustrates the average daily two-way traffic at each location by day type.

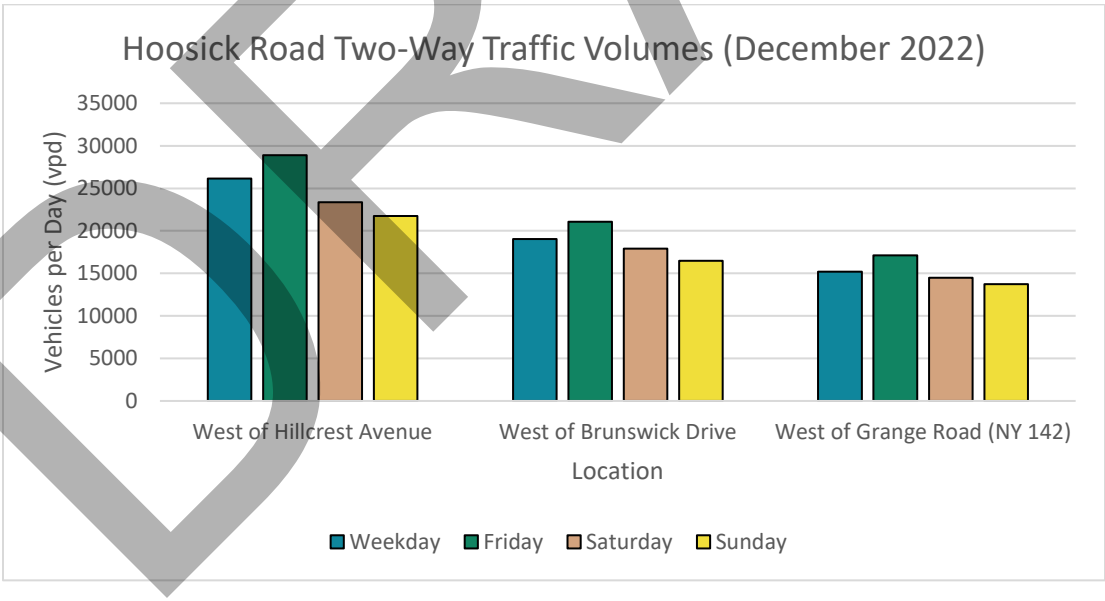


FIGURE 2.4 – HOOSICK ROAD TWO-WAY TRAFFIC VOLUMES (DECEMBER 2022)

The figure shows that traffic volumes are generally highest in the west end of the corridor and gradually decrease further east as vehicles access destinations within the corridor. Fridays experienced the

highest traffic volumes, followed by the typical weekday period, with Saturday and Sunday volumes being lower overall. Figure 2.5 illustrates the hourly variation in two-way traffic for the segment west of Hillcrest Avenue and indicates that Hoosick Road does not have the traditional morning and evening rush hours that are seen on primarily commuter roads, but instead has a long traffic plateau from late morning through 6:00 p.m. This trend is further pronounced on Fridays with the peak period occurring midday from 12:00 p.m. to 2:00 p.m.

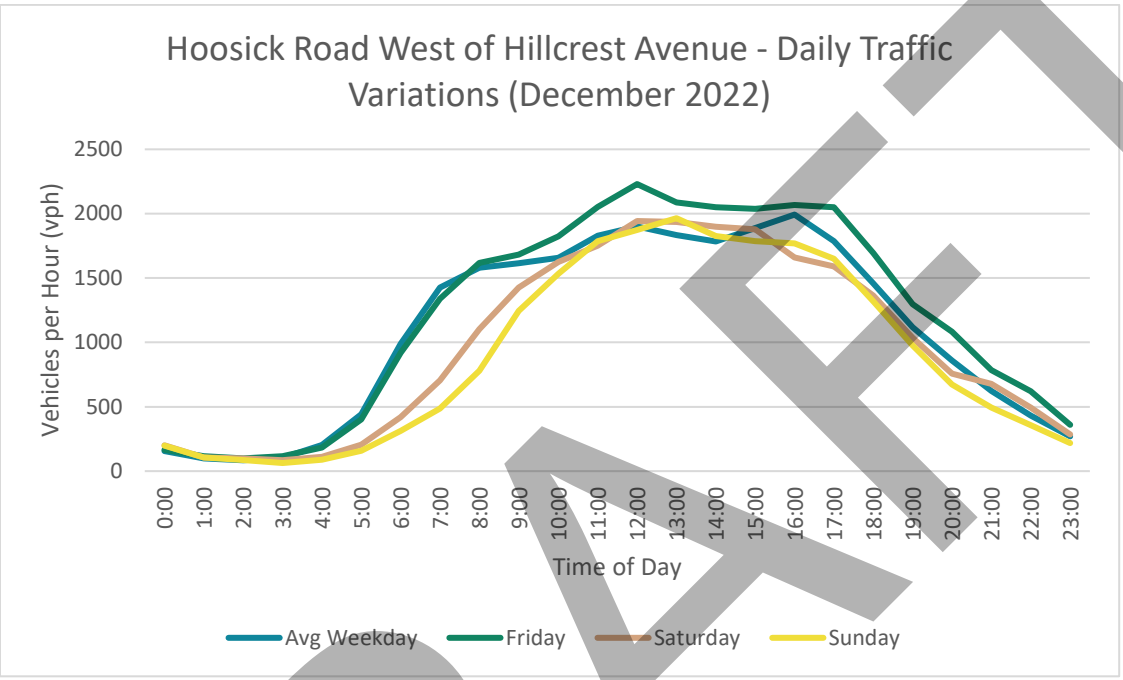
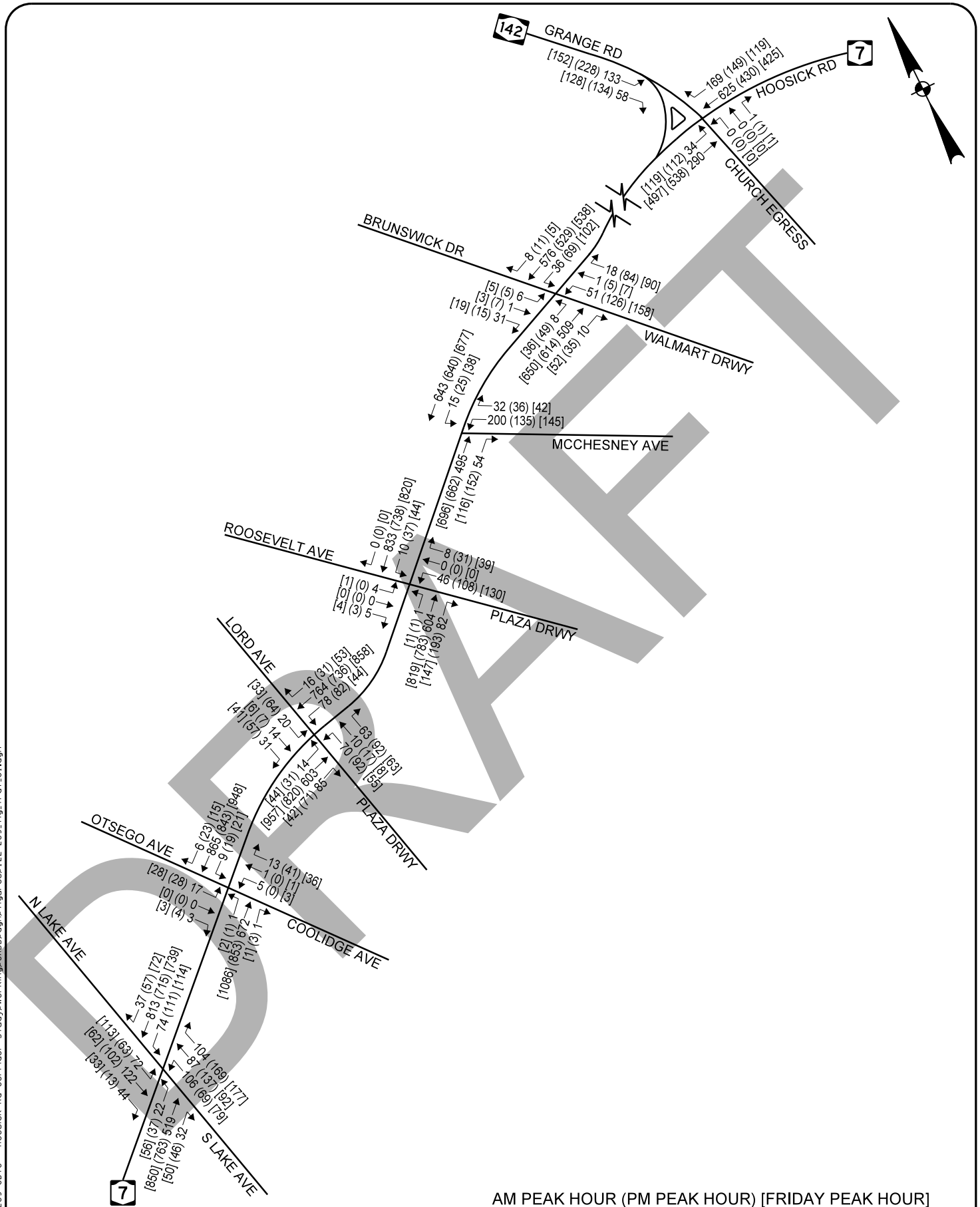


FIGURE 2.5 – HOOSICK ROAD DAILY TRAFFIC VARIATIONS (DECEMBER 2022)

The second phase of data collection conducted in March 2023 included ATRs at the three locations from phase 1 for comparison to the December 2022 counts, as well as intersection turning movement counts (TMCs) at the six signalized intersections on Hoosick Road within the study area and the unsignalized intersection at Hoosick Road/Coolidge Avenue/Otsego Avenue to facilitate the development of a traffic simulation model. The TMCs were completed during the peak periods identified in the first phase of data collection as noted above and balanced where appropriate. It is noted that due to the variable nature of the corridor, the observed Friday peak hour volumes on the west end of the corridor were approximately 35 percent lower than the previous December 2022 counts. As such, adjustment factors were applied to the Lake Avenue, Lord Avenue, and Roosevelt Avenue intersections for the Friday peak period to account for seasonal variations. The factored volumes are shown in Figure 2.5.



AM PEAK HOUR (PM PEAK HOUR) [FRIDAY PEAK HOUR]

EXISTING PEAK HOUR
TRAFFIC VOLUMES

HOOSICK ROAD CORRIDOR STUDY
RENSSELAER COUNTY, NEW YORK

Creighton Manning

PROJECT: 122-289	DATE: 05/2023	FIGURE: 2.6

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TRAFFIC FORECASTS

The Transportation Council maintains a travel demand model for the four-county region called the STEP Model (Systematic Transportation Planning and Evaluation Model). The STEP Model is based on population, housing and employment data and estimates traffic volumes based on demand. These estimated volumes are compared against actual traffic counts to validate the model. Each trip in the model simulation chooses a path based on the best travel time available, and as congestion increases, trips divert to alternate routes if the alternate route travel time is less. The Transportation Council STEP Model utilizes Visum software developed by the PTV Group. The model includes 1,000 traffic analysis zones that cover the entire four counties of Albany, Rensselaer, Saratoga and Schenectady. The network includes all federal aid highways in the four counties, as well as selected streets not on the federal aid system. The network consists of over 11,100 directional links and over 4,300 nodes.

Future traffic volume forecasts were prepared for the year 2045 to examine the operational characteristics of the corridor for an approximate 20-year horizon. The Transportation Council's STEP model was used to develop a background growth rate of 0.1 percent per year which was applied to the existing traffic volumes.

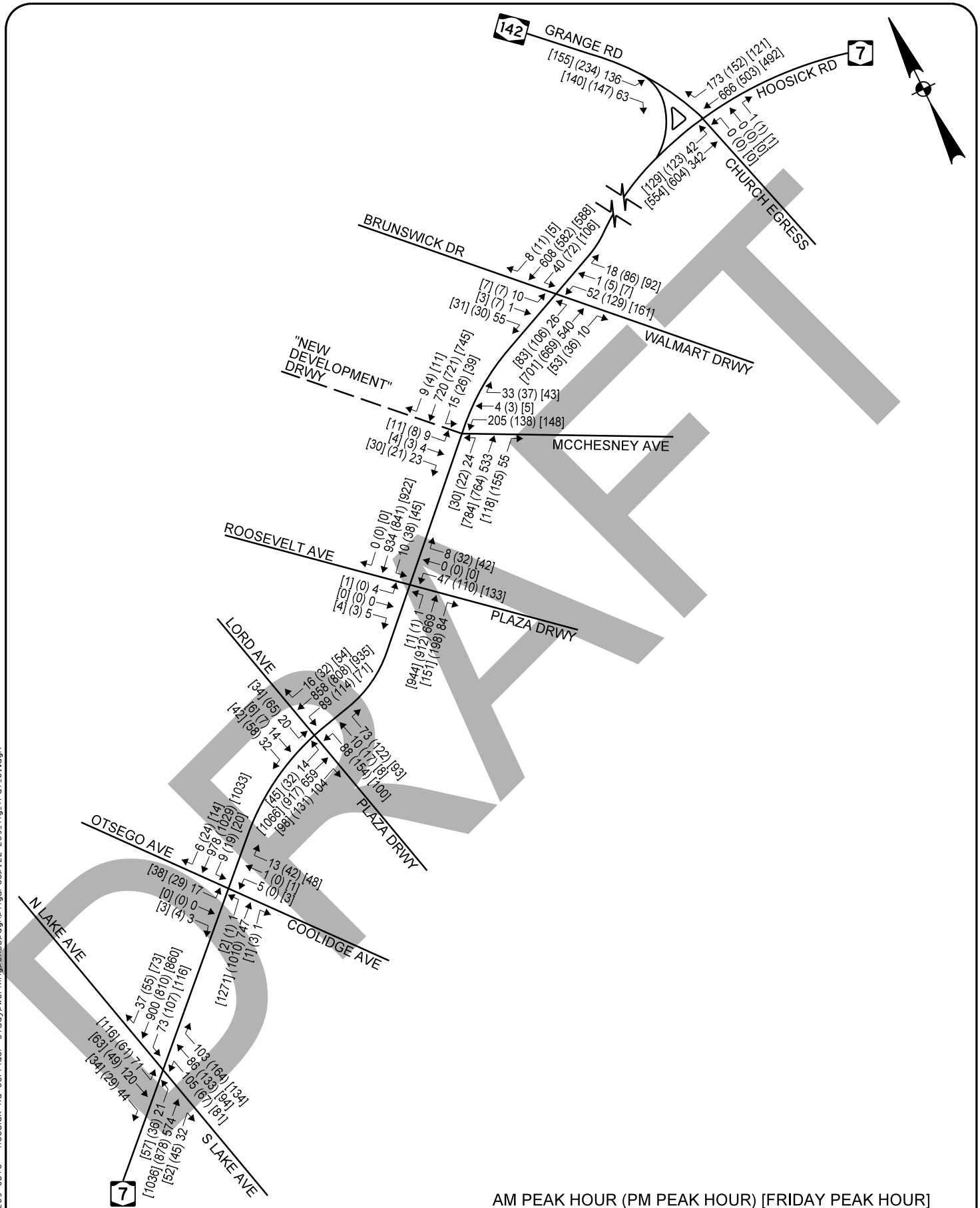
In addition, traffic generated by specific nearby pending projects was estimated and included in the forecasts. Table 2.1 shows pending and speculative projects provided by the Town.

TABLE 2.1 – PROPOSED DEVELOPMENTS AS OF APRIL 2023

ID	Development	Size	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
1	Betts Road Multi-family	250 Apartment Units	24	76	100	80	48	128
2	Betts Road Single-Family	8 Single Family Homes	1	5	6	5	3	8
3	Aldi	17,825 SF Grocery Store	10	2	12	81	80	161
4	Marise Muse (Opposite McChesney)	4,250 SF Retail, 2,350 SF Restaurant	60	58	118	55	52	107

The trips corresponding to proposed developments were distributed on the roadway network and added to the existing traffic volumes with background growth to develop the 2045 forecast volumes. The results indicate that traffic in the corridor is anticipated to increase by approximately 10 to 15 percent by 2045.

The resulting traffic forecast design hour volumes are shown Figure 2.7



AM PEAK HOUR (PM PEAK HOUR) [FRIDAY PEAK HOUR]

2045 FORECAST
TRAFFIC VOLUMES

HOOSICK ROAD CORRIDOR STUDY
RENSSELAER COUNTY, NEW YORK

Creighton Manning

PROJECT: 122-289	DATE: 05/2023	FIGURE: 2.7

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TRAFFIC OPERATIONS

Intersection Level of Service (LOS) and capacity analysis relate traffic volumes to the physical characteristics of an intersection. Evaluations of the signalized intersections were made using Synchro11 software, which automates the procedures in the Highway Capacity Manual published by the Transportation Research Board (TRB). Levels of service range from A to F, with LOS A conditions considered excellent (less than 10 seconds of delay) while LOS F represents conditions with very long delays (greater than 50 seconds at unsignalized intersections or 80 seconds at signalized intersections). Table 2.2 summarizes the existing LOS results in the study corridor.

TABLE 2.2 – LEVEL OF SERVICE SUMMARY

Intersection Approach		Control	2023 Existing			2045 Forecast		
			AM Peak Hour	PM Peak Hour	Friday Peak Hour	AM Peak Hour	PM Peak Hour	Friday Peak Hour
Hoosick Road/Lake Avenue		S						
Hoosick Road EB	L		B (12.4)	B (10.4)	B (12.1)	B (13.8)	B (11.6)	B (12.3)
	T, TR		B (14.5)	B (13.2)	B (15.4)	B (14.9)	B (15.7)	B (16.9)
Hoosick Road WB	L		B (11.0)	B (10.3)	B (12.0)	B (11.1)	B (12.3)	B (15.6)
	T, TR		B (14.5)	B (11.6)	B (13.3)	B (15.3)	B (13.8)	B (17.1)
S. Lake Avenue NB	L		D (43.6)	D (51.6)	D (52.9)	D (43.7)	D (50.6)	D (51.6)
	T		D (52.5)	E (71.8)	E (67.2)	D (52.3)	E (66.9)	E (62.2)
	R		D (46.8)	D (52.9)	D (54.4)	D (46.6)	D (49.6)	D (51.7)
N. Lake Avenue SB	L		D (49.5)	D (52.9)	D (53.4)	D (50.2)	D (53.7)	E (57.8)
	TR		E (67.1)	E (63.8)	E (62.2)	E (69.9)	E (69.2)	E (63.8)
	Overall		C (24.7)	C (23.7)	C (24.0)	C (24.6)	C (24.4)	C (25.0)
Hoosick Road/Coolidge/Otsego Avenue		U						
Hoosick Road EB	L		B (10.7)	B (10.7)	B (14.6)	B (12.1)	B (12.3)	C (17.5)
Hoosick Road WB	L		A (9.0)	A (9.8)	B (10.7)	A (9.3)	B (10.6)	B (11.8)
Coolidge Avenue NB	LTR		C (15.6)	C (17.1)	C (22.8)	C (17.6)	C (20.7)	D (29.9)
Otsego Avenue SB	LTR		C (20.5)	D (26.9)	E (39.0)	C (24.7)	E (38.0)	F (63.2)
	Overall		B (13.9)	B (16.1)	C (21.8)	B (15.9)	C (20.4)	D (30.6)
Hoosick Road/Lord Avenue		S						
Hoosick Road EB	L		B (14.7)	B (16.7)	C (19.2)	C (20.5)	C (25.3)	C (27.5)
	TR		C (22.1)	E (68.7)	E (67.8)	D (36.5)	F (187.4)	F (168.8)
Hoosick Road WB	L		B (11.5)	B (17.3)	B (16.5)	B (14.7)	B (18.2)	B (17.0)
	TR		B (20.1)	C (23.9)	D (39.4)	D (36.1)	D (54.0)	E (70.4)
Plaza Driveway NB	L		D (37.1)	D (39.8)	C (34.7)	D (38.2)	D (41.4)	D (40.7)
	TR		D (35.4)	D (35.7)	C (34.2)	D (35.1)	D (37.7)	D (35.9)
Lord Avenue SB	L		D (37.2)	D (36.6)	C (36.1)	D (37.1)	D (37.0)	D (36.6)
	TR		D (38.5)	D (35.7)	D (35.8)	D (38.6)	D (39.7)	D (37.9)
	Overall		C (22.4)	D (44.6)	E (51.0)	D (35.3)	F (106.3)	F (109.3)
Hoosick Road/Roosevelt Avenue		S						
Hoosick Road EB	L		C (24.0)	B (17.1)	C (21.1)	C (21.8)	B (18.0)	B (18.8)
	T		D (38.4)	C (24.7)	E (53.7)	C (31.7)	C (33.8)	D (47.7)
	R		B (19.0)	B (11.6)	B (16.8)	B (14.8)	B (11.1)	B (12.2)
Hoosick Road WB	L		B (11.8)	B (19.1)	D (35.8)	B (11.6)	C (32.9)	D (38.7)
	TR		C (24.8)	D (48.9)	C (30.7)	C (20.3)	C (33.3)	C (29.2)
Plaza Driveway NB	LT		E (65.6)	E (69.7)	E (68.2)	E (66.0)	E (66.4)	E (73.8)
	R		E (58.4)	D (54.1)	D (50.5)	E (58.3)	D (52.1)	D (51.0)
Roosevelt Avenue SB	LTR		E (58.4)	D (53.9)	D (50.4)	E (58.3)	D (52.0)	D (50.8)
	Overall		C (31.1)	D (35.8)	D (42.1)	C (25.9)	C (33.4)	D (39.1)

Intersection Approach		Control	2023 Existing			2045 Forecast		
			AM Peak Hour	PM Peak Hour	Friday Peak Hour	AM Peak Hour	PM Peak Hour	Friday Peak Hour
Hoosick Road/McChesney Avenue		S						
Hoosick Road EB	[L]T, TR		B (11.4)	A (8.4)	B (14.8)	C (22.8)	B (17.9)	B (19.5)
Hoosick Road WB	L		A (7.4)	A (3.4)	A (4.8)	A (7.9)	A (5.8)	A (6.8)
	T[R]		B (10.6)	A (3.8)	A (5.9)	B (12.4)	A (7.2)	A (8.3)
McChesney Avenue NB	L[T]R		E (66.4)	E (69.0)	E (66.6)	E (67.9)	E (64.8)	E (70.2)
"Marise Muse" SB	[LTR]		--	--	--	D (40.9)	D (46.3)	D (44.7)
	Overall		B (19.9)	B (12.8)	B (16.7)	C (25.1)	B (18.5)	C (20.6)
Hoosick Road/Brunswick Drive		S						
Hoosick Road EB	L		A (1.0)	A (1.1)	B (11.3)	A (2.2)	A (5.7)	A (8.7)
	T		A (5.6)	A (3.3)	B (21.2)	A (7.5)	A (9.4)	B (15.9)
	R		A (2.1)	A (0.2)	C (19.2)	A (4.0)	A (6.2)	A (7.4)
Hoosick Road WB	L		A (1.4)	A (3.5)	A (10.0)	A (1.7)	A (4.7)	A (8.9)
	TR		A (2.2)	A (4.6)	B (11.4)	A (2.7)	A (6.4)	B (10.3)
Walmart Driveway NB	LT		E (68.8)	E (74.8)	D (42.9)	E (78.7)	D (53.9)	D (46.4)
	R		E (57.8)	D (51.1)	D (36.9)	E (56.3)	D (46.0)	D (39.3)
Brunswick Drive SB	LTR		E (58.2)	D (51.1)	D (36.5)	E (56.9)	D (46.1)	D (39.1)
	Overall		A (8.8)	B (13.1)	C (20.3)	B (10.8)	B (14.1)	B (17.6)
Hoosick Road/Grange Road		S						
Hoosick Road EB	L		D (39.5)	D (51.4)	D (48.3)	D (41.7)	F (60.6)	E (56.0)
	T		A (6.2)	B (12.6)	A (9.2)	A (6.7)	B (14.9)	B (10.3)
Hoosick Road WB	TR		C (31.0)	C (32.8)	C (23.1)	D (42.6)	D (50.6)	C (28.6)
Church Egress NB	LTR		D (40.4)	D (48.6)	D (45.6)	D (40.8)	D (49.5)	D (46.1)
Grange Road SB	L, R		D (35.1	D (45.7)	D (42.6)	C (35.5)	D (45.7)	D (43.3)
	Overall		C (26.3)	C (30.2)	C (24.2)	C (32.9)	D (38.0)	C (27.2)

S, U = Traffic Signal or Unsignalized controlled intersection
EB, WB, NB, SB = Eastbound, Westbound, Northbound, and Southbound intersection approaches
L, T, R = Left-turn, Through, and/or Right-turn movements
X (Y.Y) = Level of service (Average delay in seconds per vehicle)
NA = Not Available

The results of the level of service analysis show that the majority of intersections in the study area currently operate at overall LOS D or better during the peak hours. Although overall level of service does not indicate excessive delay in the corridor, some movements such as side-street approaches or left turns from Hoosick Road experience longer delays and experience LOS D/E during the peak hours. Likewise, closely spaced intersections and driveways may experience queueing impacts that are not evident from the level of service calculation. Specifically, long delays associated with the Hoosick Road/Lord Avenue intersection result in long queues on the eastbound approach which have been observed extending through the Lake Avenue intersection, indicating that the Lord Avenue intersection is likely a bottleneck in the corridor. These queuing impacts are evident in the travel time reliability analysis as summarized below.

The future traffic analysis indicates that after accounting for growth, traffic delays will generally increase, with intersections currently operating poorly continuing to experience long delays. This is particularly the case with the movements to and from side streets and driveways, with some movements expected to experience LOS F.

Travel Time Reliability

Traffic congestion on Hoosick Road can be examined using data from the National Performance Management Research Dataset (NPMRDS). The NPMRDS contains travel time information for all major roads in the United States and is published monthly by USDOT for the purpose of providing the data needed for congestion management planning. The data is displayed by roadway segment, and contains information on travel time dating back to 2016 for all hours of the day and all days of the year in 15-minute intervals, based on data collected from GPS-connected devices. Based on the data, the following metrics can be calculated to provide a measure of reliability:

Level of travel time reliability (LOTTR) – calculated as the 80th percentile travel time divided by the 50th percentile travel time during peak travel times. This value represents consistency of travel time by comparing a fairly slow travel period (80th percentile) to the median travel time (50th percentile). For example, an LOTTR value of 1.5 suggests that, during 20% of peak periods, travel will take 1.5 times longer than average. An LOTTR close to 1.0 represents highly reliable travel times, and values of 2.0 or greater represent highly unreliable travel.

Person-hours of excessive delay (PHED) – calculated as the total amount of extra time spent in congested conditions when travel speed is below a delay threshold. This value represents the total magnitude of delay experienced by all travelers due to signal delay and traffic. It is reported on a per-mile basis.

The LOTTR and PHED was calculated for the Hoosick Road Study area segments from Lake Avenue to McChesney Avenue, and McChesney Avenue to Grange Road (NY 142) and are summarized in Table 2.3:

Table 2.3 – Hoosick Road Travel Time Reliability (NPMRDS)

Year	Direction	Segment	LOTTR	PHED
2019	EB	Route 7 – Lake Ave to McChesney Ave	1.70	39,550
	WB	Route 7 – Lake Ave to McChesney Ave	1.23	4,760
	EB	Route 7 – McChesney Ave to NY-142 Grange Rd	1.17	2,204
	WB	Route 7 – McChesney Ave to NY-142 Grange Rd	1.25	1,933
2020	EB	Route 7 – Lake Ave to McChesney Ave	1.81	35,840
	WB	Route 7 – Lake Ave to McChesney Ave	1.21	4,473
	EB	Route 7 – McChesney Ave to NY-142 Grange Rd	1.17	1,489
	WB	Route 7 – McChesney Ave to NY-142 Grange Rd	1.19	1,514
2021	EB	Route 7 – Lake Ave to McChesney Ave	1.96	61,471
	WB	Route 7 – Lake Ave to McChesney Ave	1.22	4,390
	EB	Route 7 – McChesney Ave to NY-142 Grange Rd	1.18	2,327
	WB	Route 7 – McChesney Ave to NY-142 Grange Rd	1.25	1,864

The NPMRDS data available in the study area suggests that the greatest traffic congestion occurs in the eastbound direction. Greater congestion occurs in the western segment (Lake Avenue to McChesney

Avenue). The magnitude of the traffic congestion is very high – in 2021, the LOTTR in the eastbound direction was 1.96, suggesting that 20% of trips take nearly twice as long as average. The total hours of delay (61,471 annual person-hours of delay per mile) is also very high, suggesting frequent recurring congestion in this area. In the Transportation Council's Congestion Management Process Report (December 2023), the NY-7 corridor in Rensselaer County (Hoosick Street in Troy and Hoosick Road in Brunswick) was found to be one of the most congested roadways in the region, with person-hours of delay per mile comparable only to NY-146 in Clifton Park and NY-5 (Central Ave) in Colonie and Albany. This corridor also received the highest number of reports of traffic congestion in the Congestion Management Process public survey

The NPMRDS can also be used to examine congestion by time-of-day. Figure 2.8 shows average hours of delay in each five-minute period of the day from 7 A.M. to 7 P.M. Congestion is greater in the PM hours, beginning at noon and peaking from 4 P.M to 5 P.M.

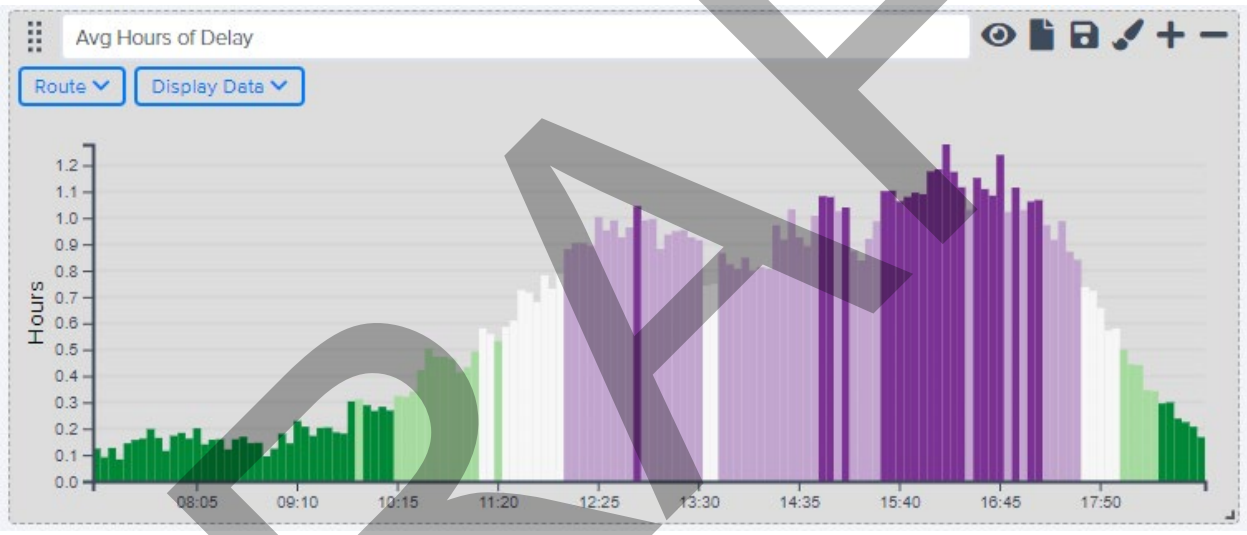


FIGURE 2.8 – AVERAGE HOURS OF DELAY BY TIME-OF-DAY ON HOOSICK ROAD

By examining total delay by day of the week, it is evident that congestion occurs on weekends, and that Friday has significantly more delay than any other day of the week:

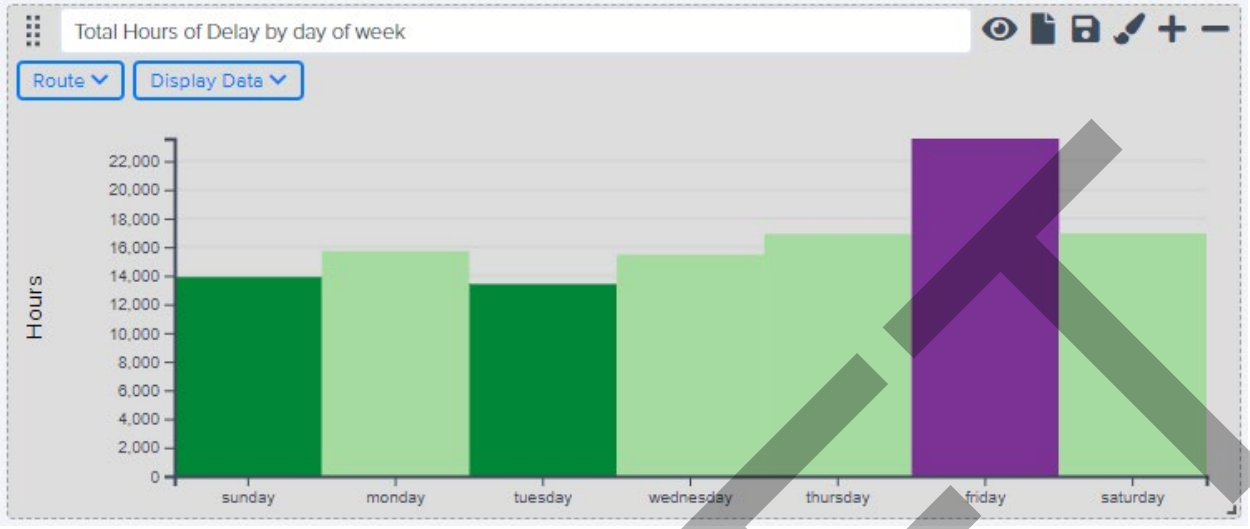


FIGURE 2.9 – AVERAGE HOURS OF DELAY BY DAY OF THE WEEK ON HOOSICK ROAD

TRAVEL PATTERNS

An origin-destination (O-D) assessment was performed to identify existing travel patterns and inform the development and analysis of future concepts. Data was queried from Replica, a web-based data platform that uses a regional travel activity model to simulate movements of residents, visitors, and commercial vehicles over the course of a typical weekday. The model uses numerous data sources including location based data, consumer spending, and demographic data to provide detailed trip tables.

Replica data was queried to identify the level of through traffic on Hoosick Road. The data indicates that approximately 6,500 daily trips in each direction travel through the study area on Hoosick Road. This accounts for approximately 35 percent of all eastbound traffic and 60 percent of all westbound traffic in the corridor.

PEDESTRIAN CHARACTERISTICS

Pedestrian counts were conducted during the intersection turning movement counts conducted in March 2023 as noted above. Table 2.4 shows the number of pedestrian crossings observed at each of the study intersections, during the peak hour traffic counts.

TABLE 2.4 – HOOSICK ROAD PEDESTRIAN CROSSING SUMMARY

Intersection	AM Peak Hour	PM Peak Hour	Friday Peak Hour	Total
Hoosick Road/Lake Avenue	3	46	11	**60**
Hoosick Road/Otsego Avenue/Coolidge Avenue	7	5	6	**18**
Hoosick Road/Lord Avenue	5	1	7	**13**
Hoosick Road/Roosevelt Avenue	8	6	9	**23**
Hoosick Road/McChesney Avenue	2	6	6	**14**
Hoosick Road/Brunswick Drive	0	9	15	**24**
Hoosick Road/Grange Road (NY 142)	0	0	0	**0**
Total	**25**	**73**	**54**	**152**

The data shows a total of 25 pedestrian crossings during the AM peak, 73 crossings during the PM peak hour, and 54 crossings during the Friday midday peak hour. The busiest crossing location is the Hoosick Road/Lake Avenue intersection followed by Hoosick Road/Brunswick Drive and Hoosick Road/Roosevelt Avenue intersections.

Relative to pedestrian infrastructure, the corridor generally provides good accommodations for pedestrian movements. Sidewalks are provided on both sides of Hoosick Road between Lake Avenue and McChesney Avenue (eastern intersection) and on the south side of Hoosick Road from McChesney Avenue to Grange Road (NY 142). Likewise, crosswalks are provided across Hoosick Road at the six signalized intersections, as well as at four unsignalized locations including Otsego Avenue/Coolidge Avenue, Woodward Avenue, Harbor Freight Tools, And Tractor Supply Company. During a field visit, it was noted that sidewalks and crosswalks are generally in good condition.

IMAGE 2.2 –EXAMPLE OF PEDESTRIAN CROSSING AT A MARKED CROSSWALK ON HOOSICK ROAD

BICYCLE CHARACTERISTICS

Table 2.5 shows the number of bicyclists observed at each intersection during the peak hour counts. The data shows a total of 6 bicyclists during the three peak periods, indicating that the corridor is not currently heavily used by bicyclists.

TABLE 2.5 – BICYCLE ACTIVITY SUMMARY

Intersection	AM Peak Hour	PM Peak Hour	Friday Peak Hour	Total
Hoosick Road/Lake Avenue	0	0	2	**2**
Hoosick Road/Otsego Avenue/Coolidge Avenue	0	0	2	**2**
Hoosick Road/Lord Avenue	1	0	0	**1**
Hoosick Road/Roosevelt Avenue	0	0	0	**0**
Hoosick Road/McChesney Avenue	0	1	0	**1**
Hoosick Road/Brunswick Drive	0	0	0	**0**
Hoosick Road/Grange Road (NY 142)	0	0	0	**0**
Total	**1**	**1**	**4**	**6**

It is noted that although bicycle activity in the corridor is low, an eastbound bicycle lane is provided to facilitate bicycle travel through the Hoosick Road/Brunswick Drive intersection.

PUBLIC TRANSIT CHARACTERISTICS (ROUTES, RIDERSHIP)

The Capital District Transportation Authority (CDTA) provides bus service throughout Rensselaer, Albany, Schenectady, Saratoga, and Montgomery counties. CDTA Route 87 operates along the Hoosick Road corridor providing service between Downtown Troy, Rensselaer Polytechnic Institute (RPI), and Wal-Mart (Driveway opposite Brunswick Drive). Route 87 is classified as a trunk route and operates seven days per week with service generally every 20 minutes from 6:00 a.m. to 11:00 p.m. on weekdays and Saturdays. Sunday service operates on a shorter span and with longer headways. Figure 2.10 illustrates the Route 87 alignment through the study area.

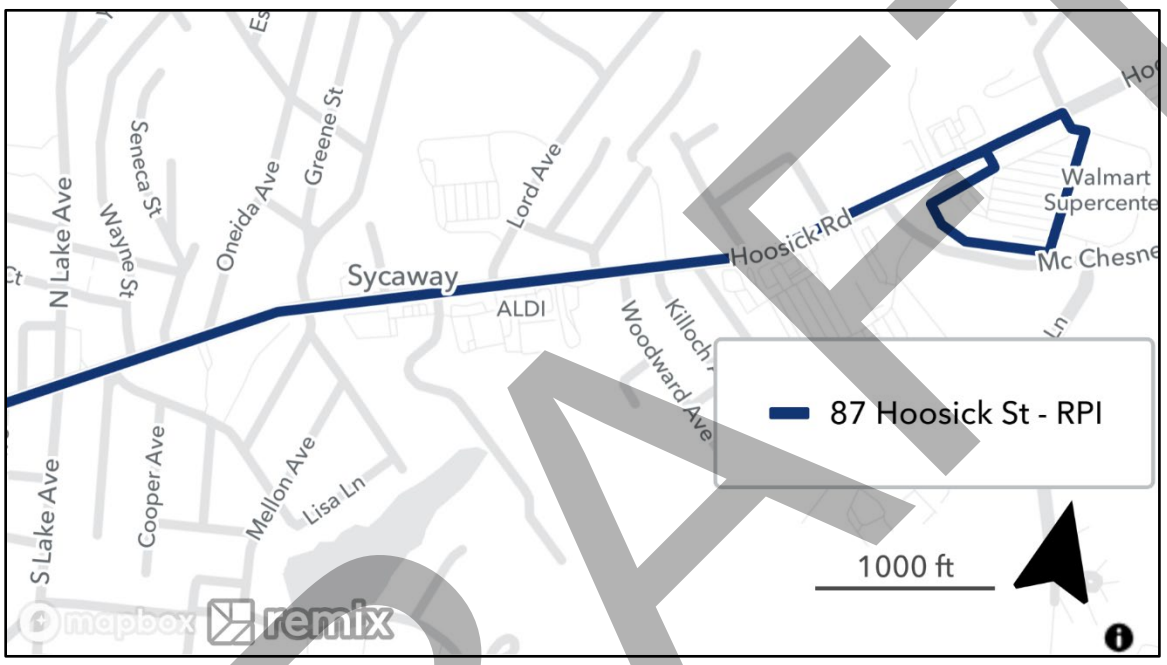


FIGURE 2.10 – CDTA ROUTE 87

Transit data was provided by CDTA from October through December 2022 and is summarized in Table 2.6. The table shows the average daily weekday ridership for each bus stop along the corridor and indicates that the bus stop located at Wal-Mart has the highest ridership with an approximate 14 boardings per hour. It is noted that ridership on Saturday's is higher with a total of 494 eastbound rides and 448 westbound rides.

TABLE 2.6 – AVERAGE CDTA DAILY RIDERSHIP

Stop Location	Route 87		
	On	Off	Total
Eastbound Stops			
Hoosick Rd& Hillcrest Ave (02871)	2.0	26.8	28.7
Hoosick Rd & Killock Ave (02870)	0.1	4.5	4.6
Hoosick Rd & Lord Ave (02871)	1.2	22.3	23.6
Hoosick Rd & Roosevelt Rd (02857)	2.7	64.2	67.0
Hoosick St & Coolidge Ave (02872)	1.2	3.5	4.7
Hoosick St & S. Lake Ave (02861)	3.7	23.2	26.9
Trustco Bank- Brunswick Plaza (02868)	1.3	24.7	26.0
Wal-Mart – Brunswick Plaza (02867)	0.0	234.5	234.5

Westbound Stops			
Hoosick Rd & Derrick Ave (03131)	6.1	0.4	6.4
Hoosick Rd & Lord Ave (12016)	13.8	0.4	14.2
Hoosick Rd & Roosevelt Rd (02856)	45.5	2.1	47.7
Hoosick St & N. Lake Ave (02860)	23.3	4.1	27.4
Hoosick St & Oneida Ave (03128)	2.9	1.2	4.0
Hoosick St & Otsego Ave (10967)	3.7	0.2	4.0
Wal-Mart – Brunswick Plaza (02867)	250.4	11.5	261.9

Crash Analysis

Crash data was provided by the Transportation Council for the most recent five years of available data (May 31, 2017, to May 31, 2022), for the 2.5 mile segment of Hoosick Road from Lake Avenue to Grange Road (NY 142). The source data was a spreadsheet summarizing crash data from the NYSDOT Crash Location & Engineering Analysis & Reporting (CLEAR) database. In total, 593 crashes occurred over the five-year period on Hoosick Road from Lake Avenue to Grange Road (NY 142). A safety screening was performed on the crash data including calculation of segment crash rates (including intersection crashes) and intersection only crash rates. Tables 2.7 through 2.9 summarize the crash analysis.

Table 2.7 – Crashes by Severity

Crash severity	Count
A - SERIOUS INJURY	8
B - INJURY	6
C - POSSIBLE INJURY	82
U – UNKNOWN (Not Reported)	1
(Crashes with no injuries)	496
Total	**593**

Of the 593 reported crashes, 96 involved one or more injuries. There were no fatal crashes in this period. The table below summarizes crashes by severity. Crashes with multiple injuries are classified by the most severe injury that occurred.

Table 2.8 – Crashes by Crash Type

Crash type	Count
COLL. W/LIGHT PEDESTRIAN/BICYCLIST	9
COLLISION WITH ANIMAL	24
COLLISION WITH FIXED OBJECT	18
COLLISION WITH MOTOR VEHICLE	541
NOT ENTERED	1
Total	**593**

Of the 593 reported crashes, 541 were crashes between two or more motor vehicles (92%). There were five crashes involving bicyclists, and four involving pedestrians. Of the nine crashes involving bicyclists and pedestrians, six resulted in injury.

TABLE 2.9 – CRASHES BY COLLISION TYPE

Collision type	Count
HEAD ON	4
LEFT TURN (AGAINST OTHER CAR)	31
NOT ENTERED	1
OTHER	49
OVERTAKING	94
REAR END	355
RIGHT ANGLE	45
RIGHT TURN	14
Total	**593**

Of the 593 reported crashes, rear end crashes are the most common, representing 355 crashes (60% of crashes). Further review of collision patterns indicates that rear-end collisions are prevalent in the western portion of the corridor between Lake Avenue and Brunswick Drive, which corresponds to the more densely developed portion of the corridor. Rear end crashes are indicative of stop-and-go traffic. Traffic congestion on this signalized corridor may contribute to the high proportion of rear end crashes. In contrast, review of the right-angle collisions indicate that these crashes typically occurred at the non-signalized intersections in the corridor, which could be indicative of overcapacity conditions where drivers exiting side-streets and driveways accept smaller gaps to turn onto Hoosick road. It is noted that the large majority of sideswipe/overtaking collisions occur on the segment of Hoosick Road between Lake Avenue and Coolidge Avenue near the Sycaway Avenue intersection where Hoosick Road transitions to a single eastbound lane. Further review of this location indicates that signage and striping appears to be appropriate and follow guidance provided in the NYSDOT Highway Design Manual.

The locations of the crashes were mapped to identify locations with concentrations of crashes in the corridor. Figure 2.11 shows a heat map for all study area crashes and shows a concentration of crashes in the western end of the corridor, where traffic volumes are higher and congestion is more prevalent.

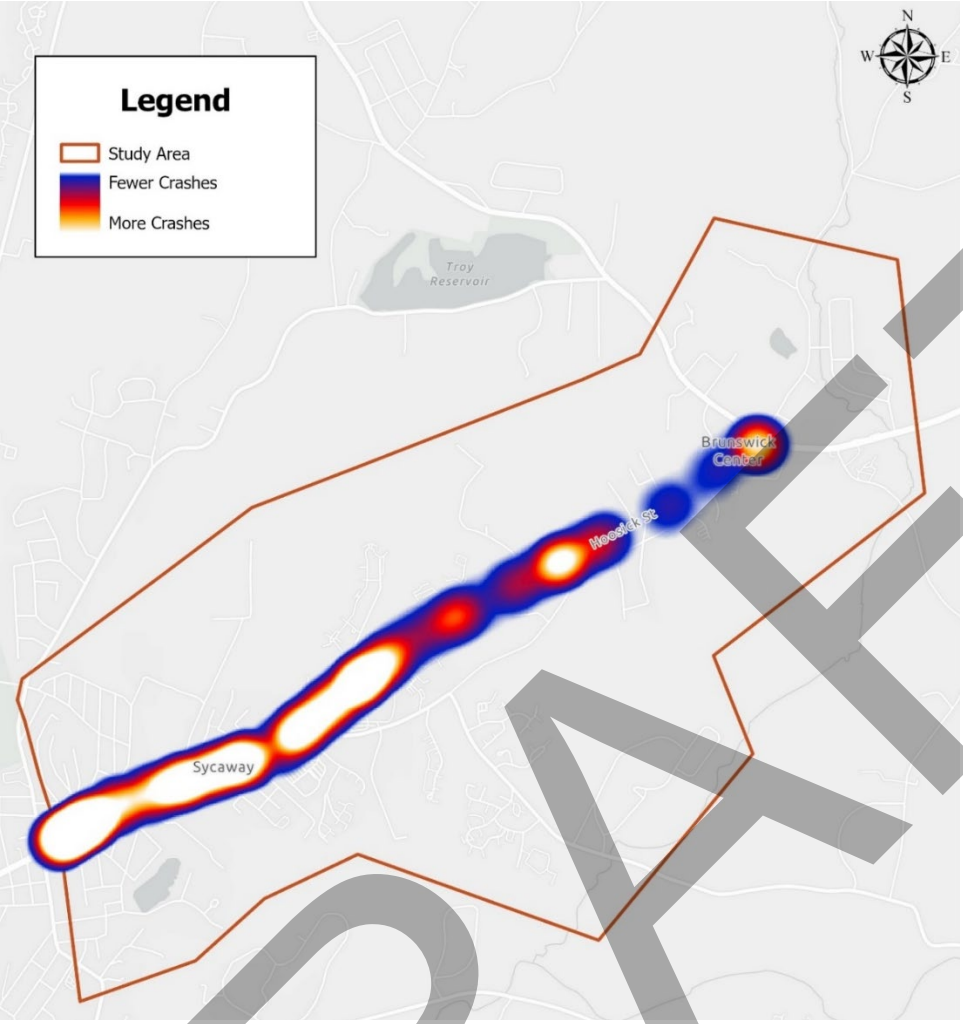


Figure 2.11 – Study Area Crashes

While the above tables and maps illustrate the number of crashes that occurred within the study area. They do not account for variations in traffic volumes at different intersections. As such, intersection crash rates were calculated to relate the number of crashes to traffic volumes at the study area intersections, and are summarized in Table 2.10 which shows that the study intersections generally have rates that are comparable to similarly designed intersections.

TABLE 2.10 – STUDY AREA CRASH RATE SUMMARY

Intersection	Number of Crashes	Crash Rate	Statewide Average Rate
1. Hoosick Road/Lake Avenue	36	0.65	0.52
2. Hoosick Road/Lord Avenue	22	0.44	0.52
3. Hoosick Road/Roosevelt Avenue	0	0.00	0.52
4. Hoosick Road/McChesney Avenue	10	0.23	0.32
5. Hoosick Road/Brunswick Drive	28	0.76	0.52
6. Hoosick Road/Grange Road (NY 142)	22	0.53	0.32

PUBLIC INPUT ON EXISTING CONDITIONS AND FUTURE NEEDS

While the above summary provides a data-oriented approach to identifying traffic operating conditions within the Hoosick Road corridor, it is important to provide citizens a meaningful way to contribute their own knowledge of issues and ideas for potential solutions. Public involvement was conducted in two phases. The first phase solicited feedback on issues and potential solutions in the study area. The second phase presented several improvement concepts to address these issues, and asked for feedback on these options. The first phase of public involvement is summarized below, while the second phase is discussed at the end of Chapter 3.

The first public workshop was held as a "Join at Your Own Pace" online public workshop. The online workshop was available for review and public comment on the study website https://hoosickroadstudy.com/ from Monday June 5, 2023 through Friday July 21, 2023. The workshop was well advertised by a press-release and flyers posted to the project website and social media; and received over 95 unique views. The workshop included an online presentation that began with an introduction by Town Supervisor Herrington and the Transportation Council Executive Director Sandy Misiewicz. An overview of the study goals, analysis, and general needs was presented by Jesse Vogl (Creighton Manning). The purpose of the public workshop was to inform the public about the transportation planning study, let them know the different methods by which they can provide comments, provide the public with an initial understanding of the existing conditions and needs, and obtain input from the public on transportation issues and ideas that should be considered as the study progresses. Workshop attendees had several opportunities to provide input and offer comments including a survey with multiple choice and open-ended response questions, an online mapping exercise with the ability to place geo-located comments, and via email to the project team. The project website address was shared and participants were encouraged to provide additional comments.

In addition to the online public workshop, a pop-up event was held at the Price Chopper on Hoosick Road on June 10, 2023 (Figure 2.12). The event was attended by over 30 residents, stakeholders, and study representatives present. Attendees had several opportunities to provide input, ask questions, and offer comments. This included a station oriented mapping session where facilitators interacted with the public to solicit input. Pop-up attendees were also encouraged to provide additional input through the online survey.

FIGURE 2.12: MAPPING ACTIVITY AT POP-UP EVENT

Survey Responses

The online presentation directed the public to complete an online survey to provide input on the existing corridor operations and issues. At the close of the comment period, over 1,000 surveys were completed. The survey prompted respondents to provide input on the project goals, how they currently use the corridor, and identify issues/concerns with study area operations and safety.

Relative to public priorities, the overwhelming majority of responses (80%) prioritized reducing congestion on the Hoosick Road corridor, and minimizing negative effects of traffic in the adjacent neighborhoods. Other priorities listed included improving bicycle and pedestrian mobility, each of which was identified as a priority by less than two percent of respondents, and improving safety which was the priority for approximately five percent of respondents. Additional survey questions regarding congestion indicated that experiencing congestion traveling along Hoosick Road is the primary concern.

Beyond the multiple choice questions, respondents had the opportunity to provide open-ended comments on concerns and improvements for the corridor. The most common concerns in the corridor were related to potential future development and the impact on traffic. Additional comments identified location specific issues, such as the lane merge east of the Lake Avenue intersection, and potential turn restrictions. A number of improvements were also identified including roadway widening and roundabouts. Figure 2.13 summarizes the open-ended responses.

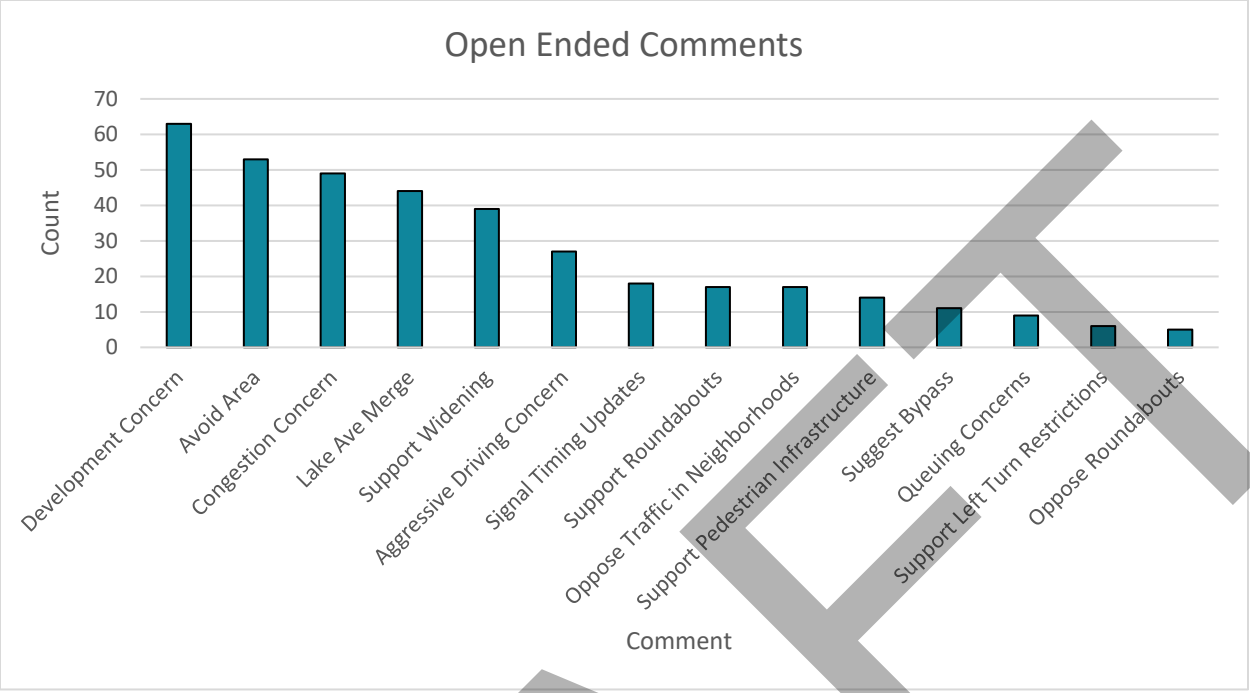


FIGURE 2.13: OPEN ENDED COMMENTS FROM PUBLIC WORKSHOP #1

The online "Join at Your Own Pace" workshop also directed the public to provide geo-located comments using a mapping survey. This survey allowed respondents to place a pin on a map and type an open ended response indicating possible concerns or ideas associated with the designated location. A review of the responses indicates that the majority of concerns are located on the segment of Hoosick Road west of Lord Avenue, as well as the other signalized intersections. The majority of the locations identified highlighted areas of congestion or safety concerns. Specifically, comments received during the pop-up event and through the online mapping survey confirmed the above traffic analysis, indicating the Lord Avenue intersection acts as a bottleneck in the corridor. Likewise, during the pop-up event, residents identified sight distance concerns at Arminghall Drive that make it difficult to exit onto Hoosick Road.

Chapter 3 – Improvement Concepts

Based on the stakeholder feedback, online public input, and the ideas received at the popup event, a series of transportation improvements were developed to address concerns identified along the Hoosick Road Corridor and adjacent neighborhoods. In many instances, the concerns were related to traffic congestion, safety and quality of life; and therefore, the proposed improvements focused on mitigation measures that address these issues.

ROADWAY WIDENING

The technical analyses and public input indicate that congestion is a primary concern in the Hoosick Road corridor. Existing travel time reliability is poor, with motorists typically experiencing above average delays and long queues at intersections. Traffic forecasts based on historical growth trends and known developments indicate that conditions in the corridor will continue to degrade unless otherwise mitigated. Not surprisingly, a number of public comments supported the idea of roadway widening, so it is important that this study provides context on this issue.

During scoping of this study by the Transportation Council, NYSDOT and the Town of Brunswick, it was established that roadway widening assessments would not be a major component of this study. In response to public and stakeholder comments, this approach was also reiterated throughout the study process. Roadway widening is not consistent with regional transportation practices, which are focused on keeping the existing transportation system in a state of good repair, along with implementation of best practices to manage congestion, safety improvements, and complete streets projects that accommodate all users including non-motorized users of all ages and abilities.

Specifically, the NYSDOT Transportation Asset Management Plan (TAMP) specifies that the Department has embraced a “Preservation First” policy due to chronic under funding which requires the department to allocate scarce resources to maintaining existing infrastructure over expansion or enhancement of the highway network. This approach focuses on preventative maintenance and preservation activities to extend or maximize the service life on an existing facility, which are prioritized over potential capacity improvements such as roadway widening, which would be considered a “Beyond Preservation System Improvement”. The TAMP indicates that although beyond preservation projects can be funded with discretionary sources such as BUILD, INFRA, TEP, and TAP, these projects are usually not affordable within a region’s planning target (i.e. the cost of these projects would exceed the total funding allocated). In the case of the Hoosick Road Corridor through Brunswick, significant local funding would be needed to supplement any available State or Federal funds, which is not considered practical.

It is also important to note that the NYSDOT and the Town of Brunswick previously considered a roadway widening concept in the area consisting of a five-lane cross-section (two lanes each way with a center turn lane) as part of a reconstruction project on Hoosick Road in 1999. At the time, it was determined that a five-lane widening was not feasible due to numerous property impacts. Specifically, the five-lane widening would have resulted in approximately 170 property impacts that would have required removal of 27 structures. Due to the cost of property acquisition and burden to local property owners, it was determined that a five-lane widening was not feasible. This conclusion remains true today.

Recognizing that a five-lane section is not practical, nor consistent with the objectives of this study, an alternative roadway widening concept was considered at a high level to reduce property impacts, but still provide some level of operational benefit for motorists. This context sensitive concept (1-1-2) would widen Hoosick Road to provide two-lanes eastbound while maintaining a TWLT lane and a westbound travel lane from S. Lake Avenue to Roosevelt Avenue. The naming convention 1-1-2 correlates to the one westbound lane, one turn lane, and two eastbound lanes. This preliminary concept would involve approximately eight to 10 feet of widening, with additional grading in some areas beyond the widening limits. A conceptual cross-section is shown in Figure 3.1.

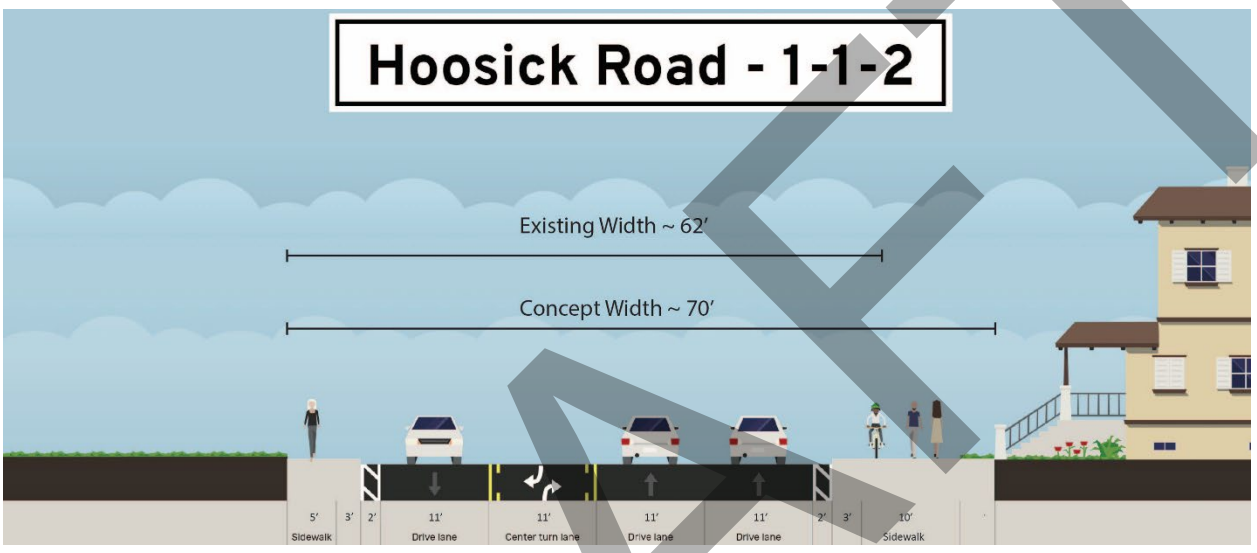


FIGURE 3.1 – WIDENING CONCEPT (1-1-2)

While the 1-1-2 widening concept is less extensive than the previously examined 5-lane widening, it is still expected to result in numerous property impacts. From a planning standpoint, approximately 23 properties along the corridor would be impacted, including four structures in the vicinity of Woodward Avenue.

Due to regional transportation programming practices, the extensive property impacts, and funding challenges, roadway widening is not recommended at this time.

INTERSECTION SPOT IMPROVEMENTS

Since roadway widening is not considered feasible, several intersection spot improvements were assessed to increase capacity in the corridor. Specifically, the combined side street and mainline volume at signalized intersections on Hoosick Road account for the majority of delay that motorists experience when traveling through the corridor. Therefore, improvements to these intersections to increase capacity, such as spot widening and the construction of roundabouts, are likely to reduce congestion and improve travel times. The following concepts were examined:

Lord Avenue Roundabout

The existing conditions and future needs assessment identified Lord Avenue as one of the major traffic bottlenecks in the Hoosick Road Corridor. Specifically, at this intersection heavy mainline volumes on Hoosick Road compete with side-street traffic destined to/from the grocery stores on either side of

Hoosick Road, resulting in a signalized intersection that is over capacity. Although NYSDOT has the ability to adjust the signal timing and coordination parameters (discussed in further detail below), it is noted that the signal is privately owned.

As an alternative to the existing signal which operates poorly, a roundabout was analyzed at the Hoosick Road/Lord Avenue intersection using Sidra software to determine potential operational benefits. Figure 3.2 shows that construction of a roundabout at Lord Avenue would result in overall vehicle delays of approximately five to 15 seconds. This equates to an approximate 85 to 90 percent reduction when compared to the existing traffic signal alternative.

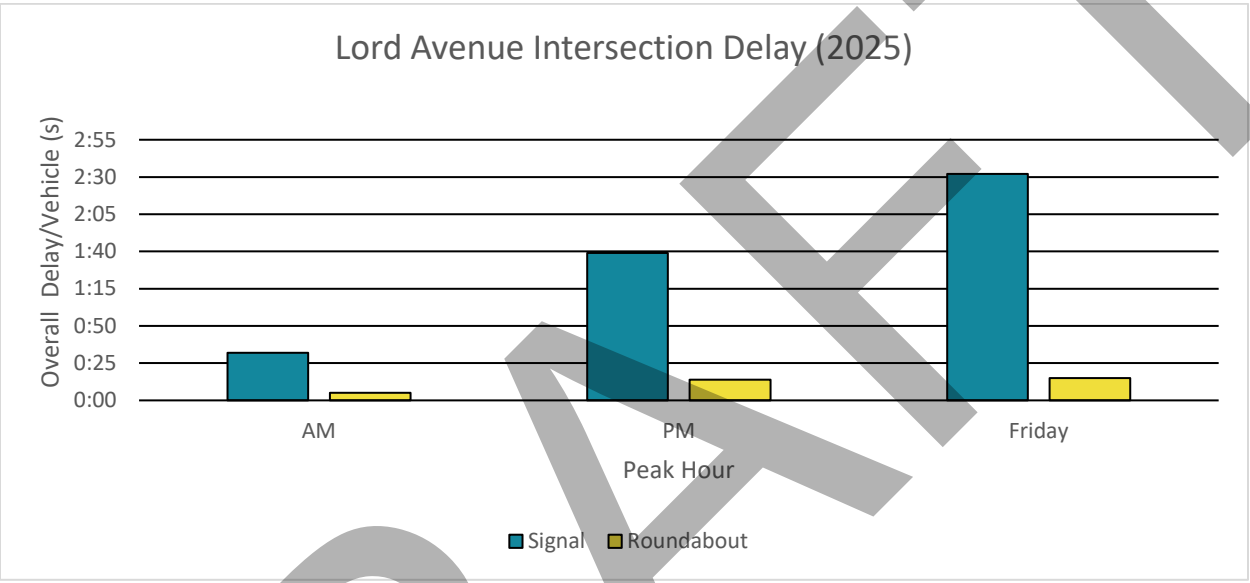


FIGURE 3.2: LORD AVENUE DELAY COMPARISON

While the roundabout concept would reduce congestion and vehicle delay, there are several challenges that would need be overcome. Specifically, although less extensive than the roadway widening concepts, the construction of a roundabout at this intersection would result in property impacts. Figure 3.3 shows the approximate footprint of a multi-lane roundabout with associated sidewalks, resulting in property impacts on all four corners of the Hoosick Road/Lord Avenue intersection.

Although the 160 foot diameter does not appear to impact existing structures, grades on the north side of Hoosick Road pose constructability challenges. As shown, the roundabout would require reconstruction of Lord Avenue which was recently reconstructed with the development of the new Hannaford supermarket. Likewise, the roundabout would extend into the stormwater management area on the Hannaford property, potentially requiring additional on-site mitigation. In the northeast quadrant of the intersection, the roundabout would extend to the existing parking area adjacent to Hoosick Road, likely requiring a retaining wall. Further preliminary engineering study would be needed to fully vet this concept. Considering the significant operational benefits, and above constructability issues, it is recommended that the Town and signal owner coordinate with NYSDOT to consider conducting a more detailed investigation of this concept.

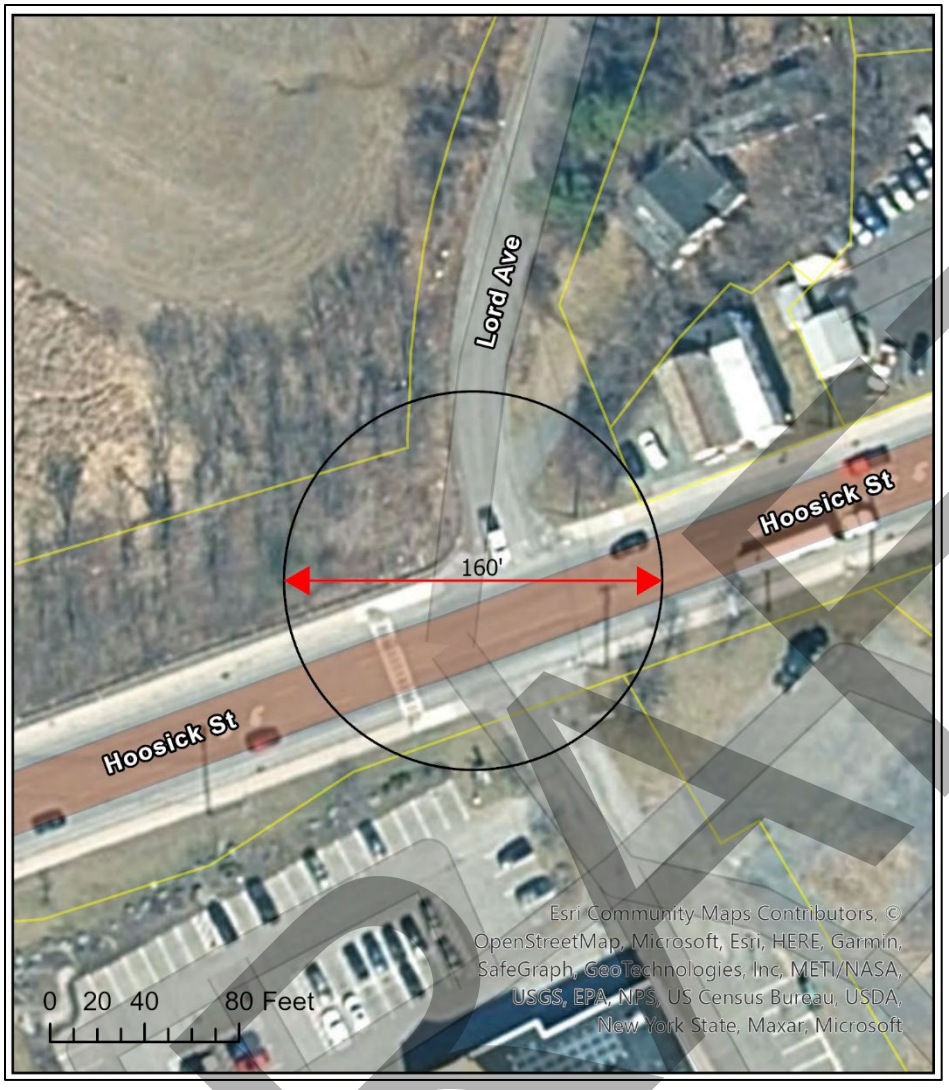


FIGURE 3.3: LORD AVENUE ROUNDABOUT CONCEPT

Roosevelt Avenue Widening

In its current configuration, Hoosick Road provides a single lane to accommodate eastbound traffic through the Roosevelt Avenue intersection, before widening to two eastbound lanes approximately 150 feet beyond the intersection. As such, eastbound capacity can be increased by widening the east leg of the intersection to accommodate a second receiving lane and convert the eastbound right-turn lane to a shared lane for right turn and through movements, as shown in Figure 3.4.

FIGURE 3.4: HOOSICK ROAD WIDENING AT ROOSEVELT AVENUE

This improvement was modeled using Synchro software and shows a reduction in delay of approximately five seconds per vehicle. Likewise, the addition of a second through lane is expected to reduce eastbound vehicle queues from approximately 600 feet to 260 feet, or approximately 55 percent. It is noted that unlike the corridor widening and Lord Avenue roundabout concepts, which will result in property impacts, the Town of Brunswick has already secured the necessary right of way to accommodate this intersection spot improvement. It is anticipated that under this widening concept, the existing eastbound bus stop would maintain its far-side location.

Grange Road (NY 142) Roundabout

Unlike the signalized intersections in the western portion of the Hoosick Road corridor, the Hoosick Road/Grange Road (NY 142) intersection operates independently and therefore offers unique opportunities for operational improvements. Specifically, while land uses east of Grange Road (NY 142) are predominantly rural in character, development and intersection density along the Hoosick Road corridor is more intense west of Grange Road (NY 142). Therefore, the Hoosick Road/Grange Road (NY 142) intersection is an ideal candidate for a gateway treatment to signal to motorists the change in character in the corridor. This coupled with westbound operational delays makes a roundabout a compelling improvement to consider.

Similar to the Lord Avenue intersection, a roundabout was assessed at Hoosick Road/Grange Road (NY 142). The analysis indicates that the proposed Hoosick Road/Grange Road (NY 142) roundabout will operate well as a single lane roundabout. Figure 3.5 shows that construction of the roundabout will result in a reduction in future vehicle delay of approximately 15 to 20 seconds per vehicle compared to a traffic signal, which equates to an approximate 65 percent reduction in overall vehicle delay.

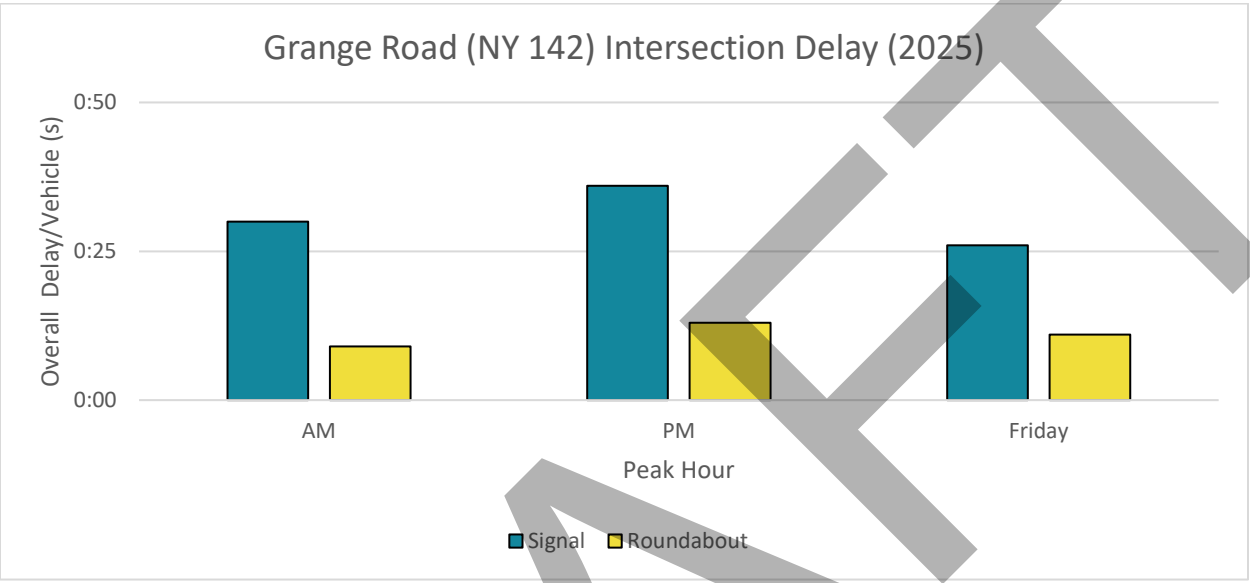


FIGURE 3.5: GRANGE ROAD (NY 142) DELAY COMPARISON

Beyond the operational benefits, the Hoosick Road/Grange Road (NY142) roundabout offers several other benefits. As noted above, this roundabout would create a gateway into the commercial portion of the Hoosick Road corridor which will provide motorists a visual queue to anticipate a change in the roadway character. This is particularly beneficial considering the large portion of through traffic that uses Hoosick Road as a connection to/from Vermont. In addition to the gateway benefit, the proposed roundabout could also improve access to the existing church south of Hoosick Road. In its current configuration, the church driveway is signed "exit only" at the signal opposite Grange Road (NY 142) with a separate entrance driveway to the east on Hoosick Road. The construction of a roundabout provides the opportunity to consolidate these driveways into a single driveway with access to/from Hoosick Road via the roundabout, thus reducing the number of curb cuts on Hoosick Road and promoting positive access management. Additionally, roundabouts are a proven safety countermeasure according to the Federal Highway Administration, and therefore could potentially provide a safety benefit. NYSDOT could consider conducting a safety review to determine if Highway Safety Improvement Program (HSIP) funds could be used for design and construction.

Figure 3.6 shows the approximate footprint of the proposed roundabout and associated sidewalks. As shown, although the roundabout would impact the property to the north of Hoosick Road between Grange Road (NY 142) and Hoosick Road, the existing structures are setback and would not be directly impacted. Grading and road work outside the approximate 140 foot diameter would be needed to tie into existing features.

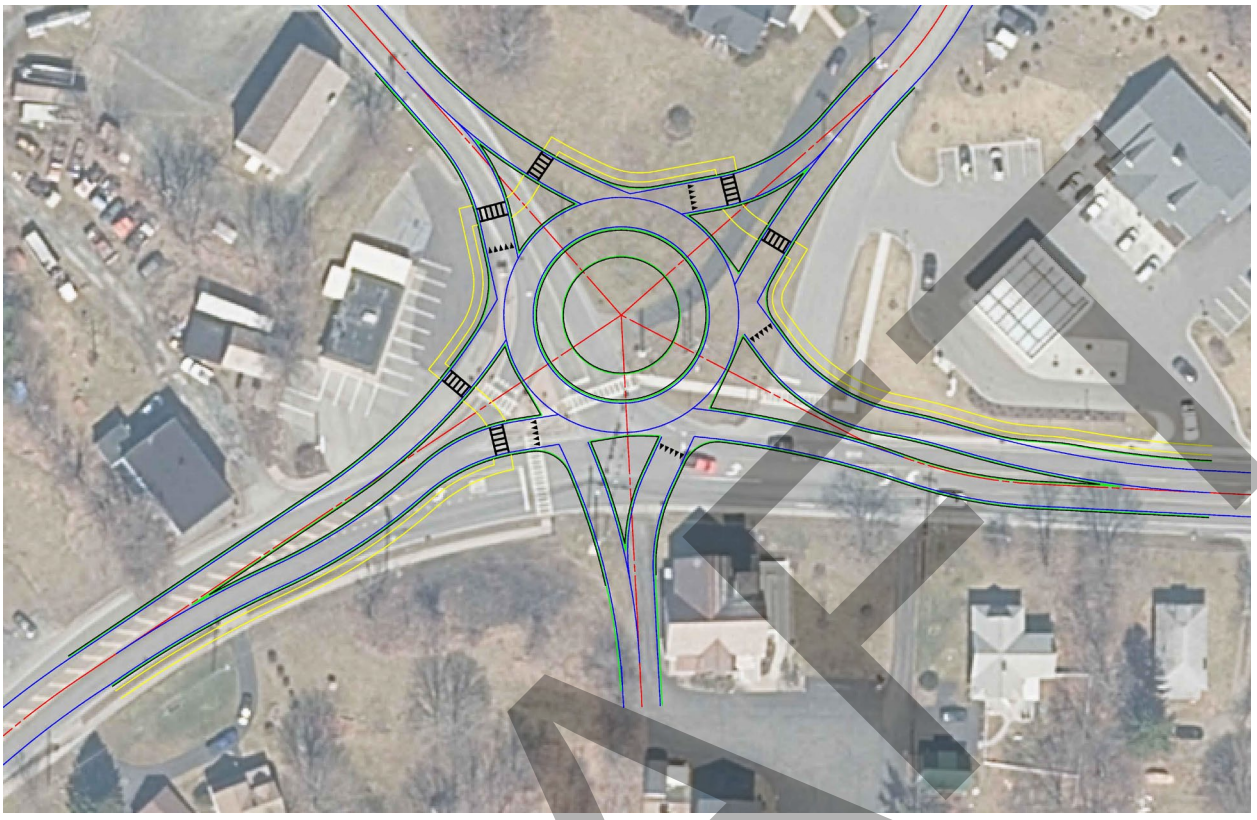


FIGURE 3.6: GRANGE ROAD (NY 142) ROUNDABOUT CONCEPT

Spot Improvement Summary

The existing conditions analysis and future needs assessment indicate that travel times through the Hoosick corridor are expected to increase by approximately three minutes by 2025. The traffic analysis shows that cumulatively, the above spot improvements have the potential to mitigate the anticipated increases in travel time through the corridor, resulting in travel times that are marginally better than exist today.

TRAFFIC SIGNAL OPERATIONS

Beyond geometric improvements to intersections to increase capacity, corridor-wide changes to traffic signal operations were examined as another method to reduce congestion on Hoosick Road. Specifically, conventional traffic signal coordination and adaptive traffic signal control (ATSC) were evaluated for their potential to improve travel times through the Hoosick Road corridor. Conventional signal coordination involves pre-programming optimum timing parameters for different times of the day/week, based on historical data and past performance. Adaptive signal control on the other hand, adjusts the signal timing in real time based on fluctuations in demand during the immediately preceding signal cycles. Figure 3.7 summarizes the average end to end corridor travel times for these different conditions.

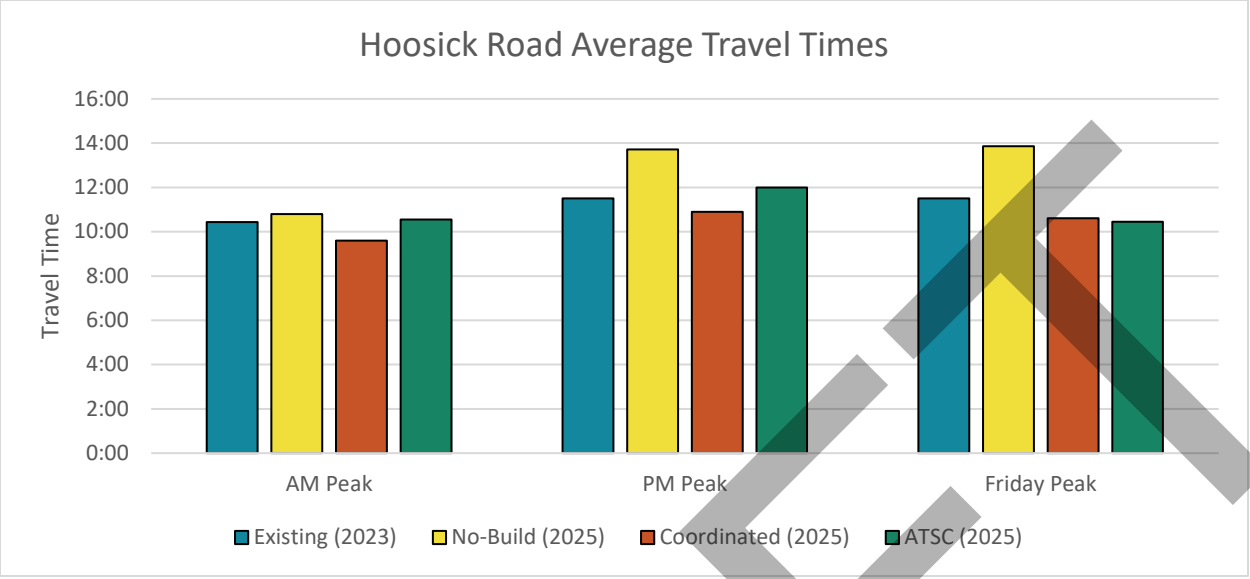


FIGURE 3.7: HOOSICK ROAD TRAVEL TIME COMPARISON

The figure shows that while it currently takes approximately 11 minutes to travel through the corridor, future developments and general traffic growth will increase peak hour travel times by approximately 25 percent to 14 minutes on average. The analysis indicates that both the conventional traffic signal coordination and ATSC concepts can mitigate this future increase in travel time, resulting in travel times similar to or better than existing conditions. Interestingly, the analysis indicates that while ATSC will also improve travel times through the Hoosick Road corridor, the benefits as compared to conventional signal coordination are not significant, and in some instances are nominally worse. This is generally consistent with industry expectations with regard to Adaptive signal control – that it functions best along roadways that operate below capacity, and see wide variability in traffic demand, where it can respond more quickly to spikes or valleys in demand. ATSC is less beneficial along congested roadways that operate over capacity. ATSC is also more costly to implement and maintain, and the Region does not currently have any ATSC deployments, so training and investments would be needed to pursue this. Considering these factors, and the negligible benefit of ATSC over conventional signal coordination during the Friday peak hour, this study recommends that the NYSDOT pursue conventional signal coordination along the Hoosick Road corridor, with several of time of day and day of week timing plans to best accommodate known traffic variations in the corridor. If the Region invests in ATSC in the future, then this corridor could be reconsidered for implementation of this technology.

BUS STOP PLACEMENT AND DESIGN

While Hoosick Road serves a large amount of vehicular traffic, it also accommodates transit service within the corridor, which provides a significant mobility benefit for many and reduces the number of cars on Hoosick Road. Except for Wal-Mart, buses stop in the travel lane to pick-up or drop-off passengers along Hoosick Road. As a result, transit dwell time (i.e. when the bus is stopped at a stop loading or unloading passengers) can have a short-term and temporary negative effect on traffic flow, as vehicles either wait for the bus to resume travel or maneuver around the bus. It is noted that this dwell time is difficult to capture in traffic models, and as such likely contributes to congestion in the corridor

beyond what is shown in the above level of service analyses. Therefore, the following concepts were explored to minimize the intermittent and short-term negative aspects of transit service in the corridor.

Signalized Bus Turnouts

FIGURE 3.8: BUS TURNOUT EXAMPLE

A bus turnout is a short bay constructed at a bus stop that allows the bus to exit the travel lane before loading or unloading passengers as shown in Figure 3.8. While bus turnouts provide the benefit of improving traffic flow, research indicates that when traffic volumes exceed 1,000 vehicles per hour, turnouts result in excessive delay for buses trying to re-enter traffic, and are therefore not recommended without additional design considerations.[1] Coordination with CDTA indicates that bus turnouts could be an effective measure if implemented at a nearside bus stop (i.e. before the bus crosses through the intersection) in conjunction with a queue jump phase at a signalized intersection which would allow the bus to re-enter traffic. Data from the transportation research board indicates that construction of queue jumps can result in a reduction in transit delays ranging from three to 17 percent. Likewise, bus turnouts can reduce average vehicle delay by up to 50 seconds. This type of improvement could be implemented at the existing eastbound Lord Avenue stop. Likewise, the eastbound Roosevelt Avenue stop could be relocated to a nearside stop to accommodate a bus turnout and possible queue jump.

Unsignalized Stop Removal

While the above bus turnout and queue jump treatment can improve traffic flow at signalized intersections, this approach is not feasible for bus stops at unsignalized intersections, requiring further examination of bus stops at Oneida Avenue, Otsego Avenue/Coolidge Avenue, and Killock Avenue/Derrick Avenue. Review of existing ridership data indicates that these stops have generally low ridership, which in turn means that buses stop infrequently at these locations and therefore have minimal impact on traffic flow. However, beyond traffic flow, bus stop spacing impacts transit vehicle and system performance as well as overall travel time for transit passengers. A review of CDTA stop spacing guidelines indicates that the maximum stop spacing is 1,500 feet in urban areas and 2,000 feet in suburban and rural areas. Table 3.1 below summarizes the existing stop spacing and indicates that removal of the Killock Avenue, Derrick Avenue, and Oneida bus stops would improve bus stop spacing through the corridor, providing a benefit to both transit riders and general vehicle traffic.

TABLE 3.1: BUS STOP SPACING (UNSIGNALIZED STOPS)

Bus Stop	Distance to West	Distance to East	Meets CDTA Stop Spacing Guideline?
Oneida Avenue	900 feet	550 feet	No
Otsego Avenue/Coolidge Avenue	1,500 feet	1,000 feet	Yes
Derrick Avenue/Killock Avenue	750 feet	750 feet	No

[1] TCRP Report 19: Guidelines for the Location and Design of Bus Stops, Transportation Research Board (1996).

ROAD AND PATH CONNECTIONS

The Hoosick Road corridor suffers from poor road connectivity. Specifically, Lake Avenue, McChesney Avenue Extension, and Grange Road (NY 142) are the only roads that provide regional connections between residential areas outside of the corridor and retail destinations within the corridor. As such, local residents, despite living nearby to these retail destinations, are generally required to use these three routes to get to destinations on Hoosick Road, and as such experience congestion similar to travelers who are passing through the corridor. Therefore, the following three roadway connections were evaluated to identify opportunities to improve local access:

1. S. Lake Avenue to Ricardi Lane
2. Ricardi Lane Extension to Brunswick Road (NY 2)
3. Brunswick Drive to Betts Road

These concepts build upon previously recommended roadway connections developed as part of the 2000 NYSDOT Arterial Access Management Plan that promote connections between Hoosick Road and N. Lake Avenue. Figure 3.9 shows both the previously proposed connections and new potential connections.

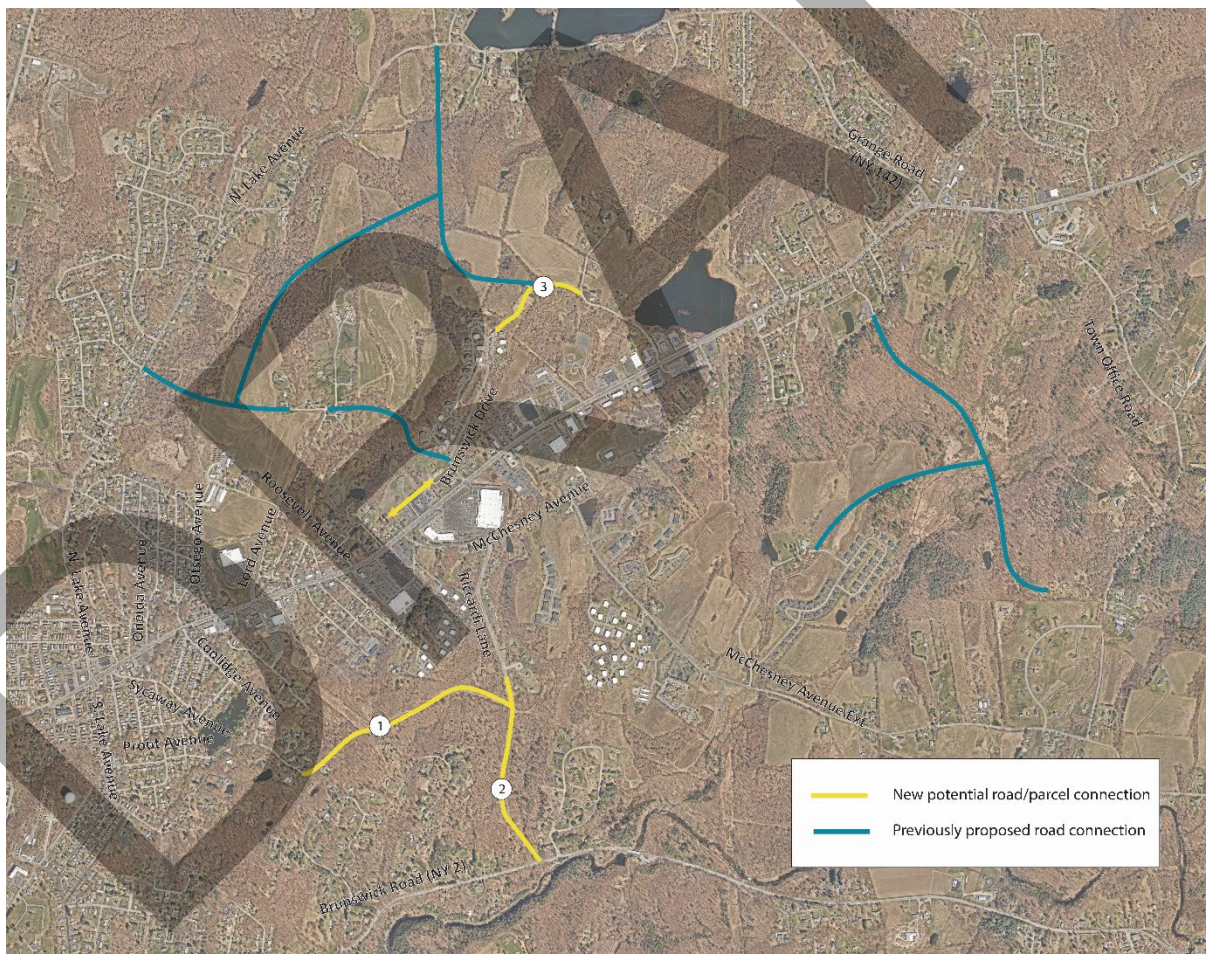


FIGURE 3.9 – POTENTIAL ROADWAY CONNECTIONS

Input from the public indicated that although local access improvements would improve quality of life, additional traffic in neighborhoods is a concern. Therefore, the above roadway connections were modeled using the Transportation Council STEP model to determine the relative demand for each connection and potential diversions from Hoosick Road. The model indicated that there is existing demand for these local roadway connections, which if constructed, would have a similar character to the existing neighborhood roads. Further, with the new road connections, the model shows a minor reduction in traffic on Hoosick Road, likely due to new opportunities for local residents to access retail via McChesney Avenue or N. Lake Avenue directly. As shown, the potential connectors provide local access to Hoosick Road without providing an appealing route for through traffic on Hoosick Road to divert to. Additionally, the local connector roads may provide a benefit to emergency responders, as local connectivity can improve response times.

In addition to the local roadway connections, additional bicycle and pedestrian connections were reviewed to improve multi-modal access between residential areas and commercial and retail opportunities within the Hoosick Road corridor. Specifically, within the study area, there are several multi-family housing developments located south of Hoosick Road on McChesney Avenue Extension. Although residents living in these developments are generally within one mile of Wal-Mart, Price Chopper, and other destinations in the corridor, lack of sidewalks on McChesney Avenue and McChesney Avenue extension makes walking uncomfortable and acts as a barrier to access. While the wide shoulders on these roadways can accommodate pedestrians and bicyclists, the volume and speed of traffic can discourage their use by non-motorized users. Conversely, providing sidewalks, bicycle lanes, or a multi-use path would improve multi-modal accommodations, as shown on Figure 3.10, and would improve non-motorized access to the existing multi-family residences, thus reducing the reliance on automobiles.

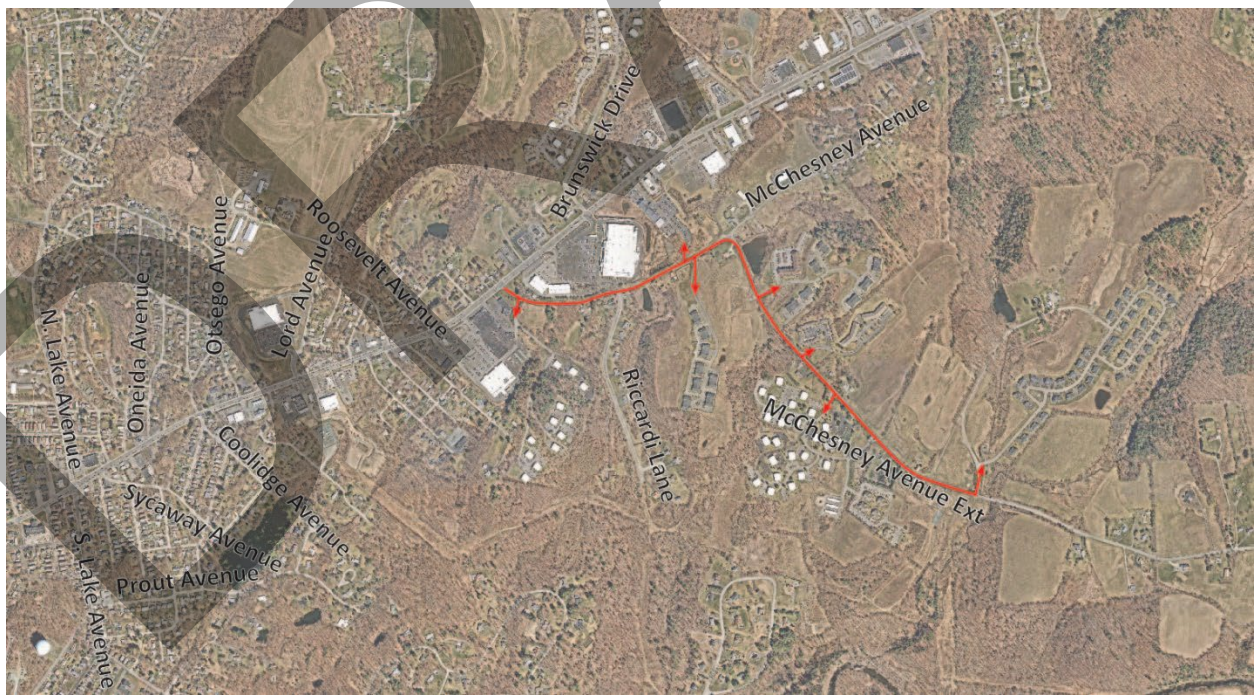


FIGURE 3.10: PROPOSED BICYCLE AND PEDESTRIAN CONNECTIONS

Access Management and Land Use Considerations

Beyond the above concepts to improve regional vehicle and pedestrian access to destinations along the Hoosick Road corridor, additional access management techniques and land use policies could benefit the future of the corridor by promoting an environment that manages vehicle movements to limit future congestion and reduce reliance on vehicle travel. Although there is limited developable land, properties along the corridor may eventually be redeveloped, providing an opportunity to implement new access management and land use policies that will shape the future corridor in a manner that limits congestion and promotes multi-modal access.

The Capital Region Congestion Management Process (2023) notes that access management can improve traffic flow and reduce crash risk on roadways like the Hoosick Road corridor by planning and designing for the orderly control of where vehicles enter of leave the roadway. Access management measures such as limiting new driveways, considering restrictions to certain vehicle movements (such as limiting to right-in/right-out), reducing the existing driveway density, and promoting parcel interconnections to create shared access driveways could be implemented during site plan review as properties along the corridor are developed/redeveloped. Likewise, future developments should consider driveway placement away from existing intersections so as to limit queuing impacts, and attempt to develop cross connections to gain access at existing traffic signals.

In addition to the above access management strategies, additional land use controls could also be implemented to ensure that changes to the built environment align with the corridor goals. For instance, while Hoosick Road is the Town's primary commercial center, allowing mixed-use development that includes moderate density housing could minimize future congestion in the corridor by allowing retail trips to be made by walking and providing opportunities for retail workers to live closer to jobs. Likewise, during the site plan review process, measures can be taken to promote walkability such as locating parking behind buildings rather than along property frontages, thus eliminating the need for pedestrians to cross parking lots in order to access their destination.

Traffic Calming

Increased traffic on Hoosick Road resulting from the development of new retail and commercial destinations in the corridor has negatively impacted quality of life for residents in the neighborhoods adjacent to the corridor. Specifically, residents of the Sycaway neighborhood located between Lake Avenue and Lord Avenue have indicated that traffic on local neighborhood streets has increased due to motorists bypassing the Hoosick Road/Lake Avenue intersection. While cut-through traffic may only account for a small portion of trips, reported driver behavior on these neighborhood streets has prompted a desire for increased traffic calming to slow traffic and signal to motorists that they are traveling through a residential neighborhood. Strategic implementation of traffic calming measures can change the nature of the neighborhood roads to make them less desirable as a through route, without prohibiting traffic. The traffic calming elements shown in Figure 3.11 could be considered on residential roadways in the Sycaway neighborhood. Additional traffic calming elements and details for implementation can be found in the Capital District Complete Streets Design Guide.

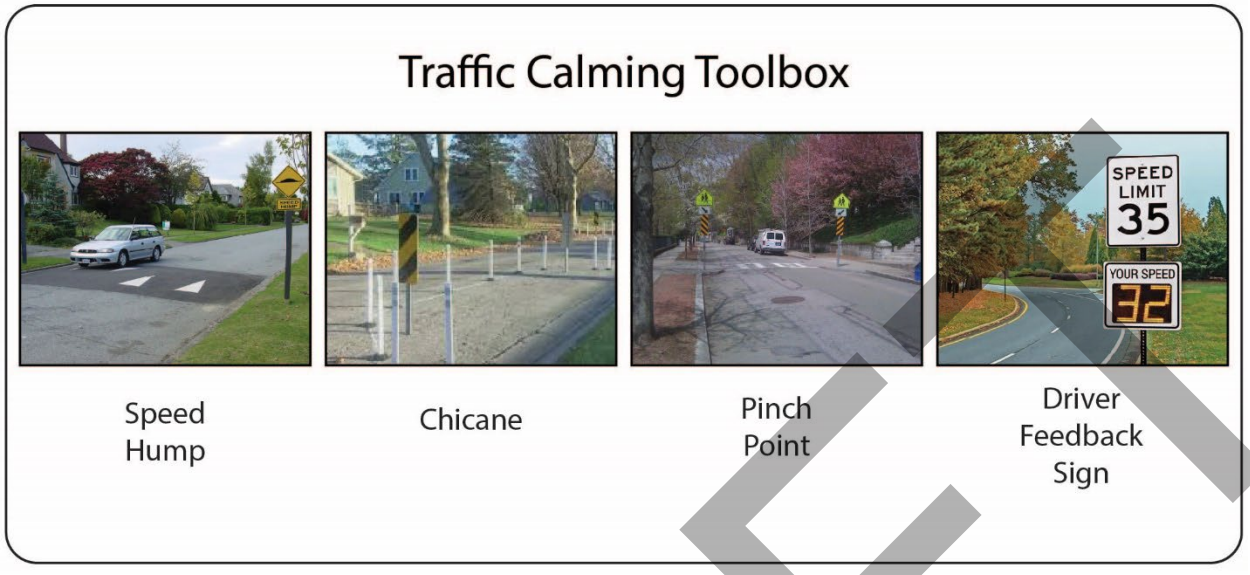


FIGURE 3.11: TRAFFIC CALMING ELEMENTS

- **Curb extensions** are a form of horizontal traffic calming that shift the curb line in order to visually and physically narrow the roadway, slowing traffic and creating safer pedestrian crossings. Curb extensions can be applied opposite each other on both sides of the roadway to provide a mid-block pinch point, or a gateway at the mouth of an intersection. Similarly, mid-block curb extensions may be offset, also known as chicanes, to force vehicles to move laterally, thus slowing traffic. The Chicane and Pinch Point images on Figure 3.11 constitute curb extension applications.
- **Speed humps** are a form of vertical traffic calming that require motorists to slow down in order to negotiate a three to four inch parabolic hump that extends across the roadway. Speed humps have been proven to reduce speeds to 15 to 20 mph and are generally applicable on low volume residential streets.
- **Driver feedback signs** calm traffic by informing motorists of their current speed in relation to the posted speed limit. When motorists travel above the posted speed limit, these signs flash the vehicles current speed to get the driver's attention. Driver feedback signs have been shown to reduce excessive speeding in neighborhoods.

In addition to the above traffic calming elements that could be applied in the Sycaway neighborhood, local access to Hoosick Road east of Brunswick Drive could benefit from changes to reduce speeds and improve intersection sight distance. Specifically, the Hoosick Road/Arminghall Drive intersection currently has limited visibility looking left for motorists exiting Arminghall Drive. This visibility makes it difficult for drivers to identify sufficient gaps in traffic to turn onto Hoosick Road, and may contribute to the observed crashes at the intersection. Several opportunities exist to improve the intersection sight distance, including clearing vegetation and regrading the existing slope. Alternatively, reducing speeds on Hoosick Road would improve access from Arminghall Drive by providing drivers with additional time to judge gaps, thus reducing the amount of sight distance required. To achieve these speed reductions, NYSDOT may consider increasing the size and adding reflective strips to the existing intersection warning sign on Hoosick Road east of Arminghall Drive, to alert motorists of potential turning traffic. Likewise,

this segment of Hoosick Road is posted at 45 mph, while the segment west of Brunswick Drive is posted at 30 mph. Therefore, the Town of Brunswick should ask the NYSDOT to consider reducing the speed limit on the segment of Hoosick Road from Brunswick Drive to Grange Road (NY 142).

Public Input on Improvement Concepts

This section is a placeholder. This draft report is intended to illustrate the analysis and preliminary recommendations to be presented to the public. After the conclusion of the comment period, a summary of public input will be included in the final report.

Chapter 4 – Conclusions and Recommendations

Hoosick Road is a heavily used roadway that serves both local traffic and regional demands, resulting in significant traffic congestion and unreliable travel times. A fundamental objective of this study was to develop recommendations that reduce traffic congestion and improve quality of life for residents of the Town of Brunswick adjacent to the Hoosick Road corridor. The technical studies show that incorporating the proposed recommendations will support efforts by the Town and NYSDOT to improve traffic operations and multi-modal mobility on Hoosick Road without increasing traffic in the neighborhoods.

THE PLAN

The plan identifies several context sensitive transportation improvements to improve traffic operations, increase capacity, and improve local connectivity, without negatively impacting residents and property owners in the study area. While a number of these improvements are described in further detail below, many of the traffic calming elements can be applied in neighborhoods throughout the Town beyond the study area boundary. As such, it is useful to think of these traffic calming elements as a "Toolbox" with many different treatments that can be incorporated into future projects to calm traffic and promote pedestrian safety and comfort. The traffic calming tools, and overall study recommendations, are shown on Figure 4.1 at the end of this Chapter and are described in further detail below. The improvements begin at the west end of the study area and continue east and are not in priority order. The numbering corresponds to the west to east convention on Figure 4.1.

1. Traffic signal spacing in the western portion of the Hoosick Road corridor demands that individual signalized intersections be considered in the context of corridor-wide operations. While some of the signals are currently programmed for coordination, changes in land use and traffic patterns require updates to the existing timing plans. Based on the analysis, it is recommended that NYSDOT implement conventional signal coordination from Lake Ave to Walmart including several time of day and day of week timing plans to best accommodate known traffic variations. Traffic operations in the corridor should continue to be monitored including the potential implementation of ATSC, in the event NYSDOT Region 1 commits to this technology and determines ATSC upgrades are necessary.

2. The plan recommends implementing traffic calming measures in the Sycaway neighborhood to maintain local access and promote safe speeds that match the residential context. Both vertical and horizontal traffic calming elements as shown in the "Traffic Calming Toolbox" should be considered at key locations on Genesee Street, Oneida Avenue, Otsego Avenue, Prout Avenue, Mellon Avenue, and Coolidge Avenue.

3. Continuing east, modifications to the Hoosick Road/Lord Avenue intersection can improve traffic operations. In the short term, widening the eastbound intersection approach to provide a bus turn-out will improve traffic flow by allowing buses to exit traffic to serve the existing nearside bus stop. Additionally, a queue jump phase could be considered at the signal to facilitate buses safely and efficiently re-entering traffic. In the longer term, it is recommended that the signal owner and the Town coordinate with NYSDOT to explore further the feasibility of a roundabout to increase vehicle capacity.

4 Along with the transit improvements at Lord Avenue, it is recommended that the existing mid-block bus stops on Hoosick Road at Oneida Avenue, Derrick Avenue and Killock Avenue be removed to improve bus stop spacing, resulting in improved flow for buses and general traffic.

5 Continuing east, the plan recommends widening the Hoosick Road/Roosevelt Avenue intersection to accommodate two eastbound receiving lanes and match the existing four-lane cross-section to the east. The widening would enable modification of the eastbound approach to provide two through lanes, increasing vehicle capacity at the intersection and improving operations. The existing eastbound far-side bus stop should be relocated near-side under this concept.

6 To improve connectivity to the middle portion of the Hoosick Road corridor, the plan recommends future consideration of additional roadways to connect S. Lake Avenue to Ricardi Lane, Ricardi Lane to Brunswick Road (NY 2), and Lord Avenue to N. Lake Avenue. Specifically, it is recommended that the Town secure right of way along the indicated paths as part of the development approval process if and when these properties develop. It is noted that if these roadway connections cannot be secured as part of the development process, the Town may wish to pursue these connections as a multi-use path to provide bicycle and pedestrian access.

7 Similar to the roadway connections, it is recommended that the Town consider constructing sidewalks or a multi-use path along McChesney Avenue and McChesney Avenue extension to better connect the existing and potential future multi-family housing developments to retail and commercial opportunities on Hoosick Road.

8 In the eastern portion of the Hoosick Road corridor, it is recommended that NYSDOT explore measures to improve sight distance or warning sign conspicuity at Arminghall Drive, including evaluating measures to reduce speed. As development occurs or gateway treatments are implemented at Grange Road (NY 142), reducing the posted speed limit should be evaluated in this section. This would be accomplished by the Town making a request to the NYSDOT to reduce the speed limit. The existing speed limit is 45 mph in the eastern part of the corridor as compared to 30 mph in the western part of the study area.

9 At the eastern most study area intersection, the plan recommends that the Town and NYSDOT construct a roundabout to improve vehicle capacity and serve as a gateway to the commercial portion of the corridor.

G Consider updates to land use and site plan review policies to promote design that limits future congestion and accommodates multi-modal access.

Implementation and Funding

The study recommendations range from relatively low-cost short and mid-term improvements, as well as larger long-term considerations. Specifically, short and mid-term improvements that could be implemented within approximately a few years, include constructing traffic calming elements such as curb extensions, speed humps, and driver feedback signs in the Sycaway neighborhood, and updates to traffic signal coordination on the Hoosick Road corridor. In contrast, longer term projects such as the

Roosevelt Avenue widening and Hoosick Road/Grange Road (NY 142) roundabout would require additional coordination. It is recommended that for these projects, the Town work with the Transportation Council and NYSDOT to get these projects on the local and Statewide Transportation Improvement Program (TIP).

The following table (4.1) summarizes the implementation plan and estimated costs, proposed projects, partners, and potential funding sources. The planning level cost estimates are based on major work items and include an XX% contingency, along with design and construction inspection costs. At the time of any grant application or funding, the costs should be reviewed and updated if necessary based on timing and the specific project description.

TABLE 4.1. IMPLEMENTATION PLAN AND COSTS

ID	Description	Partners	Cost (Thousands)	Potential Funding Sources	Implementation Timeframe
1	Traffic Signal Coordination	NYSDOT	*This section is a placeholder. This draft report is intended to illustrate the analysis and preliminary recommendations to be presented to the public. After the conclusion of the comment period, planning level cost estimates and potential funding sources will be included in the final report.*		Short
2	Neighborhood Traffic Calming	Town			Short
3	Lord Avenue Bus Stop Improvement	NYSDOT/CDTA			Medium
4	Mid-Block Bus Stop Removals	CDTA			Short
5	Widening at Roosevelt Avenue	NYSDOT/Town			Medium
6	Future Roadway Connections	Town/ Transportation Council			Long
7	Sidewalk or Path Connection	Town/ Transportation Council			Long
8	Arminghall Drive Sight Distance	NYSDOT/Town			Medium
9	Hoosick Road/Grange Road Roundabout	NYSDOT/Town/CRTC			Long

Below is a description of the available Federal, State and Local funding sources.

Federal

TIP – The Transportation Improvement Program (TIP) is a five-year capital improvement program that allocates federal highway funds to surface transportation projects that have been selected through the Transportation Council's planning process. The Transportation Council updates the TIP every two years to maintain a current list of projects. Below are several federal funding sources typically found on the TIP:

- HSIP – Highway Safety Improvement Program funding is for projects designed to achieve significant reductions in traffic fatalities and serious injuries on all public roads.
- NHPP – National Highway Performance Program funding for projects that support progress toward achievement of national performance goals for improving infrastructure condition, safety, mobility on National Highway System (NHS) roadways. Route 7 is an NHS roadway, and is therefore eligible for NHPP funding. NHPP eligible activities include roadway reconstruction, resurfacing, operational improvements (including traffic signal upgrades and computerized traffic signal control), safety improvements, and bicycle and pedestrian facilities.
- TA – Transportation Alternatives funding is a set-aside of funds under the Surface Transportation Block Grant (STGB) Program for on and off-road pedestrian and bicycle facilities, non-driver access to public transportation, and safe routes to schools. States have flexibility in how the TA program is administered and the New York State program is run through the state level TAP office.
- STBGP – Surface Transportation Block Grant Program funding provides flexible funding that may be used by states and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway or bridge on any public road, pedestrian and bicycle infrastructure, operational improvements, and transit capital projects.

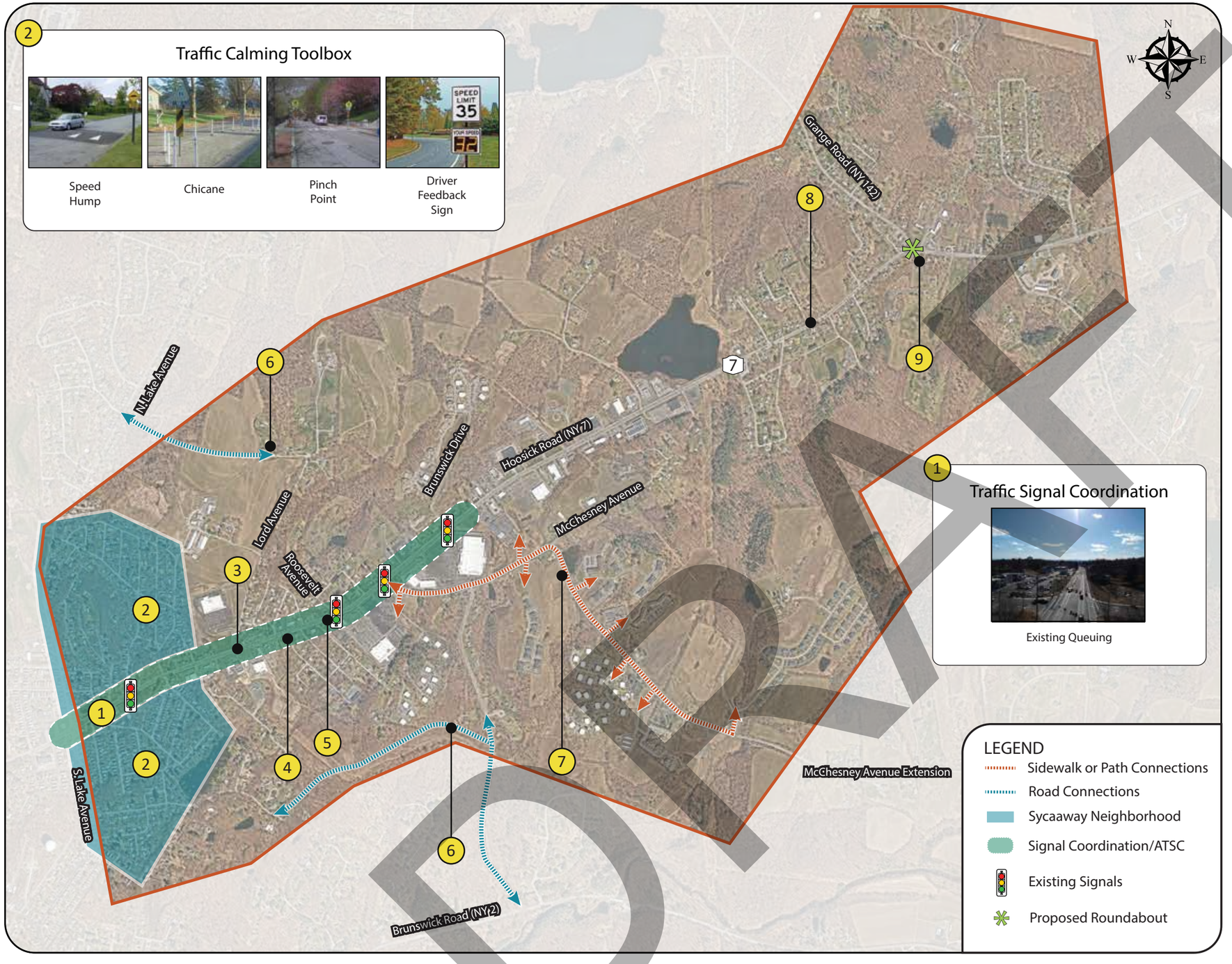
State

- State Dedicated Funds – Programmed at the discretion of the NYSDOT.
- CFA/REDC – The Consolidated Funding Application is an efficient, streamlined tool to apply for State economic development funds. The application examines funding for transportation infrastructure from multiple State sources including NYSDOT.
- CHIPS – The Consolidated Local Street and Highway Improvement Program provides State funds to municipalities to support the construction and repair of highways on the State highway system. To be eligible for CHIPS funding, the project must be undertaken by a municipality (i.e. City of Troy), be for a highway-related purpose, and have a service life of 10 years or more.

Local

- Federal transportation programs typically require a 20% local match. The Town should plan to cover a portion of the project's cost through their general fund or bonding.

The Town of Brunswick may adopt or formally acknowledge the findings of this Planning Study as a first step to pursue funding and ultimately to implement the recommendations of this study.



1. Short Term: Update conventional traffic signal coordination parameters to improve progression through the corridor.
   Long Term: Monitor traffic conditions and NYSDOT Region 1 adoption of ATSC to determine appropriateness of future upgrades.
2. Implement traffic calming measures in the Sycaaway neighbrohood to discourage through traffic and maintain local access.
3. Short Term: Widen to south and provide eastbound queue jump to remove buses from general traffic and improve flow.
   Long Term: Explore feasibility of a multi-lane roundabout at Lord Avenue.
4. Remove mid-block bus stops at Oneida Avenue, Derrick Avenue, and Killock Avenue to improve bus stop spacing and traffic flow.
5. Widen Hoosick Road at Roosevelt Avenue to accomodate a second eastbound through lane.
6. Improve network connectivity by implementing local access connections outside of the Hoosick Road corridor.
7. Consider sidewalks or a multi-use path on McChesney Avenue and McChesney Avenue extension to connect multi-family housing to retail destinations.
8. Explore measures to reduce speed, improve sight distance, or improve warning sign conspicuity at Arminghall Drive.
9. Construct a roundabout at Grange Rd (NY 142)
G. Consider updates to land use and site plan review policies to promote design that limits future congestion and accommodates multi-modal access.

TOWN OF BRUNSWICK

CAPITAL REGION Transportation Council

Suggested Improvements
Hoosick Road Corridor Study

Improvements are conceptual in nature. Final design could vary.

Creighton Manning

Figure 4.1 January 2024