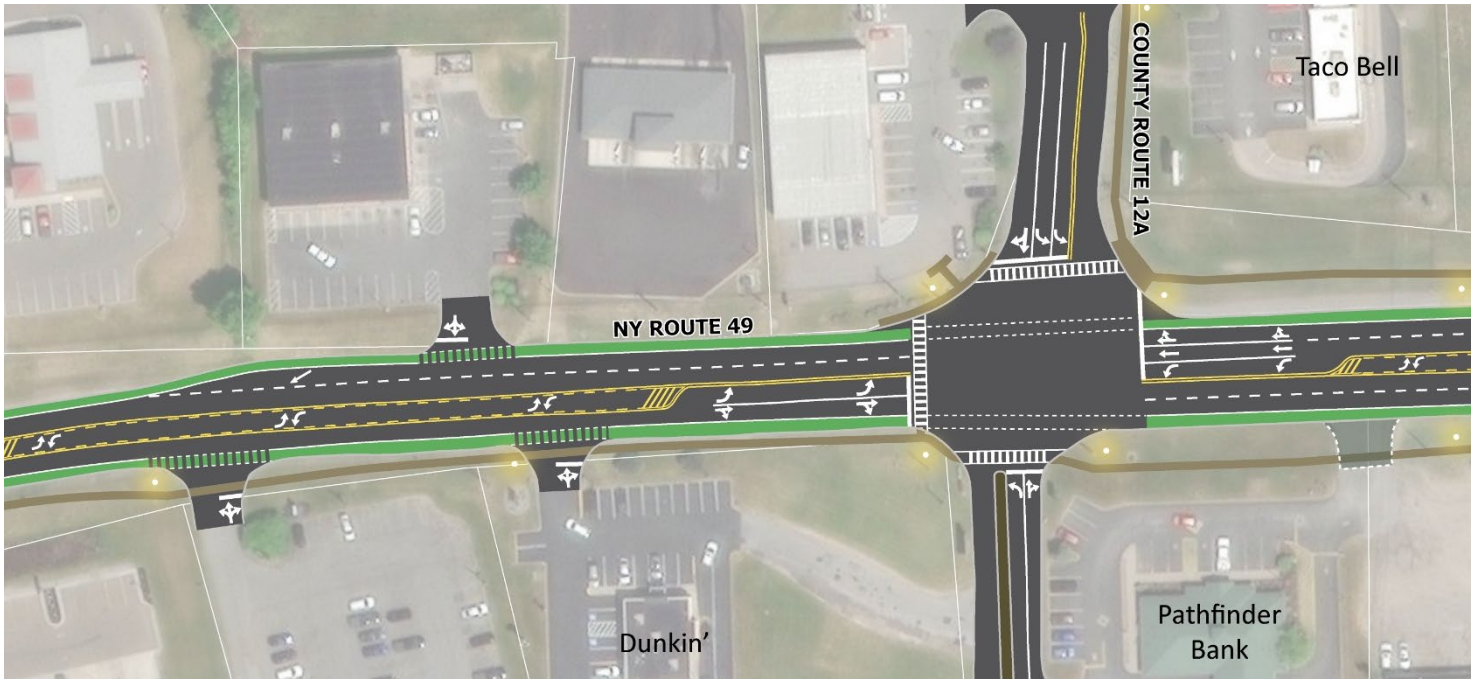
Route 49 Mobility Study – June 25, 2026



Syracuse Metropolitan Transportation Council

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Route 49 Mobility Study

Syracuse Metropolitan Transportation Council

Final Report

June 25, 2026

This document was prepared with financial assistance from the Federal Highway Administration and the Federal Transit Administration of the U.S. Department of Transportation through the New York State Department of Transportation. The Syracuse Metropolitan Transportation Council is solely responsible for its contents.

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SMTC

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1 - Introduction

1.1 Overview

As part of the 2024-2025 Unified Planning Work Program (UPWP), the Syracuse Metropolitan Transportation Council (SMTC) agreed to assist the Town of West Monroe and others with an analysis of transportation system mobility needs along the Route 49 corridor.

Who is SMTC?

The SMTC is the local Metropolitan Planning Organization (MPO) responsible for administering comprehensive, continuous, and cooperative transportation planning for the Greater Syracuse area. By federal law, a MPO is designated by the Governor for every urban area with at least 50,000 residents.

The SMTC acts as a clearinghouse where transportation planning decisions are made through a committee structure that uses models of consensus building and cooperative decision making. Committees are made up of "member agencies" from the local, county, regional, state, and federal level that have a vested interest in the planning and function of the transportation system.

The planning process also provides community members with an opportunity to participate in the discussion of specific transportation issues.

What is the Metropolitan Planning Area (MPA)?

The SMTC planning jurisdiction, called the Metropolitan Planning Area (MPA), covers Onondaga County and portions of Madison and Oswego counties.

What is a mobility study?

A mobility study is a planning-level (i.e., not engineering-level) assessment of roadways, sidewalks, bikeways, and transit facilities to help identify "big picture" vehicle, bus, pedestrian, and bicycle amenity improvement options. Some options may require additional study, design, public review, and environmental assessment.

How is this study funded?

This document was prepared using federal transportation funds (not grants) that are designated specifically for planning activities. Planning funds cannot be used for construction or other capital improvements and must be used for developing plans and studies. MPO transportation planners provide technical and objective expertise at no cost to the local community.

Who decides to implement options?

MPOs do not own or control infrastructure. Roads around Route 49 are owned by the New York State Department of Transportation (NYSDOT), the Oswego County Highway Department (Oswego County), the towns of West Monroe and Hastings, the village of Central Square, and private landowners. NYSDOT owns and controls Route 49. Road owners decide whether to implement or not to implement improvement options. As mentioned, options may require further study and design by a licensed engineer.

1.2 Regional Context and Study Area

Figure 1 shows the regional context of the study area, which extends from Little Canada Road in Hastings through the Village of Central Square

to Route 37 in West Monroe. For analysis purposes, SMTC focused on a "primary" study area from Webb Avenue to Route 37 (Figure 2). This is where the highest traffic volumes and greatest impacts are anticipated to occur. Other roads of interest include:

NYSDOT

- I-81
- U.S. Route 11

Oswego County

- CR 12
- CR 12a (Walmart Driveway)
- CR 37

Village of Central Square

- Green Acres Drive

Private Roadways

- Summerhill Drive/Green Acres Drive

1.3 Problem Overview

Route 49 varies from three to four lanes. The study area includes a commercial corridor that has an auto-centric design and land use patterns. These features limit travel modes and prioritize vehicular travel.

The region is also expecting population and job growth. SMTC's regional travel demand modeling forecasts that traffic within the study area will increase by nearly 20 percent in the next 25 years. Local communities are concerned that additional traffic growth could adversely affect signal operations and corridor travel.

The communities seek to plan for this growth, promote mobility options (e.g., vehicles, walkers, bicyclists, snowmobilers, etc.) and capitalize on assets such as snowmobile trails and walking trails.

They also seek to better understand where development could potentially occur and where key access points could be prioritized to balance traffic growth with mobility improvements. In short, the study's purpose is to guide future decisions about enhancements that support:

Vehicular Mobility

- Determine when traffic growth results in failing level-of-service at intersections
- Determine mitigation solutions to accommodate future traffic growth

Bicyclist/Pedestrian/Snowmobile Mobility

- Identify needed facilities

Land Use Connections and Circulation

- Improve access management and safe connections to properties
- Identify "side road" connections to Route 49 and potentially developable areas

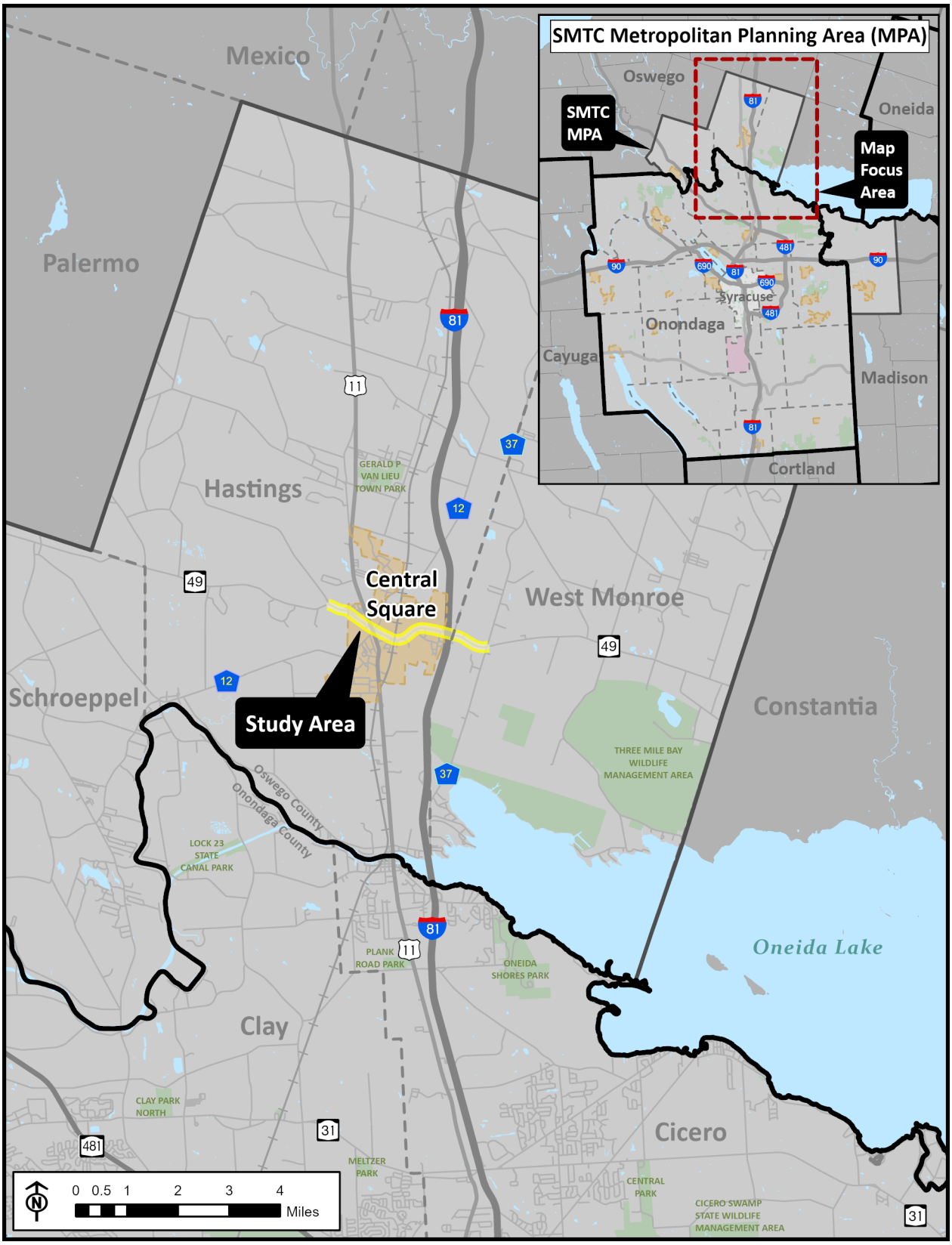


Figure 1 – Regional Context Map

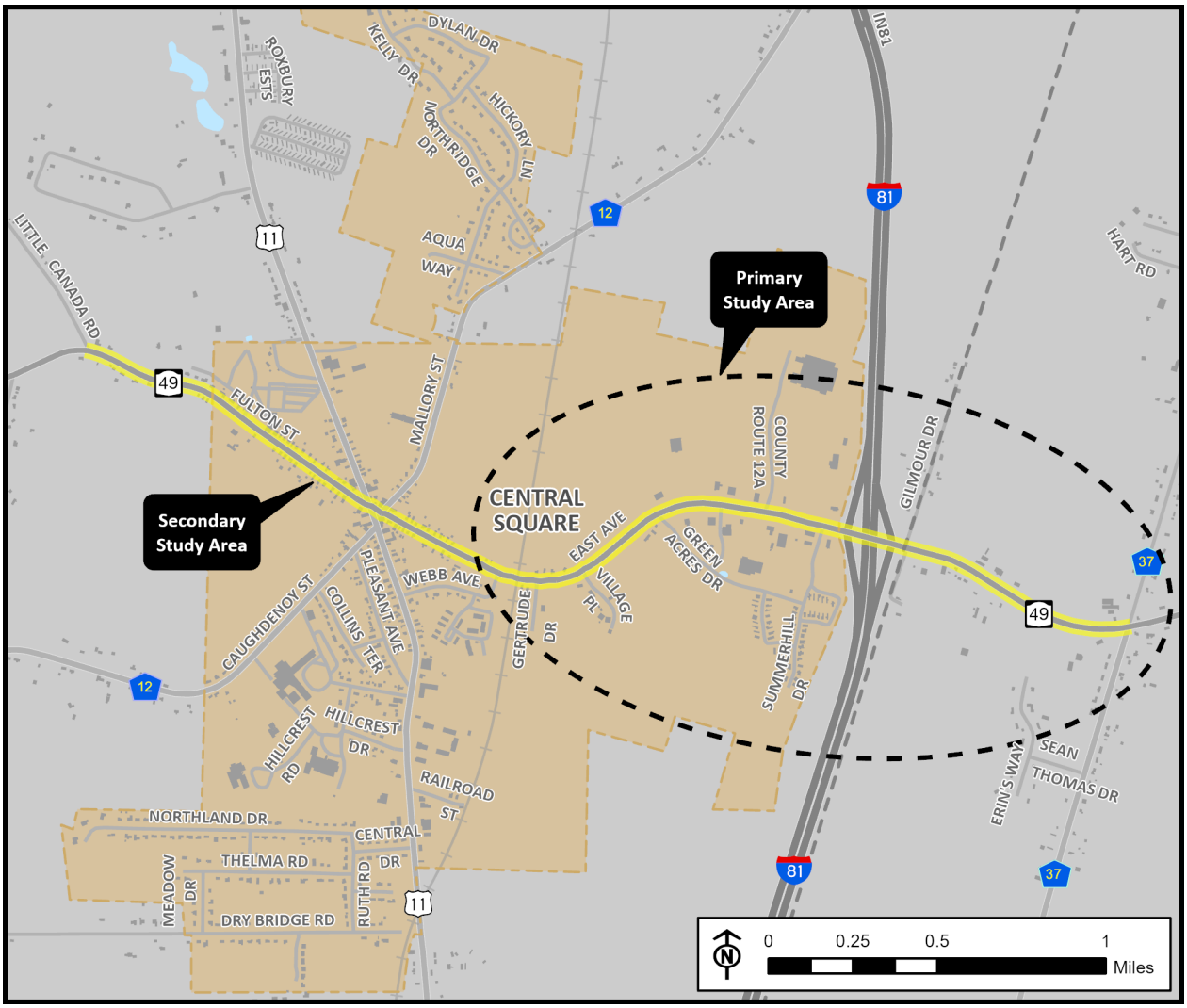


Figure 2 – Primary Study Area (within circle) for Analysis Purposes

1.4 Mobility Study Scope

SMTC developed a scope in consultation with representatives from the Town of West Monroe and SMTC member agencies. The scope was approved on July 26, 2024. A copy is provided in Appendix A.

1.5 Study Overview

SMTC used its regional Travel Demand Model (TDM), which incorporates growth from Micron, to determine future traffic growth projections, which range from approximately 0.5 percent to 0.6 percent per year.

SMTC also developed a Synchro model to assess performance at intersections. SMTC assessed existing traffic volumes and two future (2050) scenarios that are based on a conservative (high) annual growth rate of 0.75 percent over the next 25 years. Based on the Synchro findings, SMTC developed a concept plan to illustrate what types of improvements may be required to accommodate future growth projections and show best practices for access management and new connector roads.

1.6 Study Advisory Committee

To oversee this study's development, SMTC established a Study Advisory Committee (SAC) comprised of representatives from the following agencies:

- New York State Department of Transportation (NYSDOT)
- Oswego County Legislature
- Oswego County Department of Mobility Management
- Village of Central Square
- Tug Hill Commission
- Town of West Monroe
- Town of Hastings

SAC members provide technical and procedural guidance but do not vote to approve study-related products. The SAC reviewed the scope at its first meeting on December 6, 2024. The SAC met two times and corresponded via email and phone calls as needed during this study.

1.7 Public Feedback

As a technical assessment, SMTC studied future growth projections to inform decisions about how to best mitigate impacts.

The SMTC posted the draft study online for public review and comment. Comments received are summarized within this report and are included in Appendix B.

Image 1 – Rt 49 from I-81 northbound off-ramp

2 - Local Planning Studies and Initiatives

SMTC reviewed the 2013 SMTC Pedestrian Model, and the 2024 North Shore Council of Governments (NorCOG) Economic Resiliency and Recovery Plan. SMTC also attended an informational session about the Southern Oswego County Regional Interceptor Sewer (SOCRIS) study. Comprehensive plans for the communities of West Monroe, Hastings, and Central Square were not available at the time of writing this report and/or do not exist. Currently, Hastings is preparing a Local Waterfront Revitalization Program (LWRP) and Oswego County is updating a comprehensive plan.

2.1 SMTC Pedestrian Model (2013)

In 2013, the SMTC developed a Pedestrian Demand Model that uses a combination of factors, such as proximity to schools, parks, and grocery stores, as well as population density, employment density and demographic characteristics, to identify places that are "walkable." Walkable, in this context, means that homes, businesses and public buildings are situated near one another, within a relatively short walk – generally less than a half mile. As shown in Figure 3, the Model indicates the Route 49 study area east of Gerturde Drive does not have a mix of land uses attractive to pedestrians with sufficiently high model scores to qualify as a Priority Zone. However, a Priority Zone exists along Route 49 west of Gertrude Drive. This area includes dense residential neighborhoods, a library, a post office, and the Central Square School District Campus.

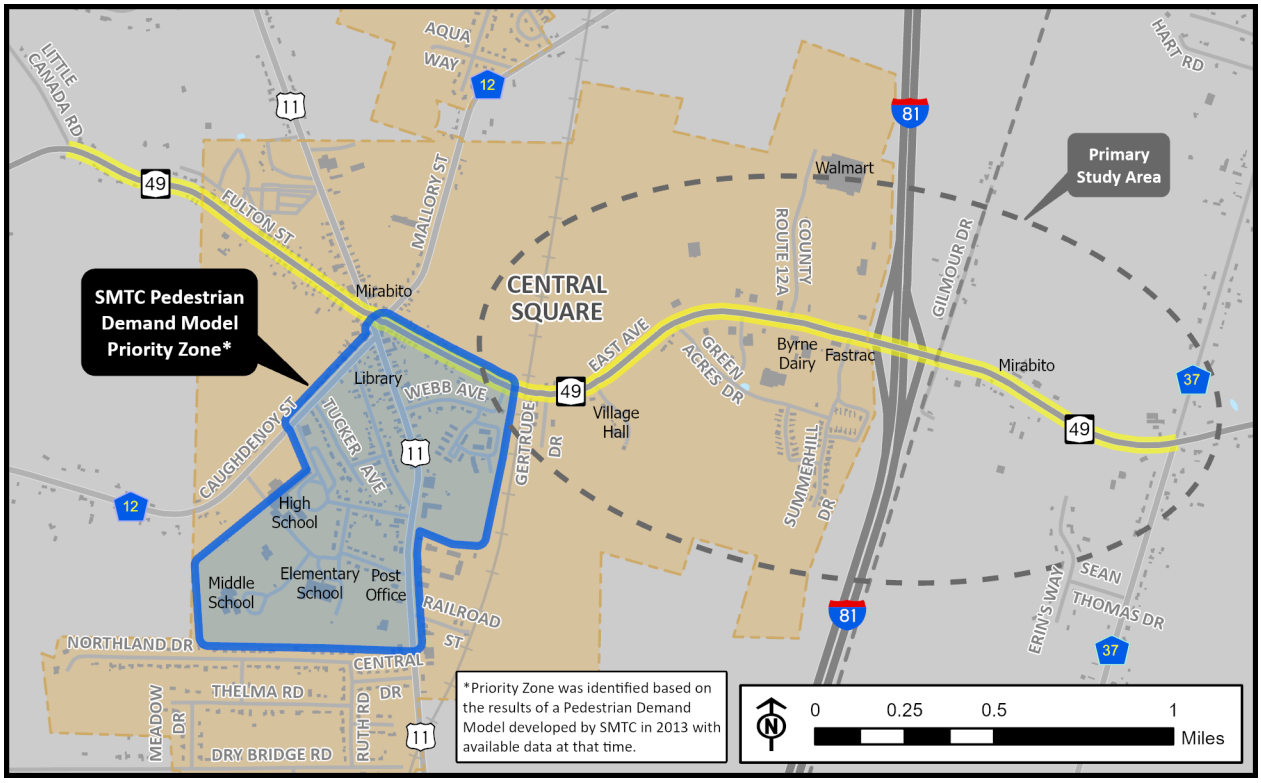


Figure 3 – SMTC Pedestrian Demand Model

2.2 NorCOG Economic Resiliency and Recovery Plan 2024

The Economic Resiliency and Recovery Plan (plan) for the Towns of Constantia & West Monroe, Villages of Central Square and Cleveland was prepared for the North Shore Council of Governments (NorCOG) by the MRB Group in February 2024.

Image 2 – Economic Resilience & Recovery Plan

The plan includes an action plan that focuses on five areas:

1. Existing business expansion
2. Infrastructure (updating and expansion)
3. Expand recreational offerings
4. Expand tax base
5. Zoning and policy

Assets

The Plan identified the following assets: tourism, Oneida Lake, fishing, trails, government jobs, retail trade, construction, and food services.

Issues

The plan identifies the following issues: Congestion, traffic safety, lack of sewers, and a lack of hotel rooms.

Wants

The plan identifies the following wants: more restaurants, a community center, more public access to Oneida Lake, a grocery store, and open space.

Opportunities

The plan identifies the following opportunities: the coming of Micron in the Town of Clay can help support more housing and supply chain businesses.

The plan does not include land use recommendations or growth projections.

2.3 Southern Oswego County Regional Interceptor Sewer (SOCRIS) 2/2025

SMTC attended a virtual informational presentation by Barton & Loguidice (B&L) about SOCRIS in February 2025. Main takeaways include:

- $91M Oswego County Project
- 5 towns, 3 villages potentially served
- Sized for long-term regional growth
- 22.4 miles of sewers (primarily along the Oswego County Recreational Trail, i.e. the rail-to-trail)
- Discharge to City of Fulton's WWTP which is only 1/3 utilized due to the loss of past industries
- Fulton's WWTP has capacity for another 10,000 people
- Schedule: funding applications '25-'26, Design '26-'27, construction '28-'29

B&L created a map that shows the potential sewer service expansion area. As shown in Figure 4, the Village of Central Square is located within the center of the map.

Route 49 corridor (including the study area) is within potential sewer expansion area. It should also be noted that the Town of Constantia (to the east of the study area) also has a town project that could tie into the SOCRIS project.

This potential project is known as the North Shore Sewer Project.

Key takeaways include:

- $61.8M Town Project
- 1,082 parcels served
- 310,000 gallons per day removed from the Oneida Lake watershed
- 55.9 miles of new sewer
- Schedule: funding applications ’25-’26, Design ’26-’27, construction ’28-’29.

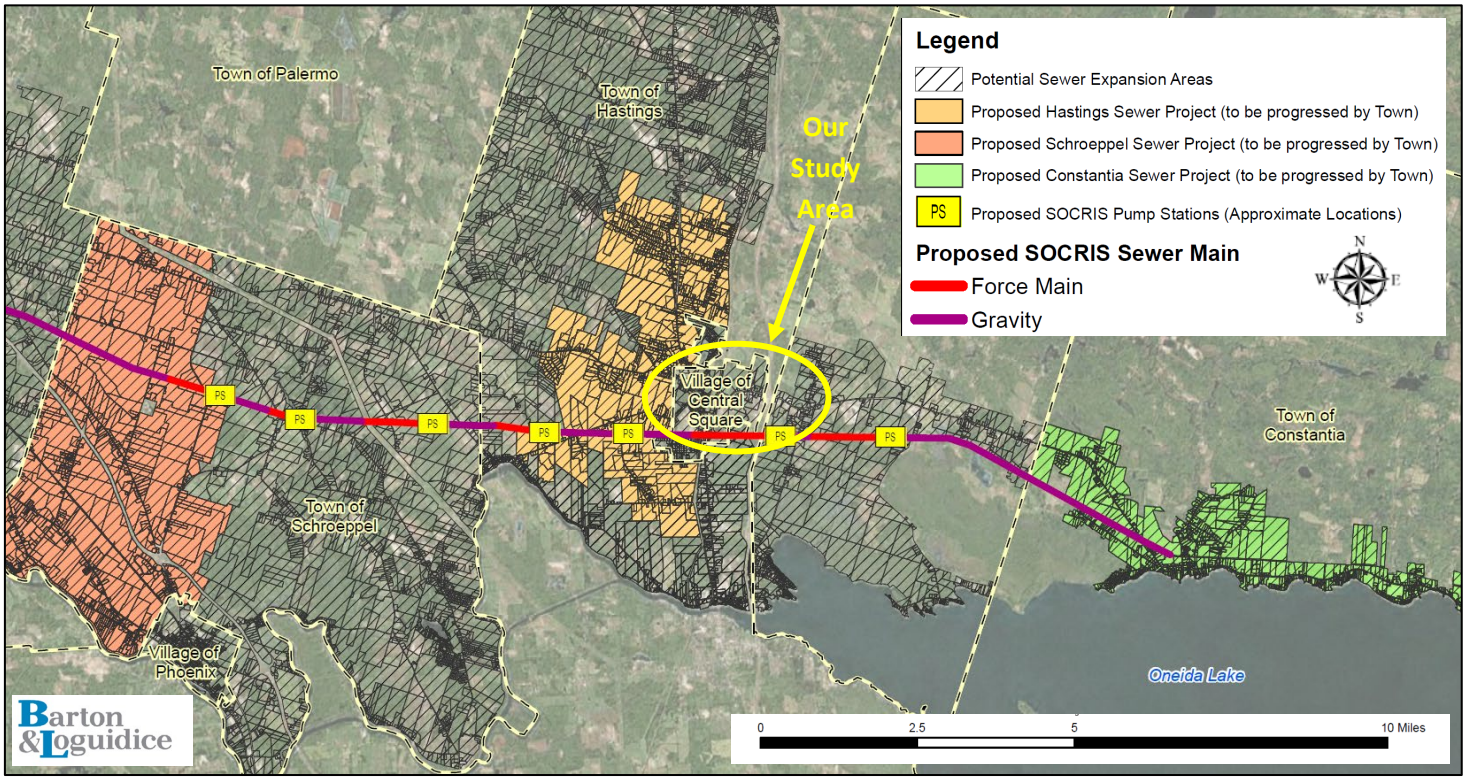


Figure 4 – Map of Potential Sewer Expansion Areas (Map provided by: B&L Engineers)

3 –Existing Mobility Profile

The 2024 Economic Resiliency and Recovery Plan (plan) include a detailed demographic summary for the communities within the North Shore Council of Governments. That plan recommended conducting this study, and by extension, this document serves as an outgrowth of that effort. As such, this report supplements the demographic data with the following additional travel and demographic profile information.

3.1 Transportation Overview

SMTC reviewed the 2022 American Community Survey (five-year estimates) to determine travel characteristics for Central Square, Hastings, and West Monroe. Major takeaways include:

- Mean travel times to work range from 23.0 to 31.5 minutes
- Approximately 13% of households do not have access to a vehicle
- Approximately 1% of workers walk, bike, or take the bus to work
- Approximately 5% to 8% of workers work from home
- Two thirds of workers commute to Onondaga County

3.2 Centro Transit Operations

As shown in Figure 5, Centro operates commuter bus service, Sy 88, which consists of:

- two regular bus routes (288 and 388) that travel along US 11
- one limited service express route (Route 388X) that travels along I-81 and Rt 49

These routes operate Monday through Friday. Bus stops within Oswego County are not signed.

Central Square to Downtown (Route 288)

The regular morning bus route, Route 288, departs from Central Square (Hungry Lane Road) at 5:46 a.m. and arrives at the Centro Transit Hub in Downtown Syracuse by 6:51 a.m. The regular evening bus route, Route 288, departs Hungry Lane Road at 6:22 p.m. and arrives at the Centro Transit Hub at 7:27 p.m.

Downtown to Central Square (Routes 388X & 388)

The morning bus route from Downtown to Central Square is the only limited express route, Route 388X. Within Central Square, Route 388X travels via I-81 and along Route 49 to US 11. It departs from the Centro Transit Hub at 5:07 a.m. and arrives at Hungry Lane Road at 5:46 a.m. The regular evening bus route is Route 388. It departs the Centro Hub at 5:30 p.m. and arrives at Hungry Lane Road at 6:22 p.m.

Boarding & Alighting

Centro collects boarding (getting on the bus) and alighting (getting off the bus) data by bus stop, with approximate weekday averages for the number of people boarding and alighting at each stop.

Based on 2023 data, on average, bus stops along these routes have fewer than 1 factored daily boarding. None have daily-factory boarding activity that is within the top 25% of all stops. Centro examines bus stops that have an average of at least 50 riders boarding daily to determine if the stop is eligible for a bus shelter. The bus stops within this study area do not meet the activity threshold to qualify for installing a shelter.

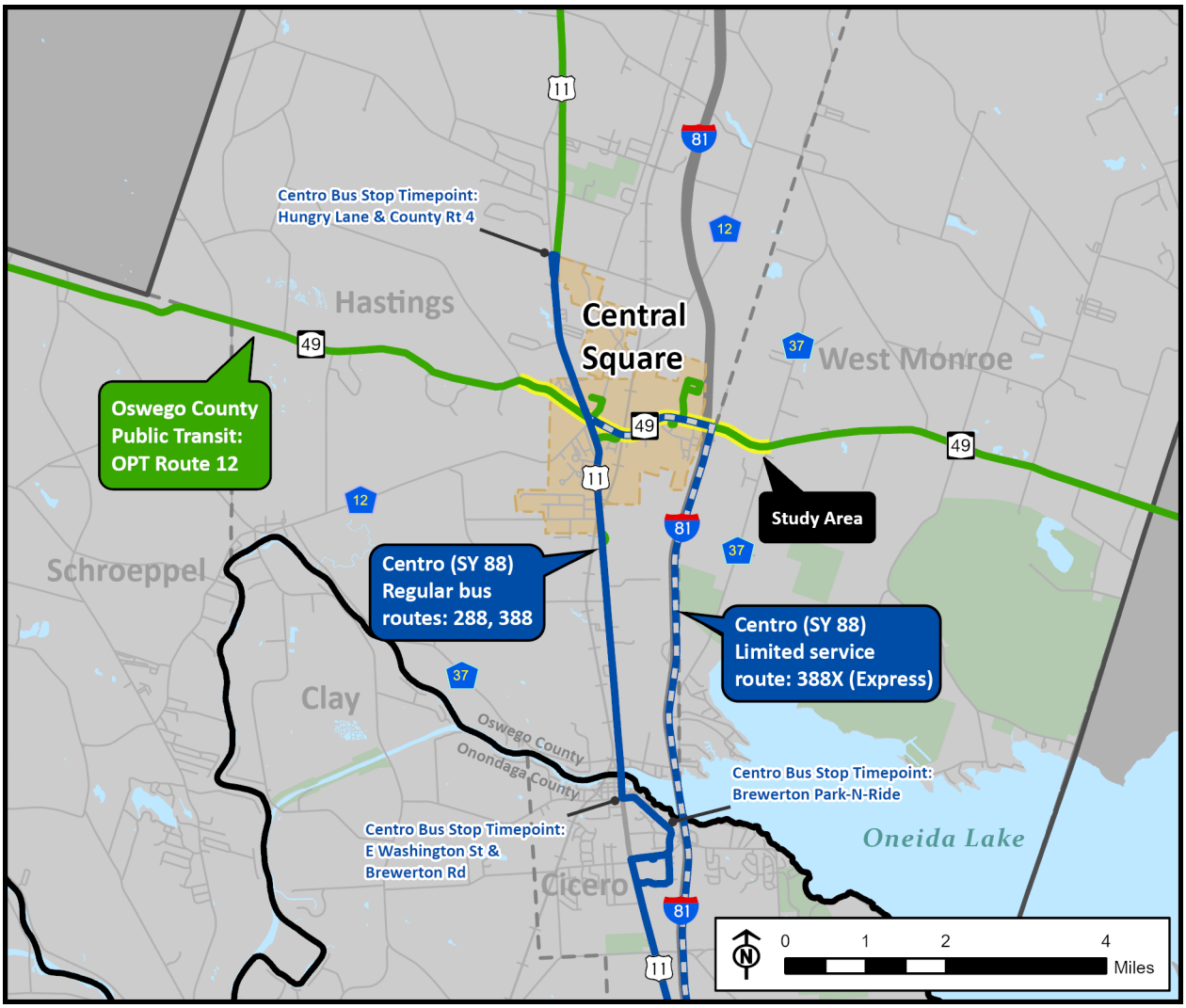


Figure 5 – Bus Routes

3.3 Oswego Transit Operations

In addition to Centro's service, Oswego County operates another public transit system in the study area.

Oswego County Public Transit (OPT Route 12) operates on a schedule Monday through Friday between 4:30 a.m. and 7:30 p.m. OPT also offers route deviations of up to 3/4-mile with 24-hour notice to allow for on-call special pick-up [paratransit] service.

OPT service also connects with Centro bus services. All buses are ADA-accessible and open to the public.

OPT Route 12 provides service to (among other communities) Hastings, Central Square, and West Monroe. Notable destinations within the study area that are served by Route 12 include Urgent Care (9:38 a.m., 10:03 a.m., 1:15 p.m., 2:10 p.m.) and Walmart (6:25 a.m., 7:05 a.m., 9:00 a.m., 9:45 a.m., 10:15 a.m., 11:35 a.m., 1:25 p.m., 2:10 p.m.).

3.4 Bike/Pedestrian Activity

Bicycle and pedestrian counts are extremely limited at study area intersections. Where counts exist, there are typically two or fewer bicyclists or pedestrians that travel through an intersection during peak hour periods.

3.5 Snowmobile Activity

Snowmobiling is an active form of transportation during the winter months in Oswego County. It serves a recreational purpose and is a big economic generator for the region.

According to the New York State Snowmobile Trail Association, there is an active local club - the Square Valley Trail Blazers - that has a strong membership base. Club members ride on trails within the study area and other riders who are not local club members also travel through the area using the local trails.

Several SAC members indicated they snowmobile on the club's trail system. Staff observed sled tracks in the snow within and throughout the study area during the '24/'25 snow season. There are no known counts of the number of people who use the trail segments within the study area. But suffice to say, it is an active area for snowmobilers.

Image 3 – Snowmobilers - courtesy of sccwi.gov

4 – Existing Facilities Profile

SMTC staff conducted a desktop analysis of existing road, bike, transit, and bike facilities.

4.1 Road Infrastructure

Number of lanes (roadway cross-section)

Travel lanes vary across the study area, but generally consist of one eastbound lane, one westbound lane, and one two-way-left-turn-lane (TWLTL). The TWLTL exists where there are driveways and no side streets. Where side streets occur, there is a brake in the TWLTL, and a dedicated left-turn bay is incorporated to allow left-turns onto the side street(s). This occurs at Green Acres Drive (westbound), at the Walmart intersection (eastbound), and at Route 37 (eastbound). Other eastbound and westbound left turn lanes (and one right turn lane) exist along the corridor.

The length of left turn lanes varies, but several are 250' to 400' and extend across businesses with driveways. Patrons turning left from businesses onto Route 49 must cross multiple travel lanes, which reduces safety as it increases the number of crash conflict points.

Route 49 posted speed limits are 30 MPH on Fulton Ave., 35MPH on East Ave., and 45 MPH between I-81 bridge and Route 37.

Pavement widths generally range from 45' to 55' but can be as wide as 70'. The bridges over Little Bay Creek and I-81 are approximately 48' and 58', respectively. Lanes appear to range between 11' and 12' wide.

Highway designations

An individual roadway can carry a variety of designations, such as ownership, functional classification, and route numbers. These designations determine design criteria, funding availability, and the process for undertaking capital or maintenance projects on the road. Each of these designations is described below and summarized in Table 1.

Touring Routes and Designated Bike Routes

Signed state highways in New York, referred to as "touring routes", are numbered from 1 to 899. Oswego County also designates County Route numbers for its roadways to assist with inventory purposes. Table 1 lists the route/touring number for each roadway.

NYSDOT also designates and signs bicycle routes. Within the study area, New York State Bike Route 11 runs along US 11. State Bicycle Route 11 is a signed on-road bicycle route that extends 320 miles from the Pennsylvania state line near Binghamton to Rouses Point on the New York – Quebec border. No bicycle facilities (e.g., bike lanes, sharrows, bike paths, etc.) exist along Route 11 in this area.

Functional Classification and ownership

Functional classification categorizes roads according to their character and the role they play in the transportation network. This classification puts roads into categories ranging from interstates, which are designed for high-speed trips between cities, to low-speed local roads, which provide access to individual properties. Roads are also classified as being urban or rural based on the Urban Area Boundary, which is primarily based on population density reported in the US Census.

Table 1 - Highway designations for Federal Aid-Eligible roads in study area

Highway Name	Segment	Route/ Touring Number	Owner	Functional Classification	Bike Route	National Highway System (NHS)
Route 49	*Little Canada Road to Route 37*	NY 49	NYSDOT	Minor Arterial	NA	No
Route 11	*Onondaga County to Wilson Road*	US 11	NYSDOT	Minor Arterial	NY 11	No
Route 37	*US 11 to Route 49*	CR 37	Oswego	Major Collector	NA	No
Route 12	*Onondaga County to CR 49*	CR 12	Oswego	Major Collector	NA	No
	*CR 49 to CR 32**	CR 12	Oswego	Minor Collector	NA	No
Route 81	*Onondaga County to Route 12*	I-81	NYSDOT	Principal Arterial Interstate	NA	Yes

* Not Federal Aid Eligible

As shown in Table 1 and in Figure 6, Route 49 is classified as a minor arterial. The portion of Route 49 between US 11 and I-81 is classified as urban, and Route 49 outside of this area (i.e., to the east and west) is classified as rural.

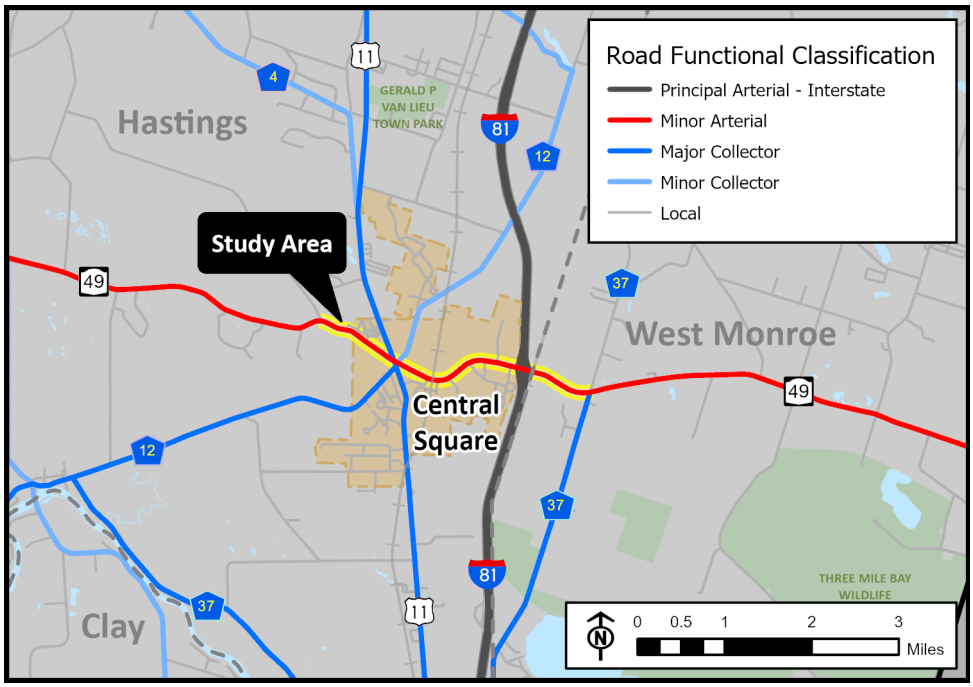


Figure 6 – Functional Classification

Functional classifications are directly related to federal-aid eligibility, which determines whether a road may receive federal transportation funding. Principal arterials, minor arterials, major collectors, and urban minor collectors are federal-aid eligible (also known as "FAE roads").

Rural minor collectors and local roads (urban and rural) are not FAE. Route 49 is a Minor Arterial and is FAE. Roads listed in Table 1 are FAE roads unless otherwise noted.

Study area roads not listed in Table 1 are classified as local roadways and, therefore, are not FAE roads. Depending on which municipality they exist within, the remaining study area roadways are owned by either the Village of Central Square, the Town of Hastings, or the Town of West Monroe.

Several "private roads" exist and thus are not owned by a government agency (e.g., Summer Hill Drive, a portion of Green Acres Drive, etc.).

Wherever private roadways exist, SMTC suggests that the local municipality consider working with private property owners to see if the municipality can obtain the right-of-way.

National Highway System (NHS)

According to the Federal Register, 23 USC § 101(a)(16), the term "National Highway System" (NHS) means the Federal-aid highway system as described in section 103(b). The NHS:

> consists of the highway routes and connections to transportation facilities that shall serve major population centers, international border crossings, ports, airports, public transportation facilities, and other intermodal transportation facilities and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel and commerce.

Roads on the NHS are prioritized for receipt of federal transportation funding. I-81 is part of the NHS, while the other roads are not.

4.2 Intersection Traffic Control

There are four signalized intersections along Route 49 within the study area. They all operate using a closed-loop detector system.

Northbound and southbound movements operate with three-colored signals. Eastbound and westbound movements operate with a combination of three-colored signals and five-section signal heads to accommodate protected-permissive left-turn phasing where left-turns are allowed.

Signal plans and programs provided by NYSDOT indicate that these signals are actuated-coordinated. The signals at Walmart and at the I-81 northbound and southbound ramps are coordinated. The I-81 northbound ramp signal is the master signal. Northbound operations are prioritized at this location. The I-81 southbound ramp signal and the Walmart signal prioritize east-west movements. These three signals are part of the same zone (Zone 1).

The remaining intersections are unsignalized with stop sign control on the side street(s) only (i.e., four-way stop-controlled intersections do not exist along US 49 in the study corridor).

4.3 Bicycle and Pedestrian Facilities

In general, bike and pedestrian facilities do not exist along East Avenue (i.e., Route 49). The Oswego County Recreational Trail extends along Route 49 from Route 11 to Route 37. A portion along Fulton Street (Route 49) includes 3' to 4'-wide sidewalks, but as mentioned, sidewalks do not exist along East Avenue (Route 49). Bike facilities do not exist along this route.

Walmart Intersection Pedestrian Amenities

Ladder-style crosswalks exist across the eastbound and southbound approaches. Pedestrian-activated pushbuttons exist. A sidewalk connects the two crosswalks at the northwest corner. Curb cuts, detectable warnings, etc. do not exist.

NYS Bike Route 11

NYS Bike Route 11 exists as a signed route only along Route 11. It crosses Route 49. Bicycle facilities do not exist along this route.

5 – Traffic Profile & Crash Summary

5.1 Existing Traffic Volumes and Trends

Annual Average Daily Traffic (AADT) is a measurement of the average number of daily trips based on all vehicle trips (going both directions) on a segment of road during a yearlong interval divided by 365.

Traffic volumes along Route 49 (from Route 11 to I-81) have decreased during the last 20 years. Volumes peaked at 14,347 vehicles per day (VPD) in 2007. The most recent 2024 count shows an AADT of 11,573. This represents a 19.3 percent decrease throughout this segment, which is an annual decline of -1.1%.

The lowest recorded AADT was 10,375 in 2020. Trends are similar elsewhere along Route 49. Recent traffic impact studies within this area also document similar findings.

Figure 7 shows the AADT for roadways listed as actual (A) counts and estimates (E). Route 49 had an estimated volume of about 11,600 vehicles per day (VPD) within the study area. I-81 had about 25,000 to 34,000 VPD and County Route 37 had an estimated volume of about 2,400 VPD.

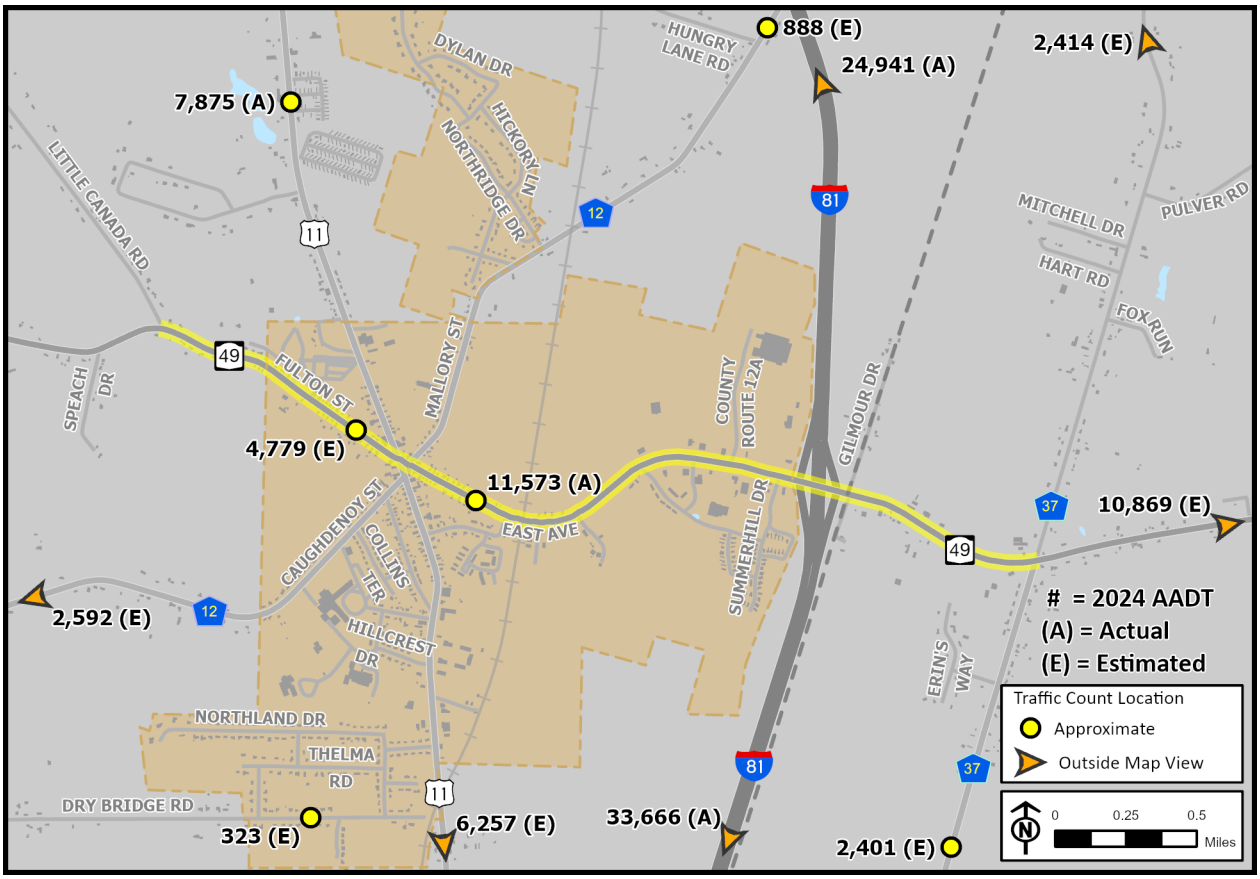


Figure 7 - Annual Average Daily Traffic (AADT) for roads around the Route 49 Study

In general, vehicular traffic throughout the region decreased following the 2020 global pandemic. Travel restrictions during the pandemic and the ability to work from home had lasting effects on traffic volumes.

Looking forward, SMTC's travel demand model, which will be discussed in greater detail in Chapter 6, forecasts a reversal of declining traffic volumes because of Micron and its anticipated induced growth projections for the region.

Hourly Traffic Volumes

Route 49 (east of Route 11) experiences a combination of commuter traffic and shopping trips that are typical of roads with commercial development and residential areas.

NYSDOT collected hourly traffic volumes in June 2020 and provided estimated volumes for 2023. However, SMTC opted to use data from 2016 (Figure 8) because it is the most recent actual count prior to the 2020 pandemic. Thus, it is more likely to represent typical conditions.

As shown in Figure 8, westbound (WB) traffic volume increased until it peaked at 554 vehicles per hour (VPH) between 7 a.m. and 8 a.m.

WB volumes dropped during the next two hours and then remained relatively steady between 9:00 a.m. until 5:00 p.m. before declining throughout the remainder of the evening.

Eastbound (EB) traffic volume increased gradually throughout the day until it peaked at 688 VPH between 5 p.m. and 6 p.m. before it decreased the remainder of the evening.

Total traffic volume (i.e., both directions) spiked twice during the morning (7 a.m. to 8 a.m.) and evening (5 p.m. to 6 p.m.) "rush" hours.

The highest recorded peak hour volume (1,095 VPH) occurred during the evening peak hour.

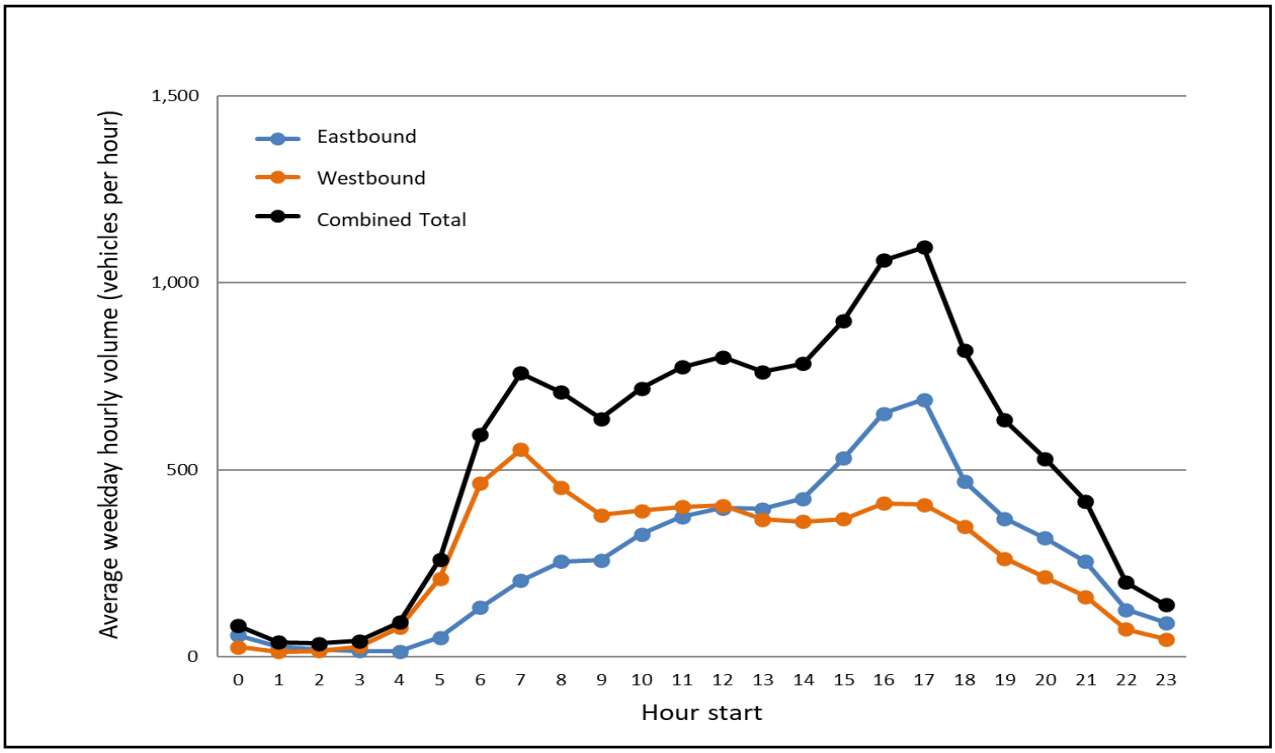


Figure 8 – Route 49 Hourly Traffic Volumes from U.S. 11 to I-81 *(NYSDOT July 26, 2016)*

NYSDOT conducted hourly traffic counts at Station 340575, which is east of Route 11 (450' west of Webb Place).

Hourly traffic counts provide a general picture of traffic volume, speed, and vehicle class in the corridor throughout the day, but individual intersection turning movement counts must be obtained to understand more specific travel patterns.

Existing Intersection Turning Movement Counts

Weekday intersection turning movement counts occurred during the morning commuter peak period (7:00 a.m. to 9:00 a.m.) and the evening commuter peak period (4:00 p.m. to 6:00 p.m.).

SMTC's consultants conducted turning movement counts at four locations. The NYSDOT provided turning movement count data for the remaining locations by referencing existing traffic impact studies (TIS).

Figure 9 and Figure 10 summarize morning and evening "peak hour" turning movement counts and source information.

"Peak hour" refers to four consecutive 15-minute count intervals that had the highest traffic volumes based on each of the two-hour count windows.

(Please note that the Rt 49 bridge over Big Bay Creek was closed from June 2024 to November 2024, when a temporary bridge was reopened. Traffic counts did not occur during this period.)

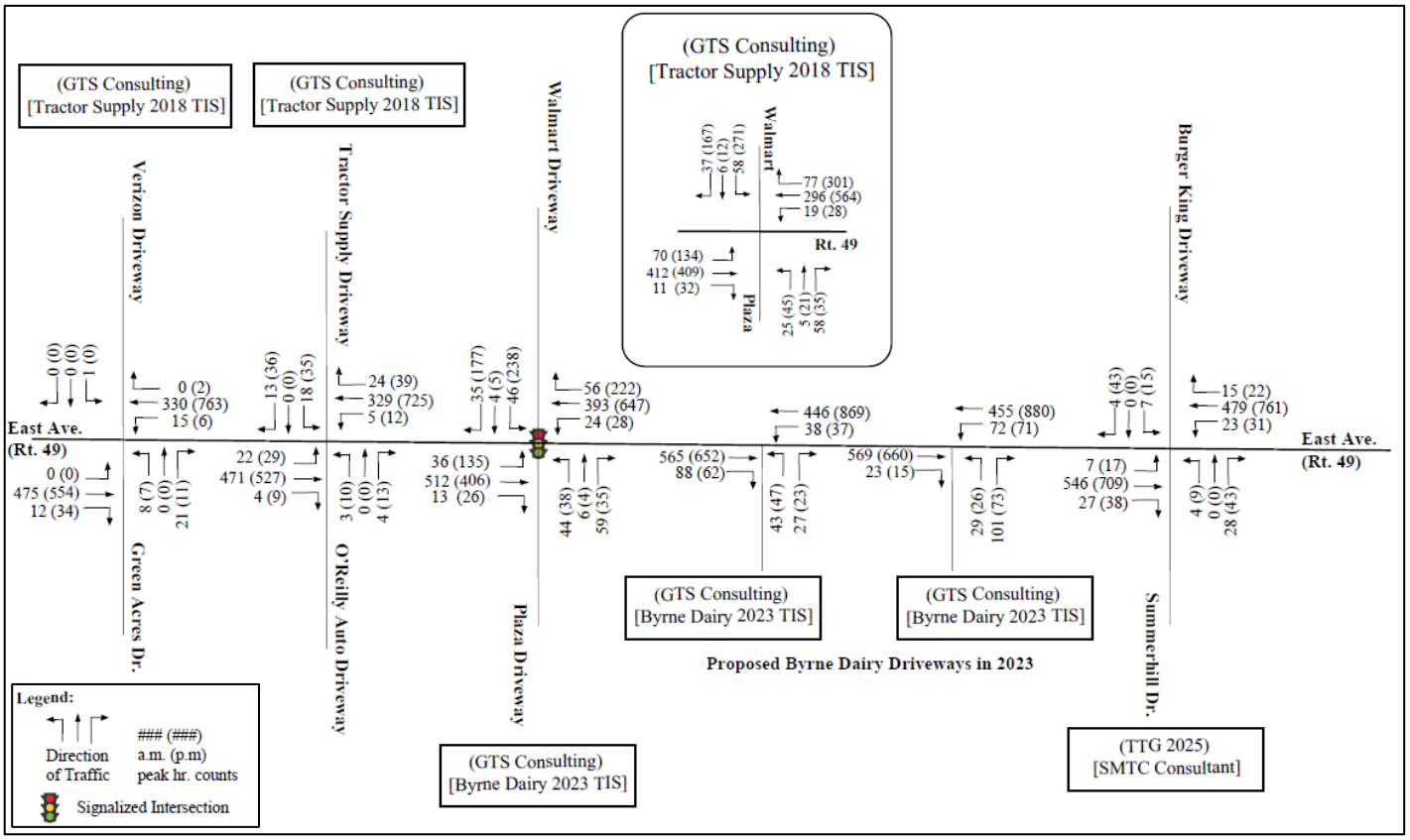


Figure 9 – Existing Weekday Turning Movement Counts (Green Acres to Summerhill)

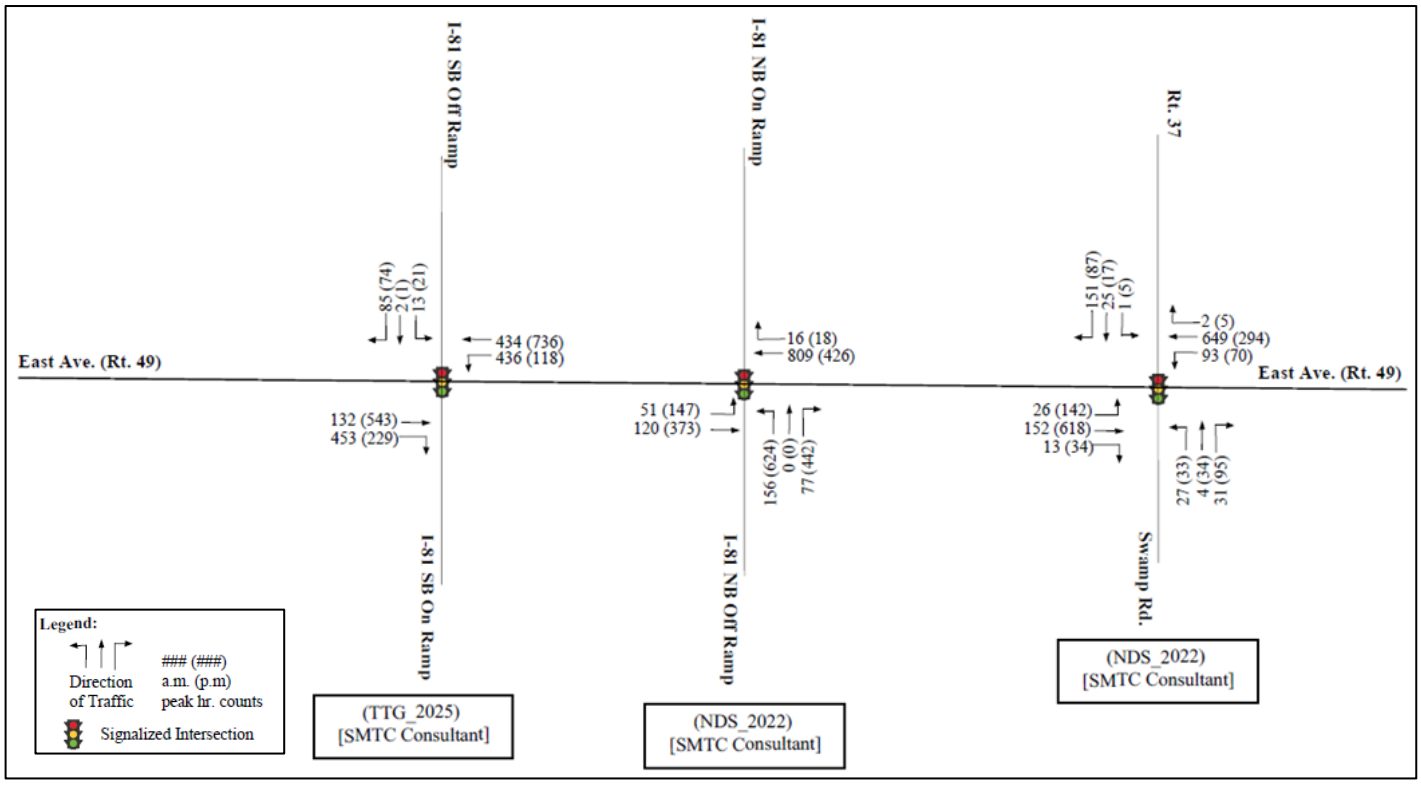


Figure 10 – Existing Weekday Turning Movement Counts (I-81 to Rt 37)

Since the turning movement counts were conducted during different time periods, SMTC balanced the existing turning movement counts between the intersections to establish the *"2025 Base Condition"* for analysis purposes (Figure 11 and Figure 12).

Traffic flow patterns

SMTC used the balanced *2025 Base Condition* numbers to visually illustrate traffic volumes by direction for the weekday evening (PM) peak hour in Figure 13. This visual representation shows where the highest traffic volumes exist based on the color and size of the circles.

As shown by the red circles, the highest traffic volumes within the study area exist along the I-81 northbound offramp and extend westbound over the I-81 bridge to the Walmart driveway. Relatively high volumes (orange circles) continue westbound from the Walmart driveway towards Route 11.

The highest eastbound weekday PM peak hour volumes (orange circles) exist along two segments between:

- the Walmart signal and I-81 SB onramp
- the I-81 northbound offramp and Route 37.

Eastbound volumes reduce slightly over the I-81 bridge due to the number of vehicles that turn right onto the I-81 southbound onramp.

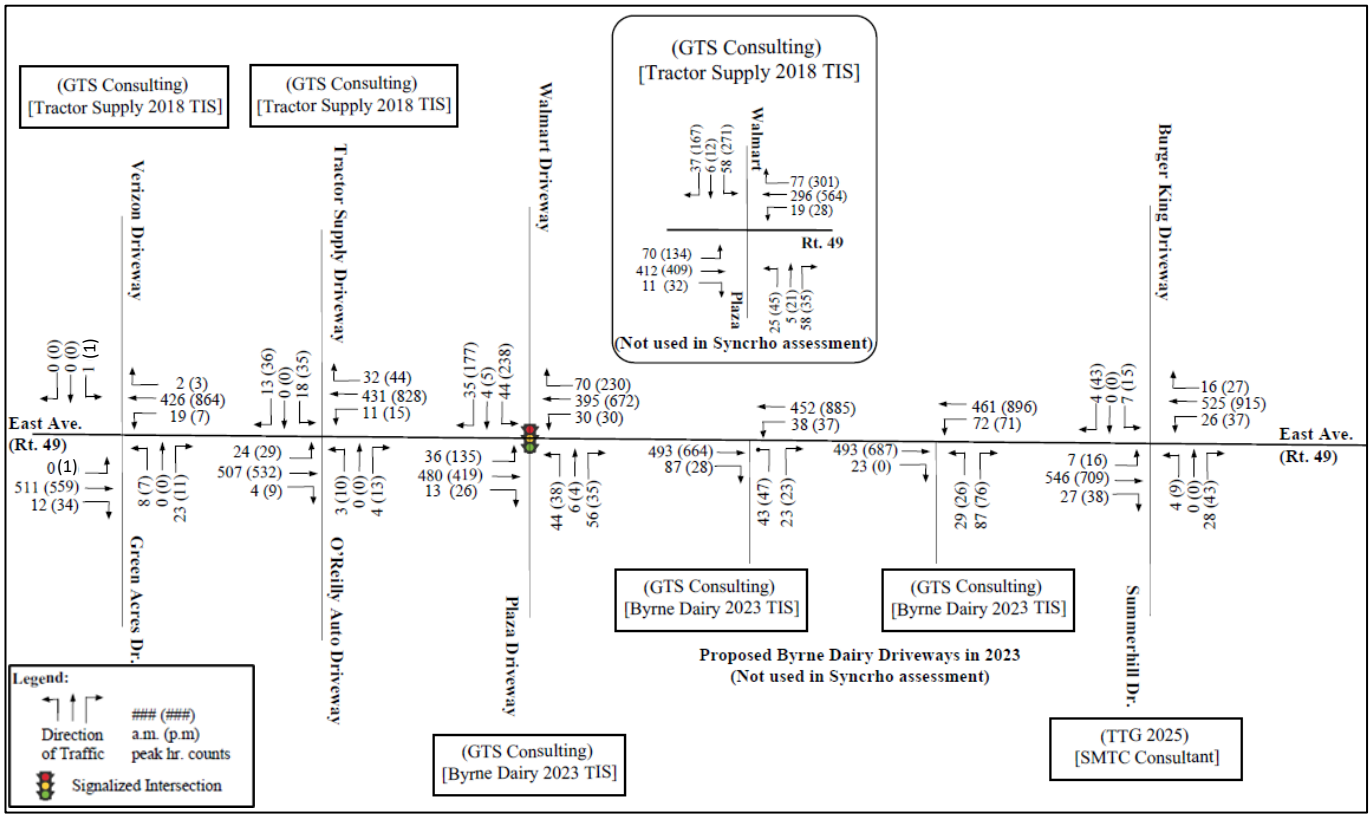


Figure 11 – Balanced Weekday Turning Movement Counts (Green Acres to Summerhill)

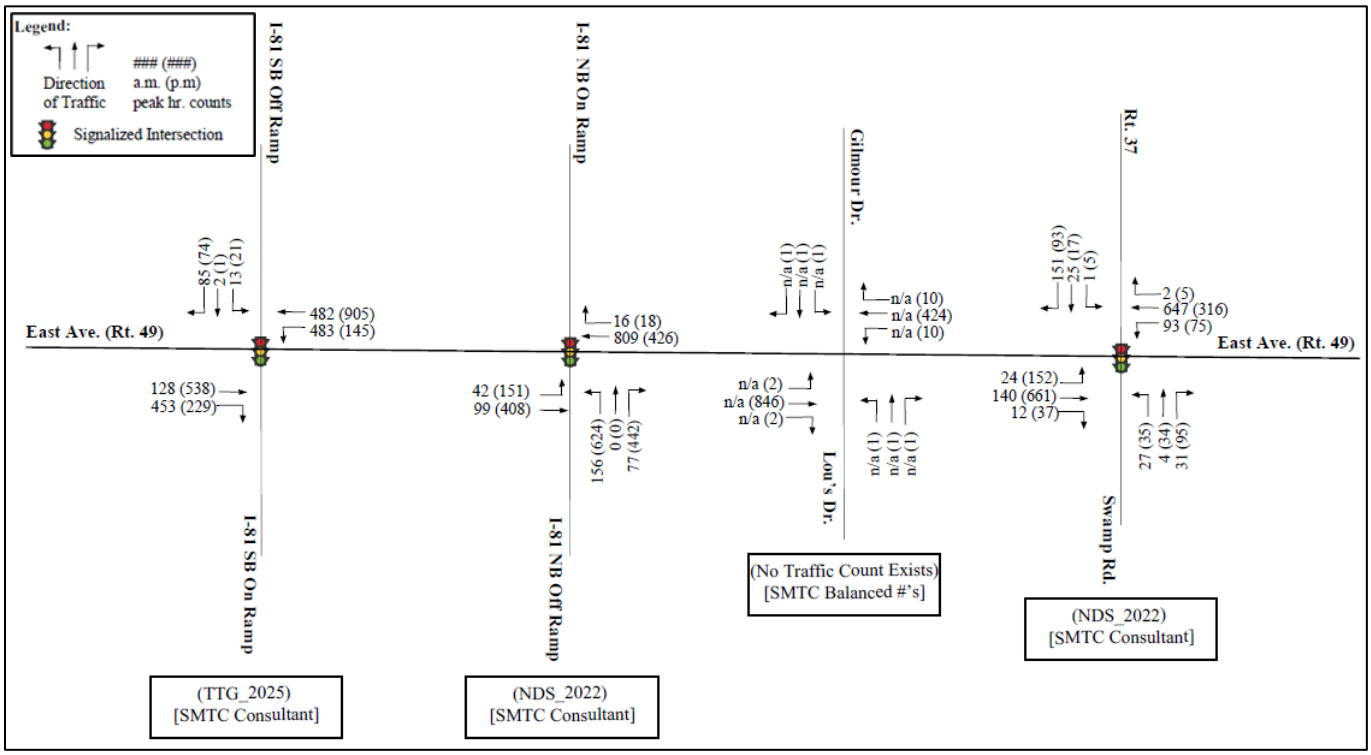


Figure 12 – Balanced Weekday Turning Movement Counts (I-81 NB to Rt 37)

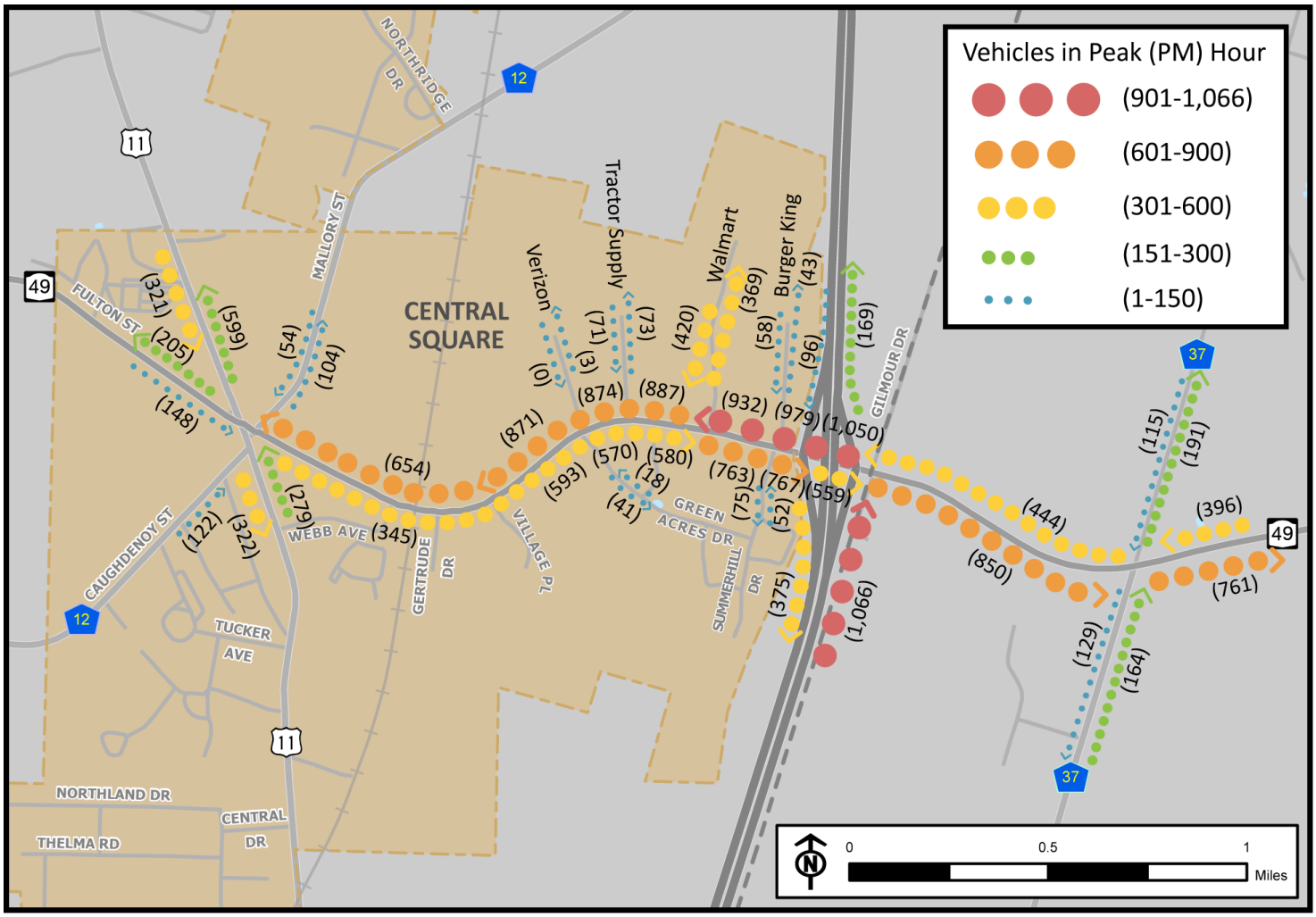


Figure 13 – Traffic Volumes by Direction for the Weekday Evening (PM) Peak Hour

5.2 Heavy Vehicle Trips

Local deliveries and pass-through freight movements impact the number and frequency of heavy vehicle trips along Route 49.

Heavy Vehicle Traffic

Vehicle classification, abbreviated to 'vehicle class', is the method the Federal Highway Administration (FHWA) uses to organize vehicles by size. Heavy vehicles are defined as any vehicle with two axles and six tires, or greater. This includes any vehicle from a small tow-truck to a seven-axle tractor trailer.

The percent of heavy vehicles is a helpful reference when considering the need to balance mobility and safety for all road users.

Heavy vehicle percentages are considered relatively low for a corridor if they consist of less than 6% of total traffic. Percentages from 6-10% are considered notable, usually indicating a freight destination or nearby interstate ramp. The primary study area experiences between 6% (2016) and 7% (2020 during pandemic) heavy vehicles and therefore is considered notable and consistent with the fact that the I-81 interstate ramp exists within the study area.

5.3 Crash Assessment

NYSDOT maintains a database known as the Crash Location Engineering Analysis Repository System (CLEAR), which catalogues information about crashes that occur throughout the state. CLEAR replaces older legacy systems and provides transportation professionals with data-driven tools to make informed decisions.

CLEAR identifies the collision type of crashes between two vehicles. Examples include head-on, rear-end, right-angle, overtaking, left-turn, right-turn, etc. SMTC used CLEAR to summarize crashes that occurred within the study area during a five-year period (January 1, 2019, to December 31, 2023). Study area results are shown in the tables and figures. The written summary addresses crashes that occurred within the primary study area.

Intersection crashes[1]

Table 2 lists intersection crashes by crash type. The two signalized intersections with the highest number of crashes (14 and 13, respectively) within the primary study area included Rt 37 and at I-81 NB. Common collision types for the four signalized intersections with the most crashes are identified in Table 3.

Table 2 – Intersection Crashes by Crash Type

Intersection	Collision type (number of events)
Route 49 / County Route 37	Rear End (5), Right Angle (3)
Route 11 / Route 49	Right Turn (3), Left Turn (3), Other (3)
Route 49 / County Route 12A	Rear End (5), Right Angle (3)
Route 49 / I-81NB ramps	Rear End (8)

As shown, rear-end and right-angle collisions were the most common collision types at the three signals within the primary study area.

Bike and Pedestrian Crashes

Two pedestrian crashes occurred along road segments, not at intersections. There were no bike-related crashes. Neither pedestrian crash resulted in a serious injury or fatality. As shown in Figure 14, one pedestrian crash occurred east of Rt 12 and the other occurred within the primary study area east of CR 12A (Walmart entrance).

Table 3 – Common Intersection Collision Types

Route 49 Intersection	Total crashes	Motor vehicles only	With bicycles	With pedestrians	Other crashes*
Route 11 (Signalized)	14	13	0	0	1
Webb Place	4	2	0	0	2
Green Acres Drive	5	4	0	0	1
County Route 12 (Signalized)	12	11	0	0	1
I-81 SB ramps (Signalized)	8	8	0	0	0
I-81 NB ramps (Signalized)	13	12	0	0	1
County Route 37	14	14	0	0	0

*Other crashes may include crashes with signposts, guide rails, or a ditch.

[1] SMTC identified intersection crashes using two methods. If stop bars were present at the intersection, crashes that occurred within the stop bars were defined as 'intersection crashes.' If stop bars were not present at the intersection, intersection crashes were defined as any crashes that occurred within 33 feet (10 meters) of the center of the intersection.

Segment (non-intersection) Crashes[2]

Crash volumes and rates[3] for road segments between Green Acres Drive and the I-81 NB ramps are shown in Table 4.

Table 4 – Segment Crash Rates and Volumes

Route 49 Road Segments	# Crashes	Segment Length	AADT	Crash Rate
Green Acres to CR 12A	29	0.24	10,357	6.45
CR 12A to I-81 SB	49	0.18	10,357	14.18
I-81 SB to I-81 NB	16	0.1	10,357	8.41
Green Acres to I-81 NB	**94**	**0.52**	**10,357**	**9.68**

The highest number and rate of crashes occurred between I-81 SB and CR 12A (Walmart). All segment crash rates are higher than state rates for mainline & juncture averages for urban undivided 3-lane and 4-lane state roads.

Fatal, Serious Injury[4]*, Injury Crashes*

Table 5 identifies the number of crashes for each crash type based on crash severity (i.e., fatal, serious injury, or injury crashes).

Table 5 – Crashes by Crash Type by Severity

Type	Fatal	Serious Injury	Injury	Other	Total
Motor Vehicle	0	4	25	176	205
Pedestrian	0	0	2	0	2
Bicycle	0	0	0	0	0
Other	0	0	5	22	27
Total	**0**	**4**	**32**	**198**	**234**

No fatal crashes occurred during the five-year review period within the study area.

Four serious injury crashes occurred – all within the primary study area (Figure 14). As noted, none involved a bicyclist or pedestrian.

Out of 32 injury crashes, 20 occurred within the primary study area.

[2] SMTC identified road segment crashes by splitting the corridor at signalized intersections, at other major intersections, or at significant changes in road character. Road segment crashes do not include intersection crashes previously analyzed.

[3] Segment crash rates are expressed in crashes per million vehicles miles (MVM) traveled and include intersection crashes.

[4] A crash is classified as a "serious injury crash" if at least one person involved experienced any of the following conditions: severe lacerations, broken or distorted limbs, skull fractures, crushed chest, internal injuries, being unconscious when taken from the crash scene, and being unable to leave the crash scene without assistance. Any other less severe conditions are considered injury crashes.

Summary Crash Map

Intersection and non-intersection crash frequency is shown on Figure 14, which also includes the following additional takeaways:

- 11 crashes involved animals (likely deer), with six occurring on the northbound I-81 offramp. This validates SAC feedback about deer collisions at this location.
- two crashes involved pedestrians (one within the primary study area east of 12a)
- four crashes involved a serious injury (all occurred within the primary study area)

Crash Classification

Crashes are classified as either 'reportable' or 'non-reportable' by the New York State Department of Motor Vehicles (DMV). A crash is classified as reportable if it results in death, injury, and/or at least $1,000 of property damage to any single motor vehicle. All other crashes are considered non-reportable.

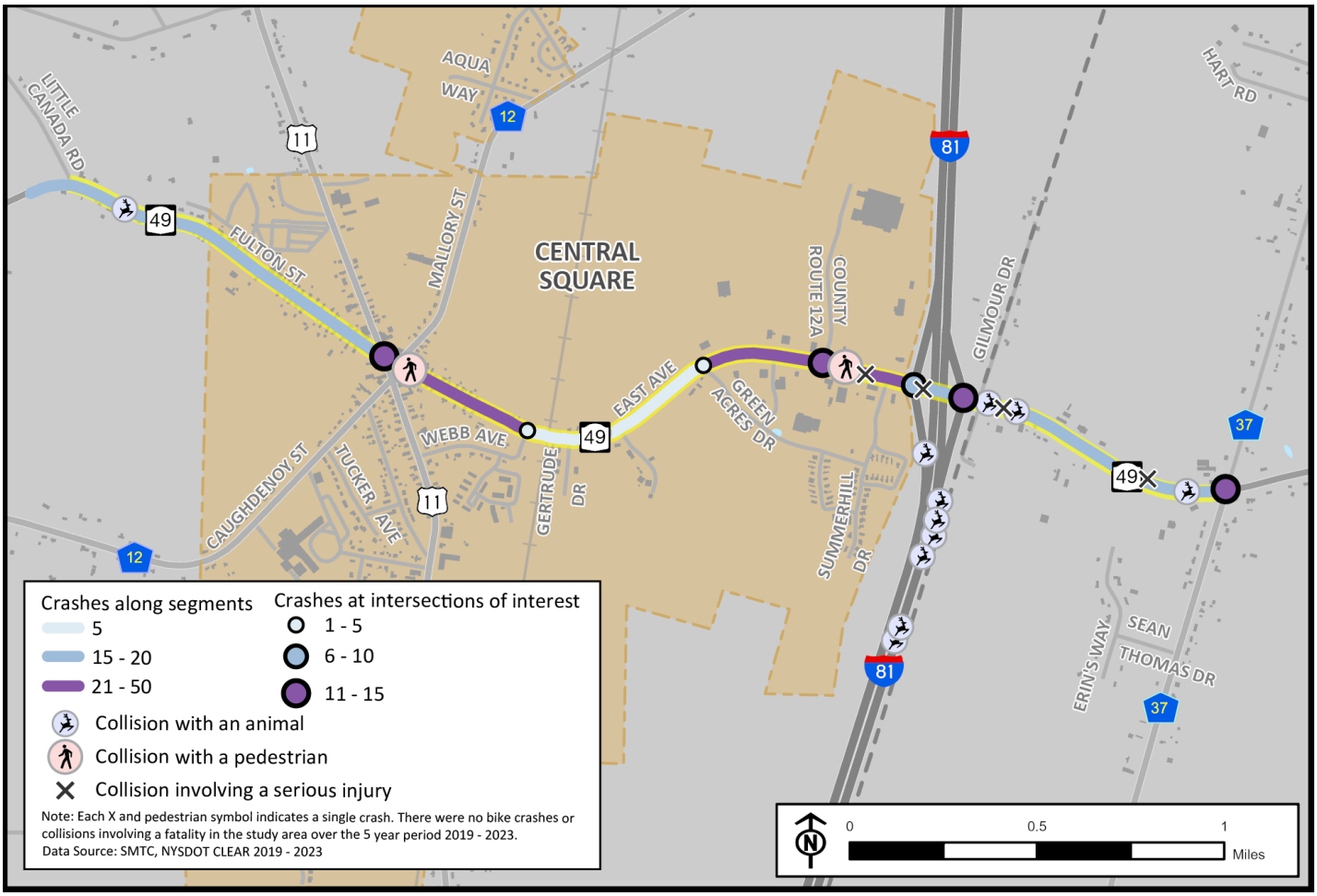


Figure 14 – Crash Frequency along Segments and at Intersections

Table 6 identifies the number of reportable and non-reportable crashes, serious injury and injury crashes by location.

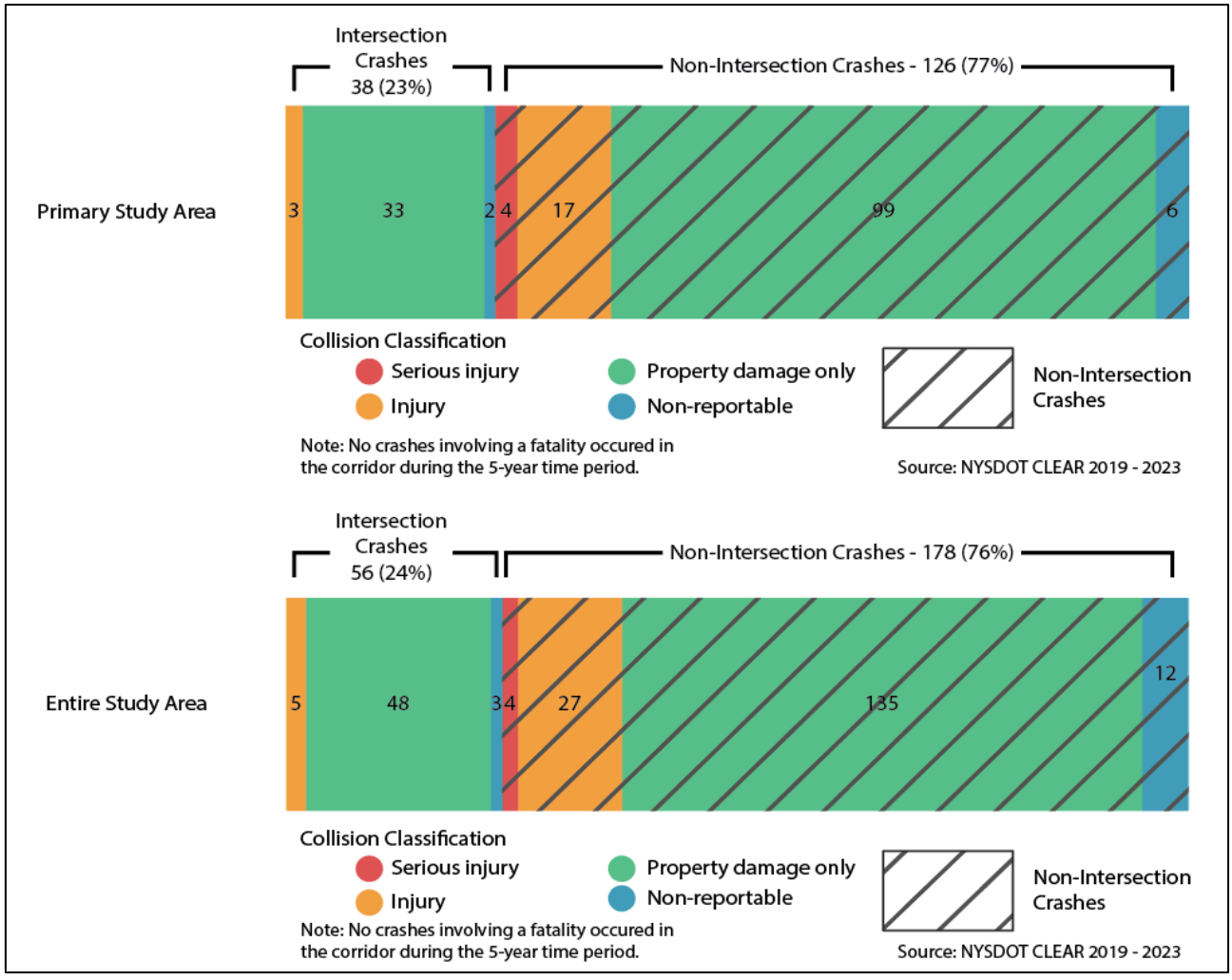
Table 6 – Reportable, Non-reportable, Serious Injury, and Injury Crashes by Location

Study Area	Serious Injury	Injury	Property Damage	Non-reportable
Primary	4	20	132	8
Intersection	-	3	33	2
Segment	4	17	99	6
Outside	-	12	51	7
Intersection	-	2	15	1
Segment	-	10	36	6
Total	**4**	**32**	**183**	**15**

For comparison purposes, Figure 15 identifies the number of reportable and non-reportable crashes that occurred at intersections and segments in the primary study area and the entire study area.

The distribution of crash classifications within the primary study area is consistent with the entire study area. However, the more reportable and non-reportable crashes occurred within the primary study area.

Figure 15 – Number of Reportable and Non-reportable Crashes



Collision Type and Contributing Factors

CLEAR notes the 'collision type' (e.g., head-on, rear-end, right angle, etc.) for each recorded crash event. It also indicates at least one contributing factor (e.g., alcohol involvement, unsafe lane change, unsafe speed, etc.). The four most common collision types and contributing factors within the primary study area include:

Collision Types (4 most common)

1. Rear-end (40%)
2. Right Angle (20%)
3. Other (16%)
4. Left turn - against another car (7%)

Of the four serious injury crashes, three involved "rear end" collisions and one involved a "head on" collision.

Contributing Factor (4 most common)

1. Following too closely
2. Failure to yield the right-of-way
3. Backing unsafely
4. Driver inattention.

(A percentage cannot be provided for contributing factors given that CLEAR collects multiple contributing factors per crash.)

Of the serious injury crashes, two involved "following too closely", one involved "illness" and one involved "unsafe speed".

5.4 Travel Speed

The posted speed limit is 35 MPH between Green Acres Drive and I-81. The speed limit drops to 30 MPH to the west, and it increases to 45 MPH to the east.

In 2016, NYSDOT collected speed data (72-hour count) 450' west of Webb Place (Station 340575). This location is west of the primary study area and has a 30 MPH speed limit.

The speed data averages the number of vehicles for each hour (for a 24-hour period) into various speed bins (e.g., 30-35 MPH).

SMTC used the speed data to aggregate hourly average speed counts into three categories:

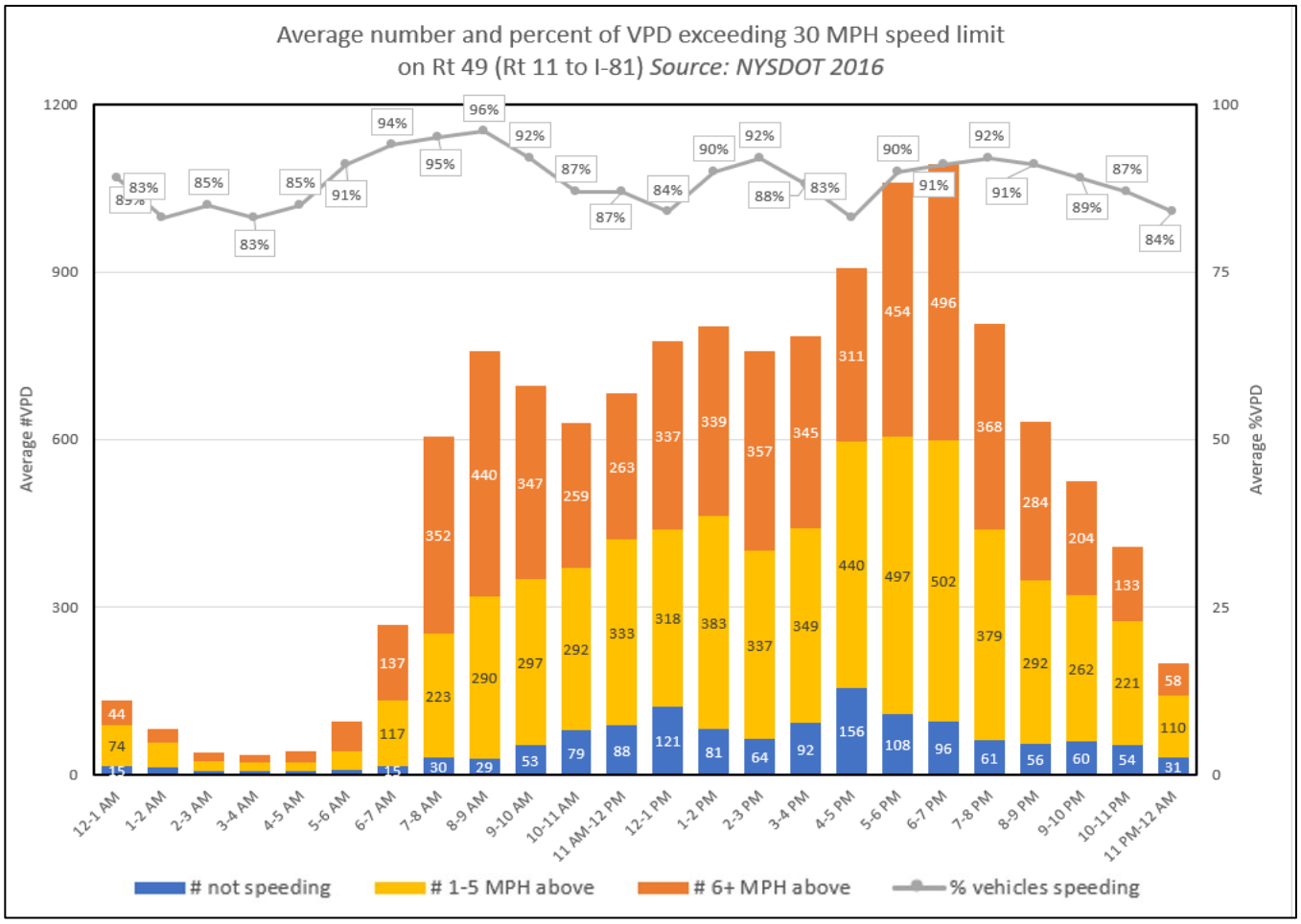
- not speeding
- speeding 1-5 MPH over the speed limit
- speeding 6+ MPH over the speed limit.

SMTC then calculated the average percentage of vehicles speeding for each hour. These data are represented in Figure 16. As shown, average hourly vehicles by speed are visualized as bars and the average percentage of vehicles speeding each hour as a line.

The speed data and Figure 16 offer the following takeaways for the portion of Route 49 located west of the primary study area:

- The overall average speed was 34 MPH.
- The average speed eastbound was 33 MPH and its 85th percentile speed was 39 MPH.
- The average speed westbound was 35 MPH and its 85th percentile speed was 40 MHP.
- Speeding is a consistent issue throughout the day in this segment of Route 49.
    - The average hourly percentage of vehicles speeding was 83% or higher for each hour.
    - The highest average hourly percentage of vehicles speeding was 96%, which occurred from 8:00 a.m. to 9:00 a.m.
- During the morning commuter period, (7:00 a.m. to 9:00 a.m.) more vehicles drove 6+ MPH over the speed limit than those that drove 1-5 MPH over the speed limit.

Figure 16 – Average Number and Percent of Vehicles per Day (VPD) Speeding



- The average number of vehicles speeding was significantly higher going westbound (983) than eastbound (322).

- During the evening commuter period, (4:00 p.m. to 6:00 p.m.) more vehicles drove 1-5 MPH over the speed limit than those that drove 6+ MPH over the speed limit.
  - The average number of vehicles speeding was higher going eastbound (983) than westbound (719).

Conclusion

Traffic volumes have decreased along Rt 49 during the past 20 years. There were no fatal crashes within the study area, but four serious injury crashes occurred; three resulted from rear-end collisions and one from a head-on collision. No crashes involved a bicyclist, but two crashes involved a pedestrian, one within the primary study area east of the Walmart intersection.

A 2016 speed count shows that 83% of vehicles west of the primary study area are traveling above the 30 MPH posted speed limit with an average speed of 34 miles per hour.

SMTC balanced intersection turning movement traffic counts within the primary study area taken during different time periods. These balanced counts represent the 2025 Base Condition to analyze for existing levels of service.

6 – Capacity Assessment

SMTC used Synchro 12 software to analyze traffic operations for three scenarios:

- 2025 Base Condition
- 2050 Condition (no mitigation)
- 2050 Condition (with Mitigation)

6.1 Scenario Assumptions

2025 Base Condition (i.e., existing conditions)

SMTC used the balanced turning movement counts (Figure 11 and Figure 12) as the 2025 Base Condition scenario to analyze in Synchro.

2050 Conditions (i.e., future growth)

SMTC used its Travel Demand Model (Model) to determine the percent of traffic growth per year to 2050. The Model includes anticipated development for the region, including Micron, and predicts that traffic will increase (i.e., a reversal of past trends of decreasing volumes):

- by less than 0.75% per year along Route 49 and I-81 within the primary study area
- 1.00% per year (westbound approach of the Rt 49/Rt 37 intersection)
- 3.52% per year (northbound approach of the Rt 49/Rt 37 intersection)

SMTC confirmed with the SAC that it is reasonable to reference the Model's growth estimates to analyze two 2050 Condition scenarios:

<u>2050 Condition (no Mitigation) Assumptions</u>

- use existing lane, signal, and intersection configurations

<u>2050 Condition (with Mitigation) Assumptions</u>

- include enhancements (see Chapter 7) to lane, signal, and intersection configurations to improve operations, as needed.

6.2 Synchro Input Assumptions

The percent growth per year in traffic volume is an input used to calculate a "Growth Factor" for input into Synchro to assess the two *2050 Conditions* for all eight intersections.

In short, the *2025 Base Condition* volume data are multiplied by the Growth Factor (GF) to increase traffic volumes for the *2050 Conditions*. SMTC used the following formula to calculate the GF results to input into Synchro:

$$GF = (1 + R)^Y$$

R = growth rate (ex. 0.75% = .0075)
Y = number of years (25 years)

- The GF for 0.75% growth per year is 1.21
- The GF for 1.00% growth per year is 1.28
- The GF for 3.52% growth per year is 2.37

For the signalized intersections, SMTC used NYSDOT signal plans to populate the Synchro model. (Not all signal plans and programs followed industry standards for phasing.)

SMTC optimized cycle lengths, phase timings, and splits. SMTC balanced opposing lefts and adjusted for 75-second cycle lengths. The signals on Rt 49 from the Walmart entrance to the I-81 NB on/off ramps are actuated-coordinated (Zone 1) with I-81 NB as master intersection. Coordination is set to the beginning of yellow timing and SMTC optimized the offsets. SMTC ensured green time was sufficient.

6.3 Synchro Assessment Summary

SMTC used Synchro 12 to determine the Level-of-Service (LOS) at eight intersections. LOS thresholds are defined as average delay in seconds per vehicle during the analysis period (peak hour) and range from LOS "A" to "F" (per the Highway Capacity Manual). Table 7 provides a summary of the Highway Capacity Manual (HCM) LOS thresholds.

For signalized intersections, a LOS "D" or better is generally considered the upper threshold of acceptability for operations. This indicates that the delay will not exceed 55.0 seconds. For unsignalized intersections, a LOS "E" or better is generally considered the upper threshold of acceptability for operations. This indicates that the delay will not exceed 50.0 seconds.

The LOS acceptability criteria for unsignalized intersections are lower than those used for a signalized intersection because drivers expect longer delays at signalized intersections.

For signalized intersections, LOS are provided for all movements and for the overall intersection. For unsignalized intersections, LOS results are only provided for stop or yield-controlled movements, or for uncontrolled left-turn lanes. Unsignalized intersections include: two-way-stop-controlled (TWSC), all-way-stop-controlled (AWSC), and roundabouts. Synchro summary assessment reports for the eight intersections are provided in Appendix C.

Table 7 – Level of Service Thresholds

Level of Service Thresholds	Delay in Seconds	
	Signalized	Unsignalized
A Little or no delay	< 10	< 10
B Minor, short delays	10.1 to 20.0	10.1 to 15.0
C Average delays	20.1 to 35.0	15.1 to 25.0
D Long, but acceptable delays	35.1 to 55.0	25.1 to 35.0
E Long, near unacceptable delays	55.1 to 80.0	35.1 to 50.0
F Unacceptable delay	> 80.0	> 50.0

Synchro LOS Findings

A summary of the unacceptable (i.e., "failing") LOS thresholds are provided in Table 8.

Key findings include:

- Three movements fail in the *2025 Base Condition* – one occurs at a signalized intersection - the southbound left from Walmart onto Route 49. This reflects current conditions.

Table 8 – Summary of Unacceptable (i.e., "failing") Level of Service Thresholds

	Route 49 Intersection	Approach	Lane Configurations	2025 Base Condition	2050 Condition	
					No Mitigation	Mitigation
Unsignalized	**Green Acres / Version Driveway**	Southbound	Left/through/right	-	F (78)	F (78)
	O'Reilly Auto / Tractor Supply	Northbound	Left/through/right	-	F (85)	F (76)
		Southbound	Left/through/right	F (74)	F (323)	Left turns would no longer be allowed.
	Summerhill Dr. / Burger King	Northbound	Left/through/right	-	F (148)	Modeled as a signal with dedicated left turn lanes at every approach. All movements operate within acceptable limits.
		Southbound	Left/through/right	F (67)	F (307)	
Signalized	**Walmart Driveway / Plaza Driveway**	*Eastbound*	Left	-	F (102)	-
		Westbound	Through	-	E (57)	-
		Southbound	Left	E (69)	F (113)	-
	Rt. 37	*Westbound*	Left	-	E (68)	-
		Northbound	Left/through/right	-	F (295)	-
		OVERALL	-	-	F (87)	-

- Five movements fail at two unsignalized intersections, and five movements fail at two signalized intersections in the *2050 Condition no Mitigation* scenario. Plus, the Route 37 intersection fails. These results identify where to target improvements for the *2050 Condition with Mitigation*.
- The *2050 Condition with Mitigation* scenario incorporates improvements (see Chapter 7) to enhance operations.

All signalized movements operate within acceptable limits. Two unsignalized movements fail, but it is not uncommon or unreasonable for TWSC side streets to fail along a major commercial corridor.

A complete list of LOS results for the eight intersections is provided in Table 9 and Table 10. Table 9 shows LOS results for the four unsignalized intersections. Table 10 shows LOS results for the four signalized intersections.

Table 9 – Level of Service Results for Unsignalized Intersections*

Route 49 Unsignalized Intersection	Approach	Lane Configurations	2025 Base Condition	2050 Condition (0.75 Percent Growth Per Year)	
				No Mitigation	Mitigation
Green Acres Dr. / Verizon Driveway	*Eastbound*	Left/through/right	A (10)	B (11)	-
		Left	-	-	B (11)
	Westbound	Left	A (9)	A (9)	A (9)
	Northbound	Left/through/right	D (28)	E (47)	E (47)
	Southbound	Left/through/right	E (47)	F (78)	F (78)
O'Reilly Auto / Tractor Supply	*Eastbound*	Left (TWLTL)	B (10)	B (11)	-
		Left			B (11)
	Westbound	Left (TWLTL)	A (9)	A (10)	A (9)
	Northbound	Left/through/right	E (37)	F (85)	F (76)
	Southbound	Left/through/right	F (74)	F (323)	No lefts allowed
		Through/right	-	-	C (23)
Summerhill Dr. / Burger King	*Eastbound*	Left	B (11)	B (12)	B (13)**
		Through/right	-	-	B (14)**
	Westbound	Left	A (10)	B (11)	C (21)**
		Through/right	-	-	C (21)**
	Northbound	Left	-	-	B (14)**
		Left/through/right	E (41)	F (148)	-
		Through/right	-	-	A (0)**
	Southbound	Left	-	-	B (18)**
		Left/through/right	F (67)	F (307)	-
		Through/right	-	-	A (0)**
	OVERALL	-	-	-	B (17)**
Gilmour Dr. / Lou's Dr.	*Eastbound*	Left/through	-	A (9)	A (9)
		Left	A (9)	-	-
	Westbound	Left/through	A (10)	B (11)	B (11)
	Northbound	Left/through/right	D (26)	E (37)	E (36)
	Southbound	Left/through/right	A (8)	E (41)	D (29)

(Now Signalized)

* Highway Capacity Manual 7 (HCM 7) - Level of Service Report

** Synchro 12 - Lanes, Volumes, Timings Report

TWLTL = Two-Way Left Turn Lane

Table 10 – Level of Service Results for Signalized Intersections*

Route 49 Intersection	Approach	Lane Configurations	2025 Base Condition	2050 Condition (0.75 Percent Growth Per Year**)	
				No Mitigation	Mitigation
Walmart Driveway / Plaza Driveway	*Eastbound*	Left	C (24)	F (102)	D (39)
		Through/right	B (12)	B (16)	B (18)
	Westbound	Left	A (2)	A (2)	A (2)
		Through	C (21)	E (57)	-
		Through/right	-	-	B (12)
		Right	A (2)	A (2)	-
	Northbound	Left	C (27)	C (30)	D (45)
		Through/right	B (10)	A (10)	B (19)
	Southbound	Left	E (69)	F (113)	D (52)
		Through/right	A (7)	A (10)	B (14)
	OVERALL		**C (21)**	**D (45)**	**C (20)**
I-81 SB On-Ramp / I-81 SB Off-Ramp	*Eastbound*	Through	-	-	A (6)
		Through/right	B (14)	C (21)	A (6)
	Westbound	Left	A (2)	B (10)	-
		Through	A (5)	B (11)	B (12)
		Left/through	-	-	B (12)
	Southbound	Left/through/right	B (19)	B (20)	C (22)
	OVERALL		**A (9)**	**B (15)**	**A (10)**
I-81 NB Off-Ramp / I-81 NB On-Ramp	*Eastbound*	Left	B (17)	C (27)	
		Through	B (15)	B (19)	B (12)
		Left/through	-	-	B (12)
	Westbound	Through/right	D (36)	D (50)	C (29)
	Northbound	Left	B (19)	C (29)	B (17)
		Through/right	A (8)	B (13)	B (15)
	OVERALL		**C (20)**	**C (29)**	**B (18)**
Rt. 37	*Eastbound*	Left	A (8)	B (11)	A (8)
		Through/right	C (22)	D (54)	D (43)
	Westbound	Left	B (15)	E (68)	D (40)***
		Through/right	B (12)	B (14)	B (17)***
	Northbound	Left/through/right	C (30)	F (295)	-
		Left	-	-	D (43)****
		Through	-	-	D (39)****
		Right	-	-	B (18)****
	Southbound	Left/through/right	B (13)	B (14)	C (30)
	OVERALL		**B (18)**	**F (87)**	**C (31)**

* Synchro 12 - Lanes, Volumes, Timings Report
** Unless otherwise noted per SMTC Travel Demand Model
*** 1.0% growth per SMTC travel demand model
**** 3.5% growth per SMTC travel demand model
TWLTL = Two-Way Left Turn Lane

6.4 Synchro Assessment Conclusion

Most movements operated within acceptable limits for the *2025 Base Condition*. One signalized movement failed – the southbound left turn from Walmart onto Rt 49.

For the *2050 Condition – no Mitigation* scenario, two signalized intersections had five failing movements and the Rt 37 signalized intersection failed overall.

The improvements in the *2050 Condition – with Mitigation* scenario (see Chapter 7) allow all movements at signalized intersections to operate within acceptable limits. Two movements fail at two unsignalized intersections. This is not uncommon or unreasonable for side streets with TWSC along a major commercial corridor. Incidentally, cross streets are envisioned in the future to connect to these side streets, which would provide additional points of access to Rt 49 and potentially improve operations.

7 – Concept Plan Examples

7.1 Purpose of the Concept Plans

The following concepts reflect a visual illustration of the *2050 Condition – with Mitigation* scenario. They include examples of road enhancements that prioritize signal progression integrity and address the failing LOS operations identified in the *2050 Condition – no Mitigation* scenario.

The concepts provide a menu of planning-level options to consider when operations degrade to the referenced levels. The concepts require an engineering-level assessment to select and design final improvements.

The concepts are not an official proposal. State, county, town, and village road owners are not obligated to build or construct anything.

7.2 Developable Areas

Conducting a build-out assessment with trip generation estimates is beyond the scope of this study. However, SMTC identified 'developable areas' based on planning-level assumptions to better understand where it may be reasonable to consider new development, new crossroad connections, road extensions, and access points. Identifying developable areas can also help local communities understand where and how much development could occur.

Planning-level Methodology

Wetlands, waterways, hillsides, woodlands, and agricultural districts, etc. limit development potential. SMTC identified 'developable areas' by conducting a 'desktop' review of available mapped environmental resources (e.g., state and federal wetlands, etc.). SMTC deemed areas unconstrained by the mapped resources as developable for this planning-level exercise.

Developable Area Map

Figure 17 shows developable areas and mapped environmental features. (See Appendix D for high-resolution maps formatted for online viewing and to plot "E" size.) SMTC used this information to identify where to suggest new crossroads, road extensions, and access points. (Map shows a 500-foot wetland check zone.)

Planning-level Development Estimates

SMTC referenced Figure 17 to calculate development potential based on noted planning-level assumptions in Table 11 to help local communities estimate how many homes, apartments, townhomes or acres of commercial development could occur. This is intended to help inform land use and zoning decisions.

Table 11 – Planning Level Development Estimates

Area	Acres	# Single Family (5-acre lots)	# Single Family (1/4-acre lots)	Townhomes, cottages, manufactured housing, condos, etc. (8 units per acre)	Commercial Acres	"New" Road (Miles)
A	41	8	165	331	7	3 miles
B	131	26	524	1048	0	5 miles
C	160	32	642	1284	0	4 miles
D	27	5	110	219	12	1 miles
E	53	11	210	421	1	2 miles
F	12	2	48	96	0	1 miles
Total	**425**	**85**	**1699**	**3398**	**21**	**14 miles**

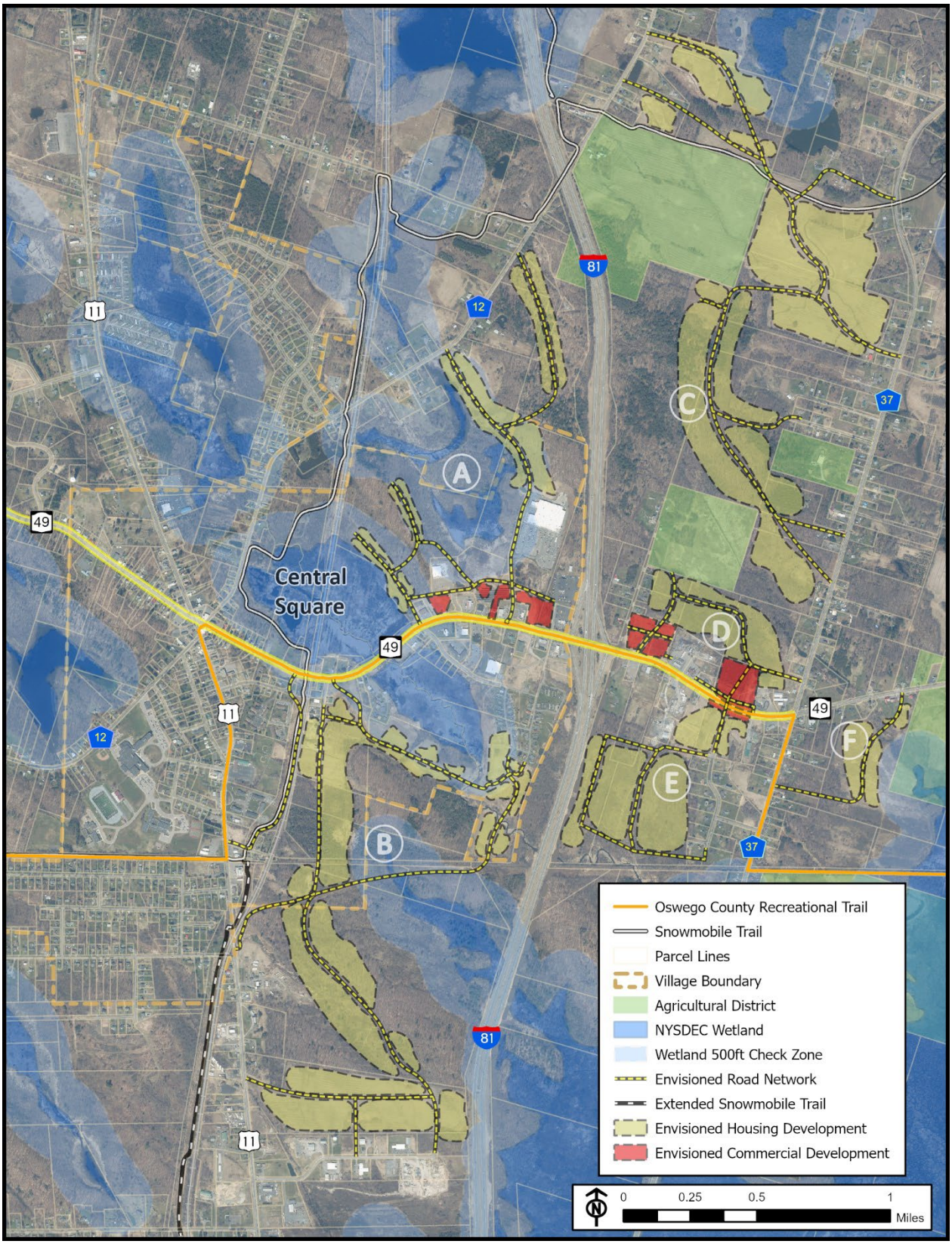


Figure 17 – Environmental Features and Potentially Developable Areas

7.3 Concept Plans

SMTC developed six figures for individual sections of the Rt 49 corridor. Figure 18 to Figure 23 progresses west to east within the primary study area. These concepts cover most of the corridor from the CSX rail line to Rt 37.

Figures 18 to 23 show 5' sidewalks and 5' bike lanes. **However, as noted on each figure, the preferred facility selection is:**

- 6'+ wide shoulders (instead of bike lanes to accommodate snowmobiles and ATVs)
- 8' to 10' wide shared use path (instead of a 5' sidewalk) to accommodate walkers and cyclists.
- Lighting along sidewalks and/or shared use path and over crosswalks within the village.

Highway boundaries are unavailable. However, based on a planning-level review of existing parcel lines, it appears that most envisioned changes (except for brief portions of sidewalk - see Figure 20 and 21) could potentially occur within the roadway's existing right-of-way.

Figure 24 shows new roadway and driveway connections, road extensions, and access management strategies for the commercial portion of Rt 49 between Green Acres Drive and Summerhill Drive. This figure is meant to inform any proposed future site plans.

Notable changes shown in Figure 18

- Sidewalks to Crossroads Park from the west on both sides of Rt 49.
- Bike lanes as shown and a sidewalk on south side of Rt 49 only, east of Crossroads Park. As noted, the preferred facilities are a shared use path and shoulders.
- A pedestrian-activated Rectangular Rapid Flashing Beacon (RRFB) and "ladder-style" crosswalk at Crossroads Park.
- Use the W11-6 and the W16-7P plaque at the snowmobile crossing location. Use the W11-6 sign with the 200 FEET plaque in advance of the crossing location. Per Section 2C.55 of the Manual on Uniform Traffic Control Devices (MUTCD):
    - W11-6 [snowmobile warning sign] may be used to alert road users in advance of locations where unexpected entries into the roadway might occur.
    - *Standard:* If a post-mounted W11-6 sign is placed at the location of the crossing point where snowmobilers cross, a diagonal downward pointing arrow (W16-7P) plaque shall be mounted below the sign.
    - *Guidance:* If used in advance of a snowmobile crossing, the W11-6 sign should be supplemented with plaques with the legend AHEAD or XX FEET to inform road users that they are approaching a point where crossing activity might occur.
- Shorten the westbound left-turn lane (to two vehicle lengths) at Webb Place.
    - Shortening the turn lane allows for a wider striped median to the east. The wider median is intended to help improve snowmobile crossing safety at this location by reducing the number of vehicle lanes a snowmobile operator must cross – from three to two. The striped median also provides an area for snowmobiles to wait, should there be a need to stop and wait for traffic.

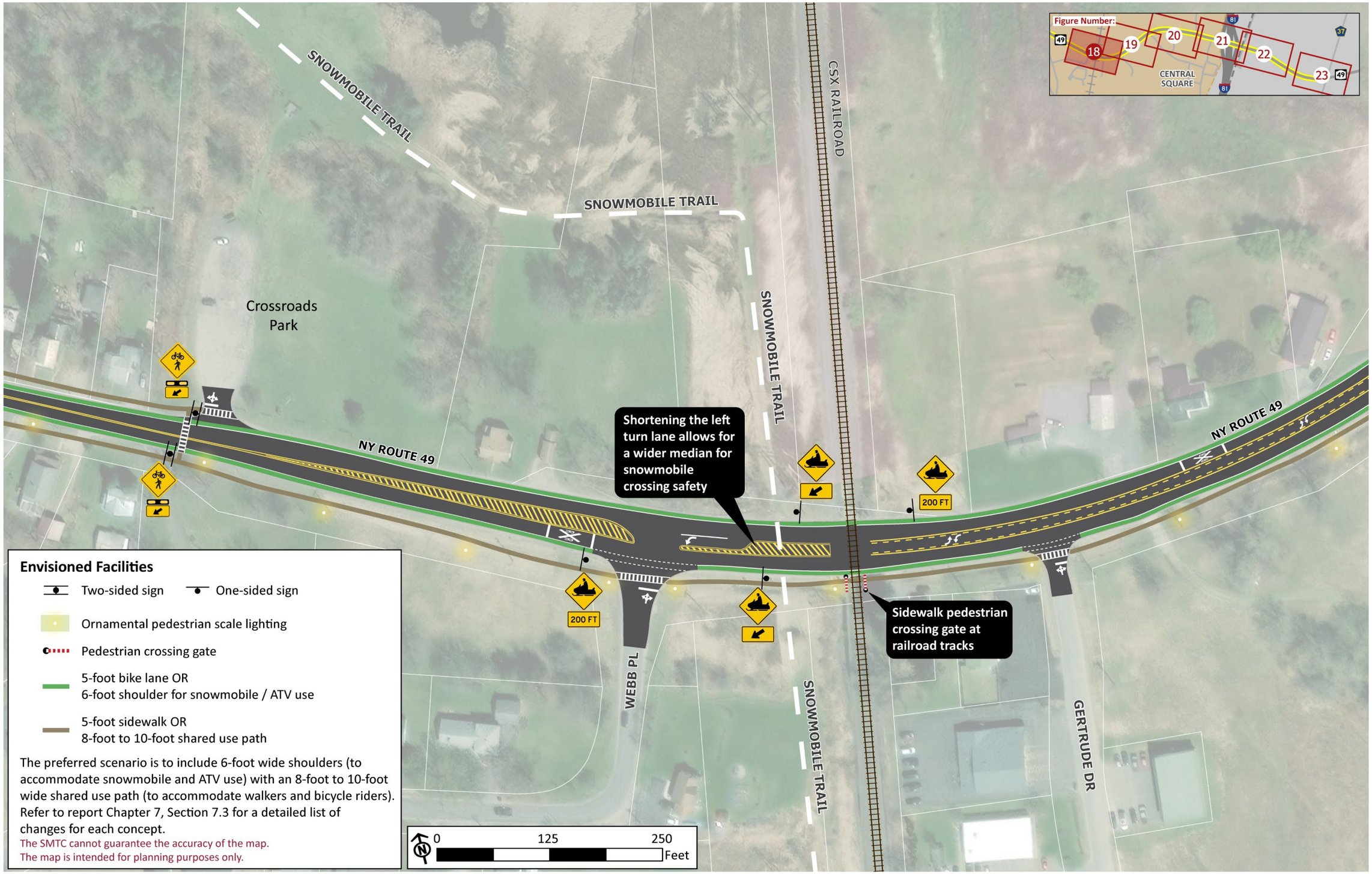


Figure Number:
18
19
20
21
22
23
CENTRAL SQUARE
SNOWMOBILE TRAIL
SNOWMOBILE TRAIL
SNOWMOBILE TRAIL
CSX RAILROAD
Crossroads Park
NY ROUTE 49
NY ROUTE 49
Shortening the left turn lane allows for a wider median for snowmobile crossing safety
200 FT
200 FT
Sidewalk pedestrian crossing gate at railroad tracks
WEBB PL
SNOWMOBILE TRAIL
GERTRUDE DR
Envisioned Facilities
Two-sided sign
One-sided sign
Ornamental pedestrian scale lighting
Pedestrian crossing gate
5-foot bike lane OR
6-foot shoulder for snowmobile / ATV use
5-foot sidewalk OR
8-foot to 10-foot shared use path
The preferred scenario is to include 6-foot wide shoulders (to accommodate snowmobile and ATV use) with an 8-foot to 10-foot wide shared use path (to accommodate walkers and bicycle riders). Refer to report Chapter 7, Section 7.3 for a detailed list of changes for each concept.
The SMTC cannot guarantee the accuracy of the map.
The map is intended for planning purposes only.
0
125
250
Feet

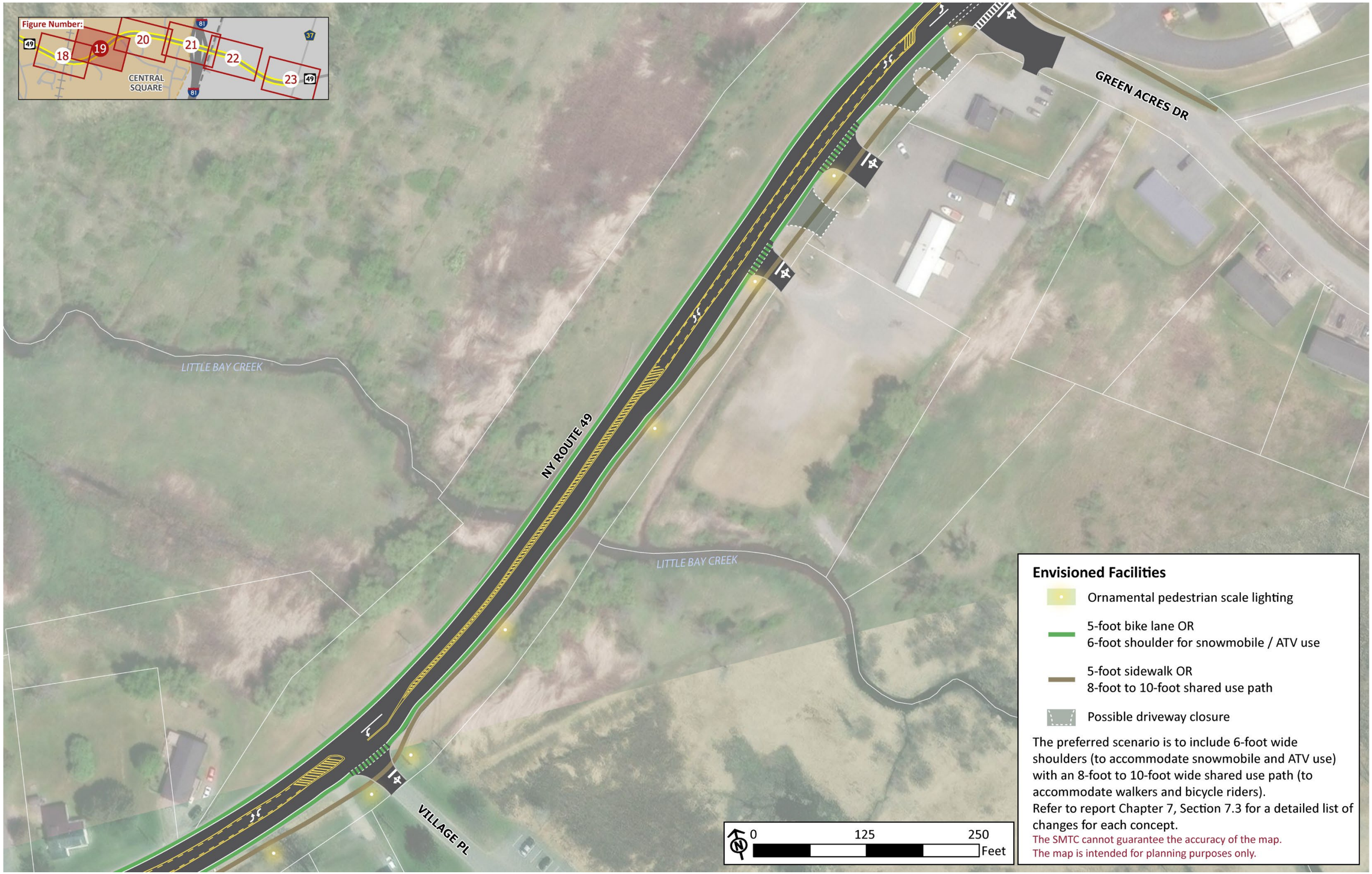


Figure Number:
18
19
20
21
22
23
CENTRAL SQUARE
GREEN ACRES DR
NY ROUTE 49
LITTLE BAY CREEK
LITTLE BAY CREEK
VILLAGE PL
0
125
250
Feet
Envisioned Facilities
Ornamental pedestrian scale lighting
5-foot bike lane OR
6-foot shoulder for snowmobile / ATV use
5-foot sidewalk OR
8-foot to 10-foot shared use path
Possible driveway closure
The preferred scenario is to include 6-foot wide shoulders (to accommodate snowmobile and ATV use) with an 8-foot to 10-foot wide shared use path (to accommodate walkers and bicycle riders).
Refer to report Chapter 7, Section 7.3 for a detailed list of changes for each concept.
The SMTC cannot guarantee the accuracy of the map.
The map is intended for planning purposes only.

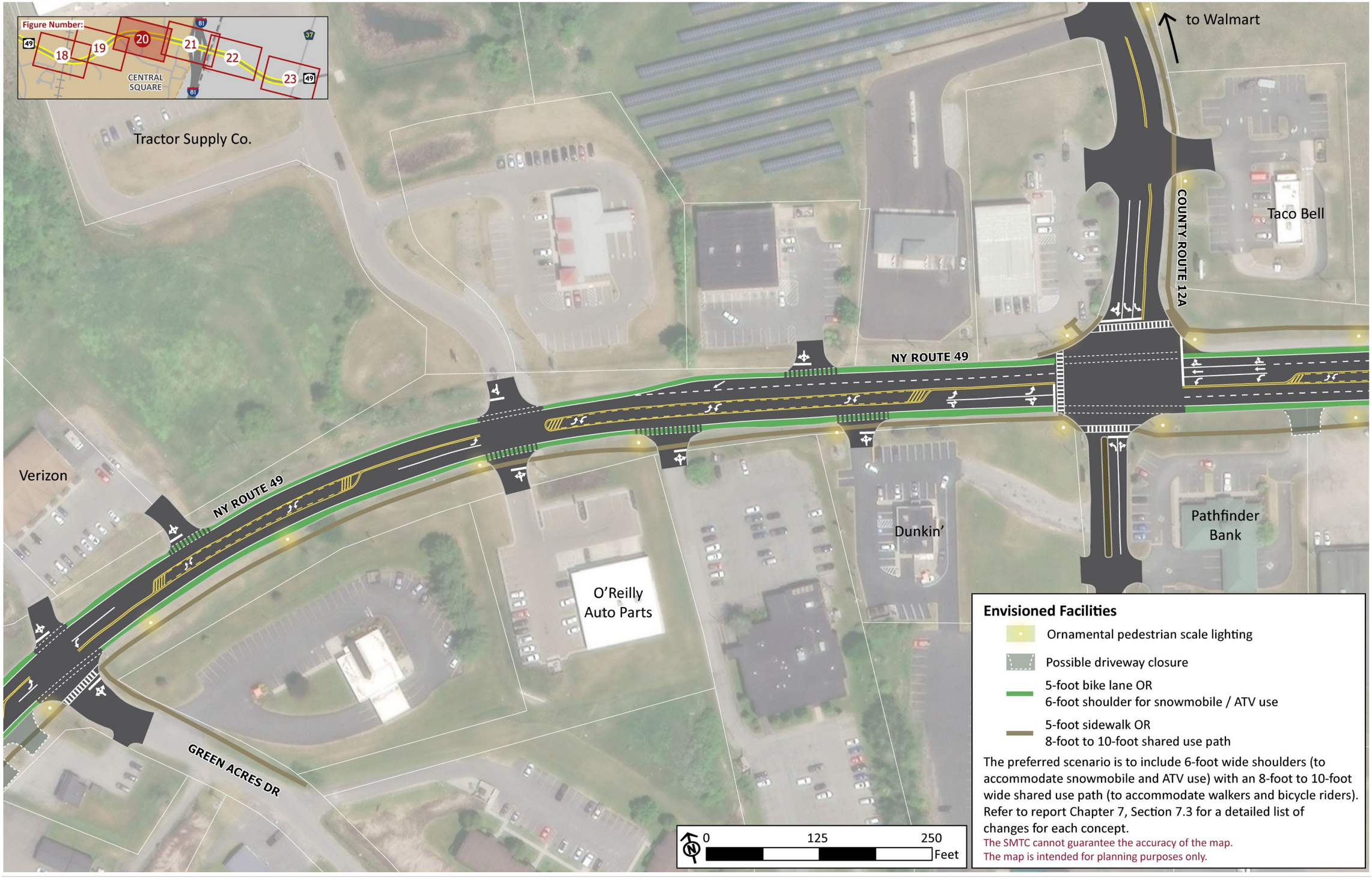


Figure Number:
18
19
20
21
22
23
CENTRAL SQUARE
to Walmart
Tractor Supply Co.
Taco Bell
COUNTY ROUTE 12A
NY ROUTE 49
Verizon
NY ROUTE 49
O'Reilly Auto Parts
Dunkin'
Pathfinder Bank
GREEN ACRES DR
0
125
250
Feet
Envisioned Facilities
Ornamental pedestrian scale lighting
Possible driveway closure
5-foot bike lane OR
6-foot shoulder for snowmobile / ATV use
5-foot sidewalk OR
8-foot to 10-foot shared use path
The preferred scenario is to include 6-foot wide shoulders (to accommodate snowmobile and ATV use) with an 8-foot to 10-foot wide shared use path (to accommodate walkers and bicycle riders). Refer to report Chapter 7, Section 7.3 for a detailed list of changes for each concept.
The SMTC cannot guarantee the accuracy of the map.
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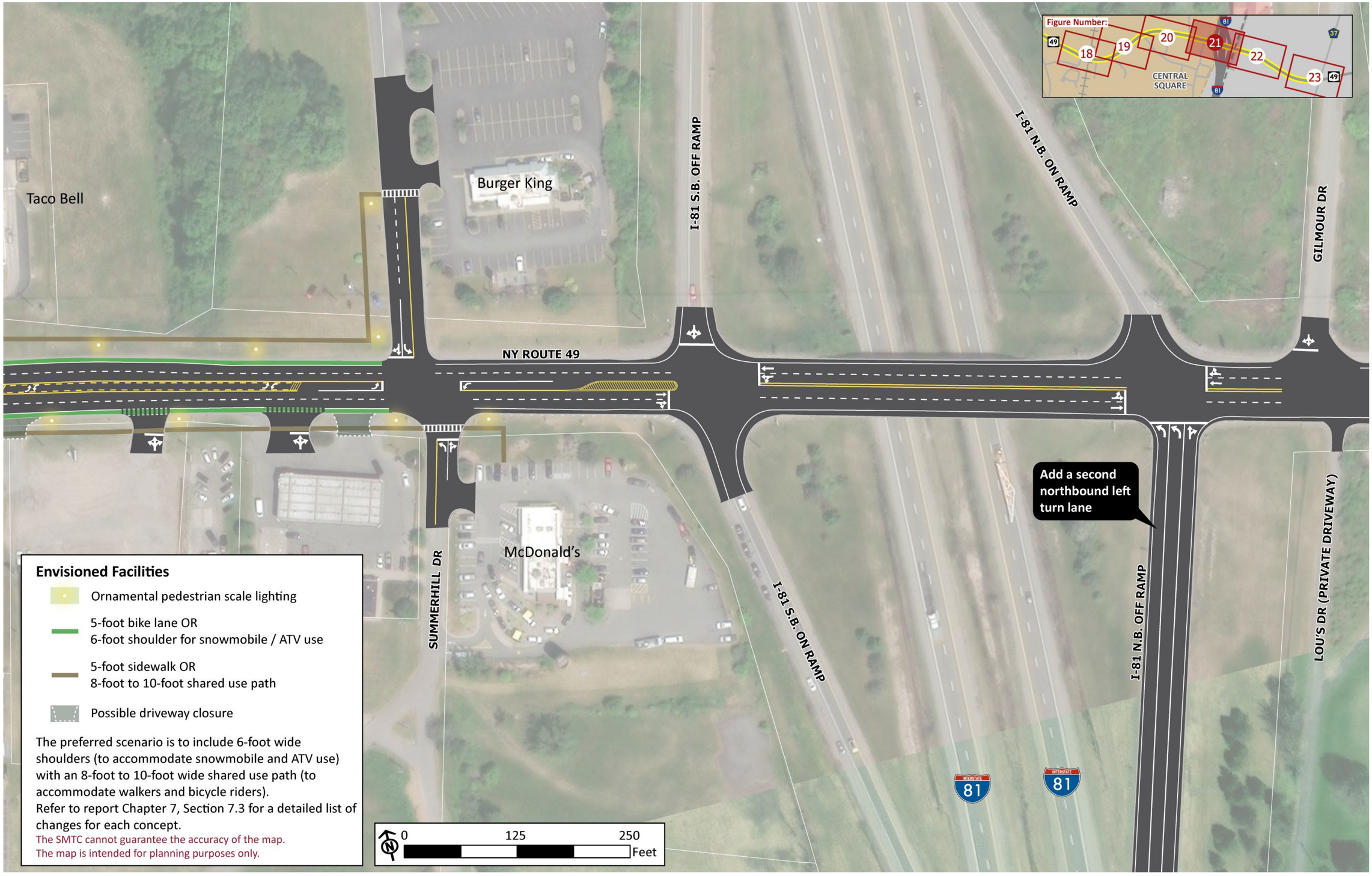


Figure Number:
18
19
20
21
22
23
CENTRAL SQUARE
Taco Bell
Burger King
McDonald's
NY ROUTE 49
I-81 S.B. OFF RAMP
I-81 N.B. ON RAMP
GILMOUR DR
SUMMERHILL DR
I-81 S.B. ON RAMP
I-81 N.B. OFF RAMP
LOU'S DR (PRIVATE DRIVEWAY)
Add a second northbound left turn lane
81
81
0
125
250
Feet
Envisioned Facilities
Ornamental pedestrian scale lighting
5-foot bike lane OR
6-foot shoulder for snowmobile / ATV use
5-foot sidewalk OR
8-foot to 10-foot shared use path
Possible driveway closure
The preferred scenario is to include 6-foot wide shoulders (to accommodate snowmobile and ATV use) with an 8-foot to 10-foot wide shared use path (to accommodate walkers and bicycle riders).
Refer to report Chapter 7, Section 7.3 for a detailed list of changes for each concept.
The SMTC cannot guarantee the accuracy of the map.
The map is intended for planning purposes only.

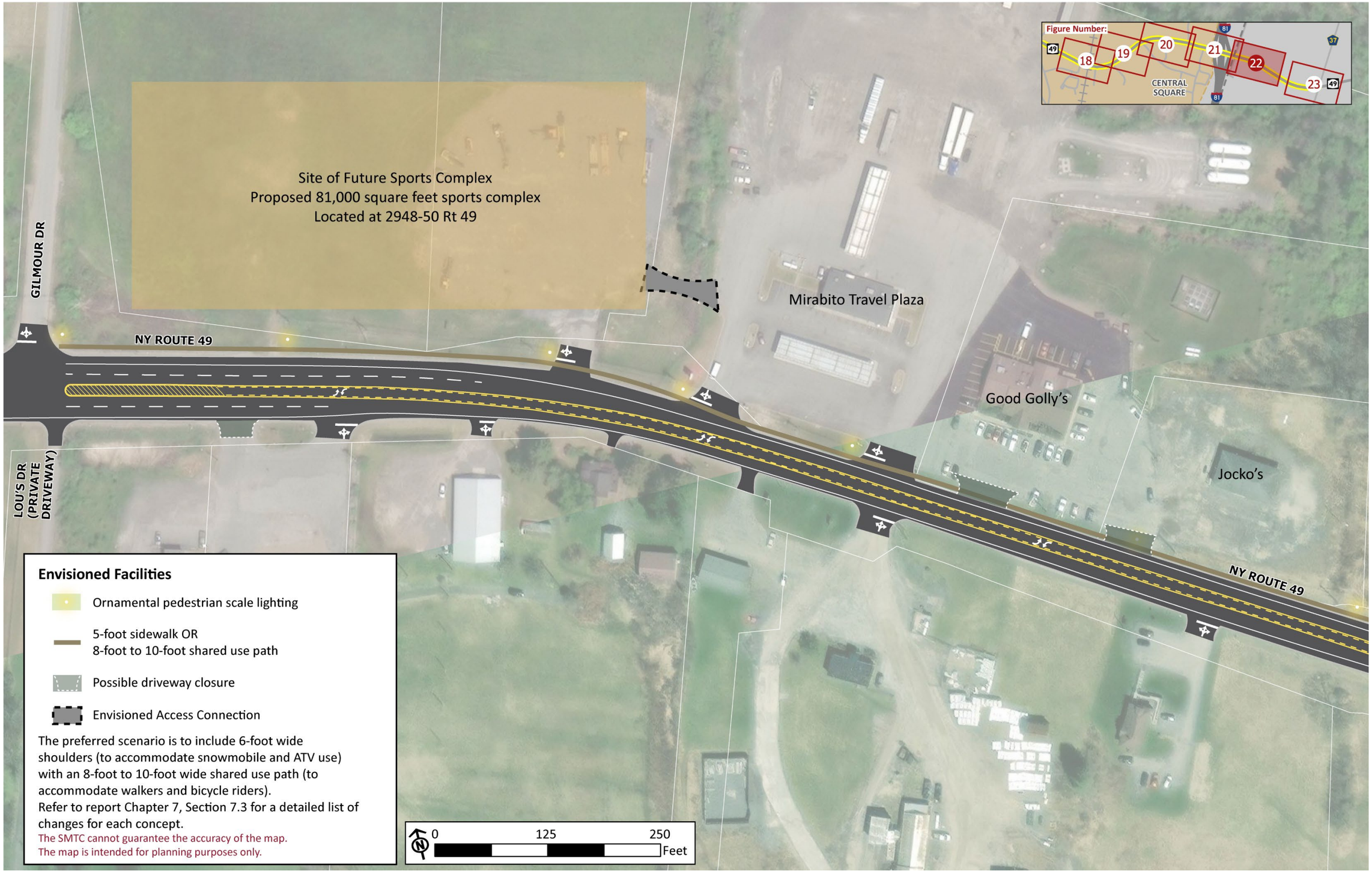
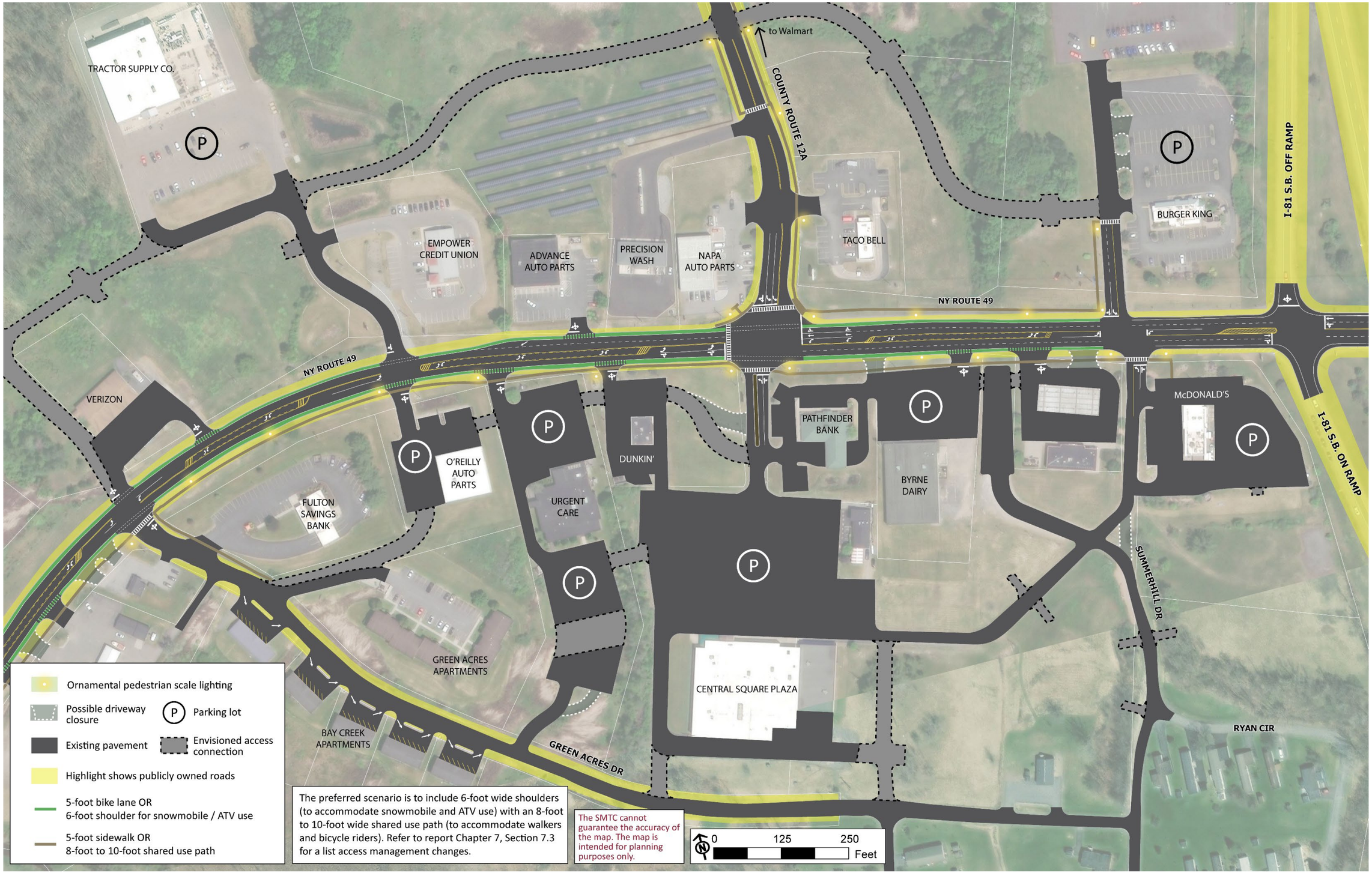


Figure Number:
18
19
20
21
22
23
CENTRAL SQUARE
Site of Future Sports Complex
Proposed 81,000 square feet sports complex
Located at 2948-50 Rt 49
GILMOUR DR
NY ROUTE 49
LOU'S DR (PRIVATE DRIVEWAY)
Mirabito Travel Plaza
Good Golly's
Jocko's
Envisioned Facilities
Ornamental pedestrian scale lighting
5-foot sidewalk OR
8-foot to 10-foot shared use path
Possible driveway closure
Envisioned Access Connection
The preferred scenario is to include 6-foot wide shoulders (to accommodate snowmobile and ATV use) with an 8-foot to 10-foot wide shared use path (to accommodate walkers and bicycle riders).
Refer to report Chapter 7, Section 7.3 for a detailed list of changes for each concept.
The SMTC cannot guarantee the accuracy of the map.
The map is intended for planning purposes only.
0
125
250
Feet


Figure Number:
18
19
20
21
22
23
CENTRAL SQUARE
COUNTY ROUTE 37 / SWAMP RD
NY ROUTE 49
Sweet Aroma Cafe
NY ROUTE 49
COUNTY ROUTE 37 / SWAMP RD
0
125
250
Feet
Envisioned Facilities
Ornamental pedestrian scale lighting
5-foot bike lane OR
6-foot shoulder for snowmobile / ATV use
5-foot sidewalk OR
8-foot to 10-foot shared use path
Possible driveway closure
The preferred scenario is to include 6-foot wide shoulders (to accommodate snowmobile and ATV use) with an 8-foot to 10-foot wide shared use path (to accommodate walkers and bicycle riders).
SMTC did not conduct a formal review of this interesection for a roundabout as it was beyond the scope of this study. However, a roundabout could be analyzed and considered.
Refer to report Chapter 7, Section 7.3 for a detailed list of changes for each concept.
The SMTC cannot guarantee the accuracy of the map.
The map is intended for planning purposes only.


to Walmart
TRACTOR SUPPLY CO.
COUNTY ROUTE 12A
I-81 S.B. OFF RAMP
EMPOWER CREDIT UNION
ADVANCE AUTO PARTS
PRECISION WASH
NAPA AUTO PARTS
TACO BELL
BURGER KING
NY ROUTE 49
NY ROUTE 49
VERIZON
McDONALD'S
I-81 S.B. ON RAMP
PATHFINDER BANK
O'REILLY AUTO PARTS
DUNKIN'
BYRNE DAIRY
FULTON SAVINGS BANK
URGENT CARE
SUMMERHILL DR
GREEN ACRES APARTMENTS
CENTRAL SQUARE PLAZA
BAY CREEK APARTMENTS
RYAN CIR
GREEN ACRES DR
Ornamental pedestrian scale lighting
Possible driveway closure
Parking lot
Existing pavement
Envisioned access connection
Highlight shows publicly owned roads
5-foot bike lane OR 6-foot shoulder for snowmobile / ATV use
5-foot sidewalk OR 8-foot to 10-foot shared use path
The preferred scenario is to include 6-foot wide shoulders (to accommodate snowmobile and ATV use) with an 8-foot to 10-foot wide shared use path (to accommodate walkers and bicycle riders). Refer to report Chapter 7, Section 7.3 for a list access management changes.
The SMTC cannot guarantee the accuracy of the map. The map is intended for planning purposes only.
0
125
250
Feet

Notable changes shown in Figure 19

- Sidewalk (on south side of Rt 49 only) and bike lanes. As noted, the preferred facilities are a shared use path and shoulders.
- The Rt 49 bridge over Little Bay Creek is estimated to be 48-feet-wide.
    - As shown, the bridge could include: (2) 5-foot bike lanes, (2) 12-foot travel lanes, (1) 5-foot striped median, (1) a 4-foot snow storage area with a 5-foot-wide sidewalk (on south side of bridge).
    - However, the preferred facility arrangement is: (2) 6-foot shoulders, (2) 12-foot travel lanes, (1) 2-foot striped median, (1) 10-foot-wide shared use path on south side of bridge.
- Shorten the westbound left-turn lane (to two vehicle lengths) at Village Place.
- Verizon Driveway (across from Green Acres) is now envisioned as a road extending behind the Verizon building.
    - Add eastbound left-turn lane – adjust its length to the Synchro queue length.
- Driveway closures as shown.

Notable changes shown in Figure 20

- Sidewalks as shown on Rt 49 and CR 12A (Walmart Driveway). Bike lanes on Rt 49. As noted, the preferred facilities are a shared use path and shoulders.
- Green Acres intersection - Verizon Driveway is now envisioned as a road extending behind the Verizon building.
    - Add eastbound left-turn lane
    - Adjust turn bay lengths to the Synchro queue lengths.
    - Extend the Two-Way-Left-Turn-Lane (TWLTL) west past Verizon's eastern driveway to improve safety. Drivers making a southbound left now only must cross one lane (instead of two).
- Tractor Supply Driveway is now envisioned as a road with no southbound left turns allowed. (O'Reilly's driveway remains a driveway.)
    - Add eastbound left-turn lane – adjust its length to the Synchro queue length.
    - (Do not add a westbound left turn lane because O'Reilly Auto would remain as a driveway.)
- CR 12A (Walmart) intersection
    - Add "ladder" crosswalks across the southbound, eastbound, and northbound approaches.
    - Add a second southbound left turn lane. Adjust turn bay lengths using the Synchro queue length. Add a second eastbound receiving lane to accept the southbound left turning vehicles.
    - Change the westbound lane assignments to 1) a through-right lane, 2) a through lane, 3) a left turn lane. This results in two westbound lanes on either side of the intersection.
    - Shorten eastbound and westbound left turn lane to Synchro queue length and extend the TWLTLs at each approach. These changes improve safety by reducing the number of lanes a vehicle must cross to make a northbound left turn from business driveways (e.g., Dunkin Donuts, Pathfinder Bank, etc.)
- Driveway closures as shown.

Notable changes shown in Figure 21

- Sidewalks as shown on Rt 49 to Burger King and McDonalds. Bike lanes on Rt 49 east of Summerhill Drive. As noted, the preferred facilities are a shared use path and shoulders (east of Summerhill Drive).
- Shoulders are envisioned West of Summerhill Drive and across the I-81 bridge. Unless the bridge is widened in the future, there does not appear to be enough space to accommodate bike lanes, sidewalks, or a shared use path. So, maximize shoulder width to the greatest extent practicable.
- Two eastbound through lanes and two westbound through lanes, including across the I-81 bridge. (Also, left turn lanes as shown at some intersections.)
- Summerhill Drive changes from unsignalized to signalized.
    - Adjust eastbound and westbound left turn lane to Synchro queue length. Extend the TWLTL east. This change improves safety by reducing the number of lanes a vehicle must cross to make a northbound left from Fastrac.
    - Change the northbound and southbound lane assignments to a through-right lane and a left turn lane.
- Changes to the I-81 southbound intersection lane assignments include eastbound through lane and a through-right lane, and a westbound through lane and through left lane.
- Changes to the I-81 northbound intersection lane assignments include eastbound through-left lane and a through lane, and a westbound through-right lane and through lane. Plus, add a northbound left turn lane. The two northbound left turn lanes feed into the two westbound receiving lanes.
- Driveway closures as shown.

Notable changes shown in Figure 22

- Changes to the westbound and eastbound lane assignments at Gilmour Drive / Lou's Drive intersection include through-left and through right lanes.
- The two eastbound and two westbound lanes taper to a signal eastbound and westbound lane west of the driveway of the future sports complex.
- Sidewalk along the north side of Route 49 to Rt 37. As noted, the preferred facility is a shared use path.
- Closure of three driveways. (Replace with more parking and green space at Good Golly's and Jocko's.)
- Maintain a minimum 6' wide shoulder in both directions.

Notable changes shown in Figure 23

- A roundabout was not assessed as it was beyond the scope of this study. However, one could be analyzed and considered.
- Bike lanes along CR 37, minimum 6' shoulders, and a sidewalk along the northside of Rt 49 east of Rt 37. As noted, the preferred facility is a shared use path.
- Changes to the northbound lane assignments include a left turn lane, a through lane, and a right turn lane.
- Closure of one driveway as shown.

Notable changes shown in Figure 24

- Light grey roads and driveways are envisioned to establish a network of roads and interconnected lots.
- Driveway closures as shown.
- Convert privately-owned roads (e.g., Summerhill Drive) into publicly owned roads. All new roads should be publicly owned.
- Parking at Bay Creek Apartments is envisioned as a one-way in and a one-way out only with angled parking and grass medians as shown.

7.4 Conclusion

The planning-level concept examples are not official proposals to construct or build anything. Should there be interest in advancing any of the ideas, the concepts would require additional engineering-level assessment to select and design final improvements. State, county, town, and village road owners are not obligated to build or construct anything.

The seven conceptual concept plans include a menu of options to improve failing level of service operations anticipated in the *2050 Condition – no Mitigation* scenario.

The concepts include planning-level examples of road enhancements that prioritize signal progression integrity and serve as a visual illustration of planning-level improvements considered in the *2050 Condition – with Mitigation* scenario.

As noted on the concept plans, the preferred bicycle and pedestrian facilities include 6' wide shoulders (instead of bike lanes) to accommodate snowmobiles and ATVs and an 8' to 10-foot-wide shared use path (instead of the sidewalk) to accommodate walkers and cyclists. Lighting along these facilities should also be provided within the village.

Envisioned changes are shown to improve traffic operations and are anticipated to improve safety as there would be fewer conflict points for crashes. Notable examples of envisioned improvements include:

- *adding amenities to accommodate walkers, bicyclists, snowmobiles, and ATVs;*
- *target locations to add northbound left and southbound left turn lanes (and additional receiving lanes);*
- *shortening the length of existing left turn lanes to align with queue lengths identified in Synchro would allow for the extension of the Two-Way-Left-Turn-Lane (TWLTL). Shortening existing left turn lanes to proper lengths and lengthening the TWLTL creates fewer conflict points for vehicles turning left from business driveways onto Rt 49;*
- *target driveways to become official roads; and*
- *considering an additional signal as needed.*

Based on a planning-level assessment, most envisioned improvements are expected to occur within the existing right-of-way. However, official highway boundary surveys are required to make the final determination.

The potentially developable areas map and land use options table can help local communities determine the appropriateness of future land use decisions, site plans, and zoning regulations.