

# Town of Glenville-Route 50 Study Area Comprehensive Plan and Zoning Analysis



December 4, 2020

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## Introduction

The Town of Glenville has requested analysis of its Zoning regulations as they pertain to a portion of Route 50, just south of the Town Center area for Complete Streets (pedestrian, vehicular, transit, bicycle), access management, stormwater management and land use. Serving as a strong foundation for an understanding of Route 50 corridor land use and transportation, an overall transportation assessment for the study area was also prioritized.

The scope of work as established for the project includes:

### Task 1: Comprehensive Plan and Zoning Analysis

CDRPC staff review of the Town's Comprehensive Plan goals and objectives, prior planning efforts relating to current Zoning regulations in the area along NYS Route 50 between Thomas Corners signalized intersection and the signalized intersection at Target Plaza, the southern end of Glenville's Town Center.

### Task 2: Route 50 Study Area Transportation Assessment

CDTC staff transportation assessment- a technical compilation of available traffic and existing conditions data, results from prior planning efforts, and recommendations relating to transportation best practices for the Route 50 corridor.

### Task 3: Conduct Zoning Code Audit

CDRPC staff conducted zoning code audit related to districts within the study area to generate recommendations that will help the Town Board modernize and improve the land development process. CDTC and CDRPC provided analysis and recommendations pertaining to pedestrian, vehicular, transit, bicycle, complete streets, access management, stormwater management and land use.

### Task 4: Provide Recommendations to Town's Code Review Committee

Recommendations provide background information to guide Glenville's Code Review Committee as they continue modernizing development regulations incorporating; complete streets concepts, access management, transit, vehicular, bicycle and pedestrian safety green infrastructure and other best management practices. The analysis will provide the foundation for potential future study within this portion of NYS Route 50.

A full presentation to the Town's Code Review Committee of this technical assistance project was made on November 10, 2020.

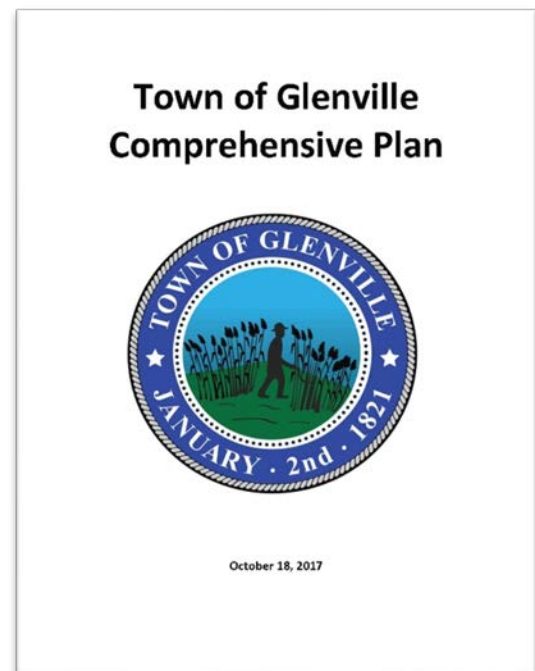
## Study Area

The study area is a 1.5-mile segment of NYS Route 50 between Thomas Corners (Route 50, Freemans Bridge Rd, Worden Rd, and Airport Rd) and the signalized intersection at Target Plaza. The Town of Glenville reports that this segment of roadway has been impacted by many recent developments that access Route 50.

### Town of Glenville Comprehensive Plan (2017)

As noted in the scope of work for this project, the Comprehensive Plan is the principal document reviewed for recommendations related to: Complete Streets, Access Management, Land Use, and Stormwater Management.

The Town's Comprehensive Plan was adopted on September 13, 2017. The Comprehensive Plan identifies Transportation as one of its 11 subject areas. The Route 50 corridor is identified as a focus area of the plan and is noted to be the Town's principal commercial corridor. The Thomas Corners Intersection is identified as a point of congestion, along with the section of Route 50 between Freemans Bridge Road and Price Chopper, which contains the entire Technical Assistance study area.



The Comprehensive Plan identifies a number of areas of concern, including:

- Congestion at intersections and along mid-blocks
- High density of intersections and closely spaced driveways
- High frequency of traffic accidents and resident complaints on the difficulty of making left turns onto Route 50 from side-streets and driveways

The Comprehensive Plan also notes that neither the Town nor NYSDOT desire additional traffic signals to be installed on Route 50. The Comprehensive Plan notes a number of recommendations for the Route 50 corridor, including additional travel lanes, roundabouts, or center turning lanes.

A review of the Comprehensive Plan provided a number of goals and recommendations related to the topics of Complete Streets integration (Pedestrian, Bicyclist, Transit), overall transportation goals, Access Management, Stormwater Management, Land Use and specific Design and other desired standards for

the Town in general, or specifically to this portion of the Route 50 corridor. Items found are noted below.

## **Complete Streets Related Recommendations**

### **Pedestrian**

- Heretofore the Town's decisions to seek funding and construct sidewalks and multi-use paths have occurred without clear policy direction to guide us. The Glenville Town Center Plan and Freemans Bridge Road Plan both provide guidance for the installation of pedestrian improvements for those two areas of Town, but beyond those areas, there is no written or mapped policy to turn to. Further, those two plans were adopted in 2004, and do not necessarily align with the current Town administration's thinking. It is for these reasons, and to implement recommendations of this Comprehensive Plan, that **the Town should adopt a Sidewalk/Multi-Use Path Plan.**
- Extend sidewalks and/or pedestrian paths into residential neighborhoods that abut the Town Center
- Pursue operational improvements and land use management options for intersections that currently experience unacceptable levels-of-service (i.e. excessive congestion) and/or high accident frequencies.
- Consider roundabouts as the preferred intersection configuration any time existing signalized intersections are being considered for improvements and at unsignalized intersections with higher-than-average accident frequencies.

### **Transit**

Route 50: This is a trunk route that provides bus service primarily along Route 50 between the City of Schenectady and the Town of Wilton. The southern terminus of the route is at the intersection of State Street and Washington Avenue in Schenectady, while the northern terminus is the Wilton Mall in Saratoga County. There are several stops along the entire length of Route 50 in both the Town of Glenville and Village of Scotia.

- Promote transit within both Glenville and Scotia.
- Improve existing bus stops to better serve riders.
- Consult CDTA during the planning/zoning review process of major commercial and industrial projects.
- Establish bus stops in commercial areas whenever properties are being considered for development or redevelopment.

### **Bicyclist**

None found specifically.

### **Access Management**

- Minimize new driveways and consolidate existing driveways wherever possible on both principal arterial roads (i.e. Route 50, Freemans Bridge Road, Route 5, Glenridge Road) and minor arterials (Maple Avenue and Sacandaga Road).
- Incorporate access management techniques as part of planning/zoning decision-making.
- Pursue traffic calming techniques along the entire Route 50 corridor.
- Pursue the establishment of parallel service roads and interconnected commercial properties in busy commercial areas to relieve intersection and mid-block congestion on principal roads.

### **Land Use**

- Develop land use regulations that preserve scenic views.
- Clarify and enforce existing zoning regulations that require preservation and ornamentation of the various Town gateways.
- Develop enforceable & reasonable commercial/industrial performance standards so nearby residents aren't impacted by lighting, noise, truck traffic, etc.
- Improve the appearance of gateways

### **Stormwater Management and Landscaping**

- Protect streams, ponds, wetlands, and shorelines from development impacts through imposition of buffers as part of the subdivision and site plan review procedures and identify guidelines/standards for these buffer zones.
- Protect stream corridors, wetlands, floodplains, and the shorelines of rivers and streams.
- Guard against land uses that could threaten groundwater, particularly Zones 1 & 2 of Aquifer for the Town of Glenville & Village of Scotia
- Amend Town's storm water management land use regulations, placing emphasis on use of modern storm water management techniques, including runoff reduction, green infrastructure, ponds w/full controls, etc.
- Amend existing commercial design and landscaping standards and consistently apply these standards to new projects so as to buffer commercial facilities from residential properties and neighborhoods.

### **Route 50 Project Area Prior Recommendations**

- Incorporate access management techniques into the Town's planning/zoning decision-making process.
- Pursue traffic calming techniques along the entire Route 50 corridor.
- Improve the appearance of gateways.
- Extend sidewalks and/or pedestrian paths into residential neighborhoods that abut the Town Center.

- Explore the feasibility of widening Route 50 in segments where congestion is persistent and where there is space to do so.

### **Route 50 Corridor Land Use and Zoning**

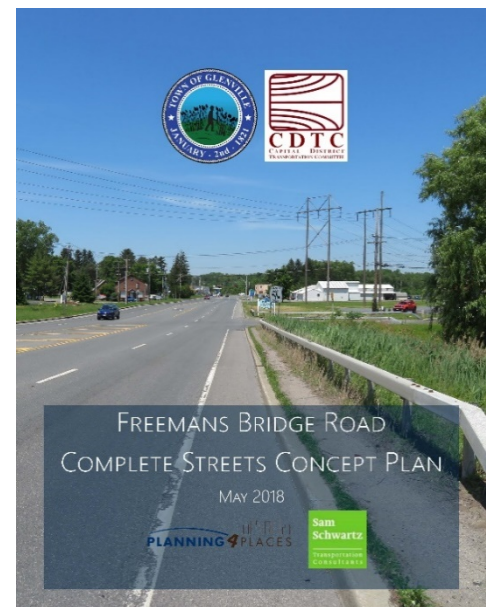
- Amend the zoning along Route 50 between the Town Center and Thomas Corners in order to promote additional commercial development and redevelopment.
- Transportation:
- Implement access management strategies throughout the corridor
- Implement traffic calming measures along the entire length of Route 50 in Glenville
- Continue to pursue establishment of a roundabout at the intersection of Route 50/Freemans Bridge Road/Worden Road/Airport Road
- Add a center turning lane or additional travel lanes on Route 50 between the Town Center and Thomas Corners
- Pursue interconnected parking lots and service roads within the Town Center to relieve traffic congestion on Route 50 within the Town Center
- Extend Rudy Chase Drive north to Glenridge Road
- Pedestrian and Bike: Seek funding for and develop multi-use trails within the Town Center and surrounding neighborhoods, and extend the existing sidewalk network out from the Town Center
- Beautification/Aesthetics: Beautify and make distinct the gateways into the town at the north and south ends of Route 50
- Add a center left turn lane on the segment of Route 50 between the four-lane Town Center section and Freemans Bridge Road.
- Adopt access management strategies within the Town's zoning ordinance for the Route 50 corridor.
- Add a center turning lane or additional travel lanes on Route 50 between the Town Center and Thomas Corners

### **Prior Plans and Relevant Regulations**

The following plans were also reviewed and goals, objectives or specific recommendations relevant to the technical assistance topics above are included within each plan discussion below.

#### **Freemans Bridge Road Complete Streets Concept Plan (2018)**

This study was a product of the CDTC Community and Transportation Linkage Planning Program. The study area examined is on Freemans Bridge Road and includes the Thomas Corners signalized intersection. The study notes that the Thomas

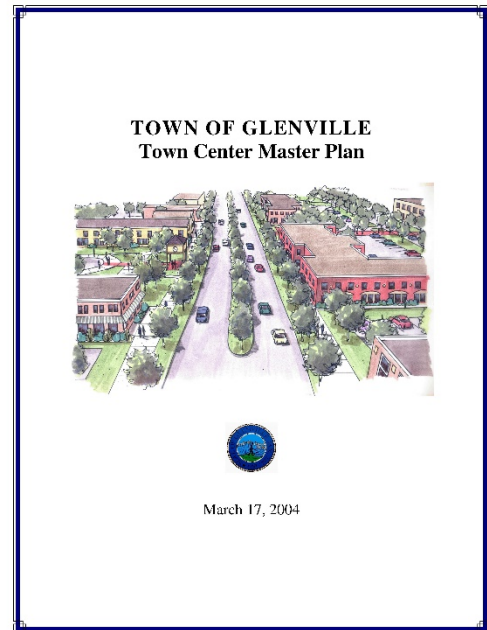


Corners intersection may benefit from 'Gateway' enhancements including a raised landscaped median and constructing a roundabout. Further recommendations are made relating to transit, land use, streetscaping, bicycle & pedestrian signage, maintenance, and shared-use sidepaths. Many of the complete streets, access management, and stormwater management recommendations identified in this plan are relevant and could be considered within any additional zoning provisions within this portion of the Route 50 corridor.

### **Town Center Master Plan (2004)**

The Town Center Master Plan appears to have been a landmark plan that provided the heart and recommendations for a Town Center area that followed on the heels of the established Town Center Overlay District in the 2001 update Zoning Ordinance.

From the Master Plan: "the Town of Glenville should enact a series of regulatory and economic development initiatives to focus land use, with the intent to establish a critical mass of businesses and activity in the Town Center. This mixed-use approach will reinforce the area as the "heart" and focal point of the Town of Glenville and will provide a unique shopping experience in the Capital Region. The proposed uses within the Town Center would allow people the opportunity to live, work, shop, and play without ever having to leave the community. This will reduce car trips for residents, allow those who cannot drive the opportunity to access jobs and entertainment, and afford residents the ability to shop close to home in a community environment."



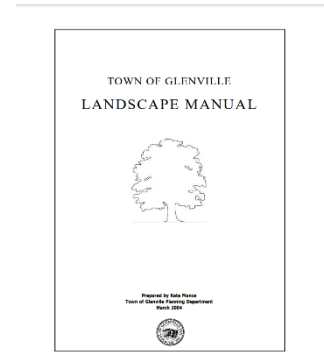
The Town Center study area defined in the plan includes the northern extent of the current Technical Assistance study area (from Target Plaza to Lincoln Drive). The plan included recommendations relating to land use, community design, and transportation along the Route 50 corridor, along with strategies for implantation of improvements. The plan calls for the construction of a new access road that would connect Glenridge Road to Rudy Chase Drive and the Airport Business Park on the east side of the Target Plaza. The plan also makes recommendations for improving access management and sidewalk connectivity.



## **Landscape Manual (2004)**

This town created manual applies to “all projects requiring site plan review as identified in Article 5 of this Ordinance (including Planned Development Districts), all conditional use permits, and all use variances that involve new construction.

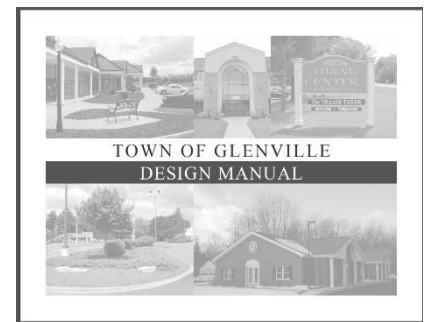
As a stand alone guide in the development process, the landscape manual could be enhanced with recommendations arising from the subjects of this technical assistance project.



## **Design Manual (2003)**

The Town created design manual serves as a complementary tool in providing additional guidance and consideration of established regulations. It specifically states that the considerations are for commercial development for all areas outside of the Town Center.

As a stand-alone guide in the development process, the design manual could be enhanced with recommendations arising from the subjects of this technical assistance project.



## **Zoning and Relevant Regulations to the Study Area**

Multiple zoning districts encompass the 1.5-mile Route 50 Study Area and have frontage on Route 50. These include:

- General business
- Research/Development/Technology
- Professional/Residential
- Planned Development
- Multifamily Residential
- Community Business

Each of these districts’ site design standards are summarized in the Town’s “The Table of Dimensional Regulations.” These site design standards establish the following:

- Minimum Lot size
- Minimum Lot depth and width
- Minimum setbacks

- Maximum height (in ft, no stories)
- Maximum lot coverage

District standards for the General Business district reference the Table of Dimensional Regulations, establish uses allowed in the district and establish sign standards.

District standards for Research/Development/Technology reference the Table of Dimensional Regulations, establish uses allowed in the district and establish sign and fence requirements.

District standards for Professional/Residential reference the Table of Dimensional Regulations, establish uses allowed in the district and establish sign requirements.

District standards for Community Business reference the Table of Dimensional Regulations, establish uses allowed in the district and establish sign requirements. They also establish the requirement that parking shall be located to one side of the principal building and/or to the rear of the lot and no more than 1/3 of the required parking may be located to the one side.

District standards for Planned Development Districts do not reference the Table of Dimensional Regulations, as the purpose of the PDD District is to facilitate increased flexibility to achieve more desirable development through the use of more creative and imaginative design of residential, mixed use and commercial areas than is presently achievable under conventional land use techniques and zoning regulations and to preserve, adapt and improve existing open space, land uses, and neighborhoods, consistent with the recommendations of the Town's Comprehensive Plan.

The implementation of planned development shall be established on a floating zone basis with attendant controls and regulations intended to provide the means to accomplish the intended purposes and goals. The Districts are considered on a floating zone basis, such that the uses of the planned development are permitted in place of the uses of the underlying zoning district(s) unless otherwise specified. Minimum yard setbacks, allowable lot coverage, maximum height or other dimensional requirements for any of the structures are to be set by the Planning and Zoning Commission and delineated on the approved plan rather than determined by any other provisions of the zoning code. § 270-27 stipulates these requirements be no less restrictive than those dimensions set forth on the preliminary site plan submitted in accordance with § 270-106.

Multifamily Residential district standards include requirements that certain uses be subject to site plan review, including Expansions to existing multifamily projects and dwellings, assisted-living facilities, bed-

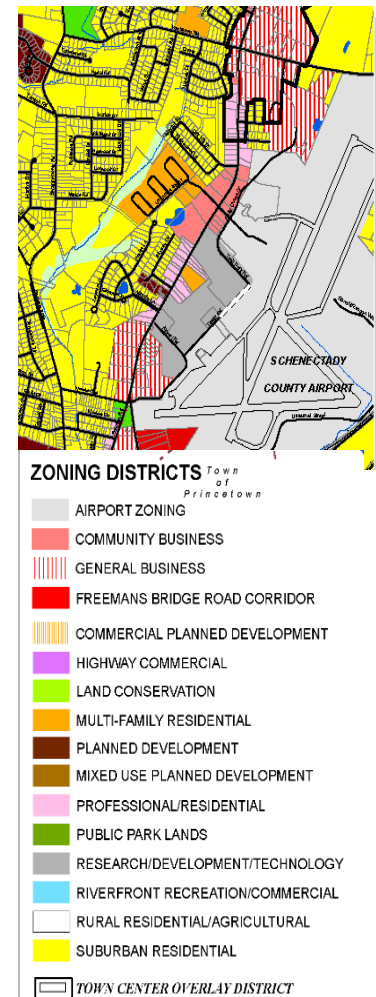


Figure 1- Zoning within area containing the Route 50

and-breakfast establishments, day-care centers and personal wireless service facilities. Multifamily dwellings must meet the requirements of the standards established in the Dimensional Use Regulations.

The Town created a Storage Overlay District in 2019. The intent of this District is to accommodate storage of automobiles associated with automobile dealerships, automobile towing operations and automobile rental operations and provide for self-storage. However, in accommodating such activities, it is the intent that there be no appreciable degradation of the character of the surrounding neighborhoods in which these activities occur. The overlay district is a floating zone in the Highway Commercial District as additional permitted uses provided certain conditions are met.

## Transportation Assessment of Route 50 Corridor Study Area

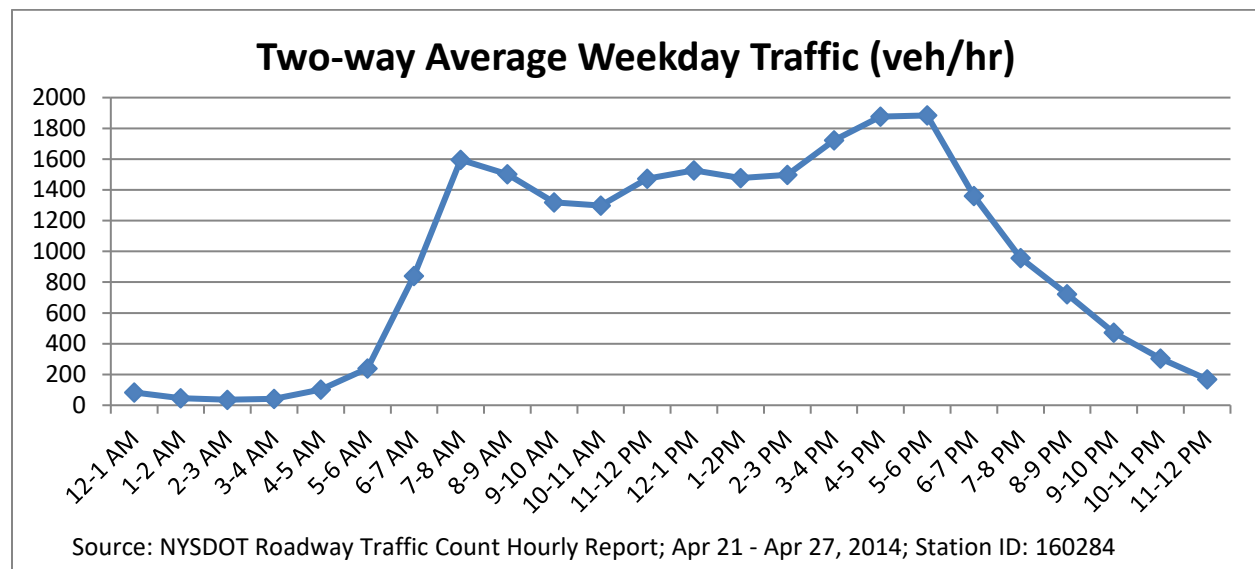
This transportation assessment is provided by CDTC to establish a foundation of existing conditions, trends, and data relevant to understanding the historic and current context of Route 50 in general, and the current study area. Given the number of recommendations made in the Comprehensive Plan related to Route 50 widening, traffic calming, and access management improvements, the assessment and analysis can be directly utilized in evaluating the feasibility of some of the goals cited.

### Existing Conditions

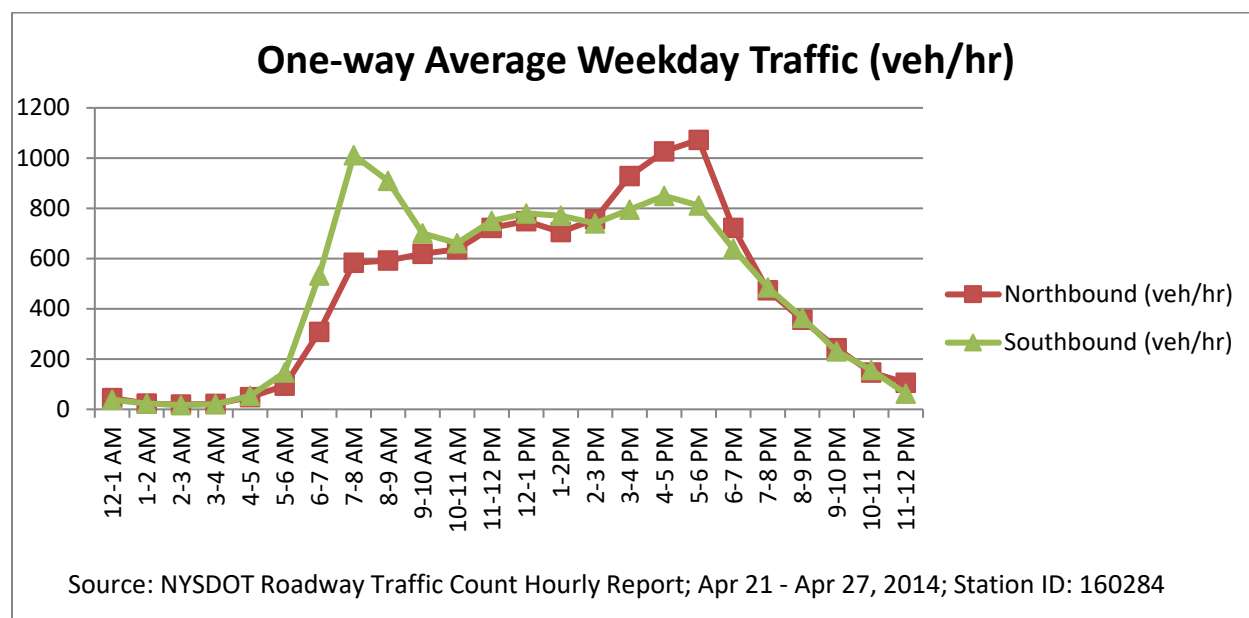
#### Vehicle movement

According to the NYS Traffic Data Viewer, average annual daily traffic on the segment of Route 50 from Glenridge Road (just north of study area) to Freemans Bridge Road was estimated to be 21,419 veh/day in 2016. There were an estimated 156 trailer trucks and 609 non-trailer trucks per day, giving a truck percentage of 3.57%.

The most recent traffic count available in the NYSDOT Traffic Data Viewer is a 7-day count conducted in April of 2014. The count was conducted in the southern portion of the study area, between Miracle Lane and Skyway Drive. The average weekday traffic was 22,547 veh/day. With seasonal adjustment, the average annual daily traffic (AADT) was 21,442 veh/day.



Strong directionality of traffic was observed, with southbound traffic being greater in the AM peak hour (7 AM to 8 AM) and northbound traffic being greater in the PM peak hour (typically 5 PM to 6 PM).



The highest observed hourly volume in the AM was 1,012 vehicles in the southbound direction. The highest observed hourly PM volume was 1,073 in the northbound direction.

In 2005, CDTC developed capacity analysis procedures for use in Generic Environmental Impact Statements. These procedures were based on the traffic engineering standards of the Highway Capacity Manual, published by the Transportation Research Board, but also consider local conditions. The CDTC procedures defined values for the maximum acceptable service flow volume and the maximum capacity for peak directional flow on arterials and collector roads. These values are shown in the table below.

**Table 1 – CDTC Mid-Block Service Volume Thresholds**

Functional Classification: Arterial and Collector Roadways	Maximum Acceptable Service Flow Volume	Maximum Capacity
Single Lane (each direction)	1,000 vph	1,300 vph
Two Lane (each direction)	2,800 vph	3,500 vph

The highest observed hourly volumes in the most recent traffic count shows that the acceptable service flow volume is exceeded in the southbound direction in the AM period (7 to 8 am; 1012 vehicles/hour) and is exceeded in the northbound direction in the PM period (5 to 6 pm; 1073 vehicles/hour). In both cases, the acceptable service flow volume is exceeded only slightly and for a brief period each day. Widening to two lanes is not warranted due to its cost; instead, bottleneck treatments such as left-turn lanes at intersections and improvements to traffic signal operations should be considered.

## Traffic growth

In the 2004 Town Center Master Plan, a traffic count conducted in 1999 was reported for Route 50 between Glenridge Road and Freemans Bridge Road. The reported AADT was 20,460 veh/day. Compared to the most recent available count conducted in 2014 (which reported 21,442 veh/day), the roadway has experienced only modest growth in the 15-year period between counts.

Future traffic volumes may be forecast using CDTC's STEP (Systematic Transportation Evaluation and Planning) Model. The STEP Model is a travel demand model that uses population, employment, and land use projections to estimate future traffic volumes for planning purposes. The STEP model forecasts modest growth through the year 2040. The table below contains modeled volumes for 2020, 2030, and 2040. The 2020 base year volume matches very closely to the NYSDOT traffic data presented earlier in this document.

Table 2 – Estimated PM Peak Hour Volumes using CDTC STEP Model			
Location: NY 50/Saratoga Rd (NY 911F/Freemans Bridge Rd to NY 914V/Glenridge Rd)			
Year	Southbound	Northbound	PM Peak Hour Volume
2020*	813	1,076	1,889
2030	818	1,109	1,927
2040	820	1,128	1,948

*\*Not reflective of COVID-19 pandemic-related traffic volume decreases (i.e. pre-pandemic)*

### NYSDOT Roadway Inventory System

According to the NYSDOT Roadway Inventory System (RIS), Route 50 through the study area is classified as an Urban Principal Arterial (Functional Class 14), and is a federal-aid eligible National Highway System (NHS) roadway. The speed limit is 40 mph for the length of the study area. The AADT reported in RIS is 19,060 – slightly lower than reported in the Traffic Data Viewer.



The study area contains three signalized intersections. From north to south, they are:

Target Plaza: This signalized intersection is four-legged, with the east approach serving Target Plaza and the west approach providing access to a single home or business. Route 50 has two through lanes and a protected left turn lane on both the northbound and southbound approaches. North of the intersection, Route 50 has a two-way left turn median which terminates at this intersection. Pedestrian push-buttons and signal heads are present. Crosswalks with curb ramps are present on the east and north approaches. There is a streetlight on the southeast corner.



**Above: aerial of Route 50 & Target Plaza (left), and street view facing northbound (right).**

Socha Plaza/Rudy Chase Drive: This four-legged intersection provides access to the Socha Plaza retail development, Shady Lane Apartments, and Airport Business Park. Route 50 has a single through lane and a protected left turn lane on both the northbound and southbound approaches. The eastbound approach exiting Socha Plaza also has a protected left turn lane. There are no sidewalks, crosswalks, pedestrian signal heads, or streetlights at this intersection.



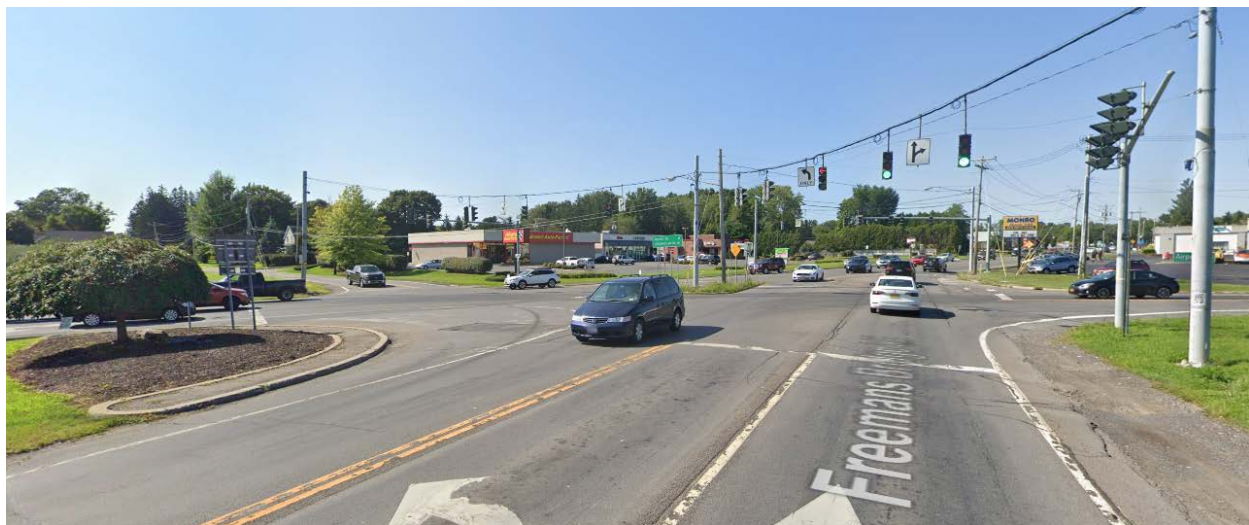
**Above: aerial of Route 50 & Socha Plaza (left), and street view facing northbound (right).**

Thomas Corners (Freemans Bridge Rd, Worden Rd, and Airport Rd): This five-legged intersection was noted to be a point of congestion in the Town's 2017 Comprehensive Plan. A dedicated protected left-turn lane is present on the Freemans Bridge northbound approach. A shared through-and-left lane is present on the Route 50 northbound approach with no signal indication for protected lefts. The southbound Route 50 approach has a dedicated protected left-turn lane. There are no sidewalks, crosswalks, or pedestrian signal heads at this intersection. Streetlights are present on the northeast corner and in the southern median. The intersection has a mix of span wire and mast arm signal supports.



**Above: aerial of Thomas Corners (left), street view facing southbound (right).**

**Below: street view facing north from Freemans Bridge Road.**





## Pedestrian & Bicycle Movement

For most of the Route 50 corridor within the study area, sidewalks are not present. Paved shoulders are present but narrow for most of the study area. Travel lane width appears to be 12 feet for the entire study area.

**Table 3 - Sidewalk and shoulder presence**

Segment	Sidewalk	Shoulder width
Target Plaza to Bank of America Driveway	Yes – east side	Approx. 4 ft
Bank of America Driveway to Rudy Chase Drive	None	Approx. 4 to 6 ft
Rudy Chase Dr to 700 ft. north of Thomas Corners	None	Approx. 4 ft
700 ft. north of Thomas Corners to Thomas Corners	None	Variable – with portions of raised concrete curbing



**Above: typical roadway cross-section with 12 ft. travel lanes and 4 ft. paved shoulders.**

Two crosswalks are present at the Target Plaza intersection. No other crosswalks are present in the study area.

There are no dedicated bike lanes present in the study area. Bicyclists travel in the travel lane or on the shoulders.

## Transit

CDTA Route 450 (Schenectady - Wilton via Route 50) operates a trunk route through the study area. The southern terminus of the route is at the intersection of State Street and Washington Avenue in Schenectady, while the northern terminus is the Wilton Mall in Saratoga County. Buses on this route make three stops in the study area, and two stops adjacent to the study area:

- Rt 50 & Horstman Dr (south of study area)
- Rt 50 & Airport Rd
- Rt 50 & Rudy Chase Dr
- 204 Rt 50 (Target Glenville)
- Rt 50 & Glenridge Rd (north of study area)

Travelers boarding or disembarking at these three stops have high need for pedestrian accommodations to safely reach their destination. Sidewalks and crosswalks are not present in the vicinity of the Airport Drive stop or the Rudy Chase Drive stop.

## Safety

An analysis of crash data on the Route 50 corridor in the extent of the study area was conducted by CDTC. Crash data was pulled for the time period from September 1<sup>st</sup>, 2014 through August 31<sup>st</sup>, 2019 – the most recent complete 5-year period available.

During this 5-year period, there were 221 crashes reported in the study area between the Target Plaza and Thomas Corners. In addition, there were 31 crashes within the five-legged intersection at Thomas Corners.

Of the 221 crashes on Route 50, nearly all were collisions between motor vehicles. There were 18 collisions with fixed objects, 9 collisions with animals, and 2 collisions involving pedestrians.

Both of the pedestrian-involved collisions resulted in injuries. In both cases, dark lighting conditions were reported (one occurred at 6:31 PM in October, the other at 8:05 PM in March). Both occurred at mid-block locations; one occurred halfway between Oak Hill Drive and Rudy Chase Drive, and the other occurred approximately 600 feet south of Rudy Chase Drive. There were no reported crashes involving bicyclists.

The table below summarizes the collisions by type. Roughly half of all crashes on this corridor were reported to be rear end collisions. For the 54 crashes assigned a collision type of “other”, the narrative descriptions from police TE-213 forms were examined. The majority of these crashes were also rear-end collisions, with a small number of fixed object collisions and left-turn collisions.

**Table 4 - Crashes by type - Route 50 between Target Plaza and Thomas Corners**

Type of collision	Number
Head-on	2
Left turn (against other car)	6
Left turn (with other car)	1
Not entered	1
Other	54
Overtaking	12
Rear end	110
Right angle	28
Sideswipe	7
<b>Grand Total</b>	<b>221</b>

The table below summarizes crashes by severity. Of the 221 total crashes, 56 resulted in at least one injured individual. There were three reported serious injuries and no fatalities.

**Table 5 - Crashes by DMV Accident Severity Classification -  
Route 50 between Target Plaza and Thomas Corners**

Reported severity	Number
Injury	6
Non-reportable	40
Property damage	125
Property damage and injury	50
<b>Grand Total</b>	<b>221</b>

The estimated crash rate on the segment of Route 50 between Target Plaza and Thomas Corners is **3.77 crashes per million vehicle-miles (MVM)** travelled. According to the most current NYSDOT summary report on Average Accident Rates for State Highways by Facility Type:

- The average crash rate on two-lane, free-access State Highways in urban areas is **3.54 crashes per MVM**. Route 50 has this configuration through most of the study area.
- The average crash rate on three-lane, free-access State Highways in urban areas is **4.76 crashes per MVM**. Route 50 has this configuration for a 700-foot portion of the study area south of Rudy Chase Drive (due to the median two-way left turn lane).
- The crash rate on Route 50 is comparable to the average crash rate for this type of roadway - approximately 6% higher.

The following map shows the locations of all crashes reported in the 5-year period. Crashes are distributed along the entire length of the study area corridor, including at mid-block and non-signalized locations. Crash clusters are present at certain intersections:

- Target Plaza to Wilson Drive: 18 crashes
- Rudy Chase Drive/Shady Lane Apts: 38 crashes
- Between Miracle Lane and Airport Road: 34 crashes
- Within 800 feet of Thomas Corners: 50 crashes (segment with high driveway density – does not include crashes within the Thomas Corners intersection).

Crash clusters appear in areas of high driveway density, where vehicles may come to a complete stop in the travel lane while waiting to make a left turn. This can lead to rear-end collisions. A two-way left turn median may help mitigate this type of collision.

## Crash Locations - Route 50 between Target Plaza and Thomas Corners



Crashes that occurred within the 5-legged Thomas Corners intersection were also evaluated. Crash data was pulled for the time period from September 1<sup>st</sup>, 2014 through August 31<sup>st</sup>, 2019 – the most recent complete 5-year period available. During this period, 31 crashes were reported.

Of the 31 crashes reported, 26 were collisions between motor vehicles, 4 were collisions with fixed objects, and 1 was a collision with a deer. There were no bicycle or pedestrian-involved collisions.

The table below summarizes the collisions at this intersection by type. For the seven crashes with a crash type of “other”, the police TE-213 forms were examined. Two were left-turn crashes, one was a fixed object crash, and the remaining crashes were of an unknown type.

**Table 6 - Crashes by type - Thomas Corners Intersection**

Type of collision	Number
Other	7
Overtaking	3
Rear end	16
Right angle	4
Sideswipe	1
<b>Grand Total</b>	<b>31</b>

The table below summarizes crashes by severity. Of the 31 crashes, 4 resulted in injuries – one of which was classified as a serious injury. No fatalities were reported.

**Table 7 - Crashes by severity - Thomas Corners Intersection**

Reported severity	Number
Non-reportable	6
Property damage	21
Property damage and injury	4
<b>Grand Total</b>	<b>31</b>

In November 2017, NYSDOT conducted a Highway Safety Investigation on the southern portion of the study area from Thomas Corners to Skyway Drive. The study reported 51 crashes in the almost five-year period from January 2013 to October 2017. The report states that the observed accident rate is typical of that type of state highway, and no safety recommendations were made as a result of the study.

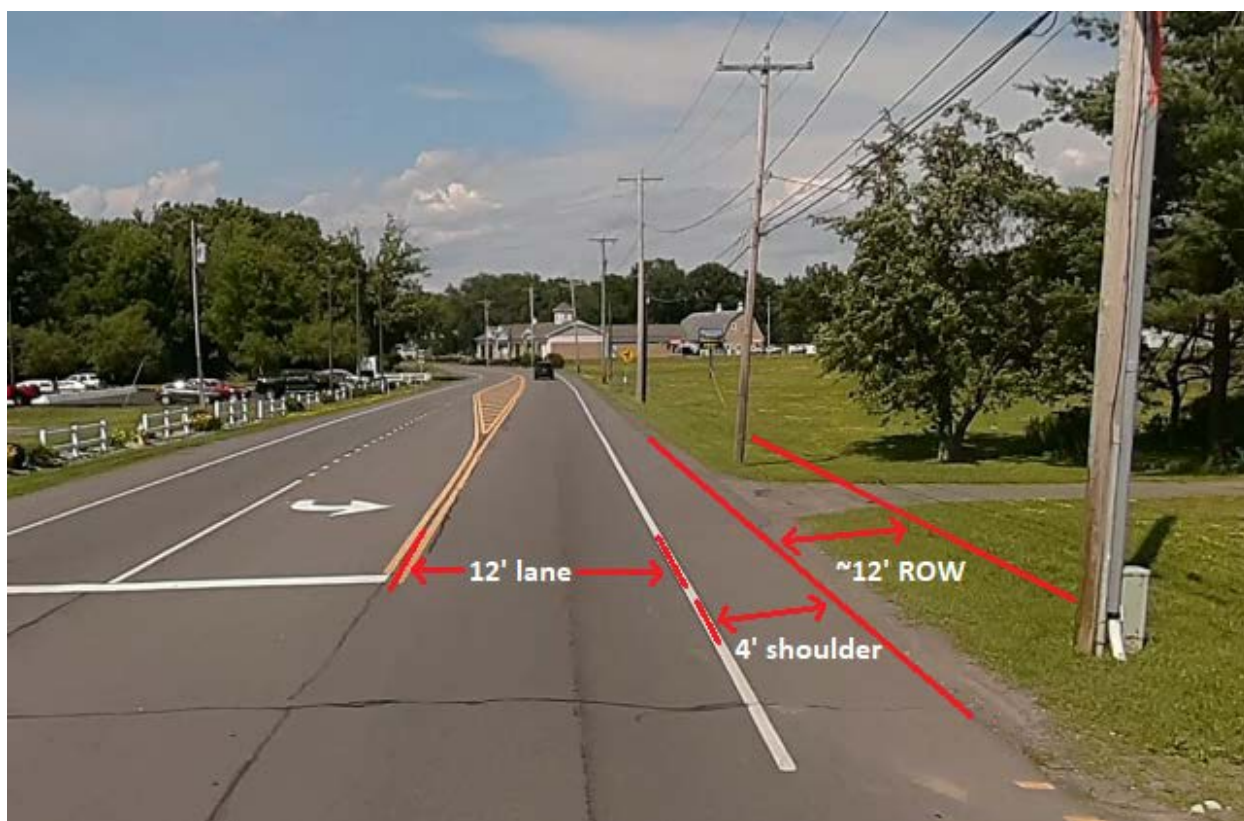


## Right-of-way

Many of the recommendations made in this assessment are dependent on right-of-way (ROW) availability. Complete Streets features (such as sidewalk or sidepath) and vehicle mobility improvements such as turning lanes require ROW width beyond the edge of the existing roadway. In addition, obstacles such as utility poles or drainage features may constrain potential alignments or necessitate costly utility relocation.

CDTC requested data on ROW width on Route 50 from NYSDOT. Several sets of plans were received that show historical ROW on segments of the study area.

A ROW plan dated February 7<sup>th</sup>, 2000 shows ROW in the vicinity of Socha Plaza and Rudy Chase Drive. On the east side of the roadway, the travel lane is 12 feet in width, with a 4-foot wide shoulder and an additional 12 feet of ROW extending beyond the edge of shoulder. Utility poles in this ROW present an obstacle to sidepath construction.



**Above: Approximate ROW width north of Socha Plaza/Rudy Chase Drive**

On the west side of the roadway, there is approximately 12 feet of ROW between the white line and the edge of ROW. Much of this area is occupied by a shoulder that begins at 4 feet wide and widens to 9 feet wide as it approaches the intersection.

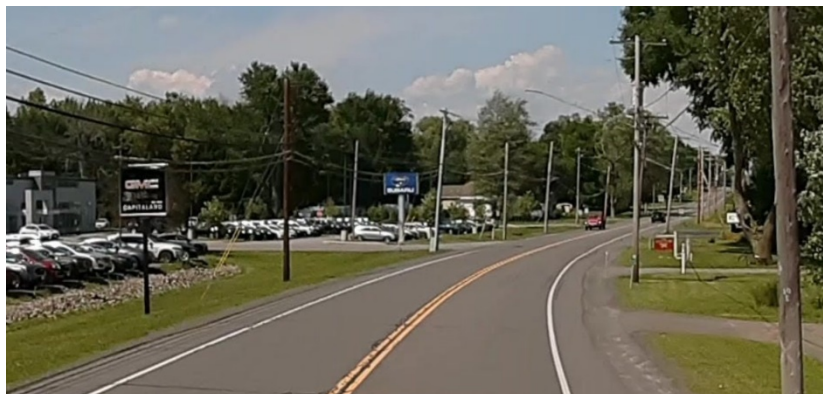
On the south side of the intersection, ROW extends approximately 11 to 12 feet wide on the east of the shoulder, but is again occupied by utility poles. On the west side of the roadway, ROW appears to widen south of the intersection. It is partially occupied by landscaping and fencing but no utility poles are present.

NYS DOT also provided a traffic signal plan from November 1997 for the Thomas Corners five-legged intersection. This plan shows ROW width on a segment of Route 50 just north of the intersection. On the east side, ROW appears to extend only to the outer edge of the raised concrete curbing – approximately 12 feet from the solid white line. This area is occupied by the raised concrete curb, utility poles, and the traffic signal pole. On the west side, ROW width appears to be slightly wider (about 13 feet) and is obstructed far less.



**Above: Thomas Corners intersection, facing north. The west side has fewer obstructions.**

Plans showing ROW extent are not available for the remaining portions of Route 50. However, it is expected that for much of the study area, utility poles will be a major obstacle to sidewalk, sidepath, or turning lane construction.



**Above: North of Thomas Corners, utility poles are close to both sides of the roadway.**



## General Recommendations

### Complete Streets

‘Complete Streets’ refers to a set of street design concepts that ensure that all roadway users are safely accommodated regardless of mode of travel. A Complete Street design can significantly improve safety and reduce pedestrian-related crashes. It can also help reduce congestion, provide more efficient travel within the community, and spur economic development (*Source: NYSAMPO Complete Streets Fact Sheet*).

Specific recommendations for consideration on the Route 50 corridor are as follows:

**Continuation of proposed Freemans Bridge Road sidepath** – One of the recommendations made in the Freemans Bridge Road Complete Streets linkage study is the construction of a multi-use sidepath to safely accommodate bicyclists and pedestrians. The sidepath was recommended due to the vehicle speed and volume both being greater than what is preferred for an on-street standard bike lane. Continuation of the proposed sidepath on Freemans Bridge was stated as a recommendation in the linkage study (page 62 of the linkage study). Sidepath alignment is dependent on right-of-way availability.

Funding for a portion of the Freemans Bridge Road sidepath is programming in the current 2019 to 2024 CDTC Transportation Improvement Program. The funded portion is from the Mohawk River to Dutch Meadows Lane.

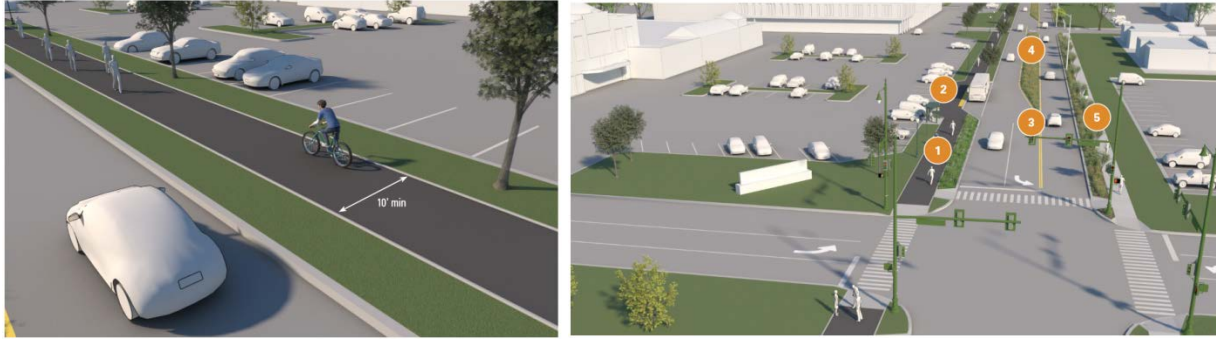
*Sidewalk and Trail Maintenance Costs*- CDTC staff has compiled data on sidewalk and trail maintenance cost from several sources. The Capital District Trails Plan cites data from Rail to Trails Conservancy (2015) that estimated annual average maintenance costs at \$1,971 per mile for asphalt surfaces and \$1,006 per mile for non-asphalt surfaces. The Hudson River Greenway similarly estimates trail maintenance costs between \$1,000-2,000 per mile. A recent article on the Albany-Hudson Electric Trail states that The Greenway estimates the annual cost of maintaining the trail at approximately \$825 – 1,675 per mile.

**Sidewalks on development frontage** – Currently, the only sidewalk in the study area is on the Target Plaza frontage. The Town should encourage the construction of sidewalk or multi-use sidepath as part of developments where appropriate.

**Pedestrian crossings** – Crosswalks are only present in the study area at the Target Plaza intersection. Crosswalks help delineate preferred crossing locations to both pedestrians and drivers. Crosswalks may be placed at signalized intersections in advance of future development with curb ramps and short

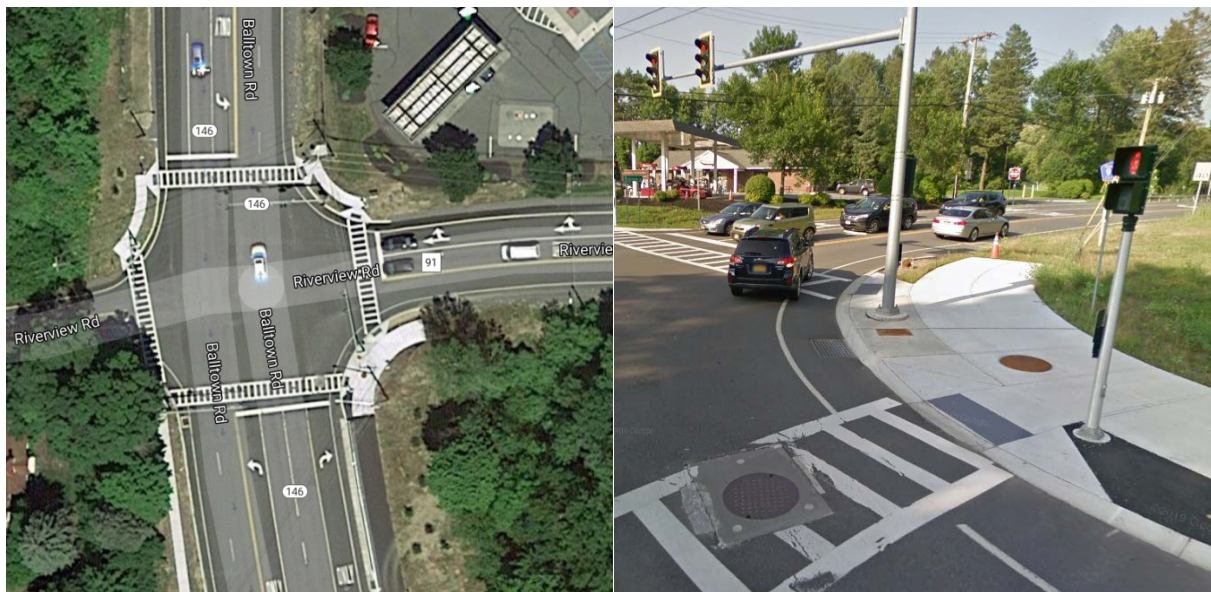
segments of sidewalk in place. Doing so ensures future sidewalk connectivity and facilitates crossings for pedestrians currently walking on the shoulder.

Improving pedestrian crossings is particularly important at the CDTA bus stops at Airport Road and Rudy Chase Drive. Travelers boarding or disembarking at those stops do not currently have sidewalks or crosswalks to use to safely reach their destinations.



**Above: Multi-use sidepath concept (left), Commercial Corridor complete street concept (right)**

Pictured below is a recent DOT intersection improvement at the intersection of NY-146 and Riverview Road in Clifton Park. This intersection was upgraded to feature crosswalks, curb ramps, and pedestrian signals. Similar improvements made to the Route 50 corridor would greatly improve pedestrian mobility.



**Above: NY-146 and Riverview Road in Clifton Park**

**Streetscaping and pedestrian lighting** – Street trees and landscaping were supported by a majority of Glenville residents polled as part of the Freemans Bridge Road linkage study. Intersection lighting helps improve safety for both vehicles and pedestrians by making junctures more visible.

## Access Management

Recommendations relating to access management laid out in the Freemans Bridge Road linkage study are also applicable to the Route 50 study area. It is important to incorporate Access Management best practices into local regulations to ensure that they are considered and implemented during the land development process.

**Reduction in driveway density and limiting new driveway construction** – high driveway density may be a contributing factor in the very high proportion of rear-end crashes observed on this corridor. In the southern segment of the study area – within 800 feet of Thomas Corners – the high driveway density may contribute to the crash cluster of 50 crashes revealed in the safety analysis. Multi-structure developments should be required to use a single driveway when appropriate.

It is recommended to limit driveways to one per property unless it is demonstrated that a second is needed due to capacity or safety needs. For locations that have a driveway connection to a side-street, consideration should be given to making the entrance on Route 50 right-in/right-out only, forcing left turns to utilize the lower-classification road, make left turns at an intersection and thus reducing potential conflict points on the more congested corridor.

**Right-in, right-out** – Some driveways in the southern end of the study area have right-in right-out access control. Right-in/right-out driveways that serve multiple businesses are an effective, relatively low-cost access management improvement. Vehicle safety is improved at the cost of vehicle mobility.

**Driveway consolidation and frontage roads** – A concept frontage road is present in the Town Center Master Plan from 2004. This road would have been built east of the current Target Plaza, and would have run southbound parallel to Route 50, eventually connecting to Rudy Chase Drive. Opportunities for future frontage roads should be examined as new developments come to the corridor. Opportunities to consolidate driveways should also be considered. Driveway consolidation improves vehicle and pedestrian safety by removing conflict points. An opportunity to consolidate driveways may exist in the southern end of the study area, where a series of businesses on the east side of the roadway have a series of closely spaced driveways.

## Transit, vehicular, bicycle, and pedestrian safety

**Safe facilitation of turns** – crash data analysis reveals that a majority of crashes in the study area are rear-end collisions. These types of crashes occur more frequently during congested conditions and when vehicles must remain in the travel lane when slowing down to turn. Currently, left turn lanes are present only at the study area’s signalized intersections (Target Plaza, Rudy Chase Drive, and Thomas Corners). Consideration should be given to adding left-turn lanes at unsignalized intersections and driveways. The addition of a median two-way left turn lane in portions of the corridor with high driveway density should also be considered. In areas where driveway and side-street density are low, defined left-turn lanes are preferable to two-way left turn lanes.

In addition to safety benefits, additional turning lanes may help reduce traffic congestion by separating turning vehicles from the flow of through-traffic.



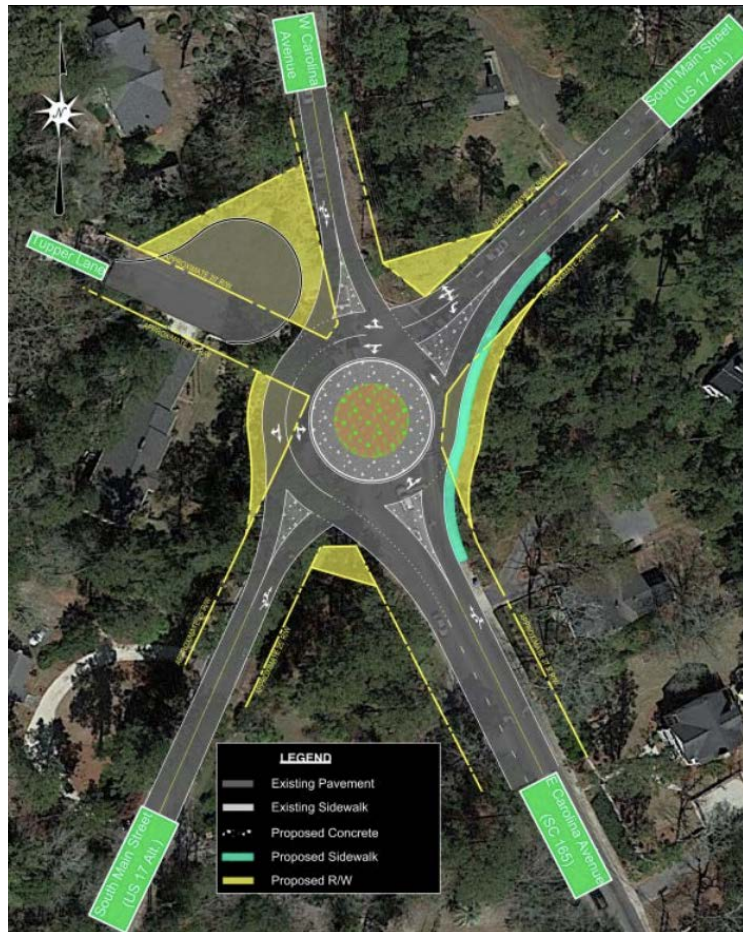
**Above: the median two-way left turn lane near Rudy Chase Drive.**

**Thomas Corners Roundabout:** the Freemans Bridge Road linkage study notes that a roundabout is proposed at the 5-legged Thomas Corners intersection. Roundabouts have been shown to reduce the rate and severity of vehicle crashes. Gateway enhancements noted in the linkage study would be incorporated into the roundabout.

A 5-legged roundabout would require considerable right-of-way availability to be built. Concepts for 5-legged roundabouts could include single-lane roundabouts, or roundabouts with two lanes to facilitate certain movements. In the case of Thomas Corners, additional lanes may be needed to facilitate through-travel on Route 50.

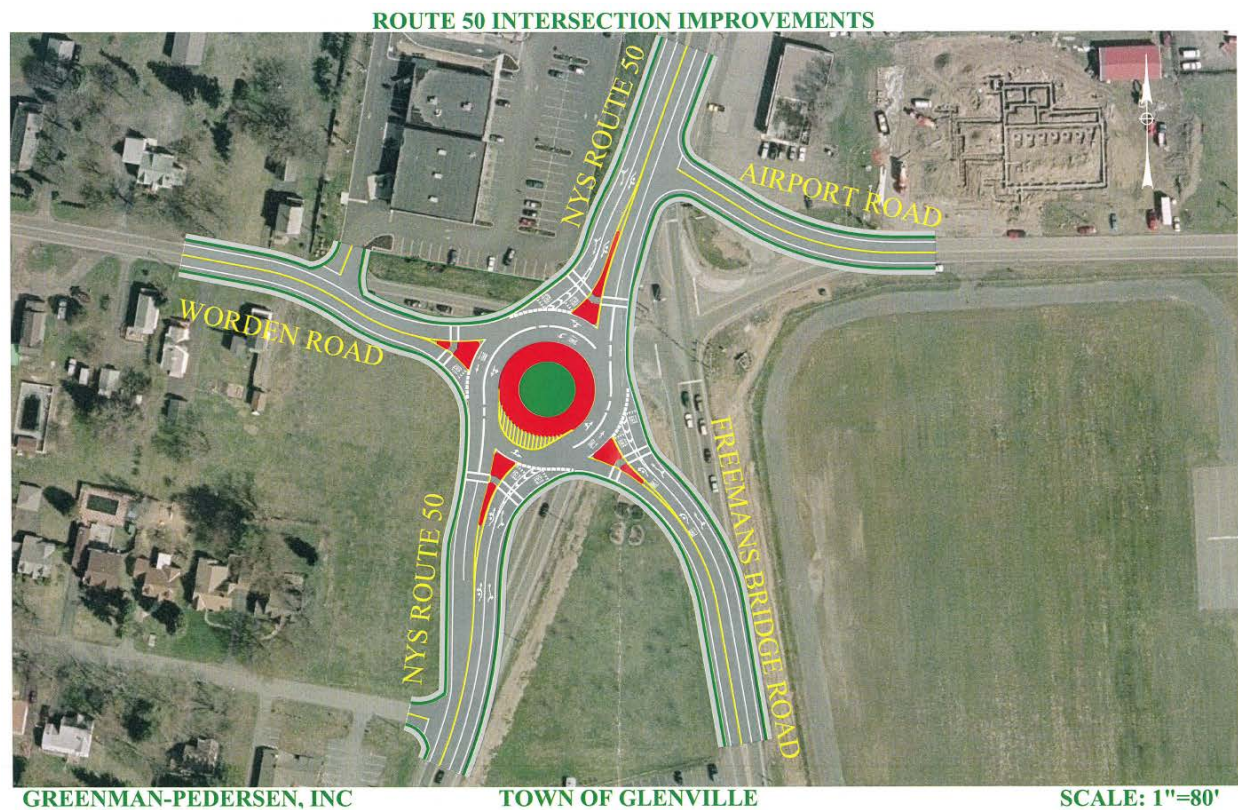


Pictured below is a concept for a 5-legged roundabout in Summerville, South Carolina that is similar in layout to Thomas Corners. Note that two circulating lanes are present in a portion of the roundabout to facilitate greater volume on certain movements. The FHWA publication “Roundabouts: An Informational Guide” contains methodology that may be used to assess the need for additional circulating lanes on some or all segments of the roundabout. Entry flows on each approach and circulating flows between each pair of adjacent approaches must be calculated and compared against capacity curves. A turning movement count with vehicle classification must be conducted to perform this analysis, as trucks use more roundabout capacity than cars.



**Above: Conceptual 5-legged roundabout**

A concept roundabout design for Thomas Corners was developed by Greenman-Pedersen, Inc., and is pictured below. Note that Airport Road is realigned to intersect Route 50 north of the roundabout so that the roundabout may be four-legged. Freemans Bridge Road is deflected to reduce incoming travel speed. Pedestrian crossings are placed on the approaches where vehicle speed is slowest.



**Above: Concept roundabout at Thomas Corners**

### *Roundabout Implementation*

The Thomas Corners roundabout was previously submitted by Town of Glenville for federal funding via the CDTC TIP solicitation in 2016. The roundabout is eligible for federal NHPP (National Highway Performance Program) funding due to Route 50 being on the National Highway System. The project is also eligible for HSIP (Highway Safety Improvement Program) funding as roundabouts have a crash reduction benefit. Finally, the project is also eligible for STBGP (Surface Transportation Block Grant Program) funding, a funding source with broad eligibility.

Projects submitted for TIP funding are scored by CDTC via a competitive process. The Thomas Corners roundabout was calculated to have very competitive project benefits; however, its high cost resulted in a relatively low benefit-cost ratio. If the project were to be resubmitted for federal funding consideration, its competitiveness could be improved by raising the local share percentage or by reducing the overall project cost. One process by which additional local funds may be raised is through

development mitigation fees, as the roundabout is expected to improve access to many development sites on the Route 50 and Freemans Bridge corridors.

Recent NYSDOT roundabout projects have been primarily funded through HSIP funds. Examples include the NY 146/146A Roundabout in Clifton Park and the Carman Road Safety Improvements project, which included the construction of two roundabouts. In the past, the state has also funded roundabouts using CMAQ (Congestion Mitigation and Air Quality) funding, such as the 9W/Feura Bush Road roundabout in Bethlehem. However, it is not known if and when another CMAQ solicitation will occur.

**Traffic signal operations** – Traffic signal timing should be evaluated at all three signalized intersections in the study area. The presence and functionality of vehicle detectors should also be assessed in the field. Green allocation should be sufficient to clear side-street queues each cycle, while allocating all remaining green to Route 50. Minimum safe pedestrian crossing intervals should be calculated and implemented at each intersection.

For the Thomas Corners intersection, the overall timing plan should be evaluated. The timing plan should be retrieved and verified against field observation. Given the complexity of the intersection, there may be opportunity to refine the signal phasing, especially if travel patterns have changed since the current timing plan was implemented. Traffic modeling software such as Trafficware SimTraffic or PTV Vissim may be used to test timing plans prior to implementation. A traffic model could also be used to evaluate roundabout concepts to select the proper lane configuration.



## Zoning Audit Recommendations

The following provides the goals and recommendations from the Comprehensive Plan, assesses the current provisions related to the specific topic in the Zoning, and provides recommendations for changes within the Zoning Ordinance or relevant regulatory document.

### Complete Streets (Pedestrian, Cyclist, Transit, Transportation Demand Management)

Complete streets is a transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. In the context of this audit, categories of pedestrian, cyclist, transit and Transportation Demand Management are all discussed.

#### Recommendation:

**Site Plan Review Checklist-** A required site plan review checklist can provide an organized means for a land use board or staff to evaluate a specific project or Town proposal for Complete Streets or Access Management components. Glenville could consider the creation of a checklist or revise an existing one to what will work best for the community. Here is an example from a national resource, and from a community in the region, Saratoga Springs.

Integrating Roadway Access Management into Local Ordinances, Appendix H Checklist from TRB Access Management Manual <https://www.nap.edu/read/25750/chapter/17>

Saratoga Springs Complete Streets Checklist

<https://www.saratoga-springs.org/DocumentCenter/View/305/Complete-Streets-Checklist-PDF>

### Pedestrian

Comprehensive Plan Excerpts:

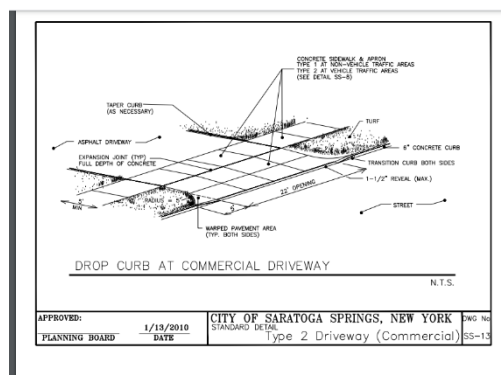
- ***Heretofore the Town's decisions to seek funding and construct sidewalks and multi-use paths have occurred without clear policy direction to guide us. The Glenville Town Center Plan and Freemans Bridge Road Plan both provide guidance for the installation of pedestrian improvements for those two areas of Town, but beyond those areas, there is no written or mapped policy to turn to. Further, those two plans were adopted in 2004, and do not necessarily align with the current Town administration's thinking. It is for these reasons, and to implement recommendations of this Comprehensive Plan, that the Town should adopt a Sidewalk/Multi-Use Path Plan.***
- ***Extend sidewalks and/or pedestrian paths into residential neighborhoods that abut the Town Center***

Current condition of sidewalks: Within the study area, only a portion of sidewalk is currently constructed along Target Plaza frontage. It ends at the property line and is currently not connecting residential or commercial properties to the south.

The Design Manual (specified for properties outside of the Town Center) requires that sidewalks “shall be provided along all sides of the lot that abut a public street”. Therefore, as properties are developed, there would be segments of sidewalk constructed.

### **Recommendations:**

**Standard Details:** If not currently available, Glenville could create a series of relevant standard details to ensure consistency, meeting Codes or relevant standards of construction the Town deems appropriate. Details could be provided for construction such as ADA accessible curbs, sidewalk, street cross-section and placement of utilities, access points, Complete Streets elements, bus shelter etc.



The City of Saratoga Springs has their Standard Details available on their website: <https://www.saratoga-springs.org/469/Standard-Details>. From there, an applicant or consultant can incorporate them directly into their plans.

**Town Construction:** Outside of these existing requirements that will only see construction as development takes place, the Town could consider its own implementation activities to construct sidewalk or sidepath connection to neighborhoods within the Study Area. Funding support could be sought from relevant sources that may include NYS, federal, or regional sources such as CDTC.

## Transit

Comprehensive Plan Excerpts:

**Route 50:** *This is a trunk route that provides bus service primarily along Route 50 between the City of Schenectady and the Town of Wilton. The southern terminus of the route is at the intersection of State Street and Washington Avenue in Schenectady, while the northern terminus is the Wilton Mall in Saratoga County. There are several stops along the entire length of Route 50 in both the Town of Glenville and Village of Scotia.*

### **Goals identified:**

- **Promote transit within both Glenville and Scotia.**
- **Improve existing bus stops to better serve riders.**

- ***Consult CDTA during the planning/zoning review process of major commercial and industrial projects.***
- ***Establish bus stops in commercial areas whenever properties are being considered for development or redevelopment.***

#### **Recommendations:**

Integrating transit infrastructure into the site plan review process is essential if the Town wishes to improve transit infrastructure and improve ridership within the Study Area as well as the town as a whole.

**CDTA comments incorporated into Zoning:** Specific references to incorporating CDTA into the site plan review process for projects within a specified distance from service area, or for projects of a certain threshold that may benefit from incorporating transit related project characteristics.

Checklist: With a wide array of items for land use boards and staff to review within the development process, additional tools such as a site plan checklist could assist in organizing consideration of everything from access management to Complete Streets.

#### **Bicyclist**

Comprehensive Plan Excerpt:

***Pedestrian and Bike: Seek funding for and develop multi-use trails within the Town Center and surrounding neighborhoods, and extend the existing sidewalk network out from the Town Center***

While there are no singular references found related to Biking in Town or along the Study Area portion of Route 50, there are references to incorporating Complete Streets, and to Route 50's busy vehicular corridor characteristics as "discouraging cyclist ridership".

#### **Recommendations:**

If Glenville wishes to increase biking along this portion of Route 50, initial definition of activity and required or suggested accommodations should be included in the Zoning Ordinance. For example, as in the Freemans Bridge Corridor District, pedestrian and bicycle accommodations are required, one specific item is in requiring a sidepath in accordance with the Freemans Bridge Road Concept Plan.

**Bike parking requirement:** Not included in other Town regulations, the Town can require bike parking to be provided for all sites, or focused on a specific area. One means to include this is requiring a number of public bike parking spaces proportionate to the vehicle parking required.

**Future Planning Efforts incorporated into Zoning:** A longer-term goal could be a specific planning effort such as a Bicycling Master Plan to understand better future goals and incremental recommendations for the Town to implement infrastructure and programming in support of cycling. The recommendations of this effort as related to the Study Area can then be codified within the Zoning.

A required site plan review checklist as noted above can specifically evaluate existing infrastructure and what is proposed.

### Transportation Demand Management (TDM) Considerations

TDM, or Mobility Management is a suite of programs and services designed to reduce single occupant vehicle (SOV) travel, fuel consumption, air pollution and parking demand by making travel options like buses, vanpooling, carpooling, walking and biking more attractive and affordable. Mobility Management focuses on how people make their transportation decisions and helps people use existing infrastructure for non-SOV modes of travel.



Visual from Portland, Oregon  
Transportation Demand Management  
Action Plan

While not expressly discussed in Glenville's Comprehensive Plan, TDM offers a focus and direct support to increasing pedestrian, cyclist, transit usage within a community's transportation network. TDM is receiving more attention within the Capital Region for these reasons, and CDTC's New Visions 2050 Long Range Transportation Plan includes guidance on Transportation Demand Management recommendations.

TDM looks to reduce vehicle trips which can reduce vehicle congestion and complement walking, biking, and transit activities- all goals expressed by the Town of Glenville within this technical assistance project. The following resources offer additional information and examples of integrating TDM into local land use regulations and site plan review process.

Current pandemic wholesale changes have forced a sea change of remote and flexible work that is likely to continue for the foreseeable future. Accommodating this within regulations is a general recommendation for communities and can provide additional community or economic development benefits. For example, reduced parking requirements in light of some of these proposed activities can also decrease new for stormwater management or permit additional room on the site for square footage dedicated to a commercial activity.

### **Recommendations:**

Additional resources such as the following could be considered by Glenville for integration into the Zoning in support of TDM.

Examples of TDM integration into the Town of Glenville's regulations could include incorporating appropriate tools from the two following resources:

[Transportation Demand Management \(TDM\) Plans for Development \(2013\)](#), a report funded by the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development, focuses on programmatic TDM measures related to new and expanding development such as subsidized transit passes for employees, parking cash-out programs, bicycle safety education classes, and Transportation Management Associations (TMAs). It emphasizes the use of TDM plans as a part of the site plan review process to accomplish measures to reduce transportation impacts from development over time. It provides a step-by-step approach on how to create a TDM Plan program as part of local land use regulation. This report also provides a menu of programmatic TDM strategies, including transit universal access as one of many tools.

[Incorporation of Transportation Demand Management \(TDM\) into the Development Review Process, Final Report and Recommendations](#), a report generated for the Government of the District of Columbia, Department of Transportation, completed in July, 2013. In addition to providing a thorough summary of best practices (Chapter 3) this report provides a detailed literature review of six model TDM programs and related ordinances from across the country (Appendix A).

Examples of straightforward TDM elements:

- Requirement to consider a TDM proposed program for projects above a certain threshold.
- Transit passes, telework (partial or full-time), flexible work hours etc. may be incorporated within specific project conditions.
- Parking required spaces reduction based on consideration of TDM activities

## Access Management

Comprehensive Plan Excerpts:

- ***Minimize new driveways and consolidate existing driveways wherever possible on both principal arterial roads (i.e. Route 50, Freemans Bridge Road, Route 5, Glenridge Road) and minor arterials (Maple Avenue and Sacandaga Road).***
- ***Incorporate access management techniques as part of planning/zoning decision-making.***
- ***Pursue traffic calming techniques along the entire Route 50 corridor.***
- ***Pursue the establishment of parallel service roads and interconnected commercial properties in busy commercial areas to relieve intersection and mid-block congestion on principal roads.***

### ***Route 50 Corridor Land Use and Zoning:***

- ***Implement access management strategies throughout the corridor***
- ***Implement traffic calming measures along the entire length of Route 50 in Glenville***
- ***Add a center turning lane or additional travel lanes on Route 50 between the Town Center and Thomas Corners***

- *Incorporate access management techniques into the Town's planning/zoning decision-making process.*
- *Pursue traffic calming techniques along the entire Route 50 corridor.*
- *Pursue interconnected parking lots and service roads within the Town Center to relieve traffic congestion on Route 50 within the Town Center*
- *Extend Rudy Chase Drive north to Glenridge Road*
- *Adopt access management strategies within the Town's zoning ordinance for the Route 50 corridor.*

#### **Recommendations:**

**Strengthen existing language-** § 270-73 Off-street Parking and Loading provides existing provisions that codify access management provisions. Given the Town's interest in further access management provisions, the language could be strengthened to:

- Require consideration of current, proposed and potential future access points of subject and adjacent properties.
- Note that access management considerations will be made that include driveway consolidation, driveway siting that incorporates current and future uses for property in question and immediate and near vicinity.
- Consider minimum recommended spacing between adjacent driveways on the same side of the street. The City of Saratoga Springs has 500 feet as a distance for a portion of Route 50. Access connections on opposite sides of the street should be aligned or off-set so as to eliminate left-turn conflicts.

**Waiver-** Require a waiver to be issued by Planning Board in cases where shared access point is not proposed. Waiver provisions should clearly state Planning Board's review of criteria relevant to decision- i.e. presence of natural or manmade permanent obstacle,

**Extended Cross-Access Easement Consideration-** As off-street parking areas are already required to be interconnected, add language related to consideration of physical extension of connections beyond the subject parcel. This can assist with longer term planning goals that provide a well aligned series of connections that could start to reflect parallel access road. Should further studies related to an access road be considered, they should be reflected within the Zoning to provide for successful integration of goals within a proposed development's site plan.

**A site plan review checklist** including access management provisions could offer the means for Staff and the Board to evaluate access management provisions more fully.

### **Model easement language-**

Model easement language can be provided or a common site plan notation to ensure consistent, appropriate treatment of current and future shared access and cross-access easements.

## **Land Use**

Comprehensive Plan Excerpts:

- ***Develop land use regulations that preserve scenic views.***
- ***Clarify and enforce existing zoning regulations that require preservation and ornamentation of the various Town gateways.***
- ***Develop enforceable & reasonable commercial/industrial performance standards so nearby residents aren't impacted by lighting, noise, truck traffic, etc.***
- ***Improve the appearance of gateways***

### ***Route 50 Corridor Land Use and Zoning:***

- ***Amend the zoning along Route 50 between the Town Center and Thomas Corners in order to promote additional commercial development and redevelopment.***
- 

The Freemans Bridge Road Master Plan and subsequent re-zoning contain many recommendations that are potentially replicable for this portion of Route 50. Primarily:

Freemans Bridge Road Corridor Development Recommendations

- Infill development that emphasizes neo-traditional style architecture is recommended.
- A vocabulary of design standards should be developed to serve as guidelines for new construction and renovations.
- Redesign Freemans Bridge Road to incorporate a planted boulevard and provide tree-lined sidewalks.

### **Recommendations:**

**Parking Maximum-** Consider parking MAXIMUM to encourage appropriate, but not overabundance of parking and paved surfaces.

### **Regulations- Simplification and Consolidation Considerations**

The Town of Glenville has developed a number of concept or geographic specific regulations within the Zoning Ordinance, or as stand-alone documents including:

- Landscape Manual
- Design Manual
- Freeman's Bridge Road Overlay District
- Town Center Overlay District
- Street and Sidewalk

Given this successful history of progressing regulations reflecting Glenville’s needs, targeted regulations that focus on the study area portion of Route 50 could be an appropriate tool. However, as specialized regulations continue, this also adds complexity to the regulations and potentially difficulty in a user understanding what regulations may apply, and in what manner to a particular property or Town as a whole.

### **User Centered Zoning**

According to the American Planning Association (APA), many municipalities are adopting a more user-centered approach to zoning challenges by utilizing new tools such as [interactive zoning maps](#). With this technology, business owners can simply click on a map to quickly reveal essential elements about a property or area they are interested in. More advanced versions of the technology tie GIS maps to granular zoning code information with links back to regulating code text that is easy to understand, well laid out, and graphically rich. Such an approach may offer significant value to Glenville and the public as a whole. The Town can consider adding elements such as:

### **Interactive Zoning Map**

Provide clear, easy to interpret regulations clearly referenced by location of interest. For example, if there is an interest in a specific parcel along Route 50, a tool that would allow for a clickable format on GIS map that would provide relevant property information, but then articulate and link the various regulations relevant to that parcel- i.e. Sidewalks, Stormwater Management, Design Manual, geographically based district like Freeman’s Bridge Road or Town Center could be extremely valuable.



### **Review of Zoning Districts within Study Area Portion of Route 50**

Further work could also include a review of existing zoning districts, overall commonalities and differences and any ability to consolidate, revise, and enhance goals and how they relate to regulations.

### **Regulating Plan**

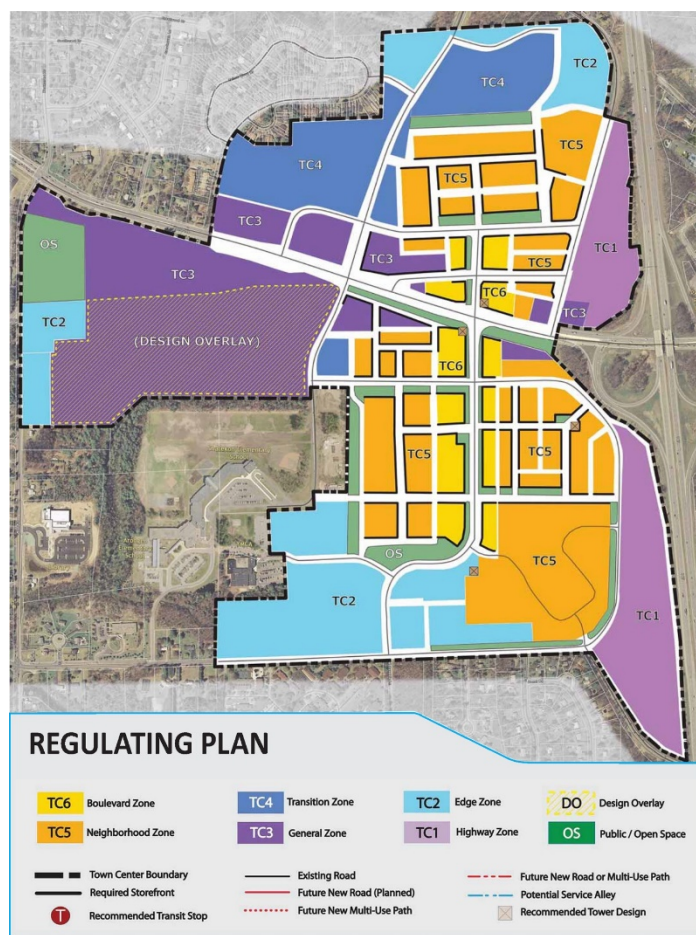
A **regulating plan** is essentially a fine-grained zoning map combined with a street **plan**, keyed to a set of standards ... It is detailed to the level of individual streets, blocks, public spaces, and sometimes even lots or buildings, which is a level of detail not found in conventional zoning ordinances.



For Glenville, such an approach could offer a clear, visually based reference of the Town's overlay districts and how they relate to each other and overall reflect the Town's land use goals for important parts of the community. For example, such a plan could provide for the relationship between Town Center Overlay and inter-related districts directly adjacent including study area.

A recent example of a Regulating Plan in our region is Clifton Park within their identified Town Center area. Clifton Park reflects Glenville and many other suburban communities' goals to establish compact centers within the community. After studies and planning efforts, their Town Center Districts Section now provides organization and definition to the group of zoning districts existing in this area, and provides information in a manner that provides structure to the uses, performance standards, and how overall districts work together within overall context of the Town Center area. Regulations are available here:

<https://ecode360.com/6715109>



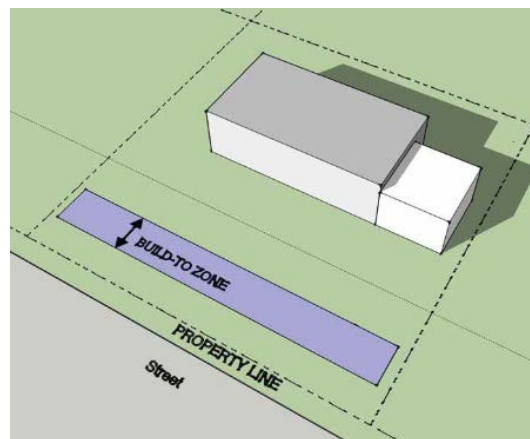
### Add visual references

Glenville regulations are continuing to incorporate visuals. Given the trend in successful land use regulation to more fully integrate meaningful visual illustrations, it is recommended that Glenville incorporate further illustrations and renderings that increase transparency of regulations and successfully reflect Town goals and desires.

### Route 50 Project Area Prior Recommendations

#### Route 50 Corridor Land Use and Zoning:

- **Pedestrian and Bike: Seek funding for and develop multi-use trails within the Town Center and surrounding neighborhoods, and extend the existing**



OPTION ONE - ACCEPTABLE. An existing building, set far back from the required build-to-zone (BTZ) places a small addition on the side of the building. Although the addition does not comply with the zoning by providing front facade within the build-to zone, this solution may be acceptable because it has not increased the nonconformity of the existing building. Accessed at: <https://ecode360.com/6715109>

### ***sidewalk network out from the Town Center***

## **Stormwater Management**

From the Comprehensive Plan: “Glenville is home to a preponderance of streams from one end of town to the other, including a handful of trout streams. Some of the more notable streams include the Alplaus Kill, Indian Kill, Horstman Creek, Collins Creek, Washout Creek, Verf Kill, Crabb Kill, Chaughtanoonda Creek, Kromme Kill, La Rue Creek, and Fallen Tree Kill. All of these streams possess environmental, aesthetic, and biological value, to varying degrees, with several also being historically significant because of former events, uses, or settlements of and along the streams. Further, some of the streams in the eastern portion of Glenville, such as the Indian Kill and Horstman Creek, take on greater importance because they provide a riparian buffer and welcomed green space in the most heavily built-up area of town. They also offer discernible edges to neighborhoods and commercial areas.”

### **Regulatory Requirements**

Nonpoint Source Pollution generally results from land runoff, precipitation or atmospheric deposition. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters.

A federal regulation, commonly known as **Stormwater Phase II**, requires permits for stormwater discharges from Municipal Separate Storm Sewer Systems (MS4s) in urbanized areas to prevent and limit Nonpoint source pollution. Permittees are required to develop Stormwater Management Program (SWMP) and submit annual reports to the Department. The town of Glenville has permit coverage as the owner operator of an Ms4. Communities with permit coverage must implement what are called “Overview of the Minimum Control Measures (MCM). One such MCM 5 is “Post-construction Runoff Control” and it requires communities to “Develop, implement and enforce a plan that addresses stormwater runoff from new development and redevelopment projects and incorporates enforceable mechanisms. Applicable controls could include preventative actions (e.g., protecting sensitive areas) or the use of **structural controls** (e.g., grassed swales or porous pavement).” To this requirement, the Town has adopted several stormwater controls and requirements withing their zoning ordinance.

### **Green Infrastructure**

As land becomes developed and urbanized, the addition of roofs, streets and other impervious areas increase the volume and rate of stormwater runoff. Green Infrastructure (GI) practices are stormwater management features designed to reduce the volume of stormwater runoff (RRv) and reduce the pollutants in stormwater discharges from the site. GI may include stormwater practices that allow for reuse, infiltration into the ground, soaked up by plants, evaporation or in some cases detention.

At the town scale, GI is a patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the neighborhood or site scale, stormwater management systems that mimic nature soak up and store water. At the neighborhood scale, Green Infrastructure practices may include bioswales, rain gardens porous pavement and open swales. For communities with separate sanitary and storm sewers GI can improve and protect water quality from Nonpoint source pollution. Green Infrastructure may also provide protection from localized flooding. Green infrastructure benefits also include aesthetic value, reduction of urban heat island effects and reduced strain on traditional stormwater infrastructure such as pipes and catch basins. GI can be incorporated into land use policies at the town scale through practices that conserve land, establish buffers and program growth without expansion of infrastructure that expands the percent of impervious land within the watershed. GI can be incorporated into the neighborhood scale by recommending, incentivizing or requiring specific GI practices as part of the stormwater management palette the Town wishes to employ. Neighborhood scale GI may include measures such as landscaping requirements, limiting impervious surfaces that generate run-off or policies that encourage behavioral change such as the encouragement of transportation choice.

### **Existing Conditions**

The Town's Stormwater Management Controls are driven both by permit requirements and zoning.

ARTICLE XI of the Town Code is the Stormwater Management and Erosion Control Law, last updated in 2007, dictates the general design, planning, installation, maintenance and inspection procedures for stormwater management controls.

This article expresses:

- The purpose: to safeguard persons, protect property, and prevent damage to the environment
- Uncontrolled drainage and runoff associated with land development has a significant impact upon the health, safety and welfare of the community.
- Eroded soil endangers water resources by reducing water quality and causing the silting of streams, lakes and other water bodies, adversely affecting aquatic life.
- Stormwater runoff and sediment transports pollutants such as heavy metals, hydrocarbons, nutrients and bacteria to water resources, degrading water quality.
- Eroded soil necessitates repair and accelerates the maintenance needs of stormwater management facilities.
- Clearing, grading and altering natural topography during construction tends to increase erosion.
- Improper design and construction of drainage facilities can increase the velocity of runoff, thereby increasing streambank erosion and sedimentation.
- Impervious surfaces increase the volume and rate of stormwater runoff and allow less water to percolate into the soil, thereby decreasing groundwater recharge and stream base flow.

- Improperly managed stormwater runoff can increase the incidence of flooding and the severity of floods that occur, endangering property and human life.
- Substantial economic losses can result from these adverse impacts.
- Stormwater runoff, soil erosion and nonpoint source pollution can be controlled and minimized through the regulation of land development activities.

Authority over stormwater management comes from § 10 of the Municipal Home Rule Law of the State of New York and it is mandated by minimum control measures 4 (construction site stormwater runoff control) and 5 (postconstruction stormwater management) of the State Pollution Discharge Elimination System (SPDES) general permit for stormwater discharges from municipal separate stormwater sewer systems (MS4s), Permit No. GP-02-02.

§ 270-7 establishes standards for Transitional yard requirements adjacent to commercial uses. The ordinance states where the side or rear lot line of a property in which a commercial use is proposed abuts a property that is either already used for residential or park use, or is zoned for residential or park use, a minimum thirty-foot-wide buffer is to be maintained between the developed portion of the commercial site and the abutting side or rear property line. This buffer is to remain free of buildings, structures, parking, roadways, dumpsters, etc.

§ 270-78 of Town code establishes a Stormwater pollution prevention plan is required; redevelopment projects; alternative practices; exemptions.

The stormwater ordinance states “no person shall commence or perform any land development activity as defined in § 270-79 herein without the review and approval of a stormwater pollution prevention plan (SWPPP) by the responsible board and/or the Stormwater Management Officer.

Within § 270-79 The Town defines land development activity as construction activity, including clearing, grading, excavating, soil disturbance, placement of fill, or redevelopment, resulting in land disturbance of equal to or greater than one acre. Also includes activities disturbing less than one acre of total land area that are part of a larger common plan of development or sale, even though multiple separate and distinct land development activities may take place at different times on different schedules.

Major projects are defined as Any land development activity that disturbs one acre or more, including all commercial, industrial, or mixed use development, as well as any residential development consisting of buildings that contain two or more dwelling units, or any land development activity not classified as a minor project. § 270-79 requires the operator of a major project must submit an SWPPP that addresses water quality and quantity controls in addition to erosion and sedimentation controls.

Redevelopment projects are defined as reconstruction or modification to any existing, previously developed land such as residential, commercial, industrial, institutional, or road or highway which

involves soil disturbance. Redevelopment provides an opportunity to reduce pollutant discharges and the rate and the amount of runoff leaving the redevelopment site, as well as to improve the quality of the runoff. However, the nature of the site, particularly in an urban location, may impose constraints that prevent implementation of full postconstruction compliance. Chapter 9 of the New York State Stormwater Management Design Manual sets forth the standards for compliance with water quantity and quality standards and specifications.

ARTICLE XI requires that “Consideration shall be given to using alternative stormwater management practices such as rain gardens, pervious pavers, green roofs and other low-impact development techniques to reduce stormwater impacts.”

Section § 270-81 sets requirements for stormwater pollution prevention plan (SWPPP) contents. “All designs and procedures to prevent stormwater pollution as set forth within the SWPPP shall be designed in compliance with the New York Standards and Specifications for Erosion and Sediment Control and the New York State Stormwater Management Design Manual, as stipulated in § 270-82.3 of this Code.” Section § 270-81 details requirements for mapping, identifying soils, a construction phasing plan, a description of the pollution prevention measures and A description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable.

For major projects, 270-81 also requires

- a site map/construction drawing(s) of each postconstruction stormwater practice, including a description of each postconstruction stormwater control practice, including specific location(s) and size(s), dimensions, material specifications and installation details. The New York State Stormwater Management Design Manual shall serve as the technical design standard.
- A hydrologic and hydraulic analysis for all structural components of the stormwater control system for the applicable design storms.
- A comparison of post-development stormwater runoff conditions with redevelopment conditions.
- A maintenance schedule to ensure continuous and effective operation of each postconstruction stormwater control practice.

§ 270-82.3 sets the Design and performance standards for stormwater management and erosion and sediment controls.

Town code requires Land development activities shall meet the design criteria set forth in the most recent version of the "New York Standards and Specifications for Erosion and Sediment Control" published by the Empire State Chapter of the Soil and Water Conservation Society. Code does allow for equivalence to technical standards. “Where stormwater management practices are not in accordance with above design and technical standards, the applicant or developer must demonstrate equivalence to

the design and technical standards set forth in this section, and the equivalence shall be documented and certified by a licensed/certified professional as part of the SWPPP.”

§ 270-82.3 states that in general, wetlands and watercourses should not be filled, graded or altered and that a vegetative buffer (twenty-five-feet minimum) shall be maintained between disturbed areas and protected federal wetlands that are not proposed to be filled as part of an Army Corps of Engineers wetlands permit. In the case of state-designated wetlands, the one-hundred-foot adjacent area shall not be disturbed without a New York State Department of Environmental Conservation permit.

In areas of severe slopes (exceed 25%), land-disturbing activities are not permitted. A twenty-five-foot buffer must be maintained between any disturbed area and the top of slopes 25% and greater.

§ 270-82.3 stipulates clearing and grading shall be substantially confined to designated building envelopes, utility easements, driveways, and parking footprints. Clearing and grading techniques that retain natural vegetation and drainage patterns, as described in the most recent version of "Standards and Specifications for Erosion and Sediment Control" referenced above, shall be used to the satisfaction of the responsible board. No clearing or grading shall take place within the established fifty-foot watercourse buffer area except to provide road crossings where permitted.

The Town defines a Watercourse Buffer as a minimum horizontal distance of 50 feet away from and parallel to the high-water level or top of bank (whichever is easiest to accurately determine) of a watercourse. This minimum distance may be increased in consideration of site-specific soil conditions, existing water quality of the subject watercourse or other pertinent factors as determined by the Town's Planning and Zoning Commission, Town Economic Development and Planning Department, Stormwater Management Officer or New York State Department of Environmental Conservation.

§ 270-82.4, Water quality standards states any land development activity shall not result in:

- 1) An increase in turbidity that will cause a substantial visible contrast to natural conditions;
- 2) An increase in suspended, colloidal and settleable solids that will cause deposition or impair the waters for their best uses; or
- 3) Residue from oil and floating substances, nor visible oil film, or globules of grease.

§ 270-82.7 establishes The Town Stormwater Management Officer or designated agent is responsible for conducting inspections of stormwater management practices (permanent water quantity/quality improvement structures). It also requires all operators are required to submit as-built plans certified by a licensed/certified professional for any permanent stormwater management practices located on site after final stabilization. Operators must also provide the owner(s) of such structure(s) with a manual describing the operation and maintenance practices that will be necessary in order for the structure to function as designed. The operator must also certify that the permanent structure(s) have been constructed as described in the SWPPP.



Inspection programs are required to be established on any reasonable basis, including but not limited to routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to, reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water drainage facilities; and evaluating the condition of drainage control facilities and other stormwater management practices.

Through § 270-82.8 the town requires a performance guarantee that states the applicant or developer may be required to provide, prior to construction, a performance bond, cash escrow, or irrevocable letter of credit, from an appropriate financial or surety institution, which guarantees satisfactory completion of the project and names the Town of Glenville as the beneficiary. The security shall be in an amount determined by the Town of Glenville based on submission of final design plans, with reference to actual construction and landscaping costs. The performance guarantee shall remain in force until the surety is released from liability by the Town of Glenville, provided that such period shall not be less than one year from the date of final acceptance or such other certification that the facilities have been constructed in accordance with the approved plans and specifications and that a one-year inspection has been conducted and the facilities have been found to be acceptable to the Town.

Where stormwater management and erosion and sediment control facilities are to be operated and maintained by the developer or by a corporation that owns or manages a commercial or industrial facility, the developer, prior to construction, may be required to provide the Town of Glenville with an irrevocable letter of credit from an approved financial institution or surety to ensure proper operation and maintenance of all stormwater management and erosion control facilities, both during and after construction and until the facilities are removed from operation. If the developer or landowner fails to properly operate and maintain stormwater management and erosion control facilities, the Town may, upon notification, draw upon the account to cover the costs of proper operation and maintenance, including engineering and inspection costs.

The town Stormwater Regulations apply town-wide.

Among the conditions, a stormwater pollution prevention plan (SWPPP) is required. The (SWPPP) must be consistent with the Town's Article XI (Stormwater Requirements) and is required for site plan approval. The SWPPP shall meet the performance, design criteria and standards set forth in Article XI and the approved site plan shall be consistent with the provisions of Article XI. § 270-24.1 requires existing on-site vegetation must be preserved to the maximum extent possible and no cutting of trees exceeding four inches in diameter at breast height (DBH) shall take place prior to the approval of the site plan. Code requires a combination of deciduous and evergreen tree plantings to screen the parking lot from nearby residential properties and on the perimeter of the parking lot. Landscaping requirements for landscaping within the parking lot shall conform to Article XIX of the Town Code. Interior landscaped parking islands and peninsulas are encouraged, but where they are used, the preferred layout is that of larger islands and peninsulas instead of numerous small islands. § 270-24.1 requires the entire area used for parking must be paved and use of permeable or porous pavement

where practicable is preferred. Surfaces shall provide dust-free, all-weather material and will be graded and drained so as to dispose of all surface water without erosion, flooding, or negative impacts onto neighboring properties. § 270-24.1 stipulates all parking areas shall address stormwater on the site subject to stormwater requirements in Article XI. Where practical, stormwater management facilities should utilize green infrastructure best management practices (BMPs) to reduce impervious surfaces in the site design using on-site infiltration practices including rain gardens, vegetated swales, filter strips, stormwater planters, permeable pavement, and porous pavement. Further details about site infiltration practices can be found in the Capital District Regional Planning Commission Green Infrastructure Toolkit found at [cdrpc.org](http://cdrpc.org).

Use	Minimum Lot Size	Minimum Lot Width (feet)	Minimum Lot Depth (feet)	Minimum Front Setback (feet)	Minimum Side Setback (feet)	Minimum Rear Setback (feet)	Maximum Building Height (feet)	Maximum Lot Coverage
Single-family (w/sewer)	15,000' s/f	100	150	30	15	35	35	35%
Two-family (w/o sewer)	30,000' s/f	140	180	30	30	50	35	25%
Two-family (w/sewer)	20,000' s/f	120	150	30	20	40	35	35%
Bed-and-breakfast establishments	30,000' s/f	140	180	30	20	40	35	25%
Multifamily dwellings	3 acres <sup>1</sup>	200	180	30	40	40	35	35%
<b>Professional Residential</b>								
All uses except home occupations and cemeteries <sup>2</sup>	30,000 s/f	140	180	40	20	40	35	25%
Home occupations and cemeteries	Not applicable							
<b>Community Business</b>								
All uses	30,000 s/f	140	180	40	20	40	35	30%
<b>General Business</b>								
All uses except shopping centers	40,000 s/f	140	180	35	30	40	35	30%
Shopping centers	5 acres	300	300	35	35	60	35	25%
<b>Highway Commercial</b>								
Single- and two-family	2 acres	200	200	50	35	35	35	100%
All other uses	40,000 s/f	140	180	40	35	35	35	30%
<b>Research/Development/Technology</b>								
All uses	40,000 s/f	160	200	50	50	50	50	30%
<b>Riverfront Recreation/Commercial</b>								
RV parks and campgrounds	20 acres	200	200	75	75	75	35	10%
All other permitted uses	2 acres	200	200	40	20	40	35	20%
<b>Airport</b>								
All uses	15,000 s/f	150	100	20	15	20	35	30%

Figure 2-Town of Glenville Town of Glenville Table of Dimensional Regulations  
[Amended 2-21-2007 by L.L. No. 1-2007; 8-21-2013 by L.L. No. 5-2013]

## Recommendations

**Comprehensive Plan Goal: Protect streams, ponds, wetlands, and shorelines from development impacts through imposition of buffers as part of the subdivision and site plan review procedures and identify guidelines/standards for these buffer zones. Protect stream corridors, wetlands, floodplains, and the shorelines of rivers and streams.**

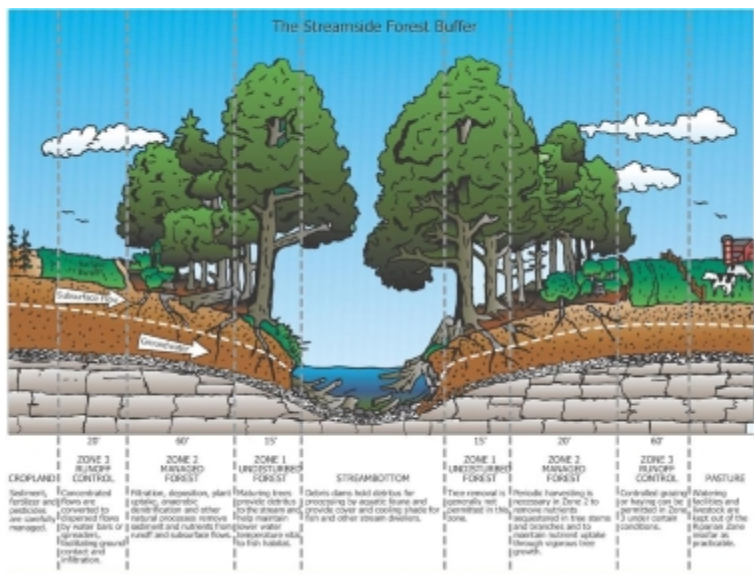
Currently, § 270-82.3 requires 25 ft. vegetative buffer (twenty-five-foot minimum) shall be maintained between disturbed areas and protected federal wetlands. In the case of state-designated wetlands, the one-hundred-foot adjacent area shall not be disturbed without a New York State Department of Environmental Conservation permit. In addition, The Town prohibits clearing or grading from taking

place within the established fifty-foot watercourse buffer area except to provide road crossings where permitted.

The NYSDEC maintains a substantial volume of best management practices for protecting stream health. Healthy buffers that can withstand flooding and provide the highest level of protection for streams consist of multiple zones.

- Zone 1: The area closest to the stream or waterbody should be planted with native species of water-tolerant trees and large shrubs with little or no harvesting. This zone provides streambank stabilization and provides leaf litter inputs to the stream. Leaf litter is eaten by macroinvertebrates in the stream, which are in turn eaten by fish. When trees grow in Zone 1, they shade the stream, which cools the water and provides better conditions for brook trout or other cold water-dependent fish species. Ideally, Zone 1 should be at least 15 feet wide.
- Zone 2: The zone upland from Zone 1 should be planted with native faster growing, smaller, shade-tolerant tree or shrub species. This zone allows water runoff to be absorbed and held in the soil. Nutrients and other pollutants are also filtered by the soil. Faster growing plants are able to uptake and store nutrients in their woody biomass. Zone 2 can range from 20 to 60 feet in width.
- Zone 3: The zone farthest from the stream and next to land use areas (for example, houses, crops or pastureland), should be planted with native grasses, wildflowers, or other herbaceous plants. These plants slow fast-moving water runoff and filter sediment. Zone 3 can range from 15 to 60 feet in width.

NYSDEC, in guidance material for communities to assess flood risk and ways to mitigate flooding risk, also provides recommended buffer widths.



**Figure 3 - Stream Buffers (Photo Credit: Stroud Water Research Center)**

Recommended Minimum Buffer Width for Common Stream Management Objectives <sup>47</sup>	
Purpose of Buffer	Minimum Width of Buffer
Bank Stabilization	98 - 164 feet
Retain Nitrogen and Phosphorous to Protect Water Quality	16 – 295 feet
Prevent Erosion (Sediment Input)	32 – 393 feet
Wildlife Habitat	98 feet – 5249 feet
Flood mitigation	65 – 492 feet

Figure 4 - Wetland and Watercourse Protection Measures (NYSDOS, 2019)

NYSDEC recommends the total width for all three zones is at least 100 feet. Riparian buffers that are at least 100 feet wide provide the minimum protection for water quality and stream protection.

In effort to protect streams, ponds, wetlands, and shorelines from development impacts through imposition of buffers the Town should consider expanding its watercourse and wetland buffers to **100 feet** and establishing guidance that mandates restorative plantings in redevelopment scenarios. With the acknowledgement this may slightly reduce acreage of developable land for parcels adjacent to wetlands and natural watercourses, the Town may wish to consider applying a mechanism to subtract affected land from property tax assessment.

**Comprehensive Plan Goal: Amend Town's storm water management land use regulations, placing emphasis on use of modern storm water management techniques, including runoff reduction, green infrastructure, ponds w/full controls, etc. Amend existing commercial design and landscaping standards and consistently apply these standards to new projects so as to buffer commercial facilities from residential properties and neighborhoods.**

The Town should consider adding and modifying the following to § 270-3. Definitions to provide clarity on practices and programs that support the implementation of green infrastructure in the Town. A definition of impervious surface is also critical to delineating areas that traditionally generate run-off and ensuring that area dedicated to stormwater management (such as porous pavement, green roofs or area that contributes to a rainwater harvesting system such as a cistern, are not counted towards imperviousness.

***Cistern*** - Large tanks that store rainwater collected from impervious surfaces for domestic, non-potable uses including, but not limited to, flushing toilets, irrigation, cleaning laundry, and washing cars. A cistern employed as part of a stormwater management practice must not overflow into the sanitary sewer. Cistern overflows must be directed to a Green Infrastructure practice that allows water to infiltrate back into the ground. Cisterns and plumbing to support rainwater harvesting must conform to NYS Plumbing Code, specifically Section 1303, Nonpotable Collection and Distribution Systems.

**Green infrastructure** - practices that maintain or restore stormwater's natural flow pattern by allowing the water to slowly permeate into the ground, evaporate and/or be used by plants. Practices include rain gardens, bioretention, vegetated swales, green roofs and porous pavements. Practices may also include rainwater harvesting systems such as cisterns and underground storage for reuse. Green infrastructure also includes preserving or restoring natural areas, such as forests, stream buffers and wetlands, and reducing the size of paved surfaces. Green infrastructure can recharge groundwater, provide wildlife habitat, beautify neighborhoods, cool urbanized areas, improve air quality and reduce stress on sewer systems.

**Green Roof** - A vegetated roof design that is explicitly designed to absorb rainfall or snowmelt, typically to manage stormwater, mitigate the heat island effect, provide habitat for urban wildlife, or offer leisure and recreational space for building occupants.

**Greenspace** - That portion of land shown on a development plan, Master Plan or Official Map the purpose of which is intended for open space preservation, recreation (active or passive), landscaping, green infrastructure for the express purpose of managing stormwater, or parkland. Unless otherwise required by the Planning or Town Board, said lands shall be undisturbed and seeded and planted with appropriate materials or left in their natural state.

**Impervious Lot Coverage** - The total area of any lot or parcel occupied by all of the following:

- 1) The footprint of the principal building (but excluding the surface area of any Green Roof or an area that drains into a cistern.)
- 2) The footprints of all accessory buildings, parking garages, carports, utility and storage sheds (but excluding the surface area of any Green Roof or an area that drains into a cistern.)
- 3) All areas or areas otherwise covered with materials impervious to water including parking areas and driveways (but not including parking areas and driveways with pervious or semi-pervious paving materials); and
- 4) All areas occupied by above ground swimming pools (but not in-ground pools).

**Shared Parking** - When two or more uses share a parking lot or structure, allowing for the total off-street automobile parking requirement for those uses may be reduced.

It is unclear if the town uses building footprints to determine lot coverage or if lot coverage is defined by impervious surface. Using Impervious surface as the standard for lot coverage extends the potential that Green Infrastructure be employed as a mechanism to manage stormwater. If building size is the metric by which lot coverage is currently defined, the Town will need to evaluate lot coverage standards before moving to an impervious based coverage standard.

## § 270-7. Yard requirements.

The Town should consider amending this provision of code to increase the adoption of Green Infrastructure practices and remove any barriers to its employment with the barrier, as GI practices may often be “structures” that would otherwise be prohibited by § 270-7.

The town should consider language that allows for the siting of GI practices within the buffer strip.  
*“Where the side or rear lot line of a property in which a commercial use is proposed abuts a property that is either already used for residential or park use, or is zoned for residential or park use, a minimum thirty-foot-wide buffer is to be maintained between the developed portion of the commercial site and the abutting side or rear property line. This buffer is to remain free of buildings, structures, parking, roadways, dumpsters, etc. **This buffer may be used for green infrastructure practices that manage stormwater provided those practices meet setback requirements established elsewhere in Town Code.** Further, the Planning and Zoning Commission and/or the Zoning Board of Appeals may require landscaping, fencing, berming, and other forms of screening within this buffer area.”*

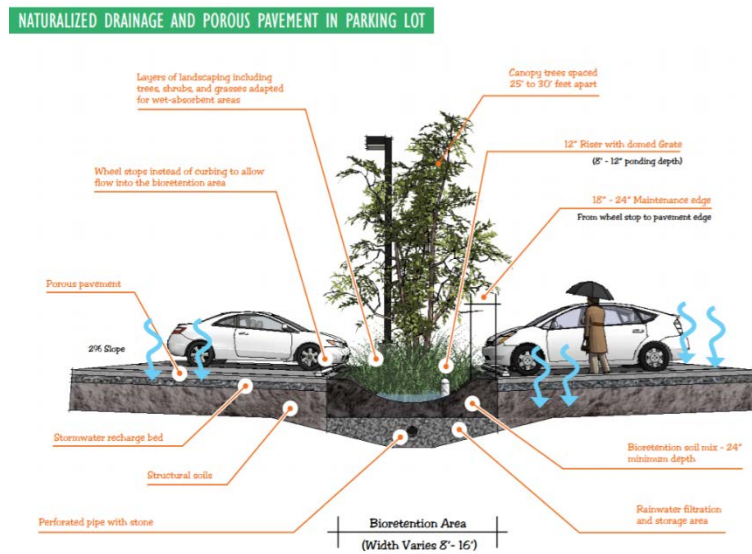
For the Storage Overlay District the Town should consider strengthening the requirement of Green Infrastructure Practices that currently encouraged but not required. The Town requires a Site Plan and a SWPPP shall meet the performance, design criteria and standards set forth in Article XI of Town code. and the approved site plan shall be consistent with the provisions of Article XI. § 270-24.1 Code currently encourages the utilization of Interior landscaped parking islands and peninsulas.

When incorporated appropriately, parking lot landscaping can do more than provide an aesthetic benefit. While trees have long been recognized for their ability to help clean the air, reduce energy needs, raise property values, and mitigate heat island effects, their innate ability to absorb and divert rainfall has been underutilized. Trees have proven value in reducing runoff and mitigating the costs of stormwater management. In fact, research by the United States Forest Service has shown the environmental and economical values trees contribute to the community.

The Town should consider revising the District Standards for the Storage Overlay District to require an area equal to at least **ten percent** of the surface area occupied by vehicle parking spaces, inclusive of driving aisles and driveways necessary for access to and circulation among those spaces, to be landscaped. In addition, landscaping should include a minimum of one tree island containing at least 50 square feet of land area, which shall include at least one medium shade tree or larger for every 20 parking spaces. Parking lot screening at the perimeter of the lot should not be used to meet this the percent landscaping requirement.



270-24.1 stipulates all parking areas shall address stormwater on the site subject to stormwater requirements in Article XI and stipulates the entire area used for parking must be paved. It allows for the use of permeable or porous pavement where practicable and states that the use of these materials is preferred, encouraging, but not requiring that green infrastructure best management practices (BMPs) to reduce impervious surfaces in the site design using on-site infiltration practices including rain gardens, vegetated swales, filter strips, stormwater planters, permeable pavement, and porous pavement.



**Figure 5 - Sustainable Green Parking Lots Guidebook  
(Montgomery County Planning Commission)**

The town should consider requiring that recessed bioretention be utilized as opposed to raised landscaped islands as a method to manage stormwater if porous or permeable pavement is not utilized within the lot. These design requirements should be considered for use Town-wide.

**To simplify the application and understanding of the Green Infrastructure requirements that will apply to multiple zones within the Route 50 Corridor Area being considered within this Study, the town should consider creation of an overlay zone similar with requirements and land used controls similar to those contained within the Freeman’s Bridge District adopted in 2017.**

The purpose of the Route 50 Corridor Overlay District is as follows:

- 1) To provide a destination gateway to Glenville, consistent with recommendations made in the CDRPC and CDTC 2020 Community Planning Technical Assistance program.
- 2) To Provide for attractive stormwater management techniques that will reduce the occurrence of flooding, increase resiliency and protect the water quality of receiving water.
- 3) To mitigate impacts of new development and redevelopment on the Town’s storm sewer system

The following are objectives the Town should consider for a Route 50 Corridor District.

- 1) The size and scale of buildings in the Route 50 Corridor Overlay District should be complementary to a pedestrian and bicycle-friendly environment.
- 2) The architectural character of new and renovated buildings should be harmonious with the surrounding area.

- 3) Improve pedestrian and bicycling infrastructure and conditions along the Corridor. Amenities shall be provided to promote pedestrian and bicycling usage.
- 4) Improve safety, better manage congestion, and implement access management along the Corridor.
- 5) Increase the potential for transit service to destinations along the Corridor.
- 6) Incorporate green infrastructure and sustainability into future development along the Corridor.
- 7) Provide streetscape amenities that give Route 50 an identity.
- 8) Accommodate, retail development, research and development, medical and office uses and to foster economic development.

The Town should define the boundaries of the District.

All development and redevelopment in Route 50 Corridor Overlay District shall comply with the requirements the Town's Stormwater Management and Erosion Control Ordinances. Each application for development or redevelopment shall be referred to the Town Stormwater Officer for a determination of whether the existing sanitary and storm sewer infrastructure is adequate in size, location, connectivity, and construction quality to accommodate expected flows of both sanitary sewer and stormwater from the proposed facility. If the Town determines that the existing sanitary and/or storm sewer infrastructure is not adequate to accommodate expected sanitary and stormwater flows from the proposed development, the Town may require that the applicant modify the proposed development and/or install or contribute a proportional share of the overall cost to the installation of required storm and sanitary sewer infrastructure before the proposed development is approved, and the applicant may be required to pay its proportionate share of those costs.

The town should consider the adoption of more progressive stormwater requirements within the Overlay District to encourage and promote the adoption of Green Infrastructure as a mechanism to manage stormwater and improve the aesthetic of the corridor. Currently, NYS requires before commencing construction activity, the owner or operator of a construction project that will involve soil disturbance of one or more acres must obtain coverage under the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity.

The Town stormwater law states "no person shall commence or perform any land development activity as defined in § 270-79 herein without the review and approval of a stormwater pollution prevention plan (SWPPP) by the responsible board and/or the Stormwater Management Officer. Within § 270-79 The Town defines land development activity as construction activity, including clearing, grading, excavating, soil disturbance, placement of fill, or redevelopment, resulting in land disturbance of equal to or greater than one acre. § 270-80 stipulates that no application for land development activity that will disturb 1 or more acres shall be approved until the responsible board, municipal official and/or department has received, reviewed and determined that a stormwater pollution prevention plan (SWPPP) has been prepared.

To increase the requirements for employment of Green Infrastructure withing this Corridor, the town could tighten the limits by which new and redevelopment projects must meet the New York State Department of Environmental Conservation Stormwater Management Design Manual and submit a SWPPP to the Town. The town could consider lowering the threshold to requiring the implementation of the manual to projects of its own choosing and elect to apply a **½ acre standard** to ensure more projects are implementing progressive stormwater management controls. The manual requires that where practical, stormwater management facilities should utilize green infrastructure best management practices (BMPs) to reduce impervious surfaces in the site design using on-site infiltration practices including rain gardens, vegetated swales, filter strips, stormwater planters, permeable pavement, and porous pavement.

The New York State Stormwater Management Design Manual provides designers with a general overview on how to size, design, select, and locate stormwater management practices at a development site to comply with State stormwater performance standards. The manual is also a key component of the Phase II State Pollution Discharge Elimination System (SPDES) general permit for stormwater runoff from construction activities from all sizes of disturbance. The Design Manual is available for download at [www.dec.ny.gov/chemical/29072.html](http://www.dec.ny.gov/chemical/29072.html). Chapter 5 of the Manual presents planning and design of green infrastructure practices acceptable for runoff reduction.

Applying the manual to disturbances a ½ acre and above would increase the adoption of the required maximum allowable design peak-flow stormwater discharges into the stormwater system, limiting to the calculated peak-flow discharge of the **10-year storm** for undeveloped site conditions. The 10-year storm is the standard event within the New York State Stormwater Management Design Manual for the overbank flood control sizing criterion to prevent an increase in the frequency and magnitude of out-of-bank flooding generated by urban development. Overbank control requires storage to attenuate the post development 10-year, 24-hour peak discharge rate. The 10-year storm is typically used as a target sizing for outfalls, and as a safe conveyance criterion for open channel practices and overflow channels. The 10-year storm is recommended as a minimum sizing criterion for closed conveyance systems.

The town could also consider requiring sites with disturbance smaller than ½ acre, and larger than ¼ acre to implement Green Infrastructure practices on site, without the requirement of a SWPPP. For projects within this threshold, the Town could require projects with more than ¼ acre of land disturbance, but not more than a ½ acre, to install at least one of the following site design features to reduce stormwater flows.

A. Install one of the following, designed to detain the first one (1) inch of rainfall and design the site to direct all rooftop stormwater and at least 75% of surface stormwater flows into that site feature, provided the feature is designed to the standard established in the New York State Stormwater Management Design Manual

1. A tree in a tree well.
2. A drainage swale or rain garden.

3. An underground cistern.

B. Install a green roof

The Town may approve alternatives to the features listed in subsection (A) above if it determines that the alternative features would achieve the same or greater detention or infiltration of stormwater.

The Capital District Regional Planning Commission also maintains a Green Infrastructure Design Toolkit that may be relied upon for development of Green Infrastructure practices for Stormwater Management. This guidance document is available at [www.cdrpc.org/programs/water-quality/green-infrastructure-toolkit](http://www.cdrpc.org/programs/water-quality/green-infrastructure-toolkit)

During project design, the Planning Board may also require incorporation of low-impact development standards wherever feasible. Appropriate engineering should include use of one or more of the following low-impact development techniques:

1. Soil amendments.
2. Conservation of land in natural state.
3. Minimizing imperviousness

The Town should encourage shared parking is encouraged, as detailed in Town Code, Article X, Off-Street Parking and Loading.

The Town should require landscaping to be used on the perimeter of all parking lots with 10 or more spaces within this district in an effort to soften the visual impact of parking lots from the street and neighboring land uses, particularly from residential uses. To accomplish this, the Town should consider requiring an area equal to at least **ten percent** of the surface area occupied by vehicle parking spaces, inclusive of driving aisles and driveways necessary for access to and circulation among those spaces, to be landscaped. In addition, landscaping should include a minimum of one tree island containing at least 50 square feet of land area, which shall include at least one medium shade tree or larger for every 20 parking spaces. Parking lot screening at the perimeter of the lot should not be used to meet this the percent landscaping requirement.

270-24.1 stipulates all parking areas shall address stormwater on the site subject to stormwater requirements in Article XI and stipulates the entire area used for parking must be paved. It allows for the use of permeable or porous pavement where practicable and states that the use of these materials is preferred, encouraging, but not requiring that green infrastructure best management practices (BMPs) to reduce impervious surfaces in the site design using on-site infiltration practices including rain gardens, vegetated swales, filter strips, stormwater planters, permeable pavement, and porous pavement.

The town should consider requiring that recessed bioretention be utilized as opposed to raised landscaped islands as a method to manage stormwater if porous or permeable pavement is not utilized within the lot. These design requirements should be considered for use Town-wide.

Recessed, bioretention islands should incorporate the following features:

- i. Any curbs installed at the edges of required perimeter and interior landscaped areas shall have openings that allow drainage from the pavement to enter and percolate through the landscaped areas.
- ii. Mulch shall not be installed adjacent to any sidewalk, parking area, or driveway with less than a one-foot border of grass or other permanent live groundcover to ensure mulch is not washed into the drainage system.

Where a parking area or lot for 10 or more spaces is adjacent a lot containing a principal Residential use, and the parking lot is not separated from the adjacent property by a principal or accessory structure, the parking area or lot shall be screened from the adjacent district or use by one or both of the following, located within five feet of the front lot line:

- 1) A masonry wall (not including Concrete Masonry Unit blocks) between 30 and 36 inches in height; or
- 2) A decorative wrought-iron-style fence between 30 and 42 inches in height, with masonry piers that may extend to 48 inches in height. Masonry piers may not exceed 18 inches in width, viewed from the street, and may not occupy more than 20 percent of the length of the fence.
- 3) A continuous line of shrubs that achieves 80 percent opaque screening between 30 and 48 inches in height during summer months.

The town should consider amending 270-73, Off-street parking, to include the Green Infrastructure and landscape standards above as to create a more robust system of stormwater management town wide and encourage a consistent town-wide aesthetic.

The Town should update the [“Town of Glenville Design Manual”](https://www.townofglenville.org/economic-development-planning-department/pages/manuals-design-landscape) published in 2003, to incorporate any changes local laws impacting the design of roofs, site layout, parking and sidewalks that are detailed within the Design Manual in order to maintain consistency between the Manual and local Code. (<https://www.townofglenville.org/economic-development-planning-department/pages/manuals-design-landscape>)

The standards in this section should be applicable to all actions proposed within the Route 50 Corridor Overlay District that are subject to site plan review as specified in Article XVI.

The CDTC Transportation Assessment included a recommendation that the Town encourage the construction of sidewalk or multi-use sidepath as part of developments where appropriate.

Should the town encourage or require the installation of a sidewalk as part of development or redevelopment within the Route 50 Overlay Corridor, it should require a minimum of four feet for a grass strip shall be provided between the sidewalk/sidepath and the street edge. This area may be used as a vegetated swale to manage stormwater.

The town currently has a provision of code, § 270-85, which provides developers the opportunity for density bonuses as an enticement for the applicant to provide affordable housing, the following bonuses, or combinations thereof, may be granted:

- 1) Reduced minimum lot sizes (cannot be smaller than 25% below the prescribed minimum lot size).
- 2) Reduced setbacks and yard requirements.
- 3) Increased lot coverage allowances.
- 4) Increased number of dwelling units within multiple-family buildings.
- 5) Increased number of dwelling units per acre within multiple-family zoning districts.
- 6) Reduced green area/open space/landscaping requirements for multiple-family development sites.

The town should consider providing this palette of bonuses for projects that meet stormwater performance measures above and beyond the minimum standards established in Article XI.

For example, the Town could establish the following within the Route 50 Corridor Overlay Zone:

New development or redevelopment of a site that incorporates a green (vegetated) roof, or other building or site features that are designed so that off-site flow of the first one inch of rainfall during the first 24 hours after rainfall ends is reduced by at least 50 percent shall receive the following benefits:

- a. The project may reduce any required building setback by 20 percent (provided the required reduction in off-site water flow is still achieved); and
- b. The project may increase the maximum height of any primary building (or part of a primary building) by 10 feet.

The town may wish to incorporate the recommendations contained within the Route 50 Overlay District into the Town Center Overlay District.

### **The Town of Glenville Landscape Manual**

The Town published a Landscape Manual in March, 2004 (<https://www.townofglenville.org/economic-development-planning-department/pages/manuals-design-landscape>) The manual provides guidelines for the selection, placement, and installation of landscaping in the Town of Glenville. The standards included here are intended to integrate landscaping into the site and provide for the vitality and longevity of landscaping materials. The goal was not to restrict development. Rather, the intent was to



extend the positive environmental and aesthetic benefits of landscaping to all commercial development within the Town.

The Design Manual should be updated to include Green Infrastructure Practices. Chapter 5 of the Manual presents planning and design of green infrastructure practices acceptable for runoff reduction. Appendix H of the Manual contains a Landscaping Guidance and native Plant Lists ideal for Green Infrastructure practices.

NYSDEC maintains a Maintenance Manual for Stormwater Management Practices., published in March 2017. This guidance should be reference in both § 270-142, Maintenance, and the Glenville Landscape Design Manual

The Capital District Regional Planning Commission also maintains a Green Infrastructure Design Toolkit that may be relied upon for development of Green Infrastructure practices for Stormwater Management. This guidance document is available at [www.cdrpc.org/programs/water-quality/green-infrastructure-toolkit](http://www.cdrpc.org/programs/water-quality/green-infrastructure-toolkit).