



STOW TOWN CENTER IMPROVEMENT PLAN

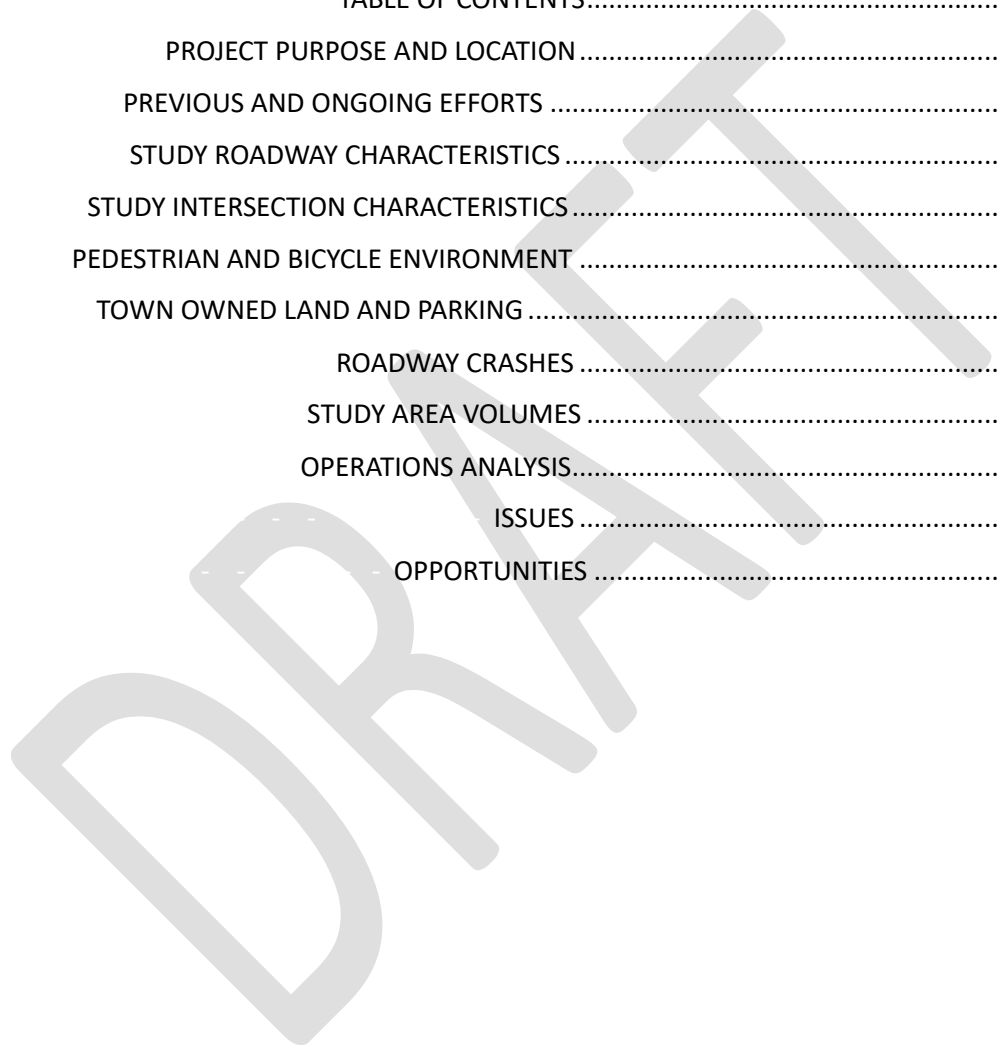
Existing Conditions Technical Report

2/22/2024



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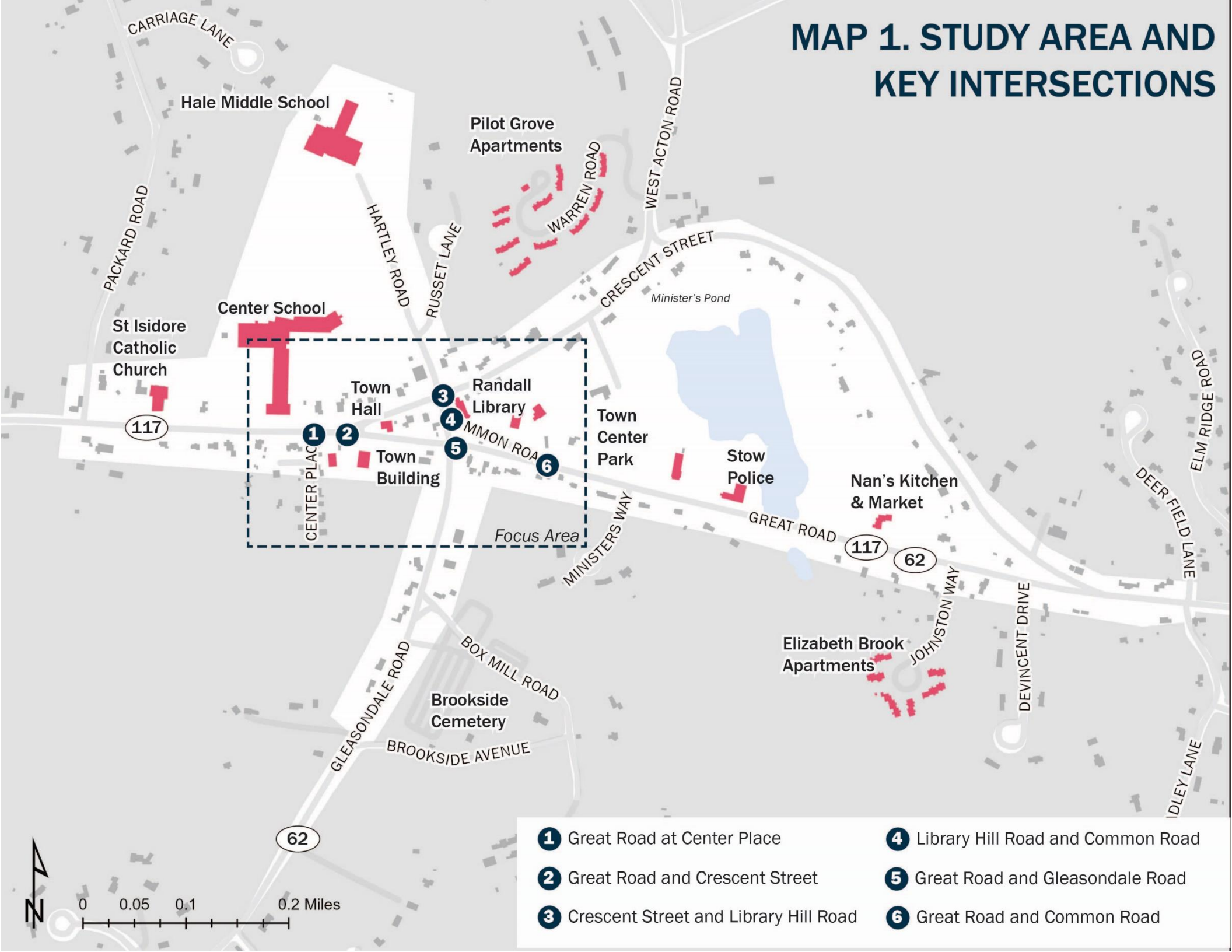
PROJECT PURPOSE AND LOCATION

The purpose of this study is to provide recommendations and concept alternatives in Stow Town Center, aimed at improving the walkability and bikeability of the area for people of all ages and abilities. Stow Town Center is located at the crossroads of Massachusetts state routes 62 and 117. The area is home to several town destinations including the Randall Library, the Town Building and offices, the town common, two schools – the Center Elementary School and Hale Middle School, the newly constructed Town Center Park, and a few commercial buildings and retailers. The area has a rich history as a farming community center dating back to the 1600s when it was first colonized by the English. The apple orchards of Stow continue to attract people from across the state of Massachusetts during the autumn picking season, generating what some locals refer to as “apple traffic.” After World War II, the town experienced growth through primarily suburban homes, which still attract residents and families to the area.

According to U.S. Census estimates in 2022, Stow has a population of approximately 7,000 people, of whom around 27 percent are under the age of 18 and 16 percent are over the age of 65. Around 84 percent of the town population identifies as White, 3 percent as Black or African American, 6 percent as Asian and 1 percent as Hispanic or Latino. Around 11 percent of residents speak a language other than English at home. The town is highly educated with 75 percent of residents having at least a Bachelor’s degree, and the median household income is close to \$150,000 per year, which is higher than the rest of Middlesex county where the median household income is around \$110,000 per year.¹

¹ U.S. Census QuickFacts. (2022). Stow, Massachusetts and Middlesex County, Massachusetts.

MAP 1. STUDY AREA AND KEY INTERSECTIONS



Hale Middle School

Pilot Grove Apartments

Center School

St Isidore Catholic Church

Town Hall

Randall Library

Town Center Park

Stow Police

Nan's Kitchen & Market

Elizabeth Brook Apartments

Brookside Cemetery

117

117

62

62

- 1** Great Road at Center Place
- 2** Great Road and Crescent Street
- 3** Crescent Street and Library Hill Road
- 4** Library Hill Road and Common Road
- 5** Great Road and Gleasondale Road
- 6** Great Road and Common Road



0 0.05 0.1 0.2 Miles

- - - - - PREVIOUS AND ONGOING EFFORTS

STOW INTERSECTION IMPROVEMENT STUDY

In 2023, the Boston Region Metropolitan Planning Organization (MPO) worked with the Town of Stow to analyze and provide short-term, low-cost improvement strategies at the intersection of Gleasondale Road (Route 62) and Great Road (Route 117), with the goal of improving safety and operations at the intersection. The study recommended the following short-term improvements:

- optimizing the signal timing
- introducing a permissive left turn lane to Library Hill Road
- narrowing all travel lanes to 11 feet and repurposing the additional space
- repainting all existing crosswalks
- adding a crosswalk to the eastern leg
- adding temporary curb extensions using paint and flex posts to shorten pedestrian crossing distances (few heavy vehicles take right turns)
- adding bollard protected bike lanes, and better defining the pedestrian refuge island

Longer-term investments include constructing sidewalks on all sidewalk legs, adding compliant curb ramps and installing accessible pedestrian signals (APS) with countdown displays.

RANDALL LIBRARY RENOVATION AND ADDITION

The Town is working on reconstructing the Randall Library complex. As part of this project, the Town is planning to convert Common Road to one-way westbound from the church driveway to Library Hill Road, adding parking along Common Road, formalizing dedicated parking spaces off Crescent Street, and reconstructing the sidewalk on Library Hill Road and Crescent Street next to the library.

COMPLETE STREETS PLAN AND AWARDS

The Town of Stow created a MassDOT Complete Streets Tier 2 Prioritization Plan in 2018. Several of the projects are within Stow's Town Center Area. These include a shared use path, sidewalks, and ramps on Crescent Street, a sidewalk on Great Road between Gleasondale Road and Common Road, pedestrian signals, crosswalk, extended pedestrian refuge, and compliant ramps at the Great Road/Gleasondale Road intersection, bike lanes on Great Road, a crosswalk across Gleasondale Road at Box Mill Road and across Great Road at Johnston Way, crosswalks and upgraded ramps at all four points of the intersection of Hartley Road, Library Hill Road and Crescent Street, crosswalk across Hartley Road at future parking lot behind old fire station, bike lanes on Gleasondale Road, extend curb and add compliant ramps on Common Road at Library Hill road to shorten crossing, and add parallel parking on Common Road. The Town was awarded funding for bike lanes along Great Road in 2018 but unfortunately could not complete the project due to right-of-way constraints. In 2023, the Town applied and received funding and developed engineering plans to construct/reconstruct sidewalks along Crescent Street from just west of Hartley Road to Warren Road.

MAP 2. PREVIOUS AND ONGOING PROJECTS

Complete Streets Plan (2018) recommended new crosswalks and ramps at the Harkney, Crescent and Library Hill intersection and crossing by new parking lot behind fire station

Complete Streets Plan (2018) recommended improved sidewalks & a shared use path on Crescent Street

Library Renovation (2023), Complete Streets Plan (2018) and MPO Study (2023) recommend one-way configuration on Common and on-street parking. Complete Streets proposes curb extension at Common and Library Hill

- Sidewalk or Shared Use Path
- On-Street Bike Lanes
- Accessible Ramps
- Rapid Rectangular Flashing Beacons (RRFB)
- ← One-Way Configuration

Complete Streets Plan (2018) recommended bike lanes on Great Road and Gleasondale Road

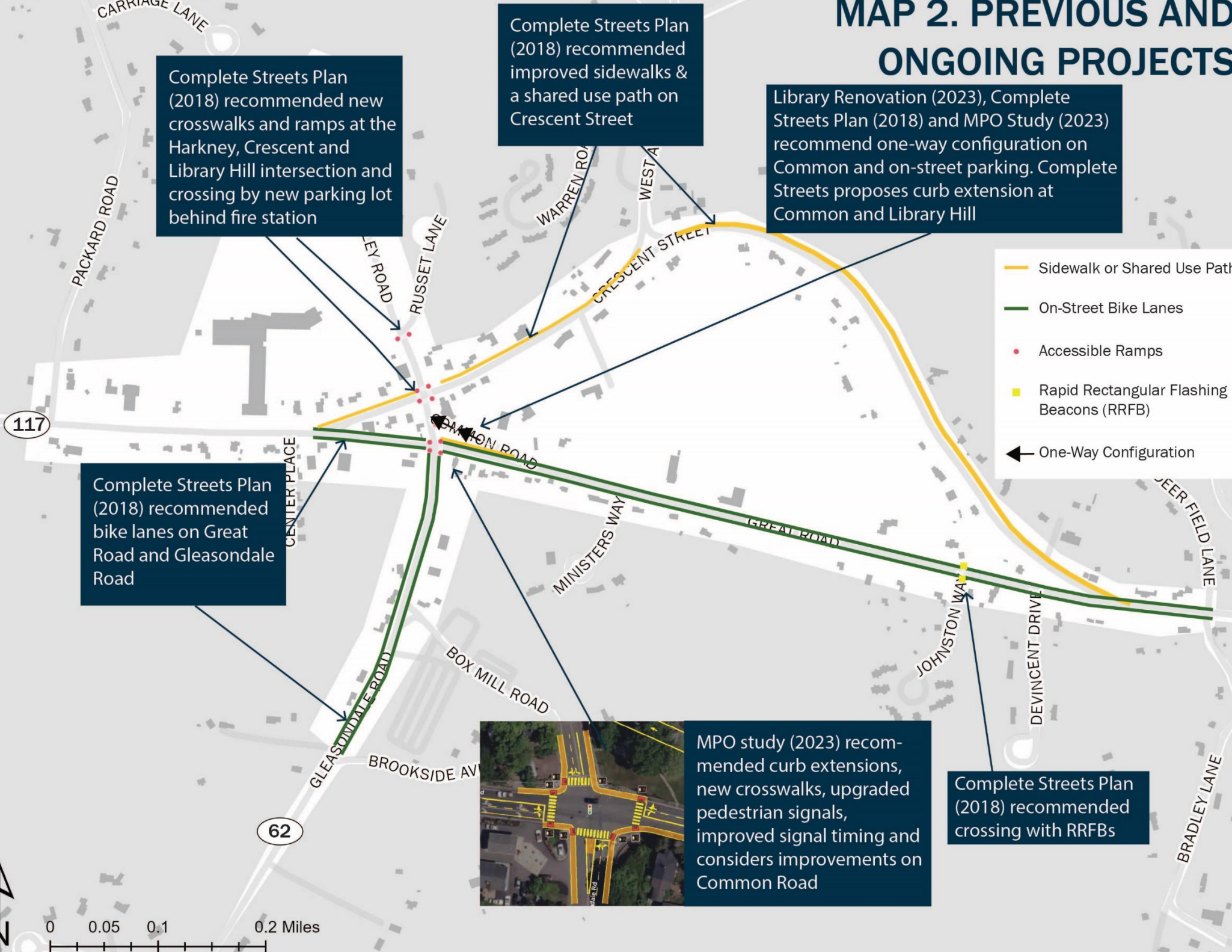
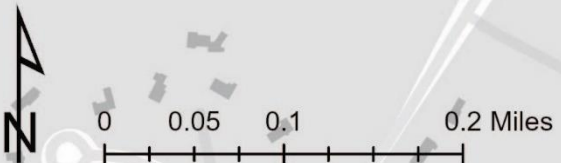
MPO study (2023) recommended curb extensions, new crosswalks, upgraded pedestrian signals, improved signal timing and considers improvements on Common Road

Complete Streets Plan (2018) recommended crossing with RRFBs

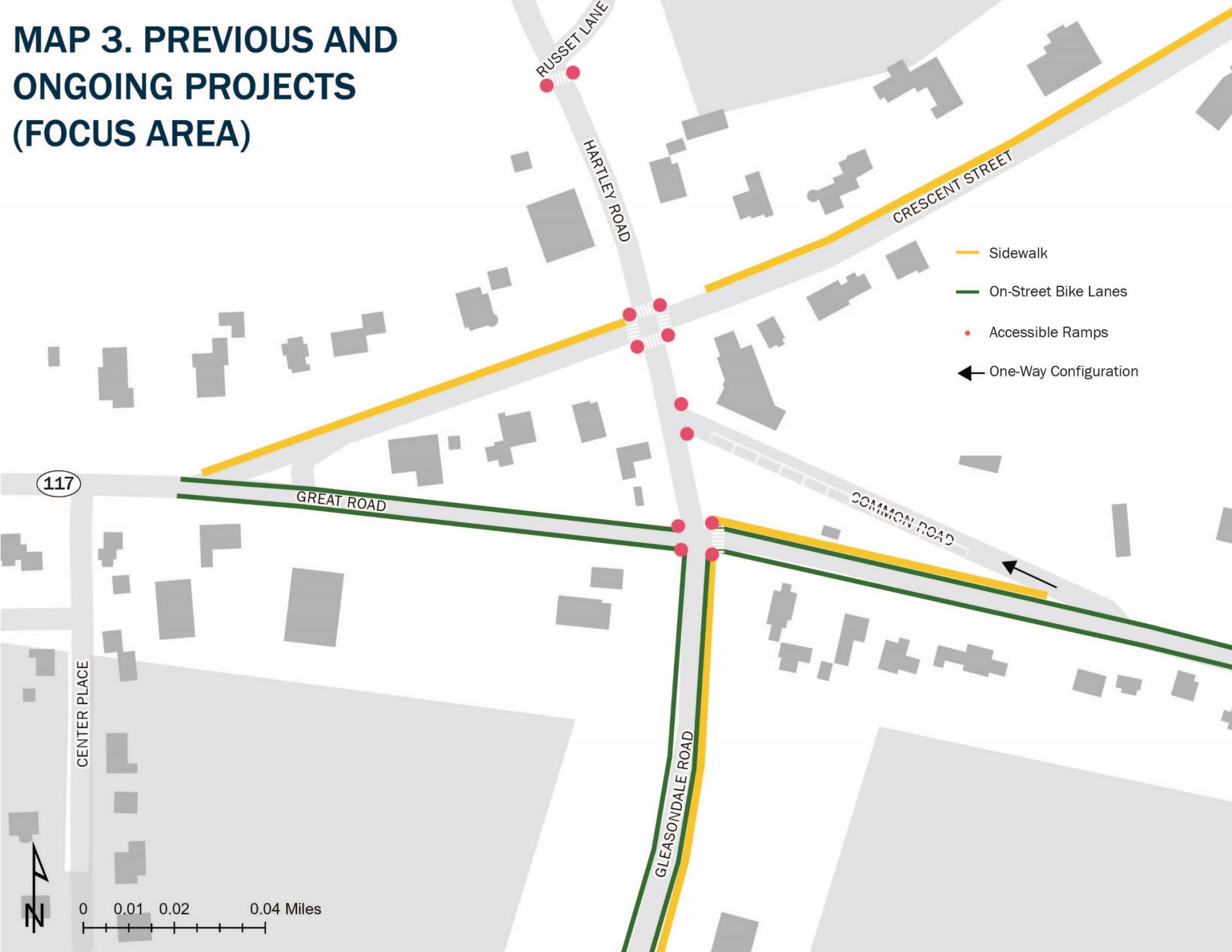


117

62



MAP 3. PREVIOUS AND ONGOING PROJECTS (FOCUS AREA)



117

RUSSET LANE

HARTLEY ROAD

CRESCENT STREET

GREAT ROAD

COMMON ROAD

GLEASONDALE ROAD

CENTER PLACE



0 0.01 0.02 0.04 Miles

STUDY ROADWAY CHARACTERISTICS

The key roadways evaluated as part of this plan are Great Road, Gleasondale Road, Library Hill Road, Crescent Street, Hartley Road and Common Road. These key roadways are those that either provide access to key town center destinations, or carry people to the town center from other parts of town. Important to note, other roadways in the town center also exist connecting people to the town center from homes and other destinations, including Box Hill Road, Brookside Avenue, Center Place, and Minister’s Way. These roads were considered as part of plan, but were not examined in the same amount of detail as the key roadways listed below.

GREAT ROAD (MA-117/62)

Great Road is classified as a Principal Arterial. Throughout the study area in Stow, the road is under Town jurisdiction, except for the State-owned bridge carrying Great Road over the Minister’s Pond. Along Great Road, there are four study intersections: Great Road at Center Place (unsignalized), Great Road at Crescent Street (unsignalized), Great Road at Gleasondale Road (signalized), and Great Road at Common Road (unsignalized). In the study area, Great Road is typically one lane in each direction with a shoulder, and does not accommodate on-street parking. A sidewalk is typically provided on one side of the road, except by the Town Hall and Town Building where sidewalk is on both sides. Great Road is characterized by a rural roadway aesthetic with trees on both sides. In the Town Center Area, the Town Hall, Town Building, Town Common, Center School and some commercial uses characterize the roadway. For most of the road, Great Road is designated as State Route 117, but for a short stretch west of Gleasondale Road, Great Road is also designated as Route 62. Route 117, which extends from Leominster to Waltham, connects Stow’s Town Center west to Bolton and Interstate 495, and east to Maynard.

Types of Roadways

Arterial: High-capacity road with the primary purpose of moving vehicles from collector roadways to expressways and freeways, and people between town and city centers.

Collector: Low to moderate capacity road with primary purpose of moving traffic from local streets to arterial roads. Typically, collectors are designed to provide access to local roadways.

Local: Low capacity road with primary purpose of providing high level of access to places on the street, generally homes but also schools and other destination.

GLEASONDALE ROAD (MA-62)

Gleasondale Road is classified as a Principal Arterial. Throughout the study area in Stow, the road is under Town jurisdiction. Gleasondale Road is typically one lane in each direction with a shoulder, with no on-street parking. Close to Great Road and Stow Town Center, sidewalks are provided for a short stretch on one side, and the road is characterized by professional buildings with relatively large parking lots. After Box Mill Road, Gleasondale Road has a more low-density suburban feel with single family homes lining the roadway.

LIBRARY HILL ROAD

Library Hill Road is classified as a Minor Arterial and is under Town jurisdiction. Library Hill Road is just 250 feet long and provides a connection between other arterial roadways - Gleasondale Road, Great Road, and Crescent Street. Library Hill Road is one lane in each direction, and does not provide formal

turn lanes at the intersection with Great Road. A sidewalk is provided on one side and there is no on-street parking. The road is characterized by the Town Common and Randall Library on the east side.

CRESCENT STREET

Crescent Street is classified as a Minor Arterial from Library Hill Road/Hartley Road to West Acton Road, and as a Collector roadway from West Acton Road to Great Road (to the east). Throughout the study area in Stow, the road is under Town jurisdiction. Crescent Street is typically one lane in each direction with a shoulder and no on-street parking. Close to Stow Town Center, sidewalks are provided on one side. The road is characterized primarily by homes and wooded areas.

HARTLEY ROAD

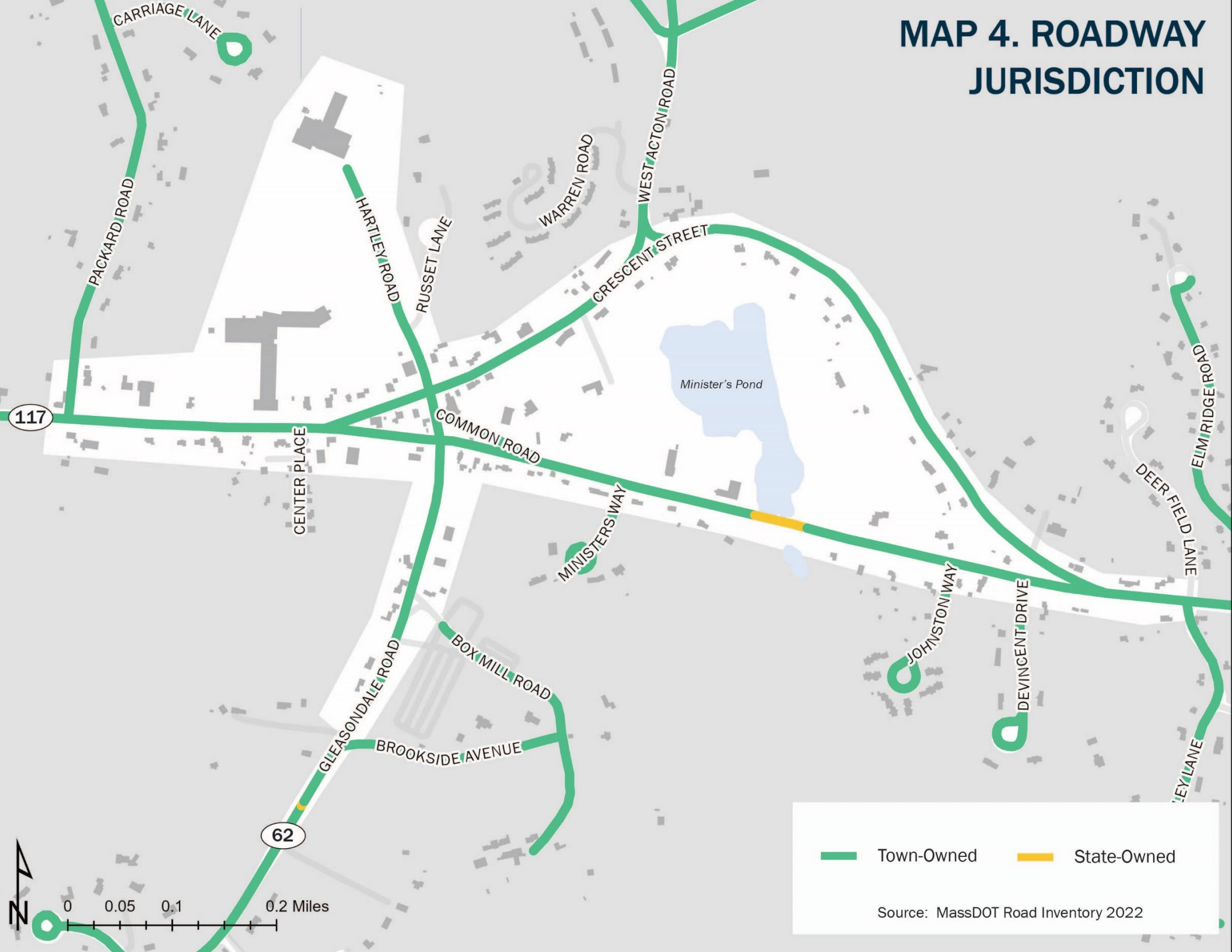
Hartley Road is classified as a local roadway and is under Town jurisdiction. The road is typically one lane in each direction with no center line, and does not provide on-street parking. The primary role of Hartley Road is providing access to Center School and Hale Middle School.

COMMON ROAD

Common Road is classified as a local roadway and is under Town jurisdiction. The road is typically one lane in each direction with no center line. The primary role of Common Road is providing access to Randall Library and First Parish Church on the north side.

DRAFT

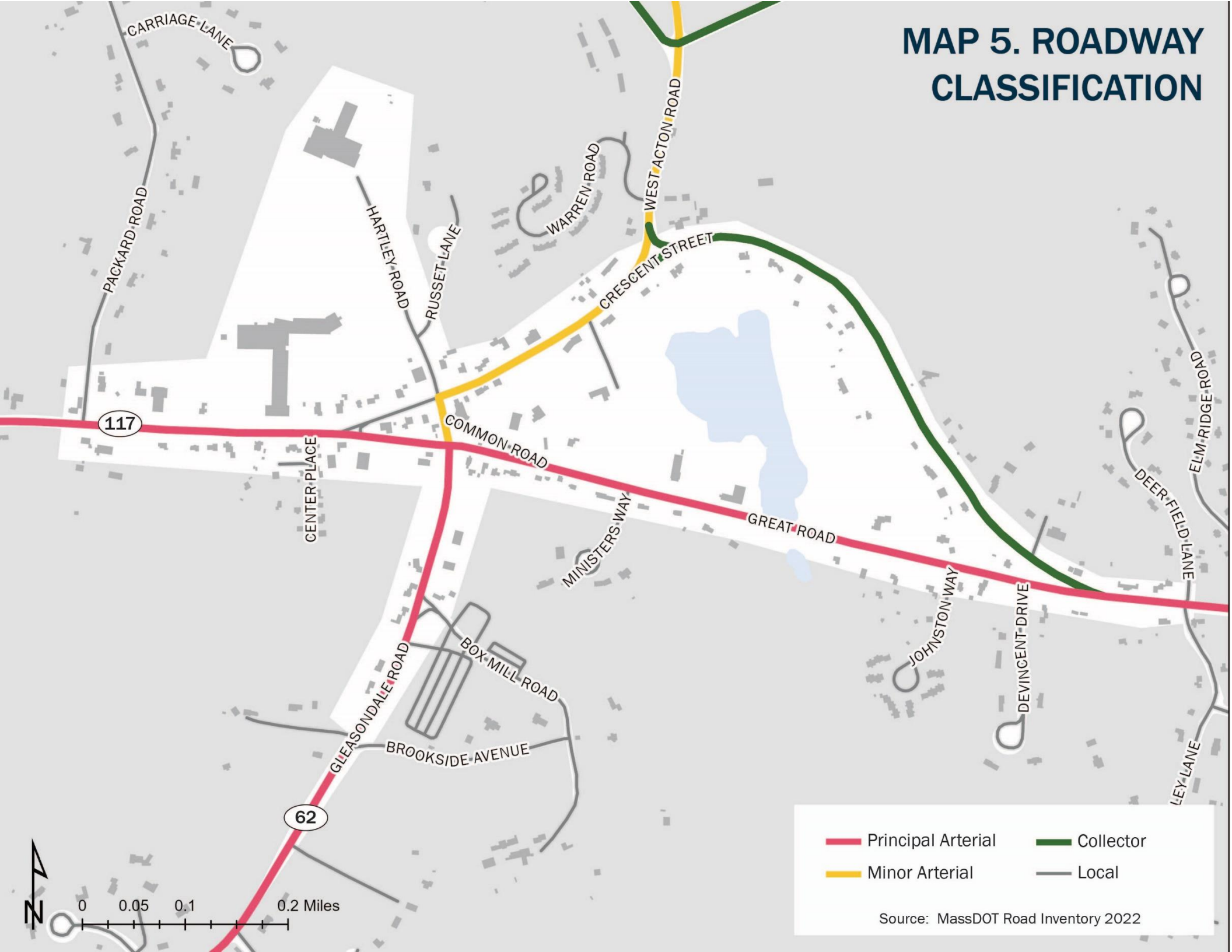
MAP 4. ROADWAY JURISDICTION



— Town-Owned — State-Owned

Source: MassDOT Road Inventory 2022

MAP 5. ROADWAY CLASSIFICATION



- Principal Arterial
- Minor Arterial
- Collector
- Local

Source: MassDOT Road Inventory 2022

- - - - - STUDY INTERSECTION CHARACTERISTICS

GREAT ROAD & GLEASONDALE ROAD, SIGNALIZED

Great Road (Route 62/117) and Gleasondale Road (Route 62) is a four-way signalized intersection under Town of Stow jurisdiction. The Gleasondale Road northbound approach has an exclusive right turn lane, a shared through-left lane, and one departure lane. The Library Hill Road southbound approach has one shared left-through-right lane and one departure lane. The Great Road eastbound approach has an exclusive right turn lane, and a shared through-left lane, and one departure lane. The Great Road westbound approach has an exclusive left turn lane, a shared through-right lane and one departure lane. There are crosswalks across the west, north, and south legs. No pedestrian signals or pedestrian phase is provided.

GREAT ROAD AND CRESCENT STREET, UNSIGNALIZED

Great Road and Crescent Street is an unsignalized T-intersection with Crescent Street forming the stem of the T at an acute angle to meet Great Road from the northeast. The alignment of the intersection encourages high speed vehicle left turn movements from eastbound Great Road to Crescent Street. The Crescent Street westbound approach is stop controlled. A slip lane allows westbound right turning vehicles to turn onto Crescent Street, and a painted island separates the slip lane from the other lanes on Crescent Street. There are crosswalks across the east and north legs of the intersection.

GREAT ROAD AND CENTER PLACE, UNSIGNALIZED

Great Road and Center Place is an unsignalized T-intersection with Center Place forming the stem of the T. Center Place is stop controlled. There are no crosswalks at the intersection.

GREAT ROAD AND COMMON ROAD, UNSIGNALIZED

Great Road and Common Road is an unsignalized T-intersection with Common Road forming the stem of the T, coming at an angle to meet Great Road from the northwest. Common Road is stop controlled.

COMMON ROAD & LIBRARY HILL ROAD, UNSIGNALIZED

Common Road and Library Hill Road is an unsignalized T-intersection with Common Road forming the stem of the T on the east side. Common Road is stop controlled. A crosswalk exists across Common Road on the east leg of the intersection.

LIBRARY HILL ROAD, HARTLEY ROAD, & CRESCENT STREET, UNSIGNALIZED

Library Hill Road, Hartley Road, and Crescent Street is an unsignalized four-way stop controlled intersection. There are crosswalks across the north and east legs of the intersection.

PEDESTRIAN AND BICYCLE ENVIRONMENT

Stow Town Center has several key town destinations, including Center Elementary School, Hale Middle School, the Town Building, Randall Library, Town Center Park, a few churches, and several businesses including Nan's and Russell's convenience store, within easy walking distance of each other. Along with these destinations, the area also has several dense residential areas nearby including the Pilot Grove Apartments on Warren Road to the north and the Plantation Apartments complex on Johnston Way to the east. As such, the area has the potential to generate more walking and biking activity through improved pedestrian and bicycle facilities and comfortable placemaking options connecting the places people live, go to school and visit in town. Currently, not many people walk in the town center, and most people biking in the area are very confident cyclists who are comfortable with more stressful roadway conditions.

EXISTING BIKING AND WALKING ACTIVITY

Based on counts collected on Wednesday, November 15, 2023 from 7 AM to 9 AM and 4 PM to 6 PM, the only crossings that saw much pedestrian activity were the northern and eastern crosswalks at the intersection of Hartley Road, Library Hill Road and Crescent Street. There were 13 crossings at these two crosswalks at around 8 AM, likely students and families walking to school. All other crossings experienced 0-2 crossings during the collection period. Notably, two crossings occurred at the northern crosswalk at the intersection of Library Hill Road, Great Road and Gleasondale Road between 8 and 9 AM despite no pedestrian signal existing at this location. A few bikes were counted as well, including one going westbound on Great Road at 4:30, one taking a right from Gleasondale Road to Great Road eastbound at 7:30 AM and another at 4:00 PM, and one travelling straight from Gleasondale Road to Library Hill Road at 7:15 AM.

SIDEWALKS

Stow Town Center has a relatively connected sidewalk network, however there are gaps, including on parts of Crescent Street, Great Road east of the Town Building driveway, and through the town common. Apart from the sidewalks within the middle school and elementary school grounds, most sidewalks are in fair to poor condition – based on pavement quality and presence of cracking, are narrow, lack a buffer to the roadway and are interrupted by utility poles and other street furniture. The paths within the Town



Sidewalk in front of Town Hall ends on Great Road before reaching the intersection with Gleasondale Road



Sidewalk in poor condition in front of Randall library. Source: Google Maps.

Center Park provide a comfortable recreational walking experience, and residents of the community come to walk dogs and enjoy the outdoors.

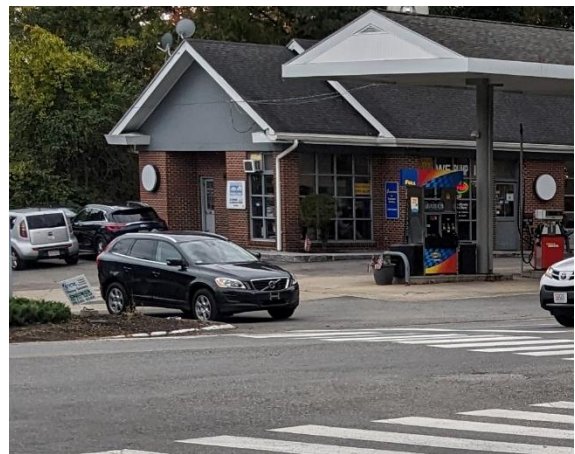
CROSSWALKS

For people to feel comfortable walking, safe crosswalks placed where people want to use them are necessary. Along Great Road between the Center School and Crescent Street (eastern intersection), there are just two opportunities to cross the street – one by the Town Hall at Crescent Street and one on the west side of Gleasondale Road. The crossing at Crescent Street has high visibility crossing treatments (Rectangular Rapid Flashing Beacon) and is around 30 feet long.



High visibility crossing by Town Hall at Crescent Street, with Rectangular Rapid Flashing Beacons (RRFBs) and new accessible ramps.

There are eight crosswalks in the area (excluding the crosswalks on school grounds). Most crosswalk pavement markings are in good condition and the zebra pattern is consistently used across all crosswalks, except for the crosswalk across Hartley Road to Center School which is faded. A major crossing barrier for people walking in the project area is the lack of pedestrian signals at the Gleasondale Road and Great Road intersection. Pedestrian signals let people walking know when they can safely cross the street with little to no conflict with vehicles. While the Great Road and Gleasondale Road intersection does provide crosswalks on three legs, the lack of pedestrian signals likely deters people from crossing. In addition, the existing crossing across Great Road on the east side of the intersection does not connect to a sidewalk on the



Crosswalk across Great Road on the east side does not have pedestrian signals and does not connect to a sidewalk on the south side.

southwest side, while the sidewalks located on the northwest and southwest sides are not connected by a crosswalk.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

To ensure all members of the community can benefit from walking, sidewalks should be outfitted with amenities for people with disabilities, including ramps with detectable warning panels for people with limited vision and proper clearance for people in wheelchairs. Most of the ramps within the study area, apart from those on school grounds, are not accessible², and several crosswalks lack ramps or connections to a sidewalk. Several of the sidewalks have utility poles and other barriers along the way, and some sidewalk surface condition does not provide a smooth surface. The Town Center Park does provide accessible stone dust paths, providing a comfortable place for people of all abilities. The one exception is the stone path connecting the park to the back of First Parish Church parking lot.



Narrow sidewalk on Great Road is interrupted by a utility pole and signage. Source: Google Maps.

BICYCLE FACILITIES

The level of stress people feel while biking influences their decision to choose to bike or not. Low stress biking environments are typically either low volume, low speed residential roadways or separated paths and trails on busier roadways. While people may bike on the sidewalk outside business districts in the State of Massachusetts, sidewalks may not provide a sufficient space and design for people to bike safely.³ Within Stow's Town Center, there are currently no dedicated bicycle facilities providing a low-stress environment for people biking on Great Road, Gleasondale Road, Library Hill Road and Crescent Street. The local roads of Center Place, Common



Great Road is suitable for more confident cyclists.

² Accessible ramps are typically made from concrete and have a detectable warning panel. The likelihood of ramps that are not compliant was based on a desktop assessment of materials and presence of a detectable warning panel – not a full field assessment.

³ MGL c.85, § 11B. No town bylaw prohibits sidewalk riding.

Road and Hartley Road provide a lower stress environment for biking but do not connect. For highly confident cyclists, the level of stress matters less, but most people will only bike in a lower stress environment. In Stow Town Center, where there are many school children, a lower stress environment is particularly important. Currently youth who bike appear to choose the sidewalk. Bike parking does exist by the Town Hall building.⁴

Types of Cyclists by Percentage of the Population

Strong and Fearless (1%): Feel comfortable and will bike on most any road.

Enthusied and Confident (7%): Feel confident biking on busy roads with bike lanes, but prefer more separated facilities.

Interested but Concerned (60%): Interested in biking, but only feel comfortable biking on trails and lower volume roadways.

No Way, No How (32%): People who perhaps never learned to bike, do not enjoy biking, or have a disability that impedes biking.

STREETSCAPE AMENITIES

Street amenities like trees, benches, public art, lighting and other elements improve the walking environment. Stow's Town Center Park and Town Common both offer trees and seating. Otherwise, the area does not provide abundant streetscape amenities.



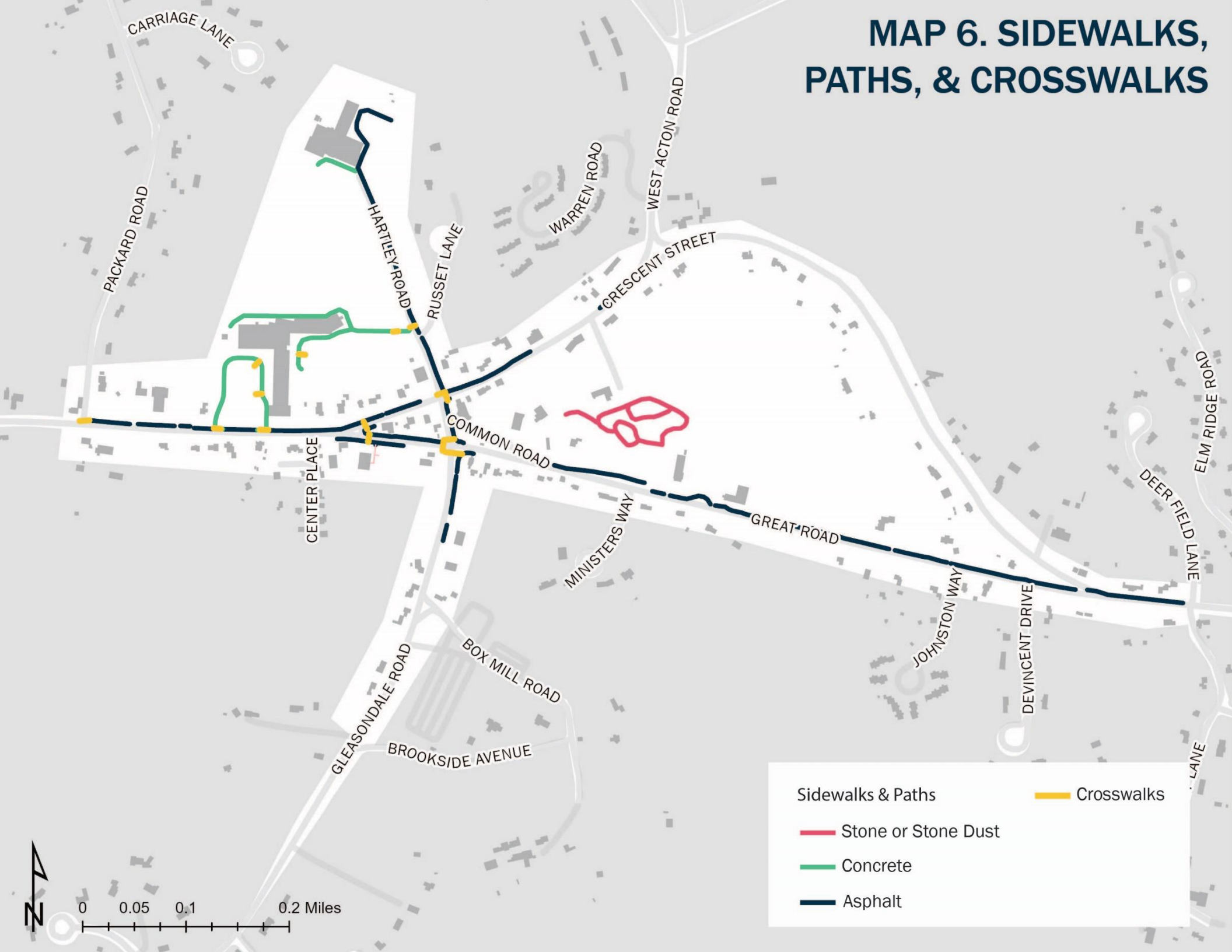
Benches in the Town Common.



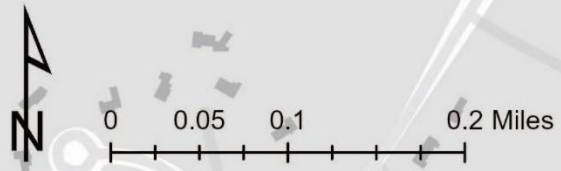
Play area in the Town Center Park.

⁴ Types of Cyclists was originally developed by Roger Geller as the City of Portland, OR?. The concept was tested through a survey by Jennifer Dill, Ph. D. of Portland State University to validate the percentage of the population who identify as each type. Source: Dill, Jennifer. (N.D.). *Types of Cyclists*. <https://jenniferdill.net/types-of-cyclists/>.

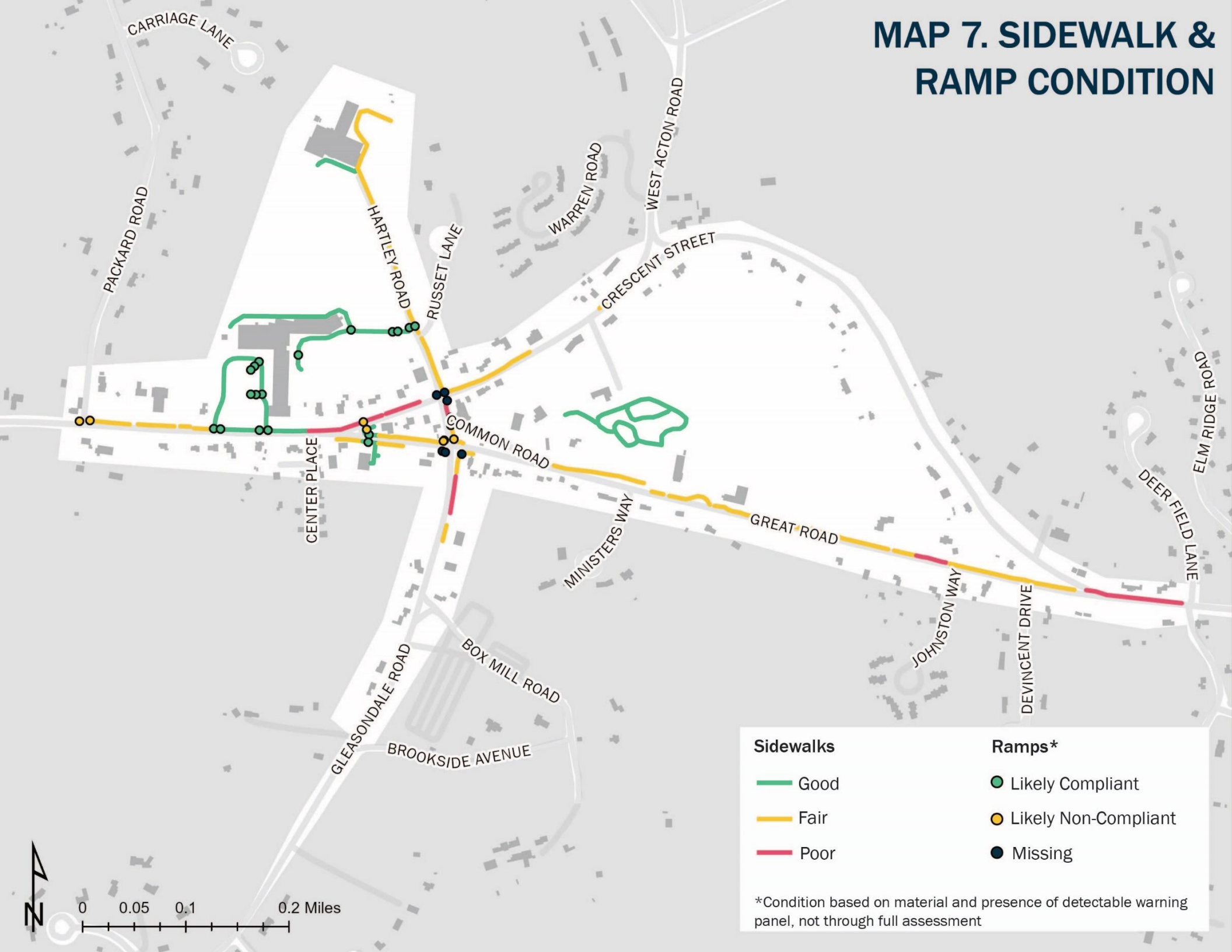
MAP 6. SIDEWALKS, PATHS, & CROSSWALKS



- Sidewalks & Paths
- Crosswalks
- Stone or Stone Dust
- Concrete
- Asphalt



MAP 7. SIDEWALK & RAMP CONDITION



0 0.05 0.1 0.2 Miles

Sidewalks	Ramps*
— Good	● Likely Compliant
— Fair	● Likely Non-Compliant
— Poor	● Missing

*Condition based on material and presence of detectable warning panel, not through full assessment

LAND USE CONNECTIVITY

A mix of land uses exist in Stow’s town center, and a walking and biking network should encourage people to move between nearby destinations. Students may walk from Center Elementary or Hale Middle to the library or convenience store after school. People living in the Plantation Apartments might walk to Nan’s Kitchen or to Town Center Park in the evening or weekend. Children living in the Pilot Grove Apartments may walk to the school or library. Town Building employees might walk to Town Center Park or the town common on lunch.

TOWN-OWNED LAND

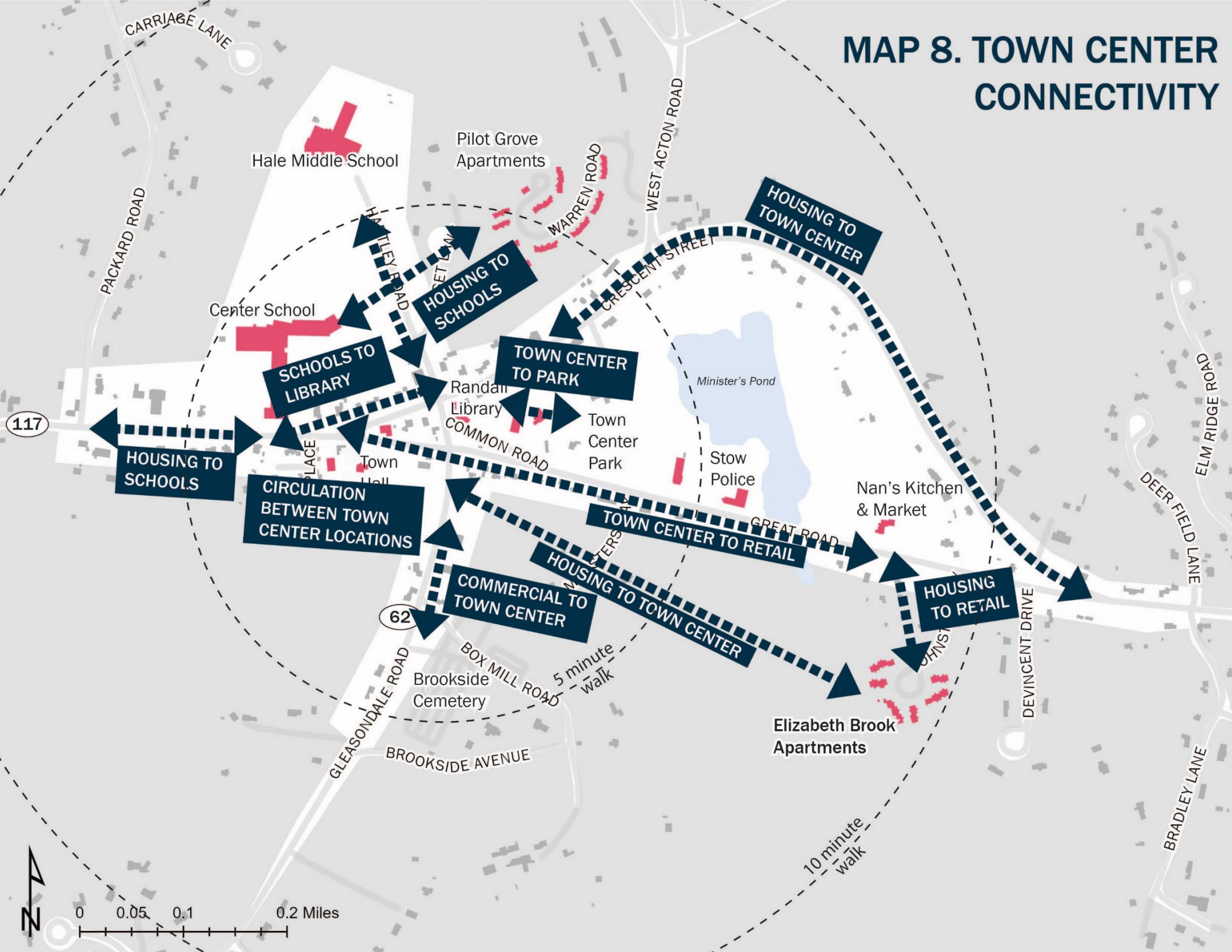
Stow’s Town Center includes around 83 acres of land in the project area, including the two schools, the Town Hall and Town Building land, the Town Center Park, Randall Library, the old fire house, the Town Common, the land south of Great Road including Brookside Cemetery, and the Hillside Cemetery.

PARKING

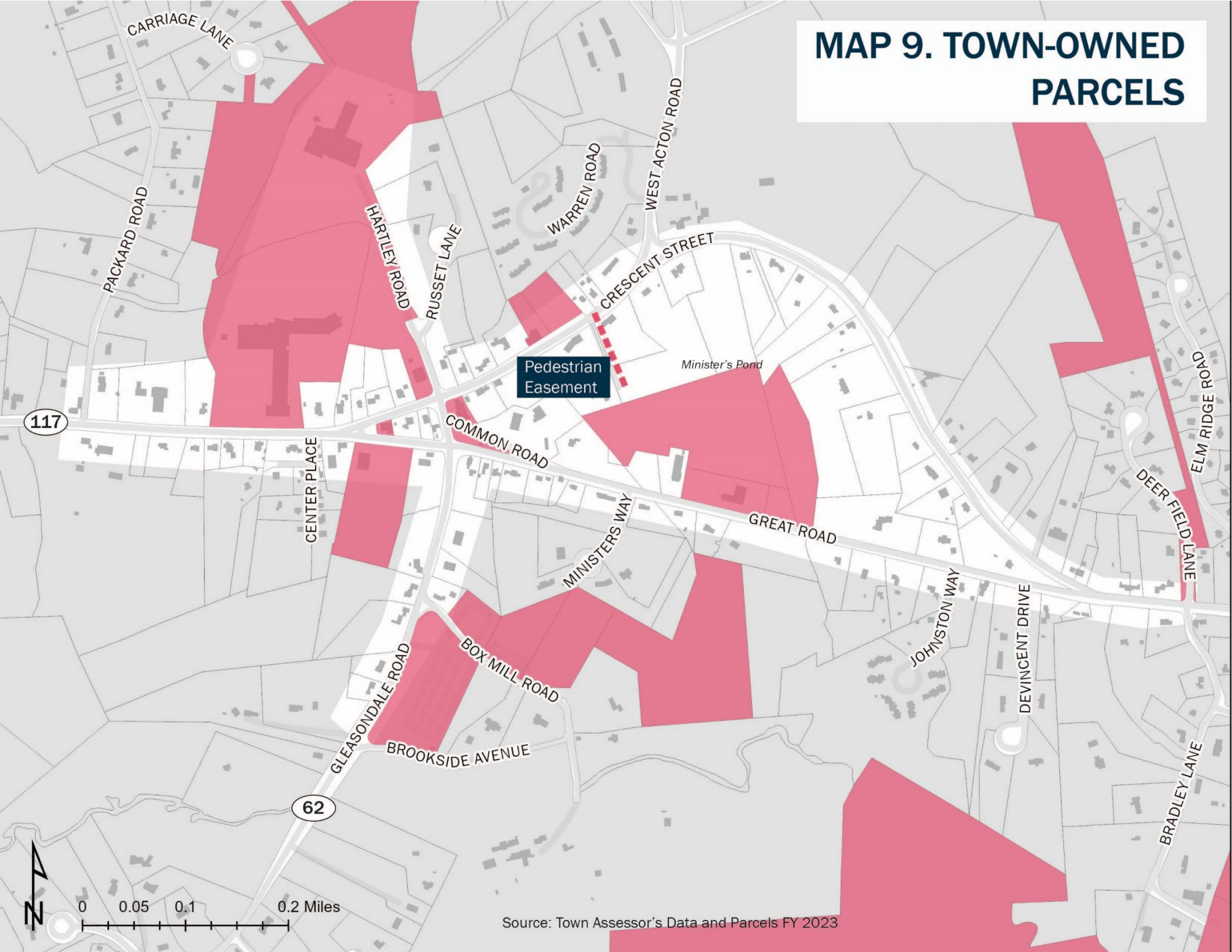
In the Town Center project area, all parking is provided in off-street parking lots, with the exception of two spaces on the south side Crescent Street by the old Town Hall. Some people also park on-street on Common Road during church time periods, but this parking is not formalized. In the off-street lots, there are approximately 850 parking spaces⁵. Of these, around 300 are provided in publicly owned parking lots. Public parking includes the lot by the Town Building, by the old fire station, at the school facilities, and by the police station.

⁵ Based on an approximate count from aerial imagery. As some lots are not striped, this number should be treated as an estimate.

MAP 8. TOWN CENTER CONNECTIVITY



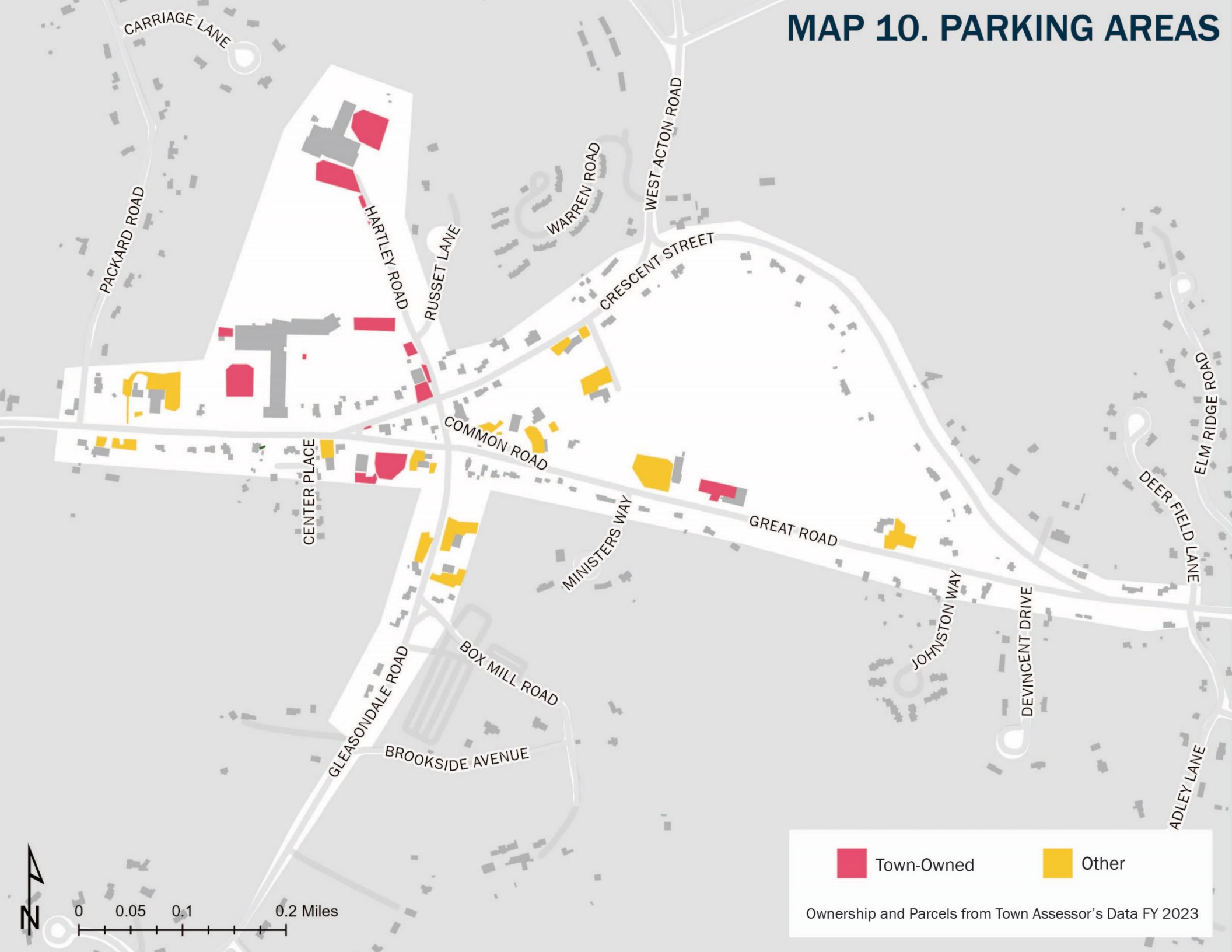
MAP 9. TOWN-OWNED PARCELS



Pedestrian Easement

Minister's Pond

MAP 10. PARKING AREAS



Town-Owned



Other

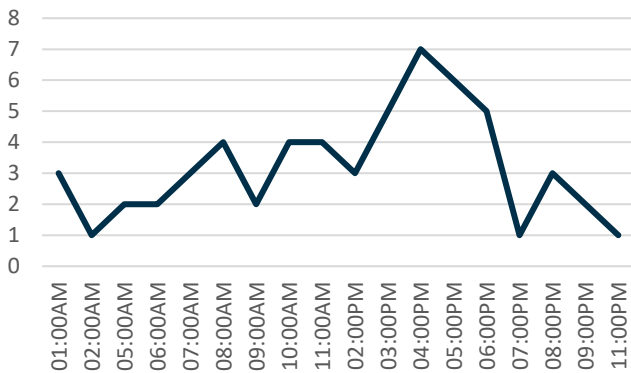
Ownership and Parcels from Town Assessor's Data FY 2023

ROADWAY CRASHES

Fifty-eight crashes occurred in the study area from 2018-2022. Just five of the crashes resulted in an injury. Three of the injury crashes took place on Great Road – in front of Nan’s Market, by Devincent Drive, west of the Center School driveway and by Packard Road. One occurred on Crescent Road near the curve in the road. Of the total crashes, 41% were single vehicle crashes involving vehicles hitting trees, deer, utility poles and other fixed objects. Angle crashes (22%) and rear-end crashes (22%) were also common along the corridor.

Seventeen of these crashes occurred at the study area intersections, of which all just involved property damage with no injuries. No crashes occurred at Library Hill and Common Road or Center Place and Common Road. While no crashes involved people walking and biking, more people might walk or bike with more comfortable and safe facilities. Access management opportunities can also be examined along the corridor at places where cars are entering or exiting, like by Nan’s. The generally low number of crashes resulting in injury may indicate vehicles traveling at lower speeds.

Crashes by Time of Day



58

Total Crashes

4-6 PM

Time Period with most crashes

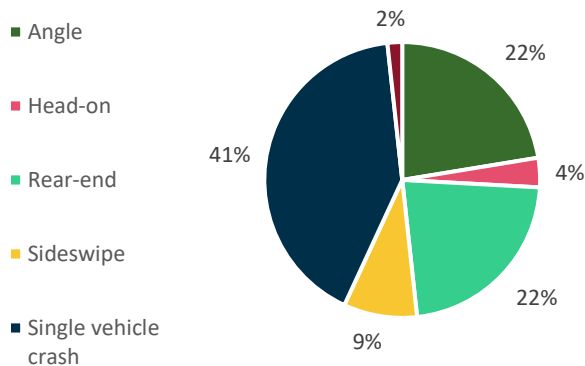
41%

Single Vehicle Crashes

9%

Crashes resulting in injury

Crash Type



Crash Year

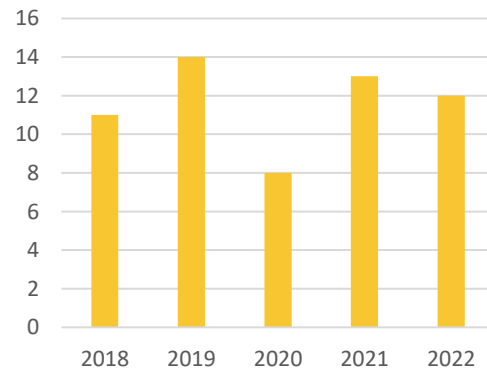
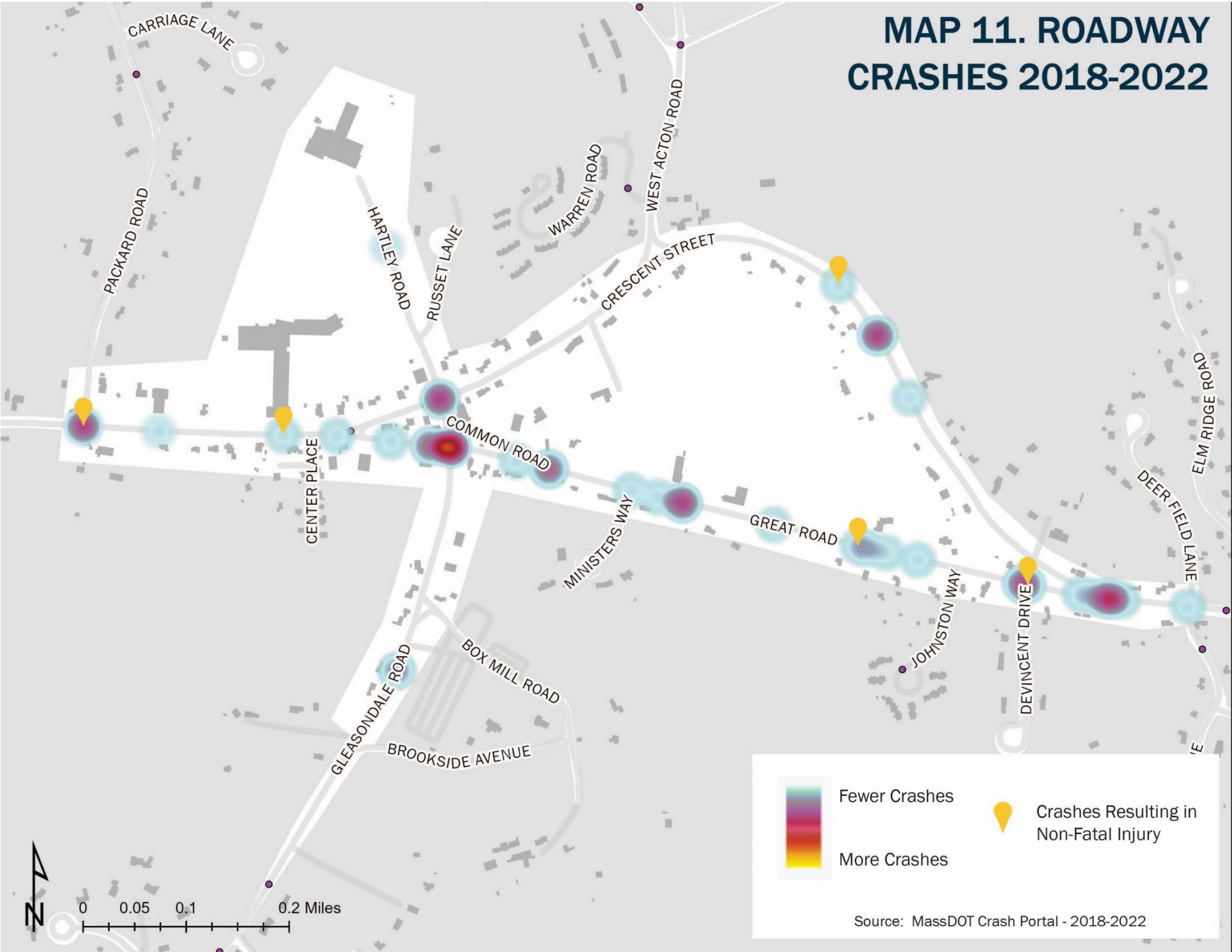



Table 1. Study Area Crashes 2018-2022

	Great & Crescent	Crescent & Library Hill	Great & Gleasondale	Great & Common	Study Area Roadways
Crash Type					
Angle	0	2	4	1	11
Head-On	0	0	0	0	2
Rear-End	0	1	3	0	10
Sideswipe	1	0	1	0	4
Single Vehicle Crash	0	0	2	2	23
Unknown	0	0	0	0	1
Injury					
Property Damage	1	3	10	3	47
Non-Fatal Injury	0	0	0	0	4
Ambient Light					
Daylight	1	1	9	2	36
Dusk or Dawn	0	0	0	0	2
Dark – Lighted Roadway	0	2	1	1	7
Dark – Unlighted Roadway	0	0	0	0	6
Weather					
Clear	1	1	7	2	35
Cloudy	0	0	1	0	5
Rain	0	2	2	1	6
Snow/Sleet/Freezing Rain	0	0	0	0	5
Time of Year					
December - February	0	1	1	0	10
March - May	0	1	3	0	15
June - August	1	1	4	1	13
September - November	0	0	2	2	13
Time of Day					
AM Peak (6:00 AM - 8:59 AM)	0	0	2	0	8
Midday (9:00 AM – 2:00 PM)	0	0	2	1	12
School (2:00 PM – 3:59 PM)	0	1	2	1	6
PM Peak (4:00 PM – 7:59 PM)	1	0	4	0	18
Night (8:00 PM – 5:59 AM)	0	2	0	1	7
Year					
2018	1	2	2	1	8
2019	0	1	2	2	13
2020	0	0	1	0	7
2021	0	0	1	0	12
2022	0	0	4	0	11
Summary					
Total Crashes 2018-2022	1	3	10	3	51
Average crashes per year	.2	.8	2	.6	10.2

MAP 11. ROADWAY CRASHES 2018-2022



 Crashes Resulting in Non-Fatal Injury

Source: MassDOT Crash Portal - 2018-2022

STUDY AREA VOLUMES

Map 12 and Map 13 show the AM and PM peak hour vehicle turning movement volumes for the study area. The volumes demonstrate that Great Road experiences the highest volumes during the peak periods, followed by Gleasondale Road and then Crescent Street. The highest turning volumes are observed connecting these roadways, specifically vehicles turning left onto Gleasondale from Great Road westbound, vehicles turning right from Gleasondale Road to Great Road eastbound, Crescent Street vehicles turning right onto Great Road and Great Road vehicles turning left onto Crescent Street north-eastbound.

Table 2 Peak Hours by Intersection

Intersection	AM Peak Hour	PM Peak Hour
Great and Center	7:15 AM – 8:15 AM	5:00 PM- 6:00 PM
Great and Crescent	7:15 AM – 8:15 AM	5:00 PM – 6:00 PM
Hartley, Library Hill and Crescent	7:30 AM – 8:30 AM	5:00 PM – 6:00 PM
Library Hill and Common	8:00 AM – 9:00 AM	5:00 PM – 6:00 PM
Great, Gleasondale and Library Hill	7:00 AM-8:00 AM	4:30 PM - 5:30 PM
Great and Common	7:15 AM – 8:15 AM	5:00 PM – 6:00 PM

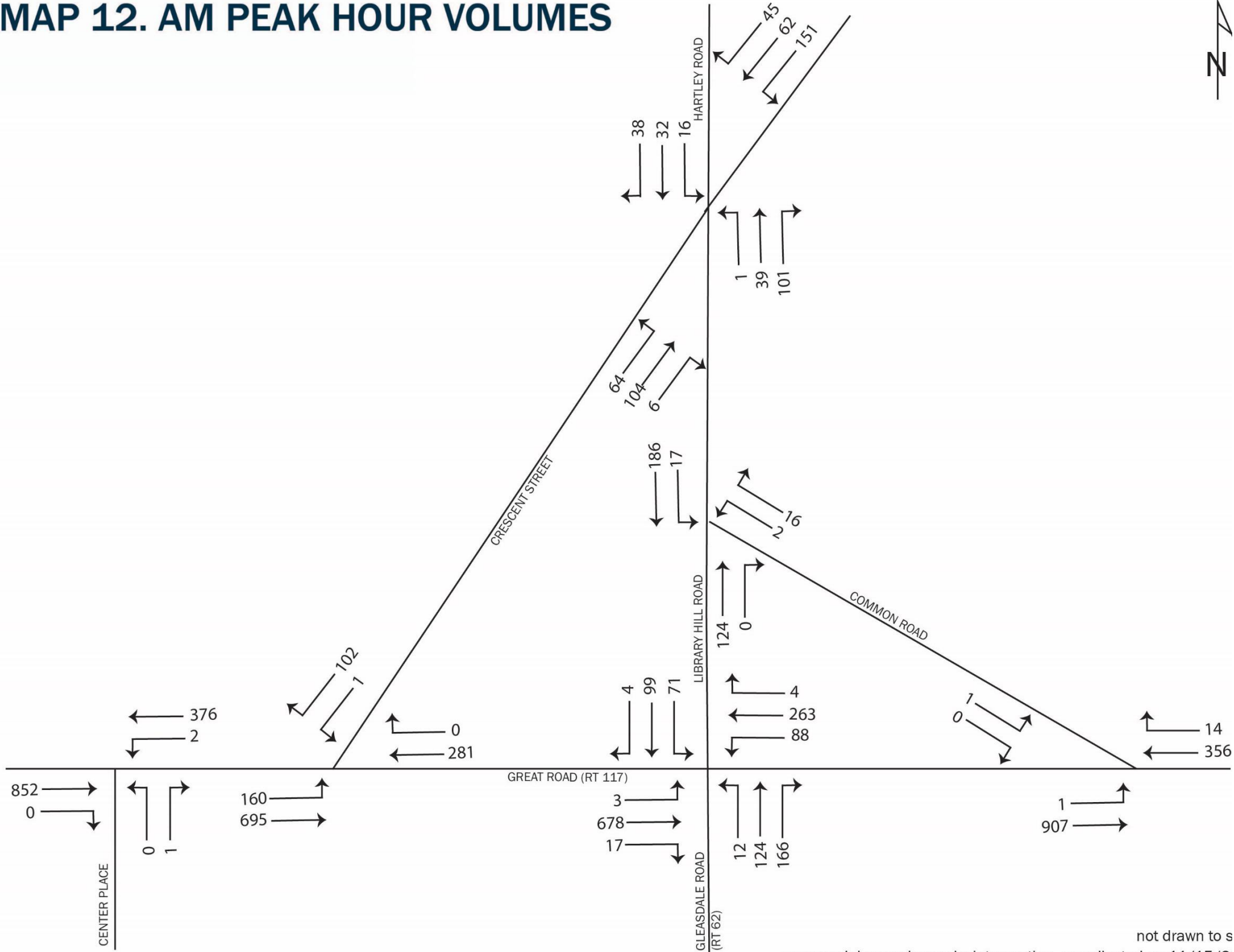
HEAVY VEHICLE VOLUMES

Heavy vehicles require greater space when making turns, particularly right turns. The chart below shows the number of heavy vehicles during the peak hour that make right turn movements in the study area. In general, more heavy vehicles occur in the AM Peak period than in the PM Peak period. The busiest right turn for heavy vehicles is the northbound right from Gleasondale Road to Great Road, followed by the northbound right turn from Library Hill Road to Crescent Street during the AM Peak.

Table 3 Heavy Vehicle Right Turns

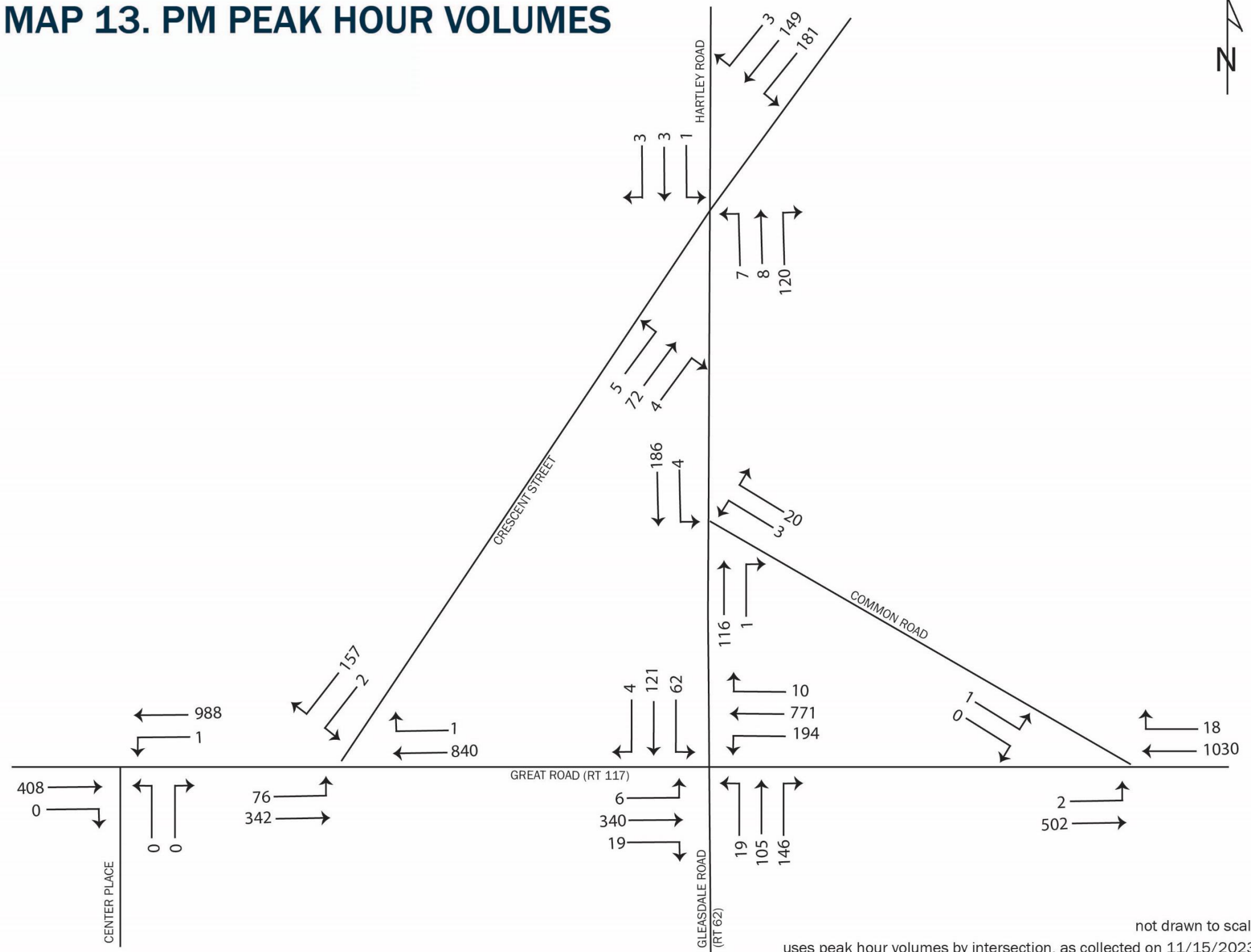
Movement	# of Heavy Vehicles (AM Peak Hour)	# of Heavy Vehicles (PM Peak Hour)
Great and Center		
Center - NBR	0	0
Great – EBR	0	0
Great and Crescent		
Great - WBR	0	0
Crescent - SBR	4	1
Hartley, Library Hill and Crescent		
Library Hill – NBR	6	0
Crescent - EBR	0	0
Crescent - WBR	0	0
Hartley -SBR	2	0
Library Hill and Common		
Library Hill - NBR	0	0
Common - WBR	3	0
Great, Gleasondale and Library Hill		
Great - EBR	2	0
Library Hill - SBR	0	0
Great - WBR	2	0
Gleasondale - NBR	10	2
Great and Common		
Great - WBR	3	0
Common - SBR	0	0

MAP 12. AM PEAK HOUR VOLUMES



not drawn to scale
uses peak hour volumes by intersection, as collected on 11/15/2011

MAP 13. PM PEAK HOUR VOLUMES



not drawn to scale
uses peak hour volumes by intersection, as collected on 11/15/2023

OPERATIONS ANALYSIS

The study intersection peak hour vehicle turning volumes were analyzed using the Synchro computer program to assess the existing operations within the project area. Based on the analysis, most intersection movements operate at Level of Service (LOS) D or better. The movements experiencing the most delay and queuing are the Great Road eastbound through movement at Gleasondale Road in the AM (LOS E) and the Great Road westbound left turn at Gleasondale in the PM (LOS F). At this intersection the Great Road westbound through movement experiences long vehicle queues in the PM peak hour.

Key Terms

Level of Service (LOS): Measure of intersection operations where “A” is good operation and “F” is very poor operation, based on amount of delay.

V/C Ratio: Used to measure whether an intersection is at or over capacity, where a ratio of 1.0 or greater is over capacity.

Table 4. Operations Analysis for Study Area Intersections Existing Weekday

Intersection	AM Peak				PM Peak			
	LOS	Delay (s/veh)	v/c	95% Q (feet)	LOS	Delay (s/veh)	v/c	95% Q (feet)
<i>Great and Center – Northbound Stop-Controlled</i>								
Center - NB	C	15.4	0.011	0	A	0	-	-
Great – WBL	A	9.6	0.003	0	A	8.2	0.001	0
<i>Great and Crescent – Southbound Stop-Controlled</i>								
Great - EBL	A	8.3	0.135	12.5	B	10.3	0.105	10
Crescent - SB	B	11.5	0.206	20	D	32.8	0.625	100
<i>Hartley, Library Hill and Crescent – All-Way Stop-Controlled</i>								
Library Hill – NBL	B	10.8	0.303	32.5	A	8.6	0.2	17.5
Crescent - EBL	B	12.3	0.388	45	A	8.5	0.136	12.5
Crescent - WBL	B	13.5	0.467	62.5	B	11.1	0.439	55
Hartley -SBL	B	11.9	0.358	40	A	8.1	0.022	2.5
<i>Library Hill and Common – Westbound Stop-Controlled</i>								
Common - WB	A	9.5	0.039	2.5	A	9.3	0.037	2.5
Library Hill - SBL	A	7.5	0.017	2.5	A	7.5	0.003	0
<i>Great, Gleasondale and Library Hill – Signalized</i>								
Great - EBT	E	68.4	1.04	#460	B	17.3	0.58	170
Great - EBR	A	0.1	0.02	0	A	0.1	0.03	0
Great - WBL	C	33.3	0.49	#82	F	106.5	1.04	#186
Great - WBT	A	6.9	0.28	86	B	16.4	0.78	#414
Gleasondale - NBT	B	17.6	0.37	71	B	17.0	0.32	67
Gleasondale - NBR	A	7.6	0.27	51	A	2.3	0.20	22
Library Hill - SBT	C	23.1	0.58	93	C	21.6	0.55	98
Overall	D	38.0	-	-	C	25.3	-	-
<i>Great and Common – Eastbound/Westbound Stop-Controlled</i>								
Great - EBL	A	8.1	0.025	2.5	B	10.7	0.003	0
Common - SB	D	28.1	0.001	0	A	38.3	0.036	2.5

WALKING EXPERIENCE

- Several sidewalks in the study area are in fair to poor condition.
- Parts of Great Road have narrow sidewalks with no buffer to vehicle traffic and have obstructions like utility poles.
- Most of the crossings in the area do not have accessible ramps.
- There are gaps in the sidewalk network that may discourage people from walking in the area. A couple examples include: the south side of Great Road between Center School and Russell's Convenience Store, the south side of Great Road west of Gleasondale Road, the north side of Great Road between Library Hill Road and Common Road, and the north side of Crescent Street west of Hartley Road.
- There are just two opportunities to cross Great Road between Center School to the west and the eastern intersection of Great Road and Crescent Street to the east. The crossings are at Crescent Street in front of Town Hall and at Gleasondale Road. The Gleasondale Road crosswalk does not have a pedestrian signal head despite being located at a signalized intersection and does not connect to a sidewalk on the southwest side, acting as a barrier for people walking. No crossing opportunities exist between Great Road and Gleasondale and Great Road and Crescent Street.

BIKING EXPERIENCE

- Besides the local roadways in the area with low vehicle traffic (Hartley Road, Center Place, Common Road) there are no low-stress biking facilities in the area. Great Road, Gleasondale Road, Crescent Street and Library Hill Road do not provide dedicated bicycling facilities.
- For confident cyclists who use the area, the hill on Gleasondale Road approaching Great Road from the south presents a challenge for cyclists caught at a red light who must start peddling again while on the hill.
- Not many people bike as a means a transportation in the area, but rather for recreational purposes.

ROADWAYS AND VEHICLES

- The Great Road eastbound through and westbound left approaches experiences significant delays and queuing in the peak direction.

PARKING

- The library does not have its own parking facility so adequate walking facilities between adjacent town-owned lots is critical.
- The route between the parking by the old fire station and the library is not accessible and the sidewalks are in poor condition.

STREETSCAPE DESIGN AND OPEN SPACE

- Besides the Town Common, no streetscape amenities such as pedestrian scale streetlights, plantings, or benches are provided in the project area.

OPPORTUNITIES

WALKING EXPERIENCE

- The abundance of Town owned land presents an opportunity for off-road trails in the area.
- The proximity of destinations (library, schools, town hall, parks) to one another is an opportunity to encourage more walking or biking trips
- Focus on all ages and abilities facilities as there could be latent demand for children and families to walk and bike in the area with the schools present in the area.
- At the intersection of Great Road and Gleasondale Road, not many trucks take right turns, which means there is an opportunity to shorten crossings through tighter turning radii. In addition, not many vehicles take an eastbound right turn, which could allow for the repurposing of the turn lane to a sidewalk or shared use path.

BIKING EXPERIENCE

- The abundance of Town owned land presents an opportunity for off-road trails in the area

ROADWAYS AND VEHICLES

- Several roads have existing widths that could accommodate improved bicycle and pedestrian facilities.

PARKING

- The town center area has many off-street lots that could be connected by paths to the town common.

STREETSCAPE DESIGN AND OPEN SPACE

- The Town Common and Town Center Parks are assets, and the library reconstruction will further make the library an attractive destination. There are publicly owned spaces that could benefit from additional streetscape amenities like benches, lighting, plantings, and public art.