



Town of Walpole Downtown Traffic Improvements January 2023

Town of Walpole – Downtown Traffic Improvements

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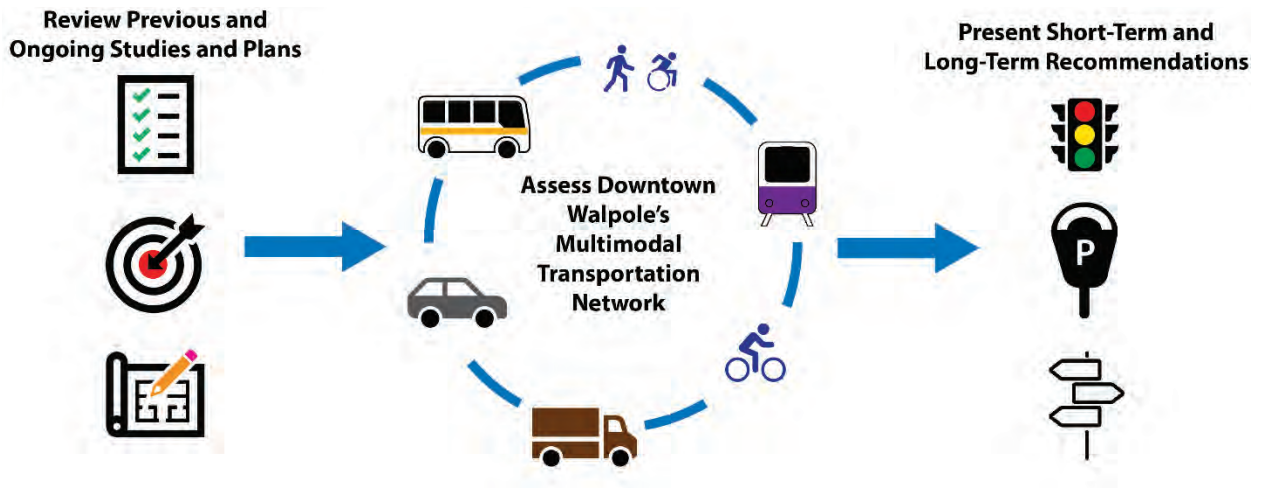
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1. Introduction

Downtown Walpole has been the focus of several planning and transportation improvement efforts in recent years. McMahon’s assessment of traffic patterns and operations through and within Downtown Walpole builds off the Town’s previous efforts, and integrates existing goals, policies, and strategies into the proposed conceptual short-term recommendations. With new residential development in Downtown Walpole adding to existing traffic volumes – including regional cut-through traffic, local traffic accessing Downtown Walpole businesses, and traffic generated by the MBTA Commuter Rail station – it is an appropriate time to reassess existing multimodal operations in the area and develop short-term and long-term strategies to accommodate Downtown Walpole’s residential growth.

The goal of this project is to present short-term strategies that will provide immediate improvements to Downtown Walpole’s traffic flow, through operational improvements, clarification of parking, and enhancing multimodal operations. These steps will support long-term strategies that will take more time to implement but will provide more substantial improvements to Downtown Walpole’s multimodal transportation network.

The project aligns with existing multimodal goals and strategies developed by the Town through recent and ongoing planning initiatives and transportation improvement projects, such as the 2022 *Walpole Master Plan* under development, the 2019 *Complete Streets Funding Program Project Prioritization Plan*, the 2015 *Walpole Downtown Action Plan*, the 2019 *Downtown Walpole Parking and Economic Development Strategy*, and the 2021 *Rapid Recovery Plan*. Downtown Walpole has the opportunity to support residential and economic growth, and the short-term and long-term traffic improvements will directly support the Town’s goals for a revitalized Downtown Walpole.



2. Existing Conditions

2.1 Study Area

Description of Area

The primary study area (see Figure 1) is within Downtown Walpole bounded by East Street (State Route 27) to the north, School Street to the east/southeast, and Front Street and Elm Street (State Route 27) to the west/southwest. Main Street (State Route 1A) runs through the center of the study area, containing Walpole’s central business district and municipal center. Secondary study areas include side streets directly north and south of Downtown Walpole to understand potential issues with neighborhood cut-through traffic. The study area is adjacent to the MBTA Walpole Commuter Rail station, a stop on the Franklin/Foxboro Line, which connects Walpole residents to South Station in Boston and brings visitors to Downtown Walpole.

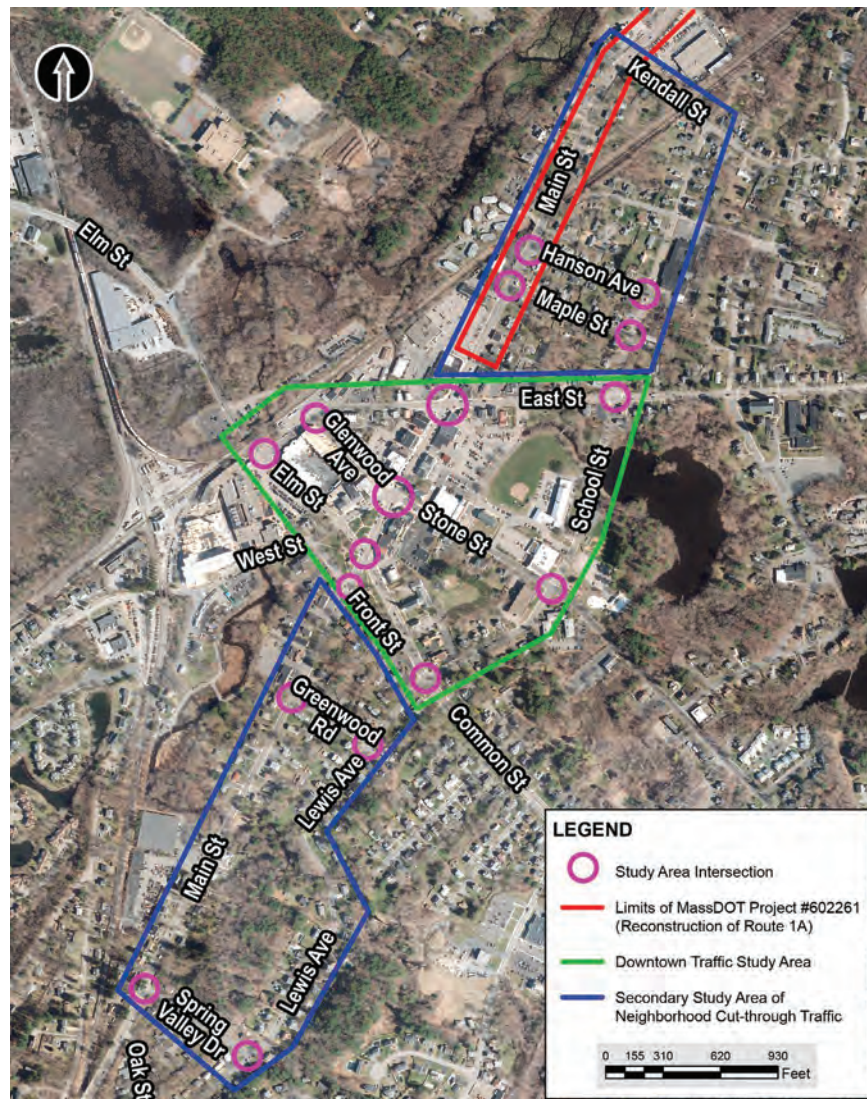


Figure 1: Study Area Map

Existing Infrastructure

The Downtown Walpole roadway network serves both as a destination as well as a heavily traveled route for through traffic. The Downtown Walpole roadway network serves pedestrian, transit, and vehicle traffic. The purpose of documenting existing infrastructure is to identify potential improvements for traffic circulation for all modes of travel, particularly in bicycle accommodations, cut-through traffic patterns, wayfinding and signage, and traffic congestion at signalized intersections. The information from prior reports (noted in Section 1. Introduction and Section 2.2 Previous and Ongoing Studies and Plans) and field observations in May 2022 serve as the basis for this assessment.

KEY FINDINGS

- Long queues form at signalized intersections during peak hours
- Traffic signals are not coordinated
- Vehicle detection systems at two signalized intersections on Main Street are malfunctioning
- People have difficulty finding convenient parking, although there is a sufficient supply of parking
- Pedestrian facilities and wayfinding can be improved
- Bicycle facilities are limited and may contribute to the lack of bicycle use
- Physical connections and wayfinding to the Commuter Rail station and bus stops can be improved

Intersections

The primary study area includes the following intersections identified on the traffic map (Figure 2):

- Elm Street (Route 27) at East Street (Route 27) (unsignalized)
- East Street (Route 27) at Glenwood Avenue (unsignalized)
- West Street at Front Street (unsignalized)
- West Street at Elm Street (unsignalized)
- Main Street (Route 1A) at Front Street (unsignalized)
- Main Street (Route 1A) at Elm Street/Common Street (signalized)
- Main Street (Route 1A) at West Street/Stone Street/Glenwood Avenue (signalized)
- Main Street (Route 1A) at East Street (Route 27) (signalized)

The signalized corridor along Main Street currently serves the highest volume of daily traffic compared to other roadways and intersections within the Downtown Walpole traffic network. Traffic signals are not currently coordinated and vehicle detection at the Main Street at Elm Street/Common Street and Main Street at East Street intersections is presently malfunctioning. As a result, delays and long queues occur at signalized intersections during peak hours,

particularly along the westbound Common Street and East Street approaches to Main Street, as indicated in Figure 2. A summary of existing traffic operations within the study area is provided in a later section of this report.

Parking

A mix of on-street and off-street public parking is provided in the Downtown Walpole area. Parallel parking with a two-hour limit is generally provided along all roadways within the primary study area, and municipal public parking lots are provided behind the commercial buildings on both sides of Main Street between the West Street/Stone Street/Glenwood Avenue intersection and the East Street intersection as shown on the parking map (Figure 3). In addition, several scattered off-street parking lots are provided for MBTA Commuter Rail passenger parking along West Street and Elm Street to the south and west of the primary study area.

Wayfinding signage is generally provided to indicate locations of public and commuter parking lots; however, signage size, visibility, presence, and placement could be improved overall. New signage for public parking was installed Fall 2022 through the Town's capital budget. Additional wayfinding signage would build upon this recent investment and assist with improved pedestrian accessibility. Parking lot location, parking signage, and high-use parallel parking locations are indicated in the parking map (Figure 3).

McCabe Enterprises and Pare Corp. previously completed the *Downtown Walpole Parking & Economic Development Strategy* study for the Town of Walpole in 2019. Based on the findings of the study, parking spaces were generally well-utilized during spot counts collected in October and November 2018, but parking demand did not generally exceed the existing supply. However, based on the responses to a survey distributed by the study team in October 2018, 39 percent of approximately 140 respondents reported leaving the Downtown Walpole area because they could not find parking or because available parking was not convenient to their destination. Since completion of the parking study, four of the eleven parking spaces on the east side of Main Street between Common Street and Stone Street have been converted to temporary outdoor dining space.



Unused two-hour on-street parking on Main Street

Pedestrian Facilities

Pedestrian facilities are provided throughout the roadway network, including sidewalks, curb ramps, pedestrian signals at signalized intersections, marked crosswalks, and pedestrian crossing signage including Rectangular Rapid Flashing Beacons (RRFBs) at selected high use crosswalks accessing the MBTA Commuter Rail station. A summary of pedestrian facilities, locations where pedestrian facilities are in fair or poor condition, or where pedestrian accommodations do not meet design or accessibility standards, are indicated in the pedestrian, bicycle, and transit map (Figure 4).



Sidewalks, curb ramp and pedestrian signal in downtown Walpole

Bicycle Facilities

Bicycle facilities are generally sparse, with no bicycle specific on-street facilities marked. Bicycle parking is currently limited to three locations in the Downtown Walpole study area: on Stone Street west of the Walpole Public Library, at the MBTA Commuter Rail station, and at the Union & West apartment complex at 95 West Street. Existing bicycle accommodations in the study area are indicated in the pedestrian, bicycle, and transit map (Figure 4).

Transit

In addition to the MBTA Commuter Rail station, MBTA bus route 34E serves stops within the Downtown Walpole study area, with stops located on Main Street north of Stone Street/Glenwood Avenue, East Street east of Main Street, and East Street west of School Street. Some stops lack signage, and amenities such as shelters and benches are generally not provided. A bus layover area is provided along Front Street west of Main Street; however, buses do not serve the MBTA Commuter Rail station, and the nearest stop, at Main Street and Stone Street, is approximately a quarter-mile walk to the station platform. Existing bus stops and transit facilities are indicated in the pedestrian, bicycle, and transit map (Figure 4).



Platform at Walpole Station



1



2



3



4



Figure 2: Downtown Walpole Traffic Assessment



1



2



3



4

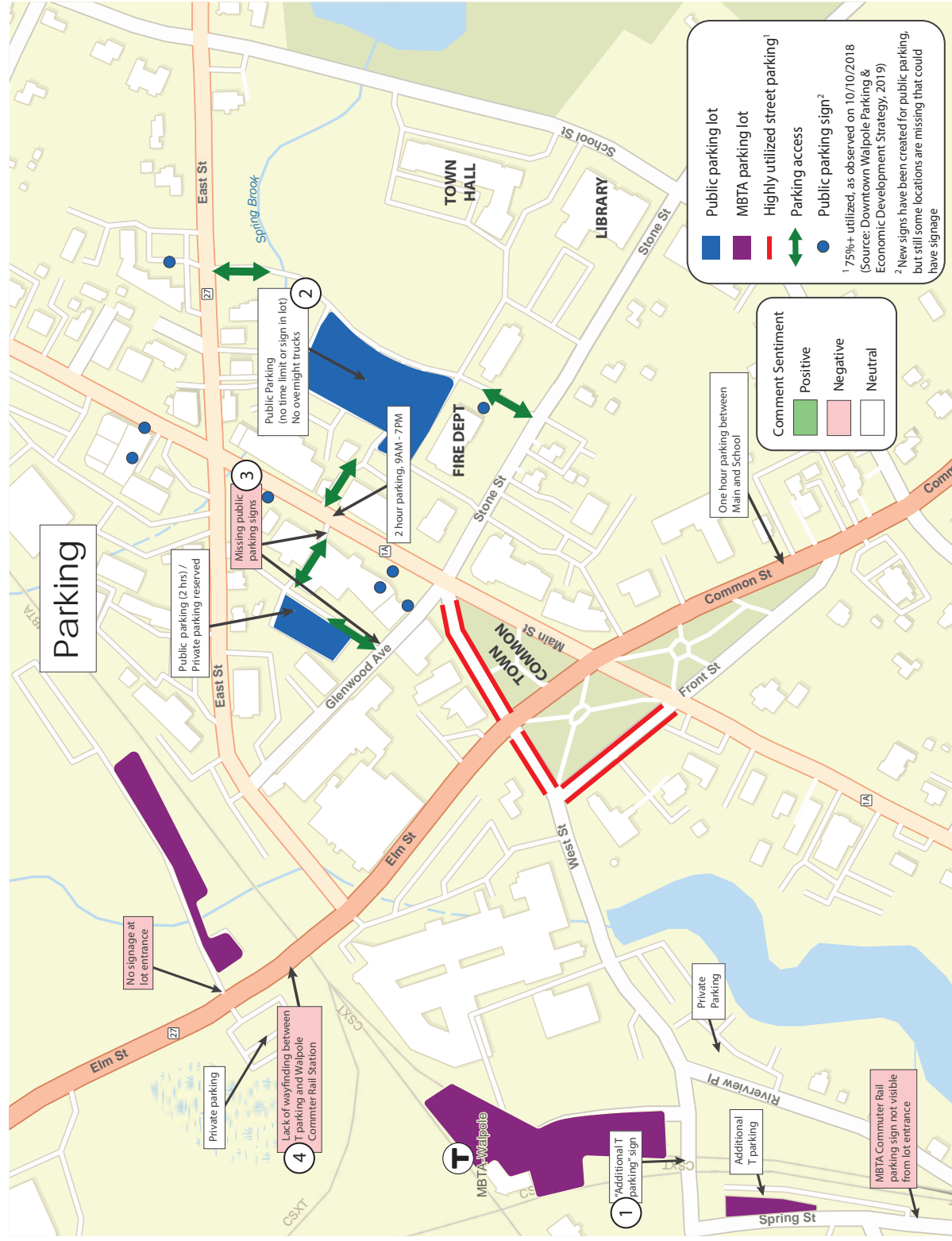


Figure 3: Downtown Walpole Parking Assessment Map

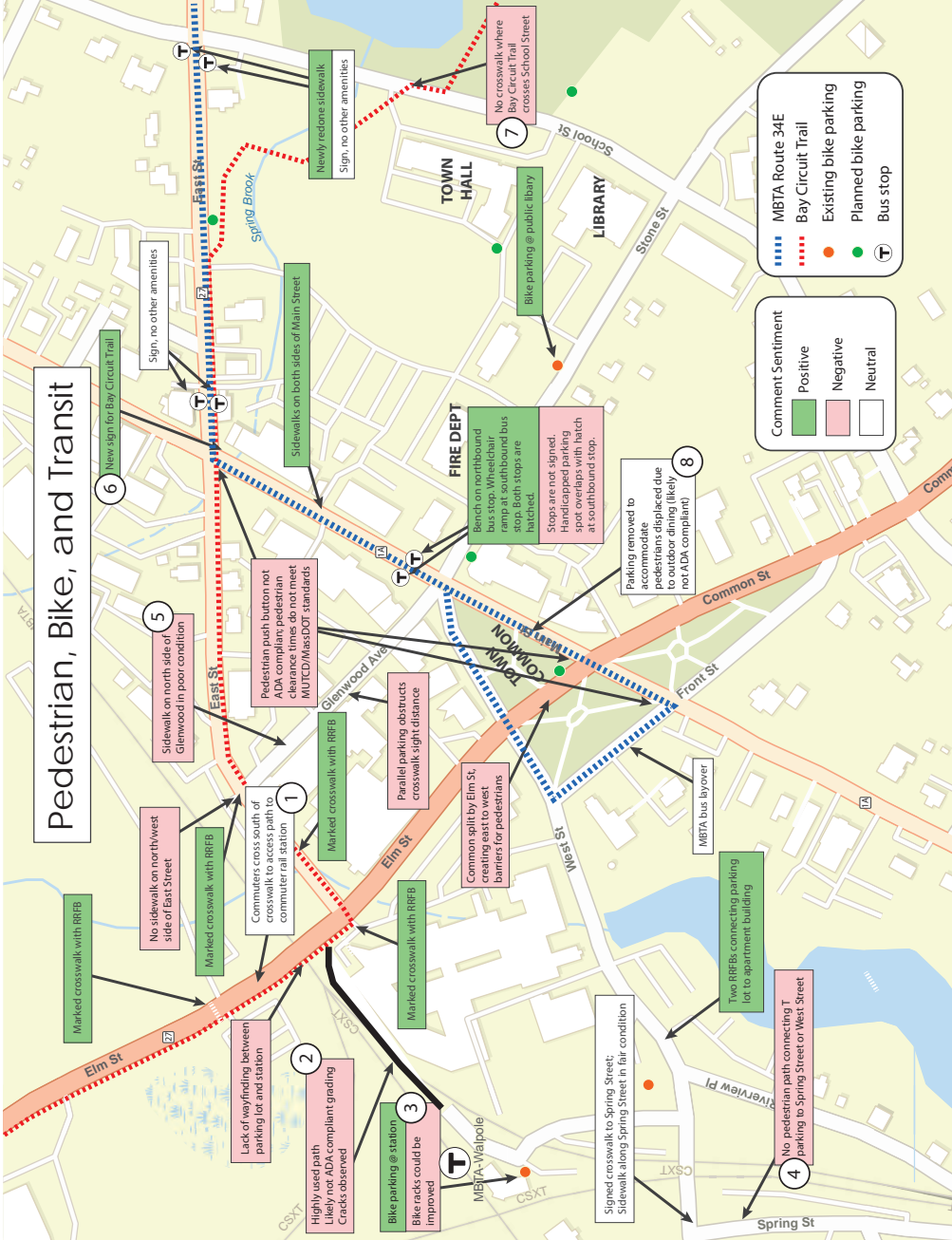
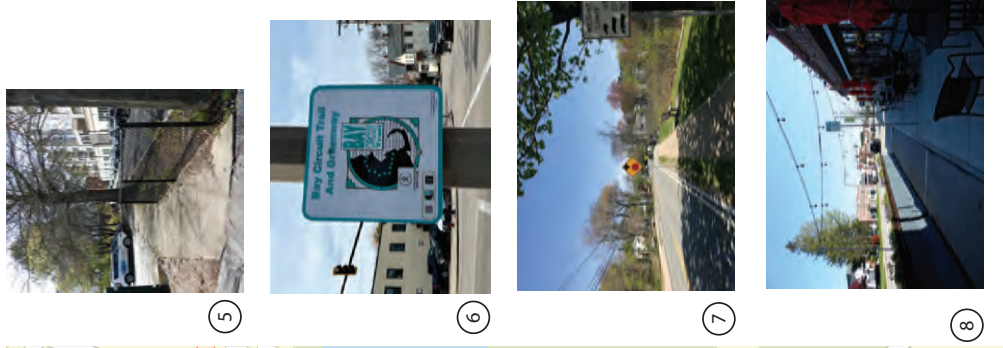


Figure 4: Downtown Walpole Pedestrian, Bike, and Transit Assessment Map

2.2 Previous and Ongoing Studies and Plans

The strategies proposed in this report are influenced by existing studies and plans (listed in Section 1), and McMahon’s independent analysis and observation of existing conditions in Downtown Walpole. McMahon’s review of previous and ongoing studies and plans reveals several common themes that the proposed strategies directly address, including:

- 1) Improving traffic flow in Downtown Walpole to create a more efficient roadway network for all modes
- 2) Improving pedestrian conditions and overall walkability of Downtown Walpole by addressing Americans with Disabilities Act (ADA) accessibility issues, installing updated signals and crosswalks, and implementing traffic calming measures and coordinating with the pedestrian improvements proposed for the Town Common
- 3) Creating better pedestrian and bicycle connections through Downtown Walpole and between Downtown Walpole and the MBTA Commuter Rail station
- 4) Improving public parking signage to ensure efficient access to Downtown Walpole’s businesses and amenities

Additionally, coordination between this study and the ongoing 2022 Walpole Master Plan process will be critical in implementing recommendations that are tailored to the needs to the Town. McMahon has received the draft results of the 2022 Walpole Master Plan Vision and Goals survey and the 2021 Local Rapid Recovery Plan, and has ensured that both short-term and long-term recommendations in this report align with community desires captured through those two processes to date. Recurring responses from public meetings, surveys, and on-line feedback include:

- ✓ Revitalize and make Downtown Walpole a destination
- ✓ Make streets safe and walkable

2.3 Existing & Projected Traffic Volumes

Turning Movement Counts

To assess existing traffic volumes on the study area roadway network, manual turning movement counts (MTMC) were collected at the following study area intersections on Tuesday, March 29, 2022:

- Elm Street at East Street
- West Street at Elm Street
- Main Street at Front Street
- Main Street at Elm Street/Common Street
- Main Street at West Street/Stone Street/Glenwood Avenue
- Main Street at East Street

The MTMCs were conducted from 7:00 AM to 9:00 AM and from 2:00 PM to 6:00 PM, which encompass typical weekday morning and afternoon peak periods. Count data collected included heavy vehicles, bicycles, and pedestrians. The MTMCs are summarized in 15-minute intervals and are provided as Appendix A to this report.

Additional MTMCs were obtained from the November 2016 *Traffic Impact Analysis for the Liberty Village Apartments* prepared by Pare Corp.,

KEY FINDINGS

- Weekday AM Peak hour is **7:30 AM to 8:30 AM**
- Weekday PM Peak hour is **5:00 PM to 6:00 PM**

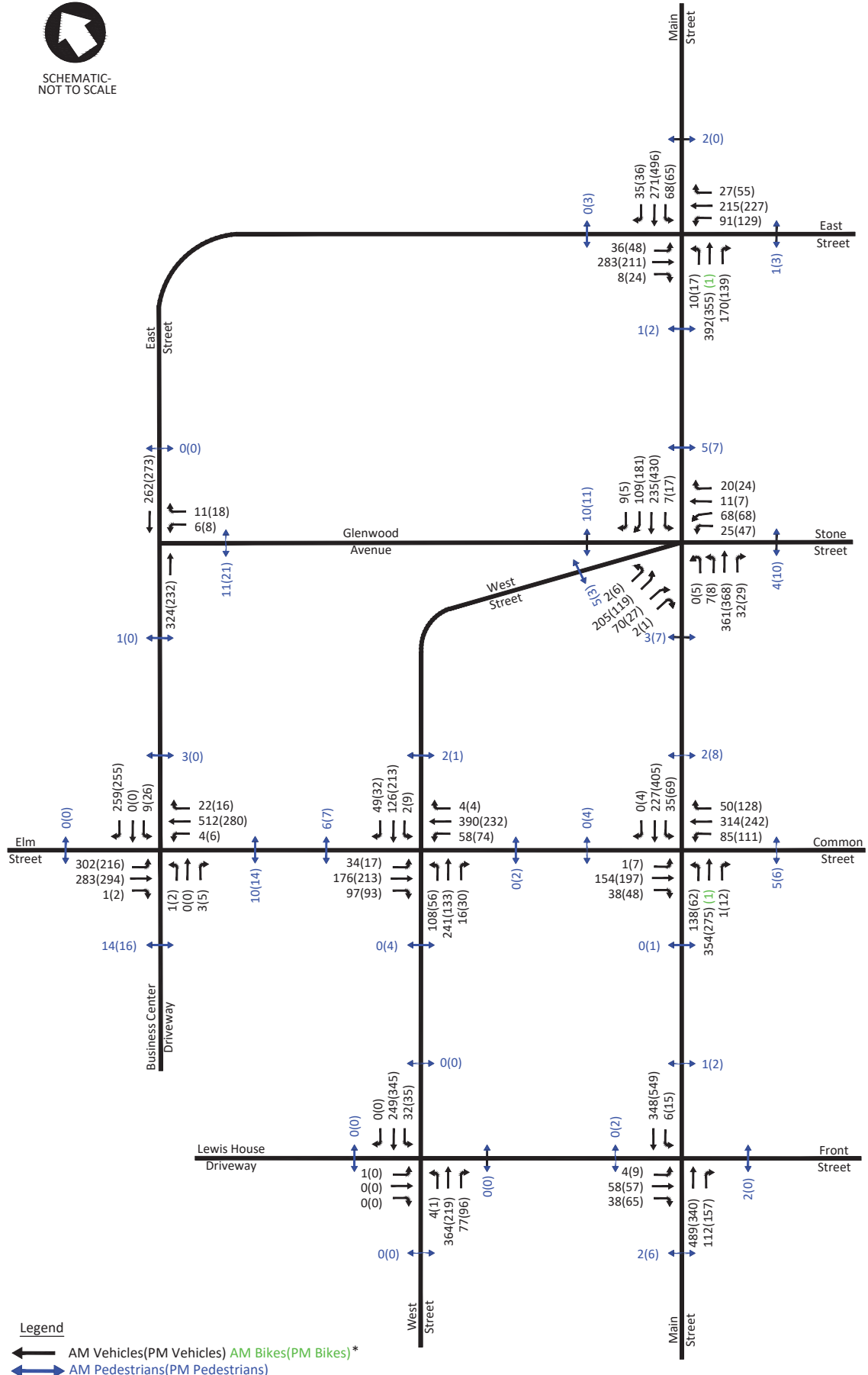
provided by the Town of Walpole. MTMCs were collected December 9, 2015 at the intersection of West Street at Front Street, and August 11, 2016 at the intersection of East Street at Glenwood Avenue. These MTMCs were adjusted to balance with 2022 traffic volumes at adjacent intersections and included as part of Appendix A.

The Study Area Traffic Schematic (Figure 5) below shows the total weekday morning and weekday afternoon peak hour vehicle volumes at each of the study area intersections by turning movement. In addition to vehicle volumes, the schematic includes pedestrian crossing volumes at each intersection, and bicycle volumes when present.

In order to establish 2029 base traffic volumes for the study area intersections, background growth and new developments were considered. The 2022 existing peak hour traffic volumes were grown by a 1% per year background growth rate (compounded annually), over the seven-year study horizon (2022 to 2029) to establish the 2029 base traffic volumes for the Downtown Walpole roadway network. A 1% annual growth rate was selected to be consistent with other recently completed studies in the Downtown Walpole study area.

Based on conversations with the Town, the existing Gilmore’s feed and grain store at 1015 East Street may potentially be redeveloped with a 148-unit residential development, although no formal plans have been submitted. To account for future increases in traffic volume due to the potential development, the proposed residential development was considered as a new peak hour traffic generator for the study area under design year 2029 conditions.¹

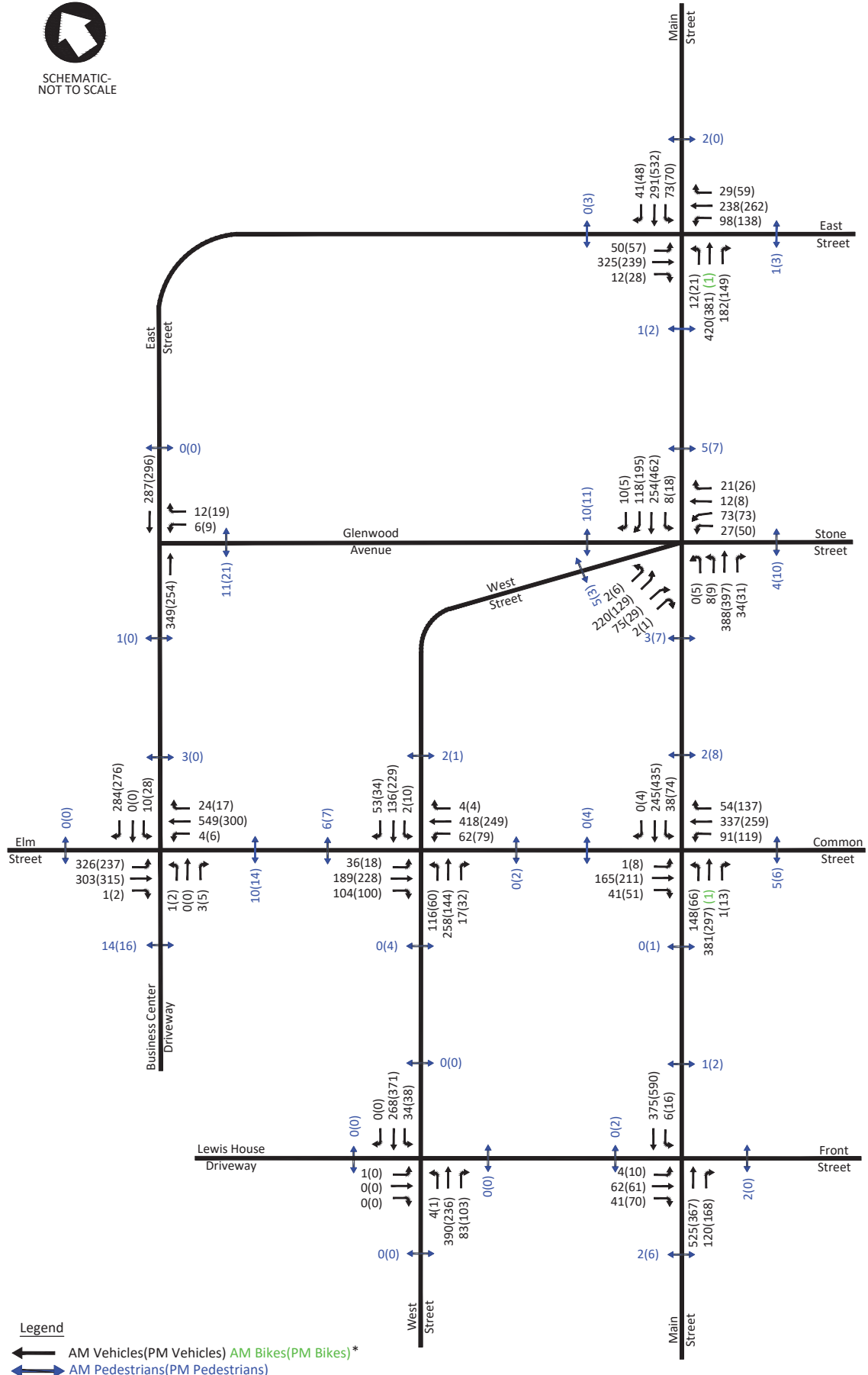
¹ New project trips for the potential residential development were estimated using the Institute of Transportation Engineers (ITE) publication *Trip Generation manual, 11th Edition*, which provides traffic generation information for various land uses compiled from studies conducted by members nationwide. Vehicle trip estimates for the potential future 148-unit residential development were estimated using ITE Land Use Code 221 (Multifamily Housing – Mid-Rise) and distributed throughout the roadway network based on the trip distribution reported in the *Traffic Impact Analysis for the Liberty Village Apartments* prepared by Pare Corp. In November 2016, for the recently constructed residential development at 1034 East Street. The trip generation and trip distribution details are provided as Appendix B. Because Gilmore’s currently closes at 4:30 PM and does not generate a significant number of trips during the existing weekday afternoon peak hour, and as the site is not anticipated to generate a significant number of trips during the weekday morning network peak hour, no trip generation credits were taken for the existing Gilmore’s store under design year 2029 conditions. It was assumed that the potential development project would not include traffic mitigation measures along the study area roadway network. A summary of the traffic volumes under existing and no build conditions are provided in Appendix C.



*Note: no bikes counted in AM



Figure 5
2022 Existing Weekday
Peak Hour Traffic Volumes
Downtown Walpole Traffic Study
Walpole, Massachusetts



*Note: no bikes counted in AM



Origin-Destination Data

McMahon completed a review of StreetLight data to identify origin-destination (O-D) traffic patterns within the Downtown Walpole primary and secondary study areas. The key question the analysis is seeking to answer is “to what extent does regional cut-through traffic have an impact on the study area?”

StreetLight data uses smartphone and GPS sensors to provide continuous traffic volume and trip data in full-hour intervals dating back to 2016 for any roadway network and intersection in the United States. Ten StreetLight zones were identified in the Downtown Walpole area, which capture bidirectional traffic volumes and patterns to and from the following locations:

Zone	Location
Main Street N	North of Kendall Street
Kendall Street	East of Townside Lane
East Street	East of Hartshorn Road
Stone Street	East of Old Diamond Street
Common Street	West of South Street
Main Street S	South of Oak Street
West Street	South of Spring Street
Elm Street	East of Robbins Road
School Street	North of Stone Street
Greenwood Road	East of Main Street

StreetLight data for the zones above were collected between January 1, 2019 and December 31, 2019 to reflect the most recent pre-pandemic conditions. The analysis focused on travel patterns within the weekday morning peak period (Tuesday through Thursday, 7:00 AM to 9:00 AM) and weekday afternoon peak period (Tuesday through Thursday, 4:00 PM to 6:00 PM).

The cut-through analyses identified origins and destinations along major roadway corridors throughout the study area and traced whether traffic was circumnavigating expected travel routes along major roadways through the downtown area by using local residential roadways. The expected travel routes within the Downtown Walpole area would include Main Street, Elm Street, East Street, Stone Street, Common Street, and West Street. Figures 7 and 8 below give an overview of top traveled routes within the Walpole downtown area, during the weekday morning and weekday afternoon peak hours, respectively, from the major roadway zones selected in the StreetLight analysis. The width of each roadway link represents the relative proportion of traffic that entered the downtown study area and traveled on that roadway. Traffic *originating* from within the downtown study area is not represented on the figure.



Figure 7: Morning cut-through traffic patterns along Main Street corridor



Figure 8: Afternoon cut-through traffic patterns along Main Street corridor

As shown in the above figures, the following local roadways within the study area were identified to experience significant cut-through traffic during the weekday morning and weekday afternoon peak hours:

- Spring Valley Drive
- Greenwood Road
- Lewis Avenue
- School Street
- Kendall Street

The roadways identified above were primarily used to bypass the Main Street corridor traveling through the Downtown Walpole area. StreetLight data indicated that these roadways were used to either bypass Main Street through the downtown area reconnect to Main Street outside the Downtown area, or to travel east or west to and from Main Street, bypassing the signalized intersections along the Main Street corridor. Directional distribution of cut-through traffic on local roadways aligned with peak hour directional distribution of traffic along Main Street. These observations indicate that **it may be reasonable to assume that cut-through traffic during the weekday morning and afternoon peak hours is correlated with existing patterns of congestion along the Main Street corridor.**

StreetLight data estimated that approximately 15-20% of traffic traveling on Main Street during the weekday morning and weekday afternoon peak hours uses the identified local roadways as a cut-through route. StreetLight data estimates that, at least 30% of the total peak period traffic on Greenwood Road and School Street may be attributed to cut-through traffic from other major roadways. A detailed summary of the StreetLight analysis findings are provided as Appendix D.

Potential recommendations to reduce cut-through behavior around the downtown area would include traffic signal improvements and congestion control along the Main Street corridor. Following traffic signal adjustments,, t consideration could be given to additional traffic calming devices on neighborhood streets if cut-through traffic is not reduced to satisfactory levels. f As traffic calming on one street has the potential to move a cut-through pattern to an adjacent street, traffic calming measures could be considered along Maple Street and Hanson Avenue in addition to the streets identified above.

Level of Service and Capacity

Intersection capacity analyses were conducted using Synchro capacity analysis software at the Downtown Walpole study area intersections under 2022 existing and 2029 future design year peak hour traffic conditions. The analysis is based on Synchro capacity analysis methodologies and procedures contained in the *Highway Capacity Manual, 6th Edition* (HCM), which is summarized in Appendix E.

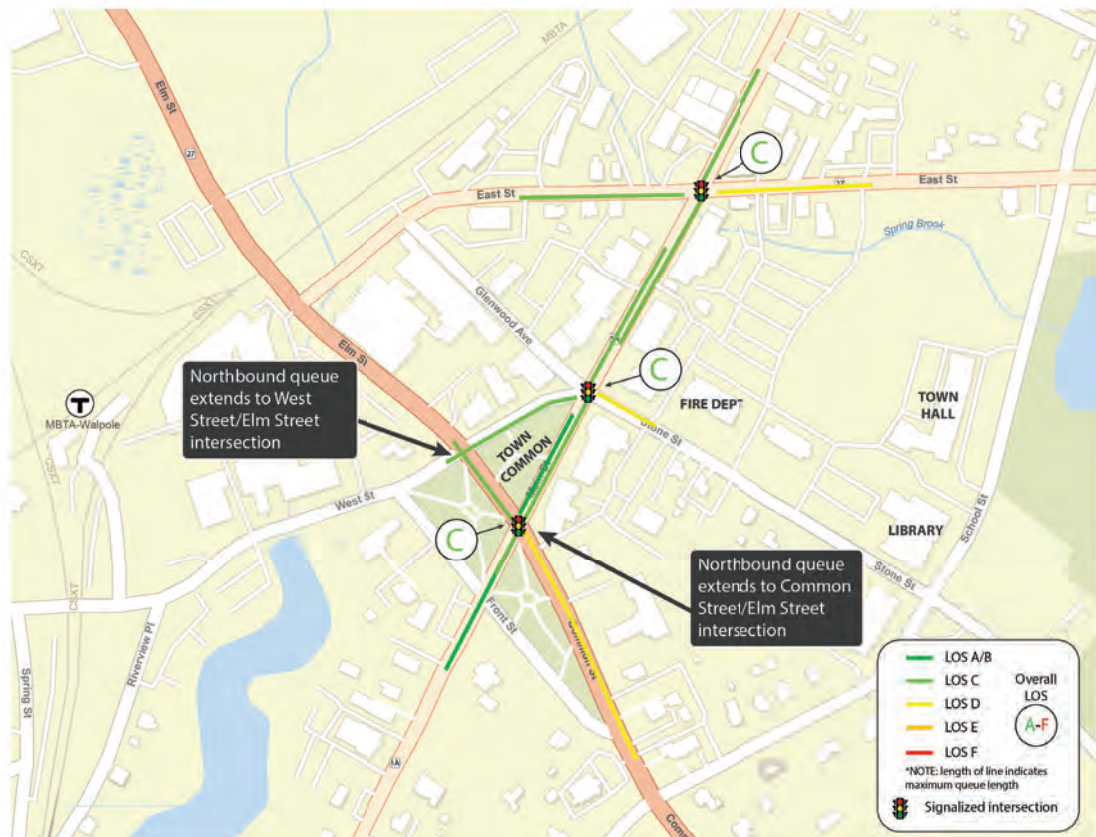
Average total vehicle delay is reported as level-of-service (LOS) on a scale of A to F. LOS A represents delays of 10 seconds or less, and LOS F represents delays in excess of 50 seconds for unsignalized intersections and 80 seconds for signalized intersections, respectively. A more detailed description of the LOS criteria is provided in Appendix D. Generally, LOS D is considered acceptable delay for most urban and suburban environments. LOS E and F are typically experienced in dense urban environments during peak periods and may be acceptable where increasing capacity is not feasible or not desirable.

Signalized Intersections

The capacity analysis results and estimated maximum queue lengths for the signalized intersection movements are shown in Figure 9.



AM LOS and maximum vehicle queues (2022 existing)



AM LOS and maximum vehicle queues (2029 No Build)

KEY FINDINGS

- The westbound approaches at each of the three signalized intersections along the Main Street corridor experience the highest delay during both the weekday morning and weekday afternoon peak hours when compared with the other movements at the signalized intersections.
- This delay, coupled with longer queues in the northbound and southbound directions along Main Street, may encourage cut-through traffic along School Street and Greenwood Road, as evidenced by the StreetLight data analysis.
- Utilizing School Street southbound allows drivers to bypass westbound delays along the Main Street signal corridor.
- Utilizing both School Street and Greenwood Road would bypass the longer queues running northbound and southbound along the Main Street corridor.

Unsignalized Intersections

The capacity analysis results and estimated maximum queue lengths for the critical movements at the unsignalized intersections in the study area are presented in Figure 10.



AM LOS and maximum vehicle queues (2022 existing)



AM LOS and maximum vehicle queues (2029 No Build)

Figure 10: LOS and queue length at unsignalized intersections

As shown in Figure 10, the unsignalized intersections operating with the highest vehicle delay are the intersection of Elm Street at West Street, and Elm Street at East Street. The movements experiencing an LOS of F and operating over capacity under 2022 existing and future 2029 conditions at the intersection of Elm Street at West Street are the Elm Street westbound movement and the West Street northbound movement during the weekday morning peak hour. This is a critical intersection that offers the most direct route to both MBTA access points on Elm Street and West Street from the Downtown Walpole area, for which there are no clear cut-through options. During the weekday afternoon peak hour, the westbound and northbound movements operate at LOS C under 2022 existing conditions and LOS D or better under future 2029 conditions.

At the intersection of Elm Street at East Street, the southbound East Street approach operates at LOS E during the weekday morning peak hour and LOS D during the weekday afternoon peak hour under 2022 existing conditions. Under future 2029 conditions, the southbound movement is projected to worsen to LOS F during the weekday morning peak hour and is projected to continue to operate at LOS D during the weekday afternoon peak hour. The increase in delay is likely due to additional traffic at the intersection from background growth and the potential additional traffic from future residential development along East Street.

The northbound driveway approach to Elm Street also experiences high delays; however, due to the low volumes utilizing the driveway, the northbound approach operates well below capacity.

The Synchro capacity analysis worksheets for the 2022 existing and 2029 no build traffic conditions are presented in Appendix F and Appendix G. Detailed summary of level of service, delay times, capacity measurements, and queue estimates are provided in Appendix H.

3. Short-Term Recommendations

Categories:



Signal Upgrades



Multimodal Improvements



Wayfinding

Summary of short-term recommendations

Recommendation	Cost	Status
Signal improvements	\$250,000	In progress
Improve Downtown public parking signage	\$10,000	Recently completed
Improve Downtown wayfinding	\$75,000	In progress
Improve pedestrian facilities	\$200,000	Partial progress
Improve bicycle facilities and bicycle parking	\$50,000	In progress
Side street traffic calming	?	May not be needed
Improve MBTA bus stops	N/A	Not started

The short-term recommendations are based on the following key findings:

Traffic Congestion

- Long queues at signalized intersections
- Traffic signals are not coordinated
- Vehicle detection systems are malfunctioning

Cut-through Traffic

- Peak hour congestion on Main Street leads to cut-through traffic on side streets

Multimodal Operations

- Pedestrian facilities and wayfinding can be improved
- Bicycle facilities are limited and may contribute to the lack of bicycle use
- Physical connections and wayfinding to the Commuter Rail station and bus stops can be improved

Based on the findings, key recommendations for easing traffic congestion in Downtown Walpole are associated with signal operations, enhancing connections for all modes of travel, and improving information through signage and wayfinding.

Recommendations for short-term improvements to Downtown Walpole’s multimodal transportation network are outlined below, along with associated preliminary cost estimates. Note that costs are approximate and are subject to change based on engineered design of each recommendation and fluctuations in material costs over time.

Topic	Issue	Short-Term recommendations	Approximate Cost
Traffic	Peak hour traffic congestion/ Neighborhood cut-through traffic	<ul style="list-style-type: none"> • Repair signal detection at Main Street and East Street, and Main Street and Elm Street • Coordinate signals along Main Street with time of day signal plans that cater to directional distribution patterns 	\$80,000
Traffic	Neighborhood cut-through traffic	<ul style="list-style-type: none"> • Coordinate signals along Main Street with time of day signal plans that cater to directional distribution patterns • Consider traffic calming devices on School Street, Lewis Avenue, and neighborhood streets that discourage through traffic if this remains an issue following traffic signal adjustments on Main Street 	\$65,000
Traffic	Poor sight distance at Elm Street and East Street due to MBTA overpass	<ul style="list-style-type: none"> • Add advance warning signage • Add all-way STOP control • Revise striping and add curb extensions to improve sight lines 	\$60,000
Pedestrian	Downtown Walpole walkability and pedestrian accessibility issues	<ul style="list-style-type: none"> • Revise pedestrian clearance times at signalized intersections • Provide countdown pedestrian signal heads and accessible push buttons • Provide sidewalk/crosswalks based on established pedestrian routes between MBTA Commuter Rail Station, “off-site” MBTA parking (Spring Street and Elm Street), and Downtown Walpole • Evaluate pedestrian connections from parking lots along Elm Street and Spring Street, and assess feasibility of adding crosswalks and pedestrian pathways 	\$200,000

		<ul style="list-style-type: none"> • Shorten crossing distances where feasible 	
Pedestrian / Wayfinding	Bay Circuit Trail (BCT) through Downtown Walpole	<ul style="list-style-type: none"> • Improve visibility of BCT blazes to support downtown pedestrian activity • Add crosswalk where BCT crosses School Street 	\$40,000
Parking / Wayfinding	Underutilized public parking lots Downtown Walpole	<ul style="list-style-type: none"> • Clarify on-street signage directing drivers to off-street public parking lots • Provide clear signage in off-street lots indicating hours of public parking and time limits • Improve visibility of entrances to public parking lots for pedestrians by providing adequate lighting, signage, and other place-making elements like plantings to promote a park and walk environment from off-street lots to Downtown Walpole businesses • Create an online parking map 	\$7,500
Pedestrian / Wayfinding	Connecting the MBTA Commuter Rail Station to Downtown Walpole	<ul style="list-style-type: none"> • Add wayfinding signage to MBTA Commuter Rail along pedestrian paths to/from Downtown Walpole (West Street and Elm Street) • Work with the MBTA to improve signage to Commuter Rail parking lots, including off-site lots 	\$7,500
Bicycle	Lack of bicycle accommodations	<ul style="list-style-type: none"> • Expand bicycle parking, especially near the MBTA Commuter Rail station, off-site MBTA parking lots, and Downtown Walpole parking lots • Provide pavement markings (e.g., sharrows) • Provide bicycle wayfinding signage 	\$10,000
Transit	Improve MBTA bus stops	<ul style="list-style-type: none"> • Work with the MBTA to add bus stop signs at Route 34E bus stops on Main Street • Initiate advocacy with the MBTA to extend Route 34E to the Commuter Rail Station 	N/A

4. Long-Term Capital Improvements

Categories:



Signal Upgrades



Street Configuration



Roadway and Sidewalk Reconstruction

Summary of long-term recommendation

Recommendations	Improvement Type
Changes to intersection configurations	 Street Configuration Updates
Upgrading signal equipment	 Signal Upgrades
Neighborhood roadway one-way conversions and traffic diversions	 Street Configuration Updates
Work with route finding apps (Google, Waze, etc.) to avoid neighborhood streets	 Other
Overpass reconstruction	 Roadway and Sidewalk Reconstruction
Reconstruct and/or widen sidewalks and pedestrian paths	 Roadway and Sidewalk Reconstruction
Consider closing Front/Elm Street to vehicle traffic and expand public space	 Roadway and Sidewalk Reconstruction
Consider upgrading pedestrian signal equipment	 Signal Upgrades
Reallocate less utilized on-street traffic for multimodal facilities or placemaking	 Street Configuration Updates
Install bicycle lanes or separated paths and consider providing bicycle signals	 Roadway and Sidewalk Reconstruction

Long-term recommendations described in the table below can be addressed in subsequent phases of this project. As each series of recommendations will require stakeholder engagement to determine the specific scope of improvements, costs estimates will be developed during a future phase of this study.

Topic	Issue	Long-Term recommendations
Traffic	Peak hour traffic congestion	<ul style="list-style-type: none"> Analyze options for overall circulation and street directions (see also pedestrian recommendations) Upgrade peer-to-peer signal communications Modify intersection configurations Provide overhead signals for East Street approaches at Main Street
Traffic	Neighborhood cut-through traffic	<ul style="list-style-type: none"> Design options for neighborhood streets to reduce through traffic such as limited one-way segments, physical diverters, and other treatments to encourage local traffic only. Work with route finding apps (Google, Waze, etc.) to discourage routes via neighborhood streets.
Traffic	Poor sight distance at Elm Street and East Street due to MBTA overpass	<ul style="list-style-type: none"> Revise circulation to make East Street one-way north from Elm Street (would re-route Route 27 North) Reconstruct/realign East Street at Elm Street intersection Reconstruct MBTA overpass to improve sight lines
Pedestrian	Downtown Walpole walkability and pedestrian accessibility issues (see Figure 11 for map of pedestrian recommendations)	<ul style="list-style-type: none"> Reconstruct sidewalks on north side of Glenwood Avenue and locate within the public right-of-way Reconstruct sidewalk on north/west side of East Street between Main Street and Glenwood Avenue, and connect with improvements to improve sight lines Reconstruct pedestrian path from Elm Street to MBTA Commuter Rail station Explore options to convert Front Street/Elm Street to prioritize people walking Widen sidewalks in Downtown Walpole to provide additional space for pedestrians and outdoor dining
Parking / Wayfinding	Underutilized public parking lots Downtown Walpole	<ul style="list-style-type: none"> Reallocate less utilized on-street parking on Main Street for traffic calming, placemaking, or pedestrian and bicycle infrastructure improvements
Bicycle	Lack of bicycle accommodations	<ul style="list-style-type: none"> Evaluate changing lane configurations to add bicycle facilities

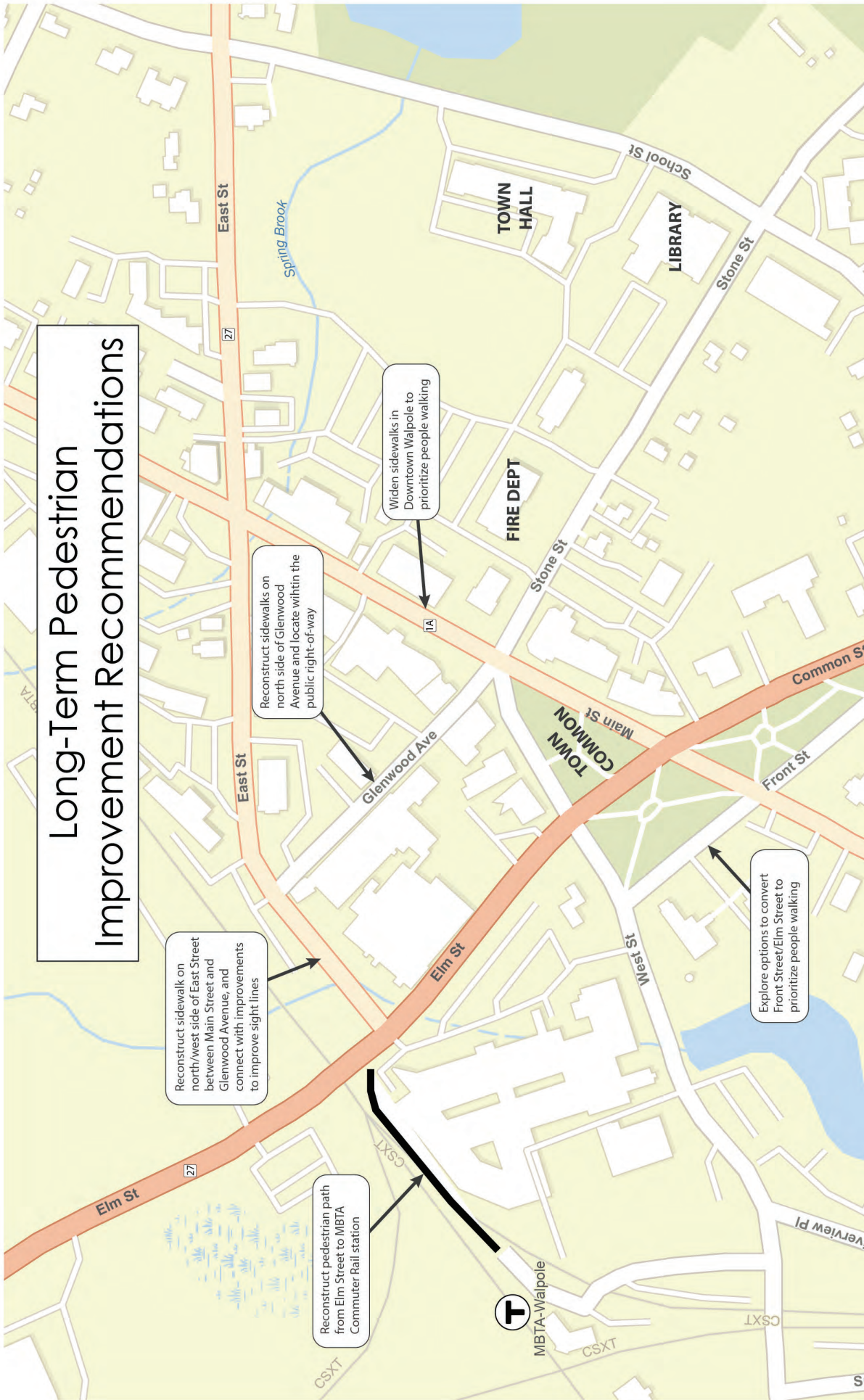


Figure 11: Long-Term Pedestrian Improvement Recommendations

5. Concept Examples

Examples and concept renderings of some of the above short-term and long-term recommendations are included below for illustrative purposes. See Appendix I for a full “toolbox” of potential improvements.

Potential Intersection Improvements

Existing:



With Improvements:



6. Conclusion and Next Steps

Short-Term Improvements

The short-term recommendations presented in this report will provide immediate, visible improvements to the multimodal transportation network in and around Downtown Walpole, improving traffic flow, pedestrian and bicycle accessibility and safety, and public parking and wayfinding. These improvements may be implemented through a combination of local funds and a variety of available competitive and non-competitive grants. Selected available funding programs from the Commonwealth of Massachusetts and national organizations are summarized below.

Long-Term Improvements

The next phase of this study will further examine the recommendations for long-term, more capital-intensive improvements in Downtown Walpole, including improvements to traffic signals and traffic control to provide more efficient operations and circulation, safety improvements, pedestrian and bicycle accommodations, and traffic calming measures to mitigate neighborhood cut-through traffic.

Funding

A variety of State and national funding programs are available to municipalities to support design and construction of infrastructure improvements. The following section presents selected competitive and non-competitive funding programs which the Town may wish to leverage to implement the short-term recommendations presented in this study, as well as future long-term improvements. Note that not all programs have a current funding round at this time, but may be re-authorized in the future.

- The **MassDOT Local Bottleneck Reduction Program** funds innovative solutions to address congestion bottlenecks on local roadways to improve traffic flow. Selection for award is based on congestion and delay metrics. Projects must be located on municipally-owned roadways, but project locations where congestion impacts State Highway rank higher in the application pool. Eligible project types include traffic signal retiming, detection, and equipment; signage; curb and intersection geometry changes including curb extensions and pedestrian refuge islands; restriping travel lanes including turn lanes, bus lanes, and bicycle lanes; and bus stop improvements. If selected, funding includes design by a MassDOT-selected consultant and construction up to \$500,000. Construction is administered by the Town, with costs reimbursed by MassDOT similar to a Chapter 90 project. The deadline for funding during Fiscal Year 2024 is March 31, 2023.
- The **MassDOT Winter Recovery Assistance Program (WRAP)** provides supplemental funding for cities and towns to improve their transportation networks in response to harsh winter weather, including resurfacing or reconstruction of roadways and sidewalks; repair or replacement of signs, traffic control devices, guardrail, and storm grates; and roadway

striping. This program is non-competitive, with funding allocated based on the centerline miles of roadway owned by each municipality. Walpole's maximum funding under WRAP is \$412,473.11. Costs for work conducted must be incurred between 7/1/2022 and 6/30/2023, with application for reimbursement received by the District State Aid Engineer by July 15, 2023.

- The **MassDOT Complete Streets Funding Program** provides up to \$500,000 to municipalities every four fiscal years to incorporate Complete Streets principles into roadway projects. Major project categories include intersection redesign, street reconfiguration and traffic calming, pedestrian crossings, pedestrian and bicycle network connections, transit improvements, and environment and streetscape investments. Construction is administered by the Town, with costs reimbursed by MassDOT similar to a Chapter 90 project. As Walpole last received an award in Fiscal Year 2020, the Town is eligible for up to \$500,000 beginning in Fiscal Year 2024. Only projects identified in a municipality's Complete Streets Prioritization Plan are eligible for funding; projects within the Downtown Walpole study area identified in the Town's 2019 Prioritization plan include pedestrian and bicycle improvements along School Street and Stone Street (project #1, 2, 4, 5, and 19) and reconstruction of the Common Street at School Street/Stone Street intersection (project #14). Application deadlines for Fiscal Year 2024 are May 1, 2023 for Round 1 and October 2, 2023 for Round 2. The Town's Prioritization Plan may be updated to include additional projects not identified in 2019; however, MassDOT is not providing additional technical assistance funding to update Prioritization Plans at this time. Updated Prioritization Plans must be submitted to MassDOT for review at least one month prior to the construction funding application deadline (April 3, 2023 for Round 1, and September 1, 2023 for Round 2).
- **Community One Stop for Growth** is a single application portal for twelve funding programs available from the Executive Office of Housing and Economic Development, Department of Housing and Community Development, and MassDevelopment. Funding programs available through the portal which support public infrastructure, streetscape, and placemaking include the **MassWorks Infrastructure Program, Housing Choice Grant Program, Massachusetts Downtown Initiative, Community Planning Grant Program, Site Readiness Program, and Commonwealth Places**. As each funding program has a variety of eligibility criteria and award amounts, applicants may submit an Expression of Interest (EOI) form for review and guidance toward the appropriate program or programs. For Fiscal Year 2024 funding, EOI forms are due March 17, 2023, and full applications for all Community One Stop for Growth programs must be submitted by June 2, 2023.
- The **AARP Community Challenge** provides small grants to fund "quick-action" projects that can help communities become more livable for people of all ages, including improved housing, transportation, public space, technology, civic engagement and more. AARP awarded \$3.4 million to 260 communities throughout the United States, Puerto Rico, and U.S. Virgin Islands in 2022, including projects in Boston, Chelmsford, Dennis, Westport, and

Worcester. The 2023 funding round is anticipated to open in January 2023, with applications due April 1, 2023.

- The **T-Mobile Hometown Grant** program, in partnership with Smart Growth America and Main Street America, focuses on revitalizing community spaces in towns with 50,000 people or less. Projects of up to \$50,000 each are funded on a quarterly basis, with up to 100 towns a year receiving an award. Quarterly application deadlines are March 31, June 30, September 30, and December 31, with notice of award 30 to 60 days following the end of each quarter.
- The **MassDOT Shared Streets and Spaces** program provides funding to municipalities to quickly implement a wide variety of improvements to plazas, sidewalks, curbs, streets, bus stops, parking areas, and other public spaces in support of public health, safe mobility, strengthened commerce, and speed management. Engineering and design costs may comprise up to 10 percent of a total project budget, and free technical assistance is available through the Barr Foundation to assist in project identification, development of conceptual or quick-build design, and preparation of a funding application. Award limits vary by project type, up to \$500,000. Construction is administered by the Town, with costs reimbursed by MassDOT similar to a Chapter 90 project. There is no current Shared Streets and Spaces round; the previous application round closed on March 1, 2022.