



# BRIDGEWATER DOWNTOWN

## Community Development Master Plan

- **Revitalization Plan**
- **Short and Long-Term Action Plan**
- **Appendices**

DRAFT

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Prepared for the Town of Bridgewater  
by The Cecil Group and Nelson\Nygaard

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# ■ Revitalization Plan



TOWN OF BRIDGEWATER

## Introduction

In 2014, The Cecil Group with traffic engineers Nelson\Nygaard worked closely with the Town of Bridgewater's Office of the Town Planner and Community Development Advisory Committee to create this revitalization plan. The combined efforts have led to a vision for the area and a comprehensive plan for the Bridgewater Central Business District. The plan was funded by a Community Development Fund grant in combination with a gift from Bridgewater State University and Bridgewater Savings Bank.

This revitalization plan addresses the revitalization of Bridgewater's Central Square and the surrounding area, which currently faces deteriorated sidewalks and roadways, high vacancy rate and business turnover, and deteriorated public and private buildings. The plan covers the following sections:

1. Branding and Marketing
2. Façade Improvement Program
3. Parking and Circulation
4. Streetscape Improvements
5. Focus Areas for Investment
6. Zoning Recommendations
7. Off-Street Utilities

Stakeholder input that aided in plan development was gathered in a variety of ways, including through a public workshop.

## COMMUNITY INPUT

*A public workshop was held on July 24 at Bridgewater State University. The attendance sign-in sheet recorded 67 individuals. During the workshop, feedback was solicited from attendees through various means.*

### Walking Tour Questionnaire Results

After the walking tour, 43 completed questionnaires were collected. In the following table, answers to the yes/no questions are ranked by their approval rating. In the open ended question responses, identical answers were counted and grouped.

The responses to the yes/no questions portray a generally low satisfaction with the current conditions of sidewalks, safety, streets, parking, crosswalks, and Central Square. See results on the previous page.

The open ended questions' answers offer insight into solutions that the attendees envision for the Downtown, with several repeating suggestions.

### What amenities or features might increase enjoyment of the Common as a park?

- Restaurants and cafes with outdoor seating (8 people)
- Gazebo/bandstand/stage for outdoor performances, such as music, dances, stand-up, and theater (8 people)
- Limit traffic (5 people)
- No parking around the Common, widen sidewalks (5 people)



## Walking Tour Questionnaire Results



Are you satisfied with the quantity and quality of sidewalks?



Does it feel safe and convenient to bike in Central Square?



Are the streets and sidewalks clean?



Are you satisfied with the on-street parking layout in Central Square (angled parking)?



Does it feel safe and convenient to cross streets?



Are you satisfied with the quantity and quality of crosswalks?



Is it convenient and inviting to walk to various locations in Central Square?



Is the Common inviting to spend time in?

Yes No No Answer

- Improved lighting (3 people)
- Noise reduction (2 people)
- Block the square for cars, only pedestrians
- No bike lanes
- Tree buffer zone, revamp sidewalks
- Better to have the fountain in the Common rather than at the Academy Building
- Something for children, nice atmosphere
- Easier parking
- More seating
- Some activity
- Remove angled parking
- Drinking fountain
- Umbrella tables
- More trash receptacles
- Vendors
- Clean the area

**If you were ruler of downtown what would be your first command?**

- “Keep it clean and weeded” (4 people)
- “Start a program with BR High School for students to earn community service hours by picking up trash around the downtown”
- “Clean it up! Improve building fronts”
- “Fix up sidewalks, storefronts, and parking”
- “Parking / pedestrian”
- “Cars must stop for pedestrians trying to cross in crosswalks (those not at lights)”
- “Block traffic at Central Square, provide parking elsewhere, flowers on gas lanterns, unified project with businesses, flower boxes in front of businesses, underground wires, and fill properties”
- “Clean up sidewalks, unified flower boxes, improve facades, improve curb appeal”
- “Slow traffic down, narrow roadways, shorten crosswalks”
- “Dress up the buildings, try to get more social friendly businesses to serve all residents. A ‘makerspace’ gathering place created by community for learning (like in Hartford, CT)”
- “Teach people to drive around rotaries”
- “Improve traffic patterns and speed”
- “Increase the number of highway personnel”
- “Have mixed use buildings”
- “Maintain the town center”
- “Find a way to reduce traffic despite impossibilities with through traffic”
- “Get rid of angled parking, create some one-way streets to control traffic”
- “More mixed use development and slower traffic”
- “Don’t let College Town truck park in front blocking views, clean up litter”
- “Traffic and facades”
- “Improve facades, improve handicap accessibility, improve overall appearance”
- “Eliminate all parking on the common and building a parking garage where the library parking lot stands or at the old fire station”
- “Make one side of the rotary pedestrian-only and other a typical street with two-way traffic”
- “Slow traffic”
- “Eliminate trucks through green, build parking garage in municipal lot, clean up trash”

- “Make the center a pedestrian walkway only, no cars, café tables in good weather”
- “Re-route traffic”
- “More entertainment, food options”
- “Reduce traffic through center, reroute”
- “Fewer cars”
- “Make it a destination, not a drive through”
- “Make it beautiful, friendly, full of excellent businesses”
- “Restaurant and services appealing to students and town people, more parking, more resident living space”
- “Center of Town needs to be upgraded, it is not safe”
- “I would put in a mid-priced restaurant, set up an Arts Festival, create a grant program for small businesses who want to locate themselves downtown”

## Community Electronic Polling Results

*The community was polled during the meeting to gauge their values related to planning topics. There were 53 active participants.*

### Prioritization of Focus Areas

The public was presented with eight focus areas. For each focus area, they were asked to rate from Not Important (1) to Very Important (5). To rank the relative interest in the eight focus areas, the total points given was divided by the total points possible with the specific number of respondents to each question.

### Prioritization of Focus Areas

FOCUS AREA	% OF POINTS AWARDED
Central Square area (B)	94%
Broad Street corridor (H)	89%
Plaza north of Central Square (C)	84%
Civic Plaza south of Central Square (A)	78%
Summer Street connector (D)	72%
Summer Street gateway area (E)	71%
Spring Street mid-block area (G)	69%
Hale Street area (F)	68%

Polls show that the community highly values the Central Square area and Broad Street as a connecting spur. Less importance is placed on other possible centers of growth, such as the potential gateway at the intersection of Summer Street and Plymouth Street, on Hale Street, and on Spring Street.

### Other Polling Questions

An additional two polling questions specifically addressed issues of particular importance in the planning area.

The first question polled attendees on their preference for on-street parking around the Central Square.



**Which of these options do you prefer regarding on-street parking?**

OPTION	% OF RESPONSES
No Parking	36.96%
Head-in Angled Parking	21.74%
Parallel Parking	21.74%
No Opinion	15.22%
Head-out Angled Parking	4.35%

Options for no parking, head-in angled parking (current situation), and parallel parking were the more preferred options, with almost 37% of the respondents voting for no parking at all in Central Square.

The second question polled attendees on their willingness to pay for alterations to the overhead utility poles throughout the entire Downtown area.

**Which of these options do you prefer regarding above-ground utilities?**

FOCUS AREA	% OF POINTS AWARDED
I would pay for off-street utilities	43.18%
No desire to pay for underground utilities	34.09%
I would pay for underground utilities	13.64%
No Opinion	9.09%

Options for moving utilities off-street or leaving utilities in their current position were most popular, with the desire to pay for off-street utilities as the most preferred option with 43% of the respondents.

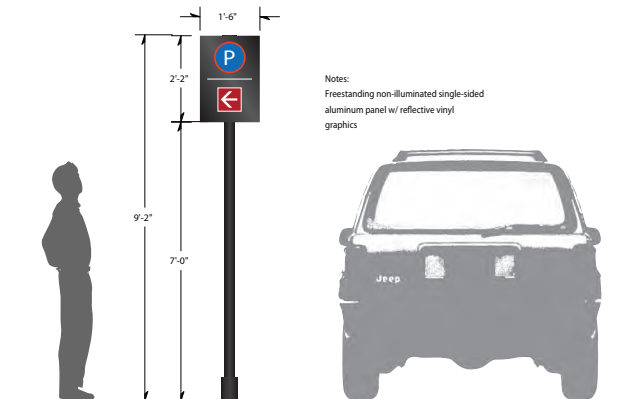
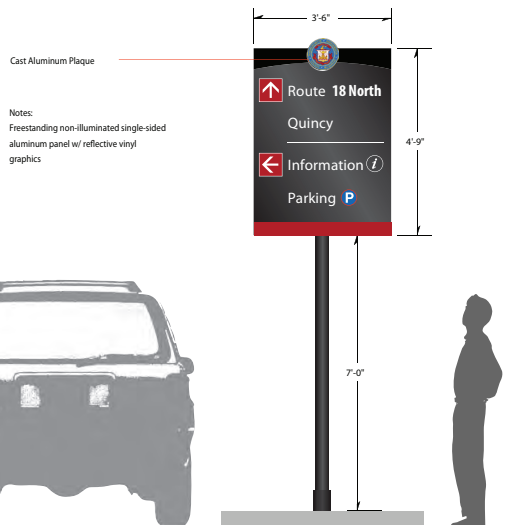
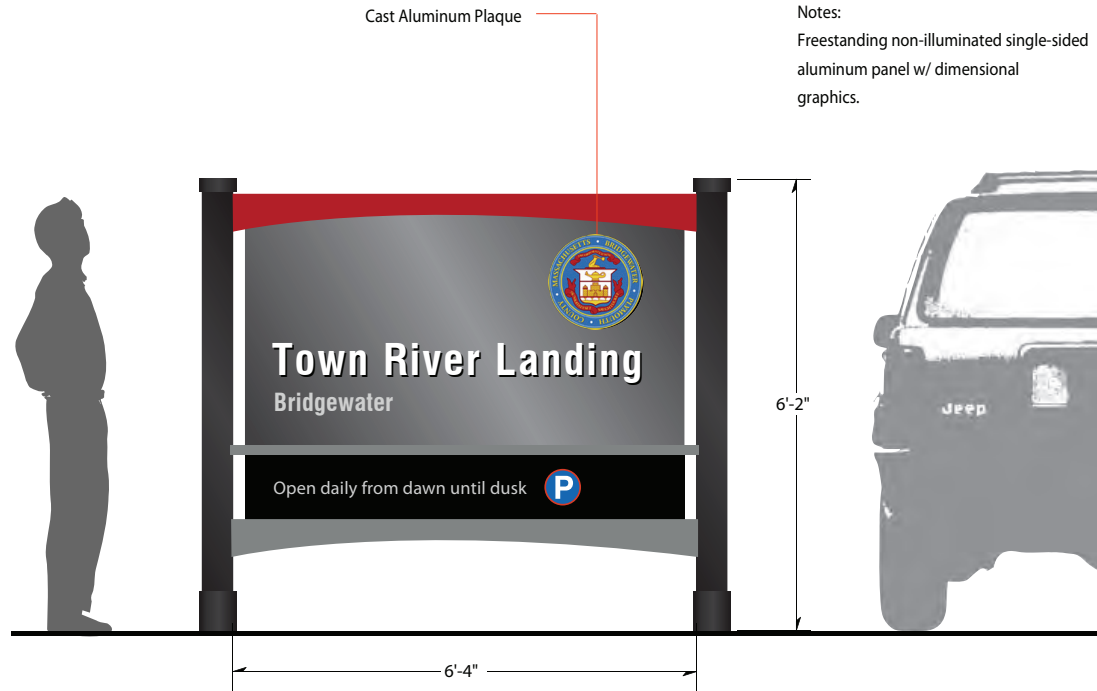
# Branding and Marketing



Bridgewater full-color seal



Bridgewater red



# 1 Branding and Marketing

*Town wayfinding directs visitors to destinations while also educating visitors on the boundaries, destinations and key features of the downtown.*

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## SPECIAL SIGNAGE FOR DOWNTOWN

Bridgewater can develop a specific vocabulary for residents and visitors to “read” in the streets, landmarks, nodal areas and unique districts. By utilizing a system of gateways, signage and streetscape elements, Bridgewater can enhance its legibility by visitors. At the same time, the signage can be used as a form of branding for downtown.

A perceived lack of public parking and access to parking can be addressed through improved signage and wayfinding for public parking through informational and directional signs.

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## WAYFINDING PROGRAM

To create a wayfinding program, Bridgewater should complete a design process that includes analysis of the range of information to be conveyed and the form of the signage. Shown on the previous page is a conceptual group of signs customized for Bridgewater downtown.

## Facade Improvement Program for Broad Street and Central Square

### Eligible Improvements

- Remove old signs
- Repair façade materials
- Restore display windows and doors
- Adding decorative/accenting materials and awnings

### Ranking Projects

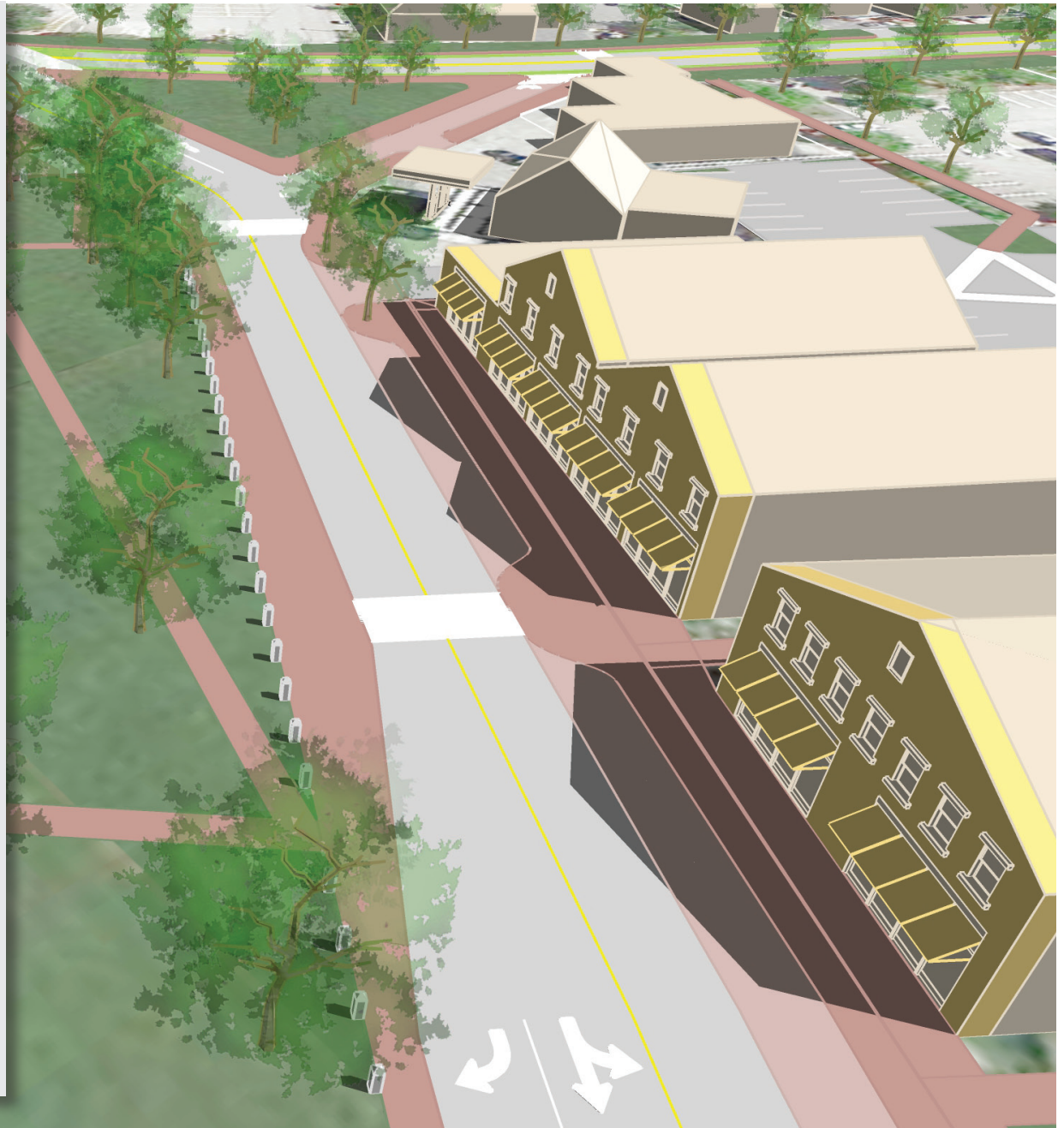
- Visibility to Public
- Correction of design problem
- Restoring historic structure
- Code compliance
- Entire façade improvement
- Need for funding

### Proposed Process

- Pre-application
- Application
- Review and decision
- Agreement
- Reimbursement

### Funding

- \$500 - \$25,000
- Grants and/or small loans



## 2 Façade Improvement Program

*The following recommendations describe various methods and components of typical façade and sign improvement programs that may be applied to downtown Bridgewater. These recommendations are intended as a resource guide as the Town moves forward in formalizing a façade & sign improvement program.*

### BASIC PROGRAM RECOMMENDATIONS

Most Façade & Signage Improvement Programs (FSIP) in Massachusetts provide matching grants to building and business owners in designated districts, such as the Downtown Zoning District, that are targeted for revitalization. In many smaller cities and towns, the maximum façade grant award of public funds will be \$5,000, to be matched by \$5,000 of private funds (a 50/50 matching grant). A 5-year preservation agreement, executed between the building owner and the Town, and recorded in the Plymouth County Registry of Deeds, should be required to protect the public investment in the façade work. Recommended sign and awning matching grant limits should be up to \$2,500 with a 5-year preservation agreement for eligible business or building owners. In all cases, a private match (50 percent or more) to public grant funds should be required. The match may be a combination of private funds, sweat equity, or other building improvements to be undertaken by the applicant in conjunction with the façade project.

### Administration

The Planning Department should administer the FSIP and offer technical assistance to applicants in obtaining design approval and processing preservation agreements, construction documents, and administering project funds. Payments for façade and signage grants should be contingent upon periodic inspections and project completion satisfactory to the Town. Recommended program materials and administrative forms include the following:

1. Façade & Sign Improvement Program District Map (private properties fronting on Central Square and Broad Street)
2. Façade & Sign Improvement Program Process Summary
3. Criteria for Project Selection
4. Façade & Sign Improvement Program Criteria Worksheet
5. Façade & Sign Improvement Preliminary Application Form
6. Façade & Sign Improvement Pre-Application Agreement
7. Façade & Sign Improvement Preliminary Application Form
8. Façade & Sign Matching Grant Review Form
9. Façade, Sign and Awning Preservation Agreement Form
10. Façade Improvement Deed Restriction Form
11. Façade and Sign Design Guidelines (Downtown Design Guidelines)

### Recommended FSIP-Eligible District

To be eligible for the program, it is recommended that commercial buildings be located within the Downtown Bridgewater Façade and Sign Improvement Program (DBFSI) District and each structure must be rated in fair, poor, or severely dilapidated condition by the Town. The selection of façade improvement projects should be based on a commercial building's distress level and other factors. The Plan-



## Facade Improvement Program for Broad Street and Central Square





ning Department should use a Program Criteria Worksheet, which awards points based on program priorities, including such factors as the degree to which an applicant's project will work to address the building's deteriorated condition and enhance the vitality of building and district and the projected cost of proposed improvements.

## DOWNTOWN BRIDGEWATER FAÇADE AND SIGN IMPROVEMENT DISTRICT

Building owners and businesses leasing space in the DBFSI should both be eligible for program funding. Tenants of commercial properties must be able to provide documentation of the building owner's consent for the improvements and the owner will be required to sign all application forms and materials. Tenants will also be required to provide a copy of their lease agreement, which indicates the lessee's responsibility for property renovation and repair. Owners should be required to execute the façade preservation agreement. Tenants applying for program funds to install new signage and/or awnings should be required to execute a similar preservation agreement to ensure the improvements are maintained over time.

### Recommended Types of Eligible Improvements

Eligible improvements should include:

1. Removal of old signs, awnings, brackets, and other exterior clutter.
2. Exterior cleaning and painting.
3. Application of new exterior materials consistent with building's historic characteristics.
4. Repair of exterior brickwork, plaster or clapboard.
5. Installation of new entry doors with handicapped access.
6. Installation or restoration of display windows.
7. Installation of new canvas awnings over windows and entries.
8. Installation of new signage.
9. Application of ceramic tile or other decorative material on exterior walls to accent openings.
10. Ineligible improvements should include:
11. Leasehold or other interior improvements.
12. Purchase of business equipment and supplies.

Labor costs should be subject to review and approval by Planning Department. All improvements must conform to State Building Codes, the Bridgewater Zoning Bylaw and the Town's Design Guidelines. Applicants' proposals should be subject to review by an appointed Design Review Committee.

### Recommended Application Procedure

1. Prior to completing the full application, interested property owners and tenants should submit a brief pre-application form describing their proposed project. Should the project meet the basic criteria for the program, the building owner or tenant would meet with the Bridgewater Planning Department (BPD) in a Pre-Application Meeting to review proposed renovations and application process. No pre-application fee would be required. Applicants would be notified whether they would be eligible and whether they are likely to achieve approval, subject to completion of the grant application and review.
2. If eligible, the building owner or tenant then completes the full application and returns it to the BPD. If the applicant is not the property owner, documentation should be required proving the applicant has the authorization of the property owner to undertake the façade work. This includes the owner's signature on all application forms and materials. BPD staff reviews the application with the members of the Design

Review Committee to determine eligibility and whether the proposed activities are within program guidelines.

3. Once an application receives preliminary approval by the BPD and the Design Review Committee, the applicant should be notified and required to pay a non-refundable façade improvement application fee (typically between \$100 and \$250). Upon payment of the application fee, the BPD may arrange a meeting between the applicant and a design representative. The applicant may work with a design representative, who will develop schematics and a description of the proposed façade, signage/awning improvement work, and prepare preliminary cost estimates.
4. The applicant and/or a design representative should appear before the Design Review Committee for a complete review of the proposed façade project. The Committee will evaluate the proposed work considering such issues such as architectural treatment of the building, impact on adjoining properties, feasibility, and other program criteria.
5. The applicant should be notified of the Committee's decision. If the Committee approves the applicant's project for façade program funding, BPD staff will work with the applicant to complete final paperwork. In most cases, conditions of approval will include:

1. Satisfactory proof of ownership and certification:



separate, higher bid, then the applicant should be responsible for the cost difference. A construction contract should be prepared by the BPD and executed by and between the applicant and the selected contractor.

6. The matching funds required of the applicant should be provided to the BPD and deposited in an escrow account. Typically, BPD staff will process payment for the façade improvement project, drawing from match funds and public funds equally.
7. The contractor must obtain all permits and approvals required by the Town.
8. At approximately 50% and 100% completion, the Town should inspect the work for workmanship and conformance to the plans. The applicant should be furnished with an inspection report noting any changes that need to be made.

Upon completion of the construction project, the façade preservation agreement should be recorded at the Plymouth County Registry of Deeds. In the case of a sign/awning project, the Town should maintain the preservation agreement on file.

## Recommended Criteria for Project Selection

The following criteria are recommended as the basis for distinguishing among qualified applicants for matching grants for façade, signage and awning improvement projects. These criteria are intended to fulfill the goals of the Façade & Sign Improvement Program and to advance the civic purposes of the Town. Specifically, the Façade & Sign Improvement Program provides financial assistance that will trigger high quality and coordinated improvements. The improvements are intended to incrementally contribute to a substantially improved retail and business environment in the Downtown FSIP District.

Applicants should be comparatively ranked according to the following criteria:

- Highly visible locations that will most affect the visual experience of the district should be favored over less visible locations.
- Projects that substantially correct existing façade design problems should receive a higher priority than those that are correcting normal or deferred maintenance.
- Projects that revitalize historic structures should receive priority consideration.
- Projects that improve the attractiveness of the entire façade should be favored above those that improve only portions of a building's appearance.
- Projects that will utilize grant funding to create visible changes should be preferred relative to projects that may fund code corrections or non-visible building improvements.
- Projects that would either be deferred or not undertaken without funding assistance.
- Projects that multiply their impact because of adjacent conditions.

A grant application and processing fees should be required for all approved grants to cover the legal costs, processing the grant forms, undertaking inspections, and other administrative costs. The fee would be due upon submittal of an application. For applications that are rejected by the Town, the fee should be returned to the applicant.

## POTENTIAL FUNDING SOURCES

There are many Façade and Sign Improvement Programs across Massachusetts with varying funding sources and program requirements. Generally, most successful programs are matching grant

programs with larger amount of funding provided by public sources such as Community Development Block Grants (CDBG) or Program Income (recycled CDBG loans used for other previous projects). Other programs are funded through low-interest or no interest loans using public funds or private funding provided by local financial institutions. Some examples of municipal programs using various funding programs relevant to Bridgewater are described below.

Different funding levels are usually established for façade improvements, awnings, and signs. While there are programs which are entirely loan-based they don't typically generate the interest from local business owners as matching grants. The match varies but is typically at 50% public and 50% private funding. The maximum amount of public match also varies greatly depending on the total amount of funding in the program. Most programs are also coordinated with design guidelines and review process, and some provide free design services by professional designers.

## Matching Grant Programs

The vast majority of Façade & Sign Improvement Programs are funded through Community Development Block Grants (CDBG), HUD 108 Loan program, MassDevelopment funds, and program income from previous federal economic development loans made to local municipalities. These are highly competitive programs and funding tends to be directly to lower-income communities. The Town of Bridgewater qualifies for Community Development Funds I (Small Cities CDBG Program) from the Massachusetts Department of Housing and Community Development (DHCD).

The Town of Norwood provides a good example. The town created a Downtown Façade and Sign Improvement Program in 1998 along with design guidelines used to provide appropriate façade treatments including restoration, maintenance and accessories such as signs and canopies. Over a 12 year period, Norwood obtained four rounds of Small Cities CDBG grants from DHCD. A total of 12 building façade improvement projects and 45 storefront projects have been completed as of 2010 using a total of \$1 million in public funds which were matched by over \$1.5 million in private investment.

## Loan Programs

There are several examples of low-interest loan pools across Massachusetts which are used for various business development programs including façade and sign improvements. The best opportunity for Bridgewater is to work together with local banks, credit unions and other financial institutions to create a low-interest loan pool for business development including façade improvements. Three programs that utilize a combination of grant and low/no-interest loans that may be relevant to Bridgewater have been identified and described below; Quincy, Beverly, and Adams.

**Quincy 2000 Collaborative**, established in 1992 as a private, non-profit economic development corporation, has a Low Interest Loan Pool with over \$5 million funded by a coalition of 11 banks and supplemented by the City of Quincy CDBG Revolving Loan Fund. The Revolving Loan Fund was created using funding provided through the City of Quincy Community Development Block Grant (CDBG) program. Note that the City is an “Entitlement City” meaning that they receive an annual allotment of funds directly from HUD to use at their discretion of eligible community development programs such as housing, infrastructure and econom-

ic development. Together, these funds can be used by start-up or expanding businesses for façade and signage improvements, business improvements, and equipment purchases.

The loan pool is administered by Quincy 2000, and loans range from \$20,000 to \$200,000. These loans can be used for machinery and equipment, inventory, working capital, leasehold improvements and other start up or expansion expenses. Loaned on a term/installment basis, the program fills the gap for businesses that do not qualify for adequate conventional financing. The program serves all types of businesses – new or existing, service, retail, industrial or commercial.

The **Beverly Façade Improvement Program** provides 50/50 matching grants for façade improvements up to \$5,000 for one-story buildings and \$10,000 for multiple-story buildings. Beverly supplements this program with a low-interest loan pool. Currently Beverly Cooperative Bank and Beverly National Bank participate and offer financing of up to \$40,000 for approved projects for qualified applicants. Façade improvement loans are payable over a 7-year term at an annual interest rate equal to the Prime Rate - 0.5% fixed or floating at the election of the applicant.

The **Adams Downtown Façade & Signage Improvement Program** provides both matching grants and/or no interest loans to building and business owners. The grant portion of the program is funded through a Small Cities CDBG from the state. In most cases, the maximum award is \$38,500 but some larger renovation projects may receive the maximum award, which can be as high as \$50,000. A 10-year preservation agreement, executed between the building owner and the Town of Adams, and recorded in the Registry of Deeds, is required to protect the public investment in the façade



work. Sign and awning grant amounts are estimated to be \$2,500 and \$3,500 respectively and a 5-year preservation agreement will be required of the business or building owner. In most cases, a private match (usually 50%) to grant funds is required. The match may be a combination of private funds, sweat equity, or other building improvements to be undertaken by the applicant in conjunction with the façade project. The Adams Co-Operative Bank and Greylock Federal Credit Union have committed loan funds to aid businesses and building owners participating in the Downtown Façade & Signage Improvement Program. The Adams Co-Operative Bank also offers a discount of 1% below the standard loan rate for program participants.



*Facade/Signage Improvement Program recommendations may include facade painting, new awnings, and new signage appropriate to the building style and downtown character.*

## Parking and Circulation: Pedestrian Improvements

Transportation principles are designed to encourage both placemaking and economic development in downtown Bridgewater. These interrelated principles work together to achieve the Town's identified priorities:

- Improve pedestrian safety and access
- Promote a “park once” environment
- Reduce heavy truck volumes through Central Square
- Slow traffic through downtown
- Promote available parking
- Accommodate cyclists

Examples of bulb outs and curb extensions



### 3 Parking and Circulation

#### PEDESTRIAN IMPROVEMENT RECOMMENDATIONS

##### Crosswalks

Crosswalks in downtown Bridgewater should maintain consistent marking patterns to stand out from other pavement markings as well as to be seen from a distance. Crosswalks enhance placemaking and reinforce Downtown Bridgewater as a pedestrian environment and place. Visible crosswalks reinforce pedestrian right-of-way at intersections as well as helping to guide pedestrians along a designated path. Bridgewater currently uses “Standard” crosswalks, as illustrated below.

The public, as surveyed through the visual preference exercise, pre-



plowing difficulties. Potential materials for a patterned crosswalk include inlay tape, granite paints or stamped colored concrete.

1 [http://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/sidewalks/chap4b.cfm](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalks/chap4b.cfm) Section 4.4.5

National guidelines (Federal Highway Administration) recommend Continental and/or Zebra style crosswalks, as they have been proven to provide greater visibility for pedestrians.<sup>2</sup> In Bridgewater, pedestrian visibility is paramount to enhance pedestrian safety, as there is significant vehicular traffic, particularly through Central Square. The Town should consider the tradeoffs between aesthetics and safety when determining crosswalk type.

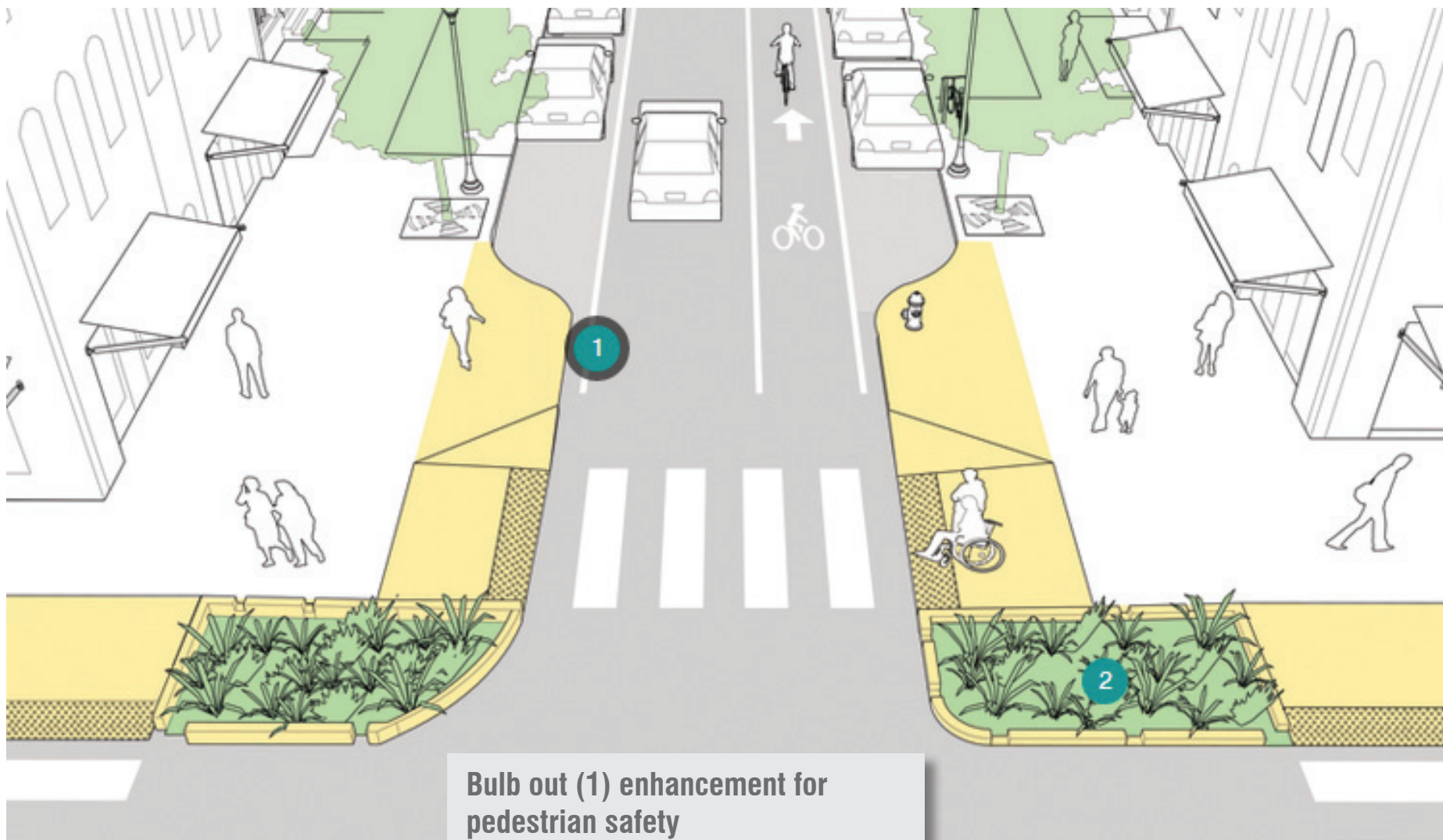
**RECOMMENDATION:** In the short-term, stripe crosswalks with Continental, Zebra, or Ladder-style to enhance pedestrian visibility. In the long-term, use patterned crosswalks that are ADA-compliant.

2 *Ibid.*





## Parking and Circulation: Pedestrian Improvements



**Bulb out (1) enhancement for  
pedestrian safety**

**Curb extensions (2) with planters**

IMAGE SOURCE: NACTO URBAN STREET DESIGN GUIDE, [HTTP://NACTO.ORG/USDG/  
STREET-DESIGN-ELEMENTS/CURB-EXTENSIONS/GATEWAY/](http://nacto.org/usdg/street-design-elements/curb-extensions/gateway/)

## Curb Extensions

Curb extensions are a traffic calming measure, primarily used to extend the sidewalk and narrow the roadway. Curb extensions provide the following benefits to pedestrians and drivers:<sup>3</sup>

- Reduce the roadway crossing distance, and therefore exposure to vehicular traffic, for pedestrians
- Calm vehicular speeds by narrowing the roadway both on roadway segments and at intersections
- Increase overall visibility by allowing pedestrians to start crossing from the edge of the parking lane, rather than through it

3 Adapted from the National Association for Transportation Officials Urban Street Design Guide, <http://nacto.org/usdg/curb-extensions/>



CURB EXTENSIONS: LEFT - QUEENS, NY, RIGHT - WESTMINSTER, MD

- Create additional public space for benches, tables, and other street furniture and/or plantings

In Bridgewater, there are some existing curb extensions at Central Square along the retail storefronts, although most do not line up with crosswalks.

Additional locations for potential extensions include the ends of each crosswalk around Central Square, Broad Street, and other high traffic volume areas. These locations are included in the specific Central Square and Broad Street recommendations that are shown later in this section.

**RECOMMENDATION: Add curb extensions at key crosswalks and intersections at high volume areas.**

## Pedestrian Connection Through Municipal Lot to BSU

As shown in the map below, the current pedestrian network in Bridgewater is generally good. Most roads, with the exception of Hale Street to the north, have sidewalks on both sides and numerous marked crosswalks to indicate the presence of pedestrians.

However, a few issues hinder the network from being completely accessible to pedestrians. Signalized intersections lack functional pedestrian countdown signals. Crosswalks are long, due to wide roadways, and expose pedestrians to vehicular traffic for long amounts of time. Some pedestrian routes are circuitous and more direct pathways exist off-street along key desire lines.



## Parking and Circulation: Pedestrian Connectivity and Improvements





Refer to **Connectivity Map**.

The Town can improve the pedestrian environment through:

- **IMPROVING PEDESTRIAN FUNCTIONS AT SIGNALIZED INTERSECTIONS** – This will enhance safety and reduce delay (and frustration) by indicating the safest time in the overall signal cycle to cross the roadway. The Town should consider:
  - \* Introducing countdown signals where they don't exist today
  - \* Adding a “leading pedestrian interval” (LPI) at concurrent intersections with heavy turning movements
  - \* Modifying cycle lengths to reduce pedestrian wait times
  - \* Retiming signals in conjunction with shorter pedestrian crossings
  - \* Using exclusive crossings at heavy pedestrian areas/times
- **REALIGNING CROSSWALKS TO SHORTEN CROSSING DISTANCE**– There are numerous pedestrian connections that could be made safer and easier to cross through improved or new crosswalks and curb extensions:
  - \* The crosswalks at the southern end of Central Square are diagonal and travel past a curb extension to the sidewalk. These could be realigned to create a more direct route between the Green and the sidewalk on the other side of the street.
  - \* The northern end of Central Square also has several diagonal crosswalks that could be straightened and shortened, potentially in conjunction with an intersection redesign.
- **CREATING PEDESTRIAN PATHWAYS** – Bridgewater's street grid can be supplemented by off-street pedestrian pathways:
  - \* The link through the municipal parking lot to Bridgewater State College should be designated and promoted as a pathway, as shown in the diagram below. This internal link connects Central Square to CVS, School Street and the Town Lot on a pedestrian-exclusive

pathway. The path could be delineated with simple paint or other materials.

- \* The Town should also pursue a pedestrian link to the Nunckatessett Greenway via the Town lot on Spring Street.
- \* New developments should also evaluate and include pedestrian links and connections.

**RECOMMENDATIONS: 1) Improve pedestrian functions at signalized intersections; 2) Realign crosswalks to shorten crossing distance; 3) Create pedestrian pathways.**

## Parking and Circulation: Bicycle Improvements

### PRINCIPLES

- Plan for a connected network
- Need for parallel facilities
- Connect to BSU, MBTA, and Central Square and Broad Street
- Identify and sign safe roadways for cyclists
- Add visible short-term bicycle parking

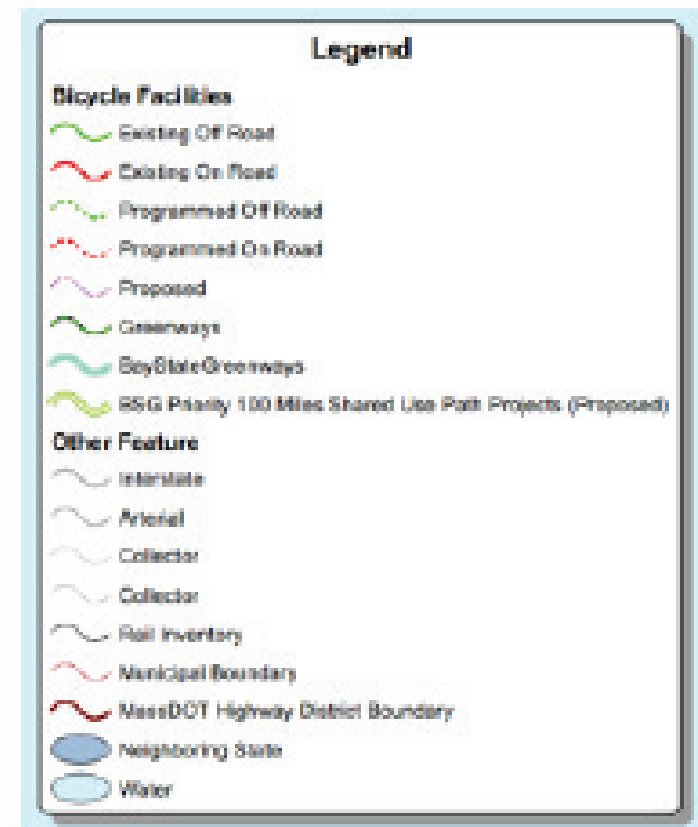
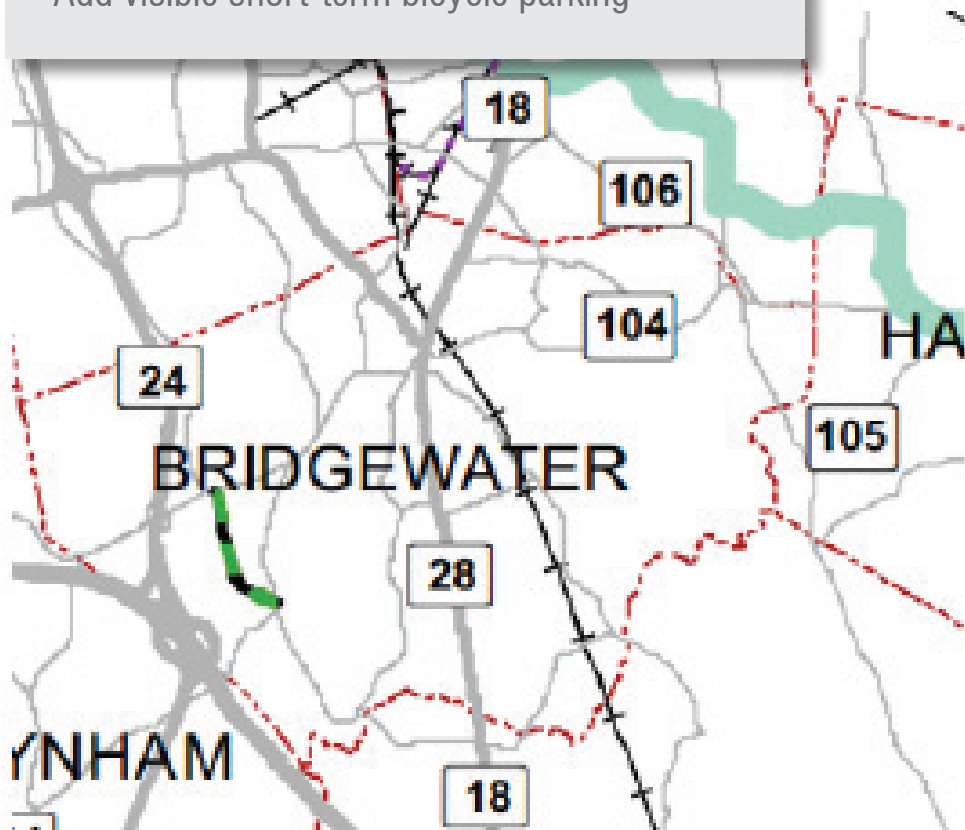


IMAGE SOURCE: MASSDOT, 2011 [HTTP://WWW.MASSDOT.STATE.MA.US/PORTALS/17/DOCS/MAPCATALOG/MAPS/BICYCLEFACILITIES2011-STATEWIDE.PDF](http://www.massdot.state.ma.us/portals/17/docs/mapcatalog/maps/bicyclefacilities2011-statewide.pdf)



## BICYCLE IMPROVEMENT RECOMMENDATIONS

Bicycle facilities are similar to roads in that they have a more regional scope than pedestrian facilities. Adding a bicycle lane on one block of a street does not improve overall connectivity for cyclists who still need a safe and direct path to and from that block. Thus, the team identified the following principles for bicycle connectivity in Bridgewater:

- **Create a connected network:** A comprehensive approach to bicycle planning will create a useful network that connects key destinations in Bridgewater. Not every road may be suitable for cyclists – in contrast, thinking comprehensively and regionally can help identify less traveled roadways that could serve as key cycling links.
- **Need for parallel infrastructure:** Avoid creating bicycle facilities that only allow travel in one direction. For example, if the Town adds a bicycle link to one side of Central Square, the other side should also have a bicycle facility.
- **Connect to destinations:** While some cycle purely for recreational reasons, it is important to create a network that connects to places. This will encourage and facilitate access for a full range of users.
- **Identify and sign safe roadways for cyclists:** Designating safe routes for cycling is the first step in building bicycle facilities; use marks on the street to identify routes.
- **Add visible short-term bicycle parking:** Visible bike racks, located near the front doors of buildings, will indicate that Bridgewater and its businesses welcome cyclists.

## Connectivity/Regional Bicycle Network

There are currently no formal bicycle facilities in Bridgewater, as shown by the map below.

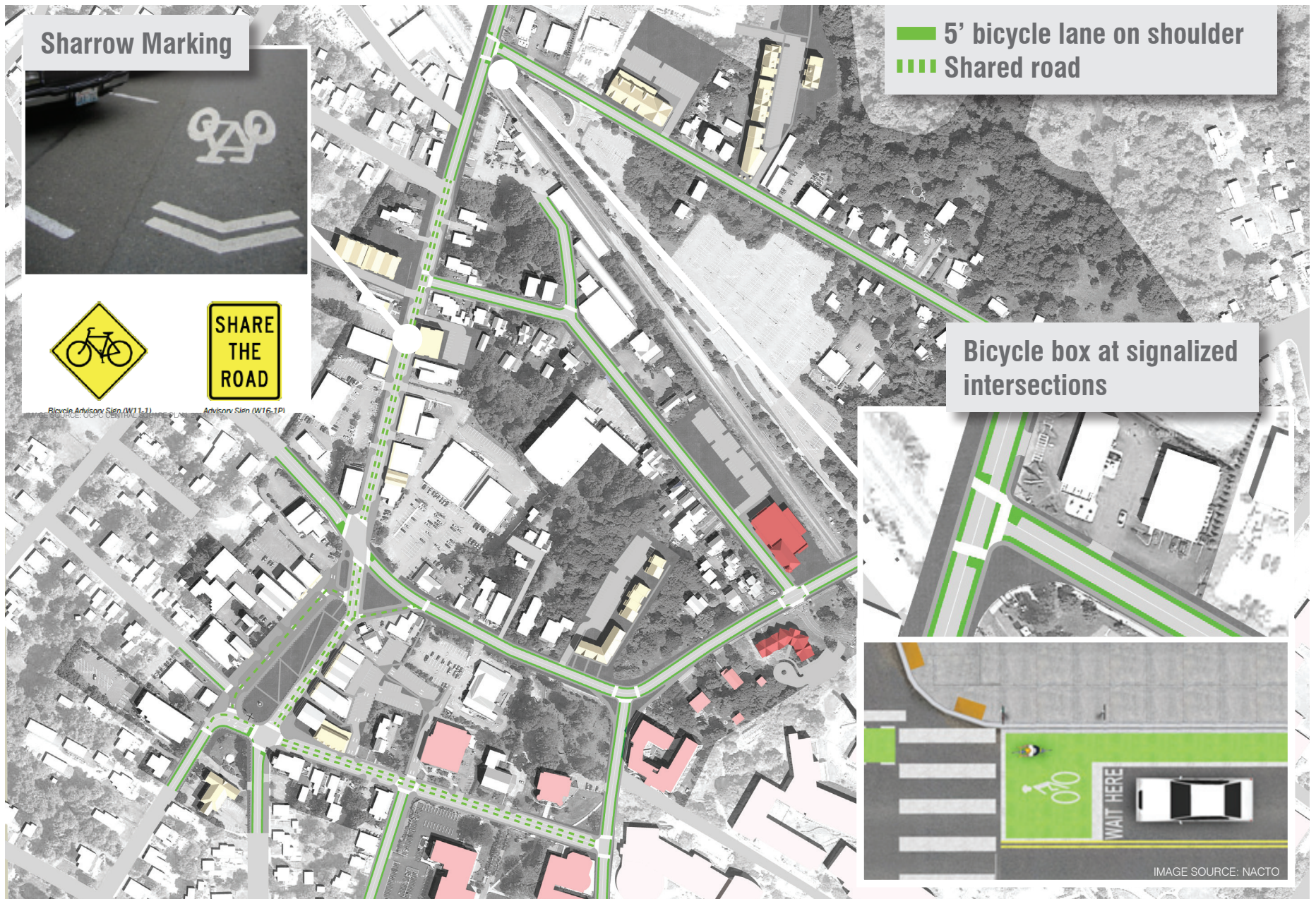
Potential key destinations that bicycle access could serve include:

- Downtown Business District (Central Square, Broad Street)
- Bridgewater State University
- Bridgewater MBTA Commuter Rail Station

The Town should plan for a bicycle network, however, it is important to note that bicycle facilities vary. Much like road or even sidewalk hierarchies, different types of bicycle facilities are appropriate in different areas. For example, simply adding a bicycle advisory sign to a low-volume residential street such as Hale Street may be enough to improve cyclist safety and designate the street as a route. In contrast, a heavily traveled roadway such as Broad Street may require a painted or buffered bicycle lane. The Town should work with BSU in developing a bicycle plan.



## Parking and Circulation: Bicycle Connectivity and Improvements





## Central Square/Broad Street

The Old Colony Planning Commission (OCPC) published the *Central Square Parking Bicycle Pedestrian and Traffic Operations Improvement Plan* in March of 2014. The Plan describes potential bicycle improvements in and around Central Square. Based on these suggestions, the Town should not only pursue a Town-wide Bicycle Plan, but prioritize bicycle accommodations in the downtown that tie into the regional network.

In the short term, installation of signage and bicycle racks are quick methods to both raise awareness of and accommodate cyclists. Signs such as those shown below are standard and alert drivers to the presence of cyclists. Bicycle parking facilities prevent informally parked bicycles from blocking other rights-of-way such as sidewalks or driveways. Racks should be located in the “furnishing zone” of a sidewalk, where they will not be in the main pedestrian path.

In addition to bicycle parking location, the type of rack is also important. The Association of Bicycle and Pedestrian Professionals (APBP) recommends bicycle racks that:

- Support the bicycle in at least two places, preventing it from falling over
- Allow locking of the frame and one or both wheels with a U-lock
- Are securely anchored to ground
- Resist cutting, rusting and bending or deformation.<sup>4</sup>

Bicycle parking can be for short, quick access locations such as in front of a grocery store, or for long-term needs such as commuter or employee parking. As shown in the image below, needs change depending on the length of parked time.

<sup>4</sup> APBP Bicycle Parking Guidelines 2nd Edition, 2010, p.2-2

Short-term spaces are often uncovered and located in visible locations (and near building front doors). Longer-term bicycle parking facilities often include covered racks, lockers, or indoor storage.

Preliminary facility improvements in addition to signage and bicycle racks may include:

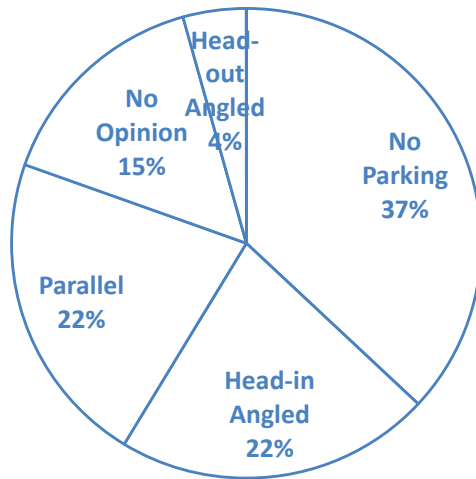
- **Sharrows:** These pavement markings can provide great value to cyclists, particularly where there is not enough roadway right-of-way to implement a full bicycle lane. Sharrows remind motorists to be aware of cyclists as well as helping cyclists feel more comfortable on the road.
- **Bike Boxes:** In areas without significant bicycle infrastructure, it is often most efficient to focus on intersections before roadways as this is where most conflicts occur. Improvements such as bicycle boxes or even striping just at the intersection can help raise cyclist visibility.

**RECOMMENDATION: Create a Town-wide bicycle plan to identify a complete bicycle network**

## Parking and Circulation: Parking Management Strategy

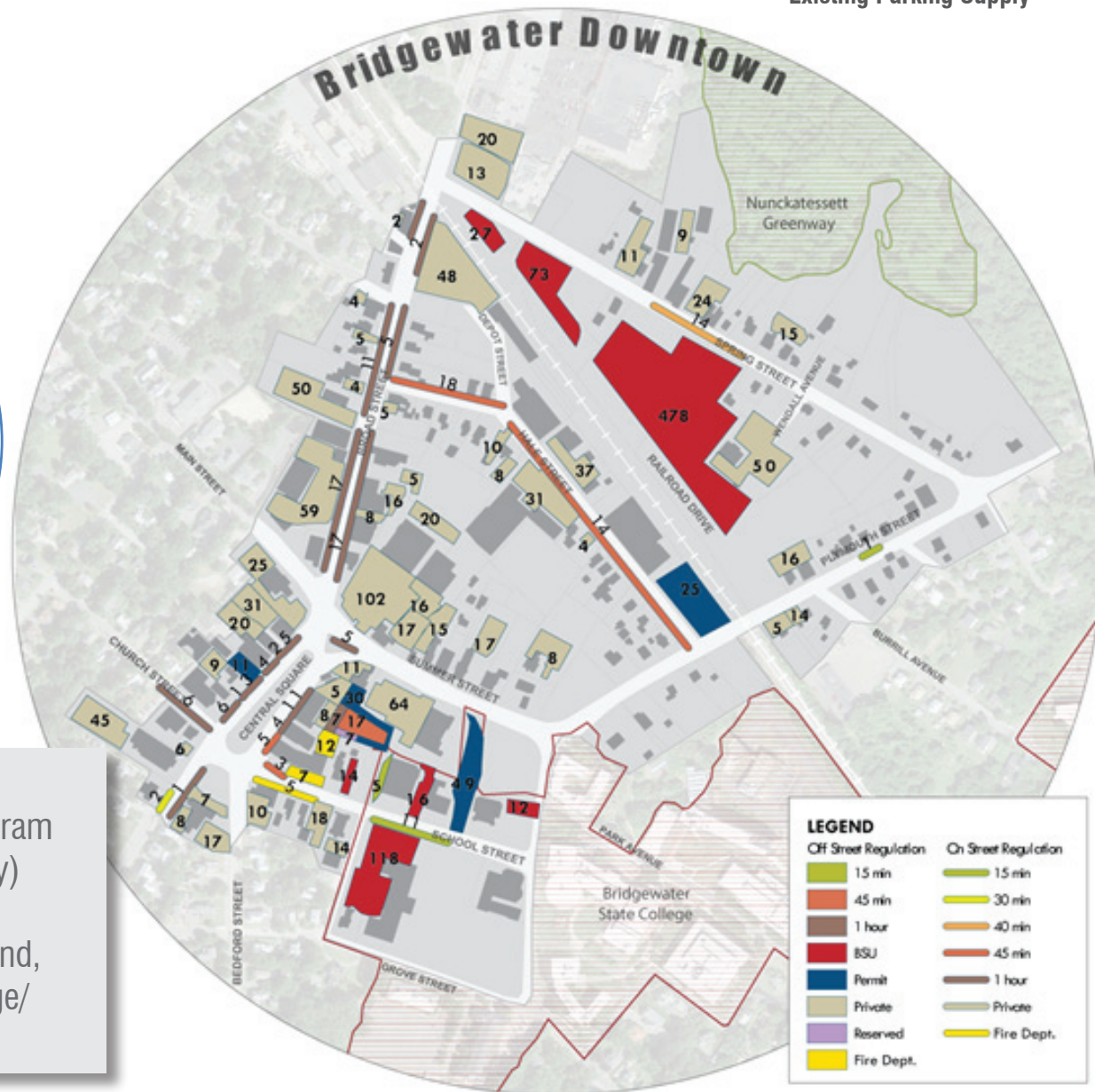
### Existing Parking Supply

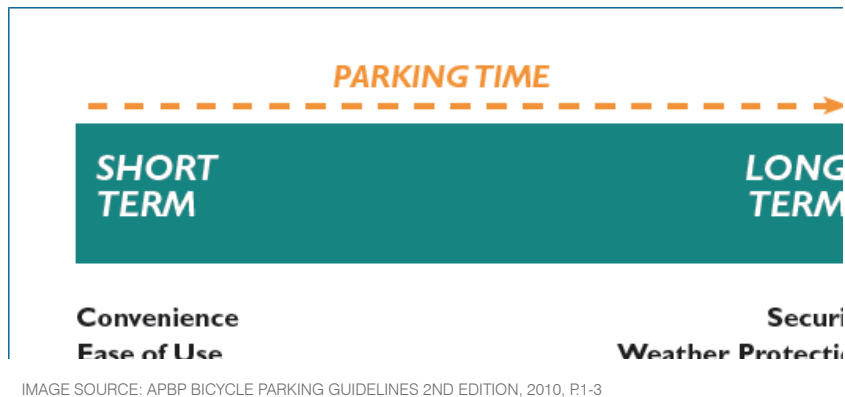
#### Survey Results from Public Input Session on Central Square On-Street Parking Options



#### Extend time limits to 2 hours

- Explore long-term parking program
- Streamline regulations (simplify)
- Use uniform and clear signs
- Monitor/evaluate parking demand, particularly as land uses change/downtown grows





## PARKING MANAGEMENT

On-street parking is currently time-limited with a variety of regulations, shown in the diagram of **Existing Parking Supply**.

The team recommends the following parking management improvements:

- **EXTEND TIME LIMIT TO 2 HOURS** – Currently, there are no publicly accessible places to park in Bridgewater for more than one hour. This discourages patrons from visiting more than one establishment downtown and/or spending significant time in downtown public spaces. Extending the regulations to two hours would encourage customer activity protecting Town parking from BSU overflow.
- **EXPLORE LONG-TERM PARKING PROGRAMS** – As downtown grows, visitors and employees may require longer term parking solutions. In the future, the Town should consider options such as shared parking with private landowners, pricing parking in-lieu of time limits, and encouraging remote parking.
- **STREAMLINE REGULATIONS** – Currently, time limits differ by 15 minutes throughout the study area. Some on-street parking is 45 minutes;

elsewhere it is one hour, for example. This adds an unnecessary layer of confusion. Parking regulations should be streamlined to minimize confusion and streamline signage.

- **INTRODUCE CLEAR SIGNAGE** – Parking signs throughout Bridgewater have a different look and feel, which is an added layer of complexity for those looking to park. The Town should have uniform signage standards with a similar color scheme that allow the user to easily interpret parking regulations and location.
- **MONITOR PARKING DEMAND** – An analysis of existing parking trends showed that there was significant capacity in the system. However, as the downtown becomes more active, parking frustrations grow. The Town should periodically monitor parking utilization of its public and private spaces. If 85% utilization is reached on-street, patrons may feel that it is difficult to find a space, and at that point, the Town should explore a more intensive parking management program.
- **CONDUCT BSU PARKING STUDY** – The University should conduct a comprehensive analysis and approach to parking management, which should help to manage overflow parking and perceived parking shortages at BSU. In addition, the study would provide an opportunity for the University to work in concert with the Town to further the elements of this plan and create an overall vision for parking and access in Bridgewater for both downtown businesses and the University.

## Municipal Parking Lot

In addition to the pedestrian path shown above, the municipal lot should be formalized and striping updated. This will encourage efficient parking patterns to maximize the use of space. See the diagram of **Municipal Parking Lot Improvements**.

In addition, improved wayfinding will alert drivers to the presence of the lot when approaching Central Square and hunting for parking. Streamlined parking wayfinding signage not only helps driv-



## Parking and Circulation: Municipal Parking Lot Improvements



ers find their way, but can be used to reflect Town character. The images below show pedestrian and vehicle-oriented wayfinding in Malden, MA and Lexington, MA that helps guide users to key destinations and/or parking lot locations. Colors and fonts are consistent throughout and the wayfinding is easy to understand. Pedestrian-oriented signage can also help promote a “park once” strategy as pedestrians can easily navigate from a parked car to a variety of destinations.

**RECOMMENDATIONS: 1) Streamline parking regulations to make them more customer-friendly; 2) Restripe Municipal Lot to encourage efficient parking patterns and sign it as public parking**

## Central Square Parking

As outlined in the OCPC report, head-in angled parking on Central Square is hazardous to pedestrians, bicycles and vehicles attempting to enter/exit spaces with poor sight lines.

The team identified three alternatives to reconfigure parking, shown below. The first two are similar to Alternative 3 from the OCPC plan, which also recommended parallel parking on the outside of the Square. In contrast, Option 1 and 2 below recommend parallel parking on both sides of the street on the Square. Option 3 introduces the idea of extending sidewalks and introducing a cycle track. With each option, changes to the parking configuration create other opportunities to create a multimodal street environment within the existing right-of-way.

## Parking and Circulation: Parking Management Strategy

### Shared Parking Goals

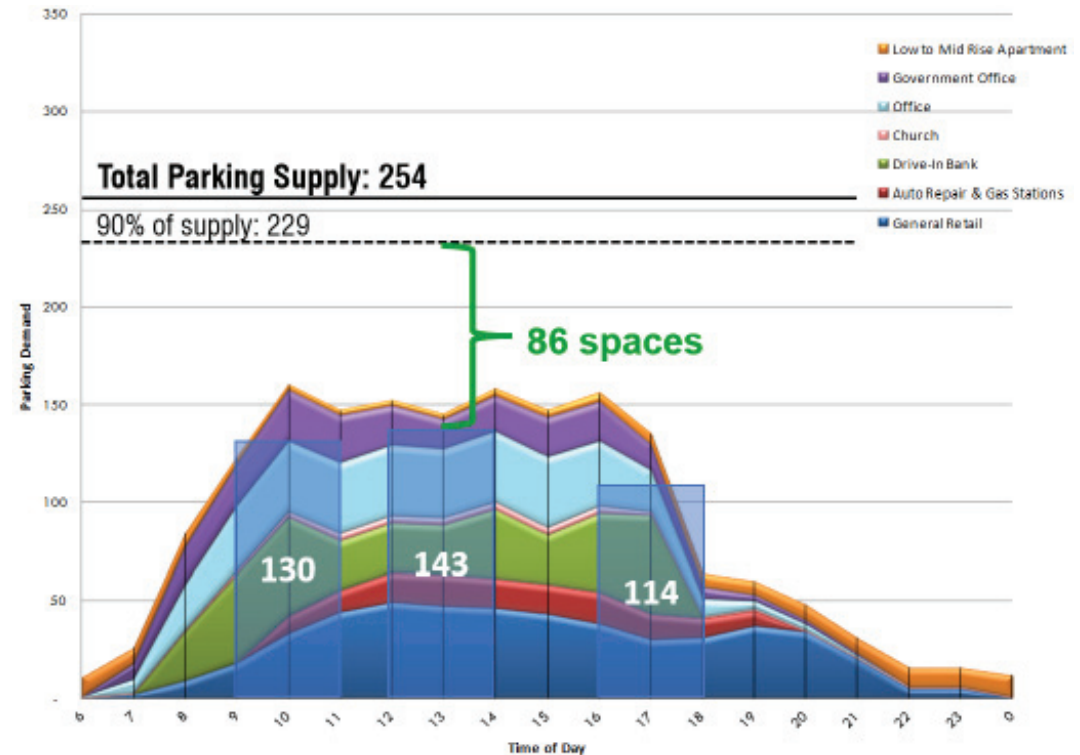
- Treat parking as a system of temporary vehicle storage
- Welcome rather than penalize customers
- Encourage shared travel
- Make it easier to find parking

### Shared Parking Elements

- Expect at least a 15% reduction in peak requirements
- Improve access and walk time to/from public spaces
- Customize regulations – parking district is CDB and other commercial districts; Use public parking to meet requirements
- Establish shared parking management fund with fees in lieu
- Encourage private easements; access and parking, maintenance, no obstruction, ability for lien

### Shared Parking Examples

- Lexington and Ayer



### Option 1 – Two-Sided Parallel Parking

This alternative removes the angled parking and eliminates the need to back into flowing traffic. To help pedestrians access locations once they leave their cars, this option recommends a sidewalk around the perimeter of Central Square.

Parallel parking on both sides can help calm traffic as there is more activity on both sides of the street. By narrowing the road right-of-way, the sidewalk in this option also helps to reduce travel speeds. Finally, parking on both sides of the square creates the opportunity for bulb-outs to improve pedestrian access across the street.

The diagonal crosswalks remain where they are today, so pedestrian crossings are longer.

### Option 2 – Pedestrian Friendly Parallel Parking

This option includes curb extensions and bulb-outs together with more perpendicular crosswalks. This reduces the overall amount of time pedestrians must spend in traffic.

### Option 3- Extend Sidewalks

This option expands the sidewalks available in front of the stores on either side of Central Square, while still providing some parking along the edges. This option significantly reduces parking options, but still narrows the roadway to reduce speeds.

**RECOMMENDATION:** The Town should eliminate head-in angled parking and replace it with parallel parking, as well as consider improving the pedestrian crossings.

### Pedestrian-oriented Signage



IMAGE SOURCE: LEFT: LOCALLY GROWN NORTHFIELD, [HTTP://LOCALLYGROWNNORTHFIELD.ORG/POST/TAG/WAYFINDING](http://locallygrownnorthfield.org/post/tag/wayfinding); RIGHT: NELSON/NYGAARD

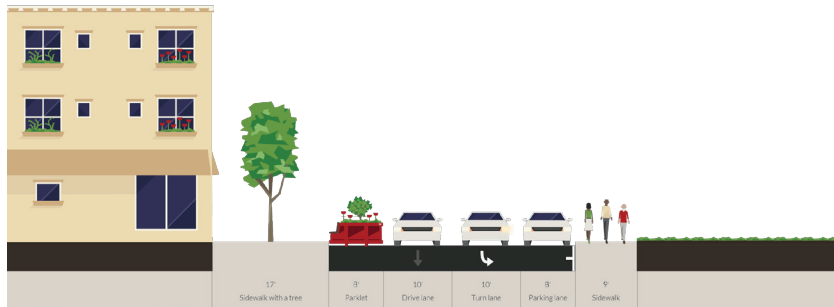


# Parking and Circulation: Central Square Options 1 and 2

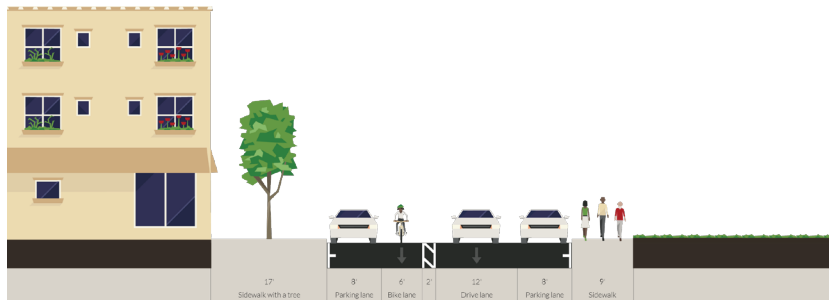
## Option 1



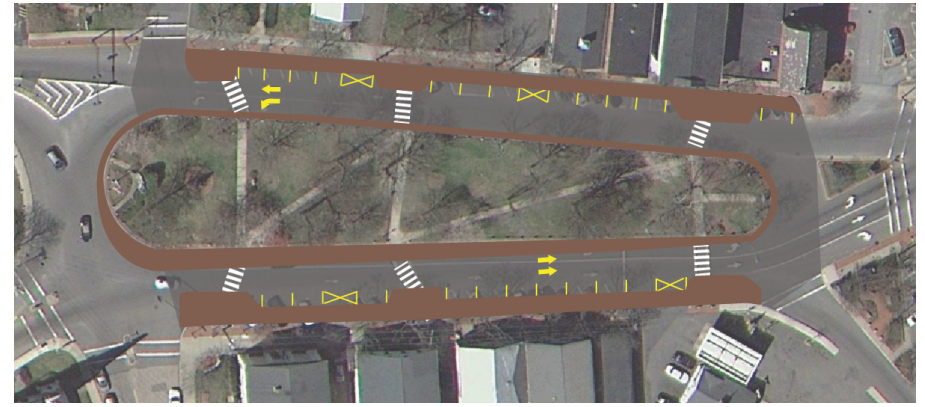
Central Square Northbound



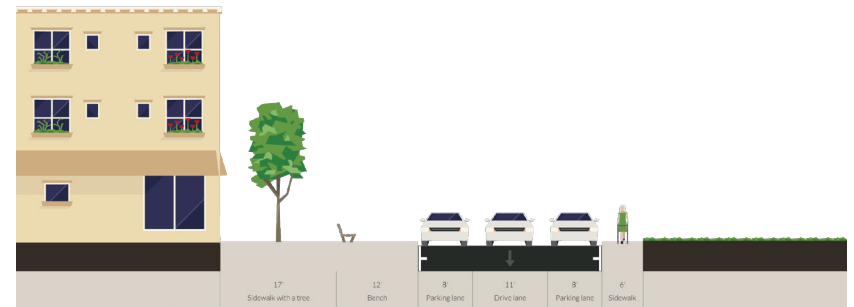
Central Square Northbound with Bike Lanes



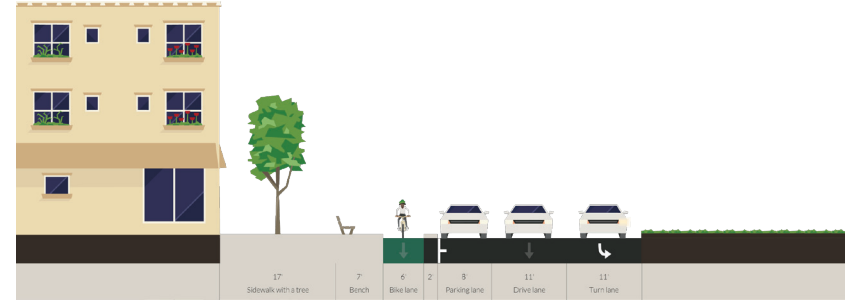
## Option 2



Central Square Northbound with Sidewalks on Both Sides



Central Square Northbound with Bicycle Lanes



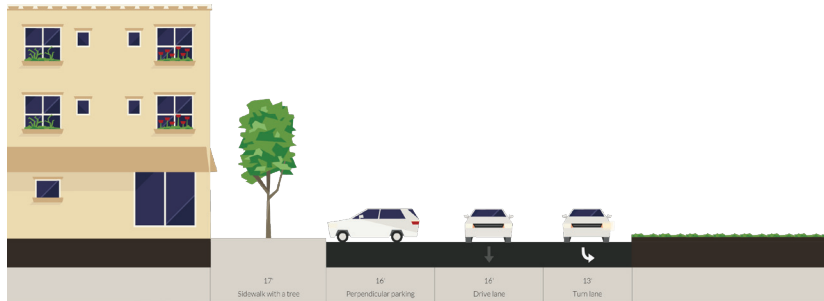


## CENTRAL SQUARE INTERSECTION REDESIGN

There are several issues with the current circulation in Central Square:

- One-way traffic lends itself to higher vehicular speeds
- Both intersections are confusing to navigate
- It is difficult to cross the street for pedestrians
- There are no bike facilities

### Central Square Northbound, Existing Conditions



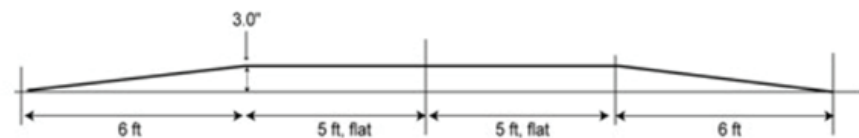
- Wide travel lanes and turn radii invite speeding traffic and heavy trucks

To address these issues, the team created a conceptual alternative to calm traffic, enhance pedestrian safety and accessibility, and move towards reaching economic development goals.

### Speed Tables

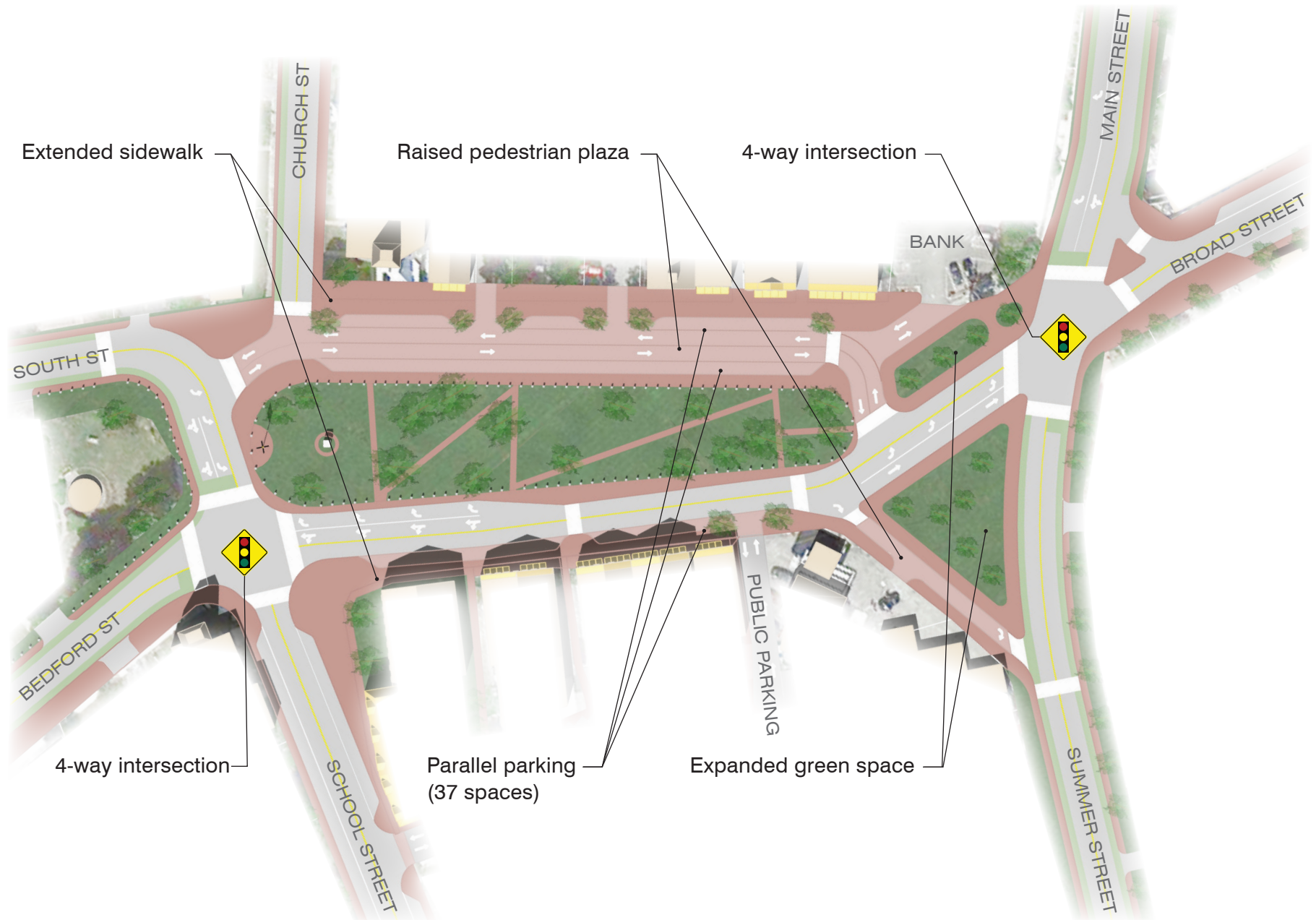
At the request of the Town, the team investigated the use of speed tables in Central Square. The Institute of Transportation Engineers (ITE) defines speed tables as “long raised speed humps with a flat section in the middle and ramps on the ends.” Speed tables slow motorized traffic as the entire vehicle wheelbase must travel over a raised area. ITE estimates that traffic travels 25-27 mph over speed tables.

Typical speed tables are a total of 22 feet in length, with two six foot ramps and a flat top of 10 feet.<sup>5</sup>



<sup>5</sup> Massachusetts Department of Transportation. (2006). Project Development and Design Guide, Massachusetts Department of Transportation - Highway Division, 2006 Retrieved from <http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/ManualsPublicationsForms/ProjectDevelopmentDesignGuide.aspx>

## Parking and Circulation: Central Square Preferred Solution (Option 3)



The New England ITE Traffic Calming Guidelines emphasize that speed tables should not be used on arterial roads, but may be applicable elsewhere.<sup>6</sup> Appropriate applications include:<sup>7,8</sup>

- Local and collector streets
- Main roads through small communities
- NACTO cautions that speed tables should not be used on roadways that are wider than 50'.
- Pedestrian connections between curb extensions

Based on these guidelines, speed tables may be appropriate for some crossings near Central Square, but would need further evaluation. Crossings on the one-way roads surrounding the green may incorporate speed tables, particularly in conjunction with curb extensions.

Despite being state numbered routes, all Central Square roadways except Route 18/Bedford Street to the south of the square are under Town jurisdiction, meaning that the Town may have greater control over what is permitted.

**RECOMMENDATION: Conduct traffic counts (including turning movements and queue lengths) to further evaluate parking and circulation designs in Central Square.**

6 New England Section, ITE Technical Committee (2000). *Traffic Calming Guidelines*. Retrieved from <http://neite.org/Documents/Technical/trafcalm.pdf>. Note that projects submitted for MassDOT review should follow these guidelines, as listed in the MassDOT Traffic and Safety Engineering 25% Design Guidelines : <http://www.massdot.state.ma.us/Portals/8/docs/traffic/FunctionalDesignReportGuidelines.pdf>

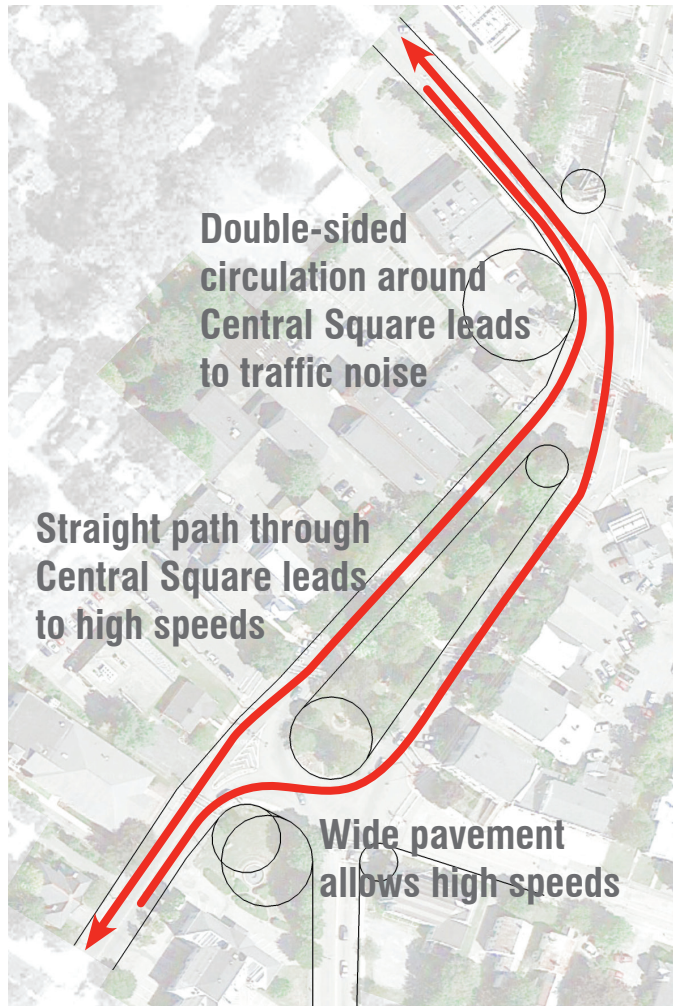
7 Institute of Transportation Engineers. *Traffic Calming Measures – Speed Table*. Retrieved from <http://www.ite.org/traffic/table.asp>

8 National Association of Transportation Officials, *Urban Street Design Guide*. Retrieved from <http://nacto.org/usdg/speed-table/>

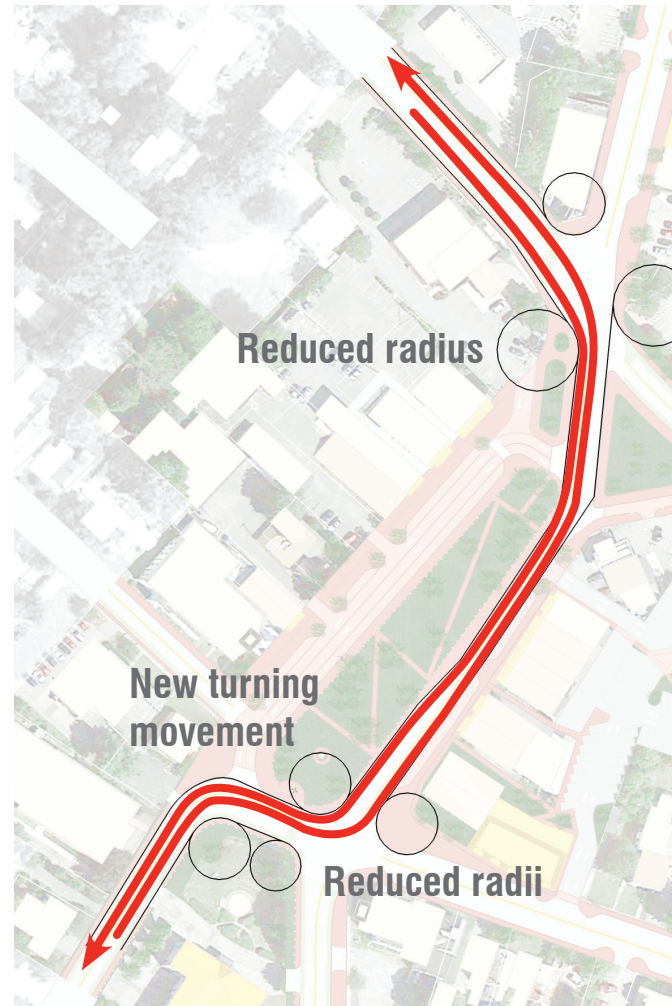


## Parking and Circulation: Heavy Truck Analysis and Recommendations

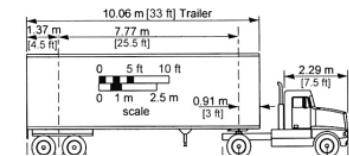
### Existing Circulation in Central Square



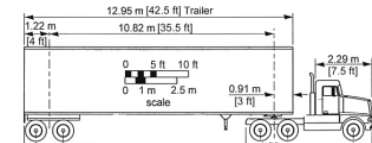
### Recommended Circulation in Central Square



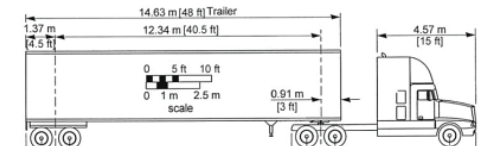
#### WB-40 OK



#### WB-50 Seek Alternate Route



#### WB-62 Seek Alternate Route





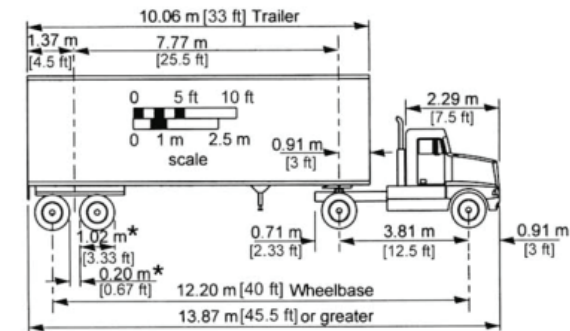
## CENTRAL SQUARE HEAVY TRUCK ANALYSIS AND RECOMMENDATIONS

The redesign of Central Square is created in such a way as to reduce the speed of heavy trucks and to decrease the frequency of heavy trucks by introducing new turning movements and decreasing the turning radii such that it is slower and less convenient to drive a heavy truck through Central Square. The conceptual redesign presented in the previous section has turning radii of 30-40 feet, thus accommodating heavy trucks except for the largest two classes of trucks, WB-50 (50 ft. wheelbase) and WB-62 (62 ft. wheelbase).

If the Town wants to accommodate WB-50 (and slow turning WB-62), this concept could be adapted in the following ways:

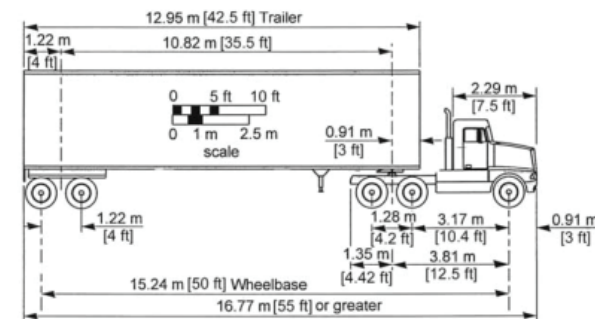
- Southern intersection:
  - \* South Street northbound traffic stopped before the intersection, which allows for trucks to make the turn from Central Square onto South Street
  - \* Three signal phases
  - \* Left turns into the shared street are not permitted
  - \* Shifts crosswalk locations
- Northern intersection:
  - \* Similar to southern intersection except right turn slip lane from Central Square is pushed towards the intersection, potentially creating a development parcel
  - \* Another right slip lane in front of the bakery helps shorten crosswalk

Rerouted truck traffic would be forced to bypass Central Square by other regional options or local roads more suitable for truck traffic than Central Square.

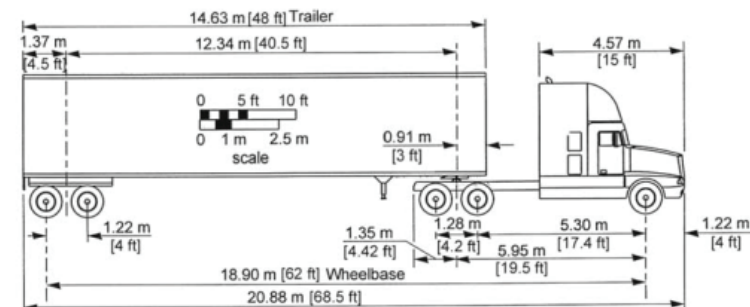


\* Typical tire size and space between tires applies to all trailers.

**Dimensions of intermediate semitrailer WB-40**



**Dimensions of intermediate semitrailer WB-50**



**Dimensions of intermediate semitrailer WB-62**

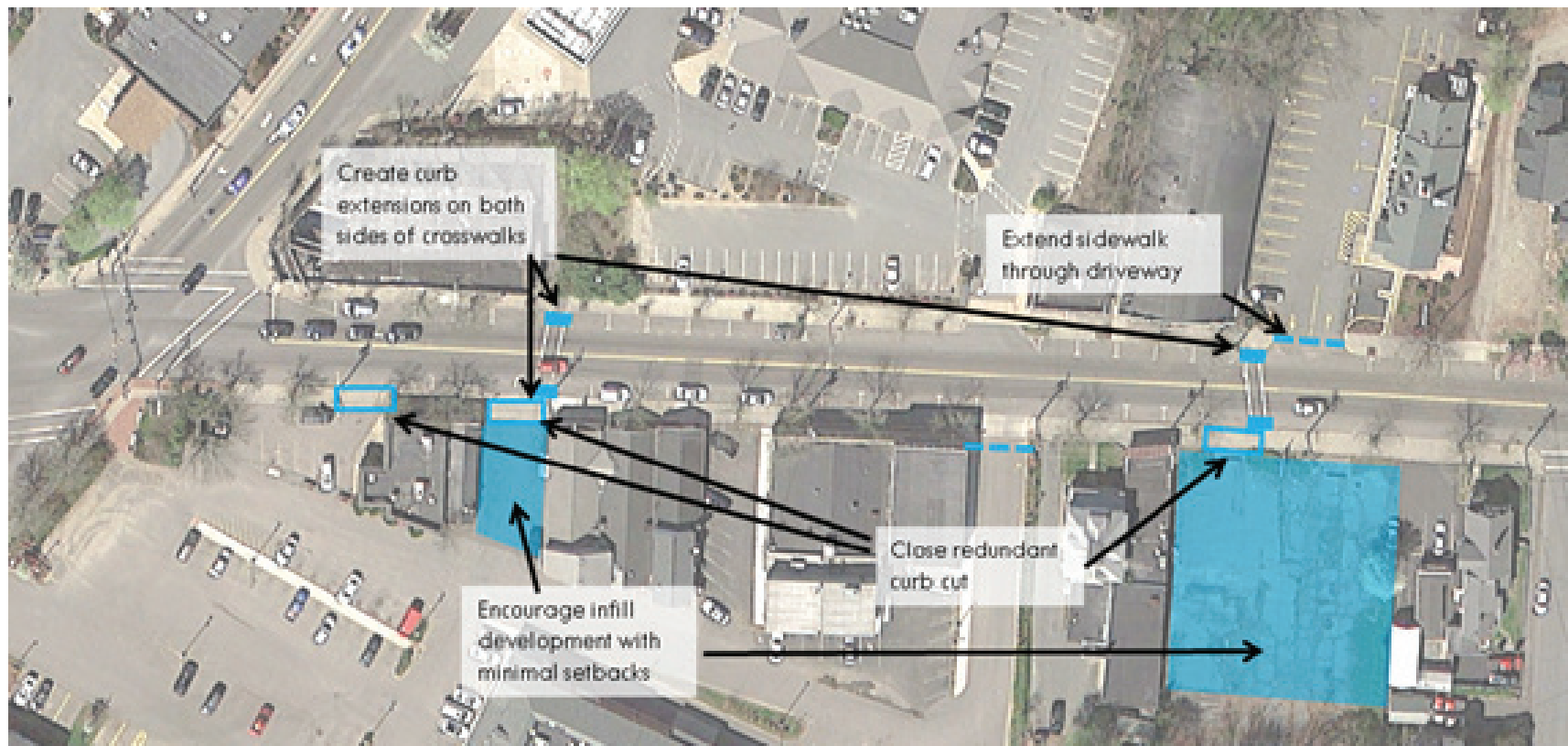
IMAGE CREDIT: REVIEW OF TRUCK CHARACTERISTICS AS FACTORS IN ROADWAY DESIGN,

## Parking and Circulation: Traffic Calming Improvements for Broad Street

### PRINCIPLES

- Maintain on-street parking
- Minimize driveways/curb cuts
- Extend sidewalks through driveways
- Add curb extensions at crosswalks
- Minimize building setbacks
- Share parking between uses

Suggested Traffic Calming Improvements for Broad Street



## BROAD STREET TRAFFIC CALMING

Broad Street is two lanes of traffic (one in each direction) with parallel parking on both sides, approximately 40' of curb-to-curb right of way. The width of the right-of-way varies slightly at different points along the street. Each parking lane is 8', which leaves approximately 24' for travel lanes. These are very wide travel lanes, which encourages speeds higher than the limit of 30 mph.

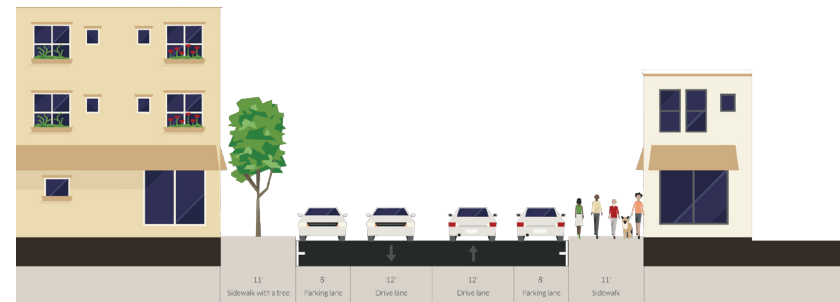
Traffic calming is important to encourage activity in downtown Bridgewater. Pedestrians and cyclists alike will feel more comfortable walking in an environment where motorized traffic moves slowly around them. In addition, overall safety increases as speeds decrease: the likelihood of fatality is significantly higher in crashes where vehicles travel over 20 mph.

Slower traffic flows on Broad Street may also encourage truck traffic to seek alternate routes that are faster.

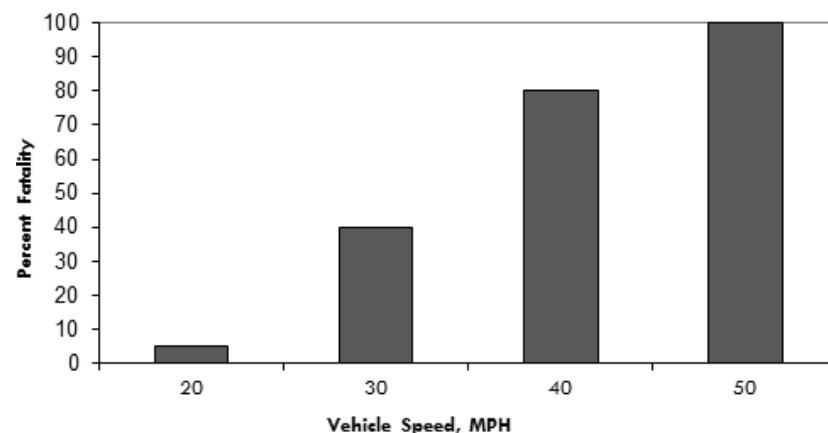
When planning for Broad Street, the transportation system should be designed with the following principles:

- Maintain some on-street parking
- Minimize driveways and curb cuts
- Extend sidewalks through driveways
- Add curb extensions at crosswalks
- Minimize building setbacks
- Share parking between uses

**Broad Street, Existing Cross Section**

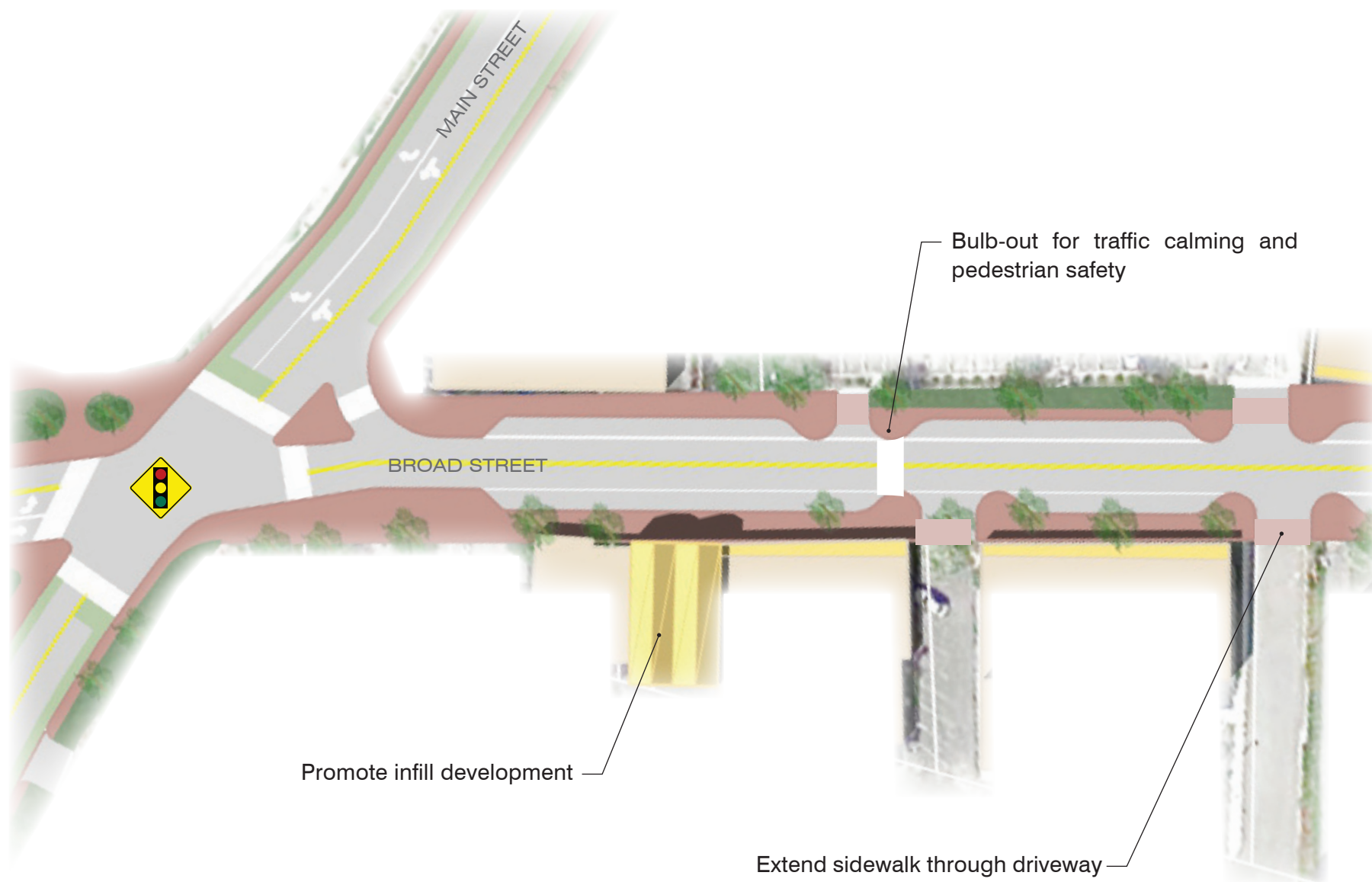


**Risk of Pedestrian Fatalities with Increasing Vehicle Speeds**



SOURCE: PASANEN, E. DRIVING SPEEDS AND PEDESTRIAN SAFETY; A MATHEMATICAL MODEL. TECHNICAL REPORT NO. REPT-77, AND NORDISK KABEL- OG TRAADFABRIKER, COPENHAGEN, DENMARK, 41 PP, 1992. HELSINKI UNIVERSITY OF TECHNOLOGY, LABORATORY OF TRAFFIC AND TRANSPORTATION ENGINEERING, ESPOO, FINLAND AS STATED IN LEAF, W. AND PREUSSER, D. LITERATURE REVIEW ON VEHICLE TRAVEL SPEEDS AND PEDESTRIAN INJURIES, US DOT NHTSA (DOT HS 809 021), 1999, P4.

## Parking and Circulation: Traffic Calming and Streetscape Improvements for Broad Street





Different types of land use merit different traffic calming options and opportunities. For example, curb extensions may be most appropriate between facing active storefronts on two sides of a street where pedestrian crossing demand is high. In contrast, extremely narrow travel lanes may be more appropriate for a residential street with low volumes of through-traffic. Thus, land use considerations should drive planning and implementation of traffic calming devices on Broad Street. Options for traffic calming include:

- **Curb Extensions:** As discussed earlier, curb extensions limit the amount of active roadway a pedestrian has to cross, but also can narrow turning radii and roadway width which leads drivers to slow down. Curb extensions are commonly found at intersections, but can also occur midblock at a bus stop, for example.
- **Speed Tables/ Raised Crossings:** Raised crossings elevate the pedestrian and thus increase visibility to drivers. In addition, drivers must slow to travel over the raised portion of roadway.
- **Narrow Travel Lanes:** Lowering a travel lane from 11' to 10' can reduce speeds by as much as seven miles per hour. More local streets may have a total travel lane width of 18', so vehicles must slow to let each other pass.
- **On-Street Activity:** Programs such as parklets in on-street parking spaces, planters, or other activity create a more active street environment that drivers inherently slow to observe.
- **Bike Lanes/Sharrows:** Including bicycle facilities in street planning slows vehicle speeds as drivers are more aware of the presence of cyclists.
- **Minimize Curb Cuts:** Multiple curb cuts into a sidewalk create conflicts between pedestrians and motorized vehicles. Consolidating curb cuts reduces these conflicts and allows for concentrated improvements such as continuing the sidewalk through the driveway.

A potential set of traffic calming improvements for Broad Street is shown in the drawing on the previous page.

 **RECOMMENDATION: Create Streetscape Plan for Broad Street in coordination with planned land use patterns.**

## Streetscape Improvements: Streetscape Elements

### Continue using...



**Pavement accents**



**Shielded pedestrian lighting**

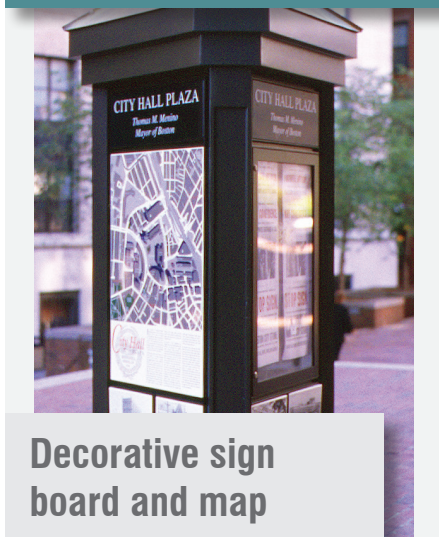


**Granite bollards**



**Ornamental benches**

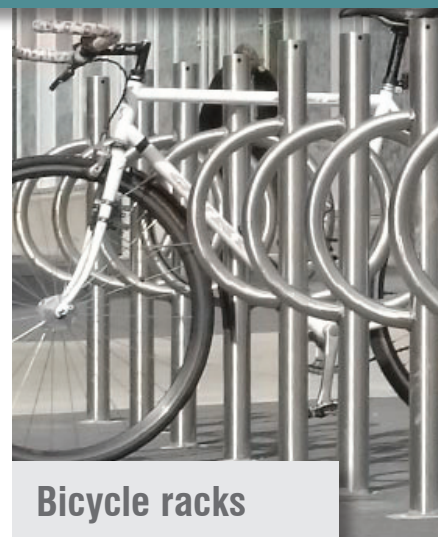
### Start using...



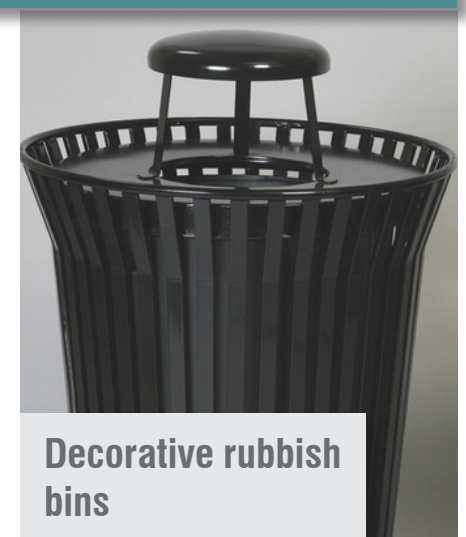
**Decorative sign board and map**



**Bicycle boulevards**



**Bicycle racks**



**Decorative rubbish bins**

## 4 Streetscape

*A streetscape is a composition of many elements that are placed over the previously discussed circulation plan. Streetscape elements support goals for safety, comfort, and access for pedestrian, bicyclists, and vehicles.*

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### STREETSCAPE ELEMENTS

The Central Business District and Central Square have a landscape element vocabulary that should be retained. Previous efforts have resulted in brick trim on concrete sidewalks, ornamental lighting, granite bollards, and ornamental benches. These streetscape treatments, mostly found on Central Square today, can be extended throughout the Central Business District to create a unified character and identify.

To further improve upon the existing streetscape, additional elements can be added. New elements that support bicycles as a means of transportation include bicycle racks and sharrows (share arrows indicated shared roadways). Additional street furniture that will improve users' experience on Central Square is decorative rubbish bins (which will also address the noted problem with trash in the public realm), decorative sign boards, and improved signage and wayfinding as previously discussed.



## Streetscape Improvements: Central Square Streetscape and Programming



Park cafe



Park cafe



Gazebo



Farmers Market



## CENTRAL SQUARE PROGRAMMING

One of the most requested features during the public input session was an increase in activity in and around Central Square. With a new circulation pattern and streetscape around Central Square, there will be diminished discomfort to pedestrians and users, thus creating new opportunities for activities.

### Built program

These programming uses involve permanent infrastructure.

- **Open air cafes and restaurants:** The extended sidewalks around the outer edge and inner edge of Central Square could be used by cafes and restaurants in the area. Current zoning sets the number of required parking spaces per restaurant based upon the number of seats that restaurant has. In order to promote outdoor seating, the Town could update zoning such that around Central Square open air seating in the public right-of-way does not require additional built parking in the same way that interior seating does.
- **Park cafe:** The Town could choose to allow a development pad on Central Square itself.
- **Gazebo:** A gazebo or bandstand structure in Central Square could support various activities and programs and attract architectural interest to Central Square. Interestingly, Central Square previously had a bandstand that was removed due to under-utilization (because the traffic noise became unbearable). With an updated circulation pattern and slowed-down traffic, the Town may consider reinstating such an installation.

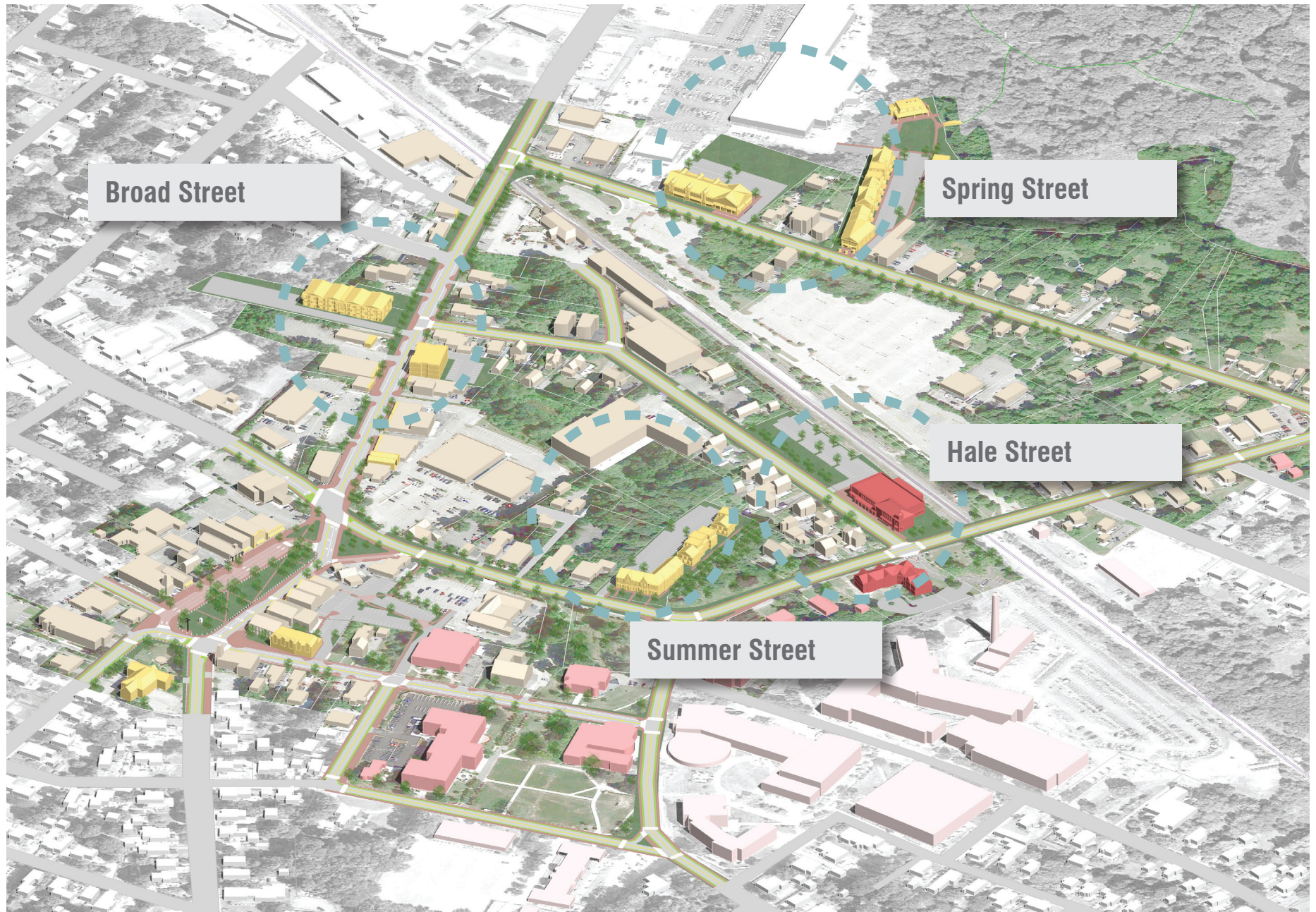
### Pop-up program

Not all uses require permanent structures. Here are some types of uses that can be temporary.

- **Farmers market:** Enliven Central Square with seasonal weekly or monthly farmers markets.
- **Holiday market:** Attract interest to Central Square with holiday markets, especially Christmas.
- **Outdoor performances:** Celebrate the new, quiet Central Square with musical and theatrical performances on the green.
- **Dances:** Bring the community together through organized dances in Central Square.



## Focus Areas for Investment





## 5 Focus Areas for Investment

*The vision for revitalizing downtown is for the area to become a more walkable, pedestrian-friendly area with a mix of vibrant uses. Six redevelopment sites are investigated for their potential to activate Bridgewater's streets and neighborhoods as well as contribute to the goals of the Housing Production Plan.*

### MIXED USE DEVELOPMENT

Bridgewater's Central Business District, which encompasses most of the Downtown revitalization area, is positioned for mixed use development through the zoning bylaw's Section 19 Mixed Uses, adopted September 3, 2013.

The purpose of mixed use development is to allow for a vibrant, walkable downtown with additional small restaurants, retailers, and cafes combined with new opportunities for housing that respond to changes in market demand.

Mixed use developments are allowed by special permit, subject to several requirements in addition to the already established zoning bylaws including land space requirements. The additional requirements address the building design and building siting. The requirements aim to increase pedestrian comfort and interest by placing parking lots to the rear of buildings, placing buildings close to the public right-of-way, and activating the street through windows, recesses and projects on street walls, and awnings.

### BRIDGEWATER'S MARKET SEGMENTS

#### Tapestry Segmentation

Market segmentation targets consumer prospects by splitting populations through place-specific data. Knowledge of customers and constituents is critical to developing effective marketing programs with information mined from customer databases. This analysis examined US Census Data and consumer data through ESRI's Tapestry Segmentation to understand lifestyles and consumption patterns for houses and goods. Bridgewater's profile reveals the demographics, lifestyles, and product preferences in the immediate region.

#### Targeting Mixed Use Development

In Bridgewater's downtown revitalization, new mixed use development can target relevant market segments. Bridgewater has a specific mix of the following market segments.

#### Old and Newcomers

These residents are either starting their career or retiring, ranging in age from under 35 to 65 and older. Education is above average, with a median household income of over \$44,500. More than 60 percent rent in multi-unit buildings or mid- or high-rise buildings. This market segment has a lifestyle that reflects their uninhibited stage in life, participating in outdoor exercise and leisure activities.

This segment is expected to be the most important target for downtown mixed use development. As a population, they are at a very



## Focus Areas for Investment: Broad Street



**Mixed-use building with commercial frontage and apartments above**

**0.50 acres  
2 dwelling units + 2 affordable  
4,800 SF commercial space  
33 total parking spaces**

mobile period in their lives, either starting up after education or looking to downscale from a single-family home as empty-nesters.

### **Metropolitans**

Metropolitans are a mix; about half married, half unmarried, living in either single-family homes or multiunit buildings, and split evenly on renting or home ownership. They are educated with a median household income of over \$60,000. They pursue active, urban lifestyles. They travel frequently, practice yoga, go kayaking, hiking and backpacking, and skiing.

Metropolitans will be attracted to mixed use development in Bridgewater if there are sufficient urban amenities, such as cafes and cultural events, in addition to outdoor recreation opportunities. For this segment, important factors are the revitalization of Central Square, reconstruction of the Town River Landing, improved access to parks, and stimulation of local innovative companies.

### **Suburban Society**

This market segment consists of mostly married couples with children who are city escapees that accept a longer commute in exchange for fewer neighbors. These residents are educated, with a median household income over \$85,000. About 90 percent live in single-family homes, with a median value of over \$230,000. More than 80 percent of the households own at least two cars.

Of Bridgewater's existing market segments, this one is least likely to be attracted to mixed use development in the downtown.

## **CONNECTION TO HOUSING PRODUCTION PLAN**

The 2012 Housing Production Plan's goals include creating new affordable housing downtown in multi-family and mixed use buildings. To do so, the Plan recommends the Town to undertake strategies including permitting multi-family and mixed use buildings downtown and encouraging redevelopment of underutilized sites downtown.

The proposed development sites on Summer Street and Hale Street align with the potential development sites identified as underutilized sites in downtown, except that the Hale Street property will be developed by BSU without housing.



## Focus Areas for Investment: Broad Street





## BROAD STREET AREA

### Mixed-Use Development at 76-78 Broad Street

A mixed use building on 76-78 Broad Street is currently undergoing permitting before development.

According to an article by Rebecca Hyman on October, 8, 2013, developer Jim Paskell has proposed a “friendly 40B” project that would be “an engine to help drive downtown revitalization.” The proposed building would house 25 apartments and three commercial units on a three-quarter acre parcel not far from the Common.

Rendering of proposed building, courtesy of Tim Johnson Architect, LLC



### Mixed-use Development at 63-65 Broad Street

Two vacant parcels at 63-65 Broad Street are candidates for redevelopment. Both of the parcels are owned by Brancaccio Ralph Trustee and have a combined land appraised value of \$247,900. The current condition is shown below.

The total size of the two parcels is 0.50 acres. Under the current mixed use zoning, that would allow for two residential units, plus an additional two units if developed with 25% affordable housing. Under the mixed use zoning, the ground floor is required to be commercial space. Based on a typical commercial building depth of 60 feet and maximization of the frontage (accounting for a 24 foot access to parking in the rear and a sidewalk), it is estimated that 4,800 square feet of commercial space can be accommodated. The

## Focus Areas for Investment: Summer Street

**Mixed-use building with commercial frontage and town houses facing onto the park**

**1.43 acres**

**7 dwelling units + 4 affordable**

**6,000 SF commercial space**

**57 total parking spaces**





combined parking requirement for the commercial space and four units of housing is 33 parking spaces.

The model shows a zero foot setback from the public right-of-way, which is consistent with the current zoning's land space requirements table due to the neighbors' zero foot setbacks. It is, however, recommended that the by-right setback be reduced.

#### Current condition of 63-65 Broad Street



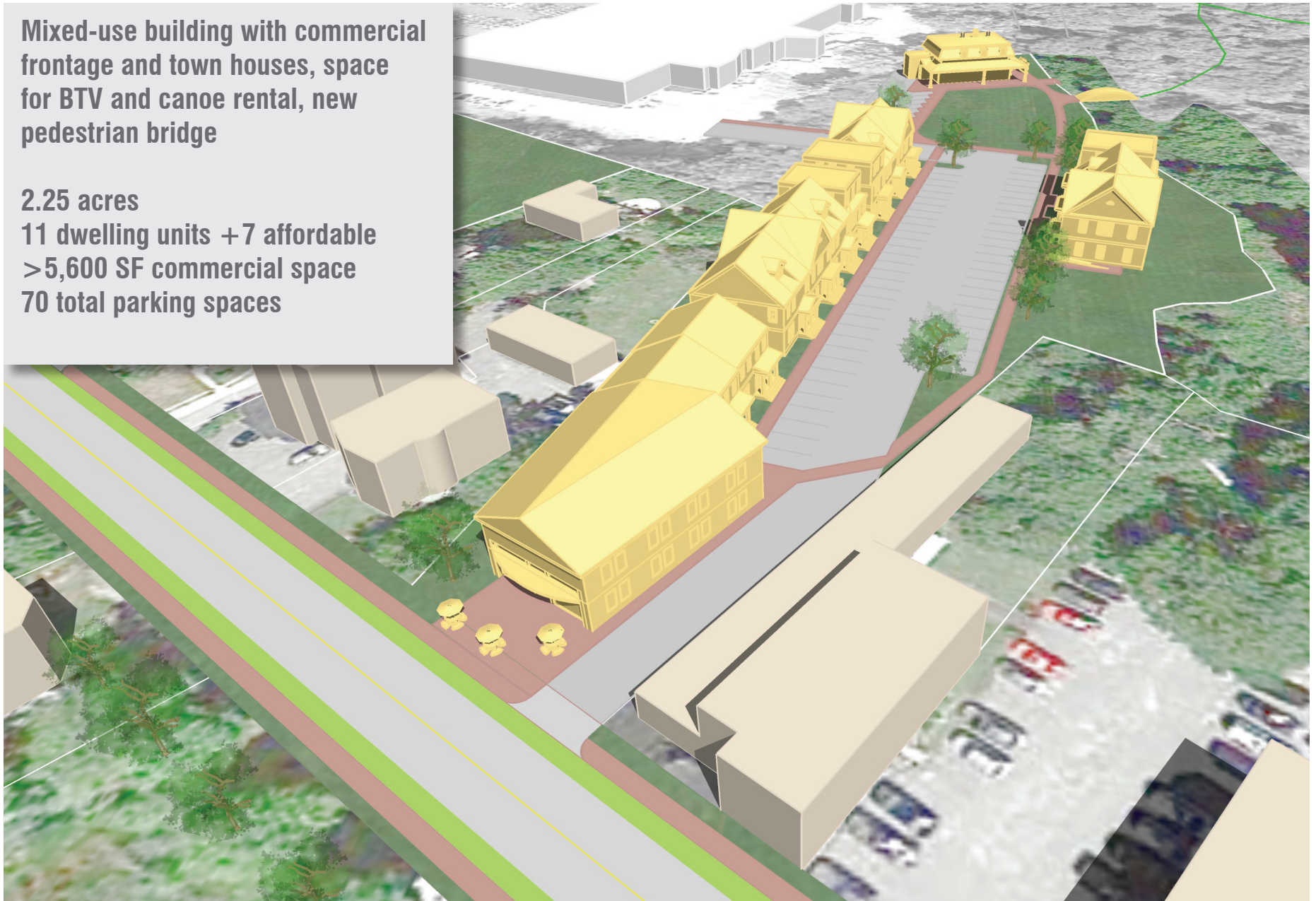
## 46 SUMMER STREET REDEVELOPMENT

This redevelopment opportunity is two parcels, both listed at 46 Summer Street: the vacant gas station on the frontage and a decaying 1900's multifamily building on a long rear parcel. The properties have different owners and a combined total appraised value of \$882,600 . If developed together, the total area would be 1.43 acres. With the current zoning, the area would support seven dwellings units plus another four units if 25% affordable housing units are included. With a mixed use development, the first floor frontage on Summer Street could support 6,000 square feet of commercial space. The eleven dwelling units and commercial space together are estimated to require 57 parking spaces depending on the specific commercial uses.

## Focus Areas for Investment: Spring Street

**Mixed-use building with commercial frontage and town houses, space for BTV and canoe rental, new pedestrian bridge**

**2.25 acres  
11 dwelling units + 7 affordable  
>5,600 SF commercial space  
70 total parking spaces**





There are several attractive features for this area. Importantly, the corner parcel between the development area and Plymouth Street (and BSU) is a beautifully maintained park set aside as conservation land. Townhouses or other types of development could have one face towards a parking lot and another face towards this amenity.

The target segments for this project would be both “Old and New-comers”, especially any potential renters and buyers that are connected to BSU.

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## SPRING STREET AREA

### **80 Spring Street Town Yard and River Landing**

This Town-owned parcel’s existing condition is a collection of municipal buildings and a canoe/kayak launch that is in disrepair. Of the two major structures on the site, the Bridgewater TV building is in good repair and is currently being productively used. The Department of Public Works’ garage on the site, however, is in a state of significant disrepair. The appraised land value is \$248,300 and the total appraised value for the parcel including the existing buildings is \$619,400.

## Focus Areas for Investment: Spring Street



**Mixed-use building with commercial frontage and apartments**

**1.50 acres**

**8 dwelling units + 4 affordable**

**10,800 SF commercial space**

**82 total parking spaces**

The redevelopment of this parcel has one of the highest potentials for improving the downtown area. There are several facets to the redevelopment scenario presented here. On the street frontage, a first floor commercial use is proposed with a limited setback. The commercial use plays off of the other commercial uses in close proximity, including the adjacent diner, as well as car and foot traffic between BSU and the larger shopping plaza and the student parking area. Off the street, additional housing units are proposed centered around a walkable courtyard.

To the north of the parcel near the canoe and kayak river landing, a small public park is proposed. Abutting the proposed park and the redeveloped town river landing, another commercial pad is proposed to support activities that could include relocation of the Burlington TV studio and/or outdoor recreational services such as canoe and kayak rental and storage. Lastly, a pedestrian bridge is proposed to cross the river over to the Stiles and Hart Conservation Area. The bridge would allow the public and residents access to an attractive amenity very close to the downtown for passive and active recreation. Lastly, vehicular access is suggested off of Spring Street as well as through the Roche Brothers parking lot to improve overall permeability.

## 38-42 SPRING STREET

This development opportunity is two vacant parcels owned by FLV Campus Plaza, same owners at abutting shopping plaza with Roche Brothers. The combined appraised land value is \$19,600. According to homefacts.com, three underground storage tanks were removed from 1989-1995. There is no file for the location on the EPA's New England Brownfield index.

Once again, taking advantage of the mixed use zoning that allows for the redevelopment of the CBD with small retail and restaurants, the proposed development has 10,800 square feet for first floor retail space. Current zoning allows for eight dwelling units on the 1.50 acre property, plus an additional four units if a quarter of the units are developed as affordable housing.

The imagined building has an A-frame roof with gabled dormers, extensive glazing on the ground level, and awnings near the commercial entrances. Building access would be from the front for pedestrians and from the rear for visitors parking vehicles. The parking lot would connect to Spring Street and to the Roche Brothers parking lot for increased permeability through the terrain's fabric.



## Focus Areas for Investment: Hale Street



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## HALE STREET INNOVATION DISTRICT

BSU has acquired the parcel across Plymouth Street from their welcome center that is under construction. Their plan is to investment into Hale Street with a new university building and reconstructed streetscape.

The expected development is the by construction of start-up incubator space on ground floor with University offices above. The building will face onto Plymouth Street. Hale Street will receive sidewalks and street trees. The architecture of the development will compliment the massing and style of existing abutting uses on Hale Street.

## Zoning Recommendations

### **Mixed Use Zoning [Ord. #D-2013-003 through #D-2013-007]:**

- Maximum of 8 residential units per acre (if 25% affordable)

### **Consider amendments:**

- Add shared parking allowance
- Increase density to 15 units per acre
- or, Consider total mixed use density by Floor Area Ratio; e.g. 0.6 FAR

### **Other possible amendments:**

- Zero front setback by right in CBD zone





## 6 Zoning Recommendations

*The Bridgewater Zoning Bylaws were reviewed for conformance with the concepts and improvements generated by this study. The Bylaws reviewed have been amended and updated with the latest date of December 2013.*

### DESIGN PRINCIPLES

The concepts and improvements recommended by this study were driven by a few key urban design principles. These design principles are:

- The purposes of the CBD district regulations are stated in the Zoning Bylaws within section 3.31.
- Reinvestment in the downtown is to be encouraged with implementing regulations.
- Mixed use is desirable in the downtown where it meets the historic character of Bridgewater.

The overall goals of public and private reinvestment is to improve the quality of the Downtown, with successful businesses, safe pedestrian environment, smooth vehicular travel, and activated public spaces.

### ZONING BYLAW AMENDMENT RECOMMENDATIONS

The following are specific Zoning Bylaw amendments to consider when implementing the program of improvements. These are in order as listed within the Zoning Bylaws.

1. Section 2.95 Definitions – The Bylaws have a definition for ‘Common Driveway’ which also includes criteria for approval of a common driveway. The recommendation is to amend this section and if the design criteria remain, permit common driveways without having to meet frontage requirements for all of the lots sharing the driveway in the CBD. This will allow combining multiple private, parking lots behind and to the sides of lots for greater efficiency in access and parking demand,
2. Section 6.11 provides an option for Shared Parking. This is clearly supportive of CBD redevelopment but it is recommended that additional flexibility be provided to determine allowed shared parking configurations.
3. Section 6.30 includes the Use Table which indicates that Multifamily uses are not allowed in the CBD district. This is otherwise overcome with the regulatory exception provided by Section 19.00 Mixed Uses (CBD). However, with an upper story allowance or by not allowing residential on the first-floor building frontage, multifamily could be inserted in other areas of the CBD. See more on Section 19, below.
4. Section 6.30 does not list Incubator spaces as specifically allowed in the CBD. The Planned Development District under Section 9.60 allows such spaces but includes a 5 acre minimum lot size for the district. It is recommended that the listing of these types of industrial spaces be allowed in the Hale Street area.
5. Section 8.40, Land Space Requirements Table lists the minimum lot size in the CBD as 10,000sf with 100’ frontage. Because of the unique

character of the downtown historic development, it is recommended to allow no minimum lot size or frontage requirements.

6. Similarly under Section 8.40 there are building setback requirements of 30' front yard, 25' rear yard and 15' side yard, with an exception for attached buildings. For a more urban environment the recommendation is to set the front yard standard as 0' to a maximum of 10' for the purpose of public space in the front, but no parking.
7. The maximum building height in the CBD under Section 8.40 is 3 stories or 30'. It is noted that in the Planned Development District, under Section 9.60, allows 3 stories and 45' within 300' of Route 104, which is in line with commercial mixed use. It is recommend that an allowance of 40' to 45' height be provided subject to the pitched roof requirements specified below for Mixed Uses (CBD) Section 19.00.
8. Section 10.40 Parking Dimensions of the Zoning Bylaw includes requirements for the number of parking spaces by use. The Bylaw requires two parking spaces for each residential unit. In the CBD, the regulations should only require one parking space for each one-bedroom residential unit.
9. Section 19.00 Mixed Uses (CBD) is a relatively new section of the Zoning Bylaw that supports a different approach to redevelopment. While the overall direction of the bylaw is good, several changes could help encourage reinvestment in private parcels of land. In particular, Section 19.04, has a series of requirements and may not fully realize the potential of the CBD. The following are suggested changes to the referenced subsections of 19.04:
10. Subsection 12. – This subsection discourages flat roofs on buildings to improve the character of the public realm. What is suggested is a more specific regulatory approach. The recommendation is to specify peaked roofs, particularly for buildings with one story and allow flatter roofs when the buildings are taller. This could be specified as buildings with a height less than or up to 25' high must have a roof pitch of less than 8:12, but with a building height of 26' to 40' (the latter being the maximum allowed in the district), the roof pitch may be greater than or equal to 8:12 (flatter to flat). With taller buildings the pedestrian will

not see the roof, but this allows a builder to put a peak on any building so long as the total height meets the dimensional standards of zoning.

11. Subsection 15. – This subsection allows for a maximum residential density of 5 units per acre and up to 8 dwelling units per acre if the project is at least 25% affordable. This is low for a downtown density. It was notable that the 2006 Smart Growth Zoning study recommended up to 20 bedrooms per acre in residential density in Downtown receiving district when applying the Transfer of Development Rights option. This is equivalent to 10 to 12 dwelling units per acre. It is recommended that townhouse style developments, which typically are constructed at 12 to 15 units per acre be a model, and the allowed maximum density of residential units be increased to 12 units per acre. The regulation otherwise requires a Special Permit review and a mix of uses that maintains the street activity so this is considered a reasonable option for development.
12. Subsection 16. – This subsection requires creation of site parking at 2 spaces per residential unit with an additional visitor space (one space) per every three units. With the downtown over-parked the parking requirements could be reduced to 1 space per 1 bedroom residential unit. See also the recommendations for section 10.40 above

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## CONCLUSIONS

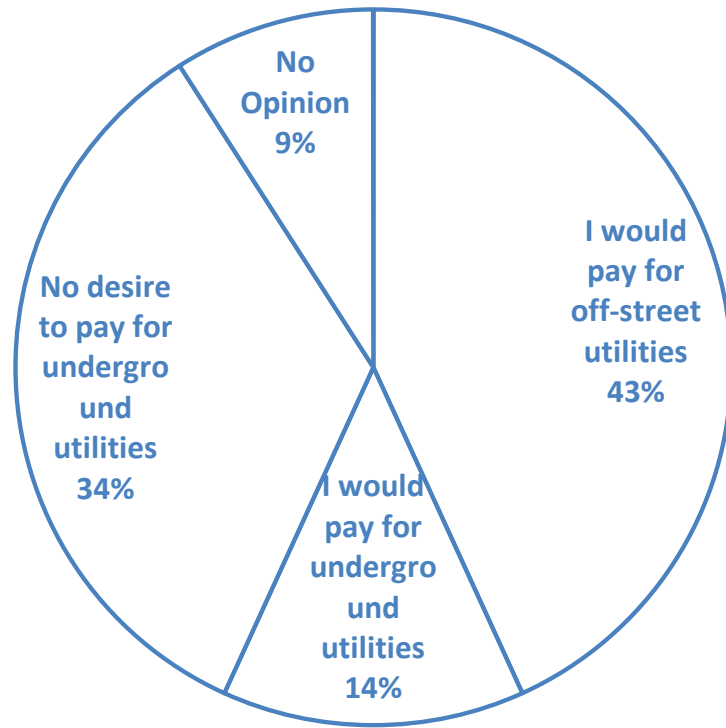
A number Zoning Bylaw amendments are recommended to implement the vision for Downtown Bridgewater. These amendments, while considered more in line with the goals and principles for Bridgewater Downtown redevelopment, still may not address all the potential conditions faced by a redeveloper of a property. Consequently, a general recommendation is to present the town as willing to work with redevelopers by drafting regulations that meet the intersecting goals of public and private interests. The model for this is the c.40R program, where regulations and design standards are often created with the participation of a developer of a property so

that the design standards match the specific needs of the property and project. This concept of negotiated development is becoming a more common approach in municipal land use regulation, where there is high value and importance in the redevelopment. This may be presented as the position of the town offices, boards and commissions when reaching out to development and business interests.





## Off-Street Utilities



**Undergrounding or repositioning not funded by State grant programs**

### Options:

- Adopt MGL Chapter 166: Section 22D
- Bond improvements
- Reposition poles

**Examples: Falmouth-repositioning, Randolph - combination**



## 7 Off-Street Utilities

*Currently, even with the advancement of cellular technology, a large number of different utility service lines are found strung across utility poles within the public rights-of-way. Placing utilities underground for visual improvement, better access and improved safety has been successfully accomplished in many communities around the country and in Massachusetts.*

While it is a relatively expensive infrastructure project, the benefits accrued are often found to be significant. This is why this element is commonly applied in the program of improvements in streetscape improvement plans. The relevance to this study would be as an element in the proposed improvements to the streetscapes on Broad Street and Central Square.

Because of the relative expense in a streetscape project, undergrounding or repositioning of overhead utility lines is not funded by State grant programs such as MassWorks. However, there are options to State grants.

A number of towns have adopted the provisions of MGL Chapter 166, Section 22; wherein the utilities using overhead distribution lines may be required to set aside a surcharge on rate payers to pay for the removal of poles and overhead wires. The relevant sections are as follows :

Section 22D. After a report has been filed under section twenty-two B, the municipality may adopt an ordinance or by-law which shall require a utility to remove its poles and overhead wires and associated overhead structures which are located upon, along or across any public

way or ways within all or any part or parts of the municipality. Any such ordinance or by-law shall specify whether it applies to all of the municipality or only to a part or parts thereof and, if only to a part or parts, shall describe such part or parts with reasonable certainty by reference to the names of any way or ways to all or any designated portions thereof to which it applies, by reference to a map, or by other suitable means.

Such ordinance or by-law may specify in whole or in part the sequence which any utility shall follow in removing its poles and overhead wires and associated overhead structures by specifying the part or parts of the municipality in which removal shall first be effected, then the part or parts in which removal shall next be effected.

The chapter allows cooperative agreements to be made with the utilities to proceed with the undergrounding of lines and removal of poles and allows the town to determine the percentage of the surcharge.

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### REPOSITIONING UTILITY POLES AND LINES

One of the significant cost components of removing overhead utilities is the costs of replacing the utility lines with underground components, and paying for the remaining life of the lines and poles. Consequently, one of the options considered by many communities is the relocation of the overhead lines off of the main public ways so that they remain above ground but are located behind buildings and in easements that are not directly visible from the main public ways. In this way the replacement costs for the utilities are significantly reduced.

This option was successfully completed in the towns of Falmouth and Randolph. Randolph used a combination of undergrounding

and relocation for the downtown streetscape project, the other elements of which were funded by MassWorks grants. Falmouth's earlier streetscape improvement project was funded by a Public Works Economic Development (PWED) grant; the precursor to the MassWorks program. However the town later opted for relocating utility lines and poles rather than using the underground conduits installed as part of the streetscape program. The photos included here show the completed project from the Main Street perspective and from the perspective of the rear area parking lots that were used for the new utility corridors.





## ■ Implementation of the Plan

*Implementation of the plan components recommended in this study will require a combination of program development, design development, and funding. The following table lists the local entities expected to participate and their responsibilities, if the plan is to be successfully completed.*

### Implementation Entities

ENTITY	RESPONSIBILITIES
<b>Public Entities</b>	
Bridgewater Town Council	Adoption of programs, approval of grant applications, and budgeting of resources
Planning Board	Review and decisions on Zoning amendments, Site Plan Reviews and Special Permits for redevelopment initiatives
Zoning Board	Review and decisions on Special Permits for redevelopment projects
Community Preservation Committee	Recommendations on use of CPA funds for historic preservation, open space and recreational components of the plan
Community Development Advisory Committee	Implementation and oversight of the Downtown plan. Prepare marketing materials and invitations to developers for redevelopment sites
State Government	Program, financial and legal support
<b>Private Entities Whose Participation Aids Success</b>	
Land/Property Owners	Reinvestment and redevelopment
Business Owners	Investment in storefronts and signage with support from town
Developers	Investment in projects, participation with '40R' proposals
Lenders	Financial support for local reinvestment projects
Institutions	Cooperative agreements for improvements that benefit the institution

# Funding the Revitalization

*The following table is a summary of the key options for funding the infrastructure and building components of the revitalization plan. These include components to support private businesses. A more comprehensive listing of financial resources for small businesses can be found on the state online resource database; e.g. <http://www.mass.gov/hed/economic/>*

## Funding Opportunities

PROGRAM	STANDARDS	BENEFITS	SCHEDULE
<b>Infrastructure and Improvement Programs</b>			
Community Development Block Grant	Section 105 of the Federal Act allows uses of funds for targeted area façade and sign improvements, code enforcement, and other downtown revitalization objectives	Town has been previously successful with the program Allows use of funds for private for-profit entities when project benefits job creation or retention, and other benefits to low and moderate income people	State's last application deadline was February, 2014
Local Infrastructure Investment Program	MGL Chapter 23L, empowers municipalities and developers to finance infrastructure investment necessary to support development	Works when a private developer wants to partner on a redevelopment plan	Open
Business Improvement District	Incorporates a contiguous geographic area which is 75% commercial/retail/industrial or mixed use Established through local petition and local hearing process	Supports control by property/business owners Allows management, marketing, economic development activities	Open
District Improvement Financing (DIF)	Must meet state regulations; administered by Economic Assistance Coordinating Council (EACC) District and plan must be designated by the Town before submitting to EACC Term is a maximum of 30 years	Authorizes tools to implement plan including acquisition and financing Financing can be from bonds or revenue from tax increments or a combination	Open

MassWorks Infrastructure Program	<p>Applications once per year in September; sometimes extra grant round in late winter</p> <p>Provides funds for public infrastructure and streetscape improvements on public property</p> <p>Public property may be acquired as gift or by easement</p> <p>Encourages public/private partnership</p> <p>Provides funds for public infrastructure improvements on public property</p> <p>Town must be the applicant</p> <p>MassWorks cannot pay for any project work done before a grant award.</p> <p>Town can request up to 10% of project costs in its application for design, engineering, etc. to be undertaken after an award</p>	<p>Several different grants were rolled into this program two years ago. It provides one-stop grant program</p> <p>Substantial funding possible if State criteria for jobs and housing are met</p>	<p>Last funding round was September 2014. See suggested schedule below for more details</p>
Community Preservation Act Fund	Locally determined fund for historic preservation, affordable housing, and open space/recreation	Local control in the application of funds for the legislated purposes	Open
Adoption of c.166 sec22	Requires undergrounding of overhead public utilities and removal of utility poles	With surcharge on ratepayers, provides visual and safety improvements	Open
Local Institution Loan Pool	Loan pool from local banks and lending institutions for the purposes of funding local businesses	Private, institutional and semi-autonomous agency (MassDevelopment) funding	Open
<b>River Access and Trail Programs Included here for the link between the Downtown and the Styles &amp; Hart Conservation Area</b>			
Recreational Trails Grant [Division of Conservation and Recreation]	<p>Grants as reimbursements for trail protection, construction, and stewardship projects</p> <p>Requires 20% matching funds/in-kind services</p> <p>Types of trails funded include trails that link neighborhoods with natural areas and water trails</p>	Funding committed to multi-year projects	<p>Last funding round applications deadline was February 1st, 2014</p>
Aquatic Habitat Restoration and Revitalization Priority Projects [Division of Ecological Restoration]	Support for plans that restore the ecological integrity and community value of rivers	Funding committed to multi-year projects	<p>Next funding round RFR out November</p>
Rivers, Trails and Conservation Assistance Program [National Parks]	Technical assistance program that provides a National Park Service employee to help organize, strategize, build public participation, and help implement a conservation and/or recreation project	Provides focused technical assistance and broad recognition	<p>Applications must be submitted by August 1st</p>



# MassWorks Grant

*The streetscape and street infrastructure improvements recommended in this plan could be funded in part by a MassWorks grant from the Massachusetts Executive Office of Housing and Economic Development (EOHED). The following table lists the projected steps and timeline for the MassWorks grant application process, based on the 2014 program schedule.*

## MassWorks Grant

MONTH	ACTION	RESPONSIBILITY
January - April	<ul style="list-style-type: none"><li>• Discuss planned infrastructure improvements</li><li>• Negotiate public and private contributions</li><li>• Evaluate public ownership of property needed for public improvements; negotiate any necessary acquisitions</li><li>• Town Council appropriation for grant application studies and completion</li></ul>	Town /Property Owners
May	<ul style="list-style-type: none"><li>• MassWorks on-line applications available</li></ul>	EOHED
May-June	<ul style="list-style-type: none"><li>• Grant application process:</li><li>• Prepare plans and cost estimates for infrastructure improvements</li><li>• Report 'Economic Development' scorecard (economic and fiscal impacts, funding strategy, property owner and other private investments)</li></ul>	Town
May-August	<ul style="list-style-type: none"><li>• Application submissions announcement</li></ul>	EOHED (assuming previous schedule)
Early September	<ul style="list-style-type: none"><li>• Submit application</li></ul>	Town
December	<ul style="list-style-type: none"><li>• Announcement of funded projects</li></ul>	EOHED

# Appendix

## Existing Parking and Circulation Patterns

This section contains an analysis of existing parking and circulation patterns in downtown Bridgewater. Specifically, it includes the following sections:

- Parking Inventory and Demand, including a focus on Central Square
- Vehicle Volumes and Circulation
- Pedestrian Access
- Bicycle Access

### PARKING

The existing parking conditions data summarized in this section were collected in early May 2014. This includes:

- **PARKING INVENTORY** – A review of all parking spaces by location and regulation.
- **PARKING UTILIZATION** – Observed use of existing parking through the course of a typical weekday and weekend. Includes utilization profiles of “core” areas, general and restricted access lots, and publicly and privately owned lots.

### Parking Inventory and Regulations

A complete understanding of parking supply and regulations are the necessary base components to interpreting parking patterns

and behaviors in the study area. The inventory includes all parking within the defined study area, excluding small private driveways. This inventory was compiled and used to create a complete parking database of all parking facilities in the study area. The database was geo-coded to spatially display the existing parking facilities (see Figure 3) which remained as the base information that was used throughout the analysis.

There are 2,053 parking spaces in the study area. Of these, 177 are located on-street and 1,876 are off-street. The table below gives an overview of the parking inventory in the study area.

**Parking Inventory Overview – Study Area**

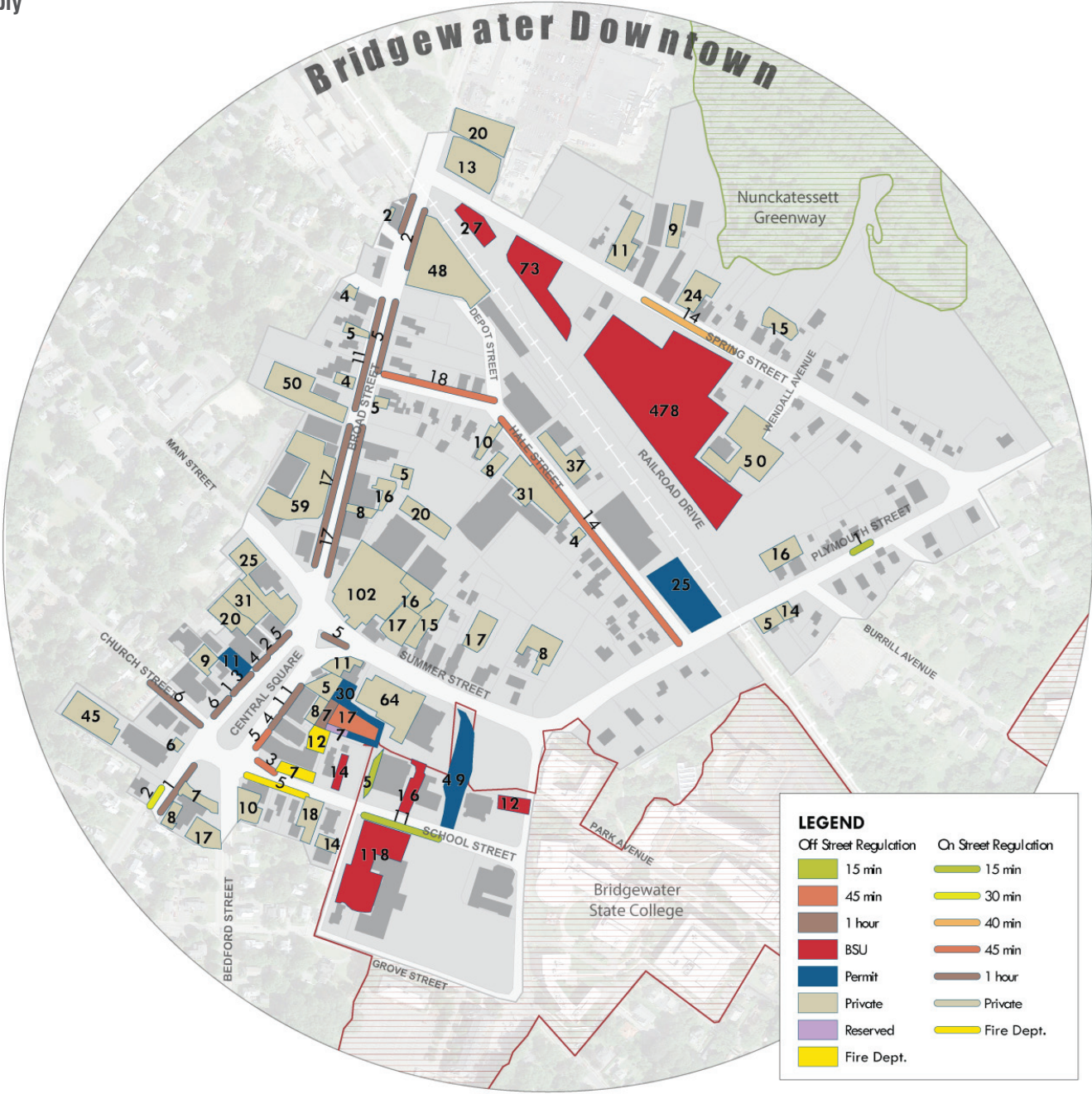
PARKING LOCATION	NUMBER OF SPACES	PERCENT OF TOTAL
On-Street	177	9%
Off-Street	1,876	91%
Total	2,053	100%

### On-Street Parking

The map on the following page is an inventory of the location and type of all parking regulations in the study area. The Town uses time restrictions to regulate on-street parking. Most regulations end at 5:00 or 6:00 p.m. with the exception of some on-street parking on the west side of Central Square where regulations end at 10:00 p.m.

There are several different time limits in the study area, although the bulk of on-street spaces have a one-hour limit. The table below

Inventory of Existing Parking Supply





shows that there are 68 spaces with four different types of parking time limits under 45 minutes. This can be confusing for the user who needs to remember a slightly different time limit depending on where he or she parks. The short time limits also cap the amount of time that someone can stay in Central Square.

### On-Street Parking Regulations

REGULATIONS	# OF SPACES	% OF TOTAL
30 min	2	1%
Fire Dept	5	3%
15 min	12	7%
40 min	14	8%
45 min	40	23%
1 hour	104	59%
Total	177	100%

### Off-Street Parking

The majority of the off-street parking in the study area is devoted to Bridgewater State University or private uses. There is one municipal lot behind the businesses on Central Square, with 24 publicly available spaces. All public parking is time limited, with the exception of permit spaces. The table below gives an overview of the off-street parking regulations in the study area.

### Off-Street Parking Regulations

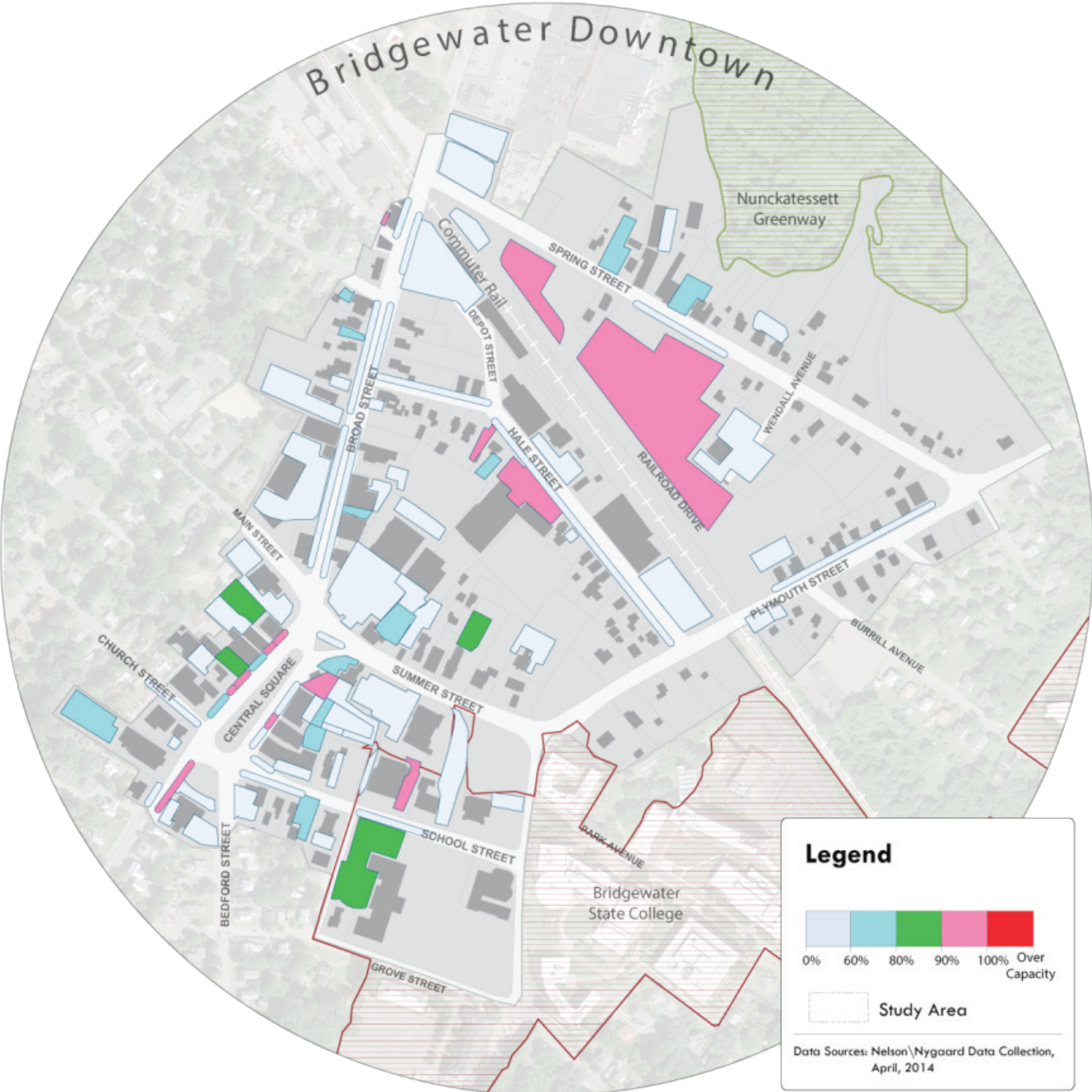
REGULATIONS	# OF SPACES	% OF TOTAL
1 hour	7	0%
15 min	5	0%
Reserved	7	0%
45 min	17	1%
Fire Dept	19	1%
Permit	115	6%
BSU	738	39%
Private	968	52%
Total	1876	100%

### Parking Utilization

Parking utilization counts provide a snapshot of typical parking use for a typical day in an area. To gather this data, the team counted parked cars in each on-street segment, lot, and garage at pre-determined time intervals. Land usage, regulation, price, and signage can drastically influence how even adjoining parking assets are utilized. By compiling parking utilization spatially, one can begin to clearly identify patterns of high or low usage, the impact of regulations, and assess how much of the parking supply is actually utilized throughout a typical day.

The consultant team conducted parking utilization counts on a Thursday in April. Data collectors captured weekday parking demand for the morning at 9:00 a.m., traditional daytime peak at 12:00 p.m., and afternoon/evening at 4:00 p.m. BSU was still in session when data was collected.

Parking Utilization, 9:00 AM



The analysis on the following pages shows the parking utilization profiles for the three time points in the study area. They are displayed in a variety of sub-sets: the entire study area, particular blocks and lots, and core areas of demand. The red lines indicate “functional capacity” of parking <sup>1</sup>, i.e. a vacancy of 15-percent on-street—about 1 out of 8 on-street spaces is available—and ninety-percent for off-street lots—a recognized national standard of when a parking facility is functionally full.

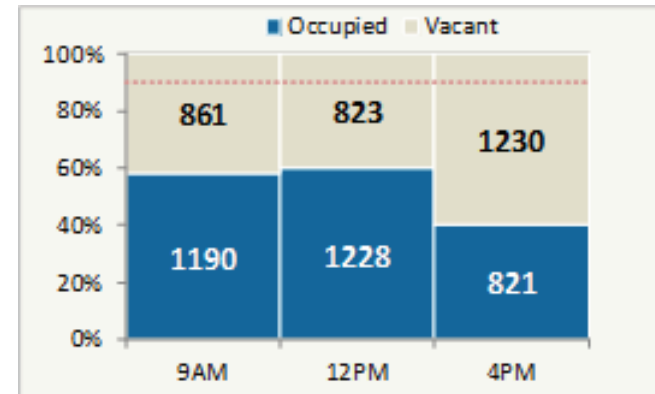
### Key Findings

- BSU lots fill quickly in the morning and empty out by 4:00 p.m.
- While Central Square on-street spaces are busy all day, there is overall capacity on-street, particularly on Broad Street.
- The Municipal Lot on Central Square has capacity throughout the day.
- At 12:00 p.m. peak utilization, parking assets are 60% utilized overall.

As shown in the utilization maps of 9 AM, 12 noon, and 4 PM, utilization is much higher during the morning and midday than the late afternoon/evening. However, even at peak usage at 12:00 p.m., there is still significant capacity overall. The table below shows parking utilization in the study area for all parking assets.

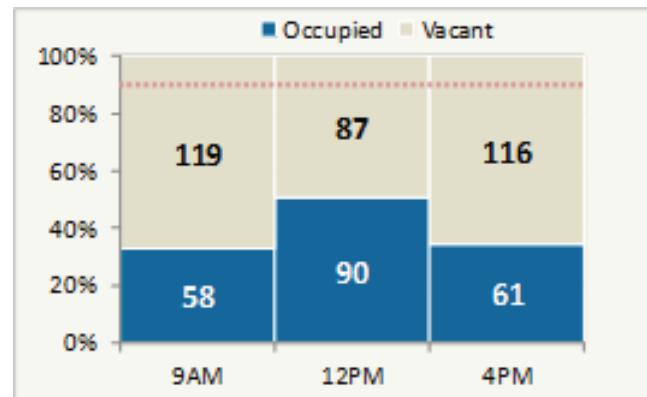
<sup>1</sup> Best national parking management practice suggests that parking is functionally full at 85% on-street (about one of every seven spaces is available) and 90% off-street.

### Study Area Parking Utilization



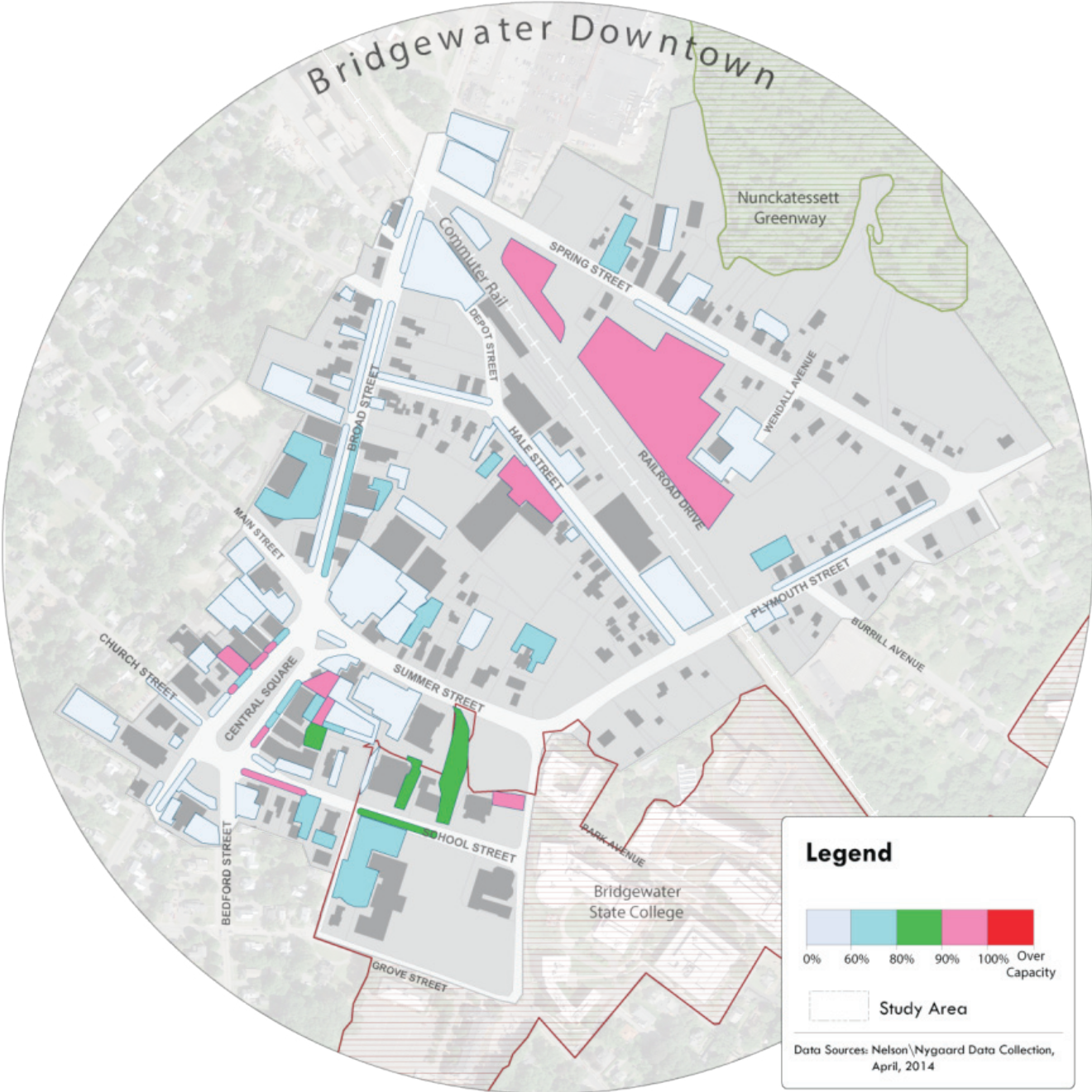
The next two tables show parking utilization broken into on-street and off-street types. Both types of parking have significant capacity available. Off-street parking fills up in the morning before the on-street, but is only about 60% utilized at peak. Similarly, on-street parking has at least 63 spaces available at peak before parking becomes functionally full at 85% utilized.

### On-Street Parking Utilization

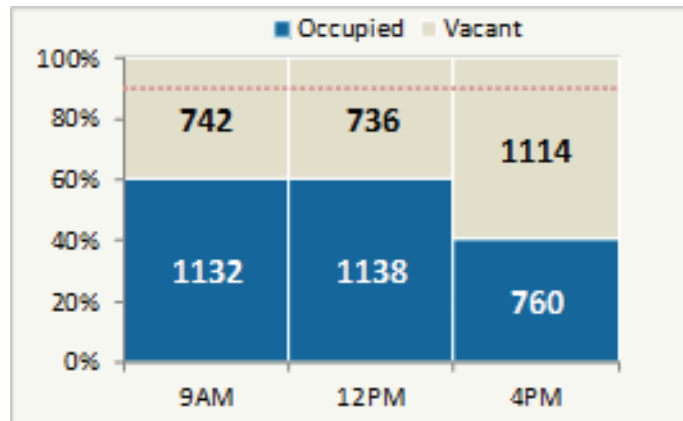




Parking Utilization, 12:00 noon

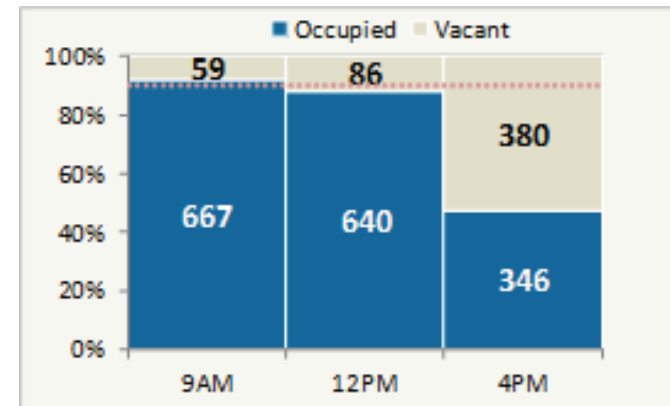


### Off-Street Parking Utilization



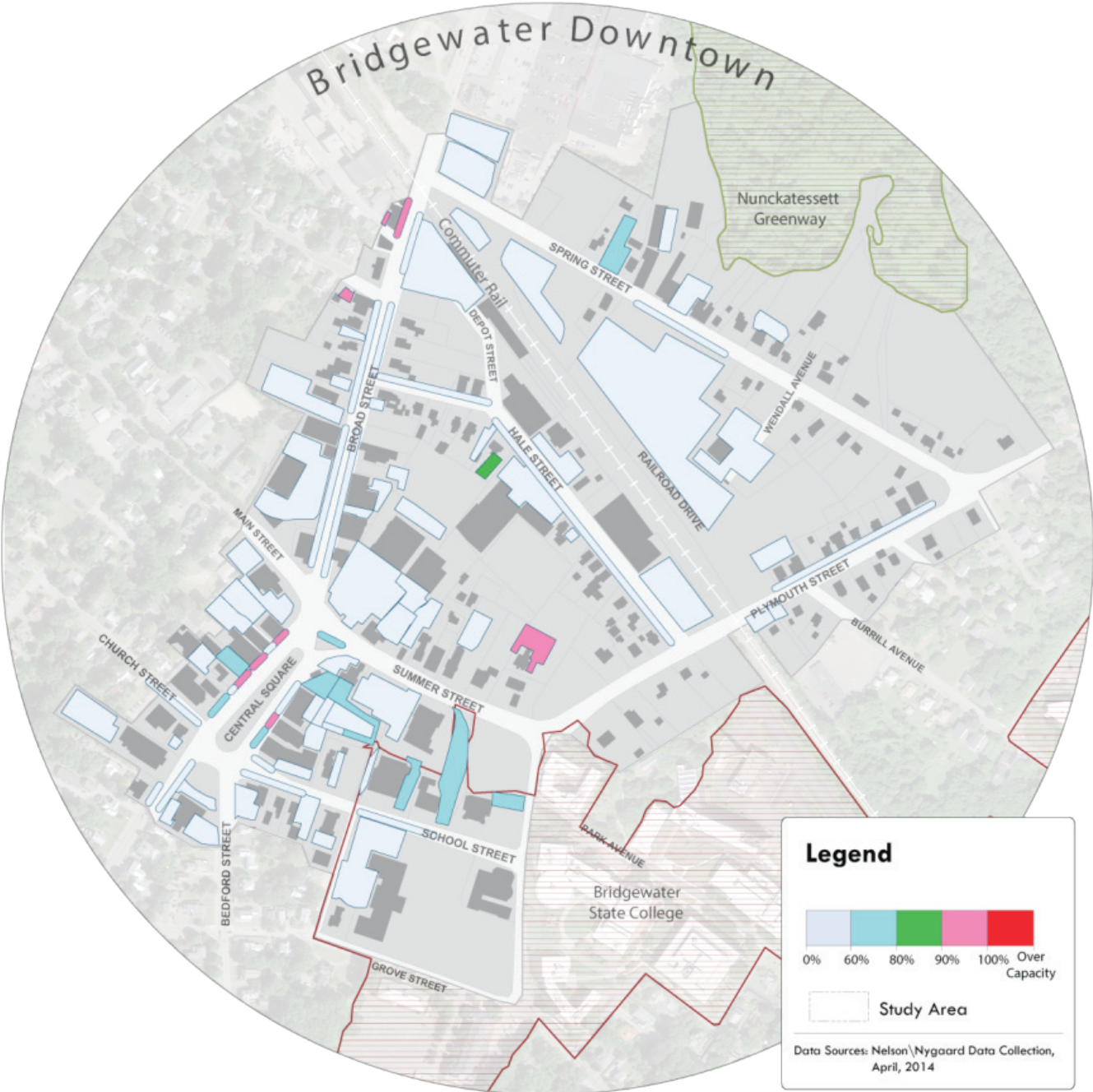
Bridgewater State University lots included in the study area provide 726 parking spaces in the study for student commuters, faculty and staff. These lots are functionally full at 9:00 a.m. with 92% of spaces utilized. However, as the day goes on, demand drops substantially at 4:00 p.m., and these spaces are only 48% utilized. The table below shows these parking utilization patterns.

### Bridgewater State Parking Facility Utilization



Central Square is a focal point of downtown Bridgewater with several local businesses in a dense, walkable environment. There are 242 spaces available in the Central Square area, as shown in the map at right. The table on the next page shows the utilization of these spaces, including on- and off-street as well as restricted and publicly available parking. These spaces are underutilized, with a peak utilization of 57 percent.

Parking Utilization, 4:00 PM

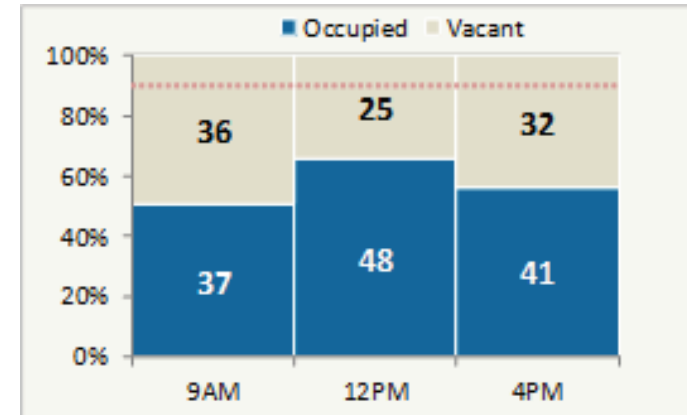




### Central Square Parking Assets

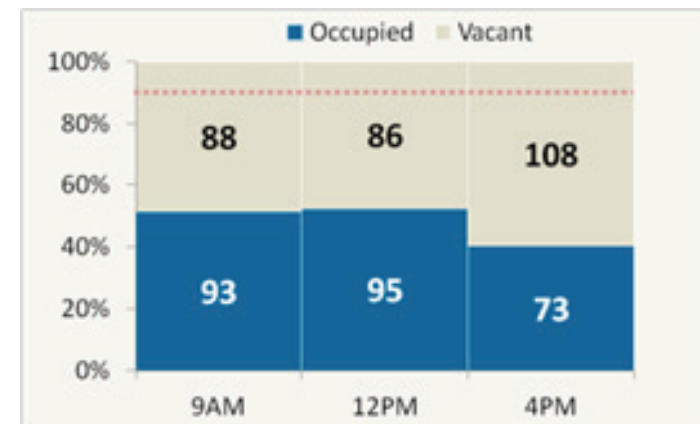


### Central Square Publicly Available Spaces



Restricted access parking also has availability throughout the day. This includes private lots, permit parking, and the on and off-street spaces reserved for fire department access, as shown in the table below.

### Central Square Restricted Access Parking



## Parking Demand – Central Square

Central Square’s walkable environment inherently allows for parking to be shared. Visitors can park once and visit multiple destinations; employees can park once for the day and walk to run errands; and residents can eat, shop, and work locally without using their car. Each land use does not need its own dedicated supply of parking, yet that is exactly what typical zoning codes indicate is needed. In addition, throughout the day, different uses have different peak demands: for example, an office may have a high demand until 5pm, and a restaurant open for dinner may have a high demand only after 5pm. Whether formal or informal, shared parking opportunities use available parking resources more efficiently and can allow for additional development.

To model parking demand in Central Square, Nelson\Nygaard used an adapted shared parking model using inputs from the Urban Land Institute’s (ULI) Shared Parking Manual (2nd Edition, 2005) and ITE’s Parking Generation (4th Edition, 2010). In addition to calculating demand by time of day by specific uses, the Central Square model tailored the shared parking model to account for internal capture, meaning that there are trips in the neighborhood that are made by patrons who, having already parked, travel between separate uses by foot and only use one parking space. Restaurants and retail services are common generators of internal capture trips in mixed-use developments.

According to national parking standard calculations, the needed number of parking spaces for this area of Central Square is about **293 parking spaces**. The area has a total of **254 parking spaces**<sup>2</sup>,

just shy of what ITE would estimate (see the following table and graph).

Central Square Parking by Land Use

LAND USE	SQUARE FEET OR DEWLLING UNITS	ITE RATE (SPACES PER UNIT/1000 SQUARE FE	EST. PARKING SPACES
General Retail	21,000	2.55	54
Auto Repair/ Gas Station	8,500	2.14	18
Bank	14,000	4.00	56
Church	22,000	3.79	83
Office	16,500	2.47	41
Government Office	7,000	4.15	29

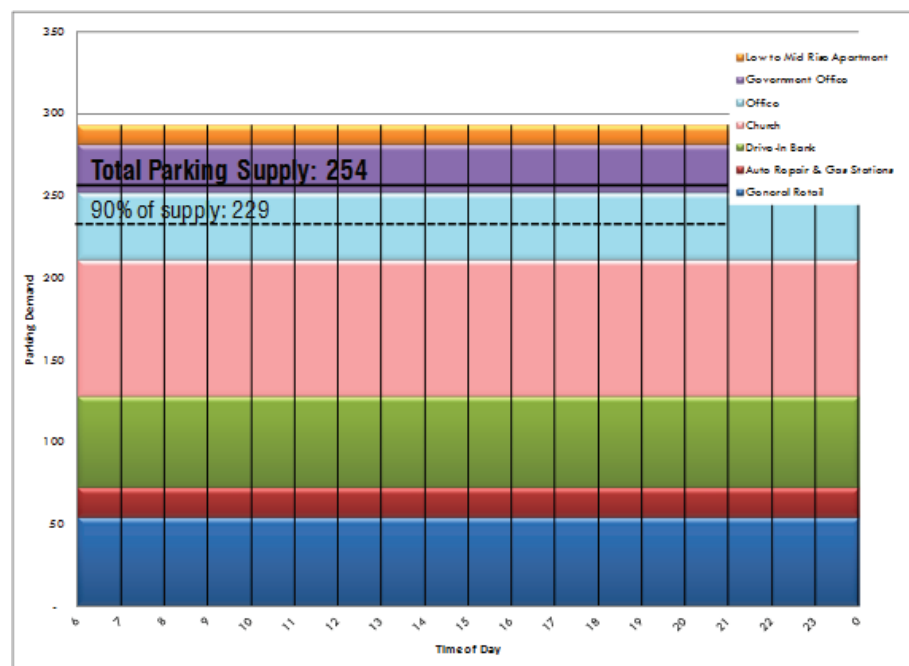
<sup>2</sup> Typical estimates for supply assume 90% of all supply, i.e. parking should be no more than 90% full.

LAND USE	SQUARE FEET OR DWELLING UNITS	ITE RATE (SPACES PER UNIT/1000 SQUARE FE	EST. PARKING SPACES
Apartments	10 d.u.	1.20	12

However, today's environment suggests that parking is shared among uses. The graphic below shows the estimated parking demand based on today's land uses, which estimates total parking demand at only about 160 parking spaces with an internal capture rate of 10-percent.

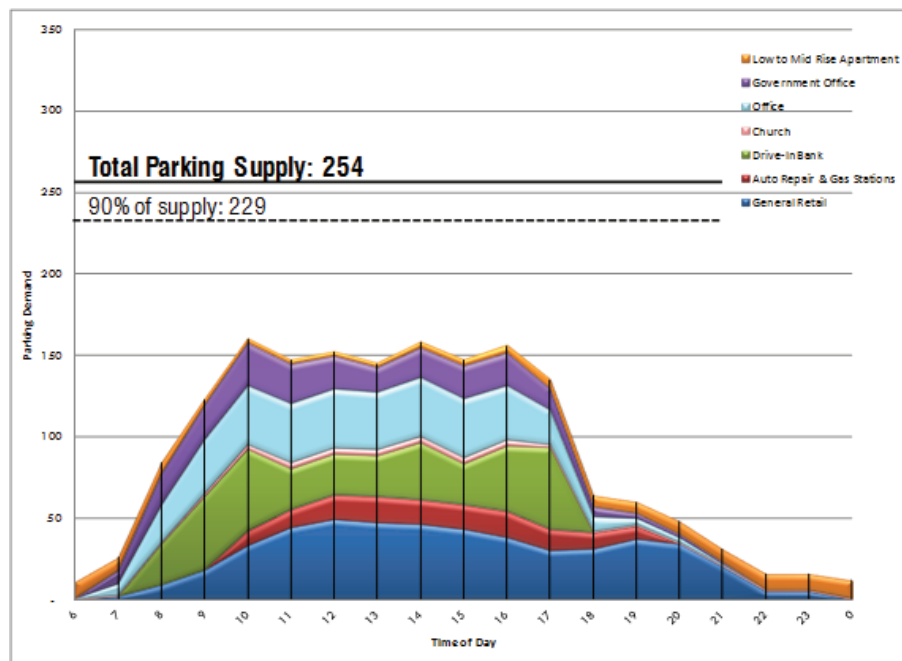
The actual parking demand (as observed in April 2014) was used to calibrate the shared parking model, and the real demand is overlaid on the model results in the graph below. This shows that in Central Square, there are more than 86 spaces available at peak, which means that about one-third of parking is available. This indicates that there is some availability during the peak of a typical weekday, and there is substantial availability in late afternoon.

**Central Square Parking Supply Compared to ITE**

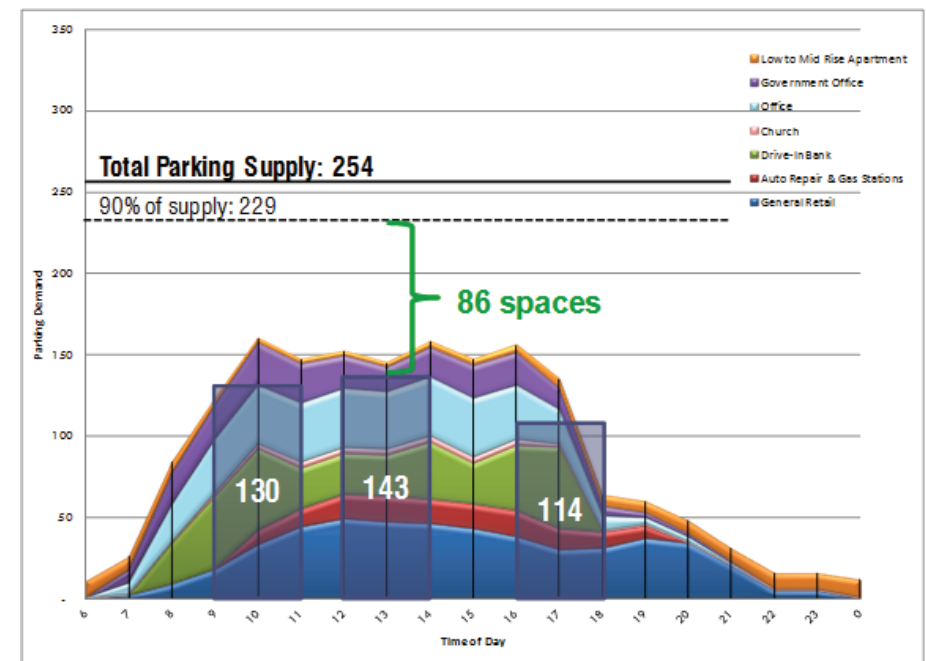




Central Square Shared Parking Demand by Time of Day plus Internal Capture



Central Square - Shared by Time of Day plus Internal Capture - Compared to Observed Demand



## VEHICLE VOLUMES

State Routes 18, 28 and 104 converge at Central Square in Bridgewater. Route 104 goes east-west, coming in on Plymouth and Summer Street in the east and continuing southwest along Central Square before turning west on Pleasant Street south of downtown. Routes 18 and 28 are north-south routes that share Bedford Street coming into downtown from the south. The two diverge north of Central Square – Route 28 goes northwest along Main Street while 18 continues northeast along Broad Street.

Because these arterial roads travel through downtown, some streets carry heavy volumes, shown in the map on the following page. For example, peak hour turning movement counts (TMCs) show that approximately 830 vehicles travel westbound on Summer Street/Route 104, 460 travel southbound on Broad Street/Route 18, and 700 travel southbound on Main Street. This traffic converges on Central Square and much of it must travel along the town green to continue south or west along any of these routes. What must be noted about these traffic volume counts is that they are nearly 15 years old; new traffic counts are needed for a more accurate analysis.

These high traffic volumes can lead to a challenging environment for pedestrians and cyclists. Pedestrians have trouble crossing the wide lanes and fast moving traffic often affiliated with rural routes. For cyclists, the large amount of truck traffic in addition to fast-moving vehicular traffic can be a challenge. Therefore it is important to facilitate pedestrian and cyclist travel in this type of environment through enhanced crossings and/or traffic calming strategies. The Central Square area presents several challenges:

- Head-in angled parking is dangerous for other drivers and cyclists
- Heavy vehicle volumes are higher than a typical downtown
- Straight, one-way roads encourage higher speeds
- Two lanes in each direction encourage higher speeds
- Confusing and complicated intersections are challenging

In contrast, other streets in Bridgewater are quieter. School Street carries about 260 cars in the PM peak hour traveling eastbound and less than 50 cars traveling westbound. Similarly, Hale and Spring Streets mostly serve local traffic with low peak hour traffic volumes. The reduced traffic means that walking along or even crossing these streets is more comfortable for pedestrians. In addition, cyclists may feel more comfortable traveling away from the trucks and high-speed traffic of state routes.

## Traffic Volumes





## Pedestrian Facilities



## PEDESTRIAN ACCESS

Most streets in the study area have sidewalks that vary in width from five to ten feet. However, Spring Street lacks a sidewalk along its south side. Crossings are generally standard style with the exception of a few ladder-style crosswalks at unsignalized intersections. The map on the next page shows the pedestrian facilities available in Bridgewater, as observed by the study team.

## BICYCLE ACCESS

Several of the previous transportation projects to bicycle facilities in downtown Bridgewater shows bicycle racks available in other bicycle facilities, such as the area.

