

PART III

RECOMMENDATIONS





5. PUBLIC OUTREACH

Introduction

The Walk/Bike Northampton Comprehensive Plan is a reflection of the community's desire for a more walkable, bikable and accessible city. Through communication with residents, business owners, advocates, stakeholders and other interested groups, the planning team created a long list of projects to support this desire. The public engagement process included a pair of well-attended public forums, two outreach events related to the redesign of Main Street, monthly meetings with the City's Bicycle and Pedestrian Subcommittee and a project website that was able to process public comments. To supplement the Alta team's effort, the Pioneer Valley Planning Commission conducted additional outreach to communities who are less likely to attend evening meetings downtown to ensure input was gathered from a wide variety of sources. In aggregate, the comments and ideas from all facets of the engagement helped to inform many of the project and policy recommendations found throughout this report.



Northampton Mayor David Narkewicz addressing the crowd at the beginning of Public Forum #1.

Pioneer Valley Planning Commission Outreach

Concurrent with Alta's public involvement described in this section, the Pioneer Valley Planning Commission (PVPC) sought perspectives on walking and bicycling by engaging with residents via Casa Latina, the Human Rights Commission and the Housing Authority properties. Generally, they were more interested in specifics for walking--with requests for:

- More sidewalks to assure connectivity, especially to school and parks from residential neighborhoods as well as other important destinations,
- Highlighting the need for sidewalk repair and maintenance, especially for wheel chair accessibility and to avoid elderly falls due to cracks and upwelled surfaces,
- The importance of lighting for safe walking at all hours.

With respect to bicycling, the people engaged did not, for the most part, feel that bicyclists belong within shared lanes with cars, so the need for bike lanes on streets as well as off road bike paths was highlighted. PVPC also understood this as an expression of need for a broad public information and education campaign to inform Northampton residents that a bicycle is a vehicle and as such belongs on the road.

A potential area of conflict surfaced with respect to the City's commitment to prioritize pedestrian infrastructure within a close proximity to the downtown--where services are concentrated--versus the high cost of housing within this same area. The residents PVPC engaged are generally less well-off economically and, not including the people who live in the Housing Authority properties downtown, cannot afford to live close to the city center. These people indicated a desire for new and improved sidewalks in the outlying neighborhoods.

Public Forum #1

On March 7th, 2016 the consultant team led the first public forum at the Senior Center on Conz Street to introduce our general approach to conducting Northampton's Walk Bike Comprehensive plan and present the existing conditions analysis. The presentation included photos and explanations of pedestrian and bicycle facility-related tools that can be used to create a comfortable cycling and walking environment for everyone. Pieces of the toolkit included rail trails, sidewalks/crosswalks, intersections, and green streets principles. The forum had a strong turnout, with over 120 in attendance. Base maps of the city that showed existing sidewalk locations and conditions, rail trail locations, and on-street bicycle facility locations were utilized to solicit input and feedback from the public. Comments were recorded and digitized in the appendix of this report.

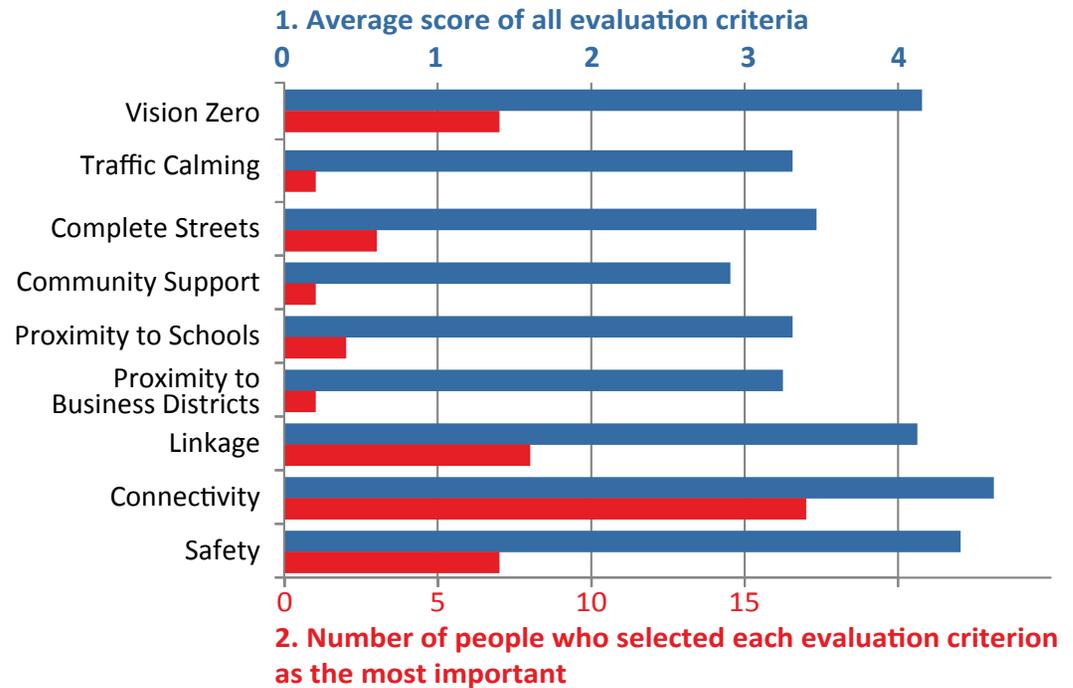


One of the many outreach meetings hosted "on-site" by PVPC included one in April at CasaLatina in Florence.

Public Forum #2

On May 18th, 2016 the consultant team led the second of two public forums at First Churches Sanctuary on Main Street to go over the proposed recommendations to enhance Northampton's bicycle and pedestrian network. Over 40 members of the community attended the event. Project ideas were displayed on large printed maps and digitally during a presentation. The public was encouraged to comment on specific projects and recommend changes to project maps. In an effort to develop a fair and equitable project priority list, a common set of evaluation criteria was circulated and attendees were encouraged to list the criteria on a scale of Very Important to Not Important (right top). 32 surveys were completed. The survey results (right bottom) indicate that improved connectivity to existing networks, improved links to popular destinations, and improved safety were the highest-rated choices. **Question 1 answers are displayed in Blue**, and **Question 2 answers are displayed in red**.

Project Priority Evaluation Criteria Survey Responses



The breakout groups invited the public to provide valuable input regarding specific project they'd like to have included in the plan.



Public Forum #1

The Main St workshop engaged attendees with large section print-outs of the Main St corridor.



Main St Workshop*

The crowd at the First Churches Sanctuary just before Public Forum 2 began.



Public Forum #2

The Main St Demonstration Project showcased how excess space within Main Streets right of way could be utilized for safer bicycle facilities and parklets.



Main St Demonstration Project*



MARCH 2016

APRIL

MAY

JUNE

JULY

PROJECT WEBSITE
PVPC OUTREACH

*See Main St. section for description.



6. RECOMMENDED NETWORK

Introduction

The nearly 200 project recommendations for the City of Northampton include new crosswalks, sidewalks, bike lanes, traffic calming elements, short connections to rail trails, and entirely new trails. All are conceptual in nature and most will need to be followed up with additional analysis, engineering study and public outreach. The projects are derived from previous City and regional planning studies and reports, consultant team field work and analysis, the public outreach described above, input from City staff and comments from the Bicycle and Pedestrian Subcommittee. All are consistent with Northampton's current Complete Streets ordinance and intended to be eligible for potential funding from the state. In aggregate, the intent of the dozens of miles of network recommendations is to improve safety, connectivity and mobility for people on foot, riding bicycles and for those with disabilities.

With the future implementation of the pedestrian, bicycle and trail projects, Northampton's network of sidewalks will increase from nearly 78 miles today to 88 miles in the future. The City's designated bicycle facilities will grow from today's 8.9 miles to 26.4 miles in the future and the trail network will expand from nearly 9.5 miles today to 14.3 miles. The expansion of active transportation infrastructure will help the City achieve its mode share goals, mitigate increases in traffic congestion and air pollution and reduce its carbon footprint. The new sidewalks, trails and bike lanes will also improve the quality of life for Northampton's residents and help businesses draw customers from a more-diverse range of transportation modes, not just motor vehicle drivers. They will enhance the City's progressive and sustainable "brand" and help attract new residents, businesses and institutions.

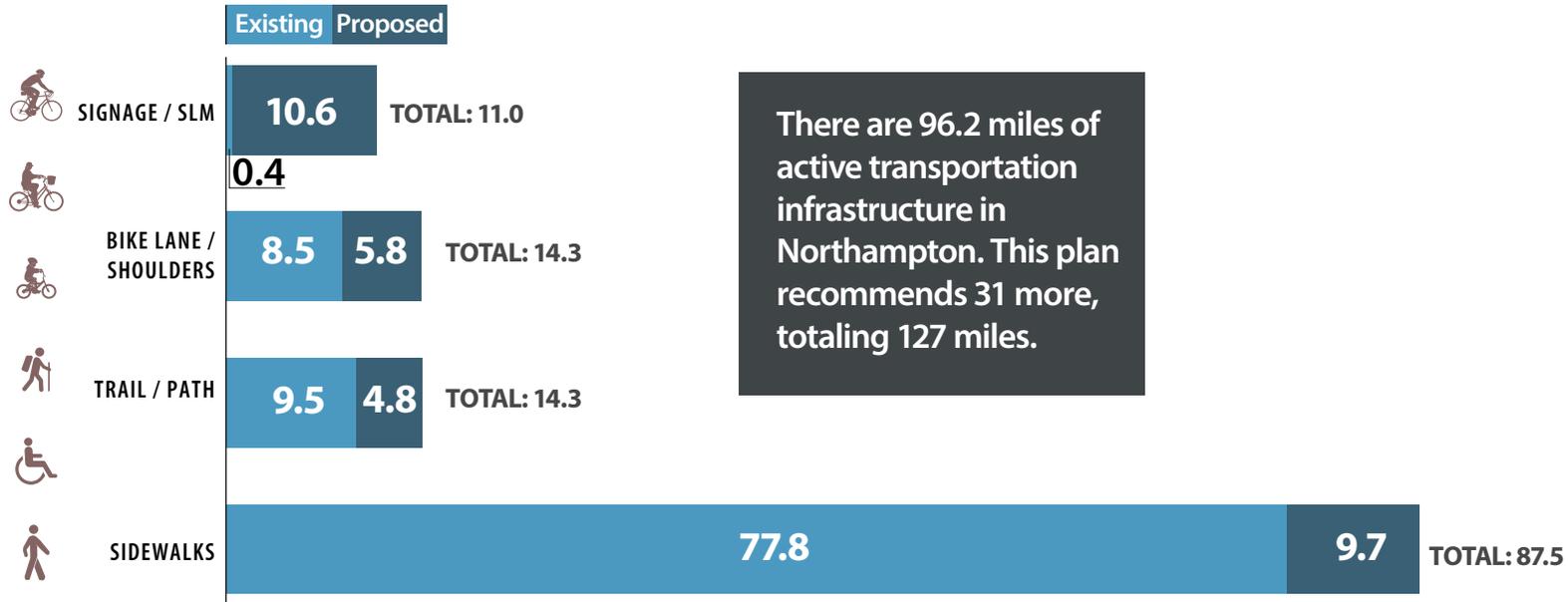
Prioritization

In order to help the City of Northampton prioritize the nearly 200 project recommendations, the plan used 9 criteria to evaluate each project. The scoring was qualitative in nature and should not be interpreted as being inflexible. The final scores should instead be used to inform funding decisions and grant requests in the future.

It should be noted that because safety and connectivity were considered the most critical criteria, both were weighted with a multiplier of 2X when determining the final scores for each recommendation.

Goal	Explanation
G1: Safety	Project provides a significant safety improvement for all users
G2: Connectivity	Project improves connections to existing sidewalks, rail trails and bike lanes
G3: Linkage	Project provides direct links to key civic, open space and cultural destinations
G4: Proximity to Business District	Project lies within one mile of Downtown Northampton or Florence
G5: Proximity to Schools	Project lies within one mile radius of a school
G6: Community Support	Project is supported by >1 person at a public forum or on web site
G7: Complete Streets	Project is consistent with the City's Complete Streets policy and eligible for MassDOT Complete Streets funding program
G8: DPW Traffic Calming List	Project lies along a roadway currently on the DPW's list of traffic calming projects
G9: Vision Zero	Project is intended to help the city achieve the goal of zero pedestrian and bicyclist deaths

The consultant team collected important data regarding how residents of Northampton want bicycle and pedestrian network projects prioritized in the plan utilizing the above information in a survey presented to attendees of Public Forum #2



6.1 Design Features Toolkit - Bicycle

Infrastructure that enables the safety of cyclists is a key feature of the recommendations section of this report. The cost and implementation timeline of these upgrades ranges from low to high. Low-cost, context-sensitive retrofits can enable safety improvements to an area pending a more robust or significant future redesign, and can encourage would-be cyclists to try out the new facility. The following design features make up a significant portion of the infrastructure improvement recommendations table in the appendix.

Shared Lane Marking (SLM) A.K.A. Sharrow



Standard SLM



Enhanced SLM



Greenbacked Sharrow

Shared lane markings are used to mark a designated bike route on roadways signed at 35 MPH or less. They are placed in the travel lane, encouraging cyclists to travel away from the door-zone of parked vehicles. These symbols highlight the fact that the roadway is a shared space, and should be coupled with "Bikes May Use Full Lane" signs (MUTCD R4-11). Enhanced Sharrows provide extra awareness to motorists due to the dashed lane lines.

The addition of green paint on the roadway typically signifies a potential conflict point. Bicycles conflict with motor vehicles at intersections and driveways where a turning movement forces a motor vehicle to cross the path of a bicycle. Although MUTCD allows up to 250 foot (maximum) spacing between sharrows, 150 - 200 feet is ideal.



Contra-Flow Bike Lane

Contra-flow bike lanes are designed to allow bicycles to ride the opposite direction of motor vehicle traffic. This treatment converts a one-way street into a two-way street for bike traffic - connecting neighborhoods via an important link in an overall bike network. Warning signs should be placed at cross streets to warn motor vehicles. SLMs may be included for cyclists riding with traffic.



Bike Lane

Bike lanes designate an exclusive space for bicycles through the use of pavement markings and signage. Bike lanes are typically located adjacent to motor vehicle traffic and travel in the same direction as motor vehicles.



Separated Bike Lane - Sidewalk Level

Raised separated bicycle lanes are vertically separated from motor vehicle traffic. A furnishing zone between the bicycle lane and curb or motor vehicle traffic is a common feature. At intersections, the raised bicycle lane can be dropped down to the street level.



Separated Bike Lane - Street Level

These bikeways are at street-level and use a variety of methods for physical protection from passing traffic. A parking lane, flexible delineator posts, or flower boxes may provide the physical separation from motor vehicle traffic.



Photo Credit: www.thedartmouth.com

Advisory Bike Lane

Advisory bike lanes are bicycle priority areas delineated by broken white lines, separate from a center one-lane two-way travel area. Motorists may only enter the bicycle zone when no bicycles are present. Motorists must overtake bicyclists with caution due to potential oncoming traffic.

Design Features Toolkit - Pedestrian

Pedestrian design features create a more comfortable and safe environment for pedestrians. Many of these are designed to slow motor vehicle traffic.



Commercial Zone Sidewalk

A sidewalk is a dedicated space for pedestrians adjacent to a street or connecting cul-de-sac neighborhoods. A 6-foot sidewalk is the minimum preferred standard in commercial areas.



Residential Zone Sidewalk

Residential zone sidewalks are important in providing pedestrians access to schools, businesses, and recreation areas. Four feet is the minimum preferred standard, and a 5-foot sidewalk is common.



Signalized Road Crossing

Signalized road crossings are typically locations where rail trails or paths cross roadways with high traffic volumes or speed and/or connect to schools.

Traffic Calming Measures



Neck Down

Neck downs are typically aligned at the beginning or entrance to a residential side street. Neck downs may be appropriate along typically low-volume streets that experience a high amount of commuter cut-throughs at peak times.



Raised Crosswalk

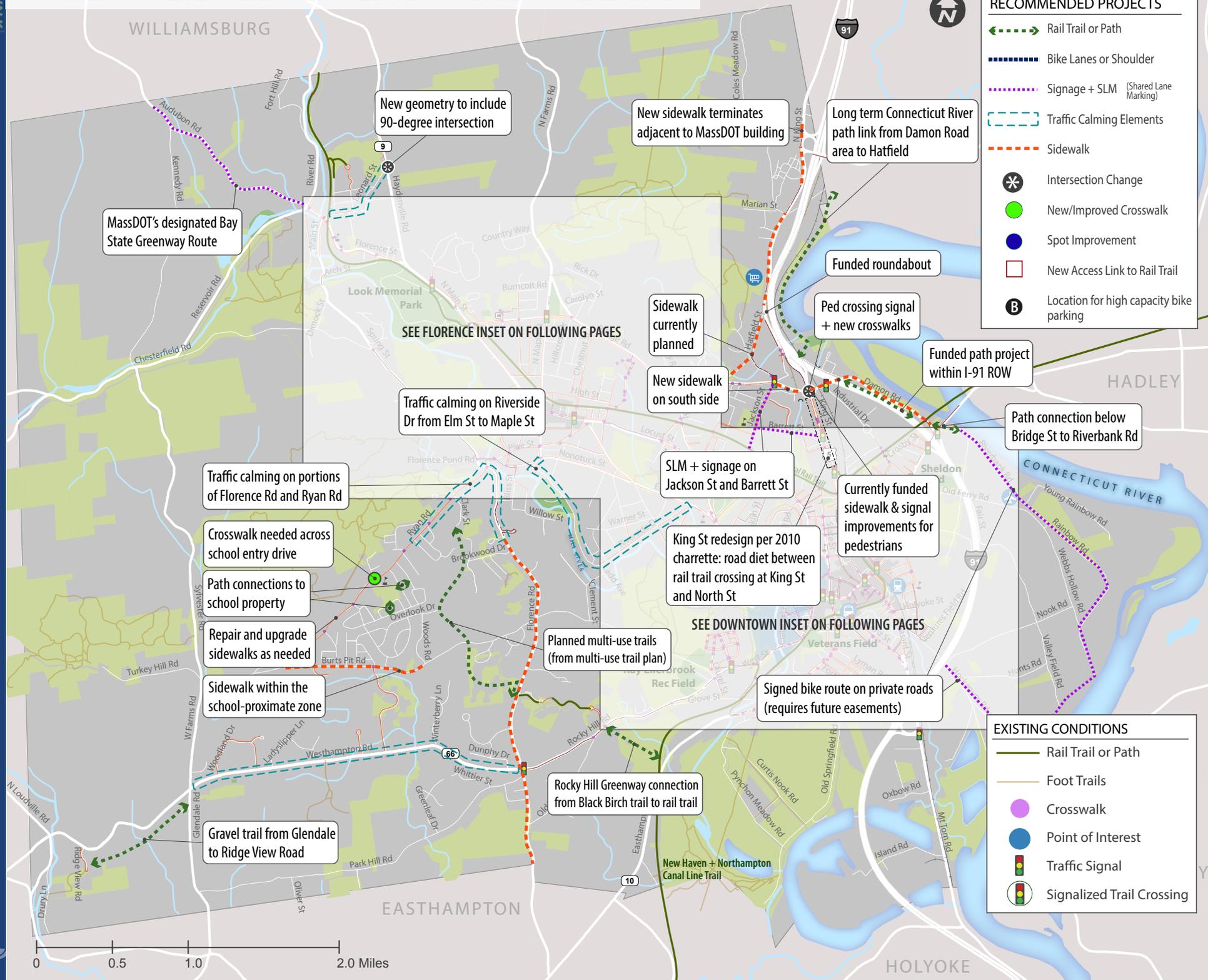
A steeper-pitched raised crosswalk is ideal for some college campus or downtown core locations where significant pedestrian crossings occur regularly or frequently. One result of a steeper crossing is motor vehicle traffic slowed to approximately 10 MPH or less. Mobility-impaired individuals have an easier time crossing as they do not have change in grade.



Chicane

Chicanes deflect vehicles and reduce mid-block speeds by discouraging rapid acceleration.

SUMMARY OF PEDESTRIAN + BICYCLE NETWORK RECOMMENDATIONS



RECOMMENDED PROJECTS

- Rail Trail or Path
- Bike Lanes or Shoulder
- Signage + SLM (Shared Lane Marking)
- Traffic Calming Elements
- Sidewalk
- Intersection Change
- New/Improved Crosswalk
- Spot Improvement
- New Access Link to Rail Trail
- Location for high capacity bike parking

EXISTING CONDITIONS

- Rail Trail or Path
- Foot Trails
- Crosswalk
- Point of Interest
- Traffic Signal
- Signalized Trail Crossing





PROJECT DESCRIPTION - CITYWIDE						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k - 50k, \$\$\$ = > 50k)
1	Sidewalk	Bridge Rd	Between King St and Jackson St	Install sidewalks	Key gap in sidewalk network	32	X	\$\$\$
2	Trail Connection	Bridge St	Below Bridge St to Riverbank Rd.	Create path connection below Bridge St	To avoid the congestion of the Damon Rd / Bridge St intersection	24		\$\$
3	Sidewalk	Burts Pit Rd	From Woods Rd to Ryan Rd	Install sidewalk in school-proximate zone		25		\$\$\$
4	Trail Connection	Damon Road area	Along Connecticut River north to Hatfield town line	Explore feasibility of building off-road trail link along the Connecticut River from Damon Road at Bridge Rd intersection area towards Hatfield	Long term regional trail connection from Northampton to communities along the river	27		\$\$
5	On-Street Bike Facility	Florence Rd		Stripe bikeable shoulder and 11' travel lanes	Florence Rd is uncomfortable for cycling	31	X	\$\$ - \$\$\$
6	Sidewalk	Florence Rd	Between Rocky Hill Rd and Blackbirch Trail	Install sidewalk along Florence Rd	Large gap in sidewalk network	27		\$\$\$
7	Traffic Calming	Florence Rd	From Ryan Rd to Brookwood Dr	Utilize traffic calming elements on this portion of road, ranked #3 on DPW's Top 5 list of roadways in need of traffic calming		25		\$\$
8	Trail Connection	Florence Rd	At Black Birch Trail	Extend Rockly Hill Greenway connection from Florence Rd. to Rail Trail	The existing trail provides a convenient shortcut from residential neighborhoods towards downtown. Expanding this trail would enhance connectivity to the New Haven & Northampton Canal Line Trail	20		\$\$

PROJECT DESCRIPTION - CITYWIDE						EVALUATION & SCORE		COST
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9	Sidewalk	Hatfield St	From Bridge Rd to N King St	Utilize traffic calming, including installation of ADA compliant curb cuts	There are currently no sidewalks along Hatfield St and this is a key route for cyclists and pedestrians to access the River Valley Coop and other retailers	25		\$\$\$
10	Intersection	Hatfield St	At N. King St	Roundabout in planning stage	Wide intersection geometry creates challenging turn movement for cyclists and challenging crossing for pedestrians	23		\$\$\$
11	Traffic Calming	Jackson St	Entire length	Traffic calming	Narrow roadway provides uncomfortable feeling for cyclists	27		\$\$
12	Traffic Signal	King St	At Bridge Rd	Install pedestrian crossing signal, countdown timers, and crosswalks	High pedestrian demand to access nearby grocers	27		\$\$\$
13	Sidewalk	King St	Between River Valley Coop and Big Y	Install sidewalks	Key gap in sidewalk network	24		\$\$
14	Sidewalk	N King St	From Asbury St to the Northampton / Hatfield line	Install sidewalks	This is key gap in the sidewalk network	22		\$\$\$
15	Traffic Calming	Riverside Dr	From Lexington Ave to Nonotuck	Utilize traffic calming elements on this portion of road, ranked #5 on DPW's Top 5 list of roadways in need of traffic calming		25		\$\$
16	Traffic Calming	Ryan Rd	From Florence Rd to Pioneer Knolls	Utilize traffic calming elements on this portion of road, ranked #3 on DPW's Top 5 list of roadways in need of traffic calming		25		\$\$



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17	Sidewalk	Ryan Rd	Burts Pit Rd to Florence Rd	Upgrade / repair / widen sidewalks	Ryan Rd is uncomfortable for pedestrians: existing sidewalks non ADA compliant	28		\$\$\$
18	Intersection	Ryan Rd	At RK Finn Ryan Road School	Install crosswalk	Students would benefit from a crosswalk at the school entrance / driveway	24		\$
19	Traffic Calming	Westhampton Rd	From Glendale Rd / West Farms Rd to Florence Rd	Utilize traffic calming elements	Despite posted 35 MPH signage, many motorists speed here regularly	19		\$\$
20	Trail Connection		At rear of RK Finn Ryan Road school	Establish trail connection between neighborhood and school on Birchwood Dr on Austin Cir	There is currently no way for students walking and biking to school from this neighborhood to reach school grounds safely and comfortably without utilizing Ryan Rd	24		\$\$\$

FLORENCE INSET - SUMMARY OF PEDESTRIAN & BICYCLE NETWORK RECOMMENDATIONS

NORTHAMPTON
BIKE
PED / BIKE RECOMMENDATIONS: FLORENCE
3-12



- EXISTING CONDITIONS**
- Rail Trail or Path
 - Bike Lane
 - Sidewalk (with buffer)
 - Sidewalk (no buffer)
 - - - Funded Sidewalk
 - Crosswalk
 - Foot Trails
 - Traffic Signal
 - Signalized Trail Crossing

- RECOMMENDED PROJECTS**
- - - Sidewalk
 - - - Rail Trail or Path
 - - - Bike Lanes or Shoulder
 - - - Signage + SLM (Shared Lane Marking)
 - - - Traffic Calming Elements
 - Intersection Change
 - New/Improved Crosswalk
 - Spot Improvement
 - New Access Link to Rail Trail
 - B Location for High Capacity Bike Parking



Reorient crosswalk and add signage

Stripe 11' foot lanes and shoulder to N. Main St

Potential path connection

Ramp connection and sidepath from Florence St to rail trail

Trailhead to Robert Hills section of Saw Mill Hills conservation area needed

Median refuge island

Because of wetland, will need to be boardwalk

Pave connection from Fern St to rail trail

Reduce turning radius and add crosswalk to Florence common

Raised crosswalk to provide access to Florence common

Long term plan needed to improve intersection for pedestrian and bike safety

Infill sidewalk gap and add crossing at intersection

Consider small roundabout with sidewalks and bike facilities

Two-way bike travel to be allowed on Scanlon Avenue (signs and possible contra-flow lane)

Terminate sidewalk at Broad Brook Greenway trailhead

City cemetery fence needs pedestrian gates

Utility pole relocation may be required for ADA

Potential location for advisory bike lane pilot

Upgrade with enhanced SLM and additional signage

Bump-out needed at key crosswalk

Reorient crosswalk

Improve path through park + S. Main sidewalk

Tighten sidewalk corner radius

Painted buffer and delineator posts recommended in bike lane

Median refuge island

Bike detector loop needed

On private street, create flush, painted walk zone on roadway

Look Memorial Park

JFK Middle School

Mass Central Rail Trail

N Main St

Burncolt Rd

Fern St

N Maple St

Hillcrest Dr

Chestnut St

High St

Locust St

Meadow St

Pine St

W Center St

Nonotuck St

Bliss St

Willow St

Ryan Rd

Spring St

Arch St

Country Way

Bridge Rd

Old Quarry Rd

Riverside Dr

Milton St

Hinckley St





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1	Crosswalk	Beacon St	At Pine St	Reorient crosswalk	Awkward geometry	25		\$
2	Sidewalk	Bliss St	Between Willow St and Mill River bridge	New sidewalk and crosswalk	Gap in pedestrian network	25		\$\$
3	On-Street Bike Facility	Bridge Rd	From N. Maple St. to Main St.	Stripe bike lanes	Important bicycle improvement for JFK Middle school students	29	X	\$\$
4	Traffic Calming	Bridge Rd	From N Maple to N Main	Utilize traffic calming elements on this portion of road, ranked #5 on DPW's Top 5 list of roadways in need of traffic calming, including a new sidewalk	Proximity to JFK Middle School	25		\$\$
5	Trail Connection	Childs Park	From Prospect St to Elm St / Northampton High School	Create path inside Childs Park adjacent to Woodlawn Ave		28		\$\$\$
6	Trail Connection	City Cemetery	Along N Maple	Install pedestrian gates at north and south end of existing cemetery fence		18		\$\$\$
7	Sidewalk	Cooley Dickinson Property	At north end of Hospital Rd	Work with Cooley Dickinson to provide better pedestrian access from Hospital Rd to the main hospital entrance	Lack of sidewalks prohibits pedestrian access the south	27		\$\$
8	Trail Connection	Dimock St	At Arch St	Provide mountain bike and hiker access to conservation land just west of intersection	Pedestrian demand	24		\$\$
9	Sidewalk	Fern St	Entire length	Install sidewalk along Fern St	Proximity to JFK Middle School	28		\$\$\$
10	Intersection	Florence Rd	At Spring St / Pine St	Consider small roundabout for safety of all users	Challenging intersection would benefit from a roundabout	17		\$\$
11	Crosswalk	Florence St	Between Warner Row and Leeds Elementary School	Re-orient crosswalk and add warning signage	Limited sight lines at curve in road and motorists speeding makes crosswalk uncomfortable for school children	27		\$
12	Sidewalk	Florence St	At Warner Row	Install curb-cuts to sidewalk	Current sidewalks non ADA-compliant	25		\$\$

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13	Trail Connection	Florence St	At N. Main St - Leeds	Connect Florence St to MassCentral Rail Trail with sidepath and ramp up embankment	Pedestrian / bike demand	31	X	\$\$\$
14	Traffic Calming	Front / Leonard St	Between Florence St and Rt 9	Utilize traffic calming infrastructure	Leonard St is used as a commuter cut through from Florence Rd to Haydenville Rd / Route 9	21		\$\$
15	Sidewalk	Hospital Rd	From Elm St to Cooley Dickinson Hospital	Stripe flush painted walkway zone along edge of roadway	Currently there is no pedestrian access to the Hospital from Elm St	27		\$\$
16	On-Street Bike Facility	Jackson St	From Prospect St to Bridge Rd (entire length of Jackson St)	Stripe Shared Lane Markings	To create more comfortable road conditions for cyclists	22		\$\$
17	Bike Parking	JFK Middle School		Install APBP-approved bicycle racks	APBP approved racks are more secure and organize bikes in an aesthetically pleasing fashion	21		\$
18	Sidewalk	Landy Ave	From Nonotuck St to Maines Field	Install sidewalks on Landy Ave	Proximity to park	27		\$\$\$
19	Intersection	Leonard St	At Route 9 / Haydenville Rd	Rebuild intersection with new geometry to include a 90 degree intersection	Oblique angle of current intersection encourages high speed turns	29	X	\$\$\$
20	On-Street Bike Facility	Locust St	From N Main St to N Elm St	Stripe travel lanes / bike lanes, include painted buffer and delineator posts	No striping or lane designation causes discomfort among cyclists and pedestrians	31	X	\$\$\$
21	Intersection	Locust St	At Hatfield St	Install refuge island in median area	This is currently an unnecessarily wide roadway with no shoulder or bike lane striping resulting in long pedestrian crossing distances	28		\$\$
22	Bike Parking	Locust Street & Bridge Road	At Smith Vocational School and JFK Middle School	Install ABPB-approved bicycle parking at these schools	Lack of bike racks that meet APBP-approved standards	21		\$ - \$\$
23	Sidewalk	Maple St	From W Center St to Middle St	Install sidewalk to close this sidewalk gap along the west side of Maple St		23		\$\$



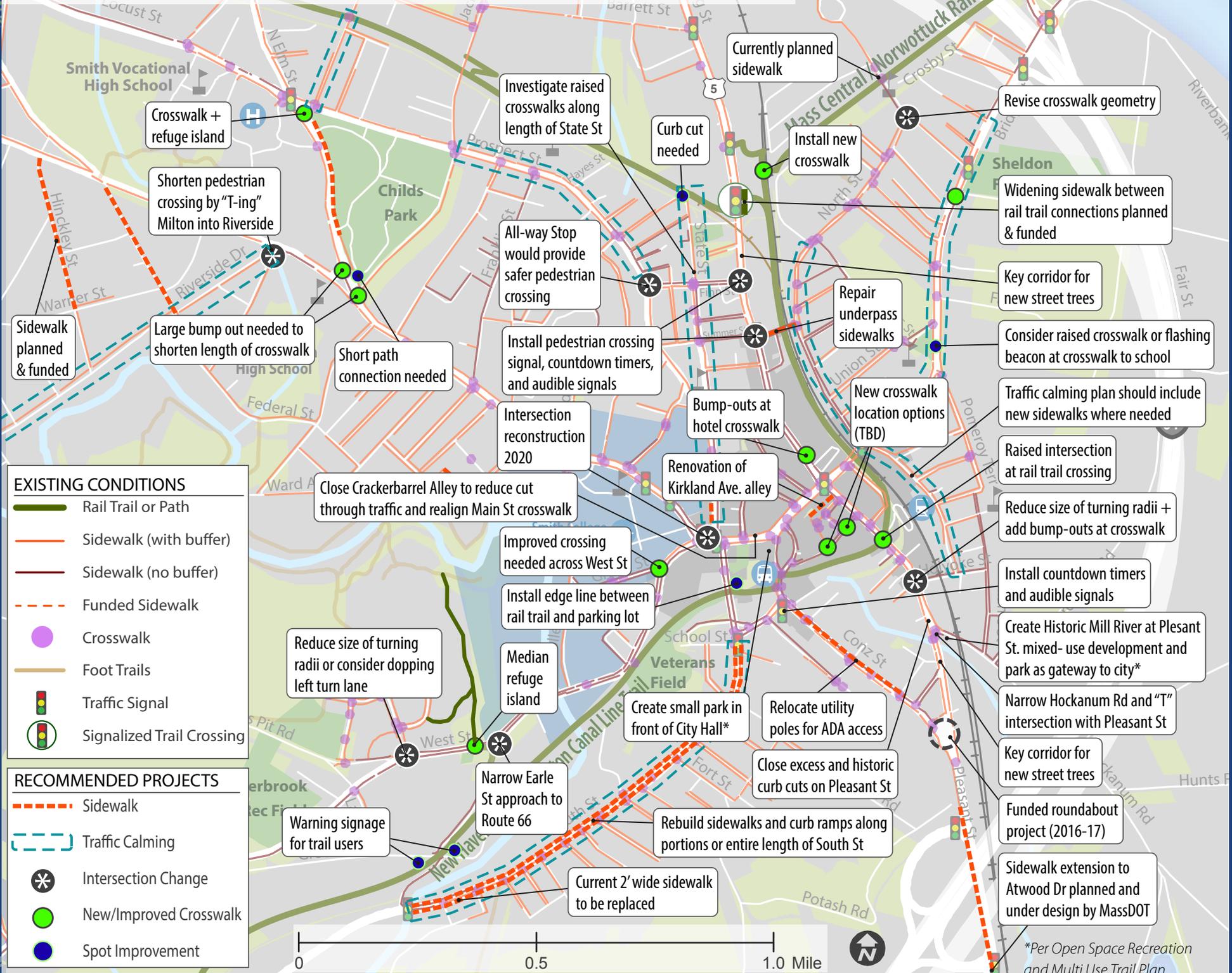
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24	Intersection	Meadow St	At Park St	Long term plan to redesign needed	Wide intersection creates unnecessarily long crossing distances for pedestrians and encourages motorist speeding	28		\$\$
25	Sidewalk	Meadow St	From N. Main St to Corticelli St	Replace existing north sidewalk to better connect Downtown Florence to the path west of the Mill River Ball Fields	Existing sidewalk is narrow and the asphalt is well worn and in need of maintenance	29	X	\$\$\$
26	Crosswalk	Meadow St	Near N Main	Install raised crosswalk to park in Florence Center beyond the path from Spring St to Corticelli St.	This is an ideal location for a raised crosswalk as motor vehicle traffic approaches a yield sign	28		\$\$
27	On-Street Bike Facility	Meadow St	From N Main to existing path on Meadow St at Corticelli St	Stripe Shared Lane Markings		22		\$
28	Sidewalk	Meadow St	From Park St/N Main to Spring St	Replace broken / damaged sidewalks	Gap in pedestrian network	26		\$\$
29	Trail Connection	Morningside Dr.	From Morningside Dr. to JFK Middle School	Trail connection to improve access to the JFK Middle School		26		\$\$\$
30	Traffic Calming	Multiple	At all rail trail crossing	Include standard signage on approach to all rail trail crossings	Current roadway crossings lack Trail Crossing / Yield to Peds signage	29	X	\$
31	On-Street Bike Facility	N Elm St	From Locust to Prospect Ave.	Reduce width of travel lanes and flush median to provide space for bike lanes		25		\$\$
32	Bike Parking	N Main St	From N. Maple St to Chestnut St	Install bike parking	A lack of bike parking in the Florence commercial district may cause fewer bicycle trips to town and increase the number of single-occupant motor vehicle trips	19		\$

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33	On-Street Bike Facility	N Main St	From N. Maple St to Chestnut St	Install enhanced Shared Lane Markings or bike lanes	A lack of bike lanes in the Florence commercial district results in less confident riders cycling on the sidewalk, causing potential conflicts between pedestrians and cyclists	31	X	\$
34	Crosswalk	N Main St	Between Look Memorial Park and JFK Middle School	Install median refuge island and boardwalk / sidewalk (due to presence of wetlands) on east side of N Main St to Bridge Rd	Proximity to JFK Middle School	26		\$\$\$
35	Sidewalk	N Maple St	At Arcanum Field	Install sidewalk adjacent to Arcanum Field (utility pole relocation may be required for sidewalks to meet ADA standards)	Major gap in sidewalk network to and from Arcanum jeopardizes pedestrian safety	29	X	\$\$
36	On-Street Bike Facility	N Maple St	From Bridge Rd to Main St.	Stripe Shared Lane Markings OR advisory bike lane markings	Potential location for advisory bike lane pilot	22		\$
37	Traffic Calming	Nonotuck St (and Elm St)	From the southern tip of Childs Park to Pine St	Utilize traffic calming elements on this portion of road, ranked #4 on DPW's Top 5 list of roadways in need of traffic calming		24		\$\$\$
38	Traffic Calming	Nonotuck St (and Elm St)	At Hinckley St	Tighten turning radius in southwest corner	Wide geometry creates intersection with high conflicts	31	X	\$\$
39	Traffic Calming	Nonotuck St (and Elm St)	At S. Main St	Install two crosswalks at this location	Crosswalks and sidewalks are inadequate at this location	27		\$
40	Traffic Calming	Nonotuck St (and Elm St)	At Bliss St	Reduce large turning radius and add crosswalk across Bliss St	Large turning radii encourages high speed traffic and creates unnecessarily long crossings for pedestrians	24		\$\$
41	Intersection	Park St	At N Main St	Reduce turning radius dramatically to slow traffic and provide opportunity to add a crosswalk	Tightening the turning radius of this intersection will reduce an unnecessarily long crossing distance for pedestrians and discourage speeding	28		\$\$



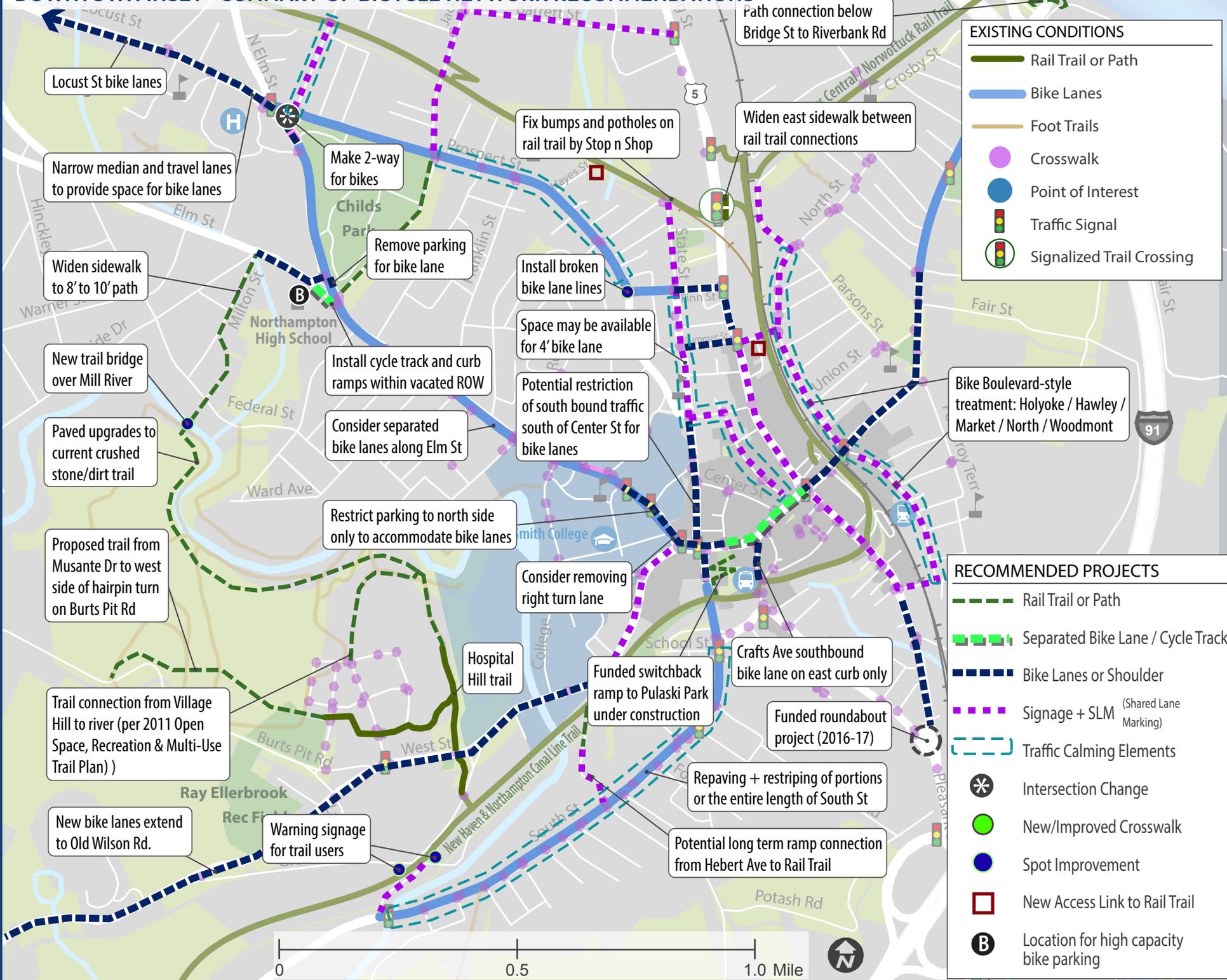
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42	Sidewalk	Pine St	Between Nonotuck and Corticelli St	Install sidewalk on south side and crosswalk at Nonotuck intersection	There is currently a wide, unmarked crossing	26		\$\$
43	Trail Connection	Prospect Ave	From rail trail intersection with Prospect Ave along N. Elm St to Elm St / Northampton High School	Install on-street bicycle facility and refuge island	This is a key connection for Northampton High School students and faculty to use the MassCentral Rail Trail to travel from neighborhoods East, North, and West of this area	29	X	\$\$\$
44	Sidewalk	Riverside Dr	Along edge of Maines Field	Install sidewalk or path along edge of park	Proximity to park	32	X	\$\$
45	Crosswalk	S Main St	At Pine St	Add curb extension and typical Pedestrian Crossing signage	This is a key crosswalk that has low visibility for approaching motorists	25		\$\$
46	Sidewalk	S Main St	From Pine St to Berkshire Terrace	Make path through triangle park ADA accessible (minimum five feet) and install sidewalk along south side of South Main St		30	X	\$\$
47	On-Street Bike Facility	Scanlon Ave	Florence Ave	Install "except bicycles" plaque to Do Not Enter sign	One way street inconvenient for cyclists	25		\$
48	Sidewalk	Sheffield Ln		Update / repair sidewalks	Pedestrian demand	25		\$\$
49	Sidewalk	Willow St		New sidewalk and crosswalk	Gap in pedestrian network	25		\$\$\$

DOWNTOWN INSET - SUMMARY OF PEDESTRIAN NETWORK RECOMMENDATIONS



*Per Open Space Recreation and Multi Use Trail Plan

DOWNTOWN INSET - SUMMARY OF BICYCLE NETWORK RECOMMENDATIONS



EXISTING CONDITIONS

- Rail Trail or Path
- Bike Lanes
- Foot Trails
- Crosswalk
- Point of Interest
- Traffic Signal
- Signalized Trail Crossing

RECOMMENDED PROJECTS

- Rail Trail or Path
- Separated Bike Lane / Cycle Track
- Bike Lanes or Shoulder
- Signage + SLM (Shared Lane Marking)
- Traffic Calming Elements
- Intersection Change
- New/Improved Crosswalk
- Spot Improvement
- New Access Link to Rail Trail
- Location for high capacity bike parking



PROJECT DESCRIPTION - DOWNTOWN						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k - 50k, \$\$\$ = > 50k)
1	Crosswalk	Allen Pl	At Gothic St	Install crosswalk	This is a difficult place for pedestrians to cross	29	X	\$
2	Sidewalk	Atwood Dr	Entire length	Roundabout project on Pleasant Street (under construction) will extend sidewalks to Dike Road and MassDOT has begun the planning for extending sidewalks from there to Atwood Drive.	This is a difficult place for pedestrians to cross	22		\$\$
3	On-Street Bike Facility	Barrett St	From King St to Jackson St	Add Shared Lane Markings and signage	This is a key bicycle route through the city and offers direct connections from neighborhoods west to the Jackson Street School	28		\$
4	Traffic Calming	Bridge St	Between Orchard St and Lampron Park	Utilize traffic calming: refuge island / curb extensions / raised-table crossing	Traffic frequently does not stop at crosswalks	30	X	\$\$\$
5	Traffic Calming	Bridge St	Between Fair St and Old Ferry Rd	Enforce no parking on sidewalk	Pedestrian demand and safety	24		\$
6	On-Street Bike Facility	Bridge St	From Market St to Orchard St	Stripe bike lanes	To create more comfortable road conditions for cyclists	29	X	\$
7	Crosswalk	Bridge St	At Parsons St	Install Rectangular Rapid Flash Beacon or other device to control crosswalk across from school	Uncontrolled crosswalk across from elementary school is inadequate for young school children who want to bike or walk to school	30	X	\$\$
8	Sidewalk	Conz St	Between Service center Rd and Wilson Ave	Relocate utility poles for sidewalk ADA compliance	Utility pole placement makes sidewalks non ADA compliant	21		\$\$ - \$\$\$
9	Intersection	Conz St	At Old South St	Install countdown timers and audible signals	Pedestrian safety and comfort.	28		\$\$
10	Intersection	Cracker Barrel Alley	At Main St	Convert Cracker Barrel Alley to pedestrian / bicycle access only, utilize curb extensions on Main Street to signify change	Low visibility, high crash / conflict area	29	X	\$\$



PROJECT DESCRIPTION - DOWNTOWN						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k - 50k, \$\$\$ = > 50k)
11	Crosswalk	Cracker Barrel Alley	Behind Main Street businesses and at Main St	Install crosswalk in rear of buildings. Re-align crosswalk extending across Main St from Cracker Barrel Alley to reflect change in Cracker Barrel Alley access	Current awkward crosswalk geometry will be out of date when Cracker Barrel Alley access changes take place	26		\$
12	On-Street Bike Facility	Crafts Ave	From Main St to Old South	Install bike lanes on left side of Craft St	This will relocate bicycles further away from angled parking which may create a potential conflict	26		\$
13	On-Street Bike Facility	Earle St	From South St to Grove St	Stripe Shared Lane Markings	To create more comfortable road conditions for cyclists	21		\$
14	Intersection	Earle St	At West St	Earle St should be narrowed on the approach to West St, consider dopping the turn lane		19		\$\$\$
15	Intersection	Elm St	At West St	Examine intersection for long term redesign including potential removal of right turn lane from Elm St to West St	Intersection prone to conflicts due to awkward geometry and traffic signal phasing	27		\$\$ - \$\$\$
16	Intersection	Elm St	N. Elm and Woodlawn Ave	Build new curb extensions (may require relocation of fire hydrant)	Long crosswalks used by High School students	30	X	\$\$\$
17	Sidewalk	Elm St	At N. Elm crosswalk	Path connection from Elm St sidewalk to path within Childs Park		26		\$
18	On-Street Bike Facility	Elm St	From Child's Park to Prospect St (at John M Greene Hall)	Swap parking with bike lane to create a protected facility	Create comfortable riding conditions for a broad range of cyclists	30	X	\$\$
19	On-Street Bike Facility	Elm St	From Prospect St to Bedford Terrace	Remove parking on the south side of street to accommodate bike lane (loss of 10 spaces)	Create comfortable riding conditions for a broad range of cyclists	26		\$
20	Trail Connection	Elm St	In front of Northampton High School, where Elm turns to N Elm back to Elm	Install cycle track along vacated ROW	Encouraging cycling to and from school by providing new facilities will encourage bicycle use over single occupancy motor vehicle trips	29	X	\$ - \$\$

PROJECT DESCRIPTION - DOWNTOWN						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k-50k, \$\$\$ = > 50k)
21	Sidewalk	Federal St	Between Riverside and Elm	Install sidewalks east side of street	This is a narrow street currently without sidewalks, and has close proximity to schools and parks	29	X	\$\$
22	On-Street Bike Facility	Finn St	Between King St and Prospect	Where possible, narrow travel lanes to 10' and install bike lane stencils in existing or new shoulder zones	This defacto bike lane area would benefit from a formal designation as a bike lane by adding traditional bike lane stencils	26		\$
23	Sidewalk	Franklin St	Between Bancroft St and Elm St	Install curb cuts	Pedestrian demand / current sidewalks non ADA compliant	24		\$\$
24	On-Street Bike Facility	Gothic and Trumbull St	Gothic: Entire Length. Trumbull: From Gothic intersection to State St.	Utilize bike-boulevard style treatments: Install Shared Lane Markings / utilize traffic calming elements	Provides an alternative to bicycling on State to access Main St	29	X	\$\$ - \$\$\$
25	Crosswalk	Hampton Ave	At Kirkland Ave OR in front of Hampton Court Apartments	Install new crosswalk at either location	A crosswalk is needed to improve pedestrian access across Hampton Ave, either at Kirkland Ave or further east towards Pleasant St at the primary entry to a parking lot which is similar to being located at a cross street.	21		\$
26	Sidewalk	Hawley St	From Holyoke St to Bridge St	Add 5' sidewalks and ADA curb ramps, make bike boulevard improvements	Bumpy, deteriorated sidewalks along Hawley St	31	X	\$\$\$
27	Trail Connection	Hayes Ave	At rail trail crossing	Install spur connection/ramp from Hayes to rail trail	Clear desire line shows existing path through woods that should be formalized with a paved ramp	26		\$\$\$
28	Trail Connection	Hebert Ave	From intersection of South St and Hebert Ave (opposite Olive St) to New Haven and Northampton Canal Line Trail at end of Hebert St	Establish formal connection by installation of ramp at end of Hebert St and signage along Hebert St and South St directing cyclists and pedestrians towards rail trail	Important connection opportunity on busy roadway to divert cyclists and pedestrians onto separated trail facility	28		\$

PROJECT DESCRIPTION - DOWNTOWN						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k-50k, \$\$\$ = > 50k)
29	Intersection	Hockanum Rd	At intersection with Pleasant St	Make intersection a "T" right angle, narrow Hockanum Road at intersection approach	Wide turn radii creates unnecessarily long crossing for pedestrians and encourages motorist speeding	26		\$\$
30	On-Street Bike Facility	Holyoke / Hawley / Market / North / Woodmont	From Pleasant St to Norwottuck Rail Trail	Bike boulevard style treatments from end to end, using enhanced Shared Lane Markings and signage	Alternative bike route to Pleasant and Main St	31	X	\$\$\$
31	Traffic Calming	Holyoke St	At Pleasant St	Utilize traffic calming devices		26		\$\$
32	Trail Connection	Hospital Hill Trail	From Village Hill development to Northampton High School	Extend and pave existing Hospital Hill path	This path is currently neglected and in disrepair	24		\$\$\$
33	Traffic Calming	King St	At Hotel Northampton	Install curb extensions at this unsignalized crosswalk		28		\$\$
34	Traffic Calming	King St	At Trumbull Rd	Install curb extensions		23		\$\$
35	Traffic Signal	King St	At Finn St	Install pedestrian signal heads, count-down timers and audible signals (for both crosswalks)		29	X	\$\$
36	Traffic Signal	King St	At Summer St and North St	Install pedestrian crossing signal, countdown timers and audible signals	No pedestrian signal exists	28		\$\$\$
37	Sidewalk	King St	At rail trail crossing	Install wider sidewalk on east side of King St.	Existing sidewalk is too narrow	27		\$\$
38	Intersection	King St	At Main St / Pleasant St	Install pedestrian countdown timers on traffic signals downtown		30	X	\$\$
39	Traffic Calming	King St	From rail trail crossing at King St to North St	Implement road diet (per 2010 charrette)		22		\$
40	On-Street Bike Facility	King St	From Finn to North St	Stripe bike lanes	To provide bike facility between Finn St bike lanes and North St connection to rail trail	28		\$

PROJECT DESCRIPTION - DOWNTOWN						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k-50k, \$\$\$ = > 50k)
41	Alley Repair	Kirkland Ave. Alley	Between Pleasant St. and Armory St. lot	Improve surface materials, lighting, and street furniture within the alley	Alley is not a comfortable place for pedestrians, though it provides a convenient connection to Pleasant St.	30	X	\$\$\$
42	Intersection	Locust St	At N Elm / Prospect St	Make intersection two-way for bikes	Bicyclists traveling from Cooley Dickson to points north from Prospect Ave are currently forced to make difficult left against traffic on Prospect St	23		\$\$
43	On-Street Bike Facility	Main St	From State at South to Hawley at Market	Install separated bike lane	Plenty of space exists within existing right of way to create separated bicycle facility.	30	X	\$\$\$
44	Sidewalk	Main St	North side, from Cracker Barrel Alley to Center	Widen sidewalk	High pedestrian demand with numerous adjacent eating establishments	21		
45	Traffic Calming	Main St	All Main St Crosswalks	Install curb extensions and median islands at all Main St crosswalks	Main streets width creates unnecessary long crossings for pedestrians	29	X	\$\$
46	Trees	Main St	Main / State / South to Main / Hawley / Market	Install new street trees and landscaping	Bolstering the already established urban tree canopy in this core downtown streetscape will provide a comfortable pedestrian experience on hot summer days.	23		\$\$
47	Crosswalk	Main St	At Cracker Barrel Alley	Re-align crosswalk geometry		27		\$
48	Trail Connection	Main St	Behind Fitzwilly's	Install signage to Main St at ramp behind Fitzwilly's	Lack of signage may confuse trail users	26		\$
49	Trail Connection	Mill River / Hospital Hill Trail		New paved trail from current terminus near Olander Dr to high school	Need to connect New Haven + Canal Line Trail to High School + Elm St	27		\$\$\$
50	Trail Connection	Musante Dr	To Burts Pit Rd (north side of road)	Install trail from Musante Dr to the west side of the hairpin turn on Burts Pit Road, on the north side of the road partially to avoid both the steep grade of the hairpin turn		23		\$\$\$



PROJECT DESCRIPTION - DOWNTOWN						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k-50k, \$\$\$ = > 50k)
51	On-Street Bike Facility	N Elm St	Just north of Elm St intersection / just west of the southern tip of Child's Park	Remove six parking spots for continual bike lane	Removal of the parking establishes a more complete connection along Elm St's established bike facility in front of the high school	30	X	\$
52	Intersection	N Elm St	At Locust St	Install bicycle loop detector or video		21		\$
53	Intersection	New Haven & Northampton Canal Line	At Earle St	Install signage instructing cyclists to approach intersection slowly	This intersection is at the bottom of a hill and the rail trail approach is on a diagonal path with significant blind spots	18		\$
54	Crosswalk	North St	Where North St meets Day Ave / Bates Ave	Update crosswalk geometry	Crosswalk is poorly aligned	30	X	\$\$
55	Intersection	North St	At Rail trail bridge at North St (between Market and King)	Upgrade underpass	Sidewalks below underpass are in poor condition	25		\$\$
56	On-Street Bike Facility	North St	North St between the King St and Day Ave	Install on-street bicycle facility (mix of bike lanes and shared lane markings)		25		\$\$
57	Trees	North St	North St between the intersection of North and Market and the intersection of North and Lincoln	Install street trees	Newly widened roadway has many fewer street trees	20		\$\$\$
58	Trail Connection	North St	At Edwards Square	Ramp to rail trail from the east end of the parking lot at corner of North and Edwards Sq	Important desire line currently used by many walkers and bicyclists	29	X	\$\$\$
59	Bike Parking	Northampton High School	Front entrance	Replace wheel bender bicycle racks with APBP approved racks	"Wheel bender" bicycle racks are less secure than APBP approved racks	18		\$
60	Traffic Calming	Pleasant St	New Haven & Northampton Canal Line Trail crossing	Utilize traffic calming: refuge island / curb extensions / raised-table crossing	Cars frequently don't stop for crossing cyclists or pedestrians	29	X	\$\$\$
61	On-Street Bike Facility	Pleasant St	Between Conz St and Main St	Install bike lanes from Conz to Holyoke and Shared Lane Markings to Main St	Bicycle safety and access	31	X	\$\$

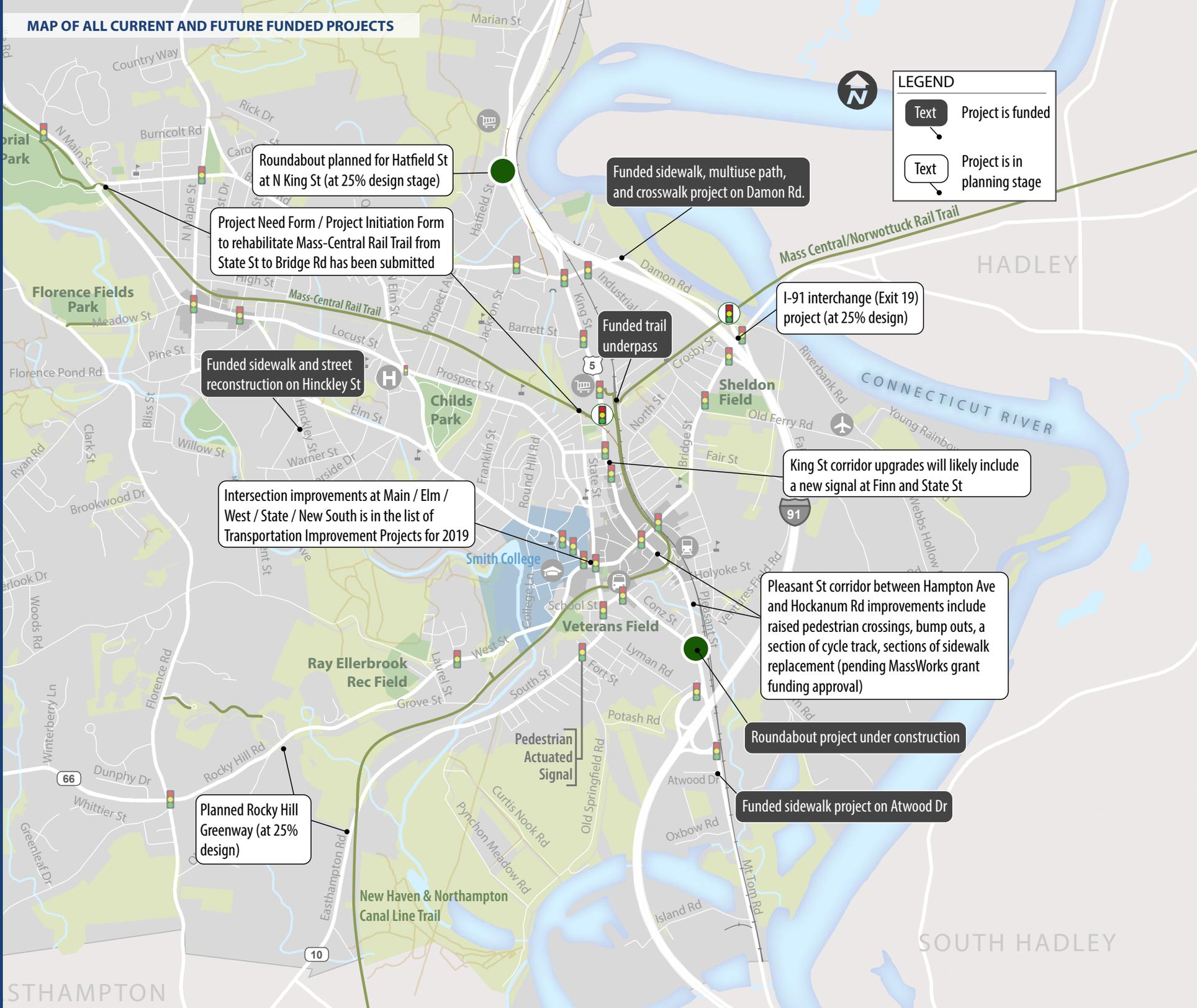
PROJECT DESCRIPTION - DOWNTOWN						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k - 50k, \$\$\$ = > 50k)
62	Intersection	Pleasant St	At Holyoke St	Reduce size of turning radius to slow turning traffic	This is a tough crossing for pedestrians due to intersection geometry	29	X	\$\$
63	Sidewalk	Pleasant St		Close excess and historic curb cuts on Pleasant St	These redundant curb cuts create unnecessary hazards for pedestrians	29	X	\$\$
64	Trees	Pleasant St / King St	From new roundabout at Conz St to Finn St.	Install additional street trees	This area represents a gap in the established urban tree canopy	22		\$\$\$
65	On-Street Bike Facility	Prospect St	At Finn St	Install bike guide lines (dashed lines) through intersection	White dashed lines will help to continue and define the eastbound bike lane as it passes through the intersection	25		\$
66	Intersection	Prospect St	At Finn St	All way stop signs needed	Motorists don't always stop for people crossing Finn St on foot	20		\$
67	Traffic Calming	Prospect St	Between Childs Park and Finn St	Utilize traffic calming: narrow roadway width	Road is too wide, causes speeding	25		\$\$
68	Trail Connection	Rail trail at Stop n Shop	Near State St	Address bumpy conditions and potholes on rail trail at this location	Bicyclist and skater safety and comfort while using trail.	20		\$
69	On-Street Bike Facility	Rainbow Rd / Hockanum Rd		Install Shared Lane Markings and/or signage	To designate this as a bicycle-friendly route around downtown	19		\$\$
70	Intersection	Riverside Dr	At Elm St / Milton St	Improve crosswalk by "T-ing" Milton into Riverside Dr via the existing parking lot or installing a mini-roundabout	This intersection has an unnecessarily long pedestrian crossing	30	X	\$\$\$
71	Traffic Calming	Riverside Dr	From Elm to Maple	Utilize traffic calming elements on this portion of road, ranked #2 on DPW's Top 5 list of roadways in need of traffic calming		23		\$\$
72	Crosswalk	Roundhill Rd	At Crescent St	Install curb cuts	Current sidewalks non ADA-compliant	23		\$\$



PROJECT DESCRIPTION - DOWNTOWN						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k - 50k, \$\$\$ = > 50k)
73	Traffic Calming	South St	Between Cedar St and Fort St	Utilize traffic calming: refuge island / curb extensions / raised-table crossing	High speeding traffic and tractor trailers, many motorists do not yield to pedestrians waiting in crosswalks	26		\$\$\$
74	Traffic Signal	South St	At Old South St	Install additional crosswalk signage	Long crosswalk geometry	19		\$
75	On-Street Bike Facility	South St	1,000 feet from Main St intersection	Install bike lane (continue existing bike lane)	The existing bike lane peters out in a high-traffic volume area along South St	30	X	\$
76	On-Street Bike Facility	South St	Between Earle St and Old South St	Repave South St, continue rumble strip between bike lane and travel lane	Multiple instances of debris in the bike lane results from deteriorated pavement and sidewalks	22		\$\$\$
77	Sidewalk	South St	Between Earle St and Dewey Ct	Update some or all sidewalks and curb cuts along South St corridor	Existing sidewalks and curb cuts in disrepair, non ADA compliant; no sidewalks between S. Park Terrace and Earle St.	26		\$\$
78	On-Street Bike Facility	South St		Spring sweeping and debris removal of bike lane is critical		25		\$
79	On-Street Bike Facility	South St / Pleasant St / Rt 9	Entire corridors of all 3 roadways	Install LED crosswalk lighting	Difficult lighting at numerous crosswalks	24		\$\$
80	Sidewalk	State St	Between Finn St and MassCentral Rail Trail	Repair and widen sidewalks	High pedestrian demand area, sidewalks are narrow and in disrepair	29	X	\$\$
81	On-Street Bike Facility	State St	Between Main St and Finn St	Utilize traffic calming devices / Stripe bike lanes (requires potential restriction of southbound traffic south of Center St) for bike lanes. State St is ranked #1 on DPW's Top 5 list of roadways in need of traffic calming.	Currently bikes ride on the sidewalk along this portion of State St causing uncomfortable situations for pedestrians. Investigate opportunity for raised crosswalks along entire length of State St.	32	X	\$\$\$
82	Sidewalk	State St	Between Center St and Main St	Install sidewalk along west side of State St	This is a high demand pedestrian area with inadequate sidewalks	33	X	\$\$\$
83	Sidewalk	State St	At Stoddard St	Install curb cuts	Existing sidewalks do not have curb cuts and therefore are not ADA compliant	26		\$\$

PROJECT DESCRIPTION - DOWNTOWN						EVALUATION & SCORE		COST
Project #	Project Type	Street Name	Extents	Project Description	Reasoning	Evaluation Score: (Max. 33)	High Scoring Projects: (Score above 28)	Range of Cost: (\$ = < 20k, \$\$ = 20k - 50k, \$\$\$ = > 50k)
84	On-Street Bike Facility	Summer St	Between King St and State St	Relocate parking to south side and install west-bound contraflow bike lane	Bicycle desire line	29	X	\$\$
85	Street Furniture	The parking lot west of Roundhouse Plaza	Between Roundhouse PI and the New South overpass	Install edge lines at the south end of the parking lot	This will discourage motorists from parking with their bumpers extending into the rail-trail zone	23		\$
86	Intersection	Village Hill Rd	At West St	Reduce size of all corner radii for slower traffic speeds	Overly wide intersection invites speeding and creates uncomfortable crossing distance for pedestrians	23		\$
87	On-Street Bike Facility	West / Chapel / Rocky Hill Rd.	Between Elm St and Old Wilson Road	Add shared lane markings and signage from Elm to Belmont and bike lanes from Belmont to Old Wilson Rd		27		\$\$
88	Intersection	West St	At Green St	Utilize traffic calming: refuge island / curb extensions / raised-table crossing	Crosswalk is too long, telephone pole restricts sight lines	31	X	\$\$\$
89	Intersection	West St	At Earle St	Install refuge island in median area	A refuge island will aid crossing pedestrians at this wide roadway	22		\$
90	Traffic Signal	West St	At Village Hill Rd	Install pedestrian signal phase at existing traffic signal		24		\$
91	Crosswalk	Woodmont Rd	At Norwottuck rail trail crossing	Install new crosswalk	Existing crosswalk is faded. High cyclist and pedestrian presence.	28		\$

MAP OF ALL CURRENT AND FUTURE FUNDED PROJECTS



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7. CROSSWALK PLANNING + DESIGN

Crosswalk Recommendations

This section describes crosswalk design guidelines, inventories the existing types of crosswalks and their locations in Northampton, and provides a toolkit of design elements for safe crosswalks. More detailed design standards for crosswalks can be found in the appendix. The general guidelines below and the detailed design standards in the appendix are based on the AASHTO Guide for Planning, Design, and Operation of Pedestrian Facilities, the MassDOT Project Development & Design Guide (2006), the NACTO Urban Streets Design Guide and Manual of Uniform Traffic Control Devices (MUTCD), including the MA MUTCD Amendments, section 3B.18, Crosswalk Markings.

7.1 General Guidelines

Installation of any new crosswalks should be preceded by an engineering study that will need to consider the number of traffic lanes, the presence of, or potential for, a median, the distance from signalized intersections, pedestrian volumes, roadway geometry, availability of street lighting, traffic volumes and posted and/or 85th percentile speed.

- Crosswalks are not required at all intersections; crosswalks should be considered at street intersections where the primary roadway

has volumes of >3,000 vehicles per day, speeds typically exceed 25 MPH or where schools, parks and senior centers are present.

- Land use, crash history, and present and future pedestrian demand to be expected can impact crosswalk design and location.
- Crosswalks shall be supplemented with curb ramps, stop bars, and signage to improve access, pedestrian convenience, and safety. In addition, crosswalks may be supplemented with curb extensions, refuge islands, raised crossings, advanced yield lines, pedestrian crossing bollard signs, and pedestrian signals with countdown timers in locations where pedestrian traffic is heavy, or near schools, parks, and senior centers.
- Compelling reasons should be found to not include crosswalks on all legs of an intersection, e.g. missing sidewalk(s), high turning volume and/or low traffic volume.
- The minimum crosswalk width at side streets with a 5' sidewalk is 8', with 12' preferred. Across busier streets and downtown, the minimum crosswalk width is 12' or the width of the adjacent sidewalk, whichever is greater.
- While there is no specific guidance from MUTCD on material use, epoxy, thermoplastic or similar durable materials should be used; brick or unit paver crosswalks are allowed but not recommended, except at signalized intersections in specific districts.
- Crosswalks should either be located where street lighting is plentiful, or new lighting should be installed concurrently.

Mid-Block Crossings

Because mid-block crosswalks can create a safer and more direct route for pedestrians hoping to avoid significant out-of-direction travel to the nearest signalized intersection, they are recommended. All sites will require an engineering study and approval by the City Engineer and follow these guidelines:

- On low-volume roadways with 85th percentile speeds up to 30 MPH, the City's standard crosswalk design will suffice (see Appendix)
- On 4-lane roads or where 85th percentile speeds exceed 35 MPH, medians, flashing beacons or a pedestrian signage and overhead lighting.
- Any mid-block crossing requires appropriate signage and overhead lighting.
- Per MUTCD, Section 4D.01, mid-block crosswalks should not be signalized if within 300' of the nearest traffic signal, or within 100' of a side street controlled by a stop or yield sign, unless a study indicates the new signal will not restrict progressive movement of traffic

7.2 Existing Crosswalk Typologies

There are a variety of crosswalk typologies within the City of Northampton. Five distinct types of crosswalk are displayed in the photos to the right, along with a synopsis of those that are preferred versus those in need of improvement.

Existing Crosswalks

Crosswalk Type	Quantity
Ladder / Continental Crosswalks	340
Parallel Crosswalks	8
Street Print	23
Zebra-style Crosswalks	1
Total Number of Crosswalks	373



Continental

Main St at Cracker Barrel Alley: The most dominant style of crosswalk in Northampton, continental style crosswalks are highly visible to motor vehicle traffic. These and ladder crosswalks are the preferred standard.



Ladder

Damon Rd. at Rail Trail Crossing: There are relatively few ladder crosswalks in Northampton. Ladder and Continental-style are the most preferred due to their high visibility and are recommended as the standard for new crosswalk striping in the future.



Street Print

Musant Dr. at Moser St: Throughout the Village Hill Development, more decorative street print durable crosswalks are used.



Zebra

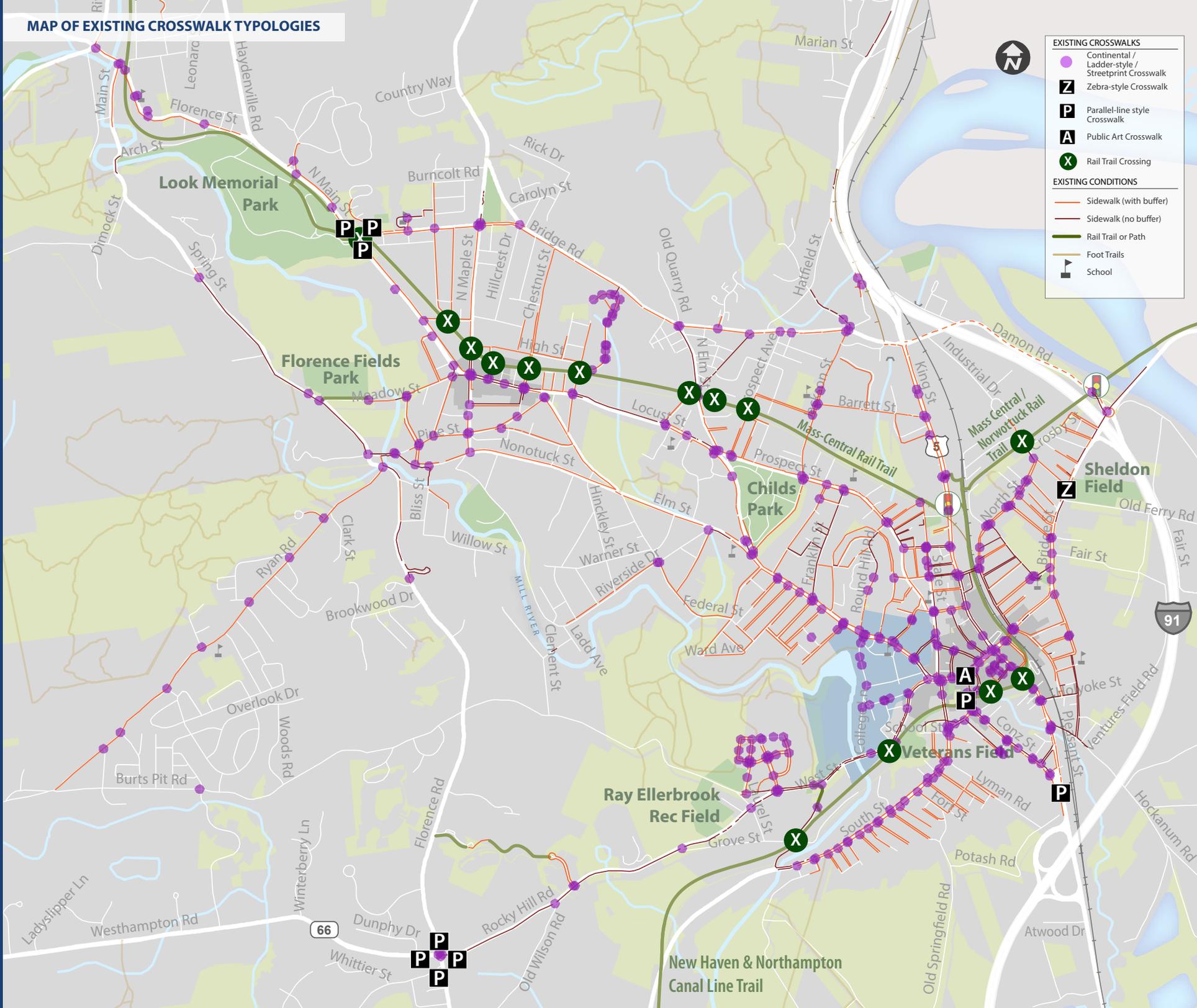
Bridge St at Day St: There is only one instance of Zebra-style crosswalk in Northampton. This style is out-of-date and should be updated to the preferred standard above.



Parallel

Crafts Ave at Old South St: There are only 8 instances of parallel-line style crosswalks in Northampton. These are the least preferred style of crosswalk due to their lower levels of visibility. Due to the inherent design of striping perpendicular to the flow of traffic, these crosswalks wear down faster due to motor vehicle tires. Parallel-style crosswalks should be updated to the preferred standard, except at locations with decorative pavers or brick, in which parallel style will be needed at the edges.

MAP OF EXISTING CROSSWALK TYPOLOGIES



EXISTING CROSSWALKS	
	Continental / Ladder-style / Streetprint Crosswalk
	Zebra-style Crosswalk
	Parallel-line style Crosswalk
	Public Art Crosswalk
	Rail Trail Crossing
EXISTING CONDITIONS	
	Sidewalk (with buffer)
	Sidewalk (no buffer)
	Rail Trail or Path
	Foot Trails
	School

7.3 Recommended Crosswalk Design Features Toolkit

Lower Cost Elements

Pedestrian infrastructure that may not be old enough to require full replacement, or where funding is limited should consider these improvements. Low cost fixes to calm traffic and enhance safety for all users of the road and sidewalk are likely to be adopted and completed sooner than more expensive projects, and can serve as catalysts for long-term change. Additionally, low-cost, context-sensitive retrofits can enable safety improvements to an area pending a more robust or significant future redesign. These are some of the design features illustrated in the crosswalk design standards found in the appendix.



Continental Style Crosswalk

Continental style crosswalks are highly visible to motorists. They are cost-effective by placing gaps in established tire tracks, reducing the level of wear over time. Continental crosswalks are the preferred crosswalk design standard.



Stop Line

Stop lines should be located a minimum of 4 feet (10' preferred) in advance of the crosswalk to reinforce yielding to pedestrians. Stop bars should be perpendicular to the travel lane, not parallel to the adjacent street or crosswalk. Stop lines can be painted where there is a stop sign (MUTCD 3B.16), and at traffic signals.



Advanced Yield Line

(Uncontrolled crossing only) Advanced yield lines placed 20 to 50 feet prior to a crosswalk can reduce likelihood of crashes at un-signalized mid-block crossings. The line encourages drivers to yield far enough away so a pedestrian can see if a second motor vehicle is not stopping a multi-lane roadway.



Crosswalk Signage

Crosswalk signage at unsignalized crossings can alert motorists to the presence of pedestrians at these locations.



Curb Ramps

ADA compliant curb ramps contain Pedestrian Warning Strips (truncated domes) to alert mobility impaired individuals utilizing walking canes to the presence of a road crossing.



In-Street Yield to Pedestrian Sign

The in-street yield to pedestrian crosswalk sign provides a reminder to alert motorists at un-signalized intersections to laws concerning yielding or stopping for pedestrians in crosswalks. These signs are also more visible to motorists than signage posted to sign poles.

Higher Cost Elements

Pedestrian crossing facilities are higher cost improvements, but generally have higher compliance rates and create a more comfortable environment for pedestrians. They should be installed at locations where there have been crashes involving pedestrians, or where heavy levels of traffic calming is needed. In order to absorb the costs, these improvements can be included in larger capital projects or redevelopment plans. Many of these elements are featured in the crosswalk design standards found in the appendix.



Curb Extension

Curb extensions include both mid-block extensions (known as pinchpoints or chokers) that may include cut-throughs for bicyclists, and intersection curb extensions that align well on streets with parallel parking. Curb extensions shorten crossing distance for pedestrians and increase sight lines for motorists by reducing parked car obstacles near crosswalks.



Refuge Island - Raised

Pedestrian refuge islands limit pedestrian exposure in the intersection. They are recommended where a pedestrian must cross more than two lanes of traffic in one direction, locations with high pedestrian-collision rates, and locations where there are high traffic volumes and speeds. Medians or safety islands create a two-stage crossing for pedestrians, which is easier and safer.



Raised Crosswalk - Shallow

Raised crossings calm traffic, increase visibility and yielding behavior, and create a safer pedestrian crossing environment, especially for mobility-impaired individuals. Shallow crossings may have a longer ramp leading to the raised crossing and / or are shorter in height than a steep raised crossing.



Raised Crosswalk - Steep

A steeper crosswalk is ideal for some college campus or downtown core locations where traffic calming goals stem from significant pedestrian crossings occur regularly or frequently. One result of a steeper crossing is motor vehicle traffic slowed to approximately 10 MPH or less. Mobility-impaired individuals have an easier time crossing as they do not have change in grade.



Pedestrian Signal With Countdown Timer

The countdown timer shows how many seconds remain for the clearing phase. The MUTCD requires countdown signals be used at all signalized intersections with pedestrian clearance intervals longer than seven seconds.



8. BIKE SHARE

Introduction

Dozens of cities in North America have recognized the health, environmental, and economic benefits of bike sharing. Northampton is well positioned as a bike friendly city in the Pioneer Valley to develop a successful bike share program with its regional partners in Amherst, Holyoke, Springfield and South Hadley. This regional partnership stems from the Pioneer Valley Regional Bike Share System Pilot report published in April 2016 by the Pioneer Valley Planning Commission (PVPC).

PVPC's report recommends a 26 station, 234 bicycle system in four communities (South Hadley became part of the plan subsequently), in two phases. Northampton was included as part of the first phase launch of the system with 7 stations and 63 bicycles. Based on the City's previously-stated commitment, it has been designated as the Lead Party and Program Administrator and will likely oversee the future operator for the entire regional system.

The program is designed for short trips within the city, though intrepid bicyclists would be allowed to ride between any of the participating cities and towns in the network. Tentatively called "ValleyBike", the PVPC report recommends "smart lock" equipment which is lower in cost than dock based systems (such as Boston's Hubway) and flexible enough for riders to lock their shared bikes anywhere in the service area, not just at designated stations.

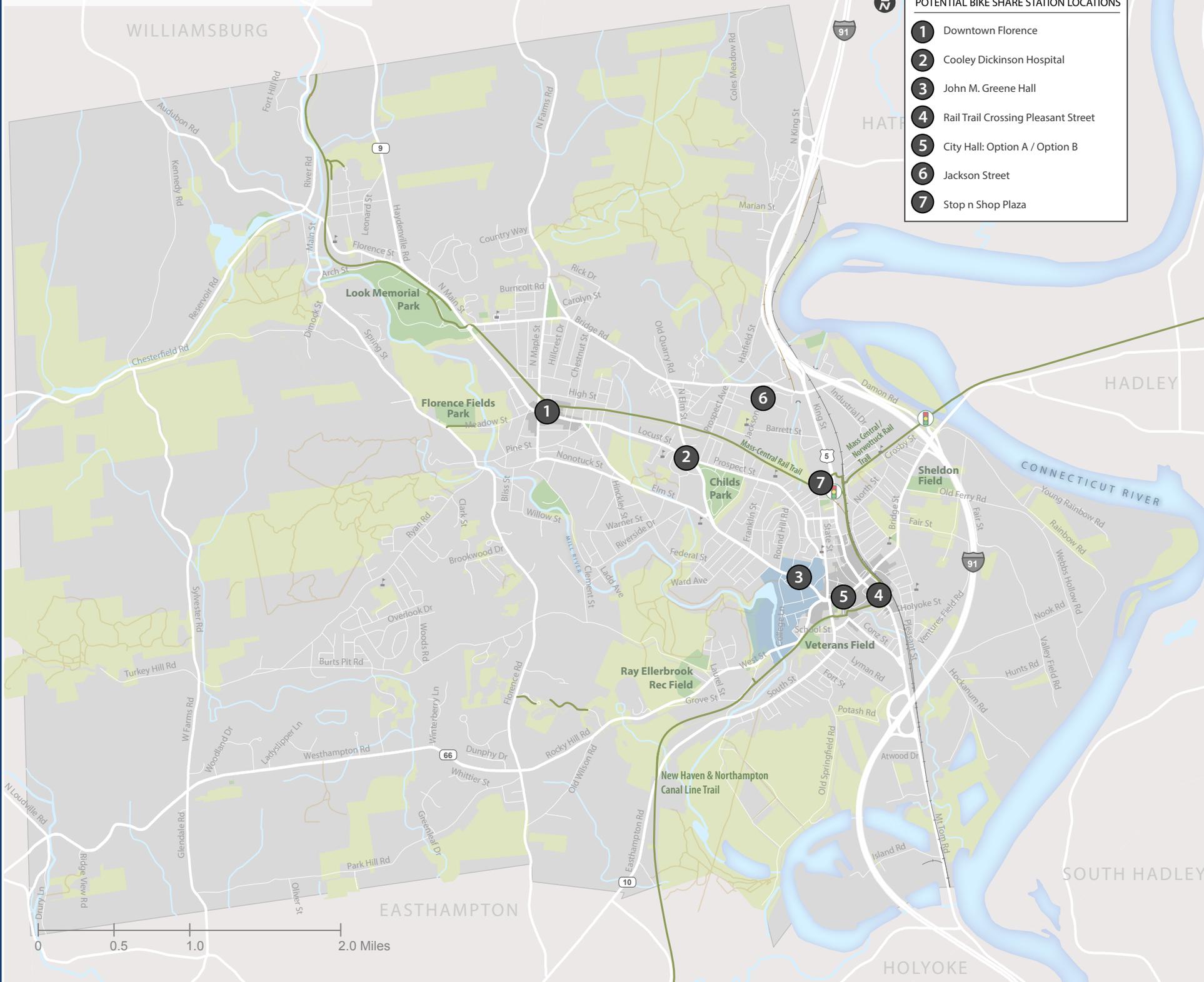
General Guidelines

In Northampton, bike share stations are planned for installation on city streets, sidewalks, plaza spaces and, potentially, on private property of a potential station or system sponsor. The smart lock stations--equipment vendor TBD--require a footprint of roughly 42' in length by 6' in width. This size will accommodate 15-18 bike racks, a transaction kiosk, solar panel and detachable panel to house a system map, access information, a PSA and/or an advertisement. On sidewalks with modest or high foot traffic, a minimum 6' clearance will be required for pedestrian access.

The following pages illustrate the recommended locations for bike share stations in Northampton. The seven sites provide coverage in Downtown Northampton and Florence, Smith College, Cooley Dickinson Hospital, Kingsgate Shopping Plaza and the Jackson Street neighborhood. Significant use is expected to come from:

- Local residents without access to a car or bike wanting to ride into downtown, to the hospital or to shop at Kingsgate
- Cooley Dickinson employees wanting to ride downtown for lunch or for errands
- Amtrak or bus riders looking to access parts of the city beyond walking distance
- Visitors wanting a quick tour of the city or to ride along the rail trail system
- Smith College students wanting to get from campus to other parts of the city

BIKE SHARE POTENTIAL LOCATIONS



POTENTIAL BIKE SHARE STATION LOCATIONS

- 1 Downtown Florence
- 2 Cooley Dickinson Hospital
- 3 John M. Greene Hall
- 4 Rail Trail Crossing Pleasant Street
- 5 City Hall: Option A / Option B
- 6 Jackson Street
- 7 Stop n Shop Plaza

0 0.5 1.0 2.0 Miles

Potential Bike Share Station Sites

1. Downtown Florence

Location:

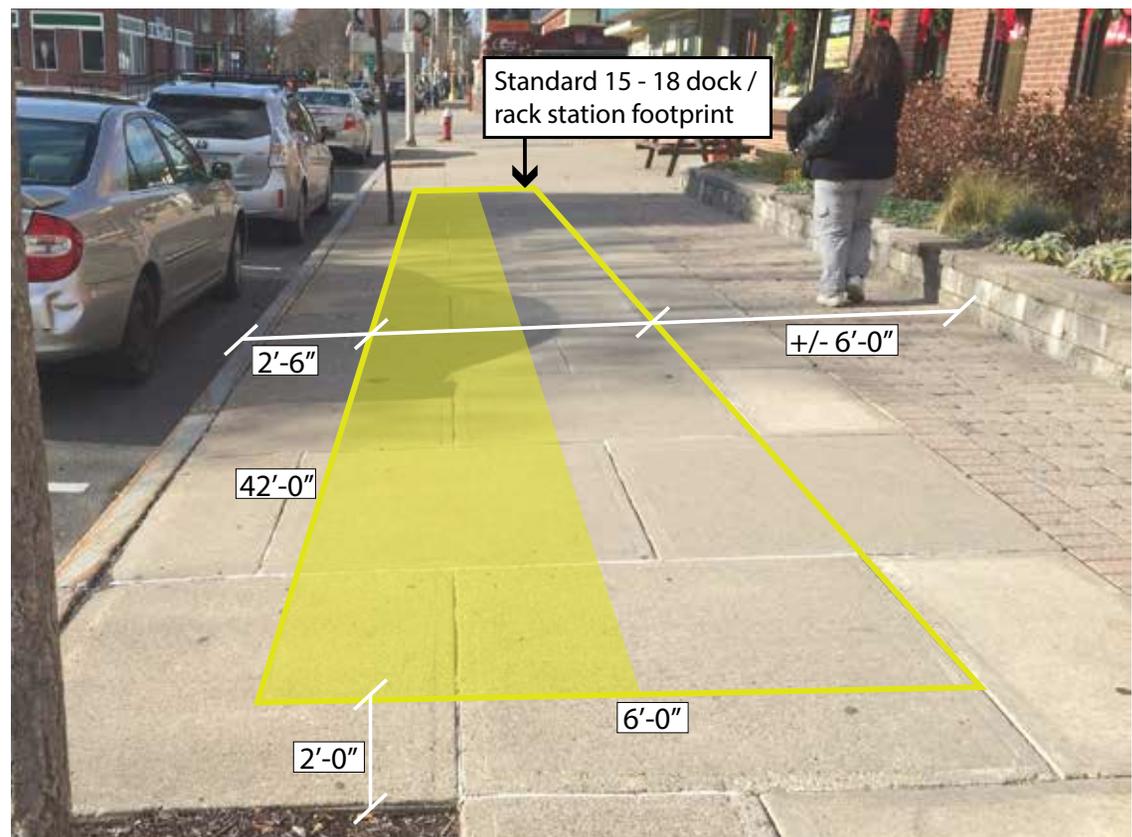
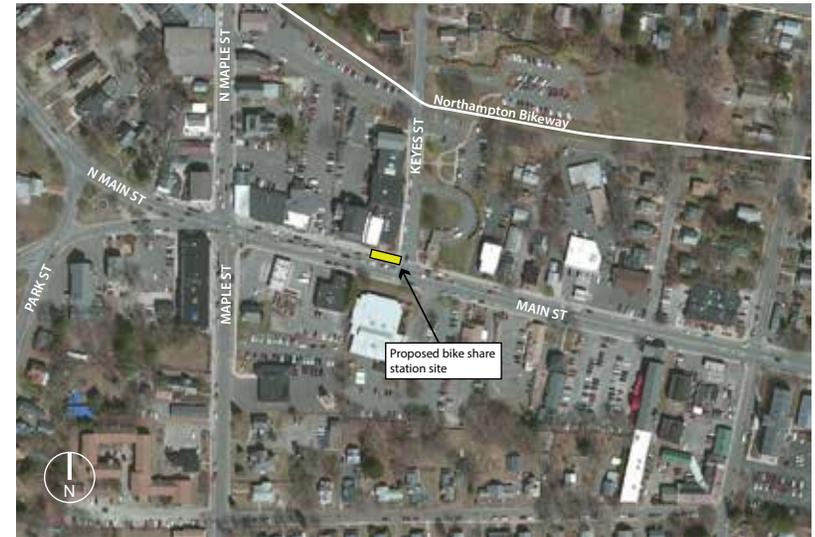
At the intersection of Main St. and Keyes St. in downtown Florence.

Property Owner:

City of Northampton

Station Footprint:

42 ft X 6 ft



Potential station site looking west on Main St.

2. Cooley Dickinson Hospital

Location:

Locust St. at N. Elm St. entrance to Cooley Dickinson Hospital, Northampton.

Property Owner:

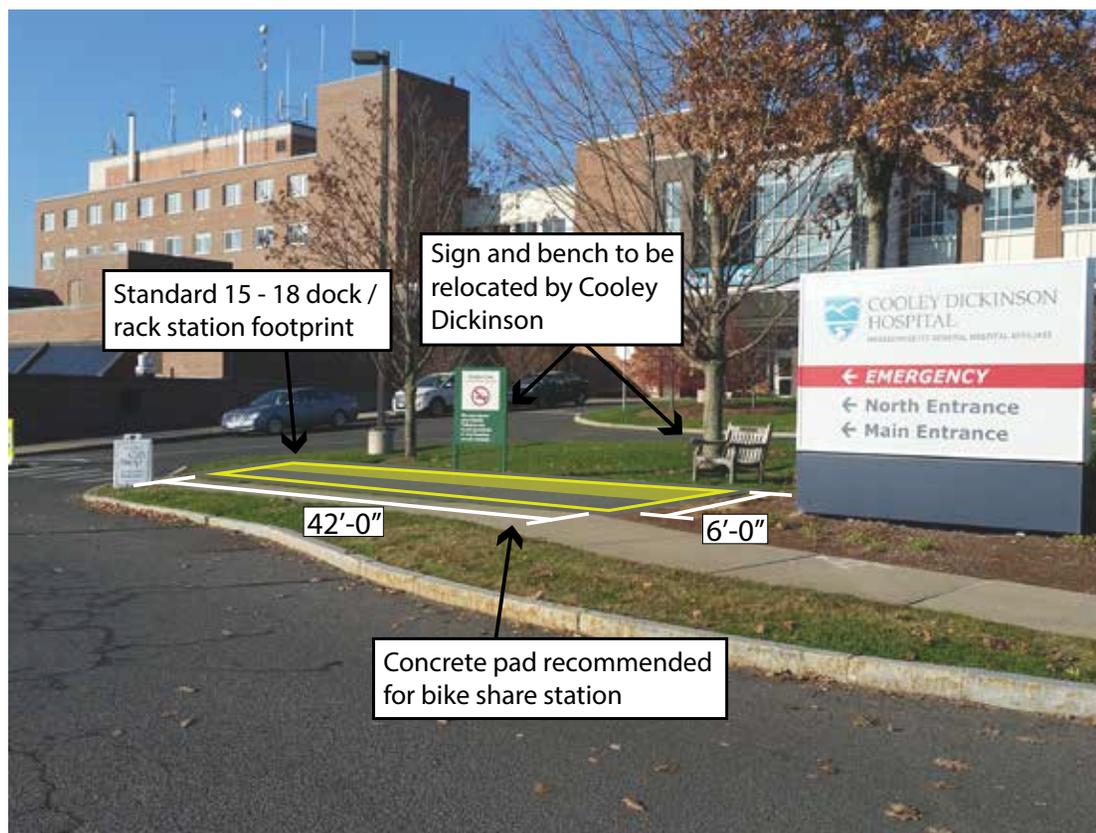
Cooley Dickinson Hospital

Station Footprint:

42 ft X 6 ft

Note:

CMAQ funding requires bike share stations to be located within public land. Cooley Dickinson Hospital must either give the city a license for this bike share station site or the site shall be moved within the public right of way.



Potential station site looking west on Locust St.

3. John M Greene Hall Entrance on Elm Street

Location:

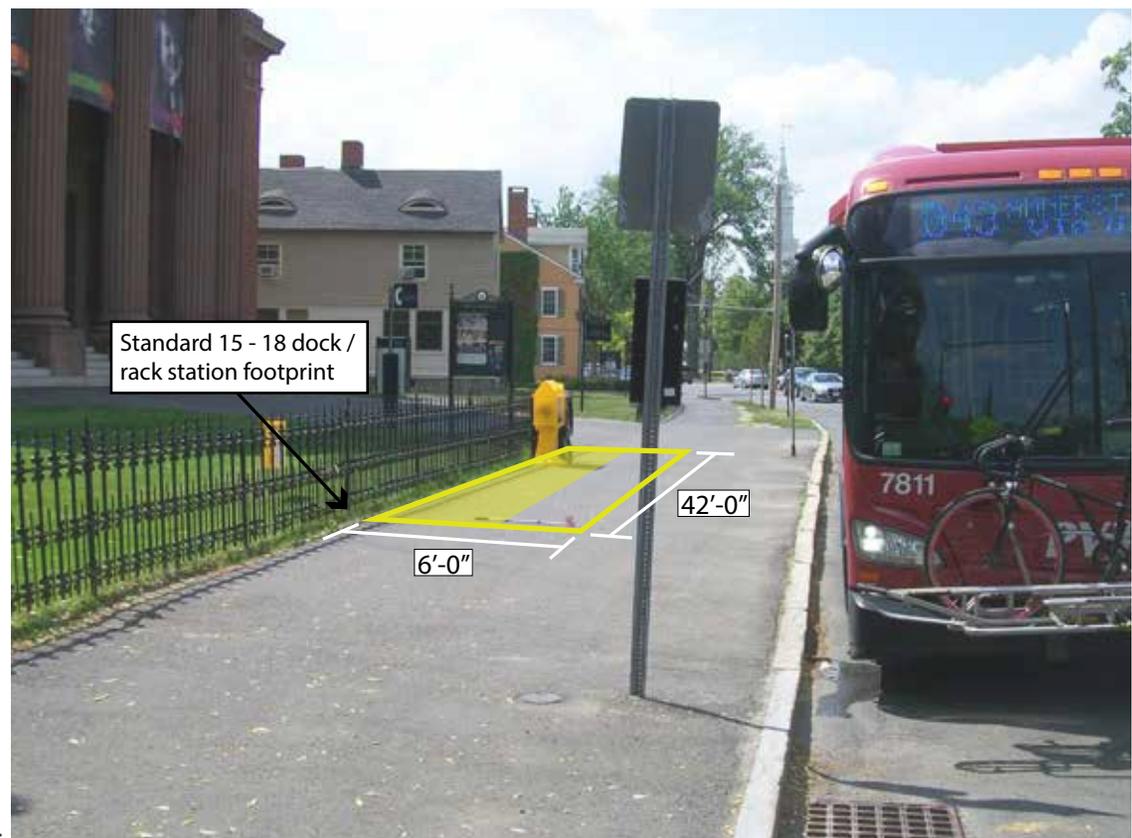
Near the intersection of Prospect St. and Elm St., in front of John M. Greene Hall.

Property Owner:

City of Northampton, adjacent to Smith College

Station Footprint:

42 ft X 6 ft



Potential station site looking northwest on Elm St.

4. Rail Trail Crossing Pleasant Street

Location:

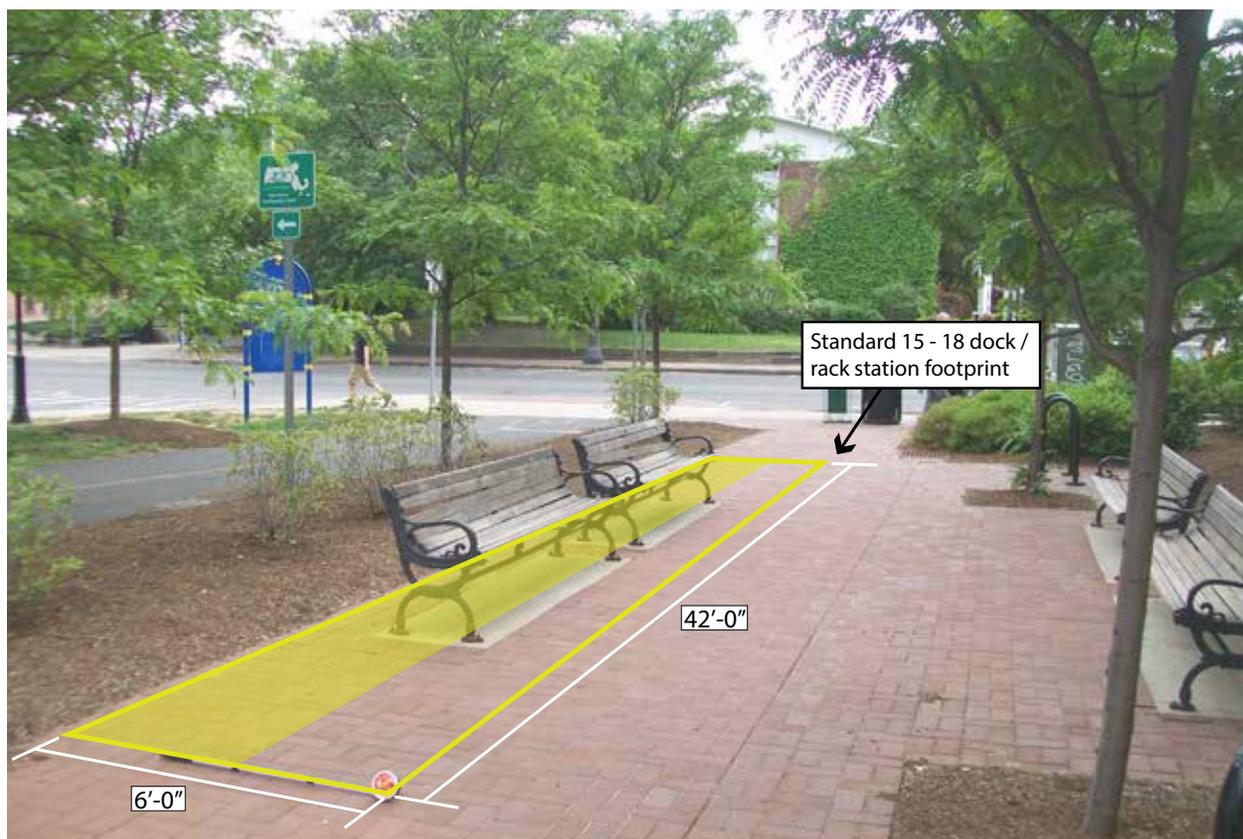
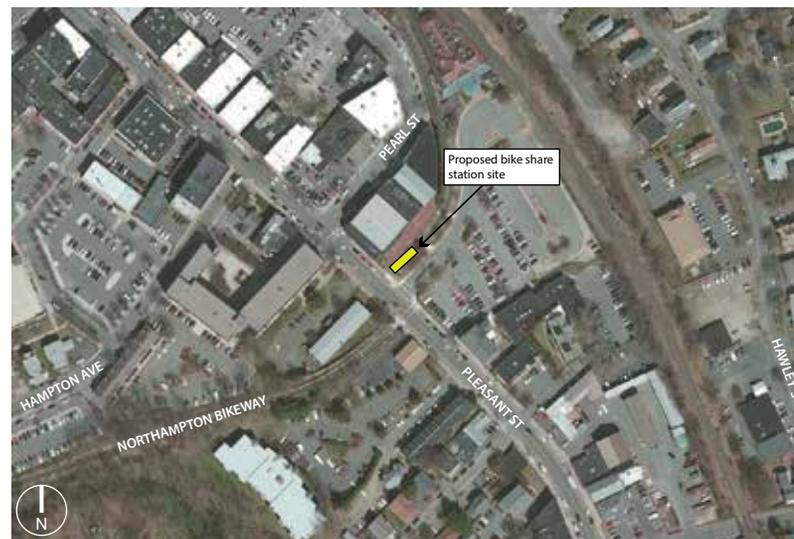
Adjacent to existing rail trail as it crosses Pleasant St.

Property Owner:

City of Northampton

Station Footprint:

42 ft X 6 ft



Potential station site looking southwest towards Pleasant St.

5. Northampton City Hall - Option A

Location:

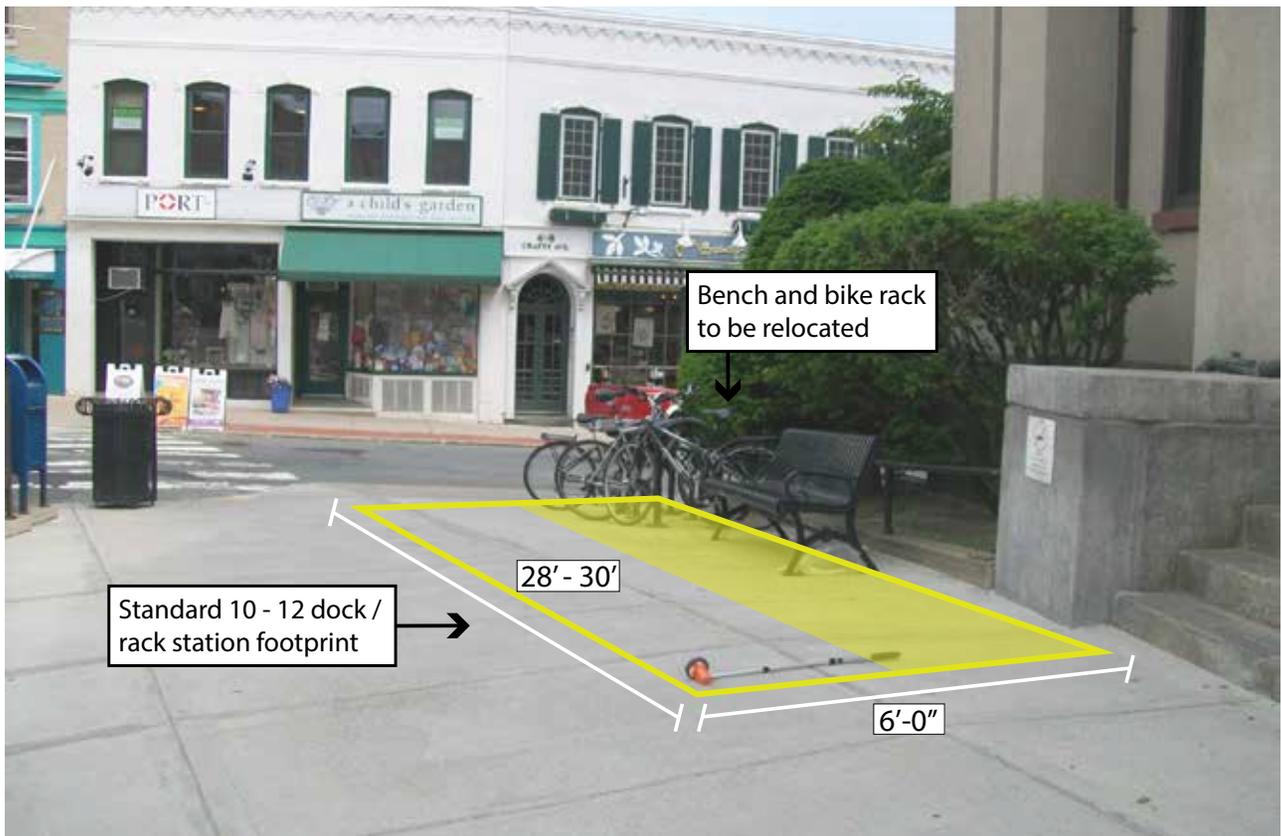
On the sidewalk, at the intersection of Main St. and Crafts Ave.

Property Owner:

City of Northampton

Station Footprint:

30 ft X 6 ft



Potential station site looking east on Main St.

5. Northampton City Hall - Option B

Location:

In the street, along Main St. between Crafts Ave. and Pulaski Park.

Property Owner:

City of Northampton

Station Footprint:

42 ft X 6 ft



Potential station site looking east on Main St.

6. Jackson Street

Location:

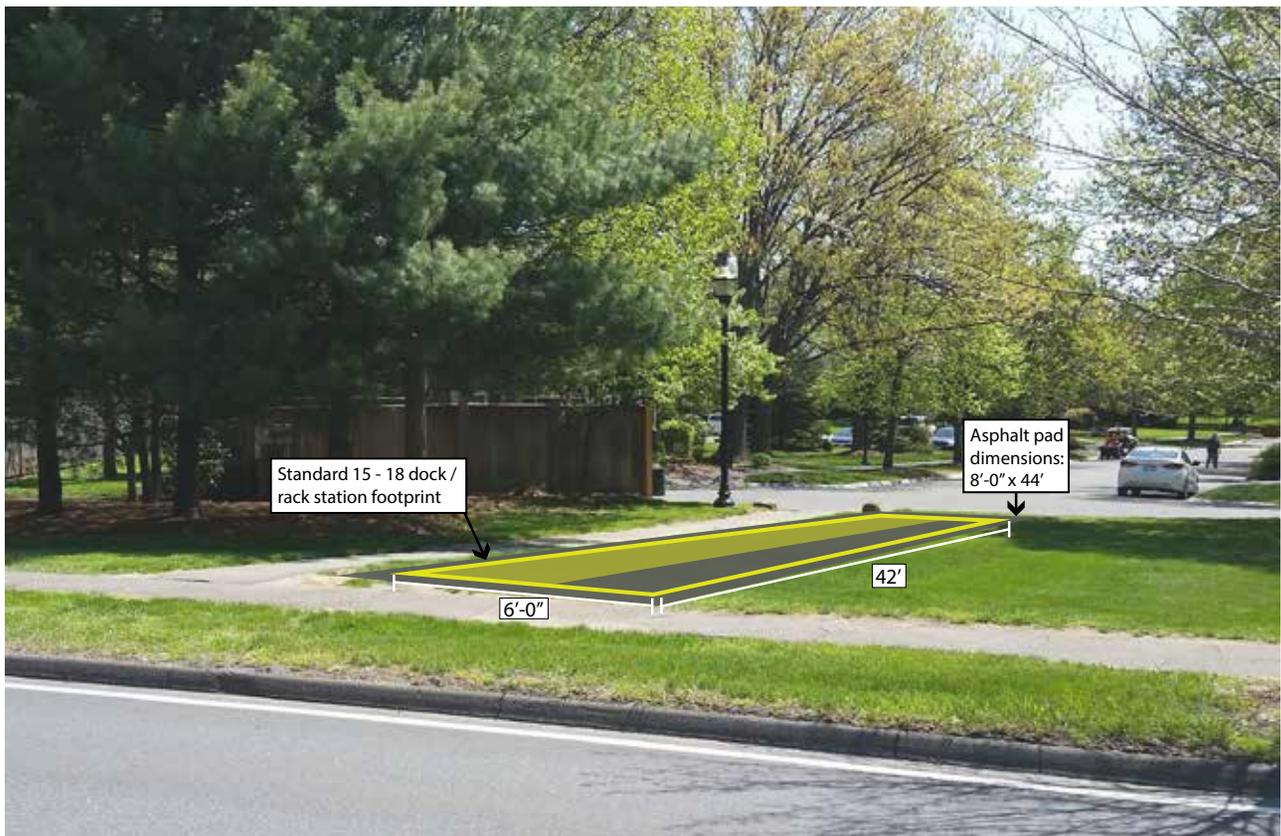
On Jackson St., at the path to Hampton Gardens Drive.

Property Owner:

City of Northampton

Station Footprint:

42 ft X 6 ft



Potential station site looking east on Jackson St.

7. Stop 'n Shop Plaza

Location:

Adjacent to Moe's Southwest Grill, in the Stop 'n Shop plaza, on the sidewalk.

Property Owner:

Private.

Station Footprint:

42 ft X 6 ft



Potential station site looking north towards Moe's Southwestern Grill

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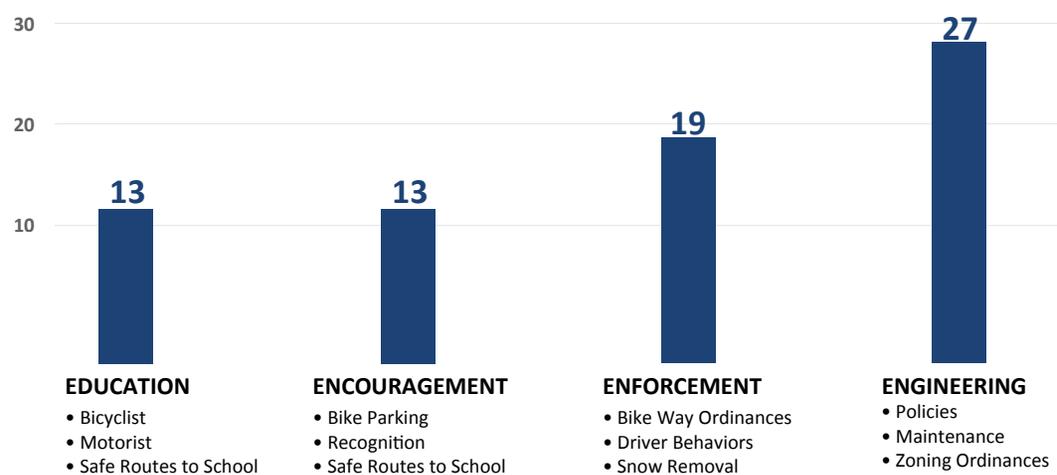


9. POLICY & PROGRAM RECOMMENDATIONS

Introduction

Northampton's commitment to improving bicycling and walking in the community is clearly expressed through existing policies and programs that, on the whole, strongly support access and safety for bicyclists and pedestrians. As part of the process for developing this plan, the project team reviewed and analyzed the existing policies and programs in the areas of Education, Encouragement, Enforcement, Engineering, and Evaluation, including local ordinances regulating bicycling and walking, zoning and site plan review ordinances, subdivision regulations, driver behavior, Safe Routes to School, and more. Input was gathered from the public via meetings and email from local officials and published information, and from research into best practices. Gaps in existing policies and programs, and potential additions or improvements, were identified. The following tables contain the policy and program recommendations resulting from this process.

Number of Policy Recommendations by Type



Policy Recommendations: Education & Encouragement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Education	Bicyclist Behavior	Some bicyclists exhibit unsafe or illegal behavior.	Laws specific to bicyclist behavior are in MGL Chapter 85, Section 11B.	Provide education and public outreach resources on (1) the state laws and local ordinances related to bicycling, and (2) safe bicycling practices. Resources include MassBike, League of American Bicyclists Smart Cycling Program, and CyclingSavvy.	Parks & Recreation Police Schools
Education	Bike/Transit Integration	Integration between bicycling and transit could be better, and could extend range of potential trips.	PVTA has web-based information and video on using bus bike racks.	Promote existing PVTA information resources, and coordinate demonstration events where people can try our bus bike racks.	PVTA
Education	Children's Education	MA Safe Routes to School offers bike and pedestrian safety training free-of-charge to partner schools.	All elementary and middle schools are Safe Routes to School partners, but do not participate in SRTS educational components.	Fully participate in MA Safe Routes to School program each year.	Schools
Education	Children's Education	Many children do not receive adequate education and practical experience about traffic safety, especially interactions among motorists, bicyclists, and pedestrians.	Summer-only Safety Village program.	Create in-school "transportation literacy" program that teaches and repeatedly reinforces traffic safety and safe interactions; extend time period for the Safety Village program.	Parks & Recreation
Education	Driver Behavior	Many motorists, bicyclists, and pedestrians lack basic information about safely interacting as the mix of roadway users evolves; also motorists often fail to yield to pedestrians in crosswalks.	None.	Public outreach, such as mailings and PSAs, to educate all roadway users about safe interactions with each other, but particularly motorist interactions with vulnerable users.	Bicycle & Pedestrian Subcommittee Police
Education	Driver Behavior	Vulnerable road users, particularly bicyclists, are at risk from drivers of buses, large trucks, and other commercial vehicle who do not know how to safely interact with vulnerable road users.	None.	Require training on safe interactions with vulnerable road users, and for all city employees or contractors who operate trucks or other motor vehicles on the job; work with PVTA to enhance training for bus drivers.	Public Works / PVTA Transportation & Parking Committee

Education	Equity	Residents in public housing often lack access to traffic safety information and other information on vulnerable users as described above.	None.	Distribute traffic safety information through Northampton Housing Authority.	Northampton Housing Authority Bicycle and Pedestrian Subcommittee
Education	Infrastructure	Some bicyclists and motorists are confused about what new roadway markings and signage mean, and how to use new types of facilities.	None.	Pictorial and video resources to demonstrate how new bicycle and pedestrian facilities are intended to be used, and pop-up installations for people to try out.	Bicycle & Pedestrian Subcommittee



A fireman teaching students safety tips and tricks at Safety Village.



An elementary school student learns proper stopping techniques at a bike rodeo at her school.

Policy Recommendations: Education & Encouragement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Education & Encouragement	Nighttime Visibility	Difficult to see pedestrians at night on paths and in crosswalks and bicyclists on paths and roads.	Pedestrians: None. Bicyclists: Bicycle lights and reflectors required at night (MGL Chapter 85, Section 11B).	Education campaign on using lights and reflective gear at night; possible reflective vest giveaways.	Bicycle & Pedestrian Subcommittee Police
Education	Signage	Rail trail users lack information about rules and etiquette, leading to unsafe conditions and user conflict.	City Ordinances: Bikeway regulations (§312-78) include several usage rules, but nothing related to user interactions or etiquette; and bikeway users must keep right (§312-78).	Signage at trail entrances and along trails, emphasizing rules and courtesy.	Parks & Recreation Public Works Bicycle & Pedestrian Subcommittee
Education	Snow removal	Sidewalk snow clearance not done consistently, particularly issue with crosswalks in Central Business District formerly cleared by BID.	Sidewalk snow clearance ordinance (§285-17).	Outreach to residential and commercial building owners to ensure they understand their snow clearance responsibilities.	Public Works Bicycle & Pedestrian Subcommittee
Education	User conflicts	Bicyclists and skateboarders ride on the sidewalk, conflict with pedestrians.	Sidewalk bicycling is legal except on specifically designated streets in the Downtown Business District and the Florence Business District (§285-12.B). Bicyclists legally riding on sidewalks must yield to pedestrians and warn them before passing (MGL Chapter 85, Section 11B).	Outreach and signage to discourage sidewalk bicycling where prohibited and to encourage courteous interactions on sidewalks. (Note that sidewalk bicycling can be an indicator of inadequate bicycle infrastructure.) Consider enforcement in high conflict areas, ideally with education stops and warnings, except where behavior is egregious.	Bicycle & Pedestrian Subcommittee Police
Education & Encouragement	Bike Parking	More bike parking needed throughout city, particularly popular destinations and nearby trailheads.	City Ordinance: Zoning ordinance requires bike parking for new construction, additions and enlargements (§350-8.11), but no general bike parking requirement.	Add bike parking at key destinations, crowdsource bike parking locations, encourage business sponsorship of bike racks.	Parks & Recreation Public Works Bicycle & Pedestrian Subcommittee

Encouragement	Bike Parking	Improve bike storage in multi-family housing	Zoning ordinance requires bike parking for new construction, additions and enlargements (§350-8.11), but not existing structures.	Provide information about acceptable bike parking (such as Northampton bike parking guide) to multi-unit residential owners. Consider incentives for improving bicycle parking in existing buildings.	Planning Board Bicycle & Pedestrian Subcommittee
Encouragement	Bike Parking	Limited and substandard bike parking at Northampton High School and Smith Voc-Ag. At the same time, vehicle parking is free or extremely low-cost, incentivizing students to drive to school rather than considering biking, walking, or transit.	Vehicle parking permit required for lower lot adjacent to NHS (purchased by \$25 "donation" to student group), with violators subject to towing. In practice, no one has ever been towed, but might be asked to move to the athletic field lot. No permit is required to park in the athletic field lot. Vehicle parking is entirely free at Smith Voc-Ag.	Consider raising parking fees (subject to need-based exceptions) at the two high schools to subsidize improved bicycle parking facilities at the schools. Conduct a study of student travel modes and preferences to determine potential for mode shift.	Schools Transportation & Parking Committee Bicycle & Pedestrian Subcommittee



A courtesy reminder on the belt line trail around Atlanta, GA. Trail sign design can be geared towards cyclists and/or pedestrian users.



The bicycle parking racks at Northampton High School are sub-standard and should be replaced with more secure 'Inverted-U' style racks.

Policy Recommendations: Encouragement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Encouragement	Bikeway Ordinance	Nighttime bikeway closure is inconsistent with transportation needs.	Bikeway is officially closed from dusk to dawn (§312-78).	Consider repealing nighttime bikeway closure, or extend hours to mid-evening, e.g. 9:00 or 10:00 pm	Planning Board Police Bicycle & Pedestrian Subcommittee
Encouragement	Children's Education	Northampton schools do not take advantage of Safe Routes to School educational or encouragement services.	Northampton schools are SRTS partners, but do not actively participate.	Work with MassRIDES to bring bicycling and walking safety training and activities to schools.	Schools Bicycle & Pedestrian Subcommittee
Encouragement	Children's Education	Encouraging children and youth to bike and walk has proven benefits for public health.	Northampton schools are SRTS partners, but do not actively participate.	Use school-based encouragement programs to engage children and youth in biking and walking. Examples: walking school buses and bike trains; targeted encouragement/incentives for high school students; adapt/expand Safety Village bike/ped safety components to in-school curriculum.	Schools Bicycle & Pedestrian Subcommittee
Encouragement	Facilities	People who cannot afford repairs at traditional bike shops or who do not know people to ride with have no place to go.	Smith Bike Kitchen serves this purpose for the Smith College community.	Create a community bike hub (similar to Smith Bike Kitchen) that can provide low-cost or self-service bike repair facilities and a location for organizing rides.	MassBike PV Bicycle & Pedestrian Subcommittee
Encouragement	Facilities	Convenient bike maintenance stands on rail trails and elsewhere.	MassBike PV purchased one bike maintenance station, which was installed.	Install (and maintain) additional publicly-accessible bike maintenance stations and water sources at key trail locations.	Public Works Bicycle & Pedestrian Subcommittee
Encouragement	Facilities	Bicycle use on school grounds and recreational facilities is broadly prohibited and treated the same as motor vehicles.	City Ordinance: Operation of vehicles (§233-1).	Amend §233-1 to allow use on school grounds and recreational facilities to the extent needed for transportation and bike parking.	Parks & Recreation Schools

Encouragement	Open Streets	Open Streets (aka: "ciclovía") or tactical urbanism events engage more people in biking, walking, and other outdoor activities in a safe, social, car-free space, and emphasize that the streets are for everyone by closing busy streets to motorized vehicles.	None.	Pilot an Open Streets event or continue the demonstration project on Main Street on regular intervals, such as monthly from April to October.	Parks & Recreation Bicycle & Pedestrian Subcommittee MassBike PV
Encouragement	Recognition	Goal: Silver (or higher) Bicycle Friendly Community	Bronze Bicycle Friendly Community	Adopt this plan and Implement "Key Steps" in Bicycle Friendly Community Report Card.	Bicycle & Pedestrian Subcommittee PVPC
Encouragement	Recognition	Goal: Silver (or higher) Walk Friendly Community	Bronze Walk Friendly Community	Adopt this plan and use WFC assessment tool feedback to improve the City's standing.	Bicycle & Pedestrian Subcommittee



Publicly accessible bicycle repair stands reduce barriers to riding by providing convenient and free access to tools necessary to keep a bicycle working properly.



Walking School Bus program encourages students to walk to school by banding together in groups similar to a school bus. A parent or teacher volunteer often leads the effort.



This Ciclovía in Bogota in 2009 is an example of a successful Open Streets policy. Each Sunday and public holiday from 7:00am to 2:00pm certain main thoroughfares are closed to motor vehicles and opened for any form of non-motorized active transportation.

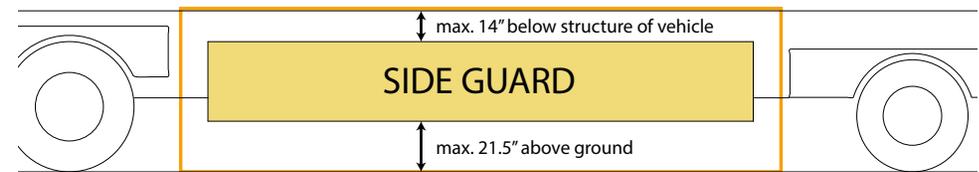
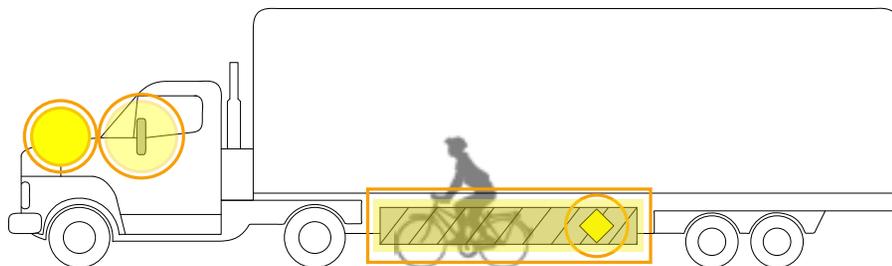
Policy Recommendations: Encouragement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Encouragement	Seniors	Bicycling is a viable but under-utilized transportation and recreation option for seniors, with Northampton's compact downtown and trail network.	None.	Provide education and training resources to encourage seniors to bike (or tricycle) for transportation or recreation.	Senior services Bicycle & Pedestrian Subcommittee
Encouragement	Snow Removal	Path network is essential transportation infrastructure, and lack of clarity and consistency with snow removal impacts bicycle and pedestrian transportation in the winter. Snow removal policy for paths is not included in DPW's Snow Removal Procedures document.	The city's objective is to plow the trails from West Street to Florence/Mulberry Streets because these are areas with the highest volumes and serve the village centers, downtown, dense neighborhoods, and schools. The former Business Improvement District used to plow the section from Main Street to State Street.	Restore plowing on rail trail from Main Street to State Street. Formalize and publicize path snow removal policy to inform public and set expectations.	Planning & Sustainability Public Works Bicycle & Pedestrian Subcommittee
Encouragement	Wayfinding	Wayfinding signage assists people to find key destinations, and encourages them to bike or walk.	Bike path kiosks, graphic art sign on rail trail bridge, WalkBoston signage, path mileage markers (planned).	Continue existing wayfinding efforts, and evaluate effectiveness. Consider need for bilingual or multi-lingual signage.	Planning & Sustainability Bicycle & Pedestrian Subcommittee Public Works
Encouragement	Snow Removal	Seniors may be unable to comply with snow removal ordinance due to physical or financial limitations.	City Ordinance: Removal of snow and ice from sidewalks (§285-17)	Provide financial and/or manpower to assist seniors with residential snow removal.	Public Works Senior Services

Policy Recommendations: Enforcement

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Enforcement	Bikeway Ordinance	Unclear which bikeways or paths the bikeway ordinance applies to, as it refers to a singular bikeway.	City Ordinance: Bikeway (§312-78)	Clarify which bikeways and paths this ordinance applies to.	Transportation & Parking Committee Bicycle & Pedestrian Subcommittee
Enforcement	Bikeway Ordinance / E-Bikes	Ban on use of "motorized vehicles" on bikeway prohibits use of electric-assist bicycles (e-bikes).	City Ordinance: Bikeway (§312-78)	Consider whether use of e-bikes should be permitted on bikeways, and how such use would be regulated.	Transportation & Parking Committee Bicycle & Pedestrian Subcommittee Police
Enforcement	Bikeway Ordinance / Motorist Behavior	Bikeway ordinance currently requires all users to yield to vehicles in the road at crossings. This may be inconsistent with MGL Chapter 89, Section 11 that requires vehicles in road to yield to pedestrians at all marked crosswalks.	City Ordinance: Bikeway (§312-78)	Consider amending ordinance to require vehicles on roadway to yield to all bikeway (or trail) users at marked crossings (and all path crossings should be marked).	Transportation & Parking Committee Bicycle & Pedestrian Subcommittee Police
Enforcement	Driver Behavior	Motorists often fail to yield to pedestrians in crosswalks.	Motorists required to yield to pedestrians in crosswalks (MGL Chapter 89, Section 11).	Additional enforcement, educational stops, and decoy operations.	Police
Enforcement	Driver Behavior	Motorists sometimes park in bike lanes, which is prohibited by city ordinance.	City Ordinance: Bike lanes (§312-80)	Additional enforcement, motorist education and outreach.	Police
Enforcement	E-Bikes	Current definition of "motor vehicle" in zoning ordinance could potentially apply to and limit use of electric-assist bicycles (e-bikes).	City Ordinance: Zoning, General (§350-2.1)	Amend zoning ordinance to differentiate e-bike from motor vehicle, consistent with any other policy changes related to e-bikes.	Transportation & Parking Committee Bicycle & Pedestrian Subcommittee Planning Board
Enforcement	Personal Safety	Concerns over personal safety and crime on rail trails, particularly at night.	None.	Consider additional patrols on rail trails.	Police

Enforcement	Police Education	Law enforcement officers may not have the latest information on laws and safety issues relating to bicyclists and pedestrians.	None.	Use available training resources, such as MassBike and WalkBoston training videos, supplemented with information on local ordinances.	Police Bicycle & Pedestrian Subcommittee
Enforcement	Snow Removal	Property owners do not consistently clear snow from the sidewalks in front of their properties, in violation of city ordinance. Crosswalks and curb ramps in Central Business District formerly cleared by BID no longer cleared.	City Ordinance: Removal of snow and ice from sidewalks (§285-17)	Issue citations to non-complying building owners and/or DPW does work and bills owner. DPW should clear crosswalks in CBD.	Police Public Works
Enforcement	Speeding	Speeding by motorists endangers bicyclists and pedestrians, particularly downtown.	City Ordinances: Speed regulation (§312-79) Speed limits (MGL Chapter 90, Section 17)	Identify areas where speeding is most dangerous to bicyclists and pedestrians, and target enforcement.	Police
Enforcement	Truck Safety	Large trucks present a particular hazard for bicyclists and pedestrians, and most trucks lack safety measures designed to protect vulnerable users.	None.	Establish an internal policy requiring side guards, convex mirrors, and cross-over mirrors on all large trucks owned or operated by the City.	Transportation & Parking Committee Police Public Works
Enforcement	Truck Safety	Operation of trucks can be unsafe in areas of high bicycle and pedestrian activity. (e.g., Main Street)	None.	Consider a long-term plan for appropriate delivery and loading locations for Main St. businesses.	Transportation & Parking Committee Police



Truck side guard graphic provided by http://www.cityofboston.gov/is/pdfs/TruckSideGuard_handout_VF2.pdf

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Policy Recommendations: Engineering

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Engineering	Bike Lane Ordinance	Existing ordinance does not contemplate a wider range of possible bicycle facilities than striped bike lanes, and specifically does not allow separated bike lanes for exclusive non-motorized use.	City Ordinance: Bike lanes (§312-80)	Amend ordinance to allow the full range of bicycle facilities, including separated bike lanes that are intended for the exclusive use of non-motorized users.	Planning & Sustainability Transportation & Parking Committee Bicycle & Pedestrian Subcommittee
Engineering	Bike Lane Ordinance	Streets with bike lanes are specifically listed in the ordinance, which is unnecessary for designating a bike lane, burdensome to keep up-to-date, and unclear what the legal consequences are if a bike lane is or is not listed.	City Ordinance: Bike lanes (§312-80)	Consider removing specific list of bike lanes from the ordinance.	Planning & Sustainability Transportation & Parking Committee Bicycle & Pedestrian Subcommittee
Engineering	Bike/Transit Integration	Integration between bicycling and transit could be better, and could extend range of potential trips by enabling bike use at beginning and/or end of transit trip.	None	Ensure adequate bike parking exists in proximity to key transit stops, and communicate the locations of integrated bus/bike stops to the public.	Planning & Sustainability Public Works Bicycle & Pedestrian Subcommittee PVTA
Engineering	Funding	The city does not currently designate any Chapter 90 funds specifically for bicycle or pedestrian projects, nor does the state expressly require that Chapter 90 projects comply with Complete Streets standards.* (See note by City Traffic Engineer.)	None	Consider allocating a specific percentage of Chapter 90 funds for bicycle and pedestrian projects, in proportion to mode share or another metric. Apply the city's Complete Streets Policy to all Chapter 90 projects.	Planning & Sustainability Public Works Transportation & Parking Committee Bicycle & Pedestrian Subcommittee
Engineering	Funding	MassDOT offers funding for Complete Streets projects.	Complete Streets Policy adopted.	Continue MassDOT Complete Streets funding process, with the goal of receiving up to \$400,000 in project implementation funds.	Planning & Sustainability Public Works Transportation & Parking Committee Bicycle & Pedestrian Subcommittee

*Bicycle and pedestrian access is considered for City projects. Full reconstruction projects consider the addition of sidewalks. Most resurfacing projects require the reconstruction of wheelchair ramps and bike lanes are considered where there is sufficient pavement width.

Engineering	Grates	Grates are not consistently bicycle-safe in either design or orientation. Ordinance does not include bicycle safety requirements.	City Ordinance: Gratings in streets (§285-24)	Although the DPW does install bike-friendly castings for upgrades and new projects, formalize by amendment to specify bicycle-safe design and orientation of grates on all streets and sidewalks.	Public Works Bicycle & Pedestrian Subcommittee
Engineering	Maintenance	Some crosswalks and bike lanes are faded and hard to see, reducing their safety effectiveness.	Crosswalks repainted annually over the summer by Public Works with bike lanes painted by a contractor	Crosswalk inventory is part of this plan. Bike lanes are listed in the bike lane ordinance, but bicycle facilities should be tracked independent of the ordinance. Ensure maintenance status is tracked as part of inventory.	Public Works
Engineering	Maintenance	Trail cleanup (brush cutting and trash cleanup) is not done consistently throughout the network.	DPW cuts brush twice a year on the Northampton Bikeway, once a year on other paths.	Expand twice-a-year brush cutting beyond the core Northampton Bikeway to other trails. Consider options for regular trash cleanup. Continue to seek "Adopt a Trail" sponsors for additional maintenance.	Public Works
Engineering	Maintenance	Street maintenance or construction operations can create hazardous conditions or block access for bicyclists, pedestrians, and people with disabilities.	City follows MassDOT guidelines for construction zone management.	Consider adopting a city policy detailing requirements for maintaining safe access through construction zones for bicyclists, pedestrians, and people with disabilities.	Public Works Bicycle & Pedestrian Subcommittee
Engineering	Trails	Consistency of signage at trail crossing of roadways.	Some roadway crossings include W11-2 and W16-7P signs currently.	All crossings should include MUTCD W11-15P signs.	Public Works



Covered bicycle parking racks near key destinations and adjacent to transit stations increase the likelihood of users completing a multi-modal transit journey.



A bicycle-unfriendly sewer grate design in Nashville, TN. These should be avoided at all costs.;



A bicycle-friendly sewer grate in Cambridge, MA. Note the direction of travel and the small opening size.

Policy Recommendations: Engineering

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Engineering	Snow Removal	Rail trail network is essential transportation infrastructure, and lack of clarity and consistency with snow removal impacts bicycle and pedestrian transportation in the winter. Snow removal policy for paths is not included in DPW's Snow Removal Procedures document.	DPW plows the Northampton Bikeway from Stoddard Street to Florence Street in Leeds. The section of the bikeway from King Street to Earle and Grove Streets (Manhan Rail Trail) used to be plowed by the former BID, by is now plowed by the Parking Maintenance Division. Plowing starts after a storm has ended, not during.	Formalize and publicize path snow removal policy to inform public and set expectations. Consider plowing during storms of sustained duration.	Planning & Sustainability Public Works Bicycle & Pedestrian Subcommittee
Engineering	Snow Removal	Previously the work of the downtown BID, snow clearance at crosswalks in Central Business District is inconsistent.	None.	City should include crosswalks and curb ramps in snow removal operations, particularly in the Central Business District.	Public Works
Engineering	Subdivision Regulations	Any point along a street (measured at the center line) must be less than 500 feet away from the nearest connected street; this applies to cul-de-sac or dead-end streets as well.	City Ordinance: Cul-de-sac or dead-end streets (§290-29.B)	Amend regulation to require that in the case of a cul-de-sac or dead-end street, if a non-connected public street that is not a dead-end is within 250 feet, and an alternative bicycle and pedestrian connection to that street is feasible, such connection is required.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Subdivision Regulations	Bicyclist and pedestrian access and safety not expressly part of Purpose, while motor vehicle safety is emphasized.	City Ordinance: Purpose (§290-2)	Add bicyclist and pedestrian access and safety to Purpose section of subdivision regulations.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee

Engineering	Subdivision Regulations	Bicycle peak-hour and daily trips not included in traffic analysis.	City Ordinance: Additional subdivision submittal requirements (§290-23)	Include bicycle trips in traffic analysis.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Subdivision Regulations	No existing requirement of interior circulation plan for bicycles.	City Ordinance: Additional subdivision submittal requirements (§290-23)	Require interior bicycle circulation plan.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Subdivision Regulations	Street design is expressly focused on "safe vehicular travel".	City Ordinance: Location (§290-29.A)	Broaden street design focus from "safe vehicular travel" to "safe travel for all road users."	Planning & Sustainability Planning Board
Engineering	A. Subdivision Regulations B. Zoning Ordinances	Subdivision Regulations and Site Plan Review criteria does not permit any decrease in roadway Level of Service, limiting potential for biking and walking improvements.	A. City Ordinance: Additional subdivision submittal requirements (§290-23) B. City Ordinance: Approval criteria (§350-11.6)	Adopt more flexible and context-sensitive Level of Service analysis, and require that project reduce (or at least not increase) Bicycling Level of Traffic Stress.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee



Specialized snow removal equipment in Sweden are designed for operation in separated and protected bike lanes.

Policy Recommendations: Engineering

E	Policy Area	Need	Current Policy	Recommendation	Potential Leadership
Engineering	Zoning Ordinances	No requirement to orient new buildings to street frontage, limiting access for non-vehicular users.	City Ordinance: Procedures (§350-11.5), Approval criteria (§350-11.6)	Amend site plan procedures and approval criteria to require new buildings to be oriented to street frontage.	Planning & Sustainability Planning Board
Engineering	Zoning Ordinances	Fixed minimum off-street vehicle parking currently required for all structures, based primarily on square footage (seats for restaurants), with no limit on commercial parking, and reductions only possible through shared parking or payment-in-lieu (for CBD).	City Ordinances: Off-Street parking requirements (§350-8.1), Shared parking (§350-8.6), Special provisions in Central Business District for meeting off-street parking requirements (§350-8.10)	Dynamically set off-street vehicle parking requirements by requiring Transportation Demand Management Plan that maximizes bicycle, pedestrian, and transit trips, and then calculates minimum off-street parking needed (not to exceed statutory minimum). Allow reduction of off-street vehicle parking for exceeding bicycle parking requirements.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	Crosswalks not expressly required, even when sidewalks are required.	City Ordinances: Procedures (§350-11.5), Approval criteria (§350-11.6), Highway Business District Design Standards attachment	Expressly require crosswalks at intersections, transit stops, building entrances, and other key locations within and adjacent to site, subject to engineering review.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	Bicycles and pedestrians not included in trip estimates, only vehicles.	City Ordinance: Procedures (§350-11.5)	Require bicycle and pedestrian trip estimates, based on anticipated demand assumption and/or nearby ped/bike counts.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	Bicycles not included in traffic pattern analysis.	City Ordinance: Procedures (§350-11.5)	Expressly add bicycles to traffic pattern analysis.	Planning & Sustainability Planning Board Transportation & Parking Commission Bicycle & Pedestrian Subcommittee

Engineering	Zoning Ordinances	Insufficient bike parking at commercial and residential buildings.	City Ordinances: Bicycle parking (§350-8.11), Chapter 350 Attachment 10, Chapter 350 Attachment 12	Increase bike parking requirements relative to current measures, and require bike parking even when no additional car parking is required. Require bike parking demand analysis.	Planning & Sustainability Planning Board Bicycle & Pedestrian Subcommittee
Engineering	Zoning Ordinances	Lack of end-of-trip facilities (e.g., showers, lockers, changing rooms) in office/commercial buildings is an obstacle to bike commuting.	City Ordinance: Bicycle parking (§350-8.11)	Require end-of-trip facilities for commercial buildings.	Planning & Sustainability Planning Board Bicycle & Pedestrian Subcommittee
Engineering	DPW Policy	Refine the process for public comments for DPW street projects	n/a	The DPW City Engineer or Traffic Engineer should come before the transportation and parking committee on the Pedestrian Bicycle Sub-Committee early enough in the decision process for substantive comments on any new or proposed projects.	Public Works



There is a general lack of bicycle parking in downtown Northampton.



10. MAIN STREET DESIGN

Previous Planning

Past plans undertaken to redesign Main Street in Northampton include the Main Street and King Street Transportation Charrette (March 2011) and the Main Street / State Street / Elm Street / West Street / New South Street Preliminary Intersection Design (July 2010.) Both of these plans by Nelson/Nygaard involved working to identify issues and opportunities along the Main St and King St corridors in Northampton and to analyze the State / Main / New South intersection to develop recommendations for redesigning the intersection to better accommodate traffic flow and pedestrian and bicycle safety. The impetus for these studies was Northampton's desire to enhance the bicycle and pedestrian environments without decreasing the vehicle throughput, as well as preserve or improve access to downtown businesses.

Some of the key findings and recommendations are summarized below:

- Critical issues identified: 1) over-designed 4-lane cross sections, 2) large intersections, 3) inhospitable bicycling environment. An over-designed street is defined as one that is "over-scaled as compared to the needs of traffic volumes and adjacent land uses. The cross-section of these roads is too wide, allowing cars to travel at excessive speeds and creating unsafe conditions for bicyclists and pedestrians."
- Lowering speeds through a road-diet identified as critical solution during charrette
- Studies referenced that show a direct correlation between street width and rate of injury in collisions. "with a very steep upward curve for streets wider than 44 feet."

- Shrinking the intersection size and width with compact design treatments have a number of benefits: “reducing vehicle speeds, particularly at the end of signal phases; less wasted space, especially where right-turn lanes are poorly utilized today; stretching of vehicle queues away from multiple approach lanes linearly towards mid-block areas, with no additional vehicle delay; far more frequent pedestrian crossing phases, which are also longer in duration; significantly shorter crossing distances that reduce the barrier of intersections like Main & King; and more predictable driver and bicyclists expectations through clearly channelized movements.”
- Long street widths and large intersections create “very long crossing distances for pedestrians, putting them in the path of cars for a long period of time.”
- Large intersections result in additional time required for each car to pass through, reducing the number of cars that can pass through in each signal cycle.
- Pull-in angled parking spaces on Main St. limit drivers’ field of view when backing out
- Additional connections are needed in places where bicycle facilities do exist but are lost at street crossings and intersections
- There is a general lack of quality bicycle parking in Northampton
- Solutions offered include road diets of four lanes to two lanes, shared bicycle boulevard style treatments, reverse angled parking on Main St, raised crossings on slip lanes, a textured crossing plaza in front of City Hall, curb extensions, new sidewalks under rail trail crossing, and widened sidewalks elsewhere

Alternative A:

- Right turn “boulder style” slip lanes
- New NB left-turn lane
- Single EB through lane
- Lengthened storage
- New on-street parking

Alternative B:

- Right turn “Boulder style” slip lanes
- New NB left-turn lane
- Single EB through lane
- Lengthened storage
- New on-street parking
- Two EB receiving lanes retained
- No northwest curb extension on Main St

Alternative C:

- Right turn “Boulder style” slip lanes
- New NB left-turn lane
- Two EB through lanes
- Lengthened storage
- Two EB receiving lanes retained
- No northwest curb extension on Main

After the completion of the three design options the City of Northampton decided to hold back on moving forward with final design due to issues related to truck turning movements and to await the recommendations on the redesign of Main Street developed during this Walk / Bike Northampton effort.

2016 Public Involvement

On May 10th, the consultant team hosted a Main Street Design Workshop that solicited public input regarding design ideas for Northampton's Main Street. Over 40 attendees engaged with cross sections of Main Street at three locations of varying width to inspire more than one option among the participants. The consultant team recognized that Northampton's Main Street redesign will likely not be solved by a one-size-fits-all approach, which resulted in the development of an exercise where attendees could lay out Main Street in a manner that they thought best suited everyone's needs. A range of graphics were created including sidewalk extensions, furniture zones, pedestrian through zones, travel lanes for vehicles, transit-only travel lanes, protected bicycle lanes and traditional bicycle lanes. Each section completed by a workshop attendee was photographed and recorded in the appendix of this report. Additionally, a brief synopsis of the results are listed below. This exercise helped to inform the consultant's final Main Street design options and final recommendations.

Specific items the community wanted to see in a Main Street redesign included:

Travel Lanes:

- One travel lane in each direction
- Left turn lane pocket within median

Parking:

- 8' parallel parking
- 18' angled parking

Bicycle Facilities:

- Separated bike lanes (located between sidewalk and parking)

Sidewalks:

- Generous planting zone
- Sidewalk cafes

Demonstration Project

On June 18th, the consultant team led a demonstration project on Main Street in front of City Hall that involved temporarily striping a separated bicycle lane between the angled parking and the curb. Curb extensions were also temporarily placed in front of City Hall and at Crackerbarrel Alley to reduce the crossing distance, and to create space for land-scaping, cafe tables and seating.

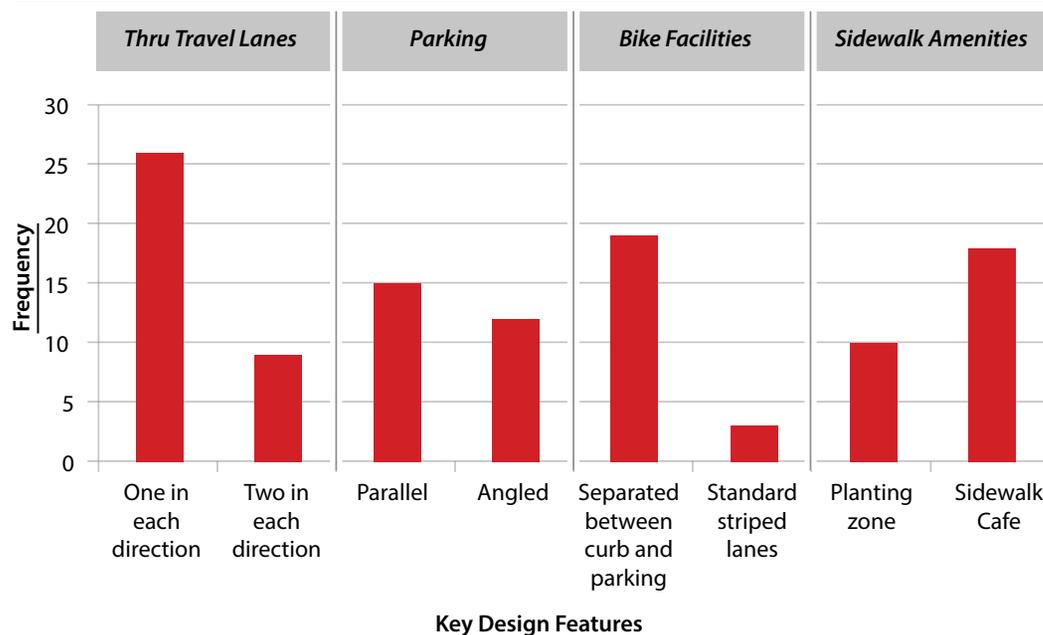


An example cross-section exercise completed by a Main Street Design Workshop attendee



Workshop attendees discuss what they'd like to see built on Northampton's Main Street

Main Street Redesign Workshop - Community Preferences



10.1 Design Options

As part of the public involvement and demonstration project effort, the design team created four design options for community evaluation. The four options were based on key design themes that included wider sidewalks, separated bike lanes, transit priority lanes, medians of various widths and a two-way cycle track within the median. Highlights of the design and the Pros and Cons of each option are presented on the following pages.



Views of the demonstration project set up that expanded the sidewalk space in front of City Hall and reduced the length of the crosswalk.



The Main Street demonstration project included large printed maps for the public to view and comment upon



A cyclist takes a video of the temporary separated bicycle lane on Main Street.



People seeking a shady place to have lunch enjoyed the outdoor seating provided during the demonstration project.



Main Street Design Option 1

Wide Sidewalks with Separated Bike Lanes

Option 1 included:

- Parking protected bike lanes on south side of Main from Strong Ave to Pleasant King.
- Sidewalk expansion, curb extensions, and raised crosswalk from Gothic to New South.
- Addition of median refuge islands and turn pockets.

Following community comment and consultant analysis, Option 1 evolved into the concept plan.

PROS

Narrower roadway makes cars less dominant, provides a more welcoming environment for walkers and less pavement that needs plowing

Provides a space for bicyclists separated from moving traffic and parked cars

Textured, flush median provides additional space for cars to pass others who are waiting to park and for enhanced emergency vehicle access

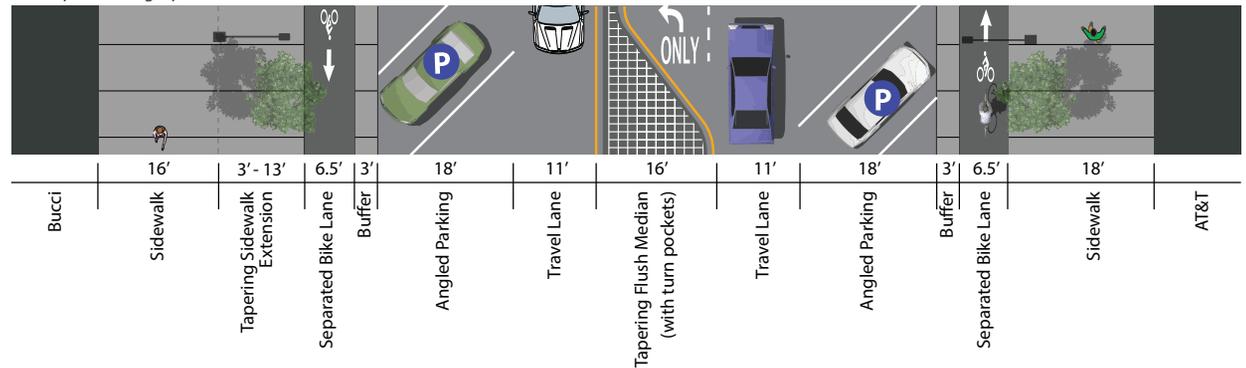
CONS

Separated bike lane takes up more space than standard bike lanes which could otherwise go into wider sidewalks or landscaping

In order to provide appropriate visibility for cyclists on the approach to intersections, some parking spaces may need to be removed

Limited opportunities to add significant landscaping or sustainability features within the median

Detail plan view graphic location between Center St and Old South St





Main Street Design Option 2

Transit Priority Lanes

Option 2 included:

- Median refuge islands in front of City Hall, between Center and Gothic, and between King and Gothic
- Narrow width of Main St to one traffic lane in each direction between Center and Gothic
- Curb extensions at 9 locations
- Traditional striped bike lanes outside of transit priority lane area

PROS

Provides dedicated space for buses to avoid traffic back ups along Main Street, saving transit riders time

Lack of space to maintain bus lanes through signalized intersections minimizes their utility

The shared bus/bike lane provides a lot of dedicated space for bicyclists during off-peak hours when bus traffic is light

During peak hours especially, many novice bicyclists and/or families riding with children will not feel comfortable sharing space with buses

Curb to curb width is generally maintained, along with the current number of parking spaces (approximately)

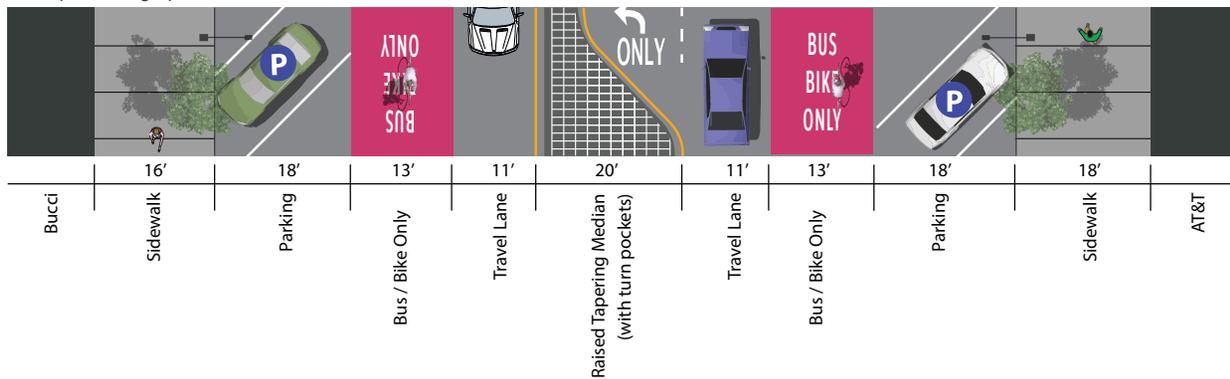
CONS

Lack of space to maintain bus lanes through signalized intersections minimizes their utility

During peak hours especially, many novice bicyclists and/or families riding with children will not feel comfortable sharing space with buses

Traffic and transit movement continues to be the dominant theme along Main Street

Detail plan view graphic location between Center St and Old South St





Main Street Design Option 3

Wide Median with Parking

Option 3 was inspired by Keene, NH who redesigned their wide Main St. into a beautiful downtown pedestrian streetscape. Option 3 included:

- Traditional striped bike lanes
- Raised median area with landscaping, crosswalks, angled parking, and a central sidewalk
- Existing angled parking on side of street transitions into a mixture of parallel parking and curb extensions

PROS

Wide median provides much flexibility to provide public space and greenery that is not simply associated with the adjacent businesses

Trees within the median will, in time, break down the scale of the widest blocks of Main Street

Parallel parking is a more “urban” aesthetic than angled parking and provides consistent treatment along the edges from end to end

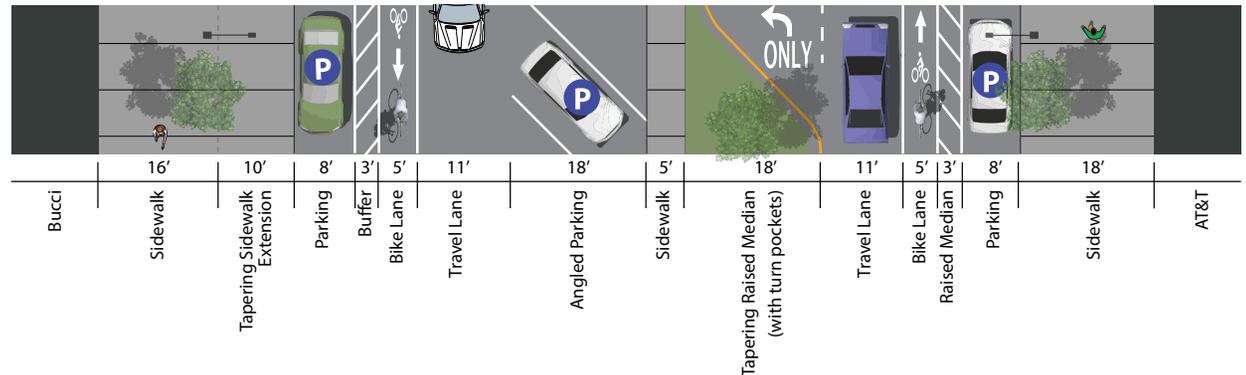
CONS

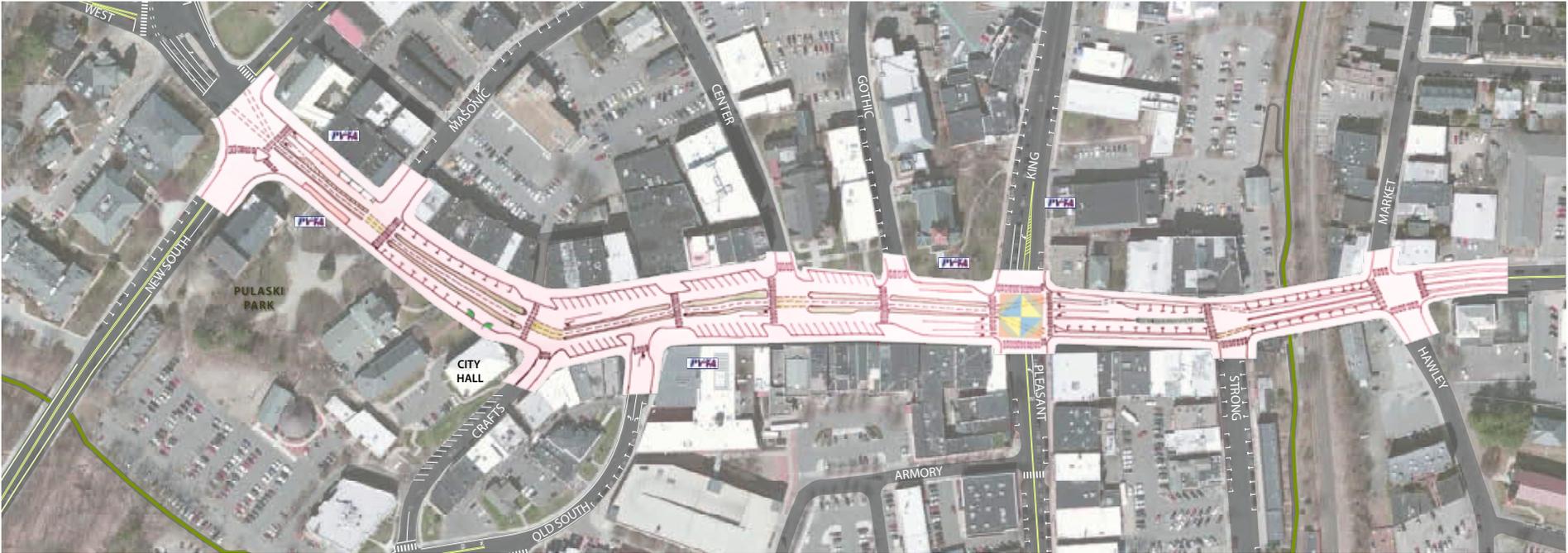
Wide median creates a less flexible street space for parades and large-scale community events

Trees within the median make for a less-conductive space for winter snow storage

The additional angled parking in the median does not make up for the curb-side parallel parking, equating to a 15-20% loss in on-street parking

Detail plan view graphic location between Center St and Old South St





Main Street Design Option 4

Median Cycle Track

Option 4 included:

- Two-way raised cycle track in center of Main Street, protected by landscaping areas and curb in narrower portions
- Curb extensions at approximately 12 locations
- The addition of turn pockets at two locations

PROS

Bicycles within the central median avoid conflicts with parked cars and minimizing cuts in the median reduces intersection conflicts

A median bikeway flanked by landscaping on each side would provide a unique and interesting experience for people riding bicycles

The potential landscaping and bikeway within the median would break down the scale of the overly-wide portions of Main Street

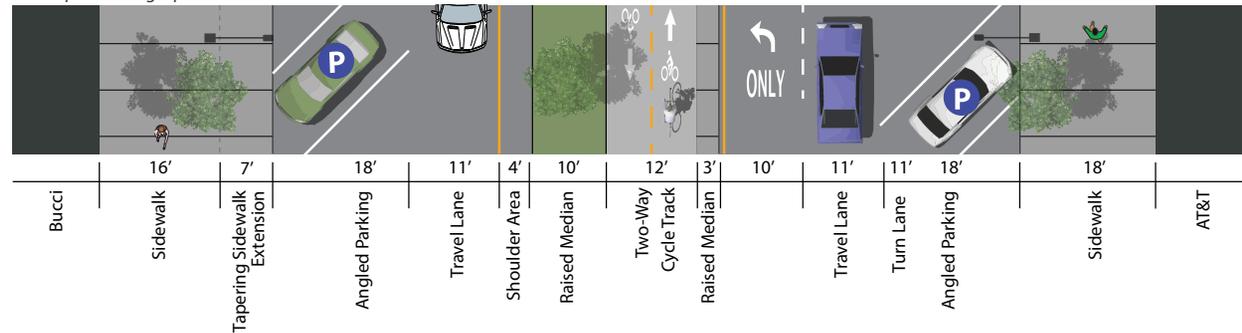
CONS

The transition from the existing bike lanes on Elm and the median bikeway will be awkward and require an exclusive bike crossing phase at the Main/Elm/State and Main/King intersections

There are few precedents for such a configuration, which would make success hard to predict

People bicycling within the median may find it less convenient to access adjacent businesses and side streets

Detail plan view graphic location between Center St and Old South St



10.2 Recommended Concept Plan

After receiving feedback from the community and City staff, a recommended concept plan was created. The following synopsis explains each design feature, beginning at the Market / Hawley intersection and ending at the Main / State / New South intersection (from east to west.)

Key Features of the Design

From Market / Hawley to Strong:

- White intersection crossing markings with solid green paint in the middle will be used to highlight to cross traffic on Hawley and Market that bicyclists are crossing the roadway along Main Street.
- Traditional bike lanes carry the cyclists up to the intersection of Strong Avenue.

From Strong to King / Pleasant:

- A curb extension on both sides of Main Street will reduce crossing distances for pedestrians and reduce motor vehicle speeds. The protected bicycle facility begins here on the south side of Main Street, while on the north side of Main Street a traditional bike lane carries cyclists up to the intersection of Pleasant and King. At this intersection the bicycle lane will be between the right turn lane and the through lane, reducing the likelihood of 'right hook' crashes.

From King / Pleasant to Center:

- The separated bike lane begins on the north side of Main Street and continues to Masonic Street.
- The bus stop on the north side of Main Street between King and Gothic will remain. Crosswalk markings shall be used to remind cyclists riding between the sidewalk and the bus stop to yield to transit users entering or exiting the bus waiting area.

- A curb extension on the west side of Gothic Street on both the north and south sides of Main Street will reduce the crossing distance for pedestrians. The curb extension on the south side of Main Street opposite Gothic Street will allow cyclists to transition into a short stretch of standard bike lane between the right turn lane and the through lane to minimize conflicts with turning vehicles.
- The King / Pleasant intersection design should consider a special paving pattern or public art to highlight the critical nature of the intersection in the heart of downtown.
- A small additional raised median will act as a traffic calming measure for motorists queuing to make a left from Main onto King Street.
- Raised crossings for both pedestrians and bicyclists at both Gothic and Center Streets will slow turning traffic.



Photo-simulation of sidewalk-level protected bicycle facility, looking east on Main Street in front of Faces and TD Bank.

From Center to Old South:

- The crosswalk across Main Street just west of Center Street will be relocated to just east of Center Street to accommodate a left turn pocket to Center.
- Northampton's rainbow crosswalk will be shortened by curb-extensions on both sides of the street, resulting in a loss of two diagonal spaces on the north side of the street. The curb extension on the south side will be elongated towards the west to accommodate passengers waiting for the bus. The larger area will allow pedestrians, transit riders, and cyclists to have their own dedicated space.

From Old South to New South:

- The existing crossing at Crafts Avenue will be replaced by a raised crossing.
- Space in front of City Hall will be reclaimed to make room for a small urban parklet (per Open Space, Recreation & Multi-Use Trail Plan (2011)) and reduce crossing distances from City Hall to the pedestrianized Crackerbarrel Alley.
- A curb extension on the parklet side of the street will complement the urban park in front of City Hall as well as to reduce crossing distances.
- Parallel parking and a small buffer will separate the protected bicycle facility west from City Hall to Masonic.
- The existing bus stop and PVTA pulse point on the south side of Main Street between Masonic and New South will remain.

New South intersection:

- Refuge island at New South and Main Street will be expanded and relocated slightly to the east. Complimentary pedestrian refuge island with raised crossing will be constructed to the west of the existing island, slowing the turning speed of motor vehicles from Elm St. to New South.

- An additional refuge island will be constructed at the northwestern corner of State and Main Street to slow right-turn movements for motor vehicles.

General:

- The general existing mix of angled and parallel parking types will remain. A small number of parking spaces will be lost to accommodate curb extensions and crosswalks. The few parking spots that will be lost are currently too close to the pedestrian crossings, creating uncomfortably short sight lines.
- Reverse-angled parking should be considered for the corridor. However, the separated bike lane design will mitigate the concerns that typical angled parking create from a bicycle safety point of view.
- Additional engineering analysis and public involvement will be required to move the concept plan into design development and implementation in the near future.





2

2

3

3

4

4

GOTHIC

KING

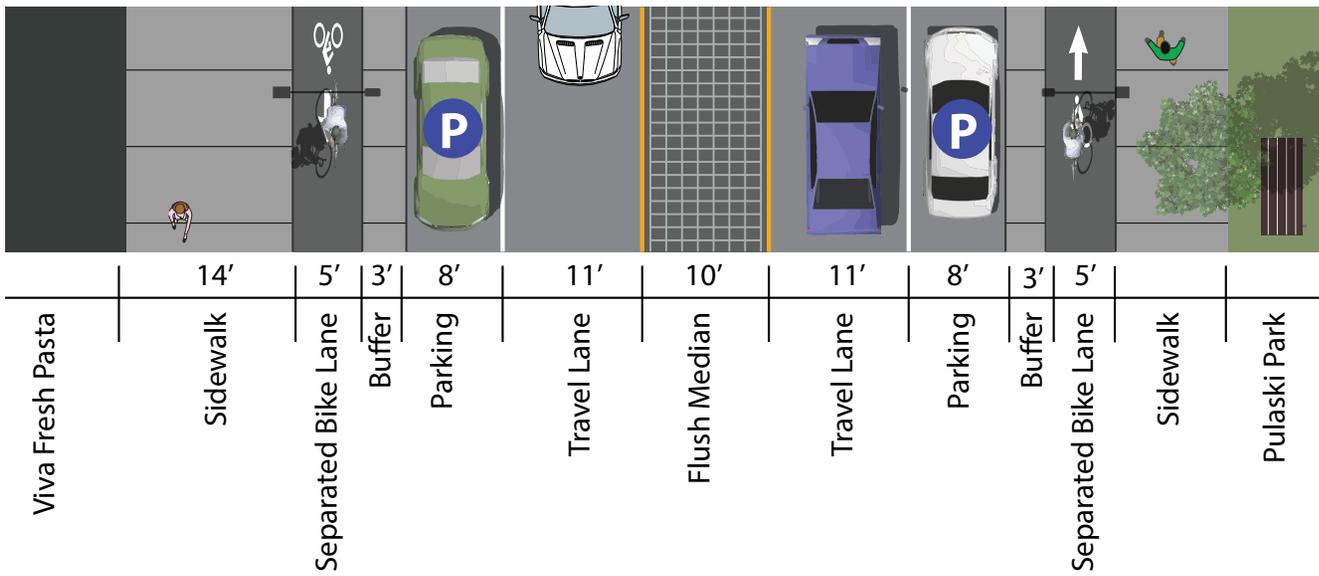
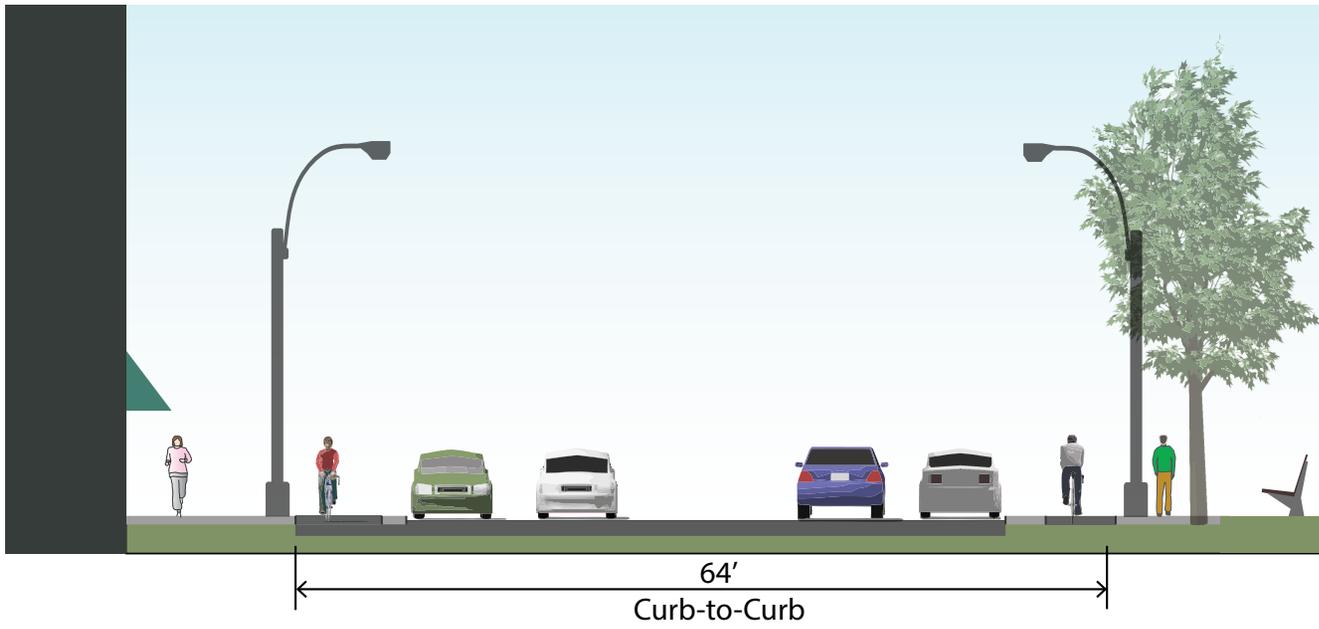
PLEASANT

STRONG

MARKET

HAWLEY

ARMORY

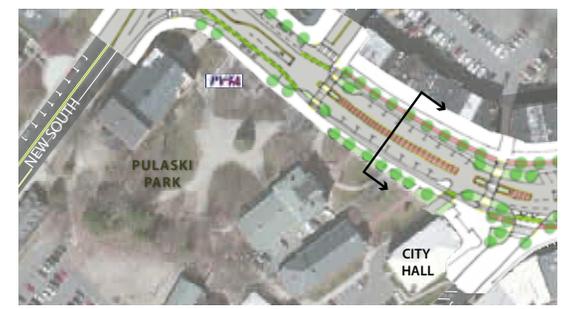


Existing conditions, looking east



Existing conditions, looking west

LOCATOR MAP



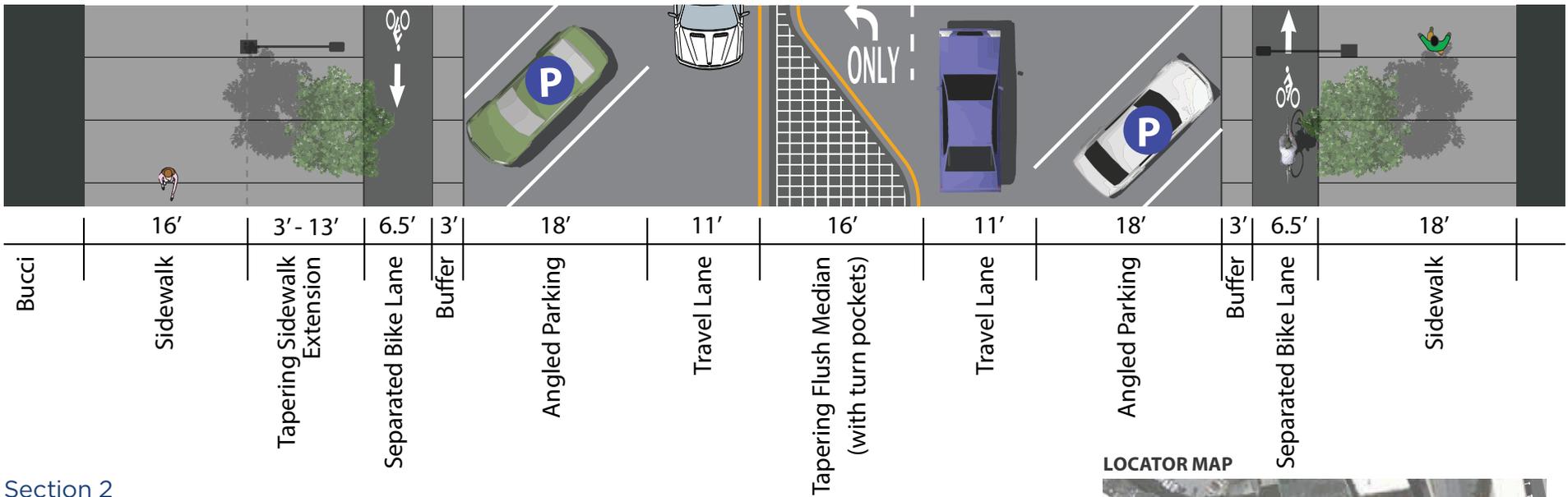
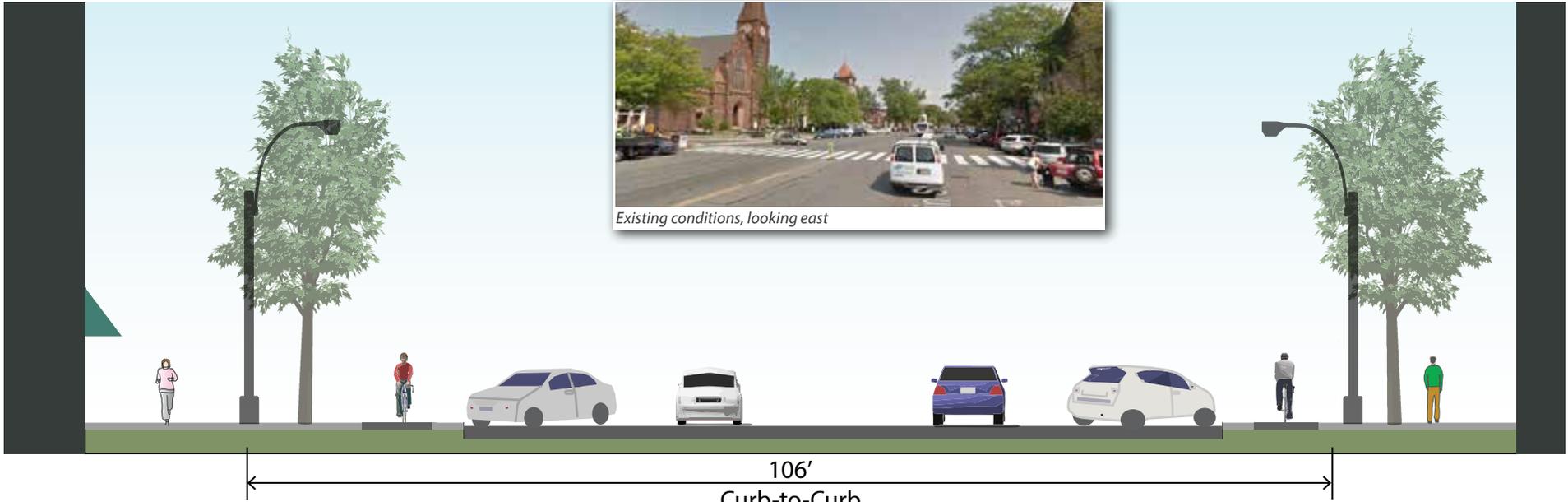
Section 1

Main Street at Masonic Street

Separated bike lanes provide comfortable facilities for cyclists of all ages and abilities. A 3' buffer between the separated bike lane and curb allows space for motor vehicle doors and other potential obstacles entering the bicycle lane to be avoided. The median area remains flush for emergency vehicle passage and potentially for short term delivery vehicle parking.



Existing conditions, looking east

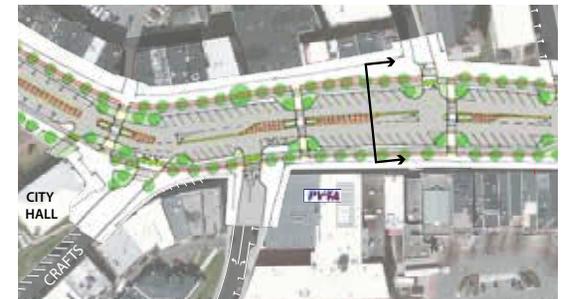


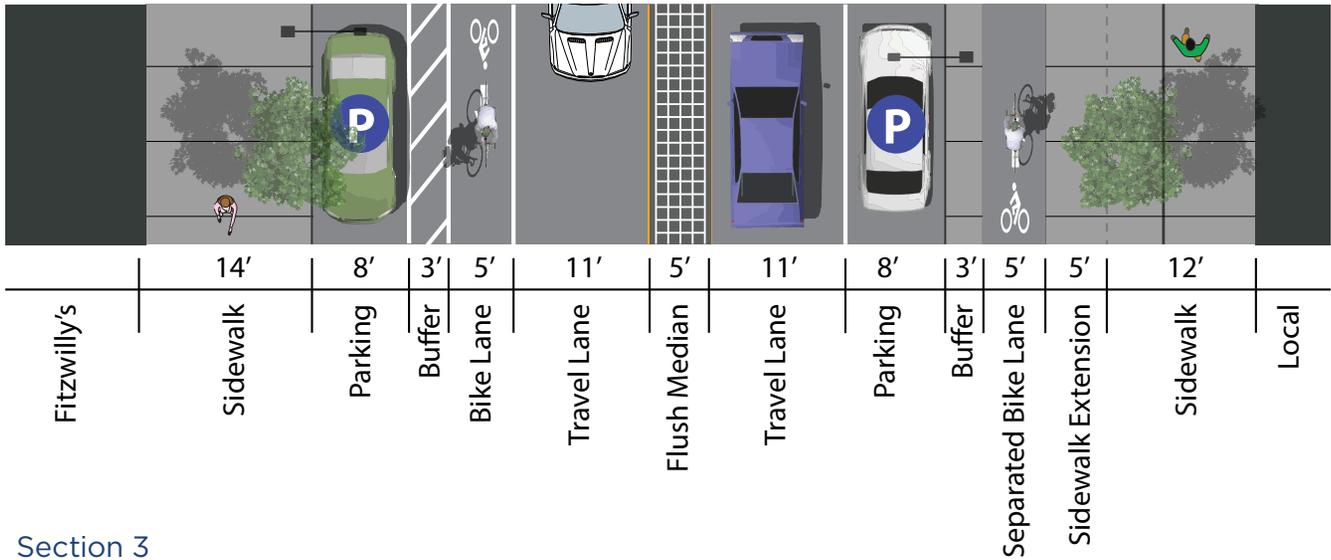
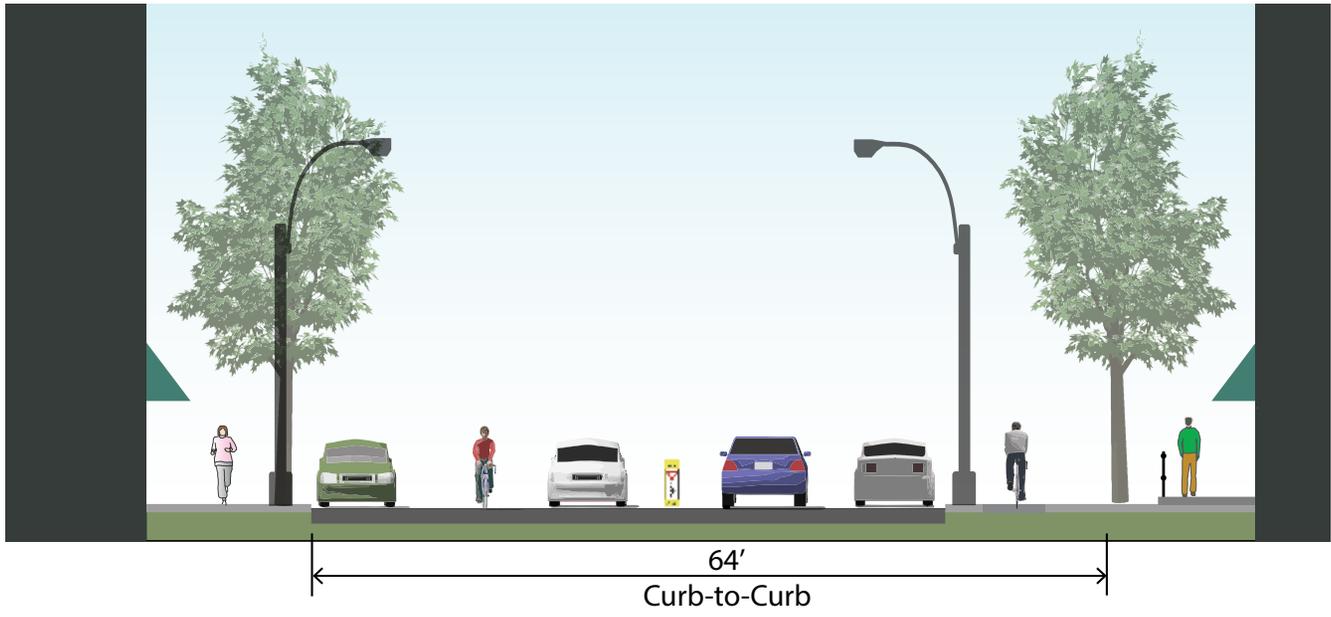
Section 2

Main Street at Center Street

An expanded sidewalk along the north side of Main Street reinforces this area as a lively pedestrian plaza and provides space for future civic events and outdoor seating. In this section the tapering median reflects the need for a left-turn pocket for motorists traveling up Center Street.

LOCATOR MAP





Section 3

Main Street at Strong Avenue

A bicycle lane on the south side of Main Street is separated from parked cars by a painted buffer, preventing the 'dooring' of cyclists by drivers exiting their vehicles. A sidewalk extension on the right side of Main Street allows space for a separated bicycle lane with a 3' buffer. A small flush median retains the one travel lane in each direction prior to the left turn pocket from Main St to Pleasant St.



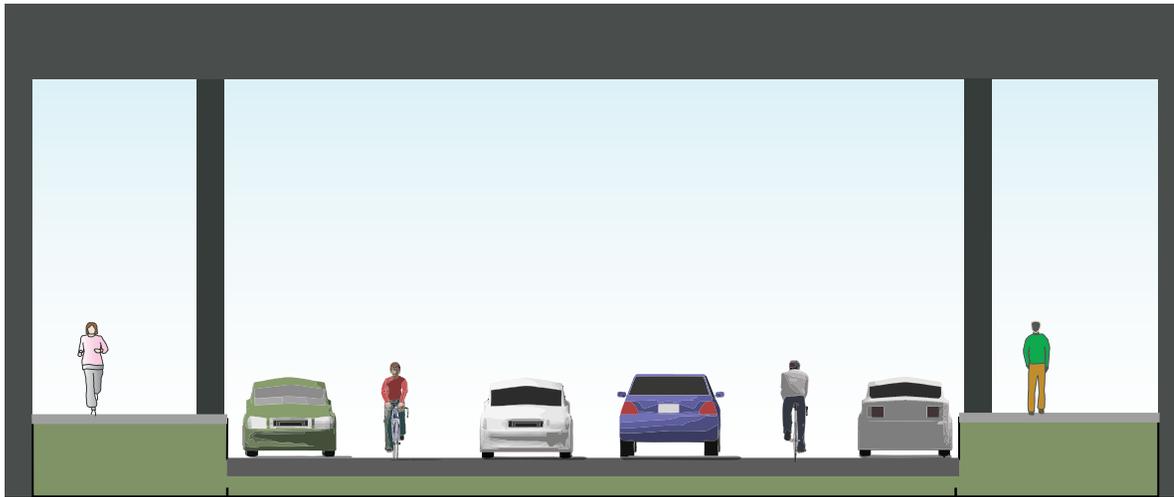
Existing conditions, looking east



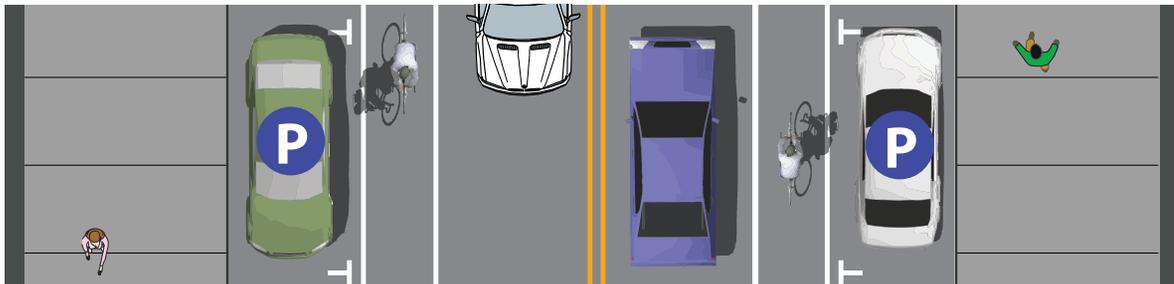
Existing conditions, looking southeast

LOCATOR MAP





50'
Curb-to-Curb



14'	9'	5'	11'	11'	5'	9'	14'
Sidewalk	Parking	Bike Lane	Travel Lane	Travel Lane	Bike Lane	Parking	Sidewalk

Section 4

Main Street at Rail Trail Trestle

Nine foot wide parking lanes provide a small buffer between car doors and the 5' bike lane passing underneath the bridge. The bike lane is accommodated by narrowing the existing wide travel lane.



Existing conditions, looking west



Existing conditions, looking east

LOCATOR MAP



10.3 Main Street Engineering Constructability Review

The design of any streetscape retrofit presents numerous challenges that require careful consideration during design in order to ensure a quality design, regulatory compliance and constructability. During the concept-level design of Main Street, the consultants considered these potential issues and attempted to use all available information to ensure that the final recommendation would be implementable.

Roadway Geometry

The roadway reconfiguration being implemented in this recommendation maintains the existing roadway alignment of Main Street and does not exceed the current ROW or impose any new substandard geometry. A travel lane width of 11 feet was chosen to ensure compliance with the MassDOT Project Development and Design Guide. This lane width will allow adequate space for vehicles without encouraging excessive traffic speeds. The existing roadway consists of a single wide lane in each direction that varies from approximately 24' to 35' in width. Despite being striped as only one lane in each direction, the roadway often operates as two unmarked lanes in each direction. The recommended conceptual design maintains one lane, albeit a much narrower lane than currently exists. The addition of left turn lanes at unsignalized intersections will help to ensure smooth traffic operations despite the narrowed pavement width.

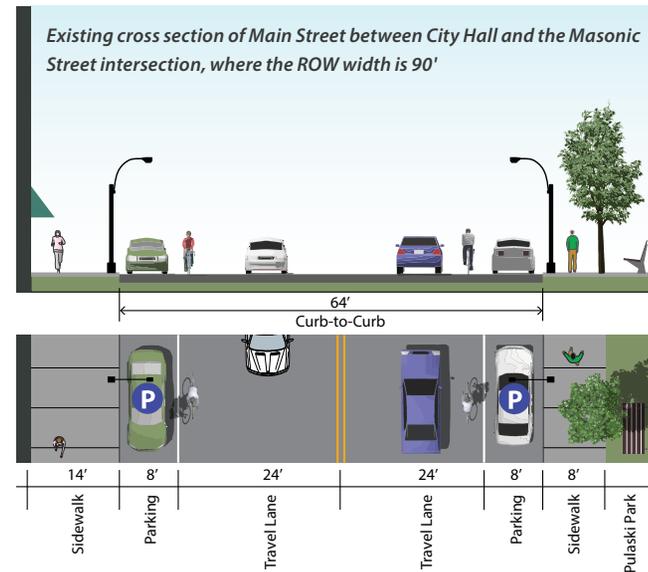
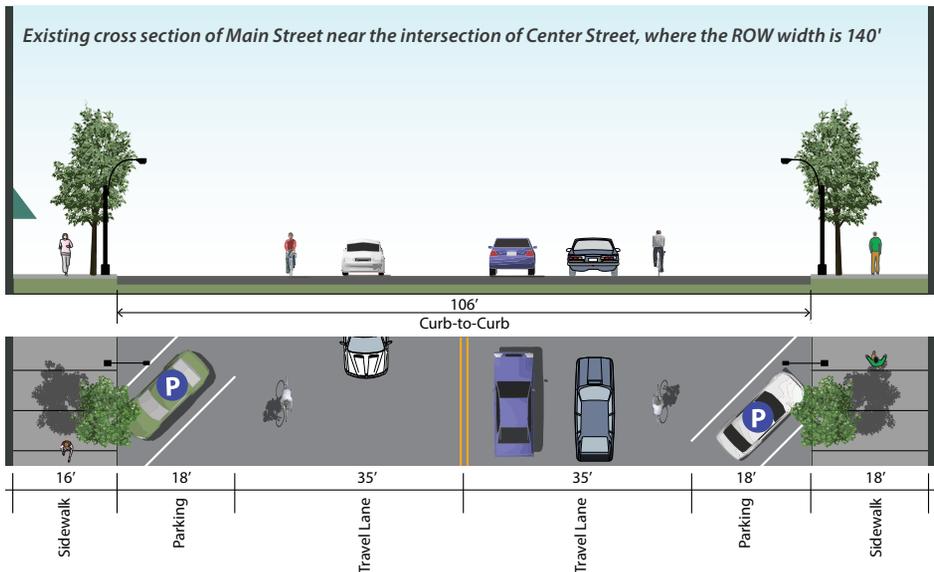
Separated Bike Lane Geometry

The separated bike lanes in the conceptual design recommendation have been designed to comply with the MassDOT Separated Bike Lane Planning & Design Guide. As the project progresses from this conceptual design to contract documents it will be the responsibility of the designer to ensure full compliance with the design guide as the overall design evolves.

Intersection Geometry and Signalization

There are three signalized intersections present in the corridor:

1. Main Street and New South Street/State Street
 - This intersection will be fully designed under a separate project and will be coordinated with Pedestrian and Bicycle Comprehensive Plan's conceptual design for Main Street to ensure compatibility. The current concept developed by Nelson/Nygaard does not provide adequate accommodation for trucks turning left from Main Street onto New South Street.



The designer will need to explore options to accommodate this movement during the development of contract documents.

2. Main Street and Pleasant Street/King Street /US Route 5/MA Route 10

- The configuration of this intersection will remain largely unchanged. All approaches will be maintained, with one minor exception: the de facto thru/right lane on Main Street’s westbound approach to the intersection will be changed to a right-turn only to accommodate safe bicycle connectivity. In the next stage of design, a thorough traffic analysis of this change will be needed to confirm its viability
- Due to the construction of wide sidewalks to accommodate the separated bike lane and curb extensions along Main Street, the crossing of Main Street will be shortened, potentially allowing signal retiming in order to improve traffic operations.
- Vehicles and bicycles will move through the intersection simultaneously; major signal modifications are not anticipated.

3. Bridge Street and Hawley Street/Market Street

- The configuration of the approaches to this intersection will remain unchanged. Traffic operations at this intersection should remain unchanged.
- Vehicles and bicycles will move through the intersection simultaneously; major signal modifications are not anticipated.

All turn lane lengths and tapers for all intersections (signalized and unsignalized) require further traffic analysis which will occur during preparation of the Functional Design Report, which is beyond the scope of this project.

Drainage and Utilities

Two major components of the conceptual design are sidewalk-level separated bike lanes and curb extensions. Any time that these features are proposed, drainage and utility modifications become a major point to be considered.

By widening the sidewalks to create sidewalk level separated bike lanes, the gutter elevation is raised and drainage must be carefully examined to prevent ponding along the sidewalk and flooding into doorways. In extreme cases, full depth

reconstruction and lowering of the roadway may be required in order to ensure positive drainage.

The construction of curb extensions provides great benefit to pedestrians by reducing crossing distances, but by extending the curb line, stormwater runoff is inevitably trapped requiring the installation of new drainage structures.

The changes to finished grade and drainage modifications resulting from the proposed improvements must be coordinated with the existing utilities present to minimize conflicts.

Any conflicts will need to be resolved,

which may include utility relocation. A detailed field survey is required to perform this analysis. Significant utility coordination will likely be required and could be a major component of the design work for this project.

Accessibility

Compliance with Massachusetts Architectural Access Board (AAB) standards will be critical during design and construction of this project. There are numerous wheelchair ramps along the corridor that will require detailed design to ensure that they meet all aspects of the AAB rules and regulations. Implementation of this conceptual design will improve access to pedestrians of all ages and abilities by resolving existing deficiencies including: excessively steep curb ramps, lack of detectable warning panels, and exceptionally long crossing distances.



Future curb extensions on Main Street will need to be carefully designed to ensure good drainage and can potentially include stormwater retention features.

Loading Zones

Due to the existing pavement width on Main Street, trucks loading and



The future redesign of Main Street will ensure full compliance with Massachusetts Architectural Access Board (AAB) standards

unloading typically park in the roadway since there is ample room for other vehicles to pass. The recommended single through lane design will prevent this from happening. In order to accommodate loading vehicles, additional consideration will need to be given to the implementation of loading zones during the transition from concept to contract documents. Conceptually, deliveries will occur in designated curb-side loading zones (TBD) and informally within extended-

length turn lanes and portions of the recommended flush median.

Snow Removal

The current excessive width of Main Street allows Public Works staff to plow snow to the center of the roadway and haul off-site after the storm has concluded. The recommended conceptual design will require that the City modify their snow removal plan to ensure that the roadway remains passable during storms due to the minimal space in the center of the roadway to store snow. In order to alleviate some issues with snow removal, Main Street's final design should incorporate features that are easily accessed by forward moving snow plows, since reverse maneuvers slow down the process of snow removal and can be hazardous to users of the roadway, bicycle, and pedestrian facilities. This is of primary concern at the curb extensions, as they present unique snow removal challenges if not designed properly. Two key design components will help aid snow removal efforts:

- Eliminate acute curb line angles since obtuse angles allow easier access by snow plows.
- Utilize a flush median to the maximum extent practical to temporarily store snow during storms.

Proper design of hardscape elements ensures that snow removal will be more efficient and less likely to damage the streetscape.

Transit

The recommended conceptual design shows bus stops along the corridor to encourage transit use. In order to allow buses to stop without impeding traffic flow, designated pull-offs are included. Bus stops located adjacent to the separated bike lane will be designed according to the standards in the MassDOT Separated Bike Lane Planning & Design Guide in order to provide safe access for transit users while maintaining the integrity of the bicycle facility. It will be the responsibility of the designer to coordinate the details of all bus stops with the Pioneer Valley Transit Authority (PVTa) to ensure their concurrence with the design and location.

Cost

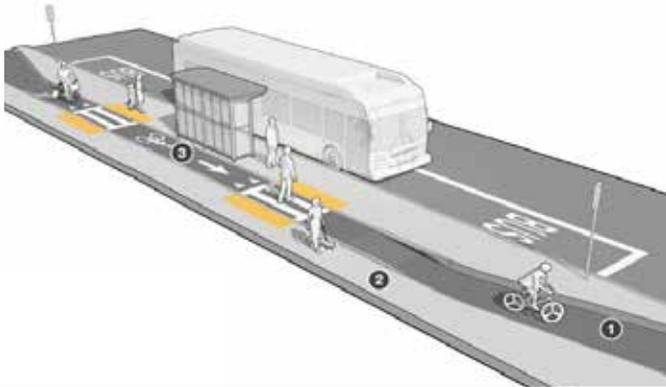
The cost estimate for the Main Street project based on current unit prices is approximately \$5.8 million, which assumes two years of inflation. For a detailed cost estimate, see Appendix 2 in the Annex of this report.



The recommended conceptual design for Main Street includes some stretches on flush median to help accommodate snow storage where Main Street is at its widest

Design Toolkit - Key Features

The following graphics illustrate design-feature precedents for Northampton to consider in the future planning and design of Main Street



Floating Bus Stop - Mid Block

As illustrated in MassDOT's Separated Bike Lane Planning & Design Guide, "floating" bus stops can be incorporated at PVRTA stops in order to maintain the integrity of the separated bike lane, while accommodating a comfortable waiting area for transit users.



Wide Sidewalks

Similar to the sidewalks in Central Square Cambridge, the future sidewalks along Main Street can be designed to incorporate a generous walking zone and provide a wide, varied-material furniture zone to accommodate outdoor seating, cafes, bike racks and street trees.



Raised Crossings at Side Streets

In conjunction with a green separated bike lane crossing, raised crosswalks slow turning motorists and emphasize that safe pedestrian and bicycle connections are the higher priority at low-volume cross streets.



Flush Median and Pedestrian Refuge Islands

Along Mass Ave in East Arlington, a flush median articulated in red "streetprint" surface seamlessly gives way to raised island that provides a safe refuge for pedestrians crossing the formerly four-lane roadway



11. PUBLIC REALM DESIGN GUIDE

Introduction

The purpose of this guide is to provide developers, property owners, and City officials with a set of recommended practices regarding the design of the public realm in the City of Northampton's primary commercial areas. The guidelines are designed to establish standards that will unify the visual environment along the major entries to the downtown, create pedestrian spaces that are consistent and inviting, and provide a vocabulary of materials and components that will create uniqueness and consistency to the City.

The guidelines are focused on the following zoning districts:

CB – Central Business:

Primarily along Main and Bridge streets from the Main / State / New South intersection of Main and West streets to the Historic Northampton Museum, and also along King and Pleasant Streets from Summer Street to Holyoke Street;

EB – Entranceway Business:

Along King Street from Summer Street to the MassCentral / Norwottuck Rail Trail;

GB – General Business:

Along Pleasant Street from Holyoke Street to the former dike; and

HB - Highway Business:

Along King Street from the MassCentral Rail Trail to the I-91 interchange.

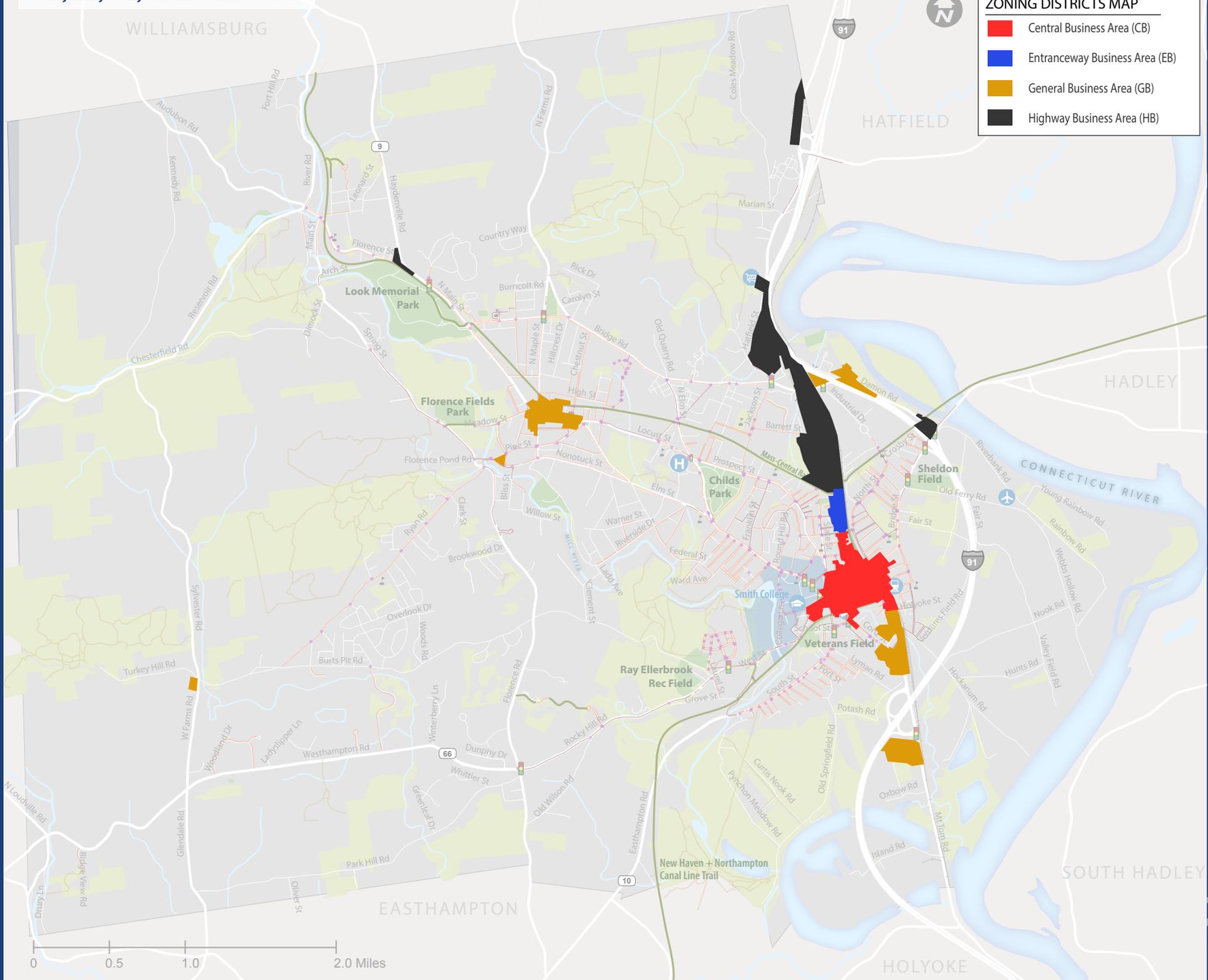
In general, these zones follow the primary streets identified above, and are typically only the depth of the properties immediately along those streets. The exception to this is the CB zone, which includes several side streets off of Main Street in the downtown, including portions of State, Masonic, Center, New South, Old South, and Pearl streets.

CB, EB, GB, HB ZONING MAP



ZONING DISTRICTS MAP

- Central Business Area (CB)
- Entranceway Business Area (EB)
- General Business Area (GB)
- Highway Business Area (HB)



The GB and HB zones also cover other areas within the City, such as the businesses along Damon Road east of I-91 and in the business district of Florence. While these guidelines may have applicability to these areas, they are primarily written for the core business districts of Northampton.

Description of Zones

While the zones under study in this document generally represent the majority of the commercial districts of the city, they are very different in character based on both the zoning parameters provided in the code and the actual development of the areas. The following table captures some of the key criteria and characteristics of each zone:

The zones under study work as a progression into the center of Northampton from the north and south, increasing in density towards the central business district. Along with the increase of density of buildings, the proximity of structures to the public realm and the presence of parking both decrease, ultimately forming the continuous street wall of Main Street. One outcome of this increasing density is a more prominent presence of pedestrians along the streets, requiring greater attention to the development of an appropriately scaled and furnished sidewalk environment.

The zones also create a framework for the aesthetic approach to these major streets, requiring consistent landscape treatment and building presence which transitions along with the density of development. By establishing guidelines for the public realm design in all of these zones, a consistent and a pedestrian zone that is inviting and habitable from their readable framework can be created to bring greater unity and imageability to the city center and its approaches.

Business Districts: Comparison of Zoning Parameters

Zone	Allowed Uses	Building Height	Setbacks	Parking	Landscaping
CB: Central Business	Commercial (retail, office), residential (second floor or back of first)	30' min. 70' max.	Front: 5' max. Side: 0' Rear: 0'	No new parking	--
EB: Entranceway Business	Retail, wholesale, office, residential (above first floor)	20' min. 65' max.	Front: 0' Side: 0' Rear: 0'	No parking within 10' of front lot line. One curb cut. Bicycle parking required.	8' buffer if building does not abut sidewalk; 10' buffer in front of parking.
GB: Greater Business	Any use	60' max.	Front: 0' Side: 0' Rear: 0'	No parking between building and front lot line	Landscaping, pedestrian malls or plazas required between building and front lot line
HB: Highway Business	Retail, wholesale, office, drive-throughs, residential (above first floor)	20' min. 65' max.	Front: 0' beyond required buffer and sidewalk Side: 0' Rear: 0'	Quantity and layout by site plan review. Bike parking required.	10' tree belt plus 6' sidewalk.

Design Intent

The intent of the Public Realm Design Guide is to respond to this increasing intensity of use while also creating a consistent vocabulary of materials and furnishings that is readable and understandable throughout the entire business district. To reinforce the progression and transition from edge to center, the following goals for the streetscape in each zone have been established:

HB – Highway Business:

- Separate pedestrians from traffic
- Provide only modest sidewalk capacity
- Buffer parking and development areas from roadway views
- Establish street trees as dominant street element

GB – General Business:

- Separate pedestrians from traffic
- Provide comfortable sidewalk capacity
- Buffer off-street parking from roadway views
- Bring street trees closer to roadway to reduce scale

EB – Entryway Business:

- Encourage pedestrian use by providing broad, comfortable sidewalks
- Incorporate amenities into sidewalk zones such as seating, tables, area lighting
- Provide variety of materials and colors to enliven pedestrian environment
- Maintain strong street tree presence

CB – Central Business

- Reinforce existing pedestrian activity with broad, comfortable sidewalks

- Incorporate amenities into sidewalk zones such as seating, tables, lighting, kiosks, clocks, etc.
- Provide a variety of materials and colors to enliven pedestrian environment
- Maintain strong street tree presence; provide understory plantings where appropriate
- Permit access between on-street parking and businesses

The goals can be translated into specific dimensional criteria to establish the framework of the street system. For consistency, the sidewalk is divided into four different components:

1. Greenscape/Furniture Zone

This is the area of the sidewalk immediately adjacent to the curb. Its primary role is to provide a buffer between vehicles moving in the street or parked at the curb and the pedestrians walking within the sidewalk. In the densely developed zones, this area can be paved and used for activities supporting the adjacent businesses, such as benches and tables, bicycle parking, information kiosks, and other furniture. In the less densely developed districts, where pedestrian traffic across it is minimal, this area becomes a green buffer forming an edge to the roadway and begins to soften the street. In both high and low density areas, the inclusion of street trees is critical to forming an edge to the roadway corridor and creating shade. Green infrastructure, in the form of infiltration planters that collect runoff from the roadway and infiltrate it back into the groundwater, is an important function that provides both softening and cooling and is an appropriate use of the greenscape zone as well. Other utilities, such as street lights, traffic signals, equipment cabinets, etc., also should be placed in this zone.



Central Business Zone

The Central Business District sidewalks should be broad, comfortable, and well equipped with amenities for shoppers and strollers.



Entranceway Business Zone

Sidewalks in the Entranceway Business District should be attractive and comfortable to encourage pedestrian usage in this emerging area.

2. Pedestrian Zone

The pedestrian zone is the primary travel zone of the sidewalk. The primary criteria for this zone is the width: it must be wide enough to comfortably accommodate the volume of pedestrians expected to use the length of sidewalk in question; at a minimum, it must meet ADA standards. The pedestrian zone must be clear vertically to a comfortable dimension as well – branches, utilities, canopies, and other structures must not protrude into the envelope above the sidewalk; a minimum height of 6’ – 8” must be kept clear to meet accessibility standards.

3. Frontage Zone

This zone is particular to the CB and EB districts, and essentially provides a clear space in front of stores where merchants can display goods for sale or place outdoor seating for restaurants and cafes. While it is desirable for this zone to be consistent with the adjacent pedestrian zone, it does not necessarily have to be identical: different paving materials and furnishings can distinguish this use area from the circulation function of the pedestrian zone. Where this zone is not populated by uses supporting the adjacent businesses, it provides a shy zone from the building wall, making pedestrian circulation more comfortable.

4. Buffer Zone

For the GB and HB districts, the buffer zone is the equivalent of the frontage zone. While it can be used in manners similar to the frontage zone, the adjacent land uses tend to be less supportive of those types of activities. Its primary function therefore becomes more focused on creating an aesthetically pleasing space in front of the building wall that incorporates the pathway leading to the building entrance. In areas outside

buildings, it provides critical screening of parking and other uses beyond the parcel’s lot line, contributing to a more consistent and harmonious street environment.

Dimensional Characteristics and Materials

The tables on the following pages indicate recommended widths for each zone and also provide guidance on materials and furnishings to be provided within each zone. Guidelines are provided for both primary and secondary streets: The primary streets are the main streets through the zone, as identified above in the introduction to the design guide. The secondary streets are any streets that branch off the primary streets. In most instances, the secondary street standards will apply to a very short length of the street, as the zones are typically only one parcel deep, but in the Central Business zone, there are several side streets that lie entirely within the zone. The reduced dimensional standards recognize that these side streets are typically narrower in right-of-way and cross-section, they typically carry less pedestrian and vehicular traffic, and they must blend back into portions of the street grid that do not have established design standards.

The following section (continued on page 3-91) provides some do’s and don’ts for proper application of and design for specific streetscape elements:



General Business Zone

The General Business District should provide adequate buffering of pedestrians from cars, both on the street and in parking lots for businesses.



Highway Business Zone

In the Highway Business District, the emphasis is on providing buffering and protection for pedestrians while creating a strong identity for the street through the use of street trees.



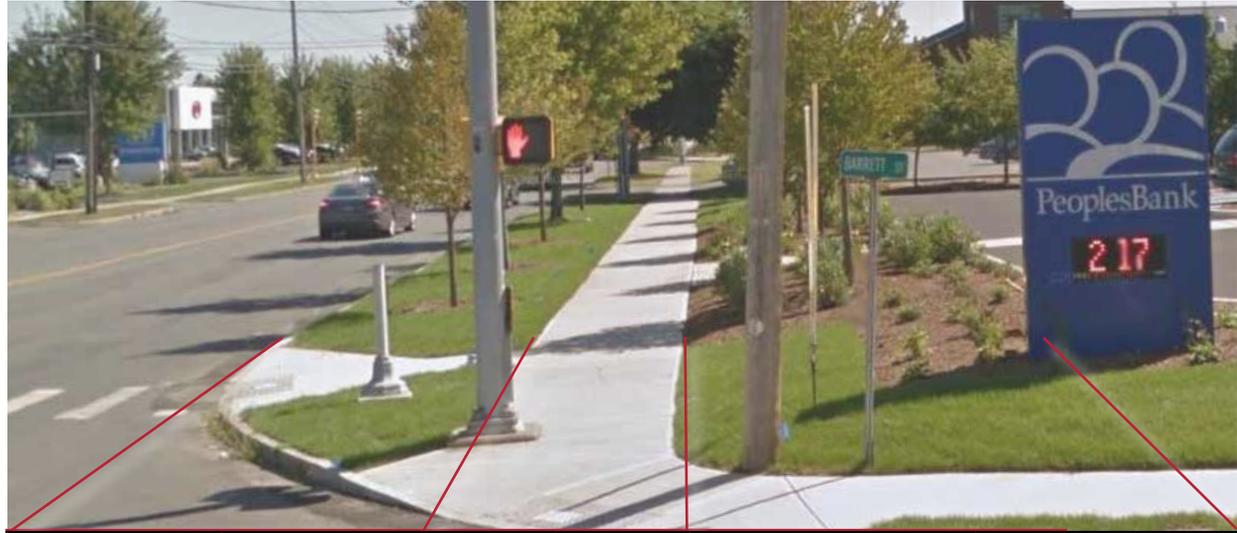
Greenscape / Furniture Zone Pedestrian Zone Frontage Zone

Zone	Street Type	Greenscape / Furniture Zone		Pedestrian Zone		Frontage Zone	
		Minimum	Preferred	Minimum	Preferred	Minimum	Maximum
Central Business	Primary	4'	10'	8'	12'	2'	5'
	Secondary	4'*	6'	6'	8'	2'	5'
Entryway Business	Primary	6'	10'	8'	12'	2'	5'
	Secondary	4'	6'	6'	8'	2'	5'

Materials Criteria

Central Business	All	Street tree planting, permeable pavement (unit pavers, etc.); Infiltration planters. Street furniture including benches, bike racks, trash receptacles, lighting, tables, etc. Must be pedestrian accessible.	Concrete with saw-cut joints for a minimum of 5' of sidewalk width; ADA-compliant unit pavers (no mortar joints)	Same as pedestrian zone.
Entryway Business	All	Street tree planting, permeable pavement (unit pavers, etc.); Infiltration planters. Street furniture including benches, bike racks, trash receptacles, lighting, tables, etc. Must be pedestrian accessible	Concrete with saw-cut joints for a minimum of 5' of sidewalk width; ADA-compliant unit pavers (no mortar joints greater than 1/4")	Same as pedestrian zone.

*Optional, if sidewalk space is available.



		Greenscape / Furniture Zone		Pedestrian Zone		Buffer	
Zone	Street Type	Minimum	Preferred	Minimum	Preferred	Minimum	Preferred
General Business	Primary	6'	10'	6'	8'	4'	10'
	Secondary	6'	6'	5'	6'	4'	6'
Highway Business	Primary	10'	--	6'	8'	12'	--
	Secondary	10'	--	5'	6'	4'	6'
Materials Criteria							
General Business	All	Street tree planting; lawn or low-maint. shrubs and groundcovers, max. 24" ht. above sidewalk. Infiltration planters are encouraged. Only roadway lighting may be included within this zone; all other street furniture to be placed in the buffer zone.		Concrete with saw-cut joints.		Provide a planted buffer to screen parking. Planting design shall be consistent with the highway business district landscaping standards for the front buffer planting. Street furniture such as benches and bike racks may be included.	
Highway Business	All	Refer to highway business district landscaping standards - tree belt.		Concrete with saw-cut joints.		Refer to highway business district landscaping standards - front buffer.	

Street trees:

- Don't plant trees in an area less than 5' by 5'.
- When planting in areas surrounded by pavement (such as in the Central Business District), use structural soil or a suspended sidewalk to create at least 800 cubic feet of planting soil underneath the pavement.
- Provide irrigation, aeration and underdrainage for all street tree plantings. Automatic irrigation is preferred, but manual irrigation is acceptable if an automatic system is not feasible and a strong commitment to perform the hand watering can be obtained. And remember, more street trees die from drowning than lack of water, so underdrainage and soil design are critical.
- Plant street trees at sidewalk level, not in raised planters or within walled areas. It makes maintenance and watering simpler, and promotes better growth and development of the trees.
- Don't use tree grates unless no other option is available. Tree grates can become maintenance problems over time, and can create tripping hazards and other problems. Use a pervious stone (such as decomposed granite) or bark mulch to fill in the tree pit at the surface.
- Select street tree species for hardiness in the local microclimate. Native species are generally preferred for this reason, but exotics can be used if chosen carefully. Make sure the tree's mature crown size and shape will fit into the space available. Where overhead utility lines cross the planting area, choose species that will stay well below them.

Infiltration Planters:

- Infiltration planters are typically located between the curb line and the sidewalk, in the greenscape or furniture zone. They can be located at low points in the road or along the curb between the high and low points. Be sure to consider the location of crosswalks to prevent water from puddling within the pedestrian area.

- Size infiltration planters to accommodate the first 15 minutes of a rain event at a minimum. This "first flush" will carry with it all the oil, grit, and other contaminants that have collected on the road.
- Additional capacity can be provided in underground galleries to maximize the removal of stormwater from the drainage system.
- Make sure the soils used within the planter, including the growing medium for the plants, allows percolation of the water into the soil at an appropriate rate: too fast prevents the soil from filtering out contaminants; too slow means a larger reservoir is required to process the water.
- Make sure plants used in the planter are adaptable to both extremely wet and extremely dry conditions. On occasion, irrigation can be used to help plants survive through periods of drought.

Street Furniture:

- Keeping the design of all street furniture within a consistent family (for example, steel painted black, or natural wood with brushed steel accents) will provide a more uniform appearance, even if some of the details of each piece vary.
- Locate all street furniture so there is sufficient space around it for people to use it without interfering with other sidewalk functions. For instance, hold benches back two to three feet from the sidewalk to prevent sitter's legs from tripping walkers, and locate bike racks so there is plenty of room for a bike with a tag-along attached to be parked without blocking the pedestrian zone.
- Anchor furniture solidly to the ground to prevent it from tipping over.
- Keep a ready supply of replacement parts and paint to repair and touch up damage quickly.



12. CONCLUSION: PERFORMANCE MEASURES

Northampton has cemented its place as a leader in bicycle and pedestrian planning and advocacy in Western Massachusetts. The City's pedestrian friendly streetscape and world-class rail trails draw users from across the region.

Northampton is becoming a more walkable and bikeable city with the completion of this Comprehensive Plan. Currently, the City is:

- Seeking Tier III Complete Streets funding from MassDOT for 15 priority projects to enhance Northampton's walk / bike infrastructure.
- Requesting state and local funding for a complete redesign of Main Street.
- Engaged in a robust analysis of all sidewalks, curbs, and ramps using digital technology to create an inventory that will be used to prioritize sidewalk and ramp construction and upgrades.

As Northampton looks to the future and begins to benchmark progress, it will be critical to carefully assess performance measures. Performance measures are tools to monitor progress related to building new facilities, expanding ridership, and improving safety for pedestrians and bicyclists. The following list will be helpful to measure success and track progress.

Participation Data

Continue to conduct pedestrian and bicycle counts on sidewalks and streets in addition to existing counts located along rail trails. This count data could inform future funding as increasing use patterns will make it politically easier to bring in federal, state and local funding.

Reported Crashes

Tracking both pedestrian and bicycle involved crashes -- with special attention to patterns in severe or fatal crashes -- should be indexed

and compared to participation rates in walking and bicycling to better understand safety improvements in the City.

Bicycle Theft

Indexed compared to participation in bicycling, based on police reports. Because not all thefts are reported, this metric may be supported by the City actively reaching out to bicycle-related programs at schools and other centers to encourage safe riding and theft reporting.

Implementation of Facilities

The installation of new pedestrian crosswalks and sidewalks, the improvement of existing sidewalks and crosswalks, miles of trails, lane miles of bike lanes, and shared lane markings, should be recorded in order to track progress. These can be tracked as a percentage of the overall roadway network. In addition, major infrastructural upgrades such as bridges and underpasses should be highlighted as significant achievements and advertised as targeted investments to increase the health, safety, and mobility of Northampton residents, workers, and visitors.

Mode Share

One simple way to understand progress on conditions for walking and bicycling in Northampton is to benchmark mode share as a critical performance measure. Using ACS data and other survey information, the City should track the percentage of people walking and bicycling to work. Future goals should establish benchmarks that increase over time, with the 2025 goal of increasing walking by 50% and bicycling by 150% (see the table in the column to the right).

Walk / Bike Friendly Community Status

The Pedestrian and Bicycle Information Center (PBIC) and League of American Bicyclists (LAB) manage Walk Friendly and Bike Friendly Community (BFC) programs, respectively. Northampton is currently designated as a bronze level community in both programs. As the PBIC and LAB provides a robust criteria system to designate participating communities, goals to increase Northampton's designation is seen as a good proxy for overall improvements in the walking and bicycling environment.

		FUTURE GOALS (L.A.B. BFC AVERAGE)			
Aspirational Performance Measures	2016	2019	2022	2025	
Walk Friendly Community Status	Bronze	Silver	Silver	Gold	
Walk Mode Share	11.2%	13%	15%	18%	
Bike Friendly Community Status	Bronze	Silver	Silver	Gold	
Bike Mode Share	3.8% (1.2%)	6% (3.5%)	8% (3.5%)	10% (5.5%)	

Properly tracked with regular ped/bike counts and other data gathering efforts, these Performance Measures will complement the Goals established for this Comprehensive Plan. The measures can also help to leverage pedestrian and bicycle infrastructure improvements to enhance the city's livability and economic vitality. Combined with on-going sustainability efforts, neighborhood revitalization and an expanding arts/culture/food scene, a more walkable and bikable Northampton will continue to place the City on a trajectory of being one of the most livable cities in New England.