

November 2016

Stoneham Town Center Complete Streets Strategy Final Report

2016 Downtown Technical Assistance,
as part of the Massachusetts Downtown Initiative





Main Street looking north to Church Street

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Introduction

This report was prepared on behalf of the Town of Stoneham through a “Massachusetts Downtown Initiative Technical Assistance Program” competitive grant from the Massachusetts Department of Housing and Community Development (DHCD). The Planning Board and Town staff provided oversight and review of the strategy, final report, and final presentation. In addition, Town businesses, residents, visitors, and employees provided insight and input into this study through a series of stakeholder meetings and a public charrette held in June of 2016. On behalf of DHCD and the Town of Stoneham, we would like to thank all stakeholders and public participants for their constructive input to this process.



Main Street looking south to Stoneham Town Common

Background and Understanding

The Town of Stoneham is located 10 miles north of Downtown Boston, on the northern edge of the Middlesex Fells. Stoneham is an attractive, regional destination with a total population of more than 20,000. The Town is easily accessible through Interstate 95 and Interstate 93, and it is served by MBTA bus routes. Currently, there is no commuter rail service within the town; however, the MBTA Commuter Rail's Haverhill Line serves the neighboring cities of Melrose and Wakefield, about 5-10 minutes away by car. In addition, the MBTA Commuter Rail's Lowell Line is accessible in the neighboring towns of Winchester and Woburn, about 10-15 minutes away by car.

Stoneham Town Center features a livable, mixed-use environment, with local walking destinations, retail, and housing. Over the last several years, the Town has made great strides to further support mixed-use development and multimodal improvements in the downtown. Recent major initiatives include the Stoneham Town Center Strategic Action Plan, which identified goals and strategies to revitalize the Town Center, including pursuing a more robust, convenient, and efficient multimodal transportation system for both residents and local businesses. Partially as a result of this process, the MBTA extended weeknight hours of service on the Route 132 bus serving Stoneham Town Center to 11:00 p.m. Simultaneously, the Town has partnered with the neighboring communities of Woburn and Winchester to build the Tri-Community Greenway, a multi-use path connecting Stoneham Town Center to Horn Pond in Woburn and Wedgemere Station in Winchester. The new path will be a great amenity for people, including pedestrians and bicyclists traveling between these communities.

As local growth and development efforts advance within Stoneham Town Center, the Town has recognized the need for a comprehensive "Complete Streets" strategy to improve the streetscape, safety, walkability, and economic development and growth. This study was commissioned to devise a Complete Streets strategy through a three-month planning process. The study began with an examination of existing conditions to determine current roadway conditions and future needs. This was followed by a robust public outreach process, including stakeholder focus groups and a public design charrette. The input from the public outreach led directly to the development of a preliminary conceptual design and, in consultation with Town officials, a final design and report.

What are Complete Streets?

Complete Streets policies and designs capture the unique vision of each community, providing a solid foundation that can change the way streets are designed and built. Complete Streets policies formally direct transportation planners and engineers to design and construct balanced streets that safely accommodate all users of all ages and abilities, including people who walk, bike, take transit, drive, and operate freight-sized vehicles. A Complete Street is one that places values on all modes of travel, is context sensitive, has both quantitative and qualitative performance measures, incorporates “green” elements, encourages connected networks, and contributes to a community’s unique sense of place.

The combination of these elements will be different for every community and corridor but can be a powerful tool in defining a functional balance and culturally distinctive sense of place. Providing for specific kinds of social activities gives rise to appealing forms and design treatments just as providing for specific ecological functions leads to unique landscape expressions.

Complete Streets projects range from redesigning lanes to increase safety and mobility for all users to introducing new streetscape elements that make corridors more enjoyable to walk along. These improvements could include raised crosswalks and curb extensions that make crossing the street less hazardous for pedestrians or parklets and other types of street furnishings that provide for more activity on the sidewalk.

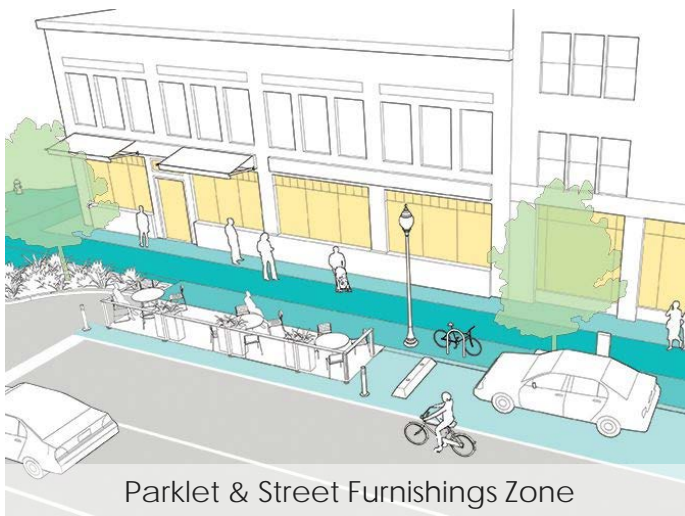


Image Source: National Coalition of Complete Streets

Text Source: National Coalition for Complete Streets, Smart Growth America, Nelson\Nygaard

Framing the Need

Situated just south of the interchange between I-95 and I-93 and minutes from the northern edge of the Middlesex Fells, Stoneham Town Center is highly accessible to local residents and visitors from throughout the region. It has an attractive Main Street filled with the historic buildings and ground-floor retail that make for active, busy streets. At the same time, Stoneham Town Center's classic New England town common offers respite from its busy Main Street and creates a large space for the Town's residents to gather.

The need for a reexamination of Stoneham Town Center's street design arose from the acknowledgement within the town that Stoneham Town Center needs a Complete Streets strategy. The Stoneham Town Center Strategic Action Plan from 2015 found that stakeholders in the Town Center expressed a desire for improved pedestrian and bicycle facilities. The Strategic Action Plan identified key goals, including a more inviting and easily navigable public realm and a more convenient and efficient multimodal transportation system.

More residents have also been moving into Stoneham Town Center over the last ten years, which increases the need to ensure that there are safe, convenient ways for them to move around their new neighborhood. These new residents have arrived with redevelopment projects like The Residences at Stoneham Square and new construction like 411 Main Street.

The goals identified in the Strategic Action Plan can be addressed through a Complete Street strategy for the Town Center. The redesign builds on Main Street's core assets and seeks to bring more foot traffic to Stoneham Town Center's streets while making them safer for all users.



Crossing Main Street near Stoneham Town Common

Goals

In consultation with Town officials and key stakeholders, four primary goals were developed to guide the plan. These goals reflect the overall strategy guiding the Town's vision for the future development of its downtown streets.

1. Establish a complete street strategy to support downtown businesses to grow and flourish

A Complete Streets strategy for Stoneham Town Center should support downtown businesses by ensuring that foot traffic in front of storefronts increases while customers that access these businesses by any type of transportation—whether by foot, by car, on a bike, or by bus—can do so with ease.

2. Achieve a vision for the downtown that articulates a walkable Town Center environment with mixed uses and open space

The plan should support and build on the existing open space and mixed-use assets that define Stoneham Town Center. These assets range from the Town Common to the ground floor retail along Main Street to the historic buildings and institutions found throughout the Town Center. These, along with the range of housing choices and transportation options, are what support a walkable downtown.

3. Recommend streetscape and roadway improvements in the Town Center to safely accommodate users of all ages and abilities, including people who walk, bike, take transit, drive, and operate freight-sized vehicles

Many people and many types of vehicles use the streets and sidewalks in Stoneham Town Center. Everyone should feel safe and accommodated on these streets and have easy access to their destinations. A key element of Complete Streets design is tailoring these principles so that seemingly incompatible users share the same streets (i.e., a truck can reasonably access a delivery zone and a family can park once and visit multiple destinations on foot).

4. Create a downtown corridor that maintains calm traffic, allows for increased access to local businesses, and improves the aesthetics of the streetscape

By slowing down traffic through sensible traffic-calming measures, access to local businesses is increased, as pedestrians feel more comfortable stopping at stores across the street or simply wandering around the Town Center. In addition, the increased sidewalk space, from elements like curb extensions, offer new spaces for plantings, benches, and other street furniture that enliven and beautify the street.

Existing Conditions

The study area selected for the Complete Streets study encompasses the commercial and mixed-use Town Center of Stoneham. As shown in Figure 1, the study area covers Main Street and Central Street between Hancock Street and Montvale Avenue.

Road widths along Main Street north of Minot Street are generally 45'-50' while the sidewalks are around 8' wide. On Central Street, the road is more narrow with a street width of around 35'—except near the intersection with Common Street where it widens. Sidewalks are about the same width as Main Street.

Existing Condition Key Findings

- Some pavement treatments and bump outs have been installed, but they don't meet best practices.
- People jaywalk because crosswalks are not located at convenient locations.
- There has been inconsistent installation of wider sidewalks and streetscape improvements.
- Many facilities are in poor condition or deteriorating.
- Intersection signaling and geometry leads to queuing and driver frustration.
- On-street parking spaces seem to be in high demand while publicly-accessible off-street parking supply is limited.

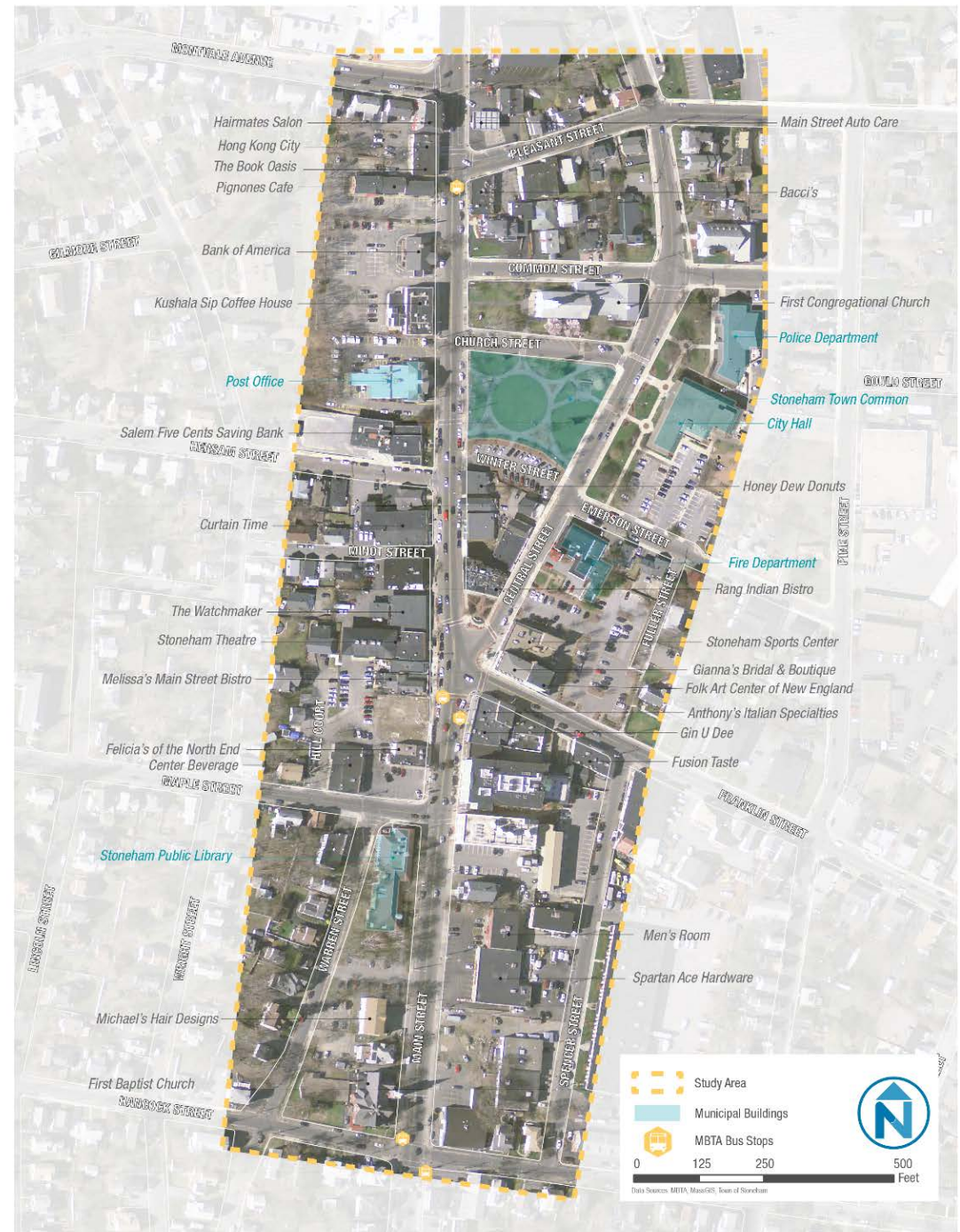


Figure 1: Downtown Stoneham Study Area & Local Businesses

Existing Conditions



Large, complex intersections create confusion for all users.



Crosswalk ramps are deteriorated.



Crosswalk pavement is deteriorated.



Wide travel lanes encourage high speeds.



Loading trucks blocks crosswalks...



...forcing families to jaywalk to cross the street.

Public Input: Stakeholder Meetings

Through a series of meetings with various stakeholders in Stoneham Town Center, the team learned about many of the issues and concerns around street design in the Town Center.

Increasing pedestrian safety was a key concern that arose many times in conversations with stakeholders. This is important for several reasons. There are several schools near Main Street, and the street often acts as a barrier to children who need to walk to and from school. There are also many walking destinations in Stoneham Town Center, which are more difficult to reach due to unsafe crossings nearby. These destinations include the many store and restaurants in Stoneham Town Center, in addition to important institutions like the local churches.

Stakeholder Meetings Key Findings

- Increased pedestrian safety is a key concern, especially for students crossing Main Street to get to school and for people visiting stores, restaurants, and institutions in Stoneham Town Center.
- Sidewalks and crossings are in need of repair. Not only are there sections that are not ADA compliant, but many sections are difficult even to push a stroller over.
- “Complete Streets” should not mean a bike lane on every street; each road should be treated as part of a “Complete System” that provides accessible routes for every user.
- Main Street should remain a street with free-flowing traffic, while increasing safety and convenience for other types of users.
- Dangerous intersections, like Stoneham Square, should be made safer and designed to discourage drivers from performing illegal maneuvers and reduce turning conflicts.

Stakeholders Interviewed
Stoneham Library
Police Department
School Committee
First Congregational Church
Disability Committee
Stoneham Senior Center
Stoneham Transportation Advocacy Committee
Stoneham Theater
Fire Department
Boys & Girls Club
Recreation Department
Greenway Committee
Stoneham Chamber of Commerce
Stoneham Town Planner
Stoneham Historical Commission
Open Space and Recreation Committee
Zoo New England
Stoneham Square Neighborhood Group and PTO
Local businesses and institutions


Public Input: Design Charrette

Over the course of an afternoon workshop and design charrette held on June 30, 2016, the team compiled public input on how the streets in downtown Stoneham should be improved. The workshop was put together and run with help from the Town, and it was attended by approximately 70 people. The activities included:

- General comments and place-specific concerns (shown in Figure 2)
- Drawing walking routes to final destinations after arriving by car, bike, or bus in Stoneham Town Center (shown in Figure 3)
- Visual preference voting between street design options (results in Figure 4)
- Road design scenarios, using street elements (like travel lanes, parking lanes, sidewalks, etc.) scaled to standard widths (pictured below).
- Comments on the plan goals



Road design scenarios



In the Town Center....

Do you feel unsafe to cross the street?

Would you like to feel safer biking in downtown?

Is it frustrating to park far away from your destination?

Come help us make
Stoneham more
complete!

“Complete Streets are streets for **everyone**. They are designed and operated to enable **safe access** for **all users**, including pedestrians, bicyclists, motorists and transit riders of **all ages and abilities.**”

- Smart Growth America

**Stoneham Town Center
COMPLETE STREET STRATEGY
HANDS-ON WORKSHOP**

**2016
JUNE
30**

Anytime between
3:00 - 7:00 PM
Stoneham Farmers Market
on the Town Common

Questions? Contact David Lizotte, 781-438-0760, DLizotte@stoneham-ma.gov



Figure 2: Public Input – General Comments



Figure 3: Public Input – How Do You Get Here?

WHAT DO YOU PREFER?

Workshop participants used sticky dots to vote for one of several options in different categories related to the Complete Streets Strategy, such as sidewalk, road width, and bicycle infrastructure. The results of the visual preference voting are shown below.

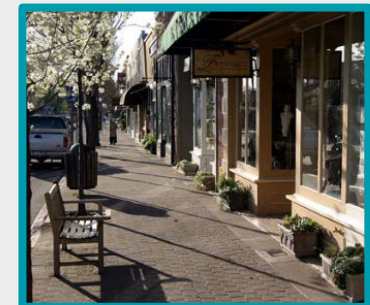
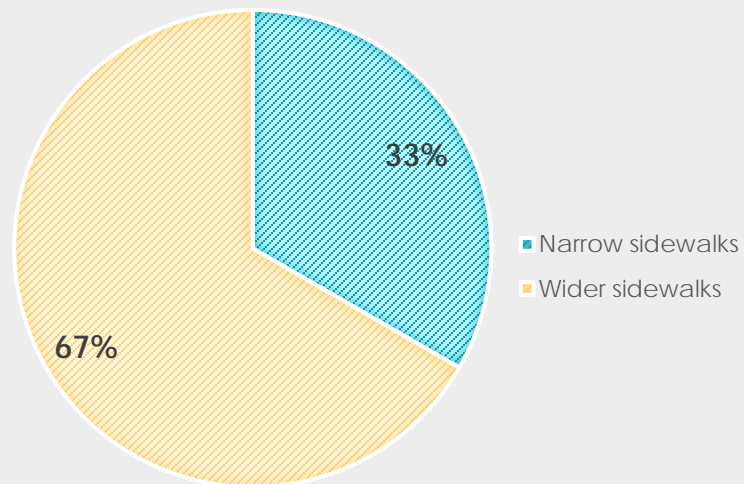


Workshop participants discuss their preferences.

SIDEWALKS



Wider sidewalk,
narrower travel lane



Narrow sidewalk,
normal travel lane

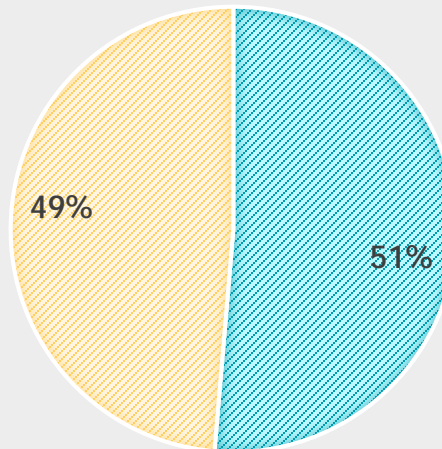
Figure 4.1: Public Input – Visual Preference Voting (Sidewalks)

WHAT DO YOU PREFER?

CROSSINGS



Raised crossing



- Painted crosswalk
- Raised crosswalk

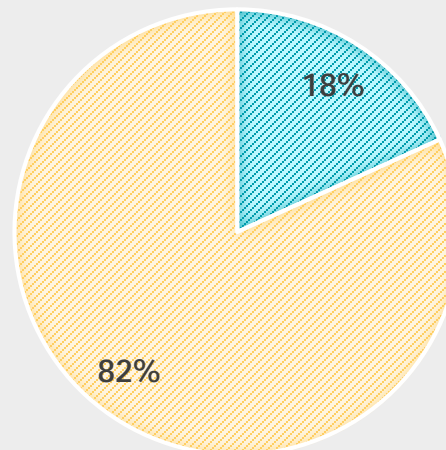


Painted crossing

CROSSING SIGNALS



Countdown crossing



- Beacon crossing
- Countdown crossing



Beacon crossing

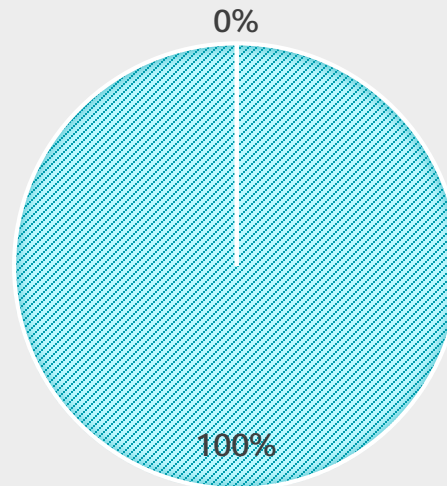
Figure 4.2: Public Input – Visual Preference Voting (Crossings)

WHAT DO YOU PREFER?

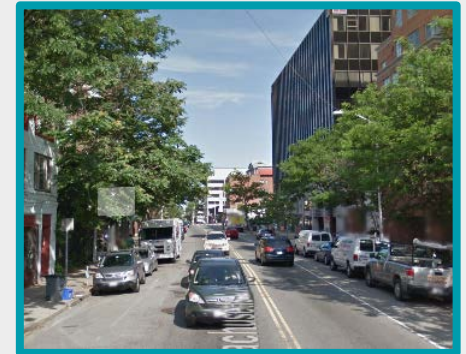
STREET SPEED



Faster but harder
to cross



- Slow and safe
- Fast, hard to cross

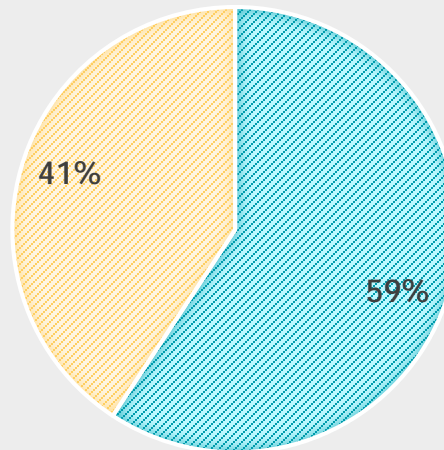


Slow and safe

STREET WIDTH



More on-street
parking



- Shortened crossings
- More on-street parking



Shortened crossings

Figure 4.3: Public Input – Visual Preference Voting (Streets)

WHAT DO YOU PREFER?

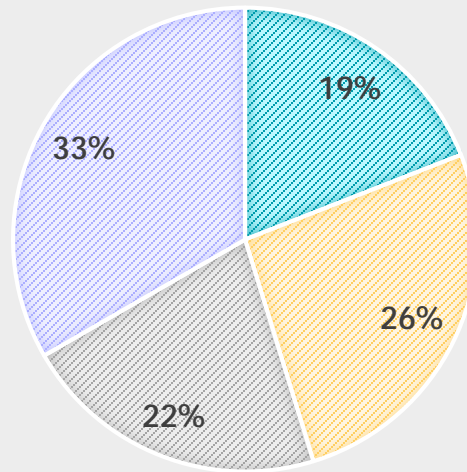
BIKE LANES, IN STREET



Sidewalk-level lane



Bollard-protected lane



- Bike lane
- Buffered lane
- Bollard-protected lane
- Sidewalk-level lane



Bike lane

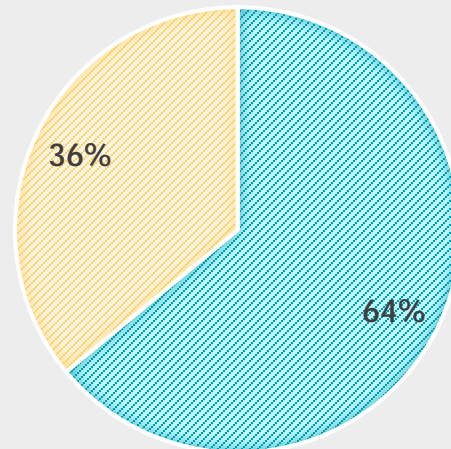


Buffered bike lane

SHARED BIKING ACCOMMODATION



Narrow shared street



- Shared-lane markings
- Narrow shared street



Shared-lane markings

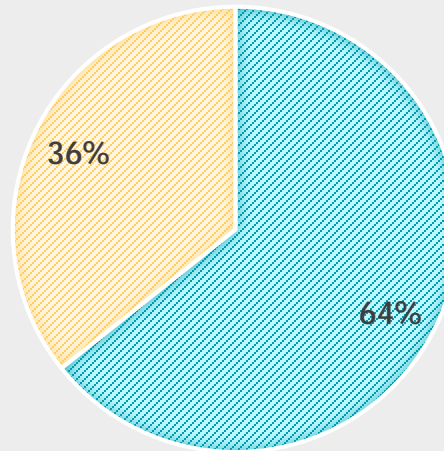
Figure 4.4: Public Input – Visual Preference Voting (Biking)

WHAT DO YOU PREFER?

SHORT-TERM BIKE PARKING



On-street bike
corral



- Inverted U
rack
- On-street
corral

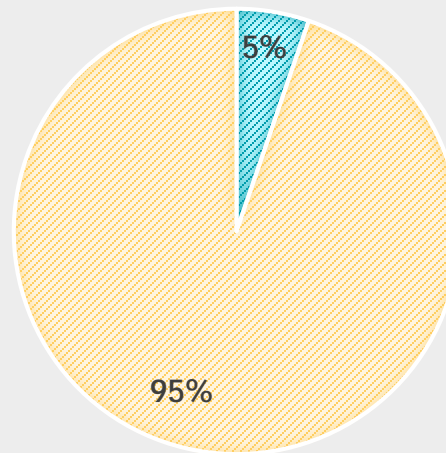


Inverted "U" bike
rack

LONG-TERM BIKE PARKING



Covered bike rack



- Bike lockers
- Covered bike
rack



Bike lockers

Figure 4.5 Public Input – Visual Preference Voting (Bike Parking)

Public Input: Design Charrette



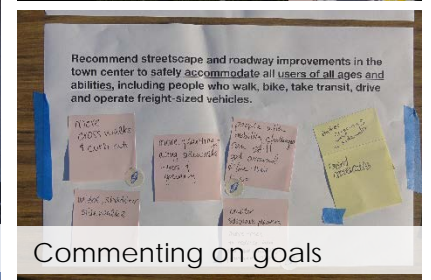
Visitors describe their routes through the Town Center.



Sharing design ideas for Stoneham Square



Visual preference voting



Commenting on goals



A visitor votes.



Common routes



A new idea for how to design Central Street

Public Input: Design Charrette



The Stoneham Town Center Complete Streets tent



The Stoneham Town Common farmer's market



Participants check out the activities.



Choosing road elements for a redesign



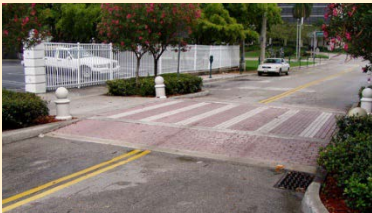
A family designs new roads for Stoneham.

Complete Streets Toolbox

Complete Streets are defined by being safe, comfortable, and convenient for travel via automobile, foot, bicycle, and transit. Beyond transportation, streets are places for car and bike storage as well as places to meet, play, eat, drink, shop, and interact. The following pages lay out a toolkit of Complete Streets elements that can be adopted by downtown Stoneham to begin to address the goals laid out by Town officials and enumerated in this plan. No solution is a silver bullet, but several of these elements, deployed either alone or in conjunction with others, can go a long way toward creating and maintaining a safe, inviting, and vibrant environment for all users.

CROSSING IMPROVEMENTS

Crossings are where virtually every user must interact, including cars, bicyclists, trucks, and, of course, pedestrians. Improved crossings will make all users feel safer, especially pedestrians, and make the entire Town Center a more attractive destination to walk around. Moreover, safety at crossings was one of the top concerns raised through the public input process.



RAISED CROSSING

Raised crossings are flat, raised areas with ramped side. Raised crossing emphasize pedestrians crossing the street by forcing vehicles to reduce their speed in all conditions—whether or not a pedestrian is present—emphasizing distinct pedestrian space on the road. The crossing should be level with sidewalks, eliminating the needs for curb ramps.



RAISED TABLE

A raised table or speed table is a flat, raised area, typically 3" to 4" high. They are ramped on each side, as shown above. The raised area typically covers the entire intersection as well as all crossings, which eliminates the need for curb ramps. Raised tables are typically installed on two-lane roads with speed limits of no more than 30 mph.



CROSSING ISLAND

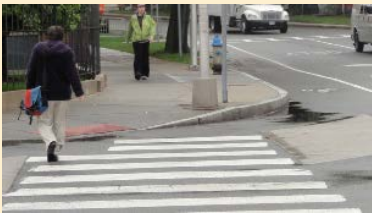
Crossing islands reduce the distance that pedestrians must cross at one time, allowing them to cross one direction of traffic and wait safely in the median area until traffic is clear on the other side of the street.

CROSSING IMPROVEMENTS (continued)



CURB RAMPS

Curb ramps provide improved access for any pedestrian, especially the young, infirm, and the elderly. Curb ramps are required by the ADA. Slope cannot exceed 1:12 or a maximum grade of 8.33%. Level top landing cannot exceed a 3% cross-slope.



INTERNATIONAL CROSSWALK STANDARD

Crosswalks should maintain consistent marking patterns to avoid confusion with stop bars and to be seen well from a distance.



TEXTURED OR COLORED CROSSINGS

Special crossing treatments ensure visibility and awareness of crossings. Inlay tape is recommended, as well as granite paints or stamped, colored concrete. Design should not impair wheelchair movement, and maintenance considerations should be taken into account in colder climates.



LEADING PEDESTRIAN INTERVAL

A leading pedestrian interval (LPI) gives extra time for pedestrians to cross at the beginning of a light cycle, improving the flow of the intersection for everyone. The LPI decreases the conflict between pedestrians and turning vehicles by processing pedestrians quickly at the start of the signal phase. They also provide increased visibility of pedestrians by drivers.

Source: <http://www.transalt.org>

SIDEWALK IMPROVEMENTS

Sidewalk improvements create better environments for the pedestrians that generate foot traffic in front of Stoneham Town Center's businesses. Complete Streets principles enliven sidewalks and make them a key component of an attractive and active downtown.



Source: Dan Burden

CONNECTED SIDEWALK NETWORK

A continuous sidewalk or side-path network on both sides of each street with frequent crossing opportunities does not require pedestrians to travel out of their way to reach destinations.



WIDER SIDEWALKS

Wider sidewalks provide sufficient space for people (including children) to interact and socialize—not just walk—while allowing for enough room to comfortably walk down the street.



AVOID WANDERING SIDEWALKS

Avoiding wandering sidewalks allows pedestrians to reach their destinations directly and not feel as if they are being led astray.



Source: Dan Burden

PROVIDE FLAT WALKWAY WHERE DRIVEWAY SLOPES

To support continuity of the walking path and to accommodate wheelchairs, the sidewalk should not dip when crossing driveways; instead, the driveway should be raised to meet the sidewalk to slow traffic and provide a safe place for crossings.

SIDEWALK IMPROVEMENTS (continued)



Source: Dan Burden

MAINTAIN SIDEWALKS ACROSS DRIVEWAYS AND CURB CUTS

Continuing sidewalk texture and visual appearance across driveways and curb cuts help to maintain a sense of pedestrian-dominated space and continuity across areas where cars are present.



Source: Dan Burden

KEEP SIDEWALKS CLEAR

Maintain a walking zone that is clear and unobstructed, and provide ample space for walking in groups. Installing amenities, such as benches, shade trees, trash barrels, etc., and allowing outdoor seating should be encouraged, but maintaining sidewalk width of at least five feet is important.

BICYCLE NETWORK IMPROVEMENTS

Bicycle network improvements create safer and more convenient conditions for cyclists who travel to and through Stoneham Town Center. This can free up space for more people to park and decrease congestion on roads, as nearby residents choose biking over driving to travel to the Town Center.



SHARROWS

The signing and chevron pavement markings are an easy addition that provide great value to bicyclists and motorists, especially where full bike lanes have not been accommodated in the available right-of-way.



INTERSECTION BIKE FACILITIES

Special treatments for bicycles at intersections help to avoid unusual conflicts, provide a direct path for cyclists close to that of motor vehicles, make bicyclists more visible and their movements more predictable, and create simple right angles that are best for bicyclists.



BIKE PARKING

Bicycle parking facilities should be located in the “furnishing zone” of the sidewalk, out of the way of the main pedestrian path and driveways. Curb extensions can be a good location for bike racks. Longer-term bike parking should also be provided in convenient, shaded, well-lit locations to maximize safety and ease of parking.

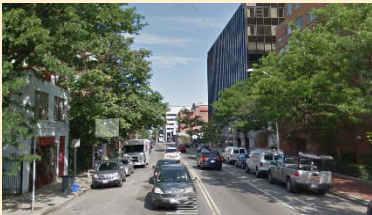


CYCLETRACKS

Cycletracks are physically separated bike facilities that remove cyclists from automobile traffic. They are designed to be at least 5' wide and one-way parallel to the adjacent lane of traffic. Sidewalk curbs, furnishings, and vegetation can be used to separate the cycletrack from the sidewalk to deter pedestrian incursion.

DRIVING SAFETY IMPROVEMENTS

Safety in driving means safety for all users on downtown streets that interact with vehicles. Creating legibility on the street makes drivers feel safer, giving them better lines of sight to other users, like pedestrians and bicyclists.



SLOWER SPEEDS

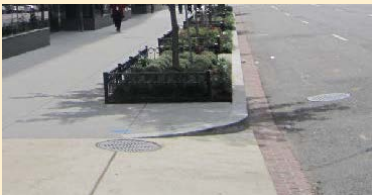
To maximize pedestrian safety, optimal vehicle speeds should be 20 mph, with a posted speed limit of no greater than 30 mph.



Source: Richard Masoner, Flickr

CURB EXTENSIONS

Curb extensions are extensions of the sidewalk that narrow the street in order to decrease pedestrian crossing distances and reduce vehicle speeds. Bulb-outs also serve to expand the pedestrian realm as an extension of the sidewalk. Used at intersections and mid-block conditions, they are typically employed where on-street parking is present.



ACCESS MANAGEMENT

Reducing the number, width, and frequency of curb cuts helps to promote walkable, safe streets. Standards should include that the sidewalk should be level across the driveway, which necessitates a slower-speed raised entry/exit, as opposed to a dropped curb.



NARROW CURB RADII

A tighter curb radius means not only a shorter crosswalk, but also a slower turn for vehicles. Wider curb radii encourages taking turns at higher speeds at intersections, already a point of conflict for pedestrians, cyclists, and drivers.

DRIVING SAFETY IMPROVEMENTS (continued)



Source: Jackson Wandress

NARROW TRAVEL LANES

To increase pedestrian safety, driver caution, and to reduce vehicular speeds, narrower roads naturally cause drivers to slow down. Narrowing a lane from 11' to 10' reduces speed by 7 mph. Lower-volume roads can tolerate 9' lanes, and local, residential yield streets may have a two-way travel area of 18' or less.



Source: www.fresno.gov

ROAD DIET

Road diets are the process of reducing an oversized roadway with a very wide cross-section to a narrower, safer, and more efficient roadway. The channelization of left turns actually helps to increase capacity. Complimentary traffic calming measures, such as curb extensions and crossing medians, slow traffic and improve safety for pedestrians.



Source: Dan Burden

SPEED HUMPS

Speed humps, or bumps, maintain slower vehicular speeds and driver awareness. Implement with a grade of 8% or less, on local roads only, with speed limits of no more than 30 mph, up to two travel lanes. Height is generally 3" to 4" high.



Source: Calm Streets Boston

CHICANES

To reduce speeds and create more greenery, curb extensions that alternative from one side of the street to the other help slow vehicular speeds. Chicanes are often landscaped and add to interest to the street.



Source: Project for Public Spaces

CHOKERS

To slow vehicles at midpoints along blocks, create room for landscaping, and define transitions from commercial to residential areas, curb extensions that widen mid-block can reduce the width of a travel lane. This slows traffic and makes for a shorter pedestrian crossing.

PARKING IMPROVEMENTS

Complete Streets principles recommend that parking facilities are designed to fit the needs of the downtown, without oversupplying so that spaces sit empty. In addition, parking can be designed to enhance, rather than detract, from the look and feel of the Town Center.



ON-STREET PARKING

On-street parking provides more activity on the street, supports adjacent commercial uses, provides a buffer for pedestrians between the sidewalk and moving traffic, and serves to calm traffic, providing pedestrians a sense of safety as they stroll, shop, and converse on the sidewalk.



REVERSE ANGLE PARKING

Reverse angle parking, also called back-in angled parking, is similar in dimension to typical reverse angle parking but provides substantial safety benefits by improving the driver's field of vision, allowing them to identify oncoming cyclists and vehicles before pulling out into traffic.

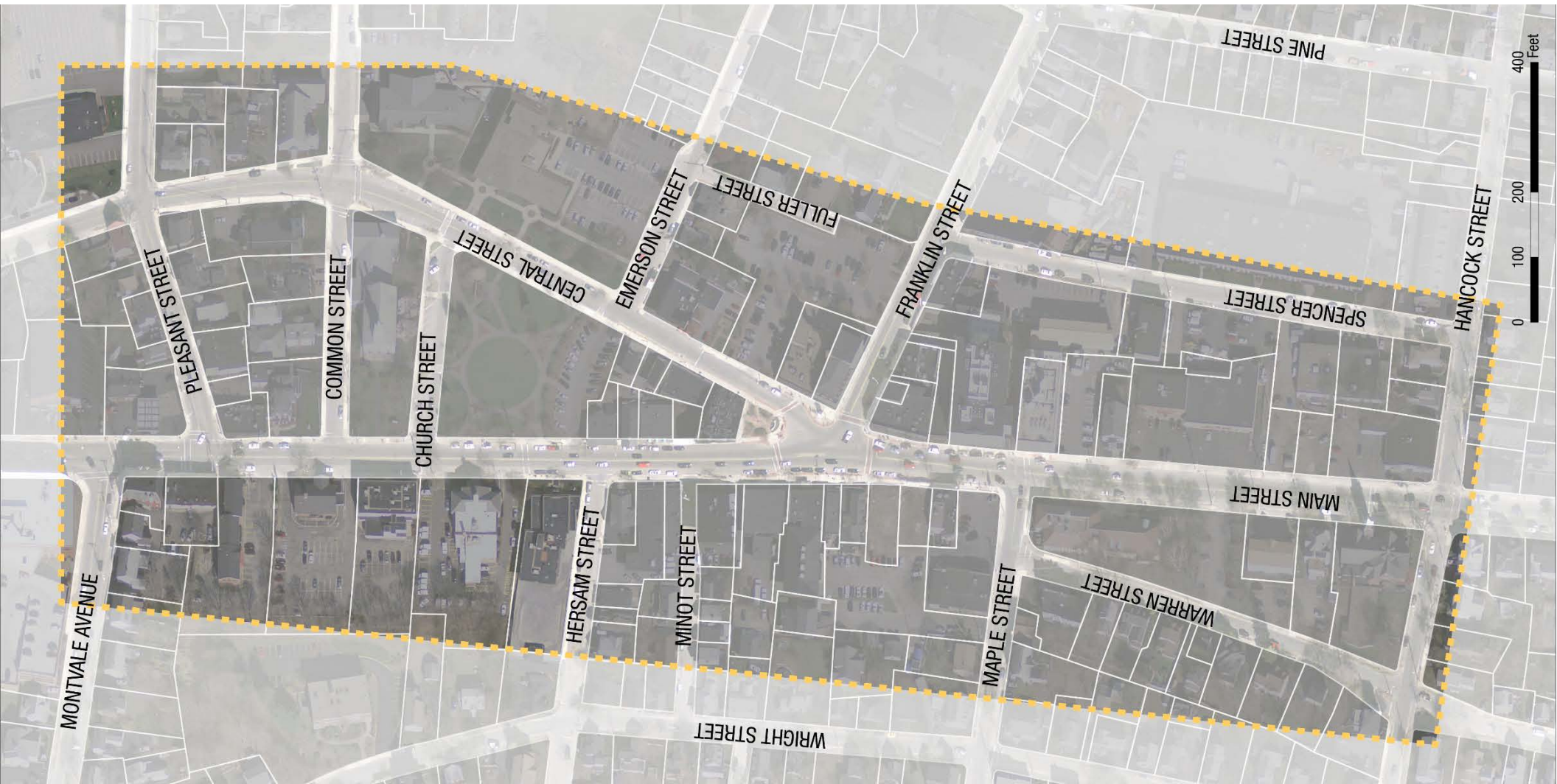


SHARED PARKING

Shared parking means that parking spaces are shared by more than one user, which allows parking facilities to be used more efficiently. Shared parking takes advantage of the fact that most parking spaces are only used part time by a particular motorist or group, and many parking facilities have a significant portion of unused spaces.

Town Center Complete Streets Concept

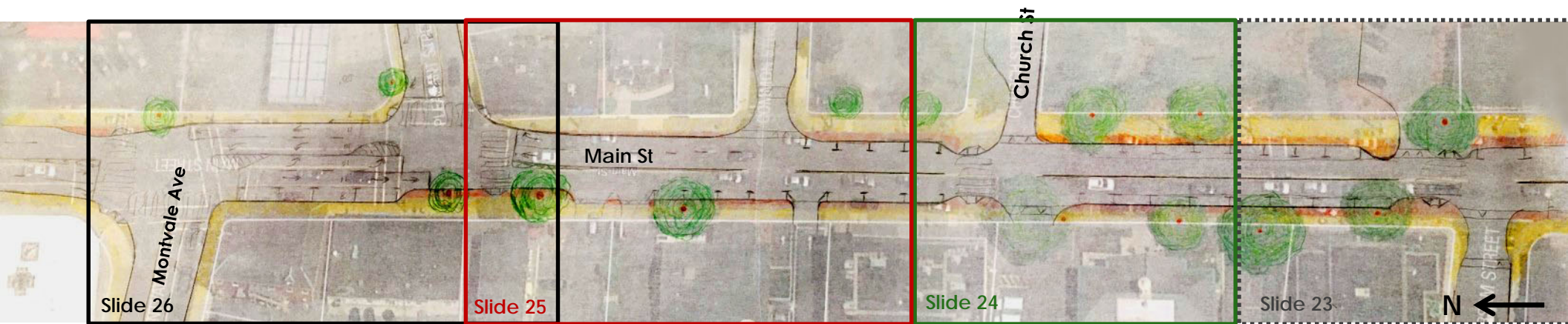
A complete streets design concept was developed for the Main Street and Central Avenue corridors. These plans were developed with information and input gathered via the public outreach process and by best practice tools that have been implemented in Main Street areas across the country.



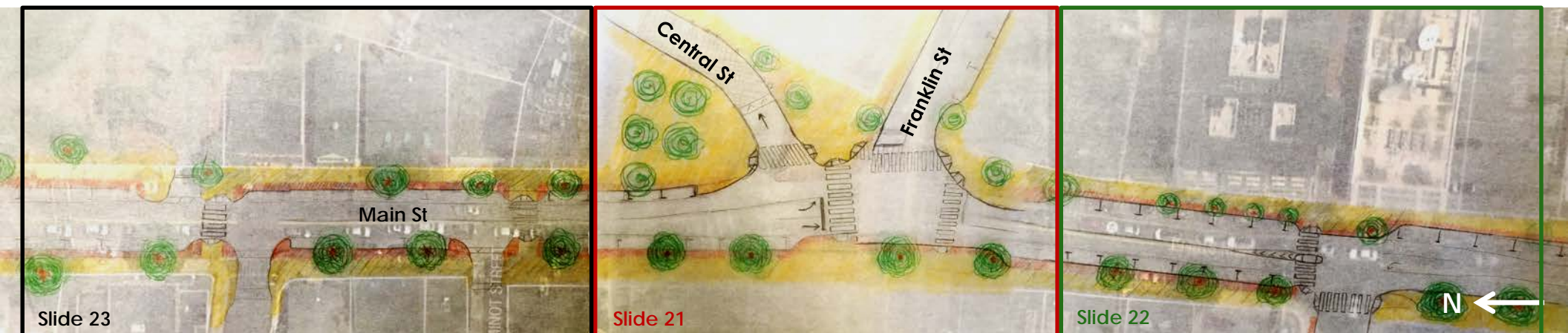
Town Center Complete Streets Study Area

Complete Street Concept: Main Street

The overall design concept for Main Street is intended to overcome today's wide travel lanes, long crosswalks, higher vehicle speeds, and other associated factors to make downtown more productive, safe, and accommodating of travelers by any age, ability, or mode. It involves narrowing travel lanes to more accepted downtown standards to reduce speeds, then giving that space to the sidewalks to improve walking comfort, add bicycle parking, and create new outdoor and storefront spaces. Along Main Street, side streets are narrowed and raised at the sidewalk to make safer level crossings. Across Main Street, curb extensions shorten crosswalks and reduce both vehicle and pedestrian delays, even though these treatments result in slower through speeds. New crosswalks are placed at prime desire lines but with intentionally consistent spacing to add predictability for all users while limiting jaywalking. For bicyclists, Main Street is mostly a destination, so bike parking is close to the side streets that connect to neighborhoods and through routes, such as the Tri-Community Greenway. The overall design result in smaller intersections with less delay for vehicles and pedestrians, yet increased safety—especially in the square.

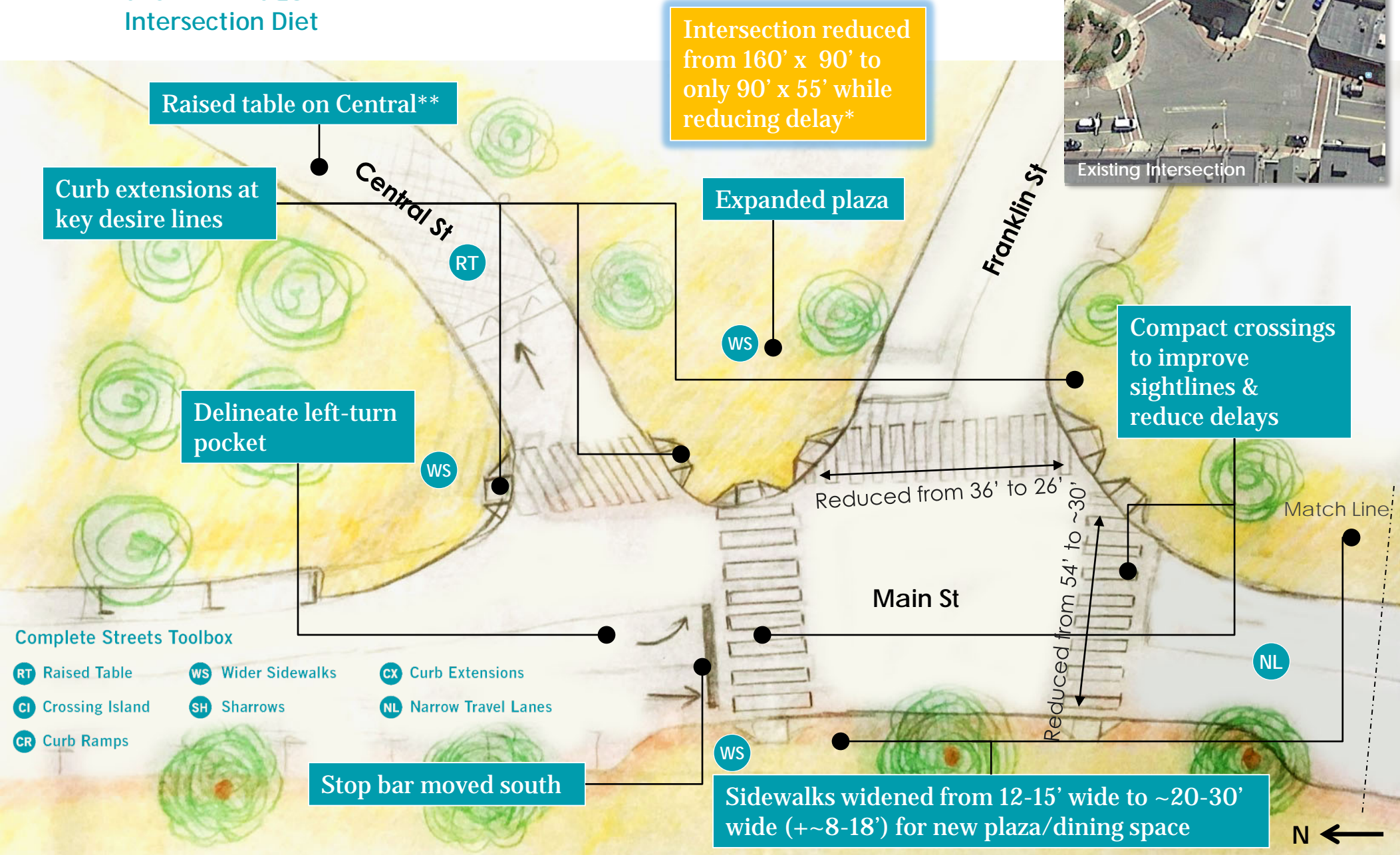


Main Street, Montvale Avenue to Hersam Street



Main Street, Hersam Street to Maple Street

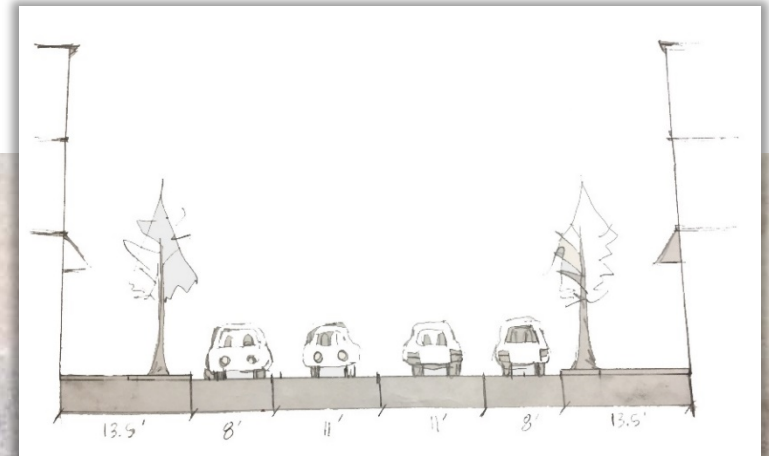
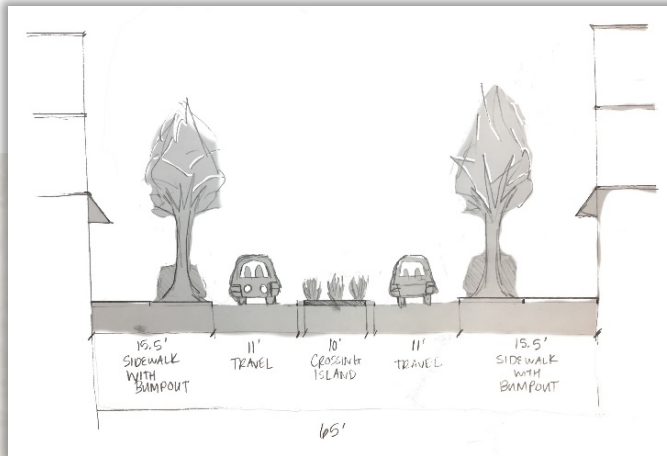
STONEHAM SQUARE Intersection Diet



* Delay reduction from shorter walk phases, shorter signal clearance cycles, a new left-turn pocket, and removal of Central Street from the Main/Franklin intersection.

** A raised "table" creates a crosswalk flush with sidewalks for an extended distance. Vehicles drive up a slope, forcing slower speeds. Slope is designed to accommodate fire apparatus safely.

MAIN STREET AT MAPLE STREET



Match Line

Sidewalks widened from ~9' wide to ~14' wide (+~6')

Curb extensions reduce crossing distance

New left-turn pocket

Main St

Reduced from 48' to ~30'

Crosswalk moved north of Maple to avoid left-turn conflicts

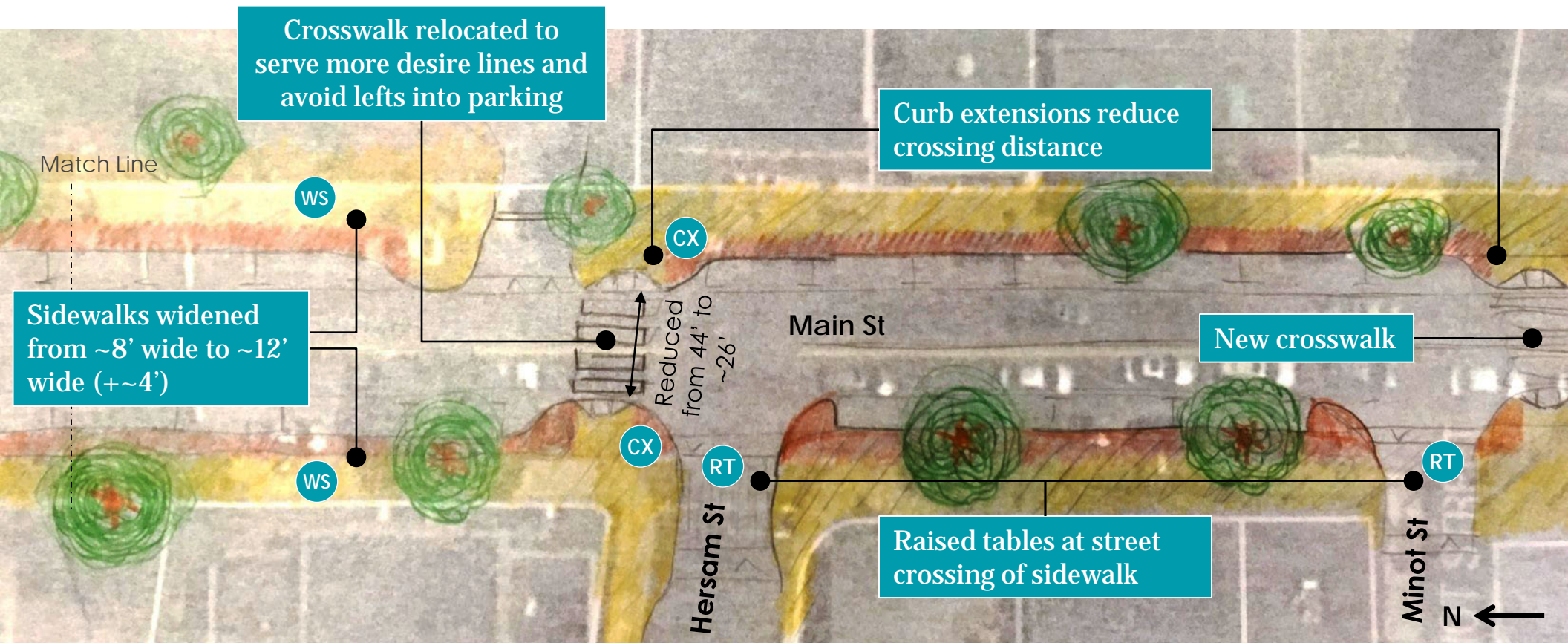
Maple St

New crossing island

Complete Streets Toolbox

- | | | |
|---------------------------|---------------------------|-------------------------------|
| RT Raised Table | WS Wider Sidewalks | CX Curb Extensions |
| CI Crossing Island | SH Sharrows | NL Narrow Travel Lanes |
| CR Curb Ramps | | |

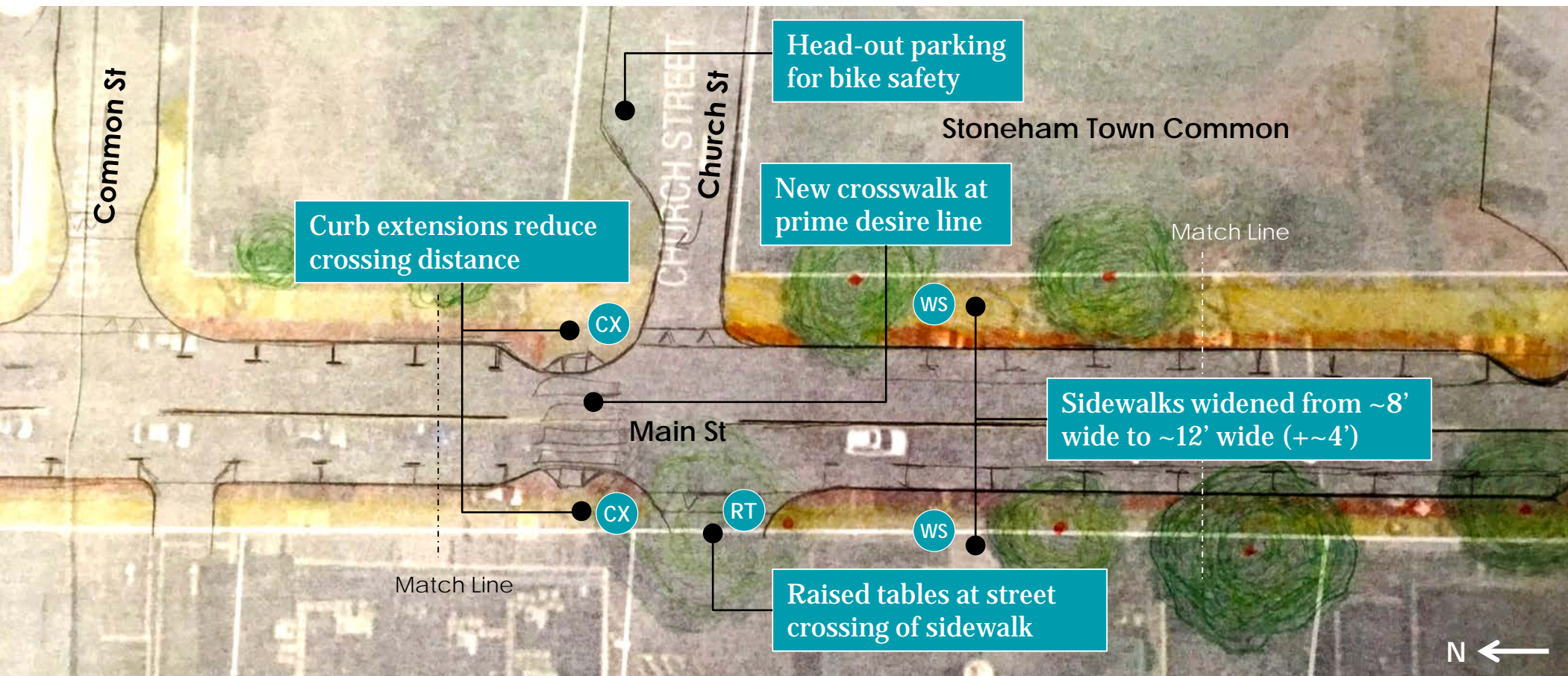
MAIN STREET AT HERSAM ST



Complete Streets Toolbox

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| CI Crossing Island | SH Sharrows | NL Narrow Travel Lanes |
| CR Curb Ramps | | |

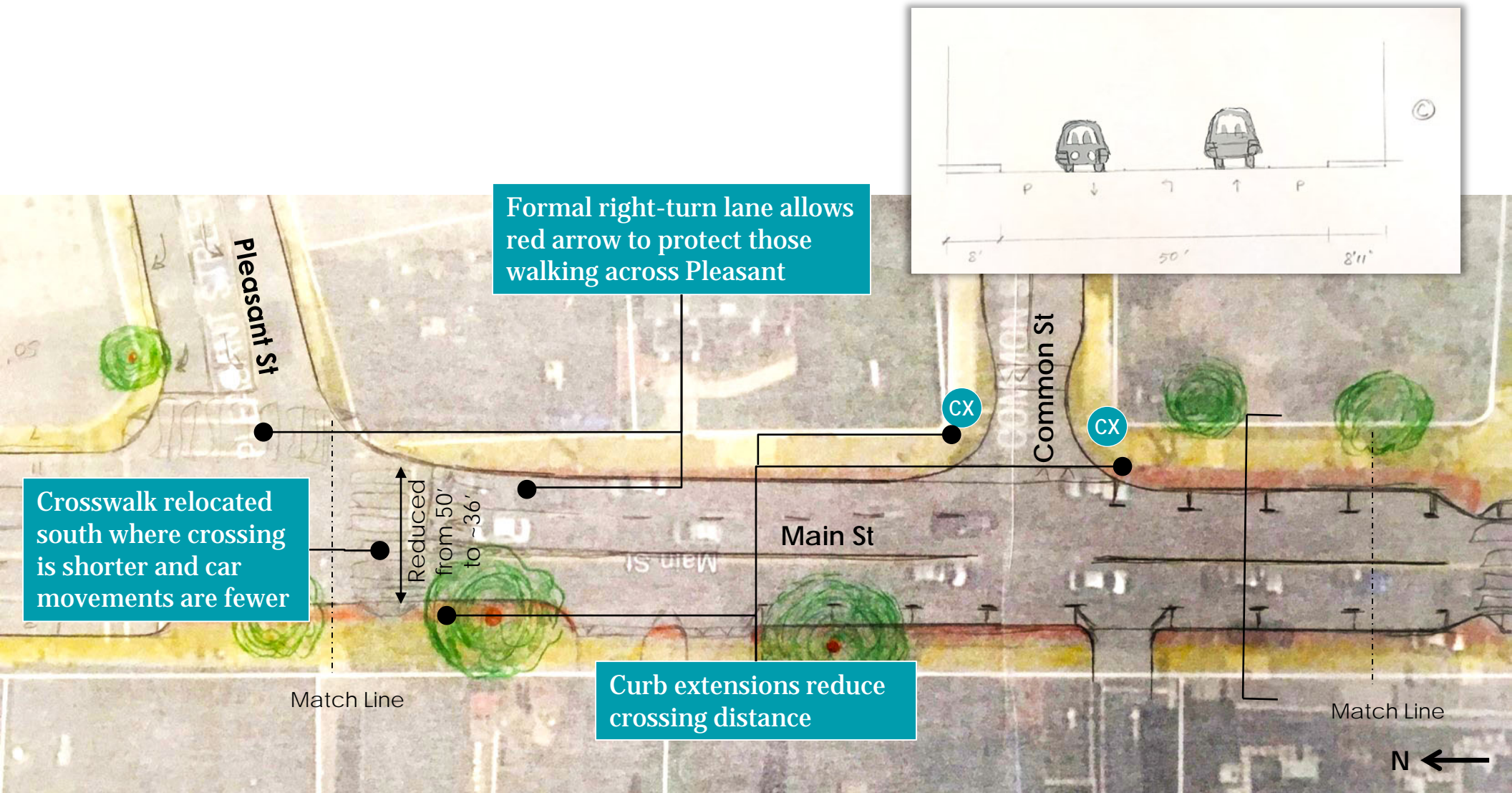
MAIN STREET AT CHURCH STREET



Complete Streets Toolbox

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| RT Raised Table | WS Wider Sidewalks | CX Curb Extensions |
| CI Crossing Island | SH Sharrows | NL Narrow Travel Lanes |
| CR Curb Ramps | | |

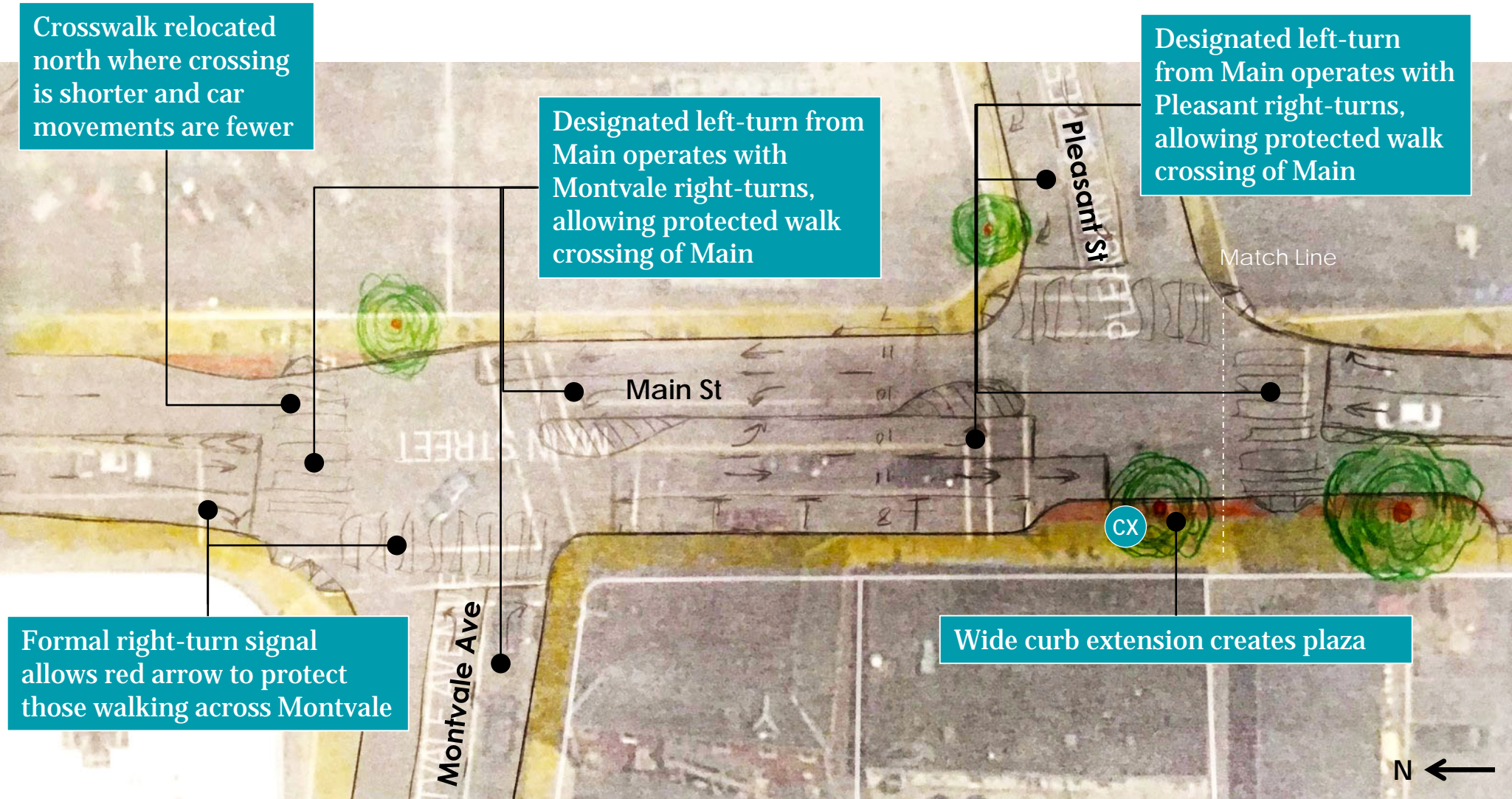
MAIN STREET AT COMMON STREET



Complete Streets Toolbox

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| RT Raised Table | WS Wider Sidewalks | CX Curb Extensions |
| CI Crossing Island | SH Sharrows | NL Narrow Travel Lanes |
| CR Curb Ramps | | |

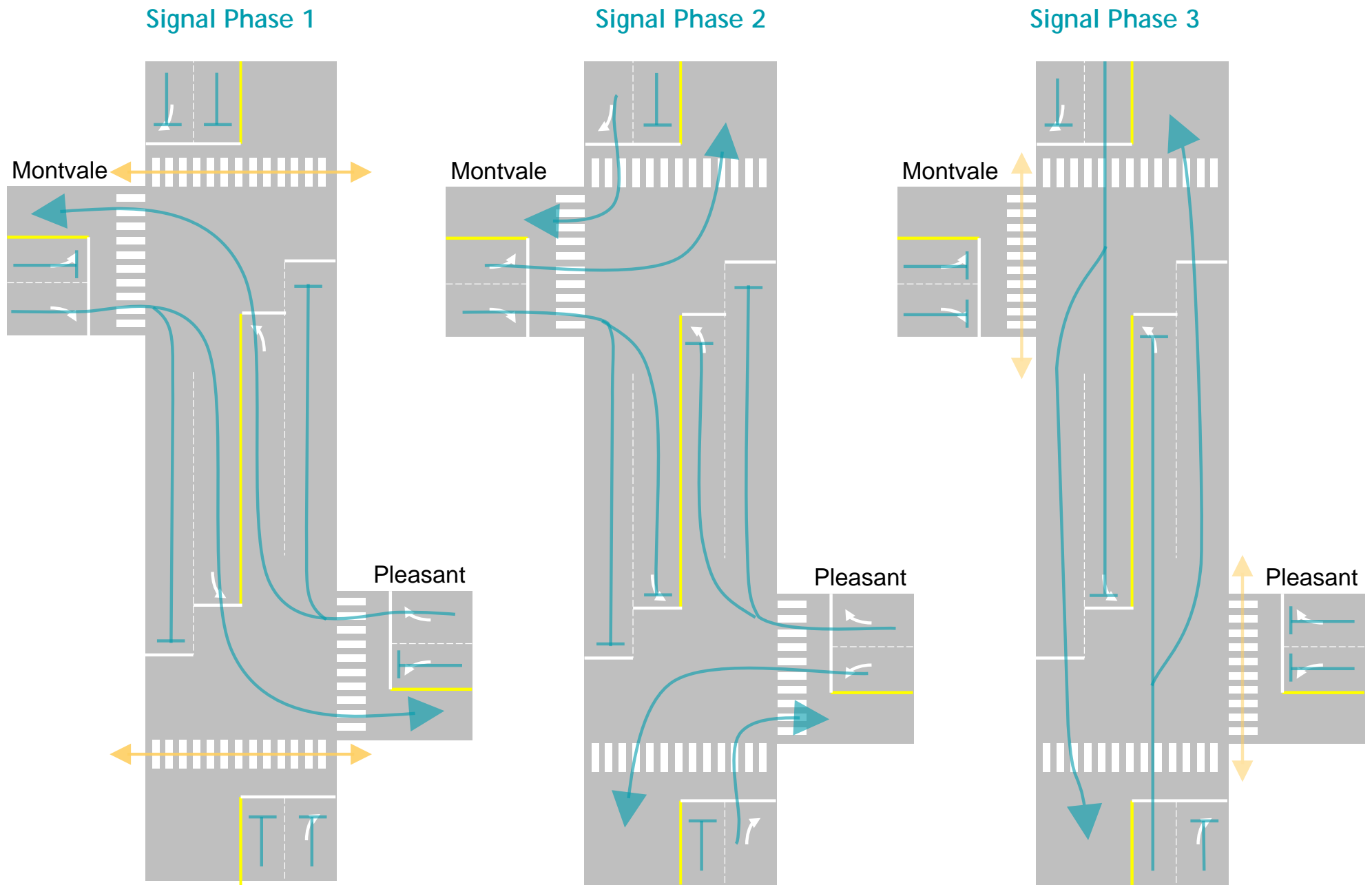
MAIN STREET AT MONTVALE AVE



Complete Streets Toolbox

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| RT Raised Table | WS Wider Sidewalks | CX Curb Extensions |
| CI Crossing Island | SH Sharrows | NL Narrow Travel Lanes |
| CR Curb Ramps | | |

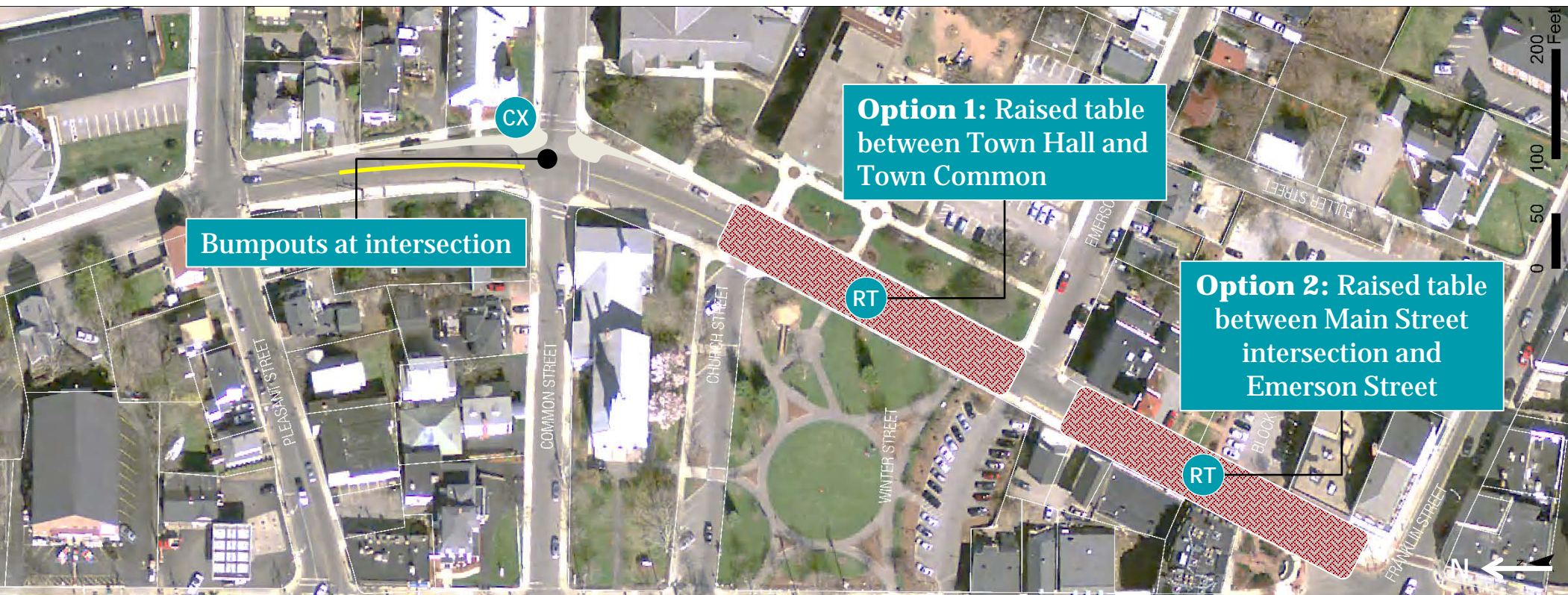
PROPOSED MAIN/MONTVALE/PLEASANT SIGNAL PHASING*:



* Primary signal phases shown. Overlapping sub-phases triggered by vehicles or walkers could help optimize operations. A full engineered analysis is necessary.

Complete Street Concept: Central Street

While Central Street provides essential access to the Town Hall, the fire station, the common, several businesses, and places of worship, it is often a cut-through for drivers avoiding Main Street, adding unnecessary speed and traffic to a local service street. The proposed design would emphasize its local role by first reducing the ease of entering Central at Main as a result of the smaller intersection. Mid-block, a raised section could reduce vehicle speeds while providing a valuable safe crossing opportunity between Town Hall and the common—also creating a plaza that could be closed to cars for special events that spill beyond the common. An alternative raised section in front of the fire station can benefit the streetscape at nearby businesses while reducing the severity of the fire house driveway apron, making it easier for apparatus to depart. Further north, a realigned centerline reduces excessive street width, and curb extensions help make the intersection safer to cross yet more efficient for vehicles, while better defining additional on-street parking.



Complete Streets Toolbox

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|---------------------------|---------------------------|-------------------------------|
| RT Raised Table | WS Wider Sidewalks | CX Curb Extensions |
| CI Crossing Island | SH Sharrows | NL Narrow Travel Lanes |
| CR Curb Ramps | | |

