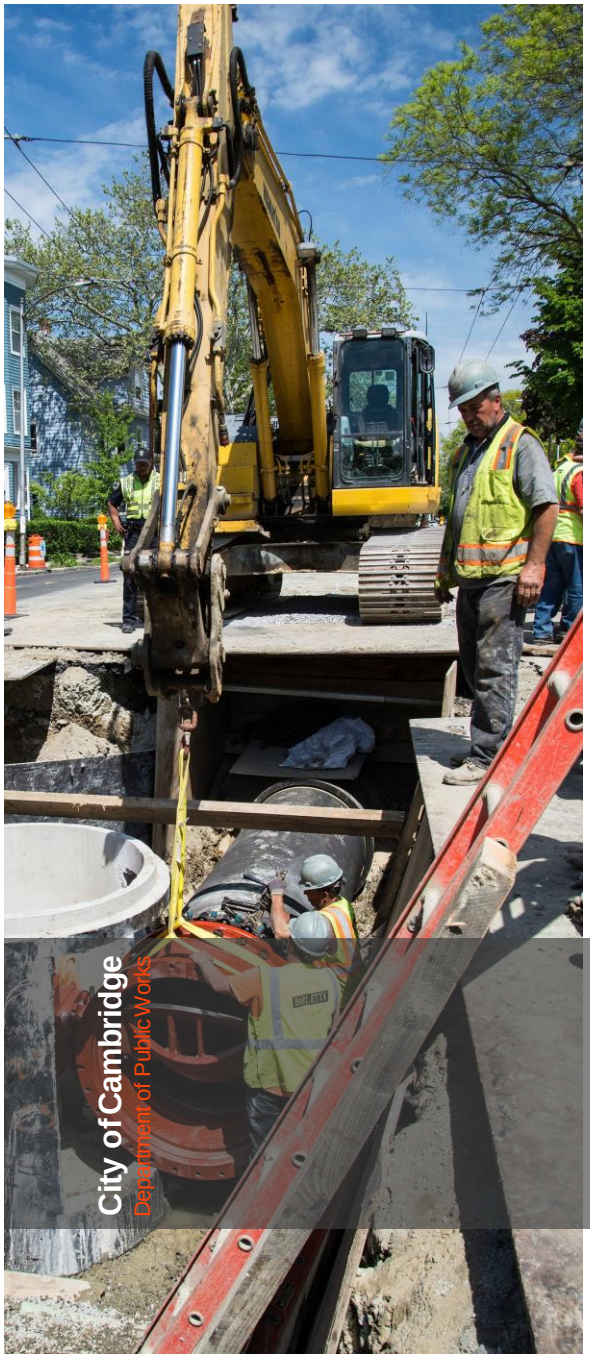
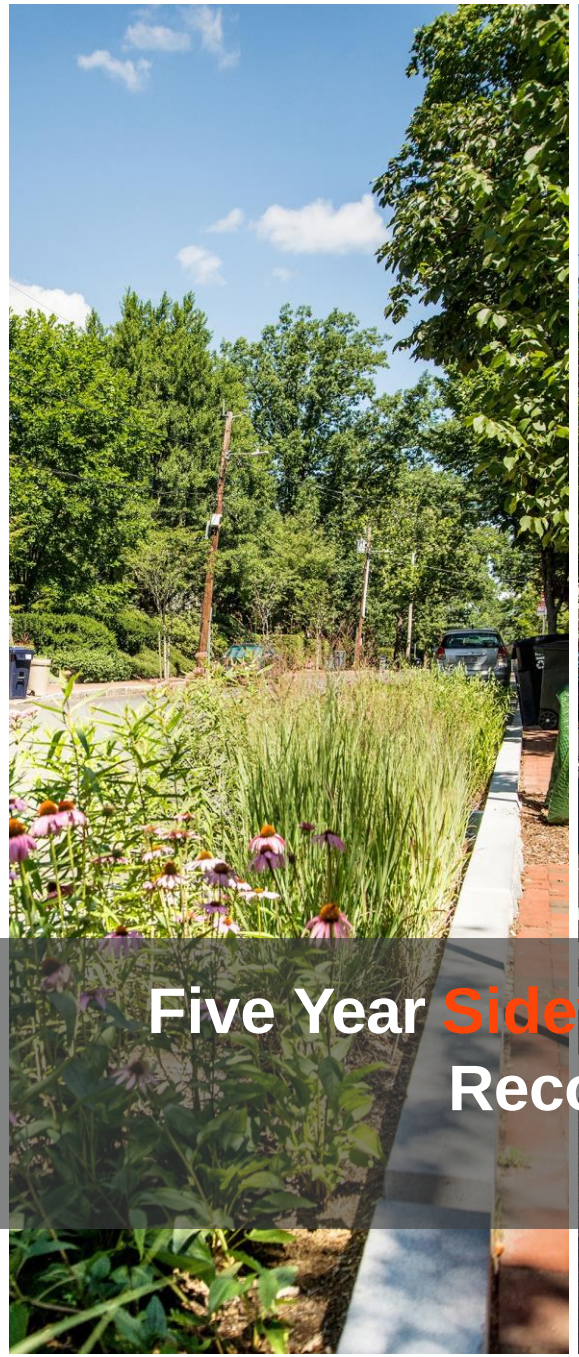
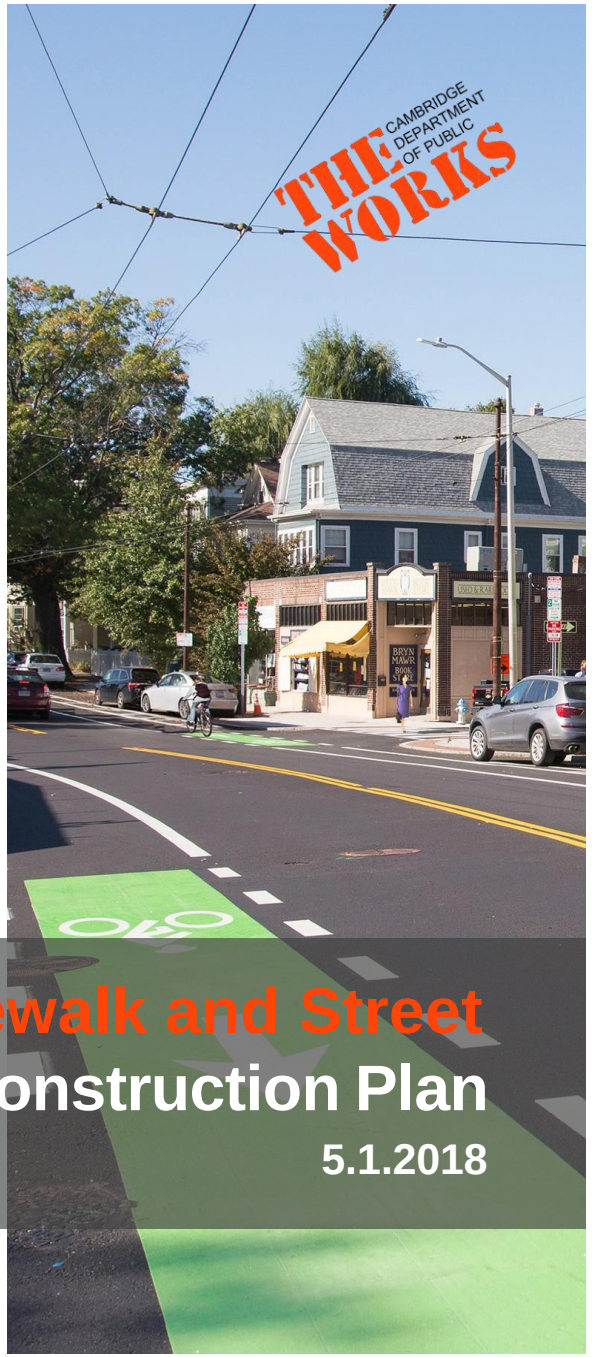
Huron Avenue

Concord Avenue to Raymond Street Reconstruction Project







City of Cambridge
Department of Public Works

Five Year Sidewalk and Street Reconstruction Plan

5.1.2018

5 YEAR PLAN | PLANNED CONSTRUCTION

Interactive construction map: www.cambridgema.gov/theworks/constructionmap

INTRODUCTION | COMPLETE STREETS

Complete Streets are **streets for everyone**. They are designed and operated to enable **safe access for all users**. Pedestrians, bicyclists, motorists, and public transportation (transit) users of all ages and abilities are able to safely move along and across a Complete Street. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They help buses to run on time and make it safe for people to walk to and from train stations.

More sidewalks and bicycle facilities are included, which provides **increased accessibility for pedestrians and cyclists**.

During design and construction of Complete Streets, our goal is to communicate projects with neighborhoods, facilitate an integrated design process, minimize disruption to community life and provide reasonable access for all users during reconstruction.

INTRODUCTION | VISION ZERO

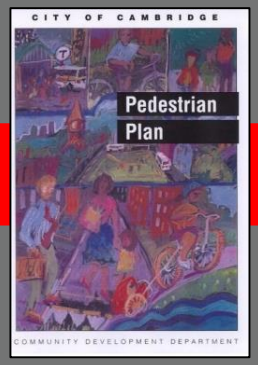
On March 21, 2016, the Cambridge City Council unanimously passed resolutions put forth by the City Manager to formally adopt Complete Streets and Vision Zero policies, showing that the City of Cambridge is committed to achieving these goals, assuring safe access for all users.

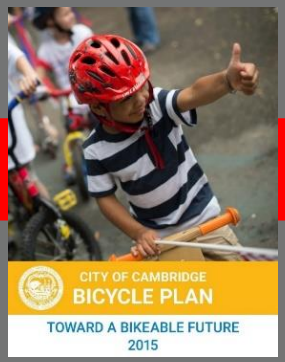
Vision Zero calls for the elimination of fatalities and serious injuries resulting from traffic crashes, and emphasizes that they can and should be prevented. The City of Cambridge is the 17th city in the U.S. to commit to a Vision Zero Policy.

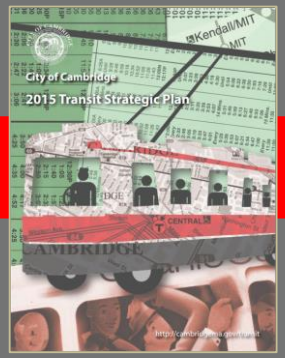
VISION ZERO CAMBRIDGE

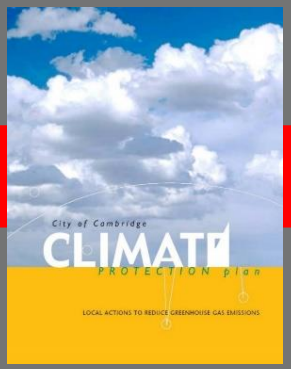
INTRODUCTION | GUIDING PLANS AND POLICIES

In addition to Complete Streets and Vision Zero









Vehicle Trip Reduction Ordinance established programs to encourage alternatives to single-occupancy vehicle travel (1992).

Cambridge Growth Policy emphasizes sustainable modes of transportation such as walking, biking and using transit and low-emission vehicles, which promote livability and help to improve air quality and reduce greenhouse gas emissions (1993/2007).

5 YEAR PLAN | SCOPE OF WORK

Our approach emphasizes **streets designed and operated for everyone**. Pedestrians, bicyclists, motorists, and transit users of all ages and abilities will be able to safely move along and across **Complete Streets**.

Emphasis on accessibility – pedestrian ramps, sidewalks and universal design.

Vision Zero calls for the elimination of fatalities and serious injuries resulting from traffic crashes.

Transit improvements – accessibility of bus stops and transit priority, as feasible.

Network of bike facilities – support people of all ages and abilities to bike safely throughout the city.

Additional street trees and green infrastructure.

Maintain and improve city infrastructure, and coordinate with private utilities to facilitate upgrades.

PROGRAMS | STREET & SIDEWALK

Street and sidewalk contracts are funded locally and by the state. These contracts are managed by the Department of Public Works. Construction generally includes surface enhancements such as:

- Paving
- Sidewalk and pedestrian ramps
- Traffic calming
- Street trees
- Stormwater management and green infrastructure
- Bike and transit improvements

Toolbox Design Elements

DESIGN | SIDEWALKS AND ACCESSIBILITY

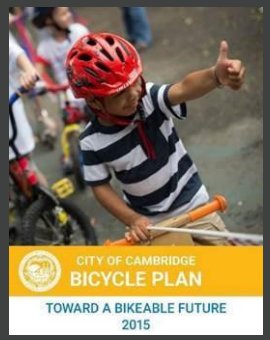
The City is committed to accessibility in all of our construction projects.

- All new sidewalks and pedestrian ramps will meet ADA /AAB requirements.
- Sidewalk widths vary by the type of street. Typically 5’ sidewalk is required, but wider sidewalks are required on busier commercial streets and arterials.
- 4’ min is required at new driveways and street trees. 3’ min is allowable at existing street trees.
- Sidewalks will include a minimum 3’ of sidewalk or accessible routes around existing trees.
- The best design for pedestrian crossings, particularly on narrow side streets, may be a modified raised crosswalk.

DESIGN | BICYCLE FACILITIES

Bicycle Facilities

- Improvements for bicycling will be considered in all projects undertaken in the City and will be guided by the Bicycle Plan.
- The Bicycle Plan lays out a vision for where we as a City want to be. The fundamental guiding principle for this plan is to enable people of all ages and abilities to bicycle safely and comfortably throughout the City. The Bicycle Plan provides the framework for developing a network of Complete Streets and supporting programs and policies that will help meet this goal.



DESIGN | TRANSIT

A sustainable and efficient mode of transportation that moves people safely compared to driving in private automobiles.

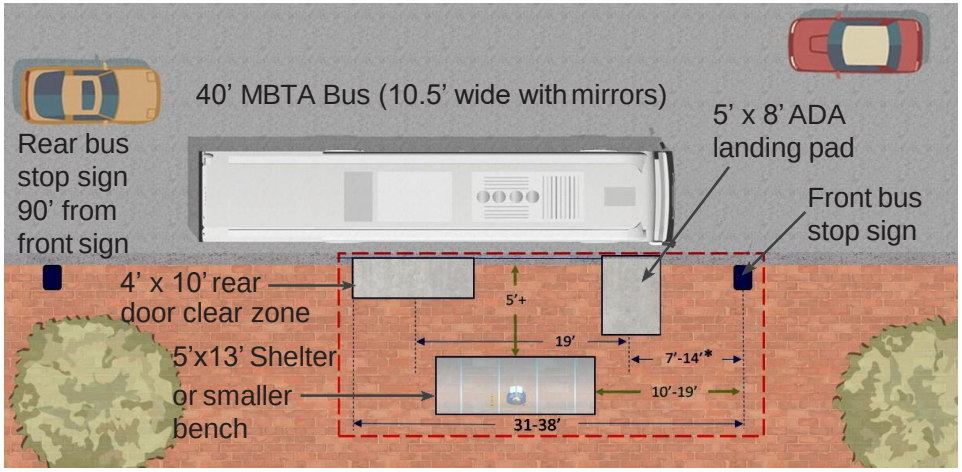
Transit considerations include:

Accessibility

Ensure that bus stops are accessible and provide amenities when appropriate.

Priority

City performed a bus delay and reliability assessment so that we can explore options for transit priority (e.g. dedicated lanes) in roadway projects where there are expected benefits.



SCOPE | STREET TREES

Existing Street Trees

Existing street trees will be protected during construction and the sidewalks will be carefully evaluated to ensure adequate accessible routes through the neighborhood.

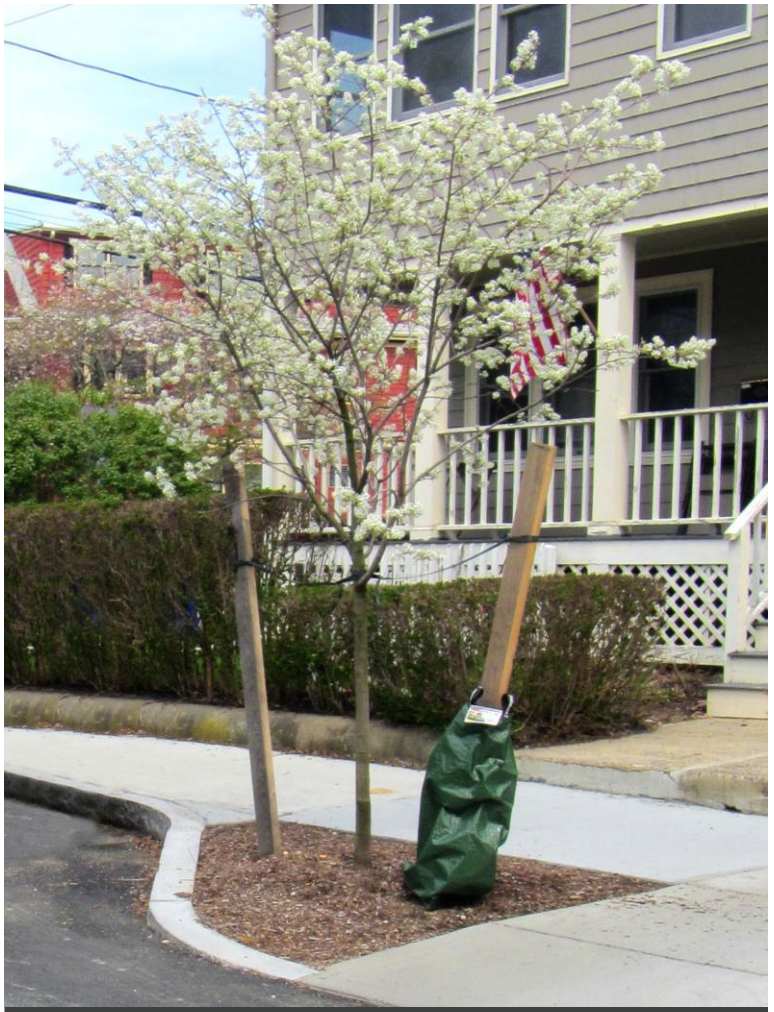
New Tree Plantings

The City Arborist will review each street and sidewalk project to determine tree planting opportunities; evaluating the location of overhead and underground utilities, proximity to intersections, site lines, building setbacks, locations of entrances, etc.

- On **narrow sidewalks** (less than 8’ wide), a minimum of 4’ of sidewalk width will be retained adjacent to new trees.
- On **wider sidewalks** (8’ wide or greater), a minimum of ½ of the overall sidewalk width will be retained for pedestrians.

Back of Sidewalk Trees

The Arborist will work with residents interested in back of sidewalk tree plantings.



GOALS

- **Protect existing** street trees during construction.
- Increase the number of street trees and maintain **accessible sidewalks**.

SCOPE | GREEN INFRASTRUCTURE

The City is incorporating green infrastructure on projects, as conditions and space allow.

Goals

- Stormwater discharges are contributing to at least 55% of impairments to Massachusetts' assessed waters.
- Goal: **improve the water quality** of stormwater before discharging to outfalls at the Alewife Brook and Charles River.

Types of Improvements

- Porous asphalt
- Infiltrating catch basins
- Rain gardens/bio basins

Siting Evaluation

- Soil conditions
- Groundwater
- Space constraints
- Maintenance

SCOPE | Construction

The City is committed to working with residents and businesses throughout the construction process.

Construction Coordination

- Project Manager and Community Relations Manager assigned to every project.
- Manage contractor and coordinate construction activities and community notifications.
- Standard Work Hours: Mon – Fri 7 am – 4 pm
- Maintain safe and effective traffic management plans to assist pedestrians, cyclists, drivers and buses travelling through project area.

Project Scope

- Reconstruct/repave street
- Reconstruct sidewalks and curb ramps
- New crosswalks, pavement markings
- Evaluate and update utilities

Project Goals

- Meet ADA requirements
- Improve safety for all users & modes of transportation
- Enhance appearance of the neighborhood
- Enhance green areas/new trees

Huron Avenue Roadway Improvement Project
Chapter 90 Contract 23
Community Meeting Tuesday April 3rd, 2018 Summary

- Cutler Avenue Reconstruction: Water and gas have been replaced. Will roadway be repaved?
  - Sidewalk and roadway improvements will happen on Cutler Avenue as part of the project

- Huron Ave/Raymond St Intersection
  - Obstructed views exiting Huron Ave on to Raymond St
  - Parking on Raymond St across from Huron Ave is prohibited but not observed
  - Traffic calming needed on Raymond St

- Congestion on Huron Ave in the a.m. and p.m.

- Speeding on Huron Ave
  - Put a lens on the traffic signal at Garden so signal color is not apparent until vehicle is closer to the intersection
  - Crosswalk and bump outs at Holly St

- Bicycle Accommodations
  - ***Project discussed with Bicycle, Pedestrian and Transit Committees at a meeting on May 14, 2018***
  - We were reminded that the Bicycle Network Plan was a guidance document with specific designs developed as projects developed
  - **Results of Meeting:** Reviewing both the network and the specifics conditions on this stretch of Huron Avenue, the recommendation was that the portion of Huron Avenue between Concord Avenue and Garden Street be treated similarly to that section from Garden to Raymond Street, with traffic calming elements and strong green-back SLM markings. The project will connect to other streets with lower speeds/volumes, traffic calming elements, and bicycle priority designations.

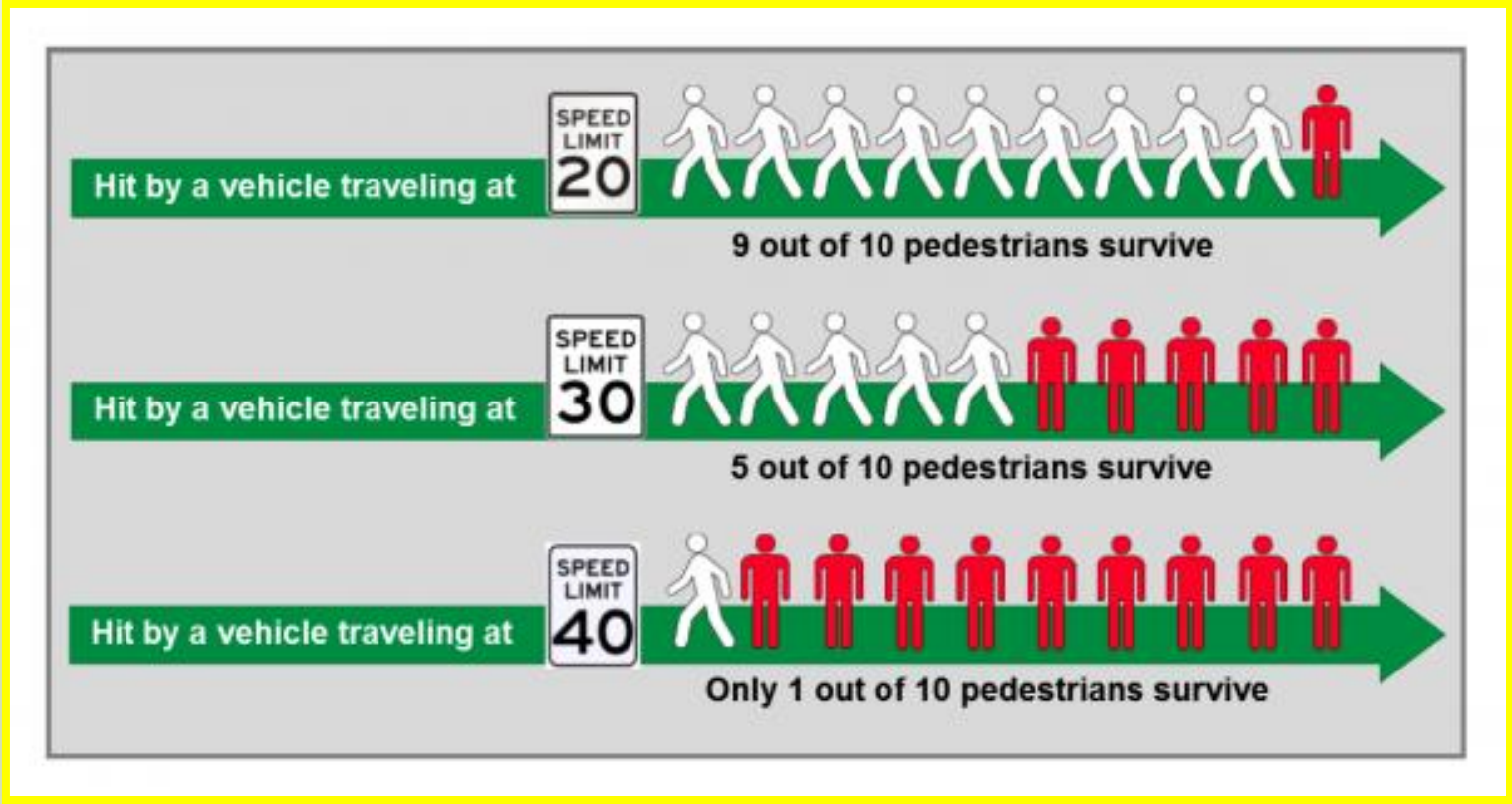
- ADA Accessibility along the south side of Huron Avenue
  - Lack of sun and poor drainage causes slow melting of snow and ice

Making crossings work

- International or “zebra” striping
- Mark all legs of an intersection
- Thermoplastic or inlay tape

Curb extensions reduce crossing distances and improve visibility

Pedestrian Injuries/Fatalities in Crashes by Vehicle Speed



Access

- Green Curb Extension

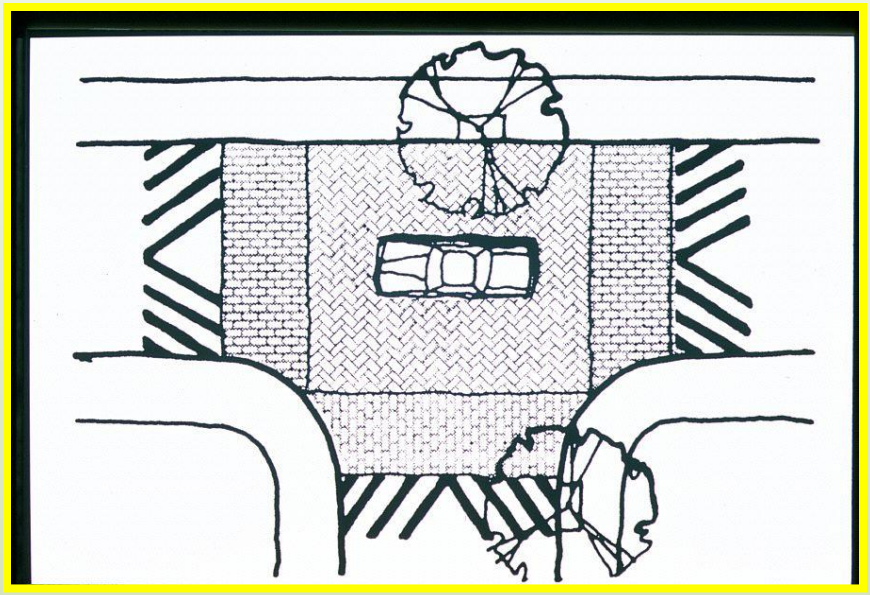
Traffic Calming Toolbox

- Narrow the road
  - Add Parking
  - Pavement Markings (edge line for bikes)
  - Visual Narrowing by Adding Trees

- Horizontal Devices: make the road less straight
  - Chicanes
  - Crossing Islands

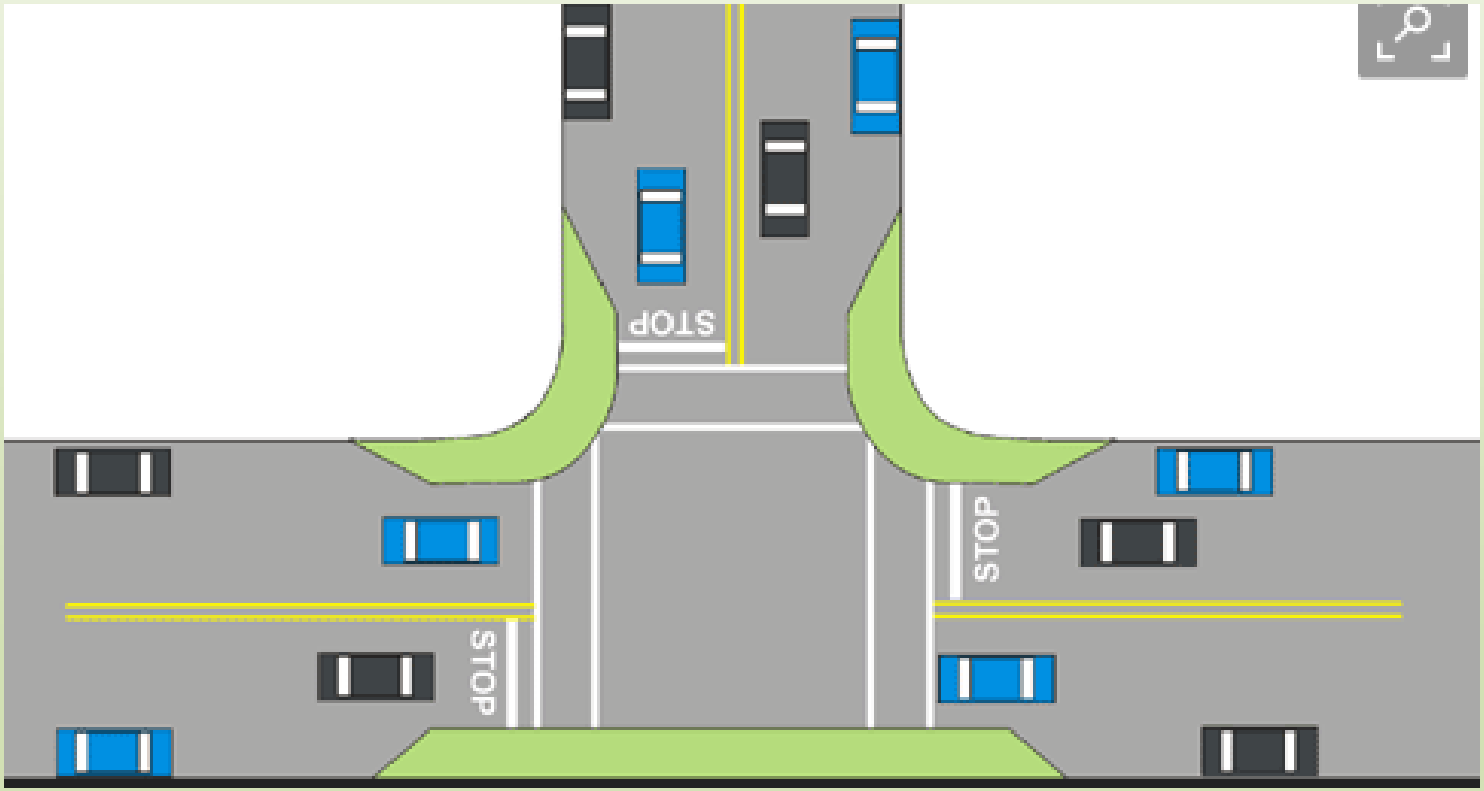
- Vertical devices: make vehicles go over something
  - Raised intersections & crosswalks

Raised intersection

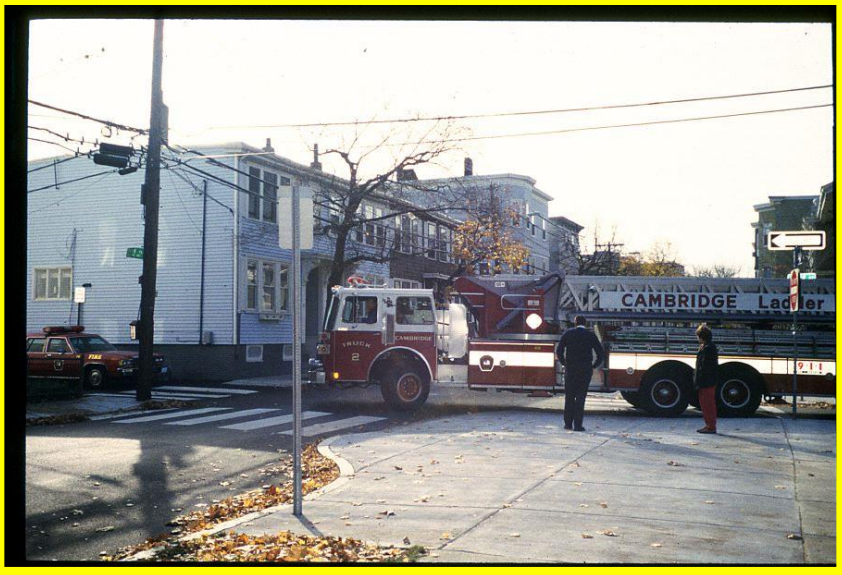


Raised intersections

Curb Extensions



Service/Emergency Vehicles

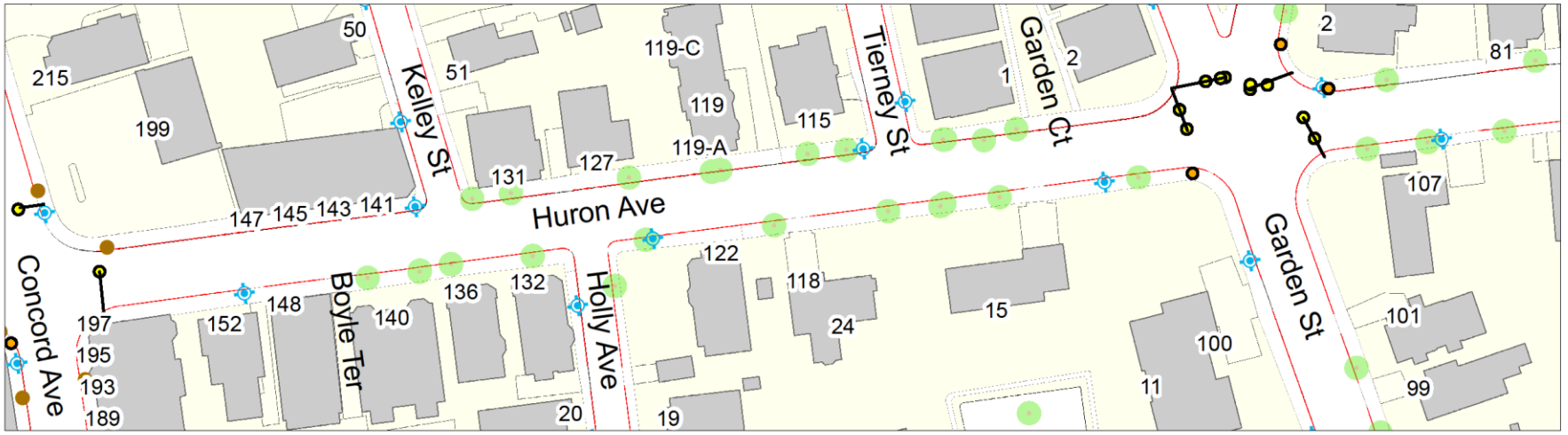


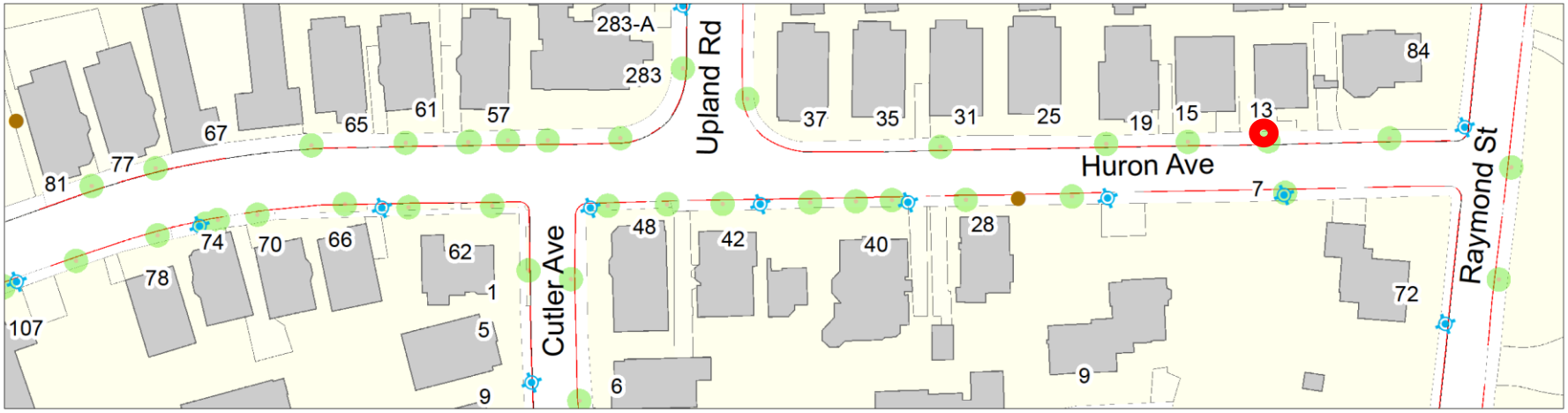
Design process:

- Walk with City Arborist
  - Evaluation of existing trees
  - Possible location or new trees (tree stickers placed at proposed locations)
- Data collection
  - Speed
  - Traffic volume – Turning movements at Garden and Huron
- Met with Bike, Ped & Transit Committees (May 14, 2018)
- Met with Fire Department
  - Possible raised intersection (Fire Chief)
  - Curb extension (Trial Friday May 18, 2018)

Huron Avenue

Community Meeting 06/14/2018





● Less than 36” sidewalk width at tree

Speed data

Huron Avenue – north east of Garden Street

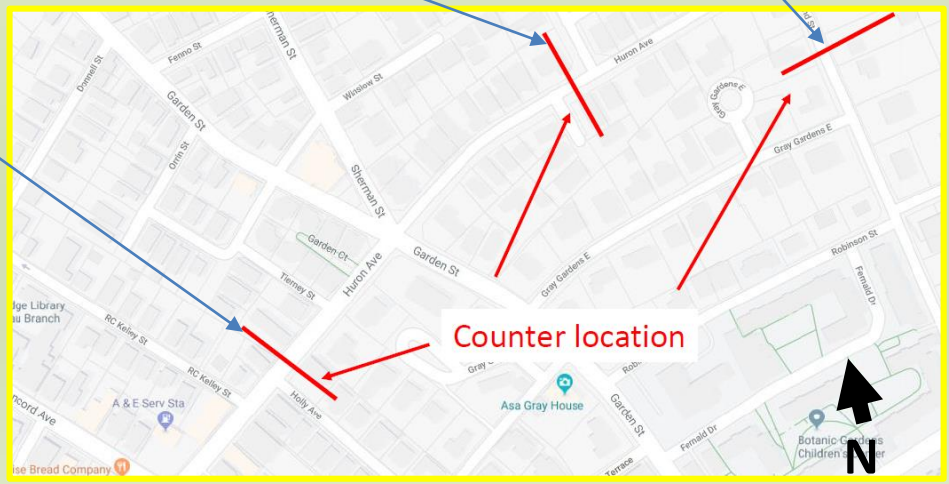
15th Percentile :	18 MPH
50th Percentile :	22 MPH
85th Percentile :	26 MPH
95th Percentile :	28 MPH
Mean Speed(Average) :	23 MPH
10 MPH Pace Speed :	19-28 MPH
Number in Pace :	1509
Percent in Pace :	81.6%
Number of Vehicles > 25 MPH :	497
Percent of Vehicles > 25 MPH :	26.9%

Raymond Street – south of Huron avenue

15th Percentile :	14 MPH
50th Percentile :	21 MPH
85th Percentile :	26 MPH
95th Percentile :	29 MPH
Mean Speed(Average) :	21 MPH
10 MPH Pace Speed :	18-27 MPH
Number in Pace :	1399
Percent in Pace :	64.9%
Number of Vehicles > 25 MPH :	503
Percent of Vehicles > 25 MPH :	23.4%

Huron Avenue – south west of Garden Street

15th Percentile :	8 MPH
50th Percentile :	18 MPH
85th Percentile :	23 MPH
95th Percentile :	26 MPH
Mean Speed(Average) :	18 MPH
10 MPH Pace Speed :	16-25 MPH
Number in Pace :	1629
Percent in Pace :	56.7%
Number of Vehicles > 25 MPH :	324
Percent of Vehicles > 25 MPH :	11.3%



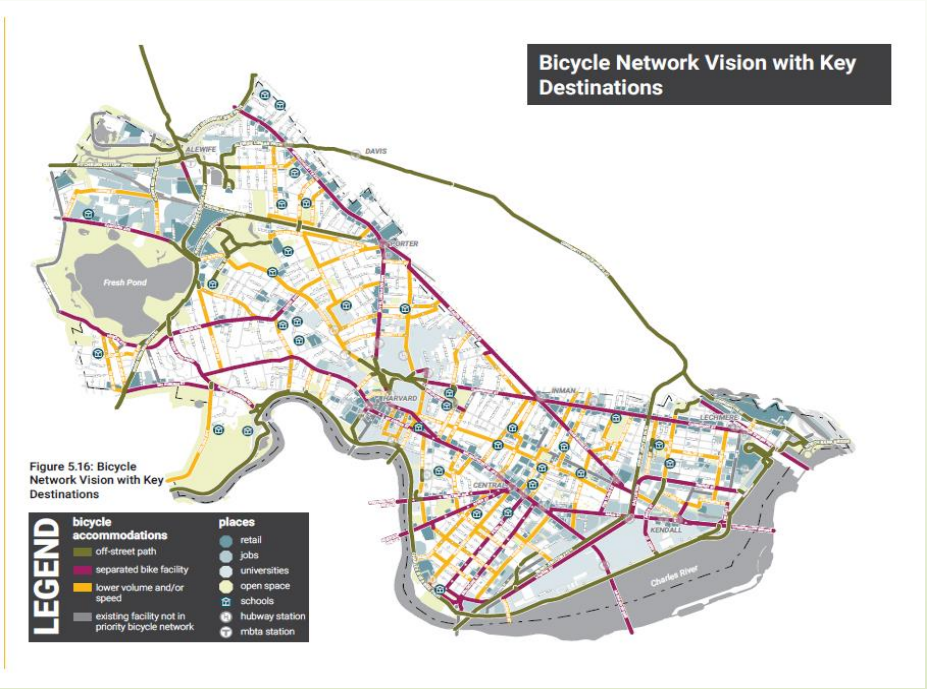


Figure 5.16: Bicycle Network Vision with Key Destinations

33’ roadway width

32’ roadway width

44’ roadway width

- Protected bike lanes 6’-10’-10’-6’: Significant issue for fire department. Removes all parking
- Bike lanes 5’-11’-11’-5’: Fire department ok with this option. Removes all parking.
- Shared lane / traffic calming: Recommended at Bike / Ped / Transit Committee discussion. Fire Department ok with this option. Maintains all parking.

Protected Bike Lane

Bike Lane

Low – Volume / Low-Speed / Traffic Calming

Plans

Curb extension

(Green area behind sidewalk)

Raised intersection


THE
END


TRAFFIC
CALMING
ZONE
please
drive slowly


CAUTION
MANY
PEOPLE
WALKING