



Willard Street Drainage Improvement Project

We Want Your Input!

The Willard Street Drainage Improvement Project includes replacing and/or rehabilitating the sewer and stormwater infrastructure and the construction of a new stormwater pipe and outfall at the Charles River, evaluation and implementation of stormwater best management practices, and water main replacement. The project also provides an opportunity to provide surface improvements, including accessible sidewalks, traffic calming, enhanced stormwater treatment, and better bicycle facilities. The City's consultant team developed options to achieve the goals of improved stormwater management and subsurface conditions, but we are seeking neighborhood input on the options for the surface improvements.

Miss a meeting? Want more information? Please visit the following for project information:
www.CambridgeMa.gov/theworks/WillardSt



We want to hear your opinions! A member of the project team will be in the neighborhood from December 11-13, between 5-7PM, to talk with you about your preferences for the One-Way or Two-Way options being considered.

If we miss you and you want to share your opinion or you have other questions about the project, please contact:

Cambridge DPW

Jerry Friedman, P.E., Supervising Engineer | 617-349-9720 | jfriedman@cambridgema.gov

One Way (Northbound) Traffic with Bike Lane

This option provides maximum stormwater treatment in an environmentally sustainable manner. One 10-foot vehicle travel lane is provided northbound, with a 7-foot parking lane on the west side and a 6-foot bicycle lane on the east side. Off the street, a 4-foot rain garden/bio-swale is provided on the east side, along with a 5-foot sidewalk. On the west side, a 3-foot zone for stormwater tree filters is provided, along with a 4-foot sidewalk.



Features

- Provides additional space for significant "Green Infrastructure" stormwater treatment features; plus additional trees and landscaping
- Dedicated bicycle lane provides better bike accommodations and is positioned away from the parked cars "door zone"
- Consistent with the 2015 Bike Network Plan
- Provides traffic calming/pedestrian priority elements including: curb extensions; raised intersection at Foster Street; raised side-street treatments at Brattle, Mt. Auburn, Dinsmore, and Willard Street Court

Considerations

- Eliminates southbound vehicular and bicycle movements
- Neighborhood adjustment period to new circulation patterns
- Would require an ADA variance for one non-compliant sidewalk location (east side)

Two-Way Traffic with Shared Lanes

This option maintains the roadway and sidewalk zones at their current width. One 10-foot vehicle travel lane is provided in each direction, shared with bicycles, with a 7-foot parking lane on the west side. Off the street, the current 6-foot combined sidewalk/tree zones would be maintained on each side. Additional underground stormwater treatment would be required to meet regulatory standards.



Features

- Maintains two-way traffic circulation for vehicles and bicycles
- Provides traffic calming/pedestrian priority elements including: curb extensions; raised intersection at Foster Street; raised side-street treatments at Brattle, Mt. Auburn, Dinsmore, and Willard Street Court

Considerations

- Limited opportunity for additional street trees or enhanced stormwater treatment
- Would require an ADA variance for one non-compliant sidewalk location (east side)
- May require additional utility relocations and larger underground stormwater infrastructure; additional long-term maintenance.
- Cyclists must share lanes with vehicles

Frequently Asked Questions

Why is this project necessary?

The Willard Street neighborhood has experienced flooding on a number of occasions due to insufficient pipe capacity in the MWRA's Mt. Auburn Street sewer. Flood events are expected to become more frequent if nothing is done, due to the more intense rain storms that the region and City now experience. This project will re-route the area's drainage to the Charles River via a new outfall pipe. Because water will now be discharged directly to the River, it must also undergo more intensive treatment than it does today. Treatment options include surface "Green Infrastructure" (GI) and/or underground treatment structures.

What is Green infrastructure?

GI is an approach to water management that protects, restores, or mimics the natural water cycle. The EPA defines GI as "a cost-effective, resilient approach to managing wet weather impacts that provides many community benefits. While single-purpose gray stormwater infrastructure—conventional piped drainage and water treatment systems—is designed to move urban stormwater away from the built environment, green infrastructure reduces and treats stormwater at its source while delivering environmental, social, and economic benefits." The two primary means of GI being considered for the Willard Street project are:

Tree Trenches: A method of stormwater management where water filters into the tree pit, feeds the tree, and any overflow goes back into the street and is collected by catch basins.

Bio Swales: Narrow planters on the sidewalk which collect stormwater from both the sidewalk and roadway. Water is absorbed and pollutants filtered by the soil and plants, and a visual amenity is provided to the streetscape.

Why is the City considering changing the traffic operation of the street if this is just a drainage/flooding project?

The project will entail significant underground construction to address drainage and other outmoded utilities. Since the street will need to be reconstructed

anyway (including sidewalks in order to meet accessibility regulations), there is an opportunity to reconsider how the street works for all users, and to possibly set aside space for self-sustaining Green Infrastructure (see above) as well as additional street trees, landscaping, wider sidewalks and bicycle facilities.

One of the options which abutters at the first community meeting asked that we consider, was conversion of Willard Street into a one-way street. The City team performed data collection and analysis to assess this option, and concluded that it would be operationally feasible, and would offer opportunities for GI that otherwise would not be possible.

Would one-way operation draw more traffic to Willard Street?

Given the existing traffic patterns in the neighborhood, the potential change of Willard Street to one-way northbound would not be expected to increase traffic from existing conditions. Proposed traffic calming which would also be implemented with the one-way configuration would likely further deter cut-through traffic.

Would Hawthorne and Sparks Streets be able to accommodate the diverted traffic if Willard Street were one-way?

Overall, the number of southbound trips projected to be diverted to adjacent roadways is relatively low compared to the existing volumes on these streets. The traffic analysis for Willard Street and surrounding intersections identified some improvements benefitting

operations and safety that could be made at the Mt Auburn intersections with Sparks Street and Hawthorne Street, even if Willard Street remains two-way.

These improvements would also benefit a one-way Willard operation. The most significant of these improvements is a new traffic signal at the Sparks/Mt. Auburn intersection, and the City plans to install this signal in parallel with the Willard Street project, regardless of which Willard Street option is chosen.

Why isn't the City performing an areawide traffic study as part of the one-way/two-way analysis?

The Willard Street project is limited in scope to drainage and surface improvements on Willard Street and the intersecting private streets. Traffic data collection and analysis was performed for a number of additional area intersections as required to assess a potential "One-Way Willard" operation. This assessment did not require a larger study area, as the City is not considering modifying operations on other area streets.

The City is considering safety improvements to the nearby Brattle/Sparks/Craigie intersection, which will be the subject of a separate community process starting in 2018.

Don't vehicles tend to travel faster on a one-way street?

The proposed design of both the one-way and two-way options includes a number of self-enforcing traffic calming features, all of which have proven effective at reducing speeds when deployed throughout the City. These include sidewalk curb extensions and a raised

intersection at Foster Street. In addition, the one-way option results in a roadway which is narrowed both physically (by widening the sidewalks), and visually (by marking a bike lane and adding more trees and landscaping). We would expect all of these design features to have a positive impact on keeping speeds within or below the City's new 25 mph limit.

Will narrowing the street impact snow removal?

The pavement width of the street will accommodate snow plow equipment. Snow will be plowed as it currently is on Willard Street and piled on the side of the road/edge of the sidewalk. The bio swales are also designed to survive, and even benefit from, snow coverage.

Will narrowing the street impact emergency response?

Cambridge Fire Department has reviewed both options for Willard Street and has confirmed that either would be acceptable for their operations.

What are the options for stormwater treatment if the street remains two-way?

Opportunities for GI are extremely limited with a two-way street. Stormwater management and flood control can be provided through traditional, engineering solutions below the roadway if Willard Street remains two-way. However, this has increased capital and ongoing maintenance costs, and will likely have a longer construction duration since the infrastructure will be below roadway grade and may also require relocation of existing conditions in order to create the required space underground.

Will work be performed on Willard Street Court and Dinsmore Court? How will they be restored afterward?

It is likely that some underground utility work will be required on both of these private ways. The City typically executes a right-of-entry with each abutter before performing work on private ways, and we anticipate following this process on this project. Since the City is disturbing these locations, we will repave each private way at the end of construction, including sidewalks.

