

Edenfield Avenue Green Street Demonstration Project



NEWEA Annual Conference
January 2018



Edenfield Avenue Green Street Demonstration Project

- Project /Grant Background
- Road Reconstruction Elements
- What is a Green Street?
- Local Pilots and Examples
- Project Design & Construction
- Outreach and Lessons Learned
- Scaling up from the Pilots



Project Background and Goals

- Excessive width (32') for a residential street, making it a good candidate for road diet
- Deteriorated surface condition due to recently completed utility (gas, water and sewer) improvements
- Implement a “green infrastructure” project in coordination with a road reconstruction project
- Increase public awareness and interest in the issues related to stormwater pollution and the potential benefits that GI can provide
- Increase departmental capacity to address current and future stormwater needs using low cost, proven technologies
- Develop a standard process for incorporating GI into road reconstruction projects



319 Grant and Project Background

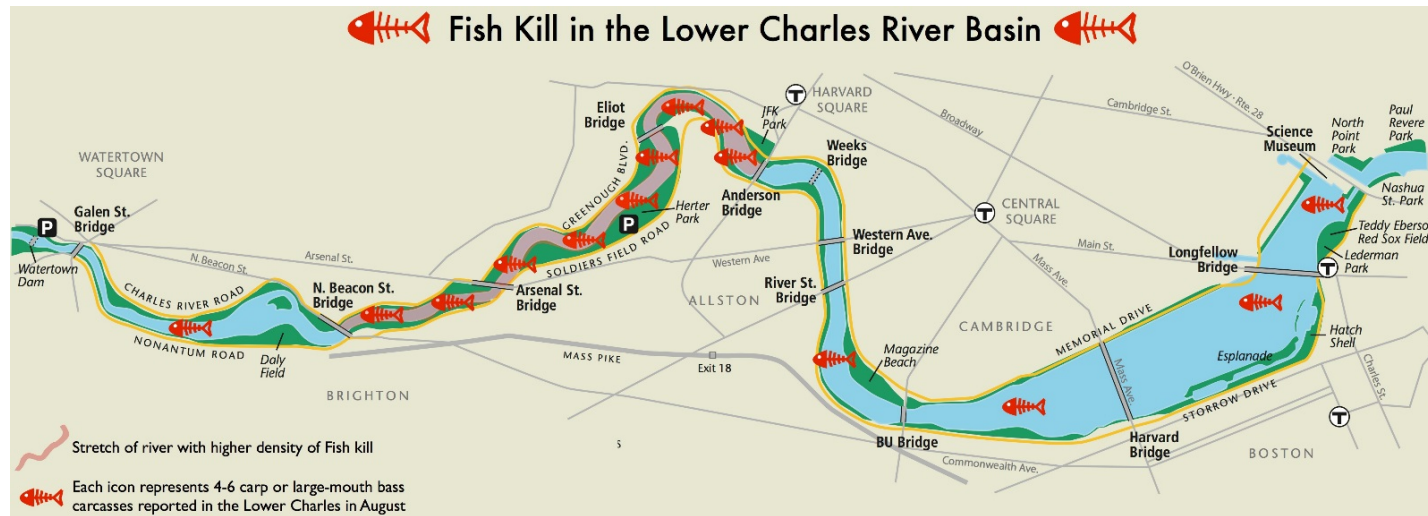
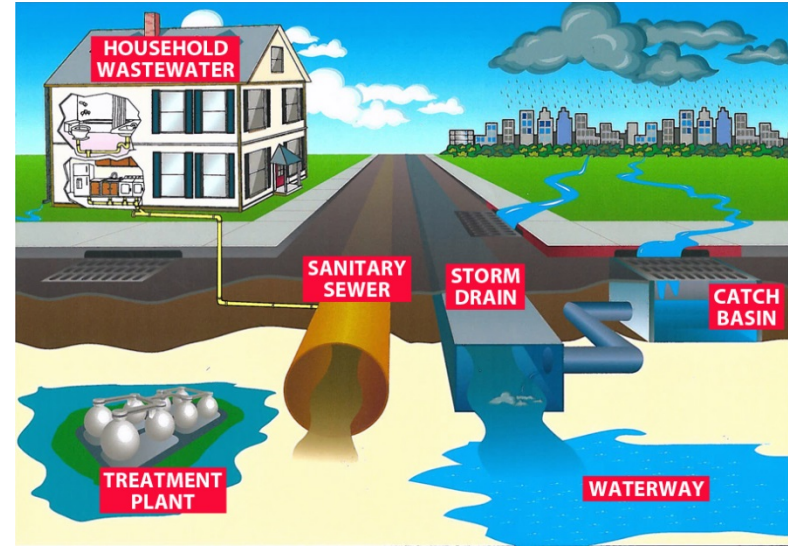
- Awarded by Massachusetts Department of Environmental Protection under 319 Non-Point Source Pollution Grant Program
- CRWA partnering with the DPW to design and implement a green street demonstration project at Edenfield Avenue
- Public outreach efforts will be closely coordinated with the Town's Stormwater Advisory Committee
- Green Infrastructure design by Horsley Witten Group, overall project engineering by WorldTech Engineering and construction by Newport



Stormwater and Water Quality

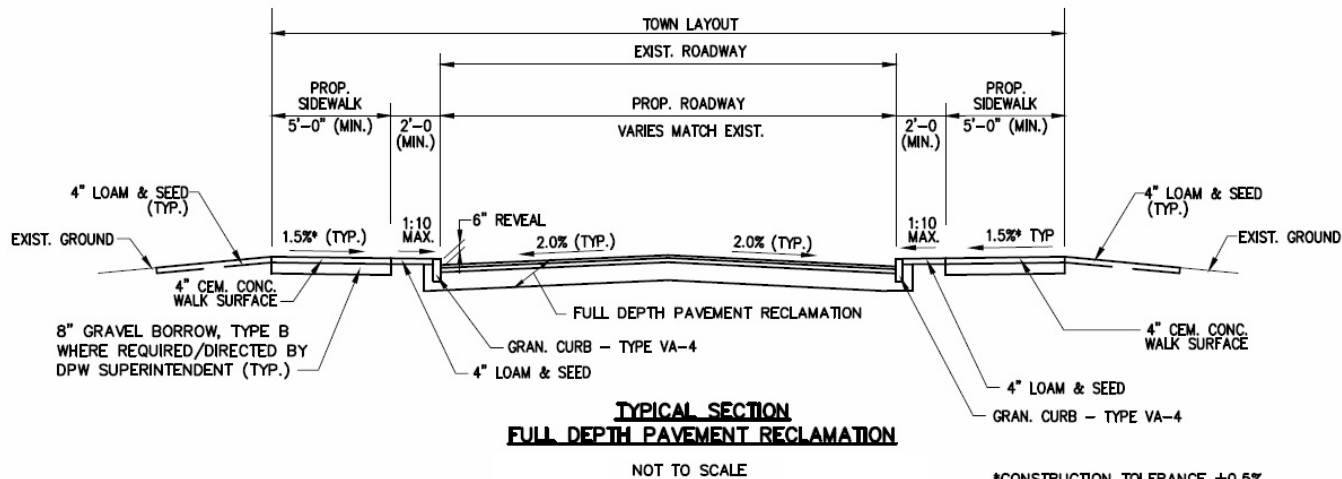
Typical pollutants in urban runoff:

- Oils and Gasoline
- Trash
- Leaves and Mulch
- Sediment
- Bacteria
- Nutrients
- Heavy Metals



Typical Road Reconstruction Elements

- Road reclamation and paving
- Drainage repairs
- Granite curbing
- Concrete sidewalks
- Handicap ramps
- Grass borders and street trees



Watertown's Complete Streets Approach

- Road diets
- Accessible ramps
- Pavement markings
- Reduced crosswalk lengths
- Curbing
- "Bump outs"
- Reduced corner radii
- Reclaimed green space
- Street trees



What is Green Infrastructure (GI)?

- Mimics natural processes
- Treats stormwater as close to source as possible
- Maximizes infiltration to reduce surface runoff
- Often employ soils and vegetation



What are Green Streets?

A street designed to:

- be a **visible component** of a system of “**green infrastructure**” that is incorporated into the **aesthetics of the community**
- integrate a system of **stormwater management** within its right of way
- **reduce the amount of water that is piped directly to streams and rivers**
- make the best use of the street tree canopy for stormwater interception as well as **temperature mitigation** and **air quality improvement**



Green Street Benefits

- Water quality improvements and volume reductions in stormwater being discharged into receiving bodies of water
- Key linking component in community efforts to develop local green infrastructure networks
- Improves local air quality by providing interception of airborne particulates and shade for cooling
- Reduces heat island effect
- Increases property values
- Calms traffic and improves pedestrian experience along the street right of way



Green Street: Local Examples



Hague St., Allston



Foster St., Cambridge



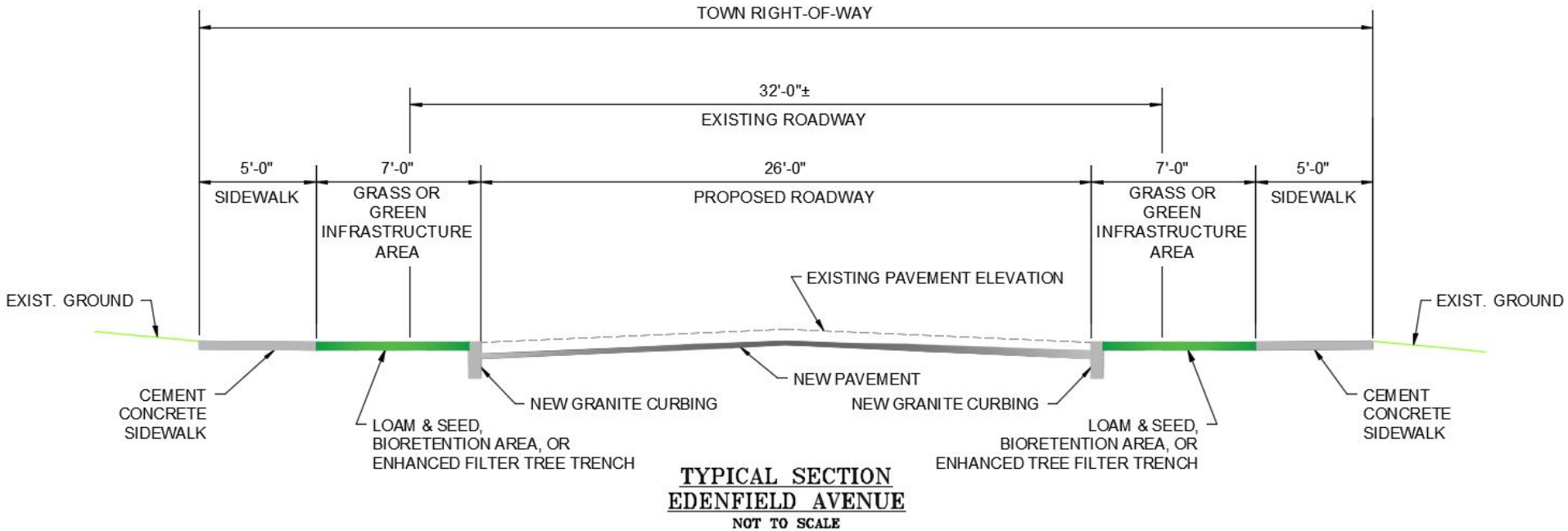
Crescent Ave,
Chelsea



Western Ave.,
Cambridge








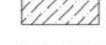

Edenfield Avenue -Proposed Road Diet



Edenfield Avenue -Proposed Design



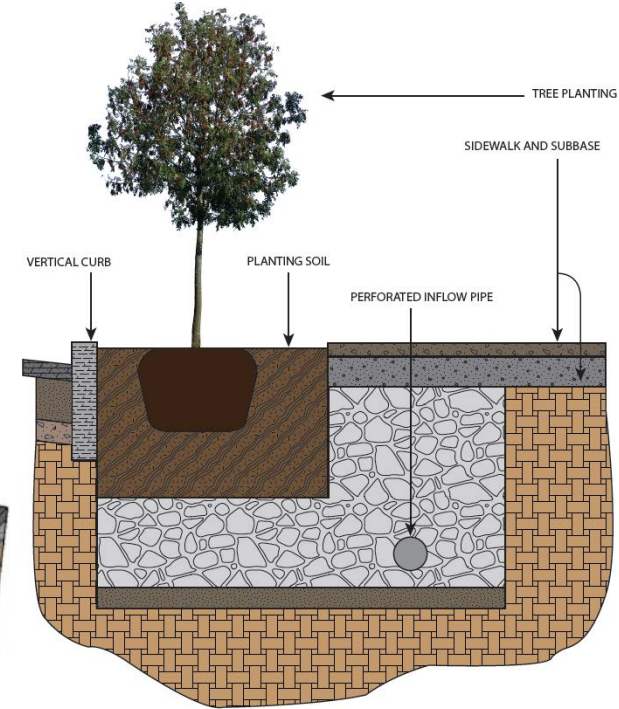
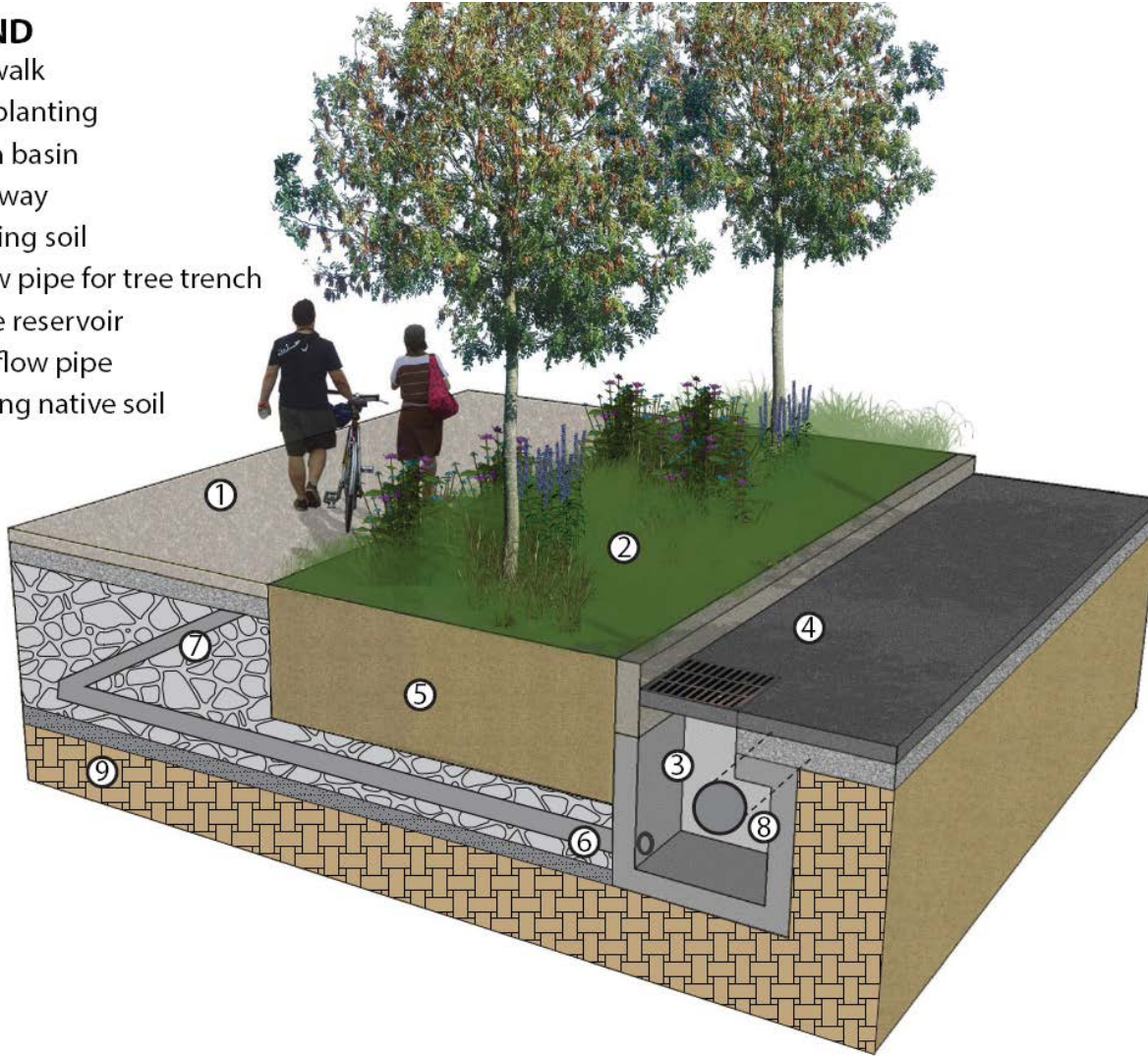
LEGEND

-  EXISTING EDGE OF ROAD
-  PROPOSED HOT MIX ASPHALT ROADWAY
-  PROPOSED CEMENT CONCRETE SIDEWALK/DRIVEWAY
-  PROPOSED GRASS AREA
-  PROPOSED CEMENT CONCRETE WHEELCHAIR RAMP
-  PROPOSED BIORETENTION AREA
-  PROPOSED ENHANCED TREE FILTER TRENCH

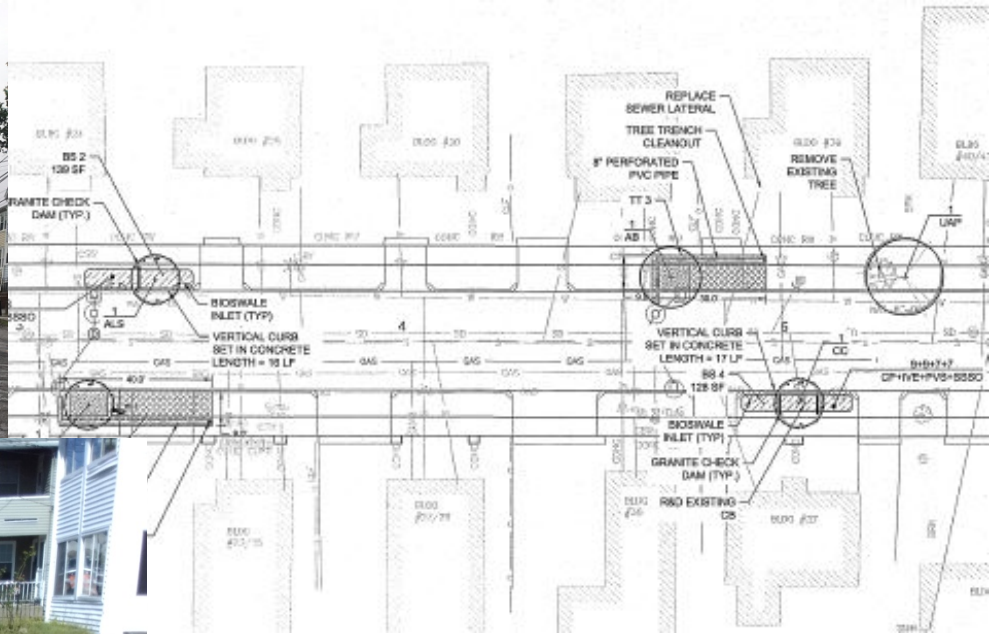
Tree Trench Schematic

LEGEND

1. Sidewalk
2. Tree planting
3. Catch basin
4. Roadway
5. Planting soil
6. Inflow pipe for tree trench
7. Stone reservoir
8. Overflow pipe
9. Existing native soil



Edenfield Avenue – Design and Construction



Project Award: 2016

Construction: 2017

Completion: Spring 2018



Public Outreach and Education

- Public and staff meetings, site walk and visits during design phase and pre construction
- Pre and post construction stormwater monitoring
- One to one conversations with project abutters during site walk and construction
- Website updates, blog posts and news articles
- Role of the Stormwater Advisory Committee and public events (Faire on the Square)
- Construction inspection and monitoring



Public Outreach and Education



Long-Term Operation and Maintenance Manual

Stormwater Improvements

Edenfield Avenue – Green Infrastructure



Prepared for:
Town of Watertown
Department of Public Works
124 Orchard Street
Watertown, MA 02061

Prepared by: Horsley Witten Group, Inc.
May 2017

Horsley Witten Group 
Sustainable Environmental Solutions
294 Washington Street • Suite 601 • Boston, MA 02108
857-253-8100 • horsleywitten.com

Other GI Retrofits in Watertown -Private Development



65 Grove Street



570 Arsenal Street
Marriott



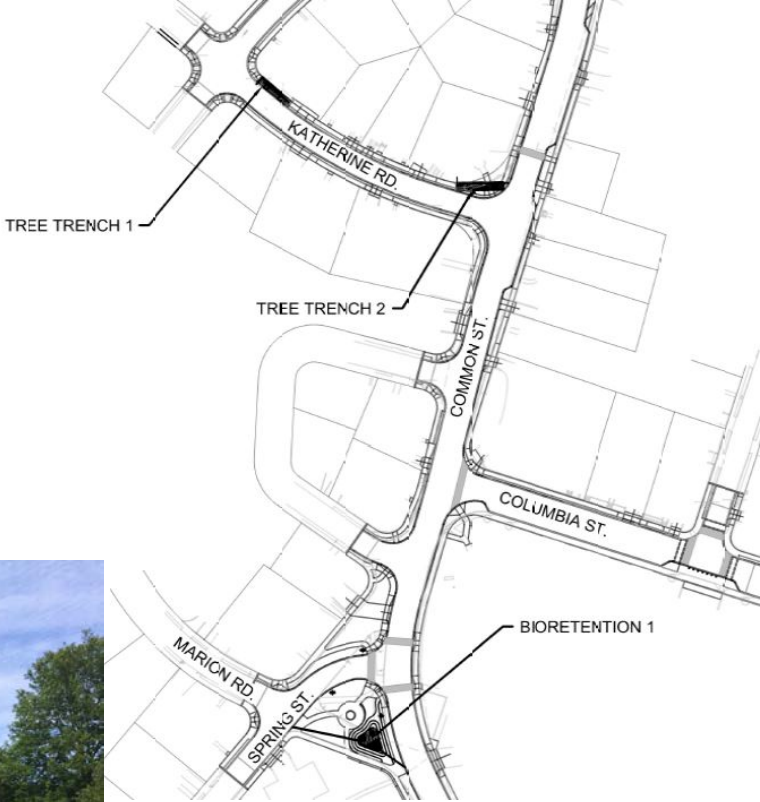
Other GI Retrofits in Watertown Public-Private Partnership



Beacon Park at Arsenal



Other GI Retrofits in Watertown -Town Projects



Common Street



Questions and Feedback

Pallavi Kalia Mande, LF'17

Director of Blue Cities

Charles River Watershed Association

<https://www.crwa.org/blue-cities/demonstration-projects/edenfield-avenue-green-street>

Matthew I. Shuman, P.E.

Town Engineer

Watertown Department of Public Works

www.watertowndpw.org

