



# Armory Village Green Infrastructure Project

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MILLBURY'S RESPONSE TO A CHANGING CLIMATE

Presented by: Laurie Connors, Director of Planning & Development

# Key Facts About Millbury

Located in Central Massachusetts, southeast of & abutting Worcester

15.84 square miles

Population of 13,500

Historic development as industrial center largely owing to the Blackstone River, which bisects Millbury from east to west

Within John H. Chafee Blackstone River Valley National Heritage Corridor

Green Community since 2011

Complete Streets Community since 2018

MVP Community since 2019



# Anticipated Climate Change Impacts

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By 2050:

Average annual temperatures expected to increase 2.9 to 6.3 degrees over historic baseline;

Hot days over 90 degrees expected to increase between 8 to 29 days;

Cold days below freezing expected to fall between 18 to 39 days;

Annual precipitation expected to increase by 1.4 to 6.8 inches;

Seasonal drought conditions may become more frequent as precipitation concentrated in extreme intensity storms and snow pack reduced.

# Millbury's Top Hazards

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Flooding (riverine, stormwater runoff and dam failure)

Winter Storms

Wildfires/Droughts

Extreme Temperatures



# Armory Village Plan: Existing Conditions & Project Scope

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# Existing Conditions - Lower Common

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# Existing Conditions - South Main Street

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# Existing Conditions – Main & Elm Streets



# Existing Conditions - Upper Common



# Existing Conditions - ADA Violations



# Armory Village Plan



# PROPOSED IMPROVEMENTS

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Reconstruct lower & upper commons,  
South Main St. parking lot

Upgrade traffic lights & pedestrian signals  
for ADA-compliance and opticom  
capabilities

Narrow intersection & install bumpouts  
to improve pedestrian safety

Construct ADA-compliant sidewalks,  
driveway aprons, crosswalks & ramps

Redo line striping, install sharrows, bike  
racks, & bicycle way-finding signage

Install decorative, energy-efficient  
streetlights

Install 21 street trees & attractive  
landscaped areas

Install 5 rain gardens, flow through  
planter, cultec system, decorative  
porous pavers, & pervious walkways

Upgrade water & sewer infrastructure

Expand sidewalks widths

Install 4-dial clock, seating, art, &  
informational signage

# Lower Common

Pedestrian plaza & wider sidewalks accommodate seating & 7 new street trees

Flow-through planter

2 rain gardens

Porous pavers with underdrains

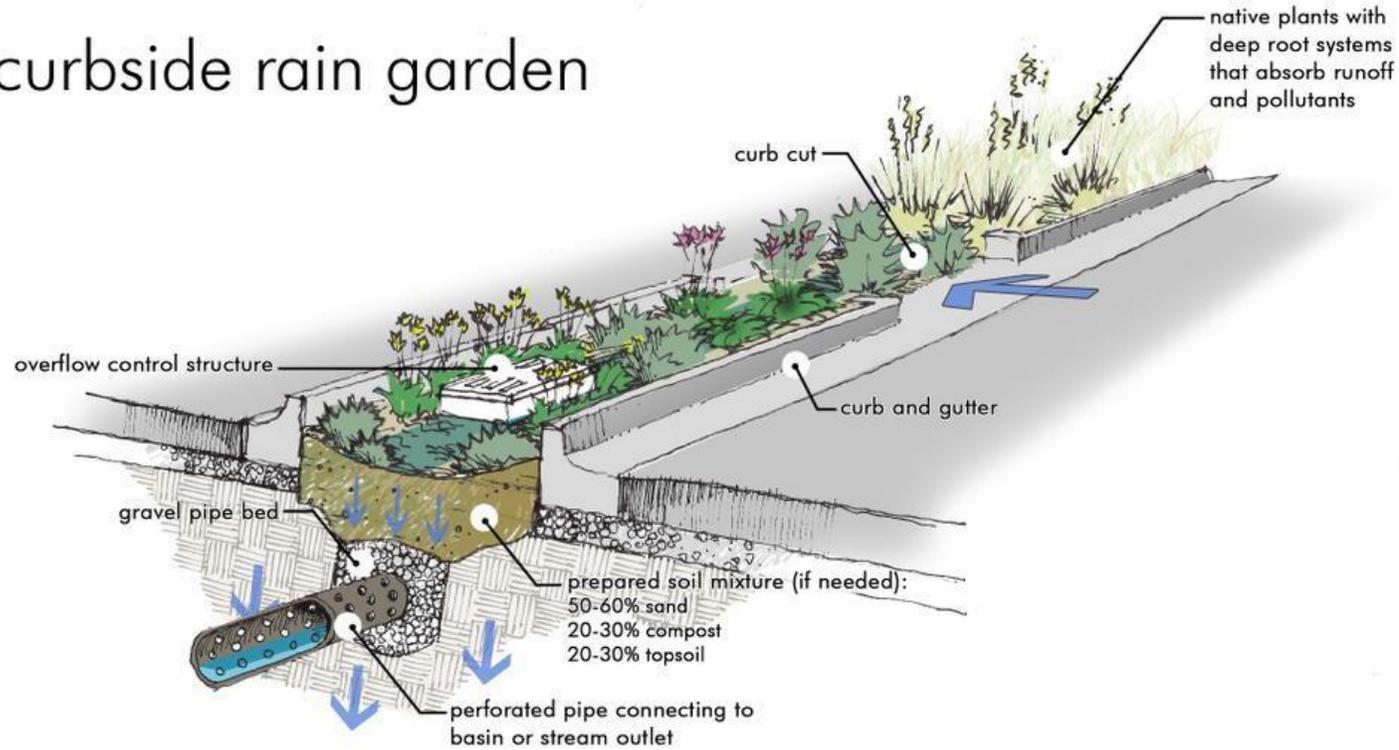
Cultec system beneath municipal parking lot

Vegetated bumpouts

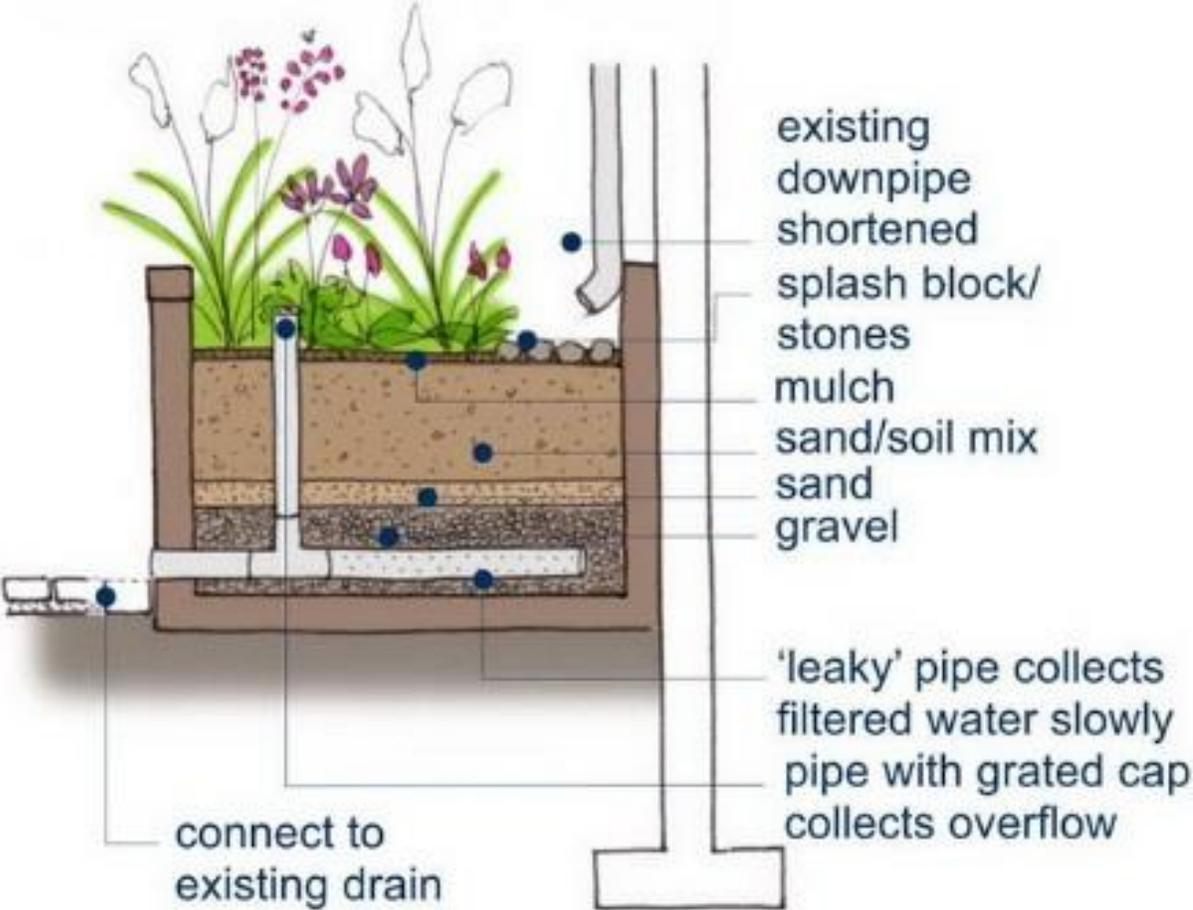


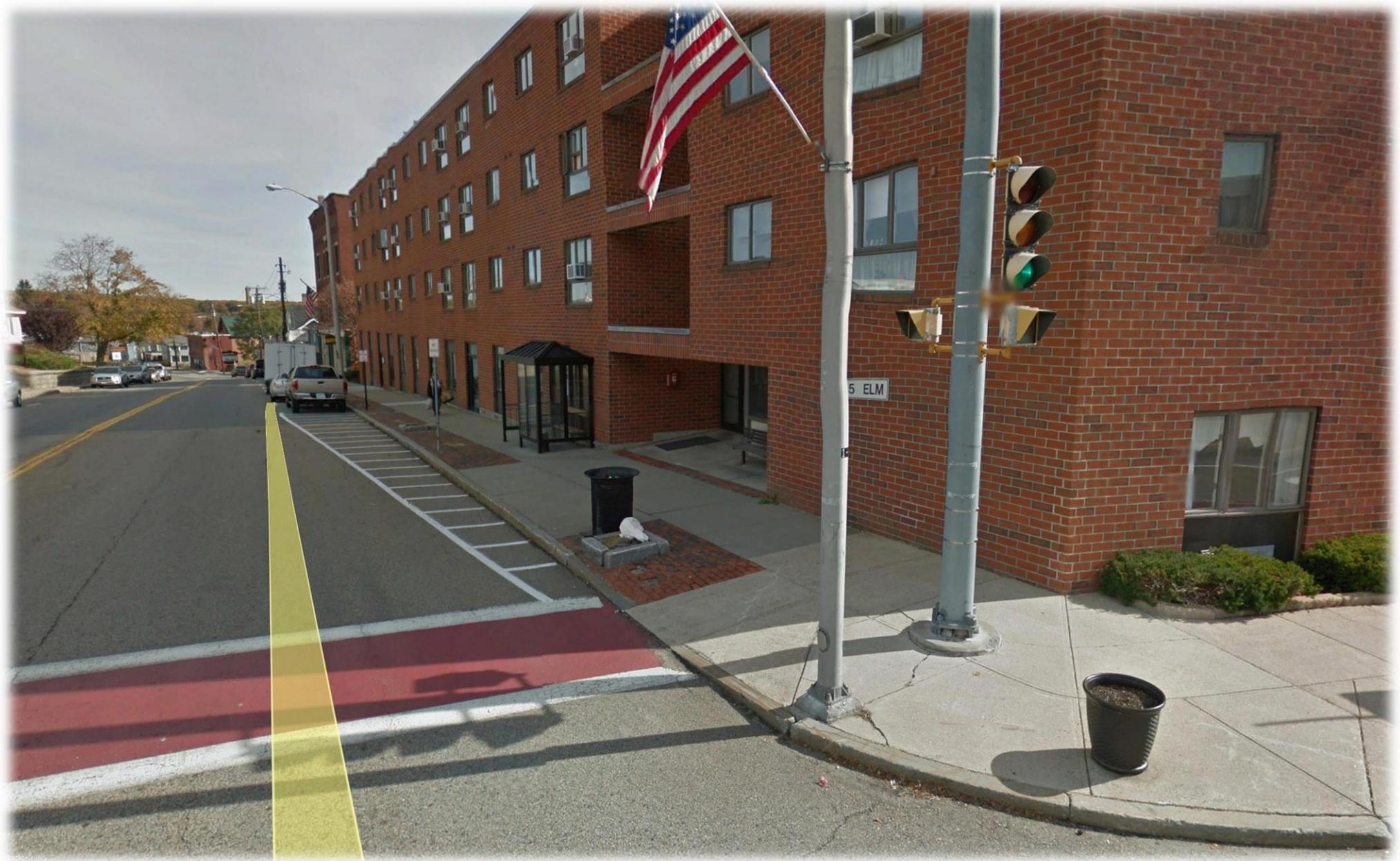
# Rain Garden

## curbside rain garden



# Flow Through Planter







# PROJECT BENEFITS

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**Climate Change Benefits** – Trees will reduce heat island impacts, absorb environmental pollutants, infiltrate & cleanse stormwater, provide habitat.

**Stormwater Management Benefits** – Green infrastructure features will intercept and infiltrate 70% of total stormwater flow, addressing both stormwater capacity & quality issues.

**Economic Development Benefits** – Welcoming public spaces will attract business, private investment & patrons!!!

**Public Safety benefits** – ADA improvements will make Millbury compliant with state/federal laws; traffic light upgrades will improve emergency services response times; shorter crosswalks will make it easier for pedestrians to navigate Millbury Center.

**Aesthetic Benefits** – Attractive design will encourage people to not only come to Millbury Center, but STAY in Millbury Center!

# ESTIMATED PROJECT BUDGET

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Roadway Improvements	\$451,650
Lower Common Improvements	\$373,956
Lower Bus Stop Corner	\$80,574
Remaining Right Side of So. Main Street	\$82,597
North Common Corner	\$134,034
North Common	\$73,209
Upper Bus Stop Corner	\$127,670
Miscellaneous (33%)	\$436,819
Inflation (4% per year)	\$70,420
<b>TOTAL PROJECT COST</b>	<b>\$1,830,928</b>

# FUNDING SOURCES

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FY 19 MVP Action Grant	\$1,000,000
Complete Streets Construction Grant	\$175,000
319 Non-point Source Pollution Grant	\$150,000
Narragansett Bay Estuary Program Grant	\$75,000
Green Communities Grant	\$28,000
Town of Millbury (Sewer Enterprise Funds)	\$200,000
Town of Millbury (Roads Funds, MS4 Funds, In-kind Services)	\$180,928
Millbury Center Beautification Initiative Funds	\$12,000
Millbury Redevelopment Authority Funds	\$10,000
<b>TOTAL</b>	<b>\$1,830,928</b>

# PROJECT SCHEDULE

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Summer 2018 – secured DEP Section 319 Grant, completed preliminary site work, prepared/submitted Green Communities Grant & Municipal ADA Improvement Grant applications, completed prerequisites for Municipal Vulnerability Preparedness (MVP) designation

Fall 2018 – completed 25% design plans for public review & feedback, finalized Complete Streets Prioritization Plan; secured Green Communities Grant, failed to secure Municipal ADA Improvement Grant

Winter 2018/2019 – completed 50% design plans for public review & feedback

Spring 2019 – prepared 95% design plans for Town review & feedback, prepared/submitted MVP Action Grant & Complete Streets Construction Grant applications

Summer 2019 – secured MVP Action Grant & partial award for Complete Streets Construction Grant, prepared/submitted Narragansett Bay Estuary Grant application, completed 100% design plans & bid documents, launched procurement process for construction contractor

Fall 2019 – secured local & state permits & approvals, bid process resulted in 1 bid that was \$2 million over budget, made minor modifications to design plans & divided bids to reduce construction costs

Winter 2020 – Installed decorative LED street lights to close out Green Communities Grant, reissued Invitation for Bids, hope to award construction contract

Spring 2020 – begin construction

June 30, 2020 – complete 50% of construction, close out DEP Section 319 Stormwater Grant and Narragansett Bay Estuary Program Grant

Summer/Fall 2020 – complete remainder of construction and close out remaining grants

# Major Project Challenges

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FUNDING, FUNDING, FUNDING

Coordinating grants and their completion deadlines

Many construction grants are awarded in late summer with construction deadlines of June 30<sup>th</sup> of the following year. These deadlines are exceedingly difficult to meet because of procurement requirements coupled with a short construction season owing to cold, snowy winters and asphalt plant closures.

THANK YOU FOR  
LISTENING!!

Laurie Connors, Director of Planning &  
Development

Any questions should be directed to  
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