

## Applicant Information

1. Name of entities applying for funding and name of project

Charles River Watershed Association (CRWA), Coolidge Road Green Street Project

2. Background on applicant(s): type of organization, e.g. 501 ( c ) 3, public agency, etc.; organization leadership

CRWA is a 501(c)3 non-profit organization that has been serving 35 cities and towns around the Charles River from Hopkinton to Boston since 1965. We work closely with environmental regulators, municipal officials, and town residents to improve management of the Charles River and surrounding landscape. Robert Zimmerman, Jr. has served as Executive Director for more than 25 years and currently fills that position. Pallavi Mande, who recently completed a Loeb Fellowship at the Harvard Graduate School of Design, has been leading CRWA's innovative Blue Cities program for more than 10 years and will manage this project for CRWA.

3. Primary contact person name, phone number, email.

Pallavi Mande, 781-788-0007 x 232, pmande@crwa.org

4. Key personnel involved in the project.

Pallavi Mande, Director of Blue Cities for CRWA

Elisabeth Cianciola, Aquatic Scientist for CRWA

Gerald Autler, Senior Project Manager for BPDA

Kate England, Project Coordinator for Stormwater Infrastructure for BWSC

Zach Wassmouth, Principal Civil Engineer for BPWD

5. Any partner organizations/property owners to be involved in project.

Boston Planning and Development Agency (BPDA), Boston Water and Sewer Commission (BWSC), and Boston Public Works Department (BPWD) are CRWA's primary partners for this project. BPWD will represent the City of Boston as the property owner of the city streets that will be improved under this project. Boston Transportation Department (BTD) has also been following the development of this project and will fill a supporting role.

6. If applicant is a non-profit organization, provide qualifications and prior history of executing similar projects.

Charles River Watershed Association (CRWA) has worked closely with environmental regulators, municipal officials, and town residents to improve management of the Charles River and surrounding landscape for 50 years. CRWA uses science, law, planning and grassroots organizing to change the way in which water resources are managed at a variety of scales, and in a variety

of settings. Our initiatives focus on water quality and quantity, restoring natural hydrology and streamflow, monitoring, fisheries restoration, and urban redevelopment. CRWA has evolved into one of the most influential watershed organizations in the country with our work now internationally-recognized through the award of the International Riverprize in 2011. Our accomplished staff includes environmental scientists, an urban designer and an attorney.

### ***Staff Qualifications***

Pallavi Mande directs CRWA's Blue Cities Initiative, which includes planning, design and implementation of green infrastructure retrofit projects. Ms. Mande has more than 15 years of experience in urban design and environmental planning and has worked on inner-city neighborhood revitalization in cities all over the U.S. Through our Blue Cities Initiative, CRWA has gained considerable experience with low-impact development stormwater treatment practices, including rain gardens, porous pavements, stormwater tree pits and planters. Most recently, Ms. Mande served as project manager for Boston's Green Alley project, a porous pavement demonstration project in Boston's south end neighborhood. Ms. Mande was a 2016/2017 Harvard Loeb Fellow.

Elisabeth Cianciola oversees CRWA's Field Science programs, which include water quality monitoring, Geographic Information System (GIS) data mapping, vegetation management, and public education and outreach. Ms. Cianciola has occupied this position for 3 years and has more than 5 years of professional experience in her field. She and Ms. Mande have collaborated to install and monitor a porous alleyway in Boston, install and monitor a stormwater bioretention retrofit at a public housing development in Chelsea, offer residential rain garden installation trainings in Franklin and Watertown, and offer rain barrel construction and installation trainings for homeowners across the Charles River watershed. The two have tag-teamed project management and outreach for the planning phase of the proposed Coolidge Road green street project.

### ***Prior History***

#### ***Allston-Brighton Green Streets Guidelines***

In 2007, CRWA partnered with the Allston-Brighton Community Development Corporation to develop a Green Streets Guide for Allston-Brighton through extensive collaboration with neighborhood residents. By conducting community workshops for three pilot streets, the design guidelines provided a catalogue of green street retrofits intended to improve streets for pedestrians and bicyclists, while also making public parks more accessible, and improving water quality in the Charles River by treating stormwater runoff. For more information about this project, refer to <http://www.crwa.org/blue-cities/community-collaboration>.

#### ***Everett Street Greening Demonstration Project***

In February of 2008, CRWA was awarded an Urban Forestry Challenge Grant by Massachusetts Department of Conservation and Recreation (DCR) to develop the design for a Green Street demonstration project along a section of Everett Street in Allston. The project involved designing a system of green infrastructure to maximize the use of street tree cover for stormwater interception as well as temperature and air quality improvement. This project was meant to create public awareness around the connection between green infrastructure, stormwater management, and ultimately water quality.

CRWA partnered with the Allston Brighton Community Development Corporation (CDC) and coordinated with the Boston Urban Forestry Coalition (BUFC) to promote the varied benefits of urban forestry including community building, water quality improvements and urban canopy enhancement. Further, by retrofitting a site that was originally 100% impervious with innovative Low Impact Developments (LID) Best Management Practices (BMPs), the project offers an opportunity to combine stormwater management goals, such as runoff reduction and water quality improvement with community goals for landscape improvements and public education on green infrastructure. The project design was completed in December 2008 and constructed in 2010. For more information about this project, refer to <http://www.crwa.org/blue-cities/demonstration-projects/everett-street-pilot>.

#### *Peabody Square Green Street Pilot*

Green Streets are those designed to incorporate innovative stormwater management techniques, including Low Impact Development (LID) stormwater Best Management Practices (BMPs), into the street right-of-way to collect and treat stormwater runoff that is generated from sidewalks, roadways and other impervious surfaces. The City of Boston Environment Department (BED) and CRWA were awarded a 604(b) grant by MassDEP in July, 2007, to undertake an innovative pilot project to assess the potential stormwater management and recharge benefits of a Green Street. BED and CRWA selected Peabody Square as a potential site for a pilot project and began work to assess the feasibility of including Green Street designs into an existing plan to redevelop the streetscape.

CRWA worked closely with the Boston Transportation Department (BTD), the Department of Public Works (DPW) and its consultant Nitsch Engineering Inc. to advance the Green Street design for Peabody Square, based upon the results of our assessment and recommended Best Management Practices (BMP's). CRWA participated in numerous meetings with representatives from BTD, DPW, BED, Parks Department, and community organizations including the St. Mark's Area Main Streets throughout the design process and to discuss long-term maintenance issues. The design was completed in 2010 and the project was constructed in 2011. For more information about this project, refer to <http://www.crwa.org/blue-cities/demonstration-projects/peabody-square>.

#### *The Greenway Links project in Boston's South End*

CRWA participated in the 2014 Greenway Links Design Charette, as part of the Greenway Links Initiative's invitation to develop design concepts that reimagine and complete missing links within Boston's existing greenway network. A variety of organizations and advocacy groups participated in the charrette, which sought to enhance Boston's urban core, specifically in the areas bordered by the Neponset, Mystic as well as Charles Rivers. CRWA's proposal uniquely explored a water-centric urban design and planning strategy, promoting the use of green infrastructure techniques to filter stormwater runoff, proactively treating it before it enters adjacent waterways.

Focusing on the greenway connection between Carson Beach and Fort Point Channel, the ultimate vision was to employ these links as a means to restore the natural, local hydrology, increasing its resiliency towards climate change while also fostering pedestrian and bicycle circulation. The proposal was well received as the CRWA team was awarded Honorable Mentions for the "Most Implementable Short-Term Plan" as well as "Best Presentation". For

more information about this project, refer to

<http://blog.crwa.org/blog/using-crwas-blue-cities-approach-to-enhance-bostons-greenway-links>

#### *Boston Complete Streets*

In 2009, the Boston Transportation Department (BTD) began an internal planning effort to reexamine and update roadway standards for all Boston streets. Their goal was to build on existing guidelines and projects, while introducing new dimensions for building streets such as sustainability principles, appropriate storm water drainage, more proactive accommodations for bicycles, integration of ‘smart’ technologies, and responsiveness to Boston’s unique urban context.

Our work with BTD on the Peabody Square project was instrumental in involving CRWA with the City’s Complete Street Initiative. In 2009, Boston Mayor Thomas Menino appointed CRWA’s Kate Bowditch to serve on a technical advisory committee to inform the development of these city-wide guidelines. The Complete Streets Guidelines were finally released in 2013, after three years of CRWA working in close coordination with the project team on its “green” section. For more information, see <http://bostoncompletestreets.org/projects/audubon-circle-fenway/> and <http://bostoncompletestreets.org/projects/central-square-east-boston/>

## Project Information

1. Briefly describe the proposed project. Include a description of the site with a map and identify all property owners. If the applicant is not the sole property owner, please include letters of support from property owner(s).

In conjunction with our partners, CRWA is requesting \$80,000 from the HAPRF to implement a street greening project around Coolidge Road in North Allston. See Attachments A and B for a detailed budget and project map. This project would constitute the first on-the-ground outcome of the North Allston subwatershed restoration planning effort that CRWA undertook with BPDA, BWSC, and Nitsch Engineering, Inc. to develop a plan for integrating green infrastructure into North Allston such that it provides sufficient stormwater treatment to meet established pollution reduction goals for the Charles River, which has been identified as being impaired due to excess phosphorus pollution, and that it provides additional community benefits. The planning and outreach the project team has conducted to date suggest that reclaiming paved areas at the following street intersections could provide space to install green infrastructure: Coolidge Road at Royal Street, Coolidge Road at Holman Street, and Coolidge Road at Arden Street (see Attachment C for possible designs). Reclaiming the corners of oversized street intersections to install green infrastructure will provide traffic calming by encouraging vehicles to travel at slower speeds in order to navigate the streets and will reduce pollution in the Charles River by infiltrating stormwater runoff from the street into the ground.

Specifically, we are proposing to install bioretention systems at these three street intersections. Bioretention systems incorporate both underground modifications to the soil and an above-ground community of plants that can include flowering plants, grasses, trees, and shrubs. The plant selection for each bioretention system can be designed to provide color, shade, pollinator habitat, clean air, and/or carbon storage, among other public benefits. Additionally, as shown in the attached renderings, the layout of the bioretention systems and other possible green street elements such as street trees can be constructed to create pedestrian-friendly pocket parks that encourage positive interactions between neighbors and walking in the neighborhood.

As outlined below, work that would be performed as part of this project includes collaborating with neighborhood residents to develop construction-ready green infrastructure designs for the proposed street intersections, construction of the final designs, and outreach to neighborhood residents to provide training to maintain the bioretention systems and promote the use of stormwater best management practices on private properties in the neighborhood. See Attachment D for the letter of support from the City of Boston Public Works Department, property owner.

2. Describe public benefits of the project with reference to review criteria.
  - Enhance the aesthetic quality and user experience of the public realm
    - Street greening projects add color and texture to the cityscape by replacing pavement with flowering plants and trees that provide habitat for native birds and pollinating insects, clean air, and shade.

- Enhance public safety
  - By reclaiming street corners from oversized street intersections, green infrastructure bump-outs such as bioretention systems reduce the comfort and ability of vehicular traffic to speed, providing traffic calming along pedestrian and cyclist routes.
- Enhance local business and economic activity
  - During project implementation, the project team will engage Allston-Brighton businesses to perform tasks such as providing plants and mulch, creating signage, etc. BPDA has already approached Mahoney's Garden Center regarding supplying construction materials and assisting with project maintenance and received a positive response.
- Improve accessibility and connectivity for non-vehicular modes of transportation
  - The project seeks to improve connectivity for cyclists and pedestrians in the North Allston neighborhood by establishing Coolidge Road as a bike- and pedestrian-friendly west-east corridor through traffic calming measures. While North Harvard Street and Franklin Street serve as designated north/south bike corridors in North Allston, this neighborhood is currently lacking in east-west bike routes.
- Promote community collaboration and civic and cultural growth
  - The project team already received a positive response from neighborhood residents when we hosted a public meeting at the Honan-Allston library on March 27<sup>th</sup> to present preliminary design concepts. We plan to further engage interested residents to develop the final project designs, maintain the green infrastructure systems, and promote the use of stormwater best management practices on private properties in the neighborhood.
- Showcase unique qualities of the neighborhood
  - The project will use greening designs that fit the history and personality of the neighborhood and improve accessibility to existing neighborhood amenities, such as the Honan-Allston Library and Library Park, Collins Square, and the Gardner Academy and the German International School.

### 3. Explain why HAPRFF funding is required.

HAPRFF funding would enable this project to proceed because CRWA would leverage the funds as match for a state grant from the Massachusetts Department of Environmental Protection's (MassDEP) Section 319 grant program for projects that reduce non-point source pollution. Applications to this program require a 40% match of local funds or in-kind resources. CRWA is submitting an application to this program for the June 2, 2017 deadline for FY18 projects. BWSC and BPDA are providing part of this match commitment with their staff time, and we are hoping to secure the remaining required match from the HAPRFF. If we succeed in obtaining funding from both the HAPRFF and MassDEP's grant program, we will have sufficient funding to complete the proposed project.

### 4. Explain if this project/funding would be part of a larger phased project, and if HAPRFF funding would be sought for future phases.

The planning phase of this project was funded by MassDEP's Section 604 (b) grant program for watershed planning projects and has already been completed. We are applying to the HAPRFF to fund the construction phase of this project, which will be the final phase.

5. Timeline (start date, end date, milestones).

Proposed start date: August 1, 2017

September, 2017: Meet with community and finalize concept/25% designs

October, 2017: Complete 50% designs

November, 2017: Obtain feedback on 50% designs in public meeting

January, 2018: Produce final project designs and submit permit applications

April/May, 2018: Begin project construction

July/August, 2018: Complete project construction

September, 2018: Host showcase event for project

October, 2018: Walk through project site with neighborhood residents to demonstrate fall maintenance

April, 2019: Walk through project site with neighborhood residents to demonstrate spring maintenance

June, 2019: Project end date

6. Project maintenance requirements, protocols, and sources of funding.

When we develop the final designs for the bioretention systems with input from neighborhood residents, the project team will also develop an Operations and Maintenance Plan (O & M plan) for the systems that outlines maintenance recommendations specific to the plants in each system. At the public meeting the project team held at the Honan-Allston library on March 27<sup>th</sup>, neighborhood residents were enthusiastic about the idea of having green infrastructure in their neighborhood and were willing to help maintain the systems. The project team will work with interested residents to develop a plant pallet for the bioretention systems that appeals to them, but will also be feasible for neighborhood residents and/or community groups to maintain.

As discussed in Section 3, BWSC and BPDA are providing matching funds in the form of staff time to design and implement the proposed green infrastructure systems, and CRWA is submitting an application to MassDEP to help fund our staff time and construction expenses. We are not seeking dedicated funds for project maintenance, because the primary maintenance activities involved in this project will be standard gardening practices including weeding, raking leaves, dead-heading flowers, and pruning shrubs. Instead, we plan to work with Mahoney's Garden Center, who has expressed interest in supporting the project, to teach neighbors how to maintain the bioretention systems using common yard maintenance tools.

7. Anticipated project sustainability/life span.

Green infrastructure such as bioretention systems typically outlast the roads they are designed to complement when well-designed and properly maintained. Morgan et al. (2011)<sup>1</sup> determined that the soil media in bioretention systems can absorb dissolved pollutants for as many as 95 years, so as long as the plants in the systems are well-suited to the environmental conditions of the site and unhealthy plants are pruned or replaced, the bioretention systems will last for decades.

8. Anticipated regulatory review and necessary permits.

A general construction permit will be required for this project. CRWA has worked with the City of Boston to permit several other green infrastructure projects in the past. Because BPWD and BWSC are partners on the project, they will already be aware of construction impacts to roads and drainage in the neighborhood.

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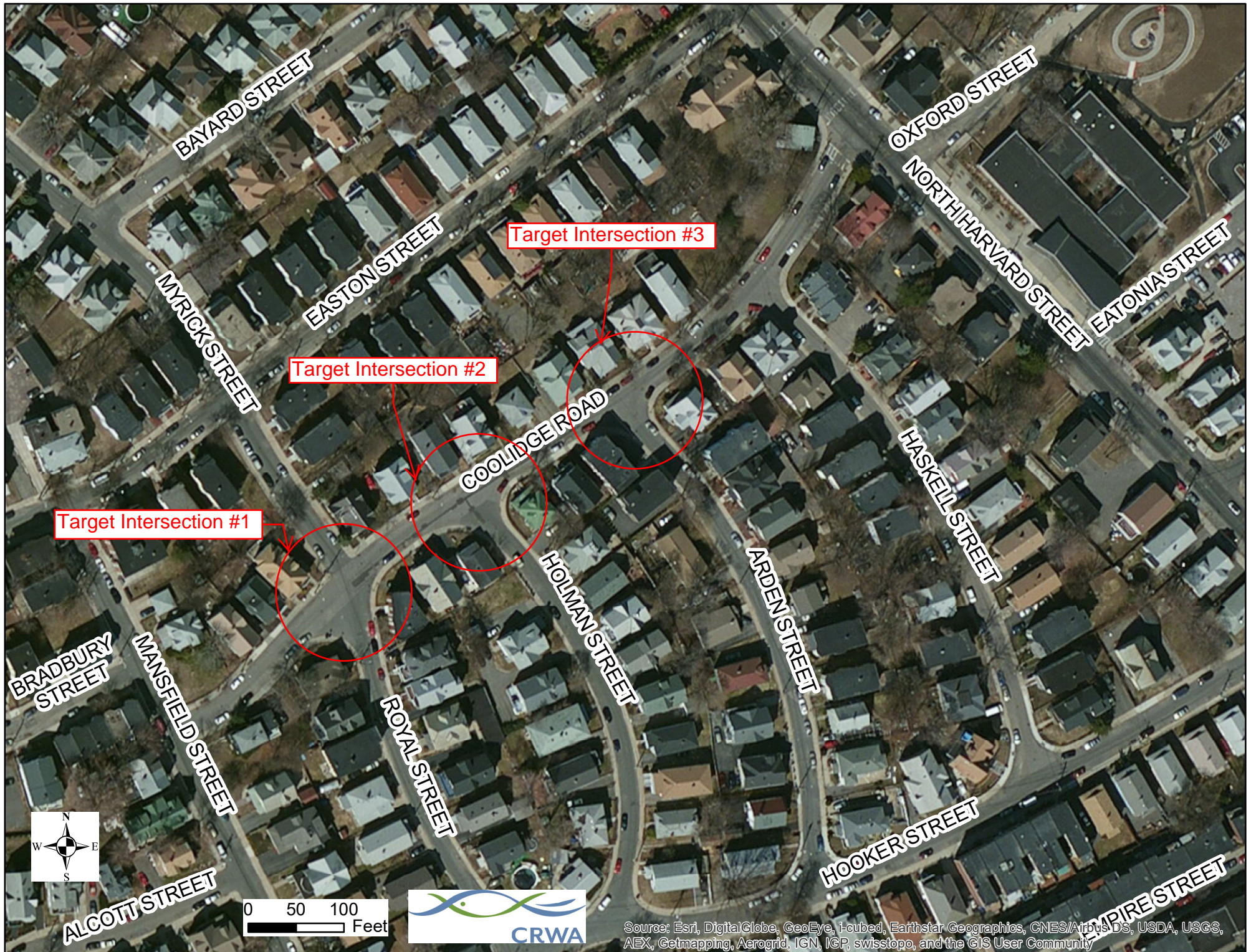
<sup>1</sup> Morgan, J.G., K.A. Paus, R.M. Hozalski and J.S. Gulliver. (2011). Sorption and Release of Dissolved Pollutants Via Bioretention Media. SAFL Project Report No. 559, September 2011. <http://purl.umn.edu/116560>.



	319 Grant	Harvard-Allston Public Realm Flex Fund	Other Match	Other Match Source
Stormwater Treatment System Design				
CRWA	\$ -	\$ 4,500.00	\$ 2,000.00	CRWA Staff Time
BPDA	\$ -	\$ -	\$ 1,000.00	BPDA Staff Time
BWSC	\$ -	\$ -	\$ 30,000.00	BWSC Employee and Contractor Time
Contractor	\$ 5,000.00	\$ 17,500.00	\$ -	
Stormwater Treatment System Construction				
CRWA	\$ -	\$ -	\$ -	
BPDA	\$ -	\$ -	\$ -	
BWSC	\$ -	\$ -	\$ -	
Contractor	\$ 150,000.00	\$ 40,000.00	\$ -	
Education and Outreach				
CRWA	\$ 15,000.00	\$ 5,000.00	\$ 2,500.00	EPA Healthy Communitites Grant (requested)
BPDA	\$ -	\$ -	\$ 3,000.00	BPDA Staff Time
BWSC	\$ -	\$ -	\$ -	
Contractor	\$ 3,000.00	\$ 2,000.00	\$ -	
Monitoring				
CRWA	\$ -	\$ 3,500.00	\$ -	
BPDA	\$ -	\$ -	\$ -	
BWSC	\$ -	\$ -	\$ -	
Contractor	\$ -	\$ -	\$ -	
Maintenance				
CRWA	\$ 4,000.00	\$ -	\$ -	
BPDA	\$ -	\$ -	\$ 1,000.00	BPDA Staff Time
BWSC	\$ -	\$ -	\$ 5,000.00	BWSC Staff Time
Contractor	\$ 25,000.00	\$ 4,500.00	\$ -	
Grant Management				
CRWA	\$ 8,000.00	\$ 3,000.00	\$ -	
BPDA	\$ -	\$ -	\$ -	
BWSC	\$ -	\$ -	\$ 2,000.00	BWSC Staff Time
Contractor	\$ -	\$ -	\$ -	
Total	\$ 210,000.00	\$ 80,000.00	\$ 46,500.00	



# Attachment B. Map of Proposed Project Area.







Existing Conditions: Intersection of Coolidge Road and Holman Street





Proposed Conditions: Intersection of Coolidge Road and Holman Street



Existing Conditions: Intersection of Coolidge Road and Royal Street





Proposed Conditions: Intersection of Coolidge Road and Royal Street





Existing Conditions: Intersection of Coolidge Road and Arden Street



May 22, 2017

Mr. Gerald Autler  
Senior Project Manager  
Boston Planning and Development Agency  
One City Hall Square  
9<sup>th</sup> Floor  
Boston, MA 02108

RE: Harvard-Allston Public Realm Flexible Fund 2017 Grant Cycle  
City of Boston – Coolidge Road Green Infrastructure Design and Implementation Project

Dear Mr. Autler:

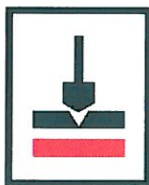
The City of Boston Public Works Department is pleased to support the Charles River Watershed Association's (CRWA) submission in response to the above referenced solicitation. We have been actively involved in the development of a sub-watershed restoration plan for North Allston, and we feel that this project will be a strategic and impactful first step in the realization of this plan. By way of this letter, we commit to help facilitate the design and construction of green infrastructure elements for the Coolidge Road stormwater retrofit project on behalf of the landowner, the City of Boston, following execution of a maintenance agreement, which CRWA has agreed to arrange.

The Coolidge Road stormwater retrofit project will complement CRWA's previous green infrastructure projects with the City of Boston, including a porous alley in Boston's South End, the retrofit of Peabody Square, and a green street on Everett Street in Allston, by demonstrating the use of attractive bioretention systems in a residential neighborhood. The project will also serve as an example for Boston residents to gain a better understanding of the various benefits of green infrastructure, such as traffic calming, reduced urban heat island effects, and increased public green space. We are eager to have this project move forward and are in support of this grant proposal.

Sincerely,

Chris Osgood  
Chief of Streets, Transportation, and Sanitation

Cc: Zach Wassmouth, BPWD  
Kate England, BWSC  
Elisabeth Cianciola, CRWA



**PUBLIC WORKS DEPARTMENT**

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**CHRIS OSGOOD** • Chief of Streets, Transportation, and Sanitation

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**Boston Water and  
Sewer Commission**

980 Harrison Avenue  
Boston, MA 02119-2540  
617-989-7000

May 31, 2017

Mr. Gerald Autler  
Senior Project Manager  
Boston Planning and Development Agency  
One City Hall Square, 9<sup>th</sup> Floor  
Boston, MA 02108

RE: Harvard-Allston Public Realm Flexible Fund 2017 Grant Cycle  
City of Boston - Coolidge Road Green Infrastructure Design and Implementation Project

Dear Mr. Autler:

Boston Water and Sewer Commission ("Commission") is submitting the following letter in support of the above referenced Charles River Watershed Association's ("CRWA") grant proposal for the 2017 grant cycle. The Commission, in collaboration with the rest of the North Allston project team, has been actively involved in the development of a sub-watershed restoration plan for North Allston. The Coolidge Road stormwater retrofit project will be a strategic and impactful first step in the realization of this plan. In support of this project, the Commission will provide design services for the green infrastructure elements of the Coolidge Road project. The Commission will also help to facilitate construction, following execution of a maintenance agreement, which CRWA has agreed to arrange.

The Coolidge Road stormwater retrofit project will further the Commission's goal of reducing phosphorus loading to the Charles River. Furthermore, the project complements previous green infrastructure projects in the City of Boston by demonstrating the use of bioretention systems in a residential neighborhood. The project will also serve as an example for Boston residents to gain a better understanding of the benefits of green infrastructure and green stormwater management, including traffic calming, reduced urban heat island effects, and increased public green space.

The Commission supports CRWA's proposal and we look forward to continuing this work.

Yours Truly,

John Sullivan, P.E.  
Chief Engineer and Operations Officer

Cc: Zach Wassmouth, BPWD  
Kate England, BWSC  
Elisabeth Cianciola, CRWA