

## “Blue Development” Goals for Harvard’s Science Complex in North Allston

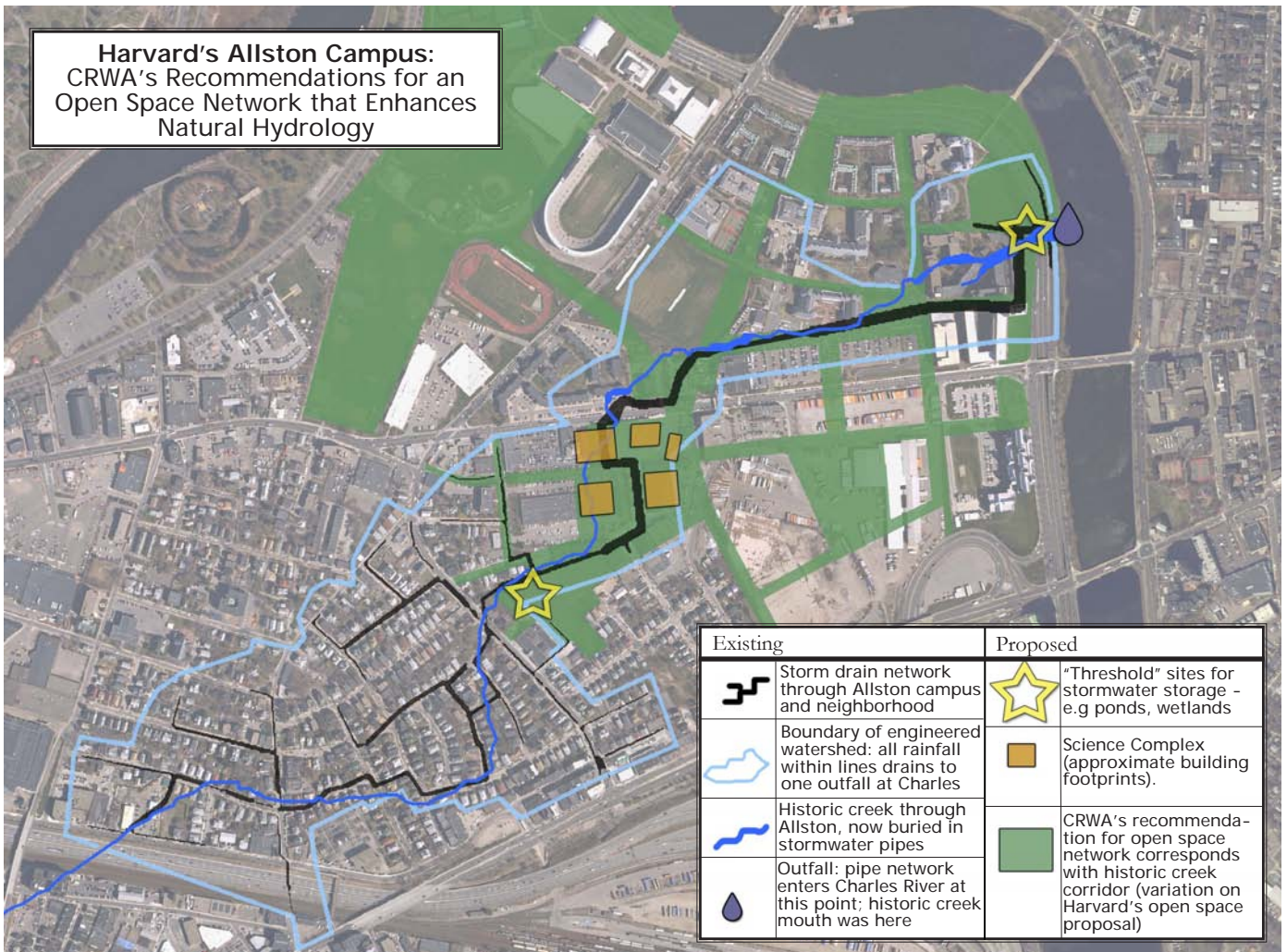
Charles River Watershed Association encourages Harvard to become a model of campus sustainability through its new institutional developments in Allston. From the Charles River’s perspective, campus sustainability means going beyond “green” development to “blue” development, incorporating designs for the built environment that engage with every stage of the water cycle.

Harvard can design a campus that functions like nature: collecting rainfall, filtering it through plants and soils, storing it for use in dry seasons, and releasing it, clean and cool, through small streams that flow to the Charles River. Streams also function as natural green corridors for people and wildlife, connecting the neighborhood, the campus and the River. Today’s technology and design allow urban environments to be energy efficient, water sensitive, and attractive while still meeting the needs of development. Harvard can do this at all levels : at the **building scale**; the **site scale**; and the **neighborhood scale**.



IMAGE:Sustainable Streetscape Proposal for Travis Street: rain gardens, street trees, and porous parking

**Harvard’s Allston Campus:**  
CRWA’s Recommendations for an  
Open Space Network that Enhances  
Natural Hydrology



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# CRWA's recommendations for Harvard's proposed Science Complex

## Site Scale Opportunities

### Mimic the water cycle by design.\*

- ~ Infiltrate flows from impervious surfaces
- ~ Reduce total annual runoff volume from the site by at least 50% over existing conditions
- ~ Maximize evapotranspiration (minimum of 20% vegetative cover overall)

Use **“green” infrastructure** as primary stormwater collection system; emphasizing surface level gravel, soil, and vegetation based treatment and infiltration systems over in-ground structures.

**Connect water and open space** in the Science Complex to larger water and open space network at neighborhood scale. **Preserve corridor for possible “daylighting”** of the historic tributary to the Charles, currently piped beneath the Science Complex Site.

Make landscape design features such as green roofs, treatment wetlands, bioretention areas, and transportation-related stormwater storage and treatment systems a **visible part of the site’s landscape design.**

**Treat all stormwater discharges** to meet water quality standards before water leaves site.

**Vegetate the site** with deep-rooted native and/or drought-tolerant vegetation and, use only organic fertilizers and pesticides, if necessary.

**Use soil amendments** (i.e., compost and topsoil) and tilling to improve existing soil structure and infiltration and remove soils with poor infiltration qualities.

**Use non-potable water for irrigation** and use groundwater displaced from underground structures as a part of a site and neighborhood scale water management system, instead of discharging to piped infrastructure.

### \* Rainfall and the Water Cycle

Conditions in natural watersheds, before urbanization:

- ~10% of annual rainfall is discharged from site as runoff
- ~40% goes to the atmosphere through evapotranspiration
- ~50% is recharged to shallow or deep storage

IMAGE: Vision of Daylighted Creek and Trail System for Harvard Property Adjacent to Honan Allston Public Library



## Building Scale Opportunities

Design Buildings with **green roofs** to absorb stormwater.

**Re-use water** wherever possible; “double-plumb” buildings to allow for reuse.

Design **water supply systems** with zone controls, pressure variability, networked water control systems, automatic shut-offs, etc.

Use water efficient **cooling and heating** methods.

Install flow monitors on sewers, **track wastewater flows**, and identify wastewater that can be eliminated from the sanitary sewer network.

## Neighborhood & Educational Opportunities

Improve neighborhood public realm by **creating new public open space and “Green Streets”** to alleviate flooding, improve air quality and provide aesthetic and public health benefits.

Integrate water features with public open space through providing interpretive signage for Allston Creek corridor and stormwater wetland garden as a part of a **greenway connecting the neighborhood to the Charles River.**

Establish an **information and educational** program including reporting monthly water use to laboratory directors and facilities managers as well as **employee incentives** and award programs.

IMAGE: Vision for Constructed Stormwater Wetland Garden between Storrow Drive and Business School Campus

