Restoring and Naturalizing Cheesecake Brook

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Information Session
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Charles River Watershed Association

- Founded 1965
- One of the countries oldest watershed associations
- Interdisciplinary staff
- Work closely with EPA, state agencies, and 35 watershed municipalities
- Program Areas
  - River Science
  - Blue Cities Initiative
  - Climate Change Adaptation
  - Law, Advocacy and Policy
Blue Cities Initiative

- Restoring natural hydrology to urban environments through green infrastructure

**Soft Ground, Vegetation**

- 40% evapotranspiration
- 10% runoff
- 25% shallow infiltration
- Natural Ground Cover

**Hard Ground, No Vegetation**

- 30% evapotranspiration
- 55% runoff
- 10% shallow infiltration
- 5% deep infiltration
- 75%-100% Impervious Cover
Example: Fort Point Channel

Option 1: Restore Wetland
• Convert Widett Circle property into wetland
• Restore water quality and habitat
• 300-acre wetland could store runoff during a 10’’ storm
• Create new open space and recreation opportunities

Option 2: Daylight Bass River
• Integrate culvert daylights into any development projects
• Improve water quality and habitat
• Protect surrounding area against 1-year storm events
• Create new open space

Conceptual Drawing of Fort Point Channel Wetland
Rendering of Bass River Daylighting
Project Background

Background Information:
- Cheesecake Brook impaired for bacteria, phosphorus, DO, algae
- Stormwater Infrastructure Improvement Plan lists stream improvements to Cheesecake Brook as priority project
- Cheesecake Brook Greenway Master Plan Report developed in 2009

Project Goals:
- Build on previous plans for Cheesecake Brook area
- Engage community in design process
- Develop ideas recommendations for naturalizing Cheesecake Brook for habitat and flood control benefit
- Incorporate Green Infrastructure recommendations into design

Project Objective
Develop a conceptual design for the restoration and naturalization of Cheesecake Brook.
Project Background

1. Monitoring & Data Collection
   • Compile & analyze water quality and habitat data for Cheesecake Brook
   • Conduct stream survey of accessible portions of Brook

2. Subwatershed Analysis
   • Review previous design documents & City reports and plans
   • GIS mapping of land use, stormwater infrastructure, impervious cover, open spaces, etc.
   • Review restoration project from Fuller Brook, Wellesley
   • Produce existing conditions memo

3. Community Design Charettes
   • Engage with local community groups and stakeholders
   • Hold a public meeting/charette
   • Use an online survey
   • Hold drop in/ open house input session

4. Conceptual Design
   • Hire design and engineering firm to produce conceptual design for downstream section of Cheesecake Brook
Project Background

The Project Will...
• Envision a holistic approach to restoring Cheesecake Brook
• Involve stakeholder engagement
• Build on previous plans
• Suggest placement of green infrastructure
• Address stormwater flooding issues

The Project Will Not...
• Be a City-led process
• Address basement flooding issues
### Habitat Assessments

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Bottom Cover</td>
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<td>11</td>
<td>13</td>
<td>15</td>
<td>7</td>
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<tr>
<td>Pool Bottom</td>
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<td>14</td>
<td>8</td>
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<td>18</td>
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<td>9</td>
<td>10</td>
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<tr>
<td>Riparian Zone (left)</td>
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<td>2</td>
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<td>Riparian Zone (right)</td>
<td>0</td>
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<td>2</td>
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<tr>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>1</td>
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<td>Bank Vegetation (right)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>5</td>
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<tr>
<td><strong>Total (out of 200)</strong></td>
<td><strong>53</strong></td>
<td><strong>78</strong></td>
<td><strong>85</strong></td>
<td><strong>103</strong></td>
<td><strong>36</strong></td>
</tr>
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</table>

### Take-Aways:

- Poor scores for channel alteration & sinuosity
  - Straighter & altered channels allow for less habitat variability and lower water quality
- Poor scores for variety & amount of vegetation on banks
  - Less habitat area & variety of habitat for critters
Subwatershed Analysis - History

1892 map of “Areas Requiring Drainage” with Cheesecake Brook highlighted
Subwatershed Analysis - History

Cheese Cake Brook Boulevard, or Albemarle Road
Subwatershed Analysis – Stormwater Network

Newton Stormwater Subbasins

Cheesecake Brook Subwatershed

Cheesecake Brook
Subwatershed Analysis – Land use
Subwatershed Analysis – Impervious Cover

41% impervious
• 2023 total acres in subwatershed
• 833 acres of impervious
Community Feedback – What Do You Think?

On the PINK sticky...
• What is one PROBLEM you’ve experienced with Cheesecake Brook?

On the ORANGE sticky...
• What is one IMPROVEMENT you’d like to see for Cheesecake Brook?
On the PINK sticky...

• What is one PROBLEM you’ve experienced with Cheesecake Brook?
On the ORANGE sticky...

- What is one IMPROVEMENT you’d like to see for Cheesecake Brook?
Next Steps

• Community Design Charette
• Survey
• Drop In/Drop Out Session
• Hire Consultant for Conceptual Design

To stay informed with the project:
• Sign up for our newsletter at www.crwa.org
• Follow us on Facebook @charlesriver or Twitter @charlesriver
• Contact lkumpf@crwa.org with any questions