Brookline Reservoir Park
Project Goals and Priorities

• Maintain the park’s character
• Maximize accessibility
• Address infrastructure issues—walking path, entries, drainage
• Enhance plantings—removal of invasives, new plantings, and an approach to vegetation on the dam
• Improve stormwater management
• Repair masonry
Baseline Improvements

- Universal access
- Masonry repair
- Turf and planting renovation
- Solutions for MA Office of Dam Safety
- Renovation/repair of walking paths
- Drainage and utility improvements
- Removal of invasives

JANUARY 9, 2018

BROOKLINE RESERVOIR PARK
State Requirements for Dam Safety Compliance

ODS Policy on Trees on Dams

- Dam embankments must be maintained free of trees and brush
- No trees and brush within 20 feet of dam or appurtenant structures
- Healthy uniform cover of grass is recommended
- Permit required if vegetation to be removed is greater than 4 inches in diameter

2014 Inspection

- Dam is generally well maintained
- Observed deficiencies

Regulated by MassDCR Office of Dam Safety (ODS)

"Intermediate" Sized Structure
"High" Hazard Classifications
PRELIMINARY DESIGN ALTERNATIVES
Masonry Evaluation & Potential Repair

- Reset capstones on retaining wall along Route 9
- Repair needed at basin armature

Estimated Cost for Masonry:
$458,000
Gate House Improvements

Estimated Cost for Gatehouse: $250,000
Stonedust Path & Platform at Gatehouse

Estimated Cost for Platform and Railing: $100,000
Lee Street / Dudley Way Entrance

Estimated Cost for Lee/Dudley Way Entrance: $56,000
Dudley Way Entrance

Existing Conditions

Estimated Cost for Dudley Way Entrance: $33,000

Proposed Alternative
Dudley Street Entrance

Existing Conditions

Estimated Cost for Dudley Street Entrance: $37,000

Base Improvements

Estimated Cost for Dudley Street Entrance: $37,000
Entrance at End of Dudley Street

Existing Conditions

Estimated Cost at the End of Dudley Street: $7,600

Base Improvements

JANUARY 9, 2018
Walnut Street Entrance

Existing Conditions

Estimated Cost for Walnut Street Entrance:
$ 1,500

Base Improvements

REFINISH EXISTING CONCRETE STAIR
REPAINT HANDRAILS
**Warren Street Entrance**

- **Base:** $133,000
- **1st Option:** ADD $29,000
- **2nd Option (Max):** ADD $244,000
- **COMBO:** ADD $40,500
- **3rd Option (Min):** SAVE $112,500

*January 9, 2018*  
*Brookline Reservoir Park*
Warren Street Entrance
Stormwater Management Goals

- Increase infiltration → decrease standing water
- Decrease impervious surfaces
- Look at providing some interpretation
Stormwater Management Goals

- Increase Infiltration: bioretention areas
Stormwater Management Goals

• Increase Infiltration: bioretention areas
Stormwater Management Goals

• Increase Infiltration
  o Swales and dry wells
  o Reduce impervious surfaces
Planting Goals

• Address ODS requirements
• Augment Cherry trees
• Remove failing trees
• Plant new trees for ‘arboretum’ character
• Remove invasives and plant new understory plants
• Revitalize troubled turf areas
• Add stands of ornamental grasses
Understanding ODS Implications

ODS POLICY:
• Remove all under-brush and trees, establish uniform cover of grass
PROPOSED RINFINED APPROACH:

- MUST - Remove all under-brush & trees under 6” cal.
- MUST - Remove trees adjacent to Gatehouse & trees in poor health
- Maintain trees – back of embankment, above water level & 6”+ caliper and healthy
- Maintain trees – along top of bank (i.e. Cherry trees)
Existing Vegetation

- Shade trees over lawn
- Wooded areas: trees with understory
- Signature Cherry trees
Diagram of Tree Removals

- Proposed Refined Approach for ODS
  - Understory removal
  - Tree removal
- Remove failing trees
- Remove invasives from wooded areas
Conditions Before New Planting

- Trees removed
- Understory removed from Dam
- Invasives removed
Proposed Planting Palette

TREES

Red Maple
Acer rubrum

Ruby Horsechestnut
Aesculus carnea

Paper Birch
Betula papyrifera

Katsura Tree
Cercidiphyllum japonicum

Redbud
Cercis canadensis

Fringetree
Chionanthus virginicus

Yellowwood
Cladrastis kentukea

Kentucky Coffeetree
Gymnocladus dioicus

Turkish Filbert
Corylus colurna
Proposed Planting Palette

TREES

Kwanzan Cherry
Prunus serrulata

Tuliptree
Liriodendron
tulipifera

Sweetgum
Liquidambar
styraciflua

Sourwood
Oxydendrum
arboreum

Carolina
Silverbell
Halesia

Scarlet Oak
Quercus coccinea

Pin Oak
Quercus palustris

Red Oak
Quercus rubra

Umbrella Pine
Sciadopitys
Proposed Planting Palette

SHRUBS AND UNDERSTORY

- Bottlebrush Buckeye
  Aesculus parvifolia

- Red Chokeberry
  Aronia arbutifolia

- Cornelian Cherry
  Cornus mas

- Gray Dogwood
  Cornus racemosa

- Redtwig Dogwood
  Cornus stolonifera

- Witchhazel
  Hamamelis x intermedia

- Inkberry
  Ilex glabra

- American Holly
  Ilex opaca
Proposed Planting Palette

SHRUBS AND UNDERSTORY

Winterberry
Ilex verticillata

Mountainlaurel
Kalmia latifolia

Spicebush
Lindera benzoin

Bayberry
Myrica pensylvanica

Low Grow Sumac
Rhus aromatica ‘Low Grow’

Mayflower Viburnum
Viburnum carlesii

Am. Cranberrybush
Viburnum opulus
Proposed Planting Palette

GRASSES

Bluestem Grass

Redtop Grass

No Mow Grass
Site Furniture, Fencing and Railings

- Proposed “Big Belly” trash/recycling
- Proposed new bike racks & signage
- Proposed drinking fountains
- Proposed additional seating
- Reinstall mile-marker
Edge Treatment along Rte. 9

Existing edge at Route 9

Extent of Ornamental Fence at Top of Slope

Base: $195,000 for 905 LF
Options for Ornamental Fence: Along Rte. 9

STEEL POSTS, PIPE RAIL WITH MESH INFILL

Century Metropolitan

$215 per linear foot
Base: $195,000

STEEL POSTS AND PICKETS

$205 per linear foot
SAVE: $9,500
### PRELIMINARY ESTIMATE & PRIORITIES

**Construction Budget in the CIP:** $2,200,000.00

<table>
<thead>
<tr>
<th>Priorities</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gatehouse</td>
<td>$250,000</td>
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<tr>
<td>Platform and Handrails</td>
<td>$100,000</td>
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<tr>
<td>Masonry</td>
<td>$457,000</td>
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<tr>
<td>SP&amp;D, Earthwork &amp; Utilities</td>
<td>$408,400</td>
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<tr>
<td>Stonedust Path</td>
<td>$97,700</td>
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<tr>
<td>Hardscape</td>
<td>$158,300</td>
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<tr>
<td>Ornamental Fence Along Route 9</td>
<td>$204,000</td>
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<tr>
<td>Site Furniture</td>
<td>$72,200</td>
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<tr>
<td>Bus Shelter</td>
<td>$20,000</td>
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<tr>
<td>Tree Planting and Seeded Areas</td>
<td>$193,100</td>
</tr>
</tbody>
</table>

**TOTAL** $1,960,700

10% Contingency $196,070

**TOTAL** $2,156,770

**Add Alternates:**
- Warren Street Entrance – COMBO (ped. entry & regrade drive) **ADD** $40,500
- Stormwater Management **ADD** $112,800
- Site Furniture – Refurbish remaining existing benches **ADD** $20,800
- Ornamental Pipe Rail at Dudley Street/Way **ADD** $168,000

**TOTAL** $2,156,770
THANK YOU!

JANUARY 9, 2018

BROOKLINE RESERVOIR PARK
Warren Street Entrance

Existing Conditions

Estimated Cost for Warren Street Entrance
Base: $133,000
1st Option: ADD $29,000
2nd Option (Max): ADD $244,000
3rd Option (minimal): SAVE $112,500
Warren Street Entrance

Existing Conditions

Proposed First Option - Pedestrian Entrance

1st Option:
ADD $29,000
Warren Street Entrance

Existing Conditions

Proposed Second Option (Full Build)

2nd Option (Max):
ADD $244,000
Warren Street Entrance

Existing Conditions

Proposed Third Option

3rd Option (Minimal):
SAVE $112,500