Phase 2 Preliminary Design, Public Meeting #3

December 15, 16, 2010

Fuller Brook Park Coordinating Committee
Wellesley Natural Resources Commission

Pressley Associates Landscape Architects
AECOM
Tree Specialists, Inc.
LEC Environmental Consultants

Agenda

INTRODUCTION

OVERALL RECOMMENDATIONS

- Vegetation Treatment
- Stream, Stream Bank
- Structures

PATH RECOMMENDATIONS

- Connections
- Segment 1: Dover Road to Grove Street
- Segment 2: Grove Street to State Street
- Segment 3: State Street to Paine Street (Hunnewell Field Area)
- Segment 4: Paine Street to Maugus Avenue (Caroline Brook)

MAINTENANCE CONSIDERATIONS

PROJECT PHASING

NEXT STEPS

Introduction

Segment 1: Dover Road to Grove Street	Segment 2: Grove Street to State Street	Segment 3: Hunnewell Fields	Segment 4: Paine Street to Maugus Avenue

Fuller Brook Segment | **Missing Link** Hunnewell Athletic Fields | **Caroline Brook Segment**

Dover Road · Cottage Street · Grove Street · Cameron Street · Brook Street · Wellesley Avenue · State Street · Paine Street · Forest Street · Caroline Street · Abbott Road · Seward Road · Maugus Avenue

Project Area

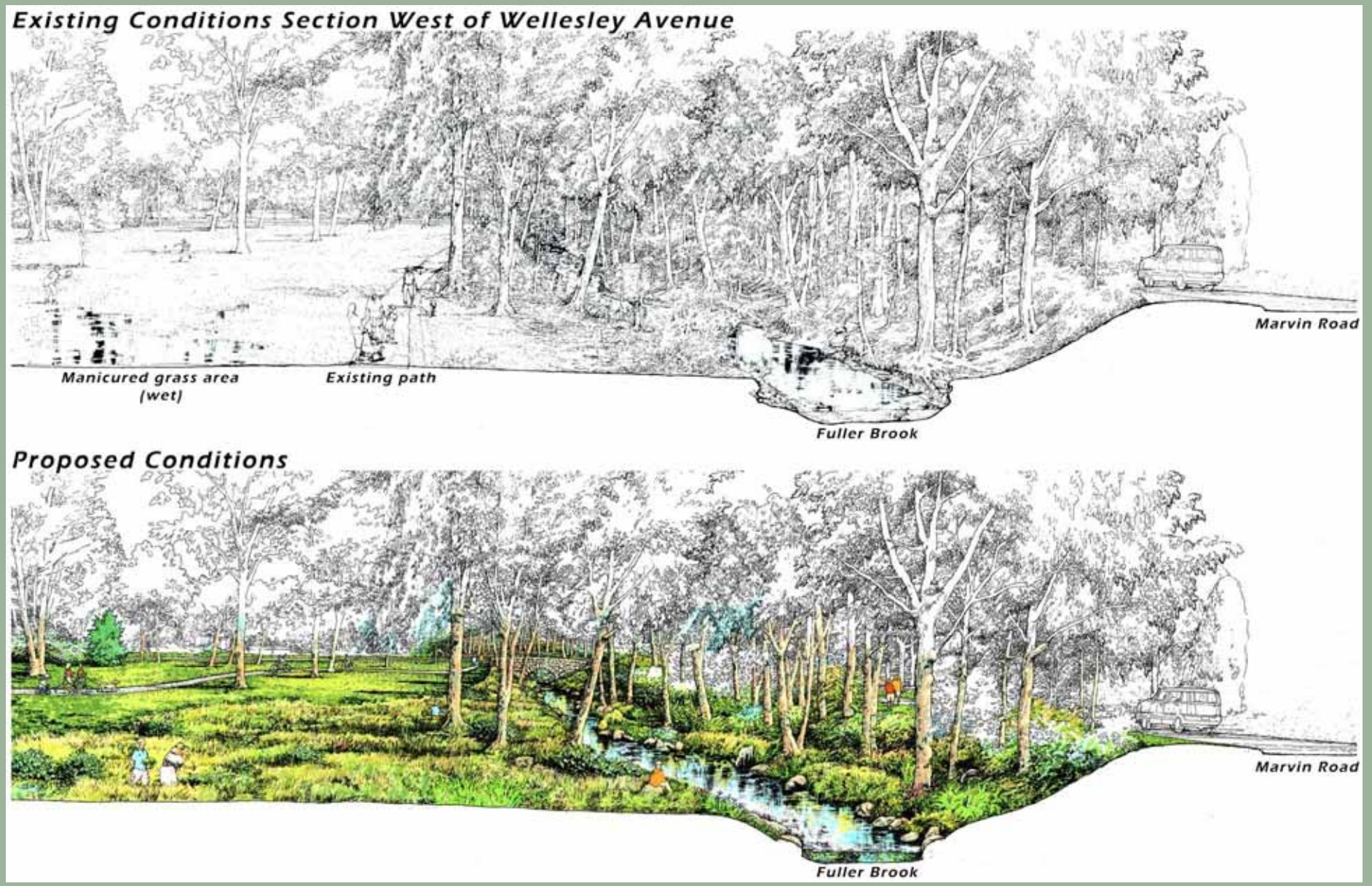
Project Goals

- The Fuller Brook Park Preservation Project will preserve and restore a vital natural, cultural, and recreational resource and significant open space that provides a vital ecological and floodplain function for the town of Wellesley.

Meeting Goals

- Present recommendations based on technical analysis and conceptual design that incorporates community input, feedback from Fuller Brook Park Coordinating Committee
- Discuss next steps
- Hear public comments on recommendations

Project Goals – Integrated Approach, Naturalistic Character



Special Considerations

Natural Resources

- Wetlands Protection Act
- Wellesley Wetlands Protection Bylaw
- Wellesley Integrated Pest Management Policy

Cultural Resources

- Secretary of the Interior's Standards for the Treatment of Historic Properties
- Massachusetts Historical Commission review

Stormwater and Drainage

- DPW Stormwater Master Plan Update

  Concerns about flooding or existing infrastructure should be directed to the DPW at (781) 235 7600

Universal Access

- USFS Recreational Trail Accessibility Standards
- Americans with Disabilities Act (ADA)

Fuller Brook Park Preservation Project Design Criteria

USE

- Encourage passive recreation including universal access
- Connect the Fuller Brook and Caroline Brook paths
- Reduce health/safety risks and threats to park features
- Community input

LANDSCAPE CHARACTER

- Enhance naturalistic character
- Convey a single park resource

RESOURCE PRESERVATION

- Preserve cultural landscape and historic resources
- Preserve natural resources

FUNCTION

- Improve storm water capacity and drainage
- Design for sustainability and maintainability
- Provide for phased implementation
- Ensure cost benefit

The complete text of the design criteria and management goals are available on the Fuller Brook Park Website.

Feedback from Public Meeting #2

General Public Comments

- Relationship between path and brook is important
- Most desired a soft-surface, permeable path
- Narrower width is preferred
- Stable shoulder was well-received
- Applicability of universal access standards
- Restore historic bridges
- Questions about water quality, public education
- Wet meadows are desirable
- Path inside the football field is not desirable
- Interest in establishing Friends of Fuller Brook Park
- Questions about long term maintenance
- Discussion about control of poison ivy
- Some areas noted as “invasive” vegetation contain large shade trees
- Meadows are desirable

GENERAL RECOMMENDATIONS

Fuller Brook Park is an Ecological System

Integrated Approach

- Park-wide issues are inter-related
- Ecological approach to developing options
- Target solutions that satisfy/address multiple issues
- Long-term maintenance will be needed to sustain improved conditions

GENERAL RECOMMENDATIONS: Trees

Goals:

- Manage tree-related risk for visitors, abutters, and important park features
- Maintain and perpetuate a healthy tree collection integral to the character of Fuller Brook Park

Current Issues:

- High-risk trees
- Trees posing threats to resources
- Tree stabilization needs for significant specimens

GENERAL RECOMMENDATIONS: Trees

RECOMMENDATIONS: Pruning & Bracing (Cabling)

Priority 1

- High risk trees = defect + high value target + high level of occupancy
- Includes trees that are damaging important infrastructure – bridges, drainage, etc.
- Continue an active risk reduction program through monitoring, treatment, and documentation

Priority 2

- Medium risk trees = defects + high value target + medium level of occupancy
- Stabilization work on significant specimens within the main park corridor
- Ongoing planting program to perpetuate and improve the quality of the overstory – native framework trees

DEFERRED

Priority 3

- Tree stabilization work on low risk trees in low use perimeter areas

GENERAL RECOMMENDATIONS: Trees

RECOMMENDATIONS: Selective Removal

Priority 1

- High risk trees = defect + high value target + high level of occupancy
- Includes trees that are damaging important infrastructure – bridges, drainage, etc.

Priority 2

- Medium risk trees = defects + high value target + medium level of occupancy

DEFERRED

Priority 3

- Tree removal work on low risk trees in low use perimeter areas

GENERAL RECOMMENDATIONS: Invasive Species Management

Norway Maple saplings, Bittersweet, Knotweed, and 10 other invasive species.

Goal:

- Preserve the integrity of the cultural landscape and historic resources
- Protect, preserve, and enhance natural resources including aquatic wetland and upland habitats
- Provide improvements that are sustainable and maintainable (managed not total eradication)

Current Issues:

- Unmanaged invasive growth on stream bank creates dense shade and root competition, eliminating herbaceous layer and leaving bare soil conditions prone to run-off and erosion
- Vines are growing into mature trees and girdling trunks and branches
- Outcompetes with native plants
- Reduces resources available for wildlife
- Obstructs views and sense of space within park corridor

GENERAL RECOMMENDATIONS: Invasive Species Management

RECOMMENDATIONS: Mowing, cutting, selective treatment to reduce threat

Priority 1:

- Areas of invasive growth compromising the stream bank
- Areas where invasives are rapidly colonizing large areas to the exclusion of native understory growth along the water course

Priority 2:

- Invasives outcompeting naturalized areas long the park's perimeter to the exclusion of native understory growth
- Areas where invasives are encroaching into open lawn areas

To be determined in Phase 3:

- Treatment of invasives encroaching on or eliminating important views

GENERAL RECOMMENDATIONS: Planting

Goal:

- Maintain and enhance the scenic and naturalistic character of Fuller Brook Park
- Protect, preserve, and enhance natural resources including aquatic wetland and upland habitats
- Enhance floodplain capacity
- Mitigate clearing of invasives, particularly along park boundary
- Provide enhancements that support Town maintenance efforts

Current Issues:

- Significant concentrations of invasive vegetation will be managed through mowing, cutting
- Areas where topography and/or poor drainage result in an accumulation of water
- Some existing vegetation results in barren understory, hastening erosion along streambank and bridges

Norway maple saplings, Segment 4

Wet meadow planting

GENERAL RECOMMENDATIONS: Planting

Recommendations:

- Introduce buffer planting – trees, shrubs, herbaceous plans – where needed
- Introduce shrub planting in key areas, particularly bridge abutments
- Infill areas where selective Norway Maples and other invasive trees are removed, particularly along park boundary
- Re-vegetate the stream bank
- Establish wet meadows in seasonally flooded areas
- Repair lawn areas where needed
- Introduce meadows
- Use a palette of native & sustainable trees, shrubs and herbaceous plants
- Detailed planting, plant selection to be developed in Phase 3

GENERAL RECOMMENDATIONS: Infill Planting

BEFORE view showing eroded path and invasive Norway Maple saplings

AFTER view showing naturalistic infill planting using native species

GENERAL RECOMMENDATIONS: Tree & Shrub Sampling

Recommend native plants that are sustainable, ecologically appropriate, pest resistant, and aesthetically appropriate to Fuller Brook Park

Trees:

- Maple (red, sugar)
- Birch (yellow, sweet, gray)
- White Pine
- Black Gum
- Quaking Aspen
- Oak (white, swamp white, red)
- Hickory

Understory and Shrubs:

- Shadblow, Serviceberry
- Dogwood
- American hazelnut
- Witchhazel
- Willow (low-growing, e.g banker's dwarf)
- Viburnum


Hickory


Serviceberry


Dogwood


Maple


Witchhazel

GENERAL RECOMMENDATIONS: Stream Course and Bank

Goal:

- Enhance floodplain function of Fuller Brook and Caroline Brook
- Enhance the naturalistic character of the park
- Repair deteriorated conditions
- Improve the sustainability of the water course

Current Issues:

- Existing curbing in Segment 1 is largely deteriorated and no longer serves intended purpose and may be impeding water flow
- Concrete material detracts from natural park character and stream habitat
- Areas throughout the park with significant bank erosion
- Significant sediment deposition in Caroline Brook, Segment 4

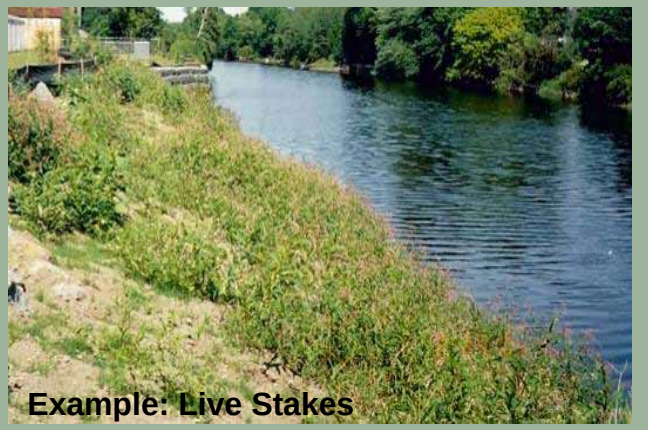
GENERAL RECOMMENDATIONS: Stream Course and Bank

Recommendations:

- Remove all concrete curbing from Segment 1, re-shape channel bed
- Stabilize stream banks with a combination of naturalistic boulder toe and fiber coir toe
    - All of Segment 1, where needed in Segment 2, 4
- Revegetate banks with live stakes and/or naturalistic planting of low shrubs and herbaceous material
- Dredge sections of Fuller Brook and all daylighted area of Caroline Brook, re-shape channel bed
- Fish ladder at Grove Street is not recommended

Follow-up Work Needed:

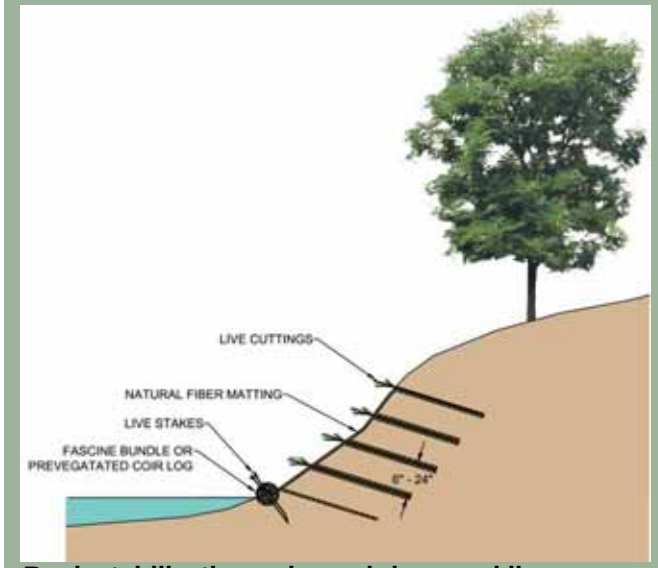
- Studies to assess water flow, inundation, velocity, etc.
- Determine source of sedimentation in Segment 4


Example: Live Stakes

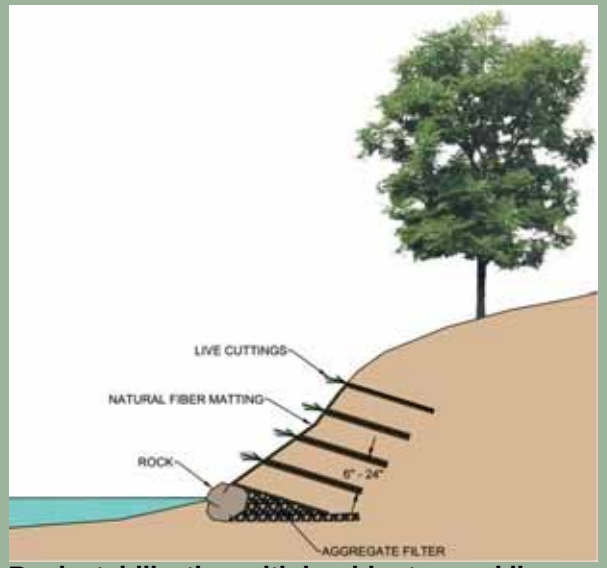

Example: Coir Logs

GENERAL RECOMMENDATIONS: Stream Course and Bank

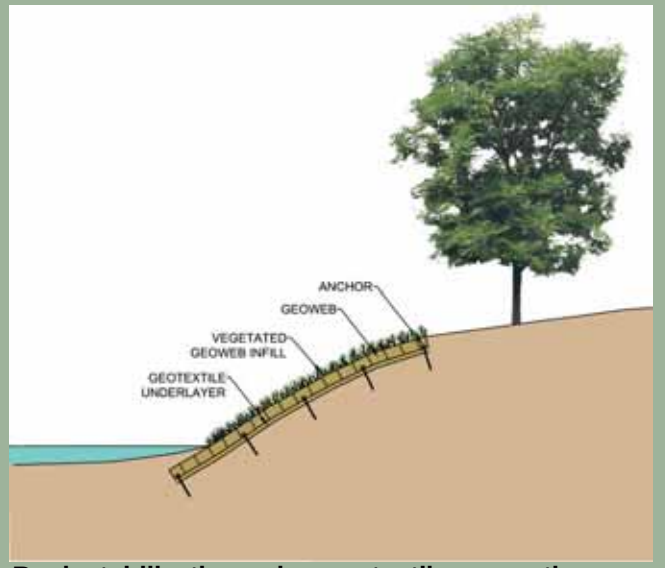
Example: Constructed bench for enhanced floodplain with natural boulder toe



Bank stabilization using coir logs and live stakes



Bank stabilization with boulder toe and live stakes



Bank stabilization using geotextile on gentle slope

GENERAL RECOMMENDATIONS: Stream Bank Stabilization

BEFORE view showing deteriorated curb, undermined bank

AFTER view showing removal of curb, naturalized stream channel, combination of boulder and coir log toe, bank stabilization using live stakes + planting

GENERAL RECOMMENDATIONS: Stream Structures

Current Issues:

- Path and road runoff has eroded soil around abutments
- Woody vegetation is encroaching upon abutments and wingwalls
- Some structural deterioration evident, but nothing that impedes flow

Recommendations:

- Repair historic structures (Cameron Street Bridge, Brook Street Bridge, State Street Bridge, Forest Street Bridge)
- Remove vegetative threats
- Stabilize stream bank to prevent erosion around structures
- Grove Street Flume to remain

Historic bridge with vegetative threats

Grove Street Flume

GENERAL RECOMMENDATIONS: Path

Considerations

- Connections
- Width
- Surface Material
- Alignment

POTENTIAL FUTURE PATH CONNECTIONS

Strengthen connections to adjacent or nearby open space and destinations:

Guernsey Path

Dana Hall School

Wellesley Square, Commuter Rail

Hunnewell School

Library

Town Hall

Simons Park

Washington Street

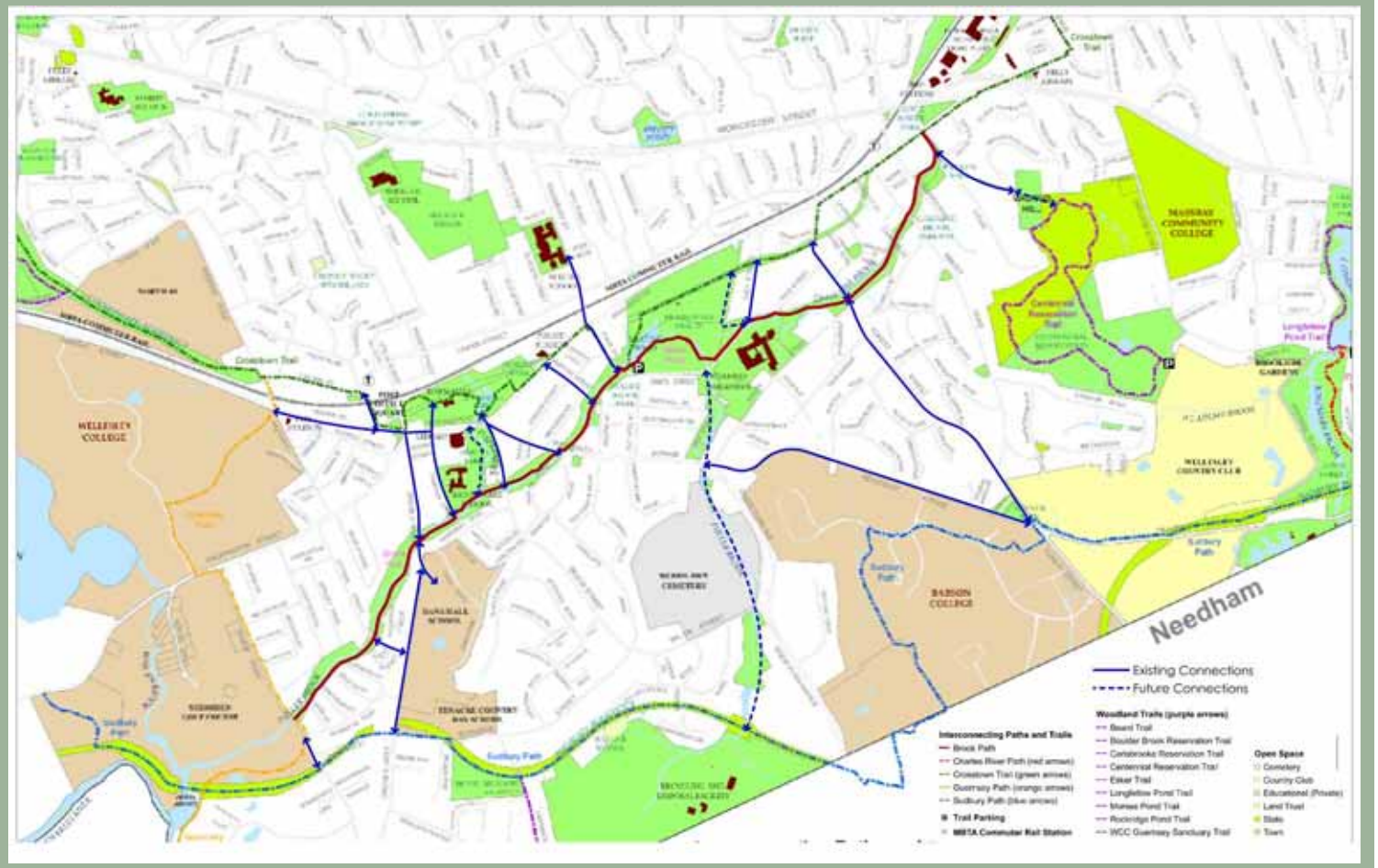
High School

Seaver Street

Crosstown Path

Hunnewell Fields

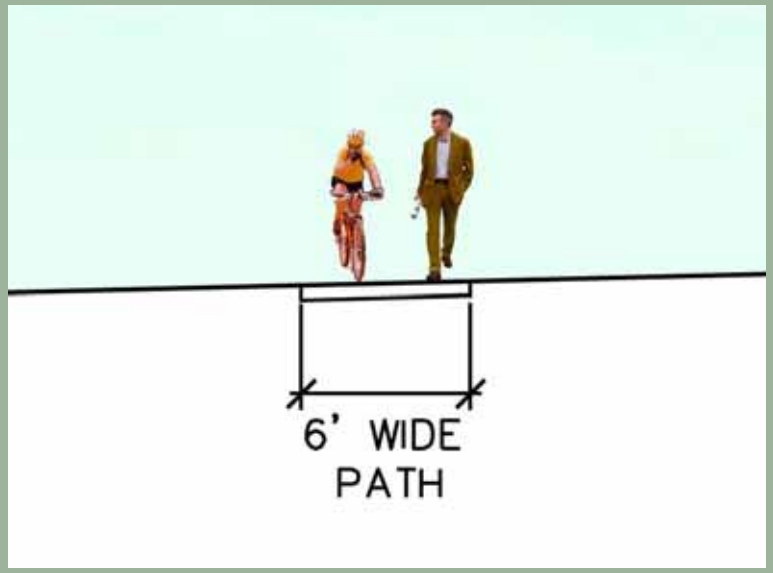
Centennial Reservation



GENERAL RECOMMENDATIONS: Path

Overall Design

- Retain the general alignment and character of the path
- Narrower path width (6')
- Minor alignment and grade adjustments to achieve 5% maximum slope
- Permeable stabilized soft surface throughout, except in areas subject to continued flooding that may require bituminous concrete or other treatment
- Bituminous concrete aprons at street connections
- Structural soil + grass along shoulders
- Re-located path only in areas where flooding and site conditions precludes a viable alternative
- Recommend installing a demonstration section in spring 2011



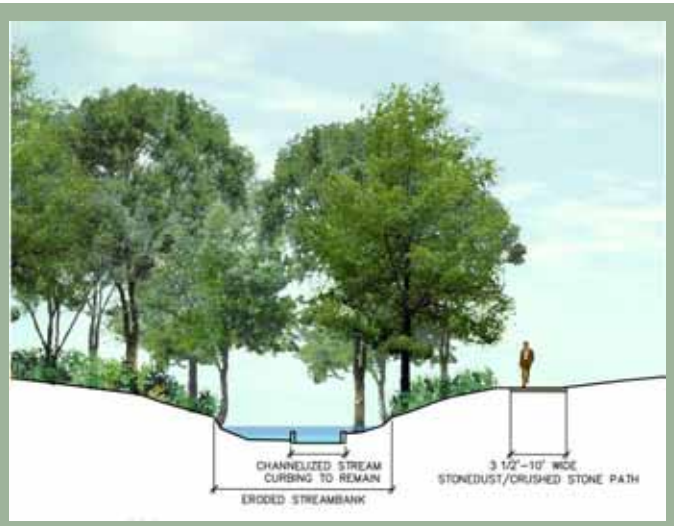
Example: Stabilized stone dust path, Charles River Reservation

SPECIFIC RECOMMENDATIONS: Segment 1 Path

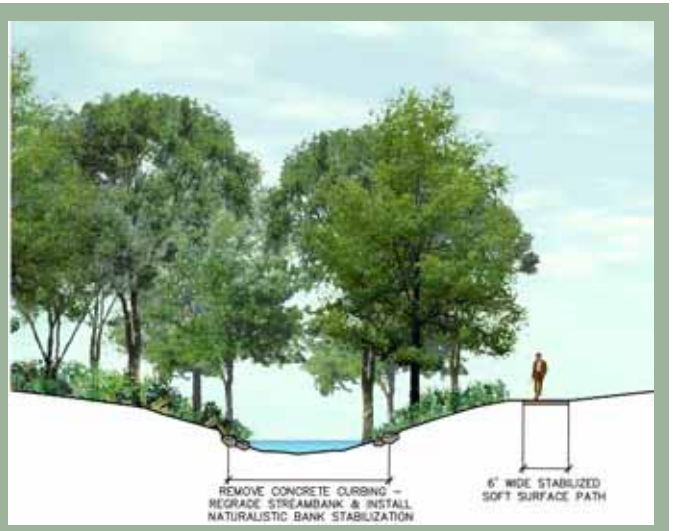
Segment 1 - Dover Road to Grove Street

Recommendations:

- Modified from Options 2 & 3 (Public Meeting #2)
- Slight alignment adjustments at Dover Road bridge, Grove Street Bridge, bank erosion areas
- 6’ stabilized soft surface
- Grass shoulders with structural soil



Existing



Proposed

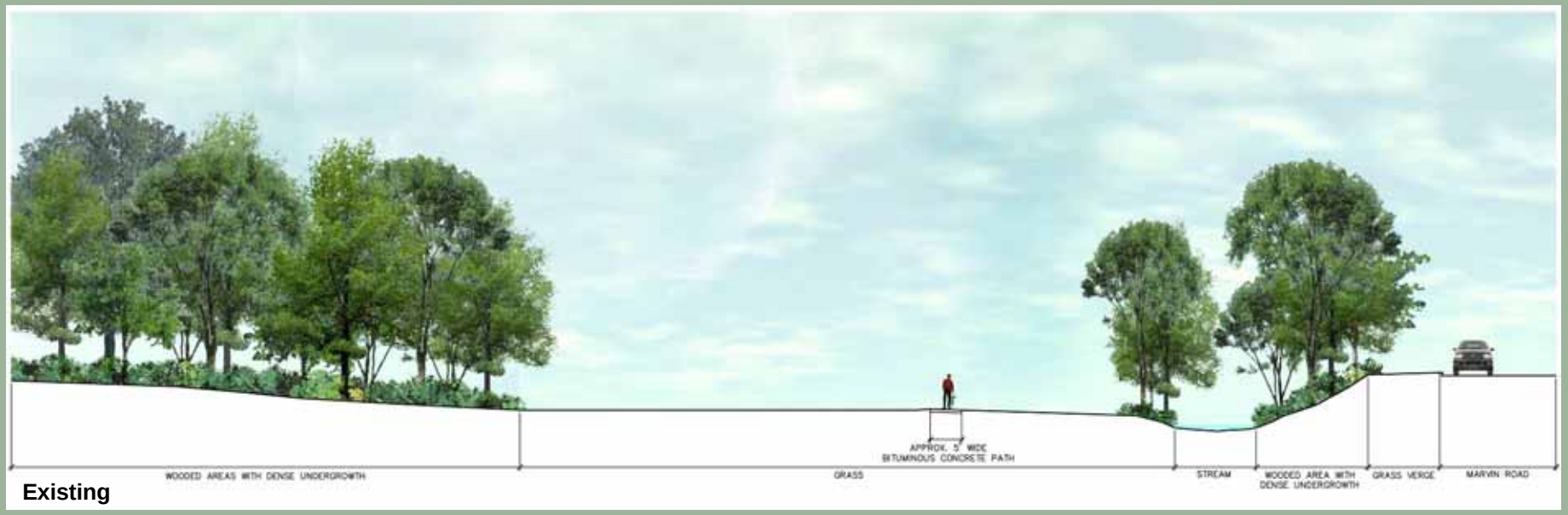
SPECIFIC RECOMMENDATIONS: Segment 2 Path

Segment 2 - Grove Street to State Street

Recommendations:

- Modified from Option 2 (Public Meeting #2)
- 6’ stabilized soft surface path (bituminous removed); further analysis and design needed in extreme wet areas to solve drainage issues, and potentially use bituminous concrete in those areas
- Grass shoulder with structural soil
- Bituminous aprons at street connections
- Several modifications to alignment to achieve 5% slope and address path flooding and erosion
- Option under consideration: Move path to west side of brook between Wellesley Avenue and Morton Street footbridge (buffer planting recommended); re-locate existing cross walk

SPECIFIC RECOMMENDATIONS: Segment 2 Path



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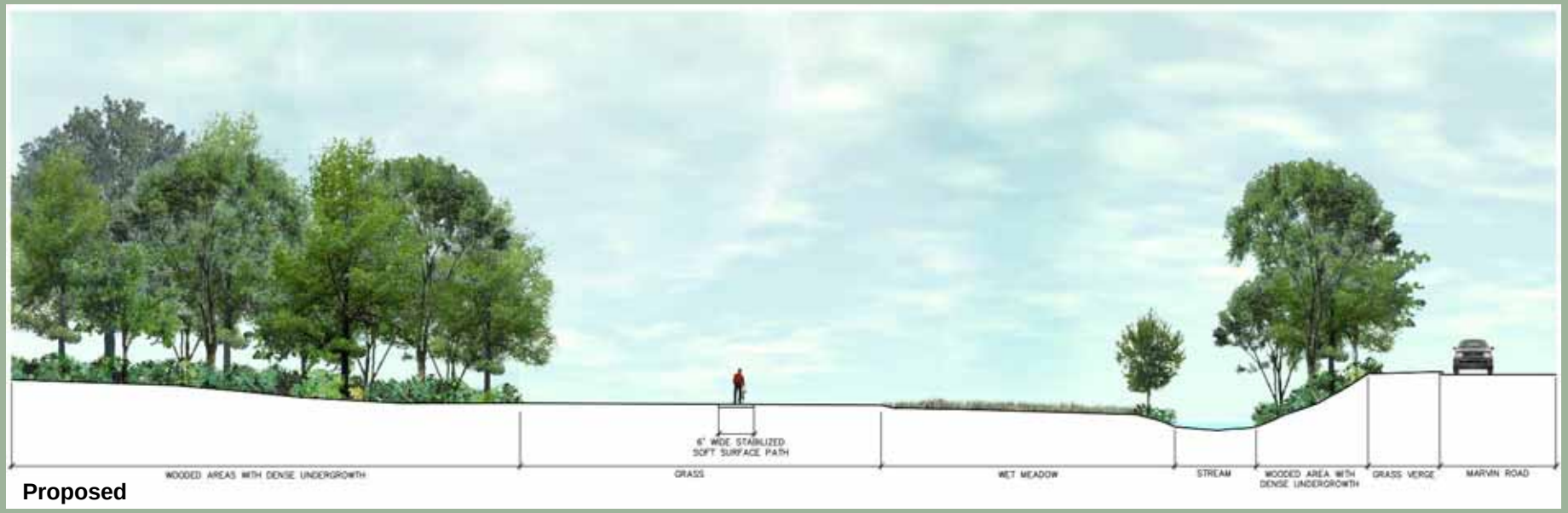


Proposed

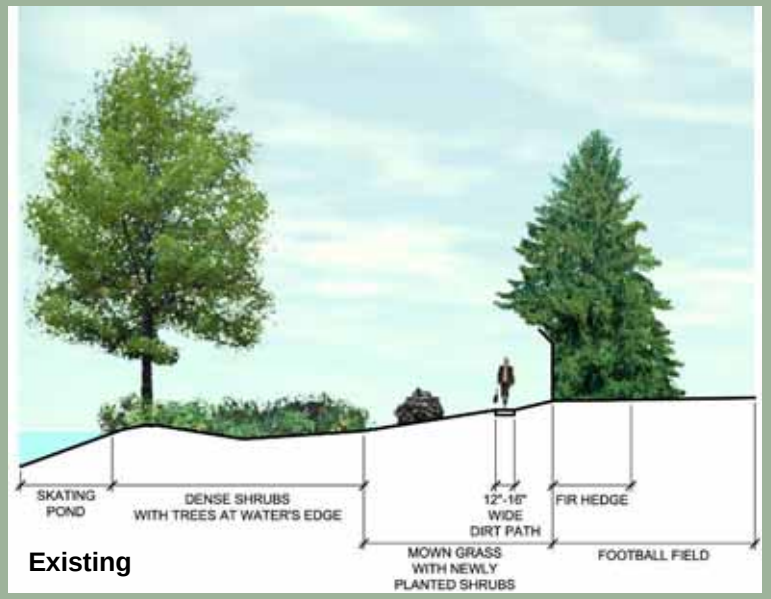
SPECIFIC RECOMMENDATIONS: Segment 3 Path

Segment 3 - Hunnewell Field and High School

Recommendations:

- Modified from Option 2 (Public Meeting #2)
- 6’ stabilized soft surface path
- Remove small section of bituminous at State Street parking lot
- Re-locate fence inside fir hedge; replace with new fence screen; new planting to replace fir hedge
- Recommend consolidating gravel paving for field service access, relocating storage sheds
- Continue path between parking/basketball court and baseball field; add new fence along baseball field
- New path leading from baseball field to Rice/Paine Street
- Connect to sidewalk along Paine Street at existing crosswalk

SPECIFIC RECOMMENDATIONS: Segment 3 Path



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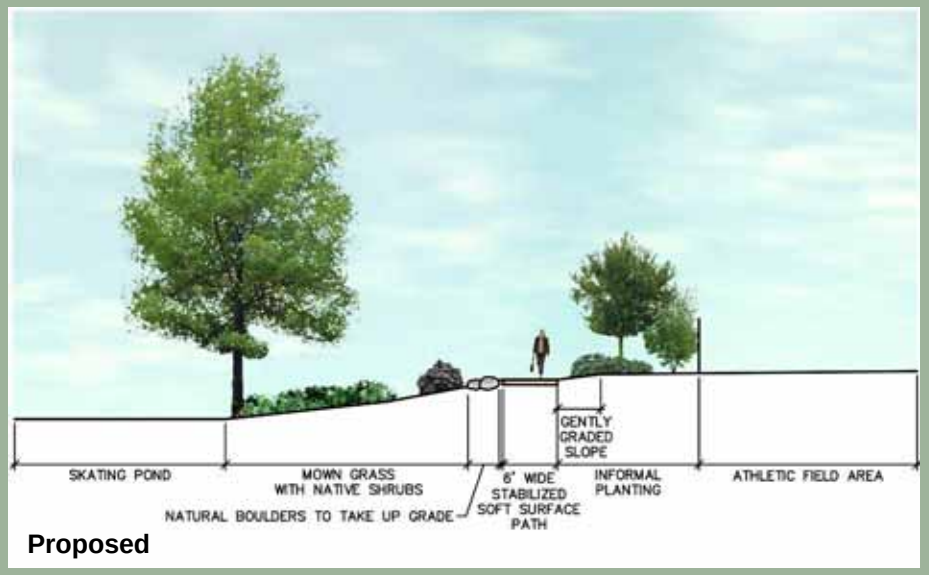

Proposed

SPECIFIC RECOMMENDATIONS: Segment 4 Path

Segment 4 - Paine Street to Maugus Avenue

Recommendations:

- Modified from Options 2 & 3 (Public Meeting #2)
- 6’ wide stabilized soft surface path
- Grass shoulder with structural soil where appropriate
- New boardwalk to replace existing bridge over Caroline Brook and part of wood chip path, achieves 5%
- Small alignment and grading changes to achieve 5% grade
- Path pulled away from property line between Abbott Road and Seaward Road
- Additional evaluation needed regarding flooding between Paine Street and boardwalk

SPECIFIC RECOMMENDATIONS: Segment 4 Path

Example: Existing boardwalk, Minuteman National Historical Park

Maintenance Considerations

Issues:

- All public landscapes require maintenance.
- Immediate threats should be a priority (hazardous trees, invasives along stream)
- Some of the necessary work is the result of deferred maintenance (e.g. invasive species)

Recommendations:

- Some of the recommendations can be accomplished through on-going maintenance:
  - Invasive species management
  - Pruning and some tree removal
  - Develop a bi-yearly program to address invasives that is species and site-specific
  - Fund a tree replacement program with clear guidelines
  - Acquire any specialized equipment needed to care for the park in its improved condition
  - Consider developing a special work crew that is dedicated to Fuller Brook Park
  - Develop a management/maintenance plan that is signed by both the NRC and DPW with an annual work plan agreed to before spring work begins
  - Establish a Friends of Fuller Brook Park and organize volunteer days

Landscape Maintenance Outline

Vegetation

Plant Establishment

- Contract maintenance period
- Trees
- Shrubs
- Live Stakes
- Meadow

Routine & Cyclic Maintenance

- Meadow
- Live Stakes
- Streambank
- Tree Care
  - Path Maintenance
  - Pruning objectives
  - Inspections

Invasive Plant Management

General site wide strategies:

- Calendar of recommended treatments

Mowing

- Hand cutting/weed wrench
- Cut stump treatments

Species-specific treatment strategies

- Most effective management: cultural and chemical methods

Path

- Raking, rolling, top dressing
- Plowing

Crew qualifications

- Contract
- In-house

Project Phasing

Phase 1:	Phase 2:	Phase 3:	Phase 4:
Preservation Master Plan	Preliminary Design	Final Design & Permitting	Implementation
Establish Guiding Principles	Develop Alternatives	Final Design	Phase Construction
General Project Approach	10% Design Recommendations	Contract Bid Documents	
		Wetands Permitting	
		Cultural Resource Compliance	

- Did not include Segment 3
- Did not include an engineering analysis of stream, erosion, sedimentation issues

Includes:

- Concept level evaluation of vegetation, stream issues
- Preliminary costs for entire project
- Wetlands delineation permit (ANRAD)

Includes:

- Additional detail, value engineering
- Final design, additional studies, construction bid documents, final cost estimate
- MEPA ENF, Army Corps permit, 401 Water Quality, Chapter 91, Wellesley NOI
- MHC PNF
- Site Plan Review

- Phasing will reduce implementation cost for a given year

Anticipated distribution of work:

- Stream 50%
- Vegetation 28%
- Path 20%
- Structures 2%

AS PRESENTED, THE TOTAL PROJECT COST IS ANTICIPATED AT 6 MILLION INCLUDING DESIGN & PERMITTING

Next Steps

Phase 2

- Feedback from final public meetings
- Refine recommendations with FBPCC
- Present to CPC, Advisory Committee (January 2011)

Town Meeting (Spring 2011)

- Request funds for Phase 3 design

Phase 3 (1-2 years)

- Final design, permitting, and additional studies
- Public hearings and comments associated with permitting
- Periodic updates on design via web and other sources
- Construction bid documents

Thank You.

Feedback: Questions and Comments

Visit the project on the WEB
www.wellesley.ma.gov/Fullerbrook

Email your comments
fullerbrook@wellesleyma.gov

Tell us what you think this evening

View the meeting on Wellesley cable WCAC December 20th and 27th at 12AM and 12PM