BELMONT COMMUNITY PATH
FEASIBILITY STUDY

Public Meeting #6 – Western End

February 8, 2017

PARE CORPORATION
Engineers | Scientists | Planners

K3LA

AGENDA

1. Introduction	Russell Leino
2. Purpose and Level of Design	Amy Archer
3. Public Engagement Goals	Kathleen Fasser
4. Alternatives Design/Cost	Amy Archer
5. Advanced Matrix	Kathleen Fasser
6. Public Engagement	Open Discussion
7. Next Steps	Amy Archer

PURPOSE

To recommend a preferred alternative for a non-motorized, multi-use path through Belmont that will serve the Town's residents as well as "fill the gap" along the Mass Central Rail Trail (MCRT) between Waltham and Cambridge using the alignments from the CPAC as a base, and to develop an evaluation process that ensures the selected alternative is justified.

LEVEL OF ANALYSIS/DESIGN

- Feasibility study intended to advance to conceptual design and planning cost estimate
  - Define path options – alignments and typical sections
  - Quantify impacts to property and resources
  - Quantify costs based on path definition
  - Weight and rank pros and cons of alternatives

PUBLIC ENGAGEMENT GOALS

Describe and outline public engagement efforts that will inform the Study

ENGAGEMENT GOAL

Level of Engagement: Collaborate (See page 6, Stakeholder Roles and Responsibilities)

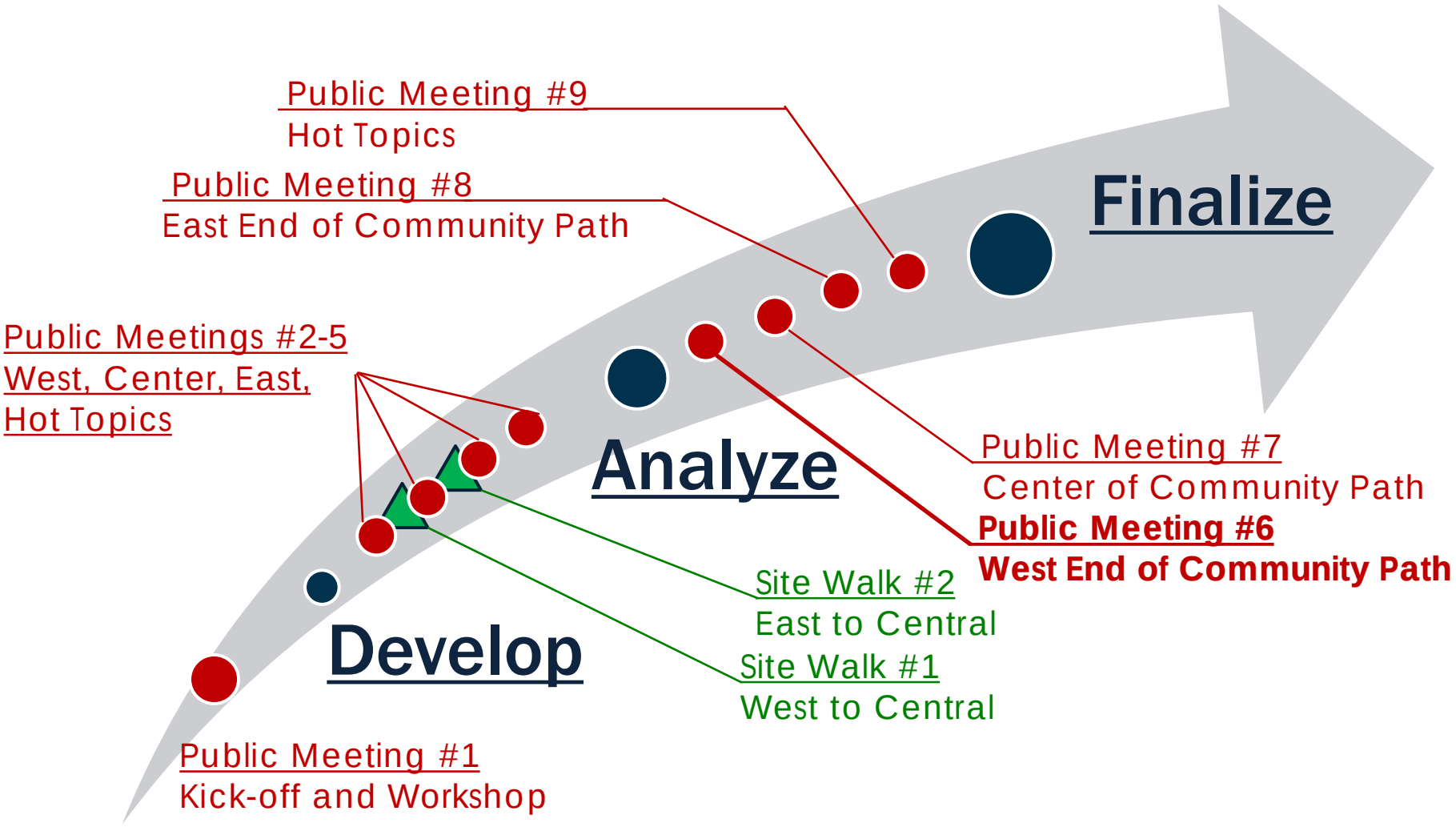
	Inform	Consult	Collaborate	Partner
Engagement Goal:	*To provide stakeholders with factual, balanced, and timely information to help them understand the project.*	*To obtain stakeholder feedback on project analysis, alternatives, or decisions.*	*To work directly with the public throughout the process to ensure that perspectives are consistently understood, considered, and reflected in project decisions.*	*To partner with stakeholders in each aspect of decision making in order to develop and implement collaborative project solutions.*

PUBLIC ENGAGEMENT GOALS

ROLES & RESPONSIBILITIES

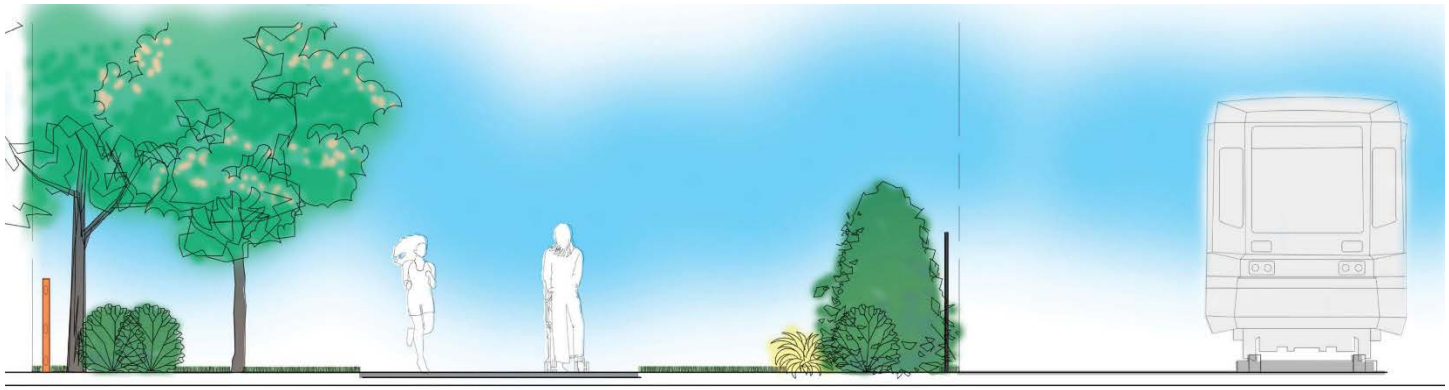
engage in the process in a manner that promotes respectful civil discourse and enhances mutual understanding of all stakeholder viewpoints.

PROCESS

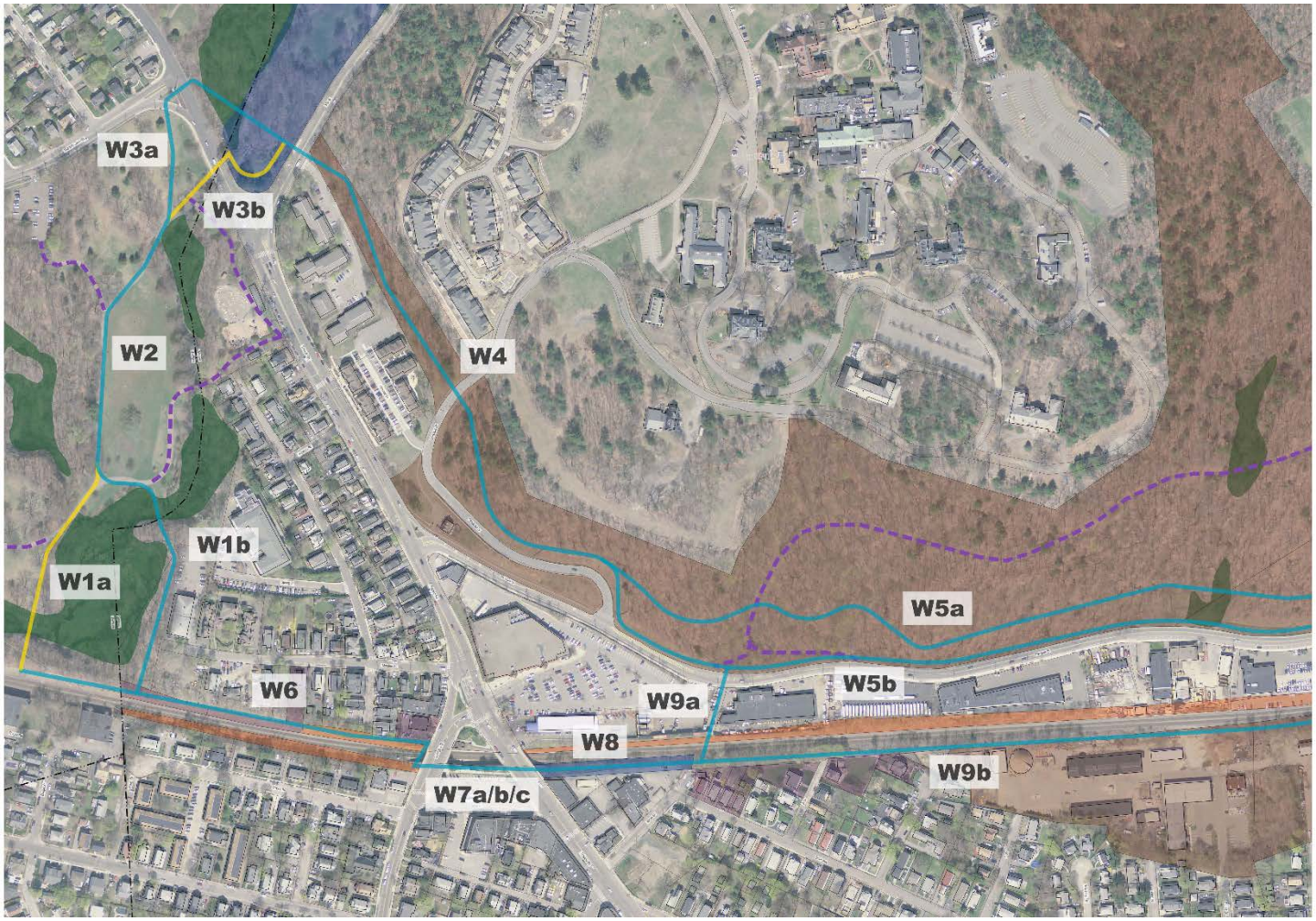

Public Meeting #9
Hot Topics
Public Meeting #8
East End of Community Path
Finalize
Public Meetings #2-5
West, Center, East,
Hot Topics
Analyze
Public Meeting #7
Center of Community Path
Public Meeting #6
West End of Community Path
Site Walk #2
East to Central
Develop
Site Walk #1
West to Central
Public Meeting #1
Kick-off and Workshop

DESIGN DETAILS

- Available space will be used primarily for parks not parking
- Recommend path width of 16’ – designated bike space
- Structure type dictated by grade/MBTA input
- Most expensive option will be costed for funding purposes
- Preference for planting along path
- Preference for shorter wood fence at abutting property but higher chainlink-type fence at RR
- Preference for fences near property lines, not near path edge



WEST SEGMENT ALIGNMENTS

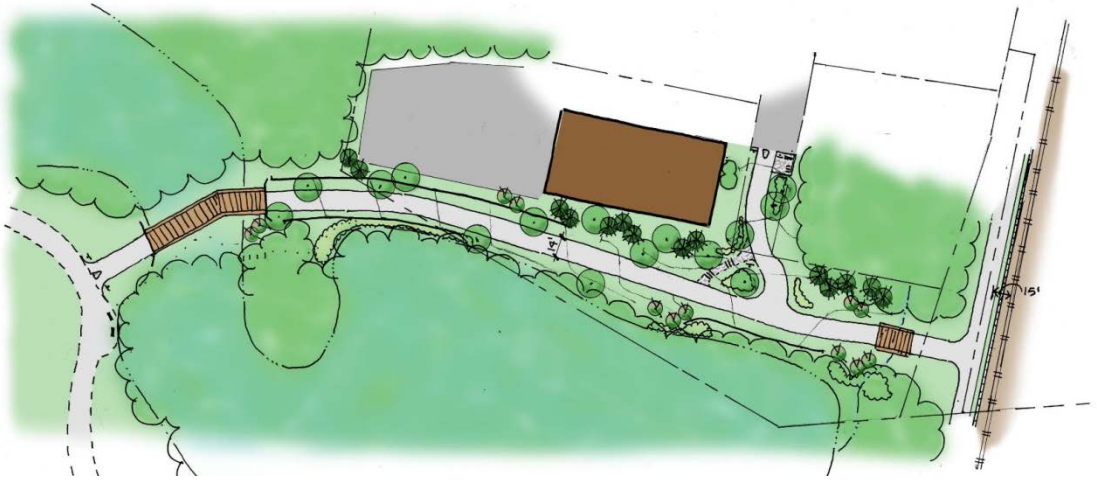


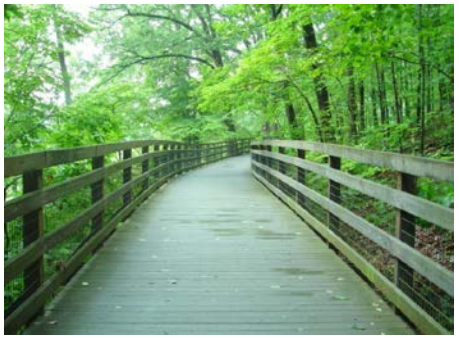
WALTHAM CONNECTION

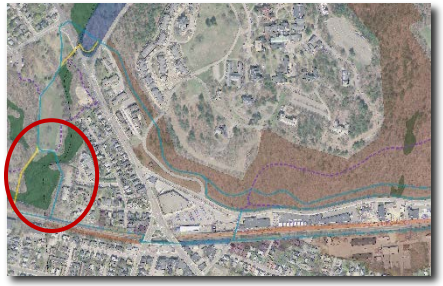
- Begin on north side of tracks close to Waltham/Belmont line
  - **Continue north through Beaver Brook Reservation (W1/2/3/4/5)**
  - Continue east through Waverley Square (W6/7/8/9)

BEAVER BROOK (W1, W2 & W3)

- W1: Enter Beaver Brook
  - Recommend 1b
  - Trail Head
  - Connection to Moraine
  - Boardwalk over wetlands – reduce loss
  - Meet existing path



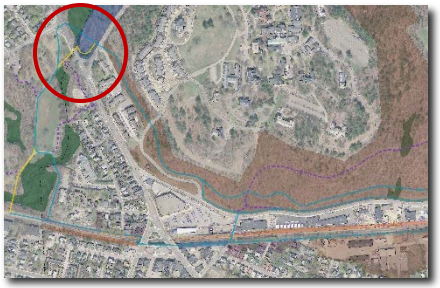




W1a/b **COST = $0.79M**

BEAVER BROOK (W1, W2 & W3)

- W2: Utilize/widen existing path
- W3: Crossing Trapelo Road
  - Recommend 3a
  - Avoid midblock crossing
  - Low Point – Drainage issues
  - Cross instead at Waverley Oaks intersection (Waltham)
  - Signalized crossing needed – requires traffic analysis/signal redesign



W2 COST = $0.27M

W3a COST = $1.12M

W3b COST = $0.79M

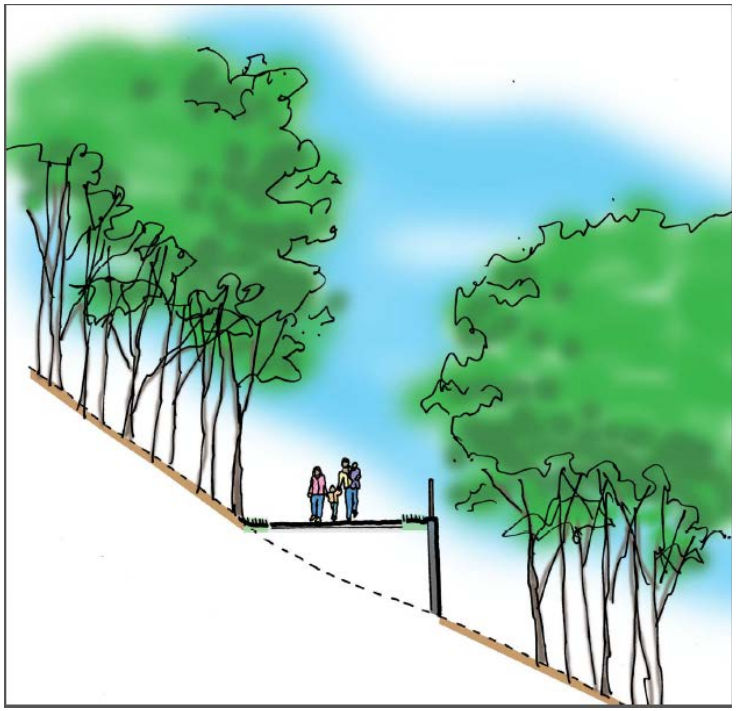
Example crossing at intersection (W3a)

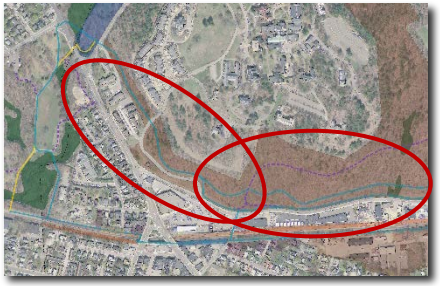
LONE TREE HILL (W4 & W5)

- Continue into Lone Tree Hill Conservation
- Manipulated CPAC alignment to follow contour
- Able to achieve ADA accessible running slope – no switchbacks

LONE TREE HILL (W4 & W5)

- W4 and W5a: Wooded Area
  - Has extreme cross slope (1:1.5)
  - Requires retaining wall (single) approximately 12’ in height
  - Requires minimum 30’ width swath of mature tree removal
  - Total impact – 3.25 acres of mature forest





W4

COST = $1.68M

W5a

COST = $4.54M

LONE TREE HILL (W4 & W5)

- W5b: Alternative – shift to the north side of Pleasant Street
  - Potential to utilize existing wall – cost construction of new masonry
  - Less impact to mature trees (over ½ mile)
  - Closer to roadway
    - Increased access
    - Fosters redevelopment

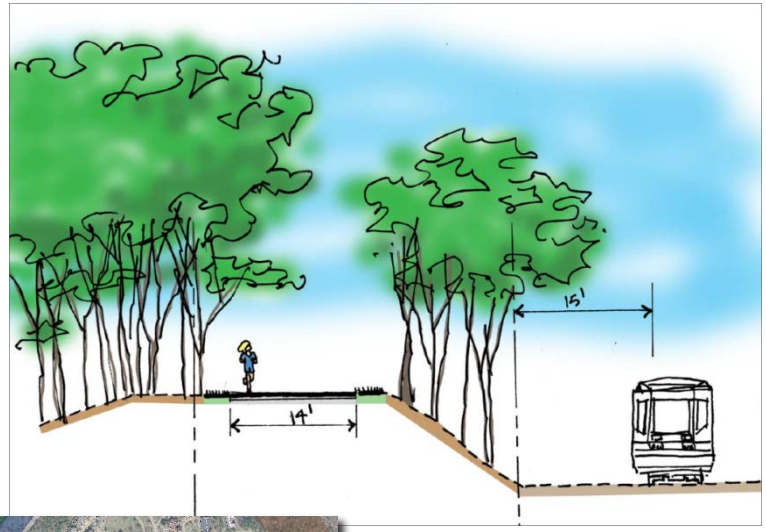
COST = $1.65M

WALTHAM CONNECTION

- Begin on north side of tracks close to Waltham/Belmont line
- Continue north through Beaver Brook Reservation (W1/2/3/4/5)
- **Continue east through Waverley Square (W6/7/8/9)**

WALTHAM CONNECTION (W6)

- Continue along north side of rail to Waverley Station – strip property impact
- Provide direct connections to Waverley Station platforms if possible (MBTA Coordination – assumed in cost)

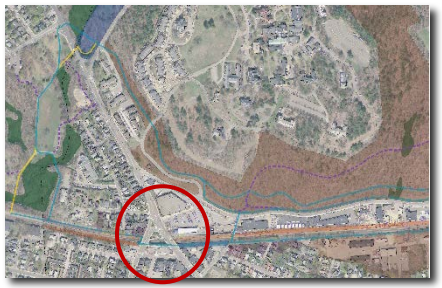


COST = $1.58M

WAVERLEY STATION (W7)

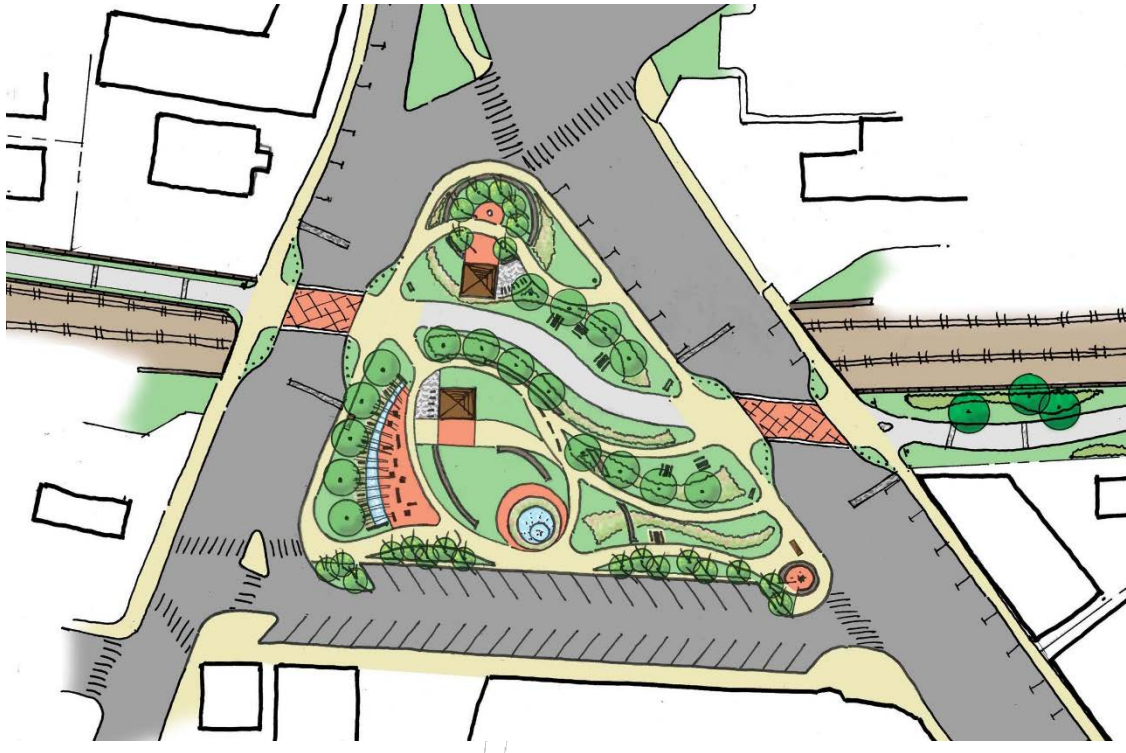
- W7a: Elevated over Platform
  - Requires bridge adjacent to Lexington
  - Requires series of ramps
  - 10’ maximum width/9’ clearance for covered platform
  - May become infeasible if MBTA elects full-high platforms
  - Cost for solid structure with pillar supports – avoid aluminum noise

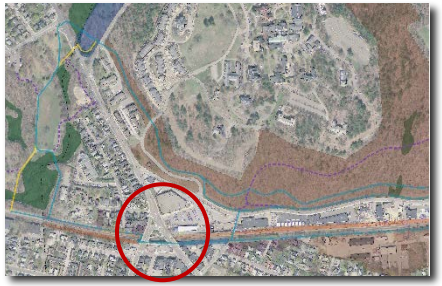
COST = $1.78M



WAVERLEY STATION (W7)

- W7b: “Box Over” Station
  - Convert Church Street to one-way WB
  - Create large park connecting to businesses:
    - Head houses w/elevators
    - Memorial/signage
    - Seating and picnicking
    - Water features, trellis, great lawn, gardens
  - Bumpouts and signalization for Lexington and Trapelo crossings

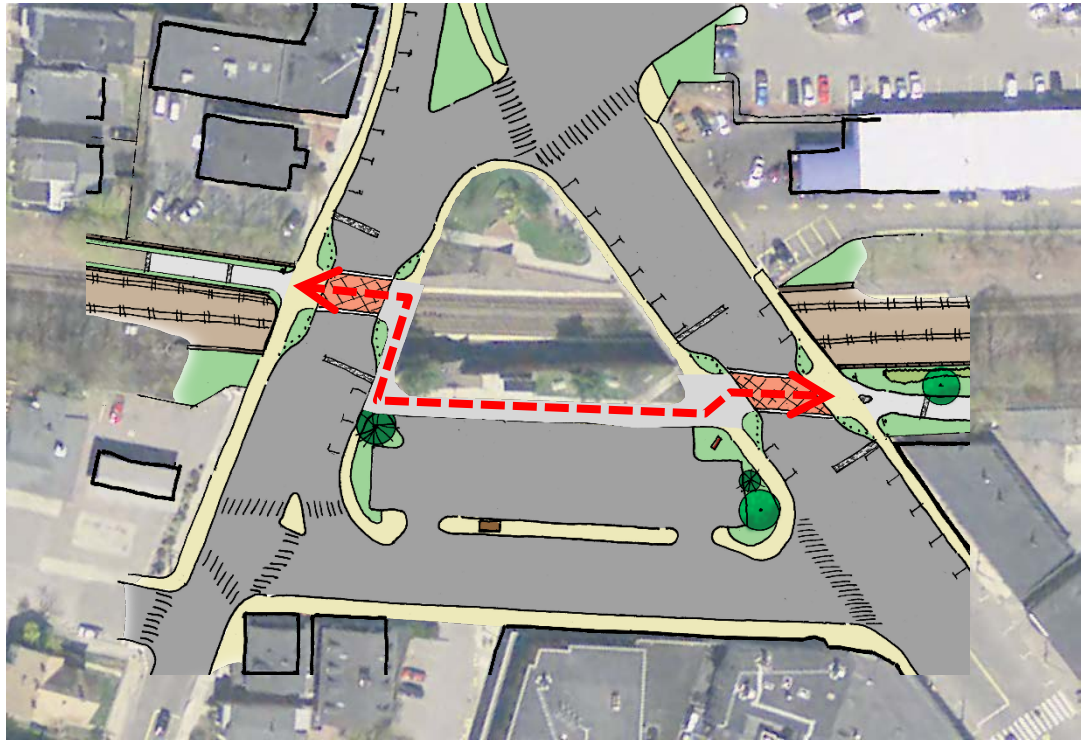


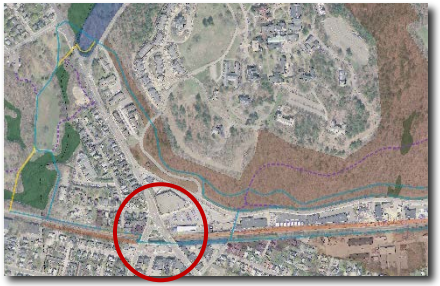


COST = $4.72M

WAVERLEY STATION (W7)

- W7c: Traverse Roadways
  - Add bumpouts and utilize space between station and parking
  - Least costly
  - Could consider for phasing as MBTA coordination advances





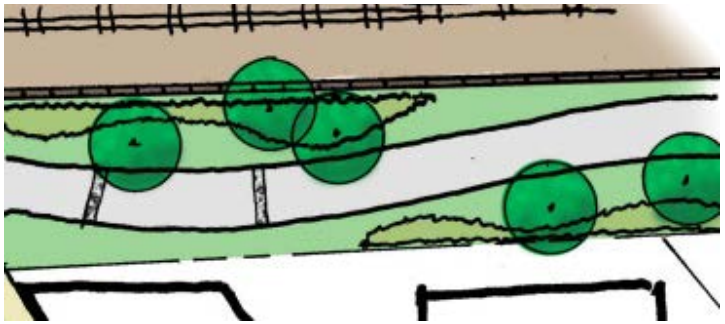
COST = $1.11M

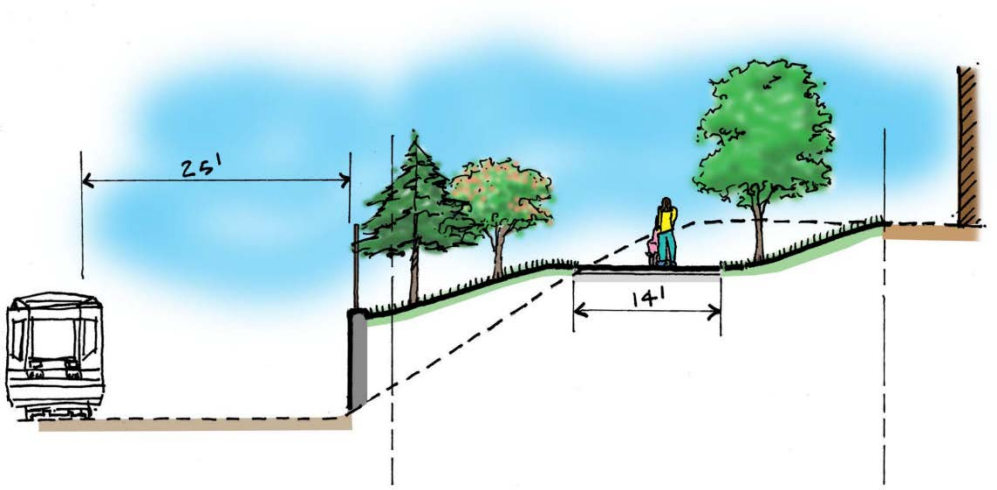
EAST OF TRAPELO ROAD (W8 & W9)

- W8 and W9b represent CPAC recommended alternative

EAST OF TRAPELO ROAD (W8 & W9)

- W8: Continue east of Waverley Station on south side of rail
  - Wide ROW provides room for curvilinear alignment and plantings
  - Requires approx. 10’ wall

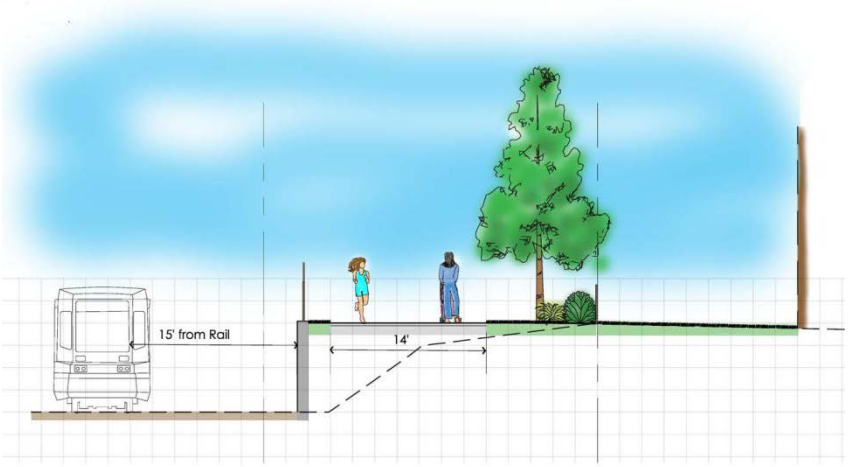


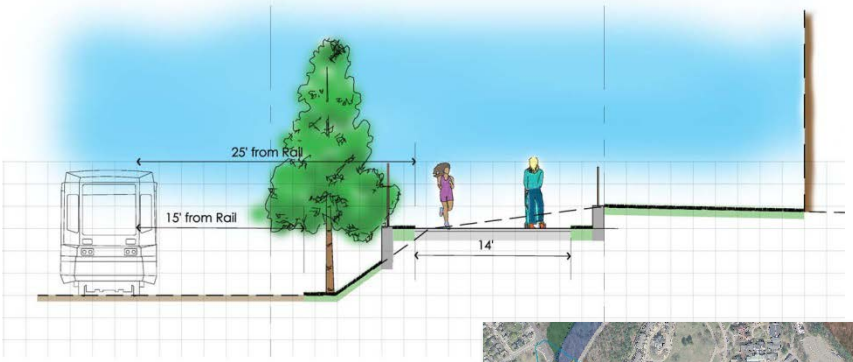


COST = $1.01M

EAST OF TRAPELO ROAD (W8 & W9)

- W9b: Remain on south side of rail through DPW
  - Varying ROW
  - Varying distance from tracks
  - Options for wall and planting locations – cost full wall, approx. 6’ average

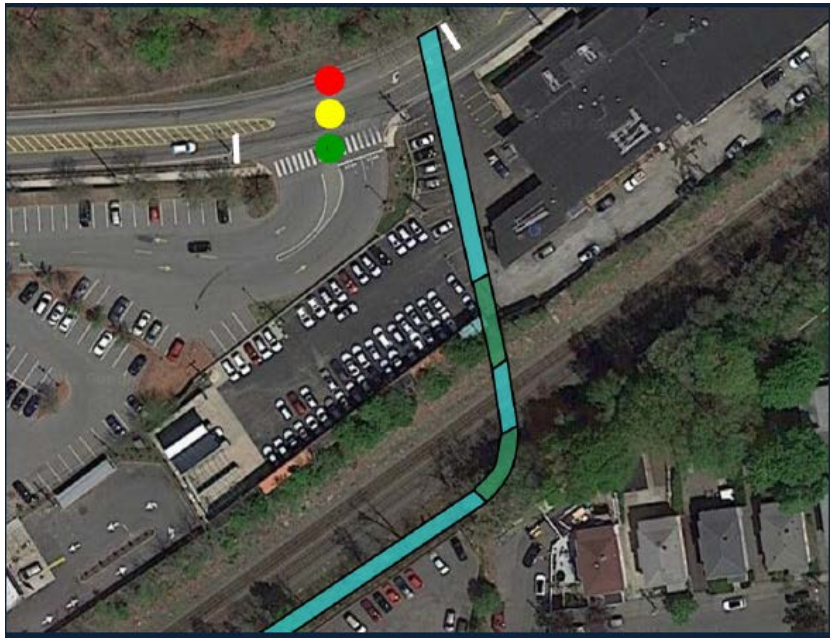




COST = $3.01M

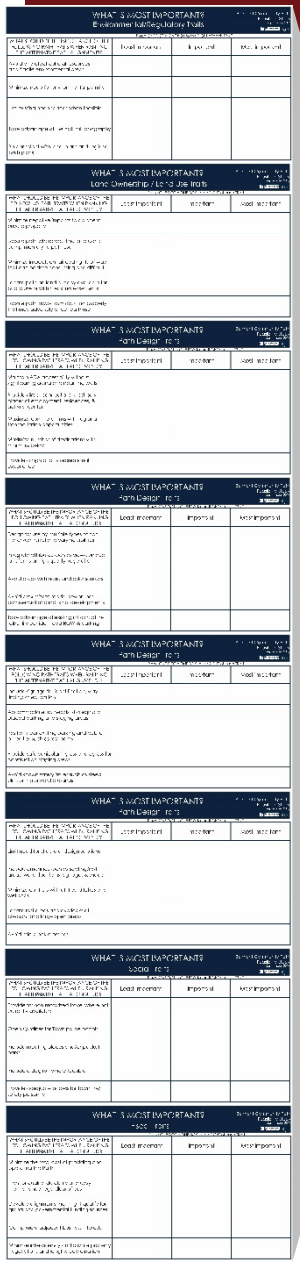
EAST OF TRAPELO ROAD (W8 & W9)

- W9a: Alternative – cross using paper street and connect to W5b
  - Owned by Town except ~10’ strip
  - Used as parking lot
  - Reduces need for walls and adds crossing/connection
  - Traffic study needed at Pleasant Street crossing – full signalization assumed



COST = $2.39M

MATRIX DEVELOPMENT



CRITERIA

- Based on community input – PAST AND PRESENT
- Includes Hot Topics

Access and Connectivity	Environmental Impacts	Property Impacts	Sense of Security/ Comfort	Relative Cost
3	1	3	2	2

GENERALLY

0 points for FATAL FLAWS
1 point for low or negative assessments
3 points for medium or neutral assessments
5 points for high or maximum positive assessments
2 or 4 points for an assessment that falls between the higher and lower number

CRITERIA
User Experience
Ease of Access
Aesthetics
Comfort
Vehicular conflicts
Conflicts with pedestrian way
Environmental and Cultural Impacts
Wetlands
Historic resources
Mature Woodland
Design Attributes
Encroachments necessary/MOU
Fire and Safety
Potential Partnerships
Distance to residential structures
Transportation
Connectivity to Destinations (Resources, Amenities and Transit)
Ease of universal public accessibility
Consistency with regional plans (MCRT/Wayside Trail)
Impact on existing traffic/transportation
Rail conflicts/proximity
Cost
Range of Construction Costs
Operations and Maintenance Costs
Qualify for Funding
Value Added

MATRIX DEVELOPMENT

USER EXPERIENCE

- Ease of Access - ramps, directness
- Aesthetics - views, landscaping, amenities
- Comfort - noise, pollution, personal space
- Vehicular Conflicts – intersections, driveways
- Pedestrian Conflicts – along or across walkways

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MATRIX DEVELOPMENT

ENVIRONMENTAL/CULTURAL IMPACTS

- Wetlands
- Historic Resources
- Mature Woodlands

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MATRIX DEVELOPMENT

DESIGN ATTRIBUTES - beyond attributes designed into every alternative alignment

- Encroachments necessary/MOU
  - residential structure = 0
  - other structure = 1
  - private residential property = 2
  - other private property = 3
  - construction easement/not permanent = 4
  - no encroachment = 5
- Fire and Safety - views, remoteness, interference
- Potential Partnerships - land acquisition, funding, and/or maintenance

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MATRIX DEVELOPMENT

DESIGN ATTRIBUTES - continued

- Distance to residential structures - Most every alignment passes adjacent to residential property. Concerns for potential negative impacts – THEREFORE:
  - 0'-10' to residential structure = 1
  - 11'-20' to residential structure = 2
  - 21'-30' to residential structure = 3
  - 31'-40' to residential structure = 4
  - 41'-50' and over to residential structure = 5

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MATRIX DEVELOPMENT

TRANSPORTATION - continued

- Connectivity to Destinations - resources, businesses, amenities and transit
- Ease of Universal Access - directness of accessible routes; quantity and challenge of accessible routes/ramps
- Consistency with Regional Plans - MCRT/Wayside Trail to Fitchburg Cut-off Path (connection to Alewife Station), relative directness
- Impact on existing traffic/transportation

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Qualify for Funding
Value Added

MATRIX DEVELOPMENT

COST

- Range of Construction Costs
- Relative Operations and Maintenance Costs
- Qualify for various Funding sources
- Value Added
  - High scores in this category indicate that there is a high community value added by the path alignment
  - Low scores in this category indicate there is a negative overall community impact by the alignment
  - a score of 3 indicates a neutral rating

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MATRIX DEVELOPMENT
WEIGHT THE CRITERIA

Public Input (Past and Present) indicate some relative importance: High quality recreational experience, community connectivity, off-road and safety

CRITERIA	
★ User Experience	x2
Ease of Access	
Aesthetics	
Comfort	
Vehicular conflicts	
Conflicts with pedestrian way	
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★ **Potential higher weight**

▬ **Potential lower weight**

MATRIX DEVELOPMENT: FATAL FLAWS

FATAL FLAW: proposed alignment is incompatible with the site or defined guideline/plan for a specific reason; and typically contains design characteristics that violate a community goal, code, initiative or requirement

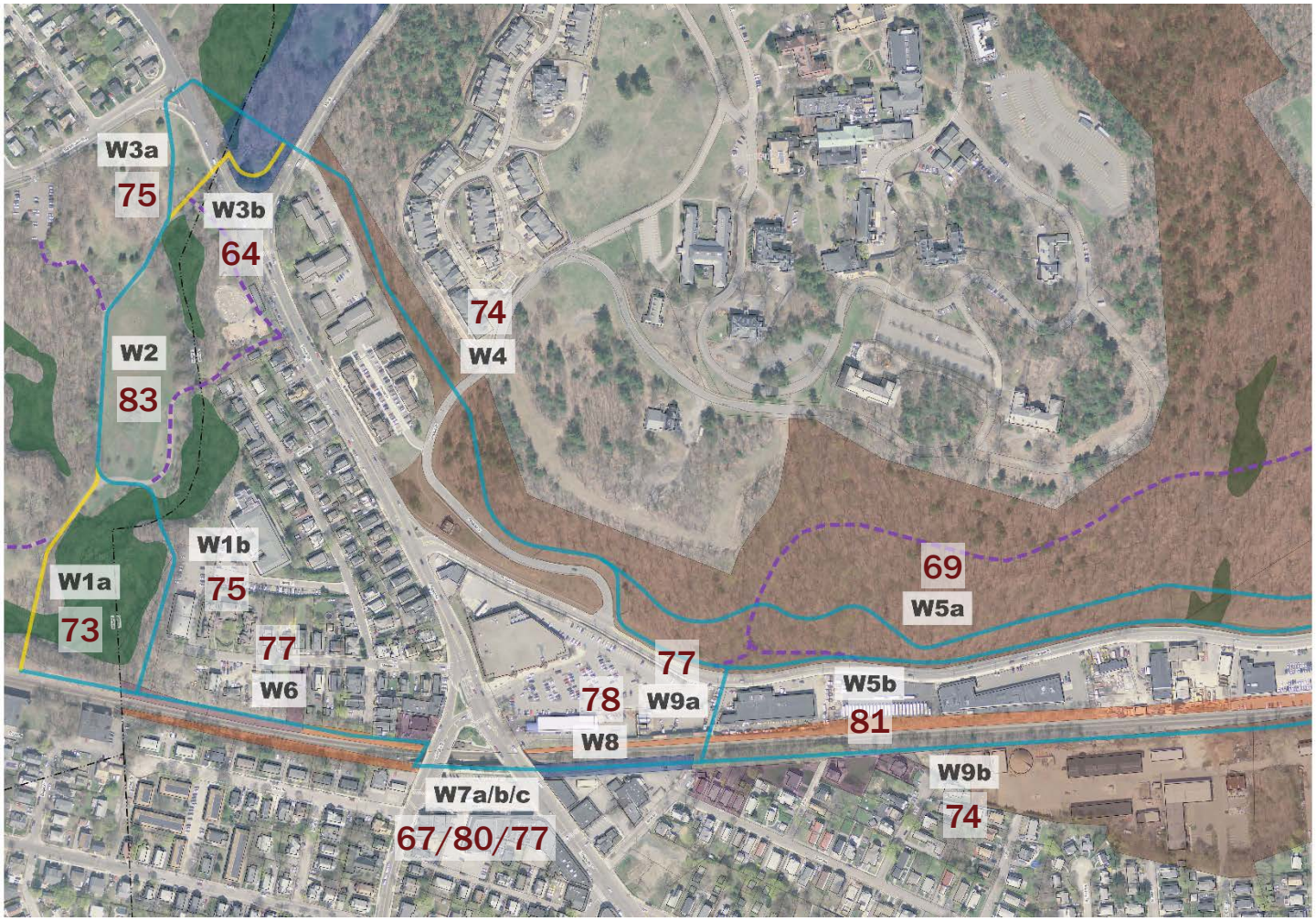
They receive a score of **0** and are <u>not</u> considered for a Recommended Route (combination of high-ranking alternative Alignments for the full length of the Study Area).

MATRIX DEVELOPMENT: FATAL FLAWS

FATAL FLAWS:

- Direct impact to an existing residential dwelling
- Over 5,000 sf of loss to high quality wetlands (as defined in MassDEP CMR 310)
- Path location is infeasible to patrol or too difficult to access in emergency situations or impedes access to other areas under Town responsibility
- MBTA has rejected the proposed alignment/know private owner will not agree/requires speculation about usability of land at time of BOS determination
- Alignment crosses an intersection with various negative conditions including excessive vehicular traffic volumes, multiple approaches/conflict points, poor sight lines, and lack of signal/inability to add signalization or alignment crosses 5 or more highly trafficked driveways within 500 linear feet of path

FOR DISCUSSION



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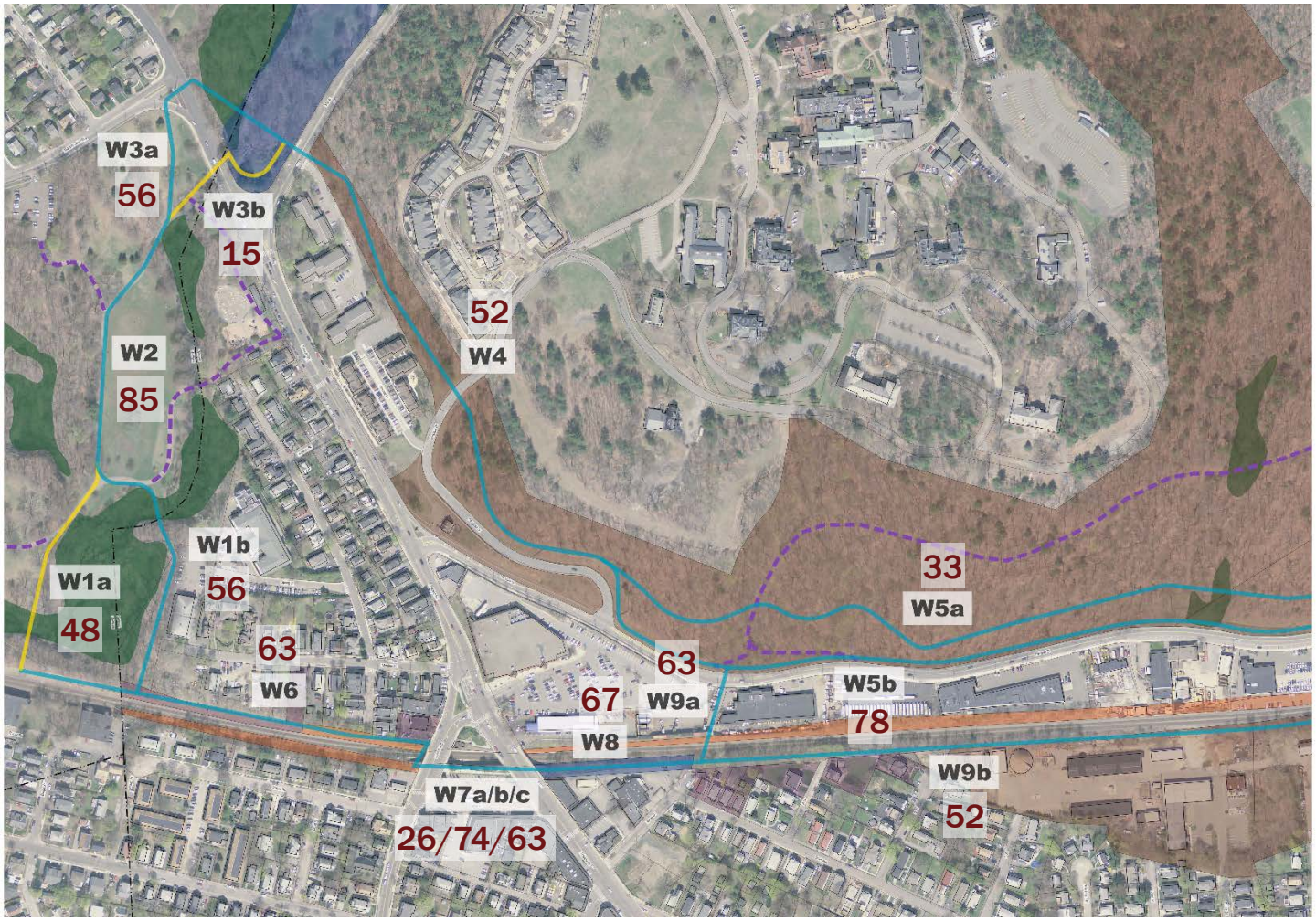
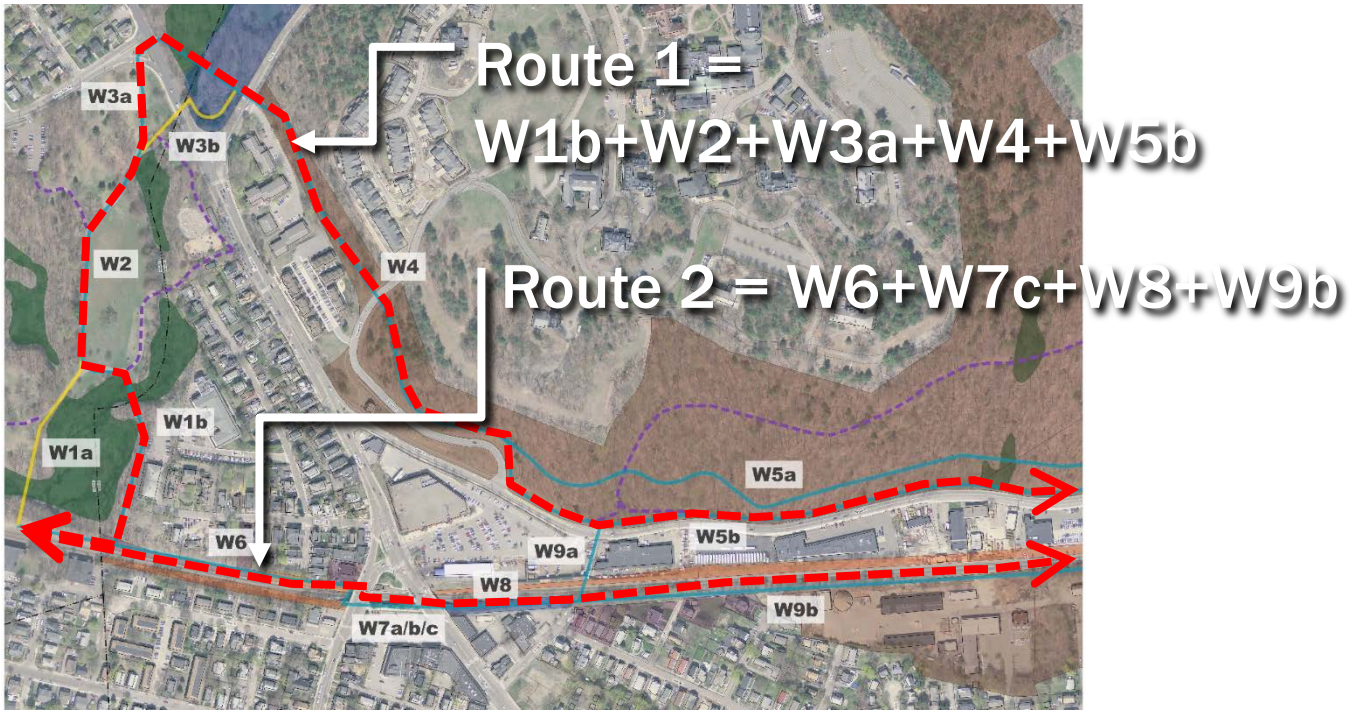


ROUTE EVALUATION

What is a ROUTE??

- combination of high-ranking alternative alignments for the full length of the Study Area

EXAMPLES



ROUTE EVALUATION

COMPARISON

- What makes a Route “HIGH RANKING”?
  - Fatal Flaws – are NOT considered for a Route
  - “High Ranking” to be determined based on final scores
  - Cutoff = i.e. 50 out of 100?

- How to evaluate Routes?
  - Does a high ranking alternative raise the score of an adjacent low ranking alternative?
  - Does a low ranking alternative decrease the score of an adjacent high ranking alternative?
  - Do links and lengths count the same?

WHAT'S NEXT?

- Consultant Team present alternative costs and expanded matrix and begin assessment of overall routes

- Cost/Matrix presentations and discussion:
  - Meeting 7: Central Area (BHA to Downtown) – February 15
  - Meeting 8: Eastern End (Downtown – Brighton) – March 8
  - Meeting 9: Cost Summary/Full Matrix – TBD

http://www.belmont-ma.gov/community-path-implementation-advisory-committee-cpiac/pages/community-path-feasibility-study

www.belmontmedia.org

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