BELMONT COMMUNITY PATH
FEASIBILITY STUDY

Public Meeting #8 – Eastern End

March 8, 2017

PARE CORPORATION
Engineers | Scientists | Planners

K3LA

AGENDA

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

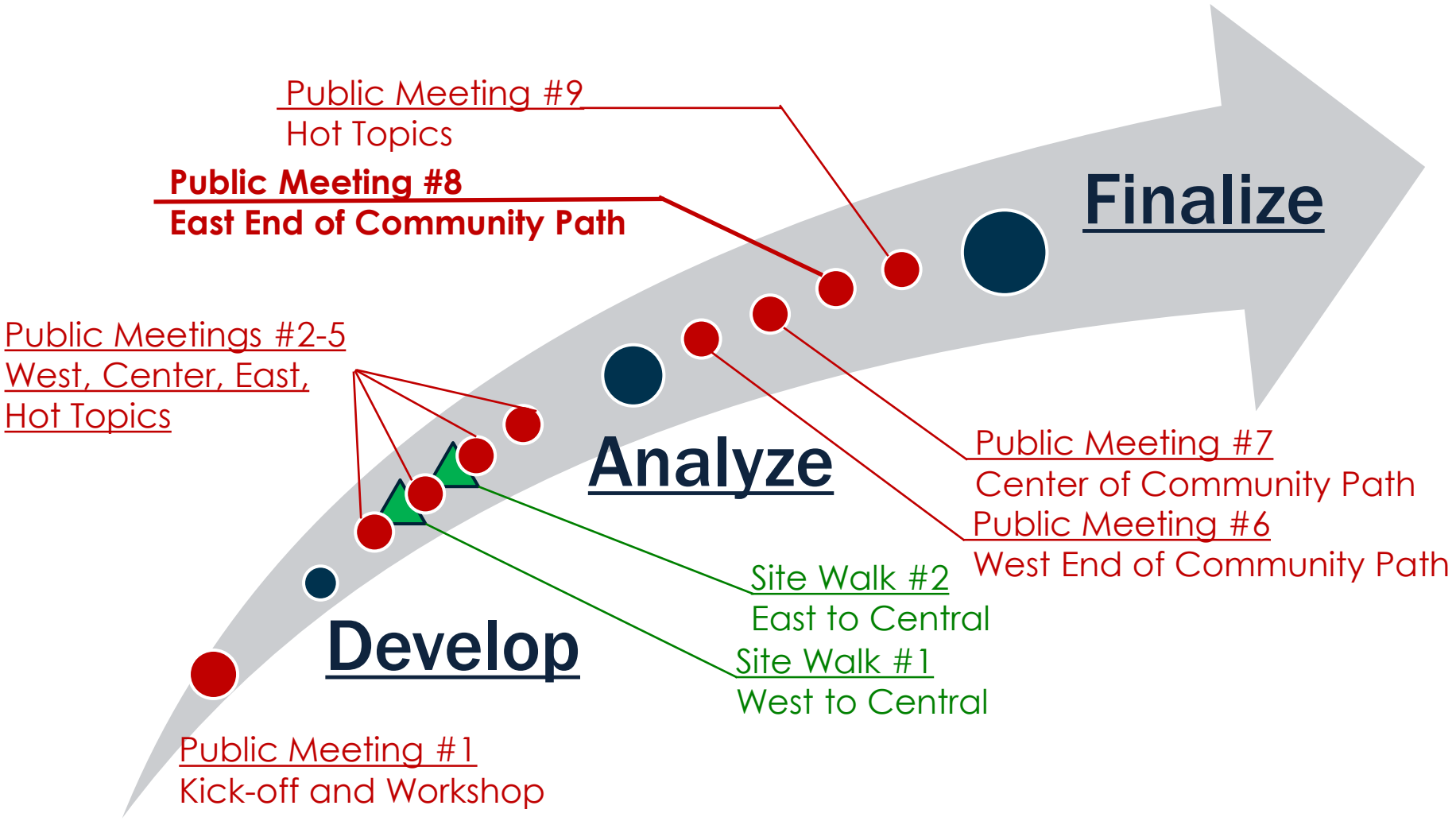
PURPOSE/LEVEL OF DESIGN

- To recommend a single route that will best serve the Town's residents AND function as a segment of the MCRT.
- Feasibility study intended to advance to conceptual design and planning cost estimate
  - Define path options
  - Quantify impacts
  - Quantify costs
  - Weight and rank alternatives

PUBLIC ENGAGEMENT GOALS

- A collaborative effort
  - Engaging and considering all stakeholders equally
  - Reflecting interests in project decisions
  - Responsibility of ALL to engage in respectful civil discourse

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
Site Walk #1
West to Central
Develop
Public Meeting #1
Kick-off and Workshop

WHERE WE LEFT OFF – CENTRAL AREA

- Presented array of alternatives to traverse downtown on either side of tracks or combination thereof, with costs and matrix.

BELMONT CENTER CONNECTIONS (C4)

- C4a: North to North → Connects to E1a
  - Continue at rail level across existing bridge structure
  - Create park and enhance downtown connection – cost as shown

COST = $1.76M

BELMONT CENTER CONNECTIONS (C4)

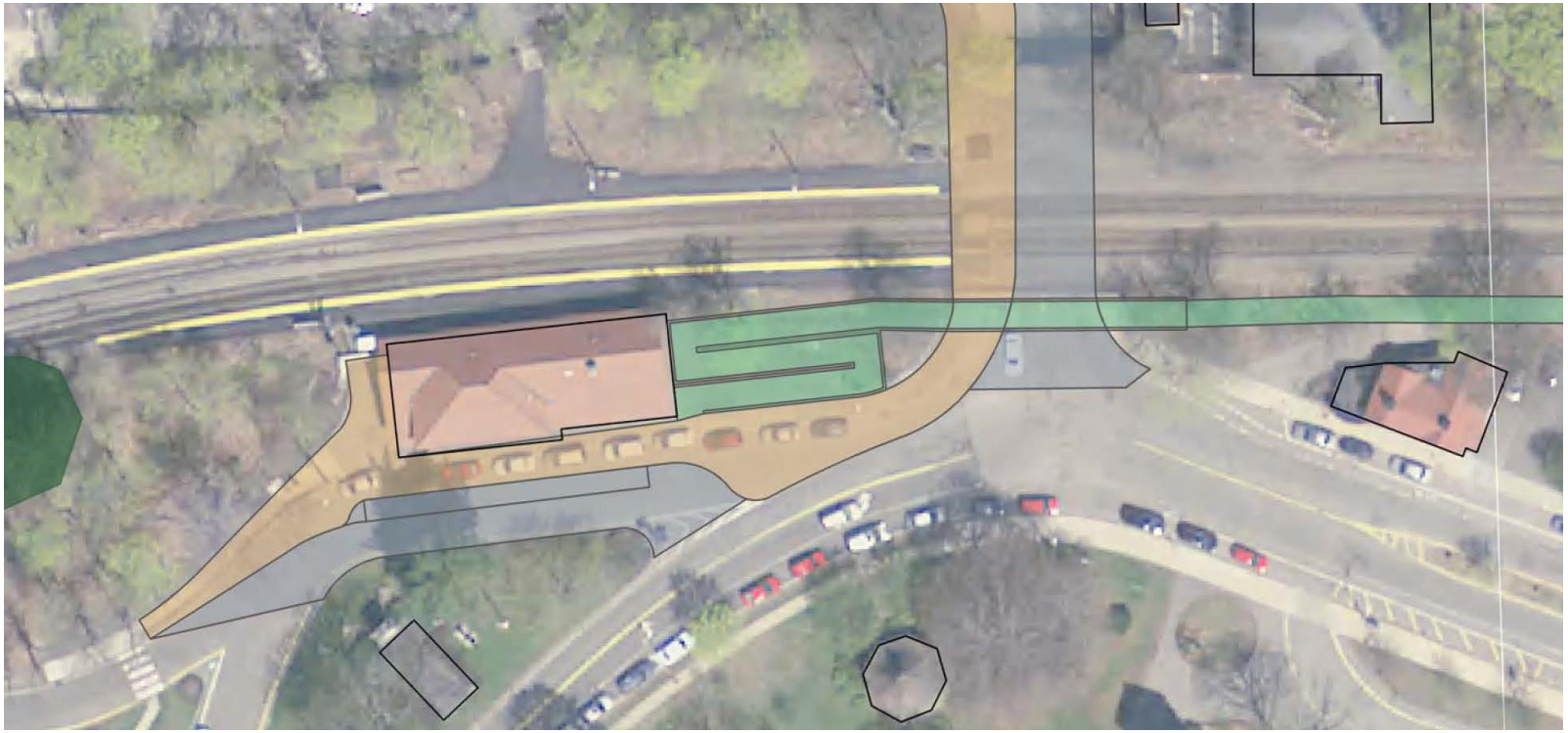
- C4d: South to North → Connects to E1a
  - Widen/shorten existing station access tunnel (cut and cover)
  - Ramp up to track level across park space

COST = $2.44M

BELMONT CENTER CONNECTIONS (C4)

- C4e: North to South or South to South → Connects to E1b
  - Ascend with switchback to track level
  - Structure adjacent to Belmont Center Station
  - Bridge parallel historic overpass

COST = $0.84M



BELMONT CENTER CONNECTIONS (C4)

- C4b: North to South or South to North → Connects to E1c
  - Either Option: Descend or ascend to/from street through park
  - North to South must cross Concord Ave
  - Cost includes sidewalk reconstruction roadway resurfacing
- C4c: South to South → Connects to E1c
- Both require signalized crossing

C4b COST = $0.79M

C4c COST = $0.59M

EASTERN END ALIGNMENTS

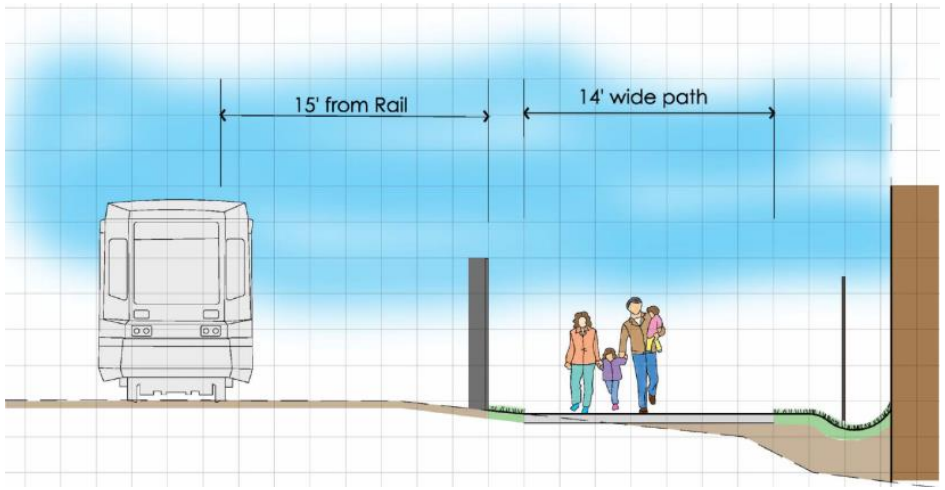
DOWNTOWN TO ALEXANDER AVENUE (E1)

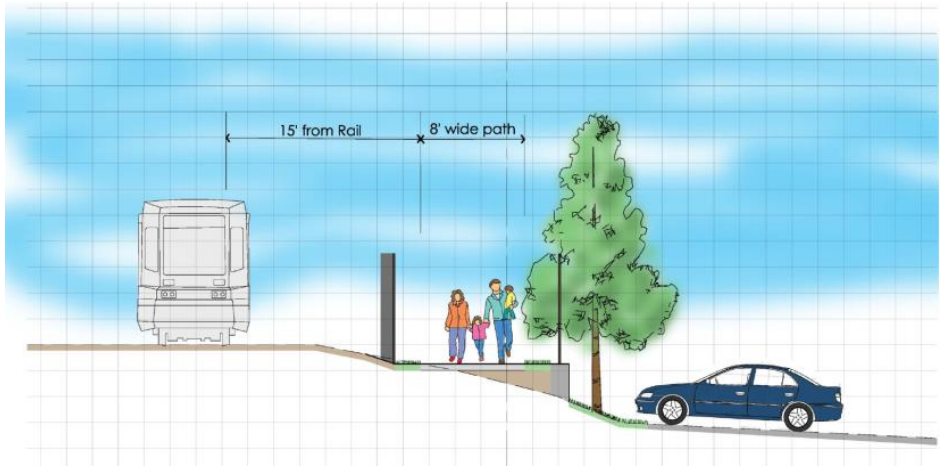
- E1a: CPAC Alignment
  - Continue on north side of rail
  - Pinch behind Coldwell Banker building
    - 25’ length
    - Minimum 15’ offset and minimum 8’ path
    - Requires solid barrier to rail per MBTA
  - Enters Belmont Citizens Forum (BCF) property - cost assumes wall separation

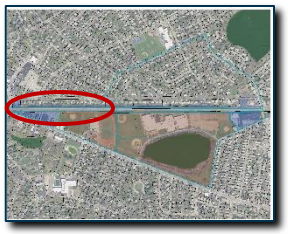
COST = $4.77M

DOWNTOWN TO ALEXANDER AVENUE (E1)

- E1b: CPAC Alignment
  - Continue east from downtown on south side of rail
  - 15’ offset and recommended path width past flower shop and post office (400’)
  - Minimum offset and minimum path past commercial properties to avoid parking impacts (450’)
  - Requires solid barrier to rail per MBTA







COST = $2.81M

DOWNTOWN TO ALEXANDER AVENUE (E1)

- E1c: Linear Park
  - Could connect to downtown
  - Would require access management

COST = $2.94M

ALEXANDER AVENUE UNDERPASS (E2)

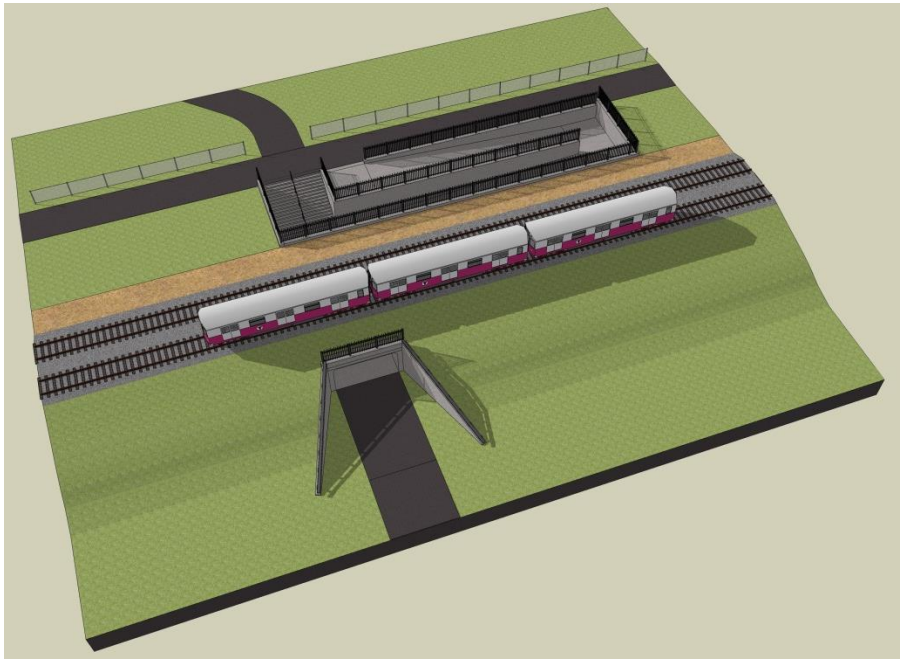
- E2a: Path Depresses to Underpass
  - Only works with path on north side of rail
  - Requires walls along property line and MBTA maintenance drive aisle

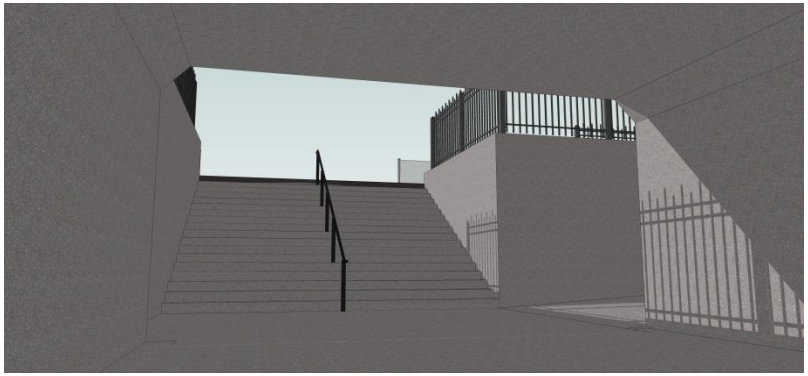
COST = 3.97M

ALEXANDER AVENUE UNDERPASS (E2)

- E2b: Switchback
  - Works with any path location
  - Path running on north side of rail could bypass underpass
  - Less walls required than E2a

COST = $2.46M





ALEXANDER AVENUE UNDERPASS (E2)

- E2c: Alexander Avenue Uses Underpass
  - Works with path on High School or Concord Avenue
  - Approach to underpass from both campus and Alexander Avenue would mimic existing Yerxa Road underpass in Cambridge
  - Minimal wall construction


Yerxa Road Underpass

COST = $2.75M

ALEXANDER AVENUE UNDERPASS (E2)

- E2: All Underpass Options
  - Connection to Concord Avenue recreational uses is important
    - Includes pool, library, music school and more
  - Must coordinate with redevelopment of high school campus

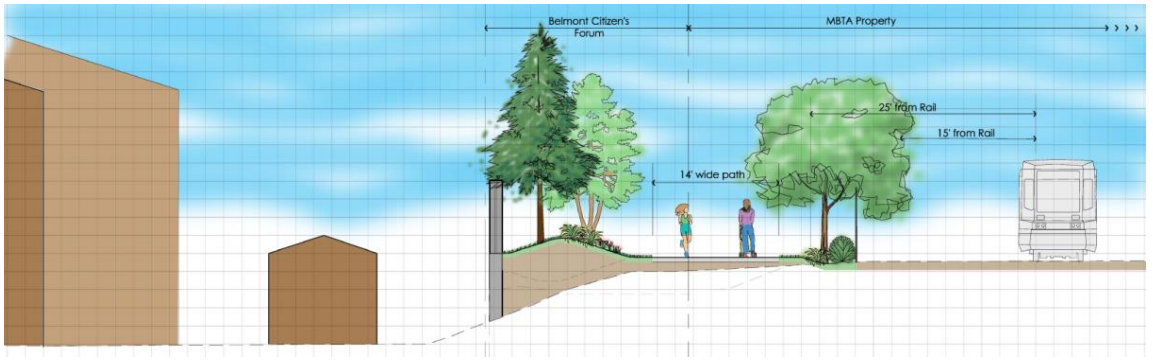
COST = $1.04M

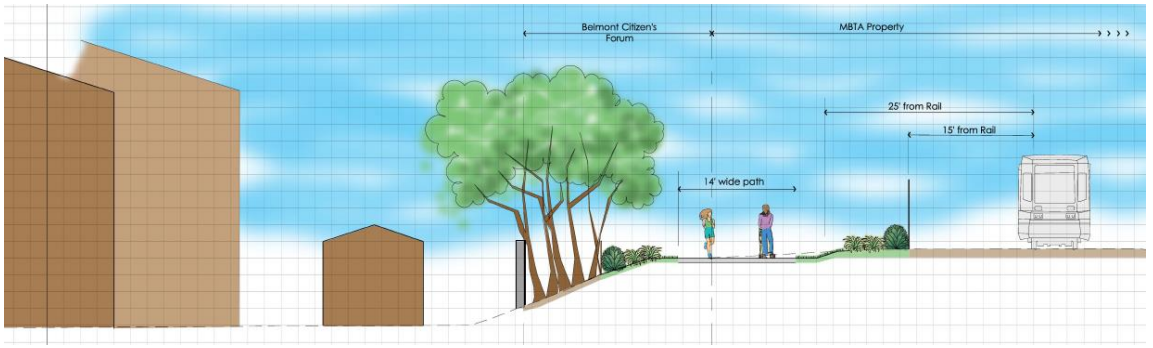
ALEXANDER AVE TO BRIGHTON ST (E3)

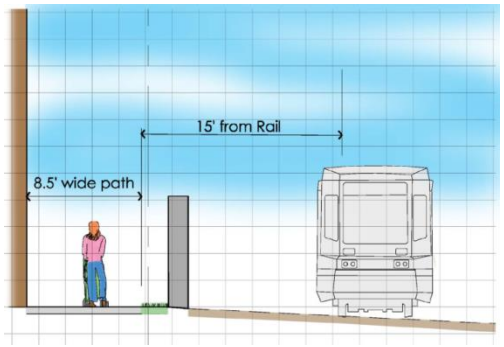
- E3a: CPAC Alignment
  - Continue east on combination of MBTA and BCF property.
  - Many options for edge treatments – 2 shown
  - Max. cost assumes retaining wall and separation wall

MAX = $5.43M

MIN = $2.75M



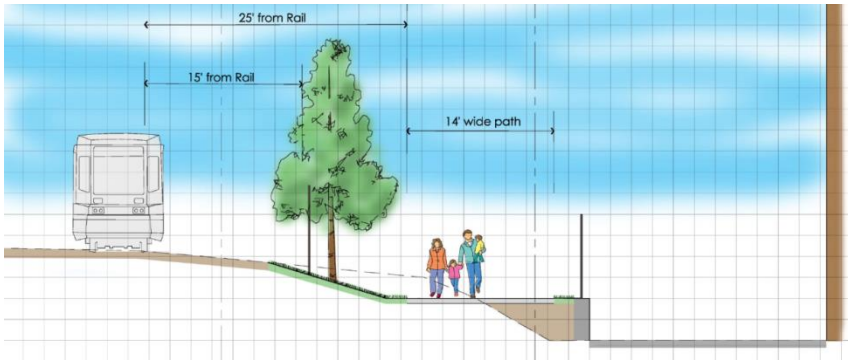


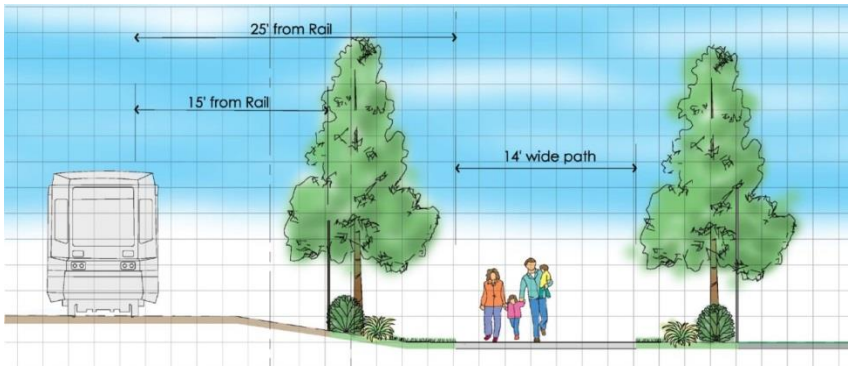


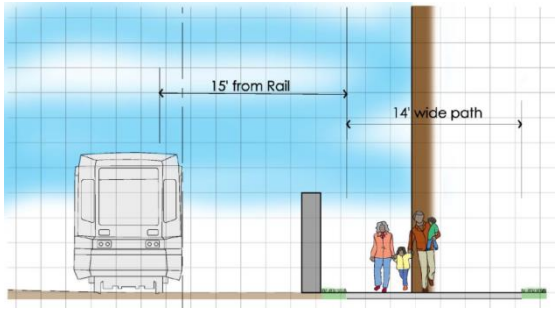
ALEXANDER AVE TO BRIGHTON ST (E3)

- E3b: CPAC Alignment
  - Along south side of rail
  - Path runs behind existing high school building
    - Minimum offset to rail
    - Retained to maintain drive aisle
  - Offset increases to recommended along tennis courts
  - Minimum offset and recommended width past crate escape – solid barrier required per MBTA

COST = $1.53M



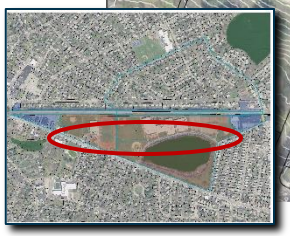




ALEXANDER AVE TO BRIGHTON ST (E3)

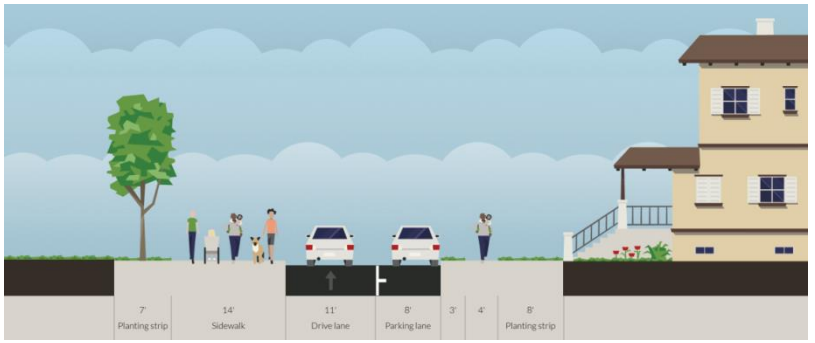
- E3c: Alternative – Traverse High School
  - Campus approved for reconstruction
  - Inclusion must be coordinated through MSBA
  - Array of options – replicate existing uses

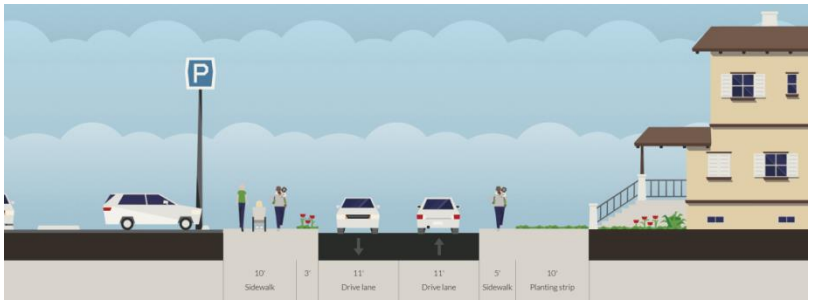
COST = $2.05M



ALEXANDER AVE TO BRIGHTON ST (E3)

- E3d: CPAC Alignment
  - Consolidate vehicular space
  - Utilize north side of existing median for linear park
  - Bumpouts reduce crossing length
  - Continue along Underwood/Hittinger

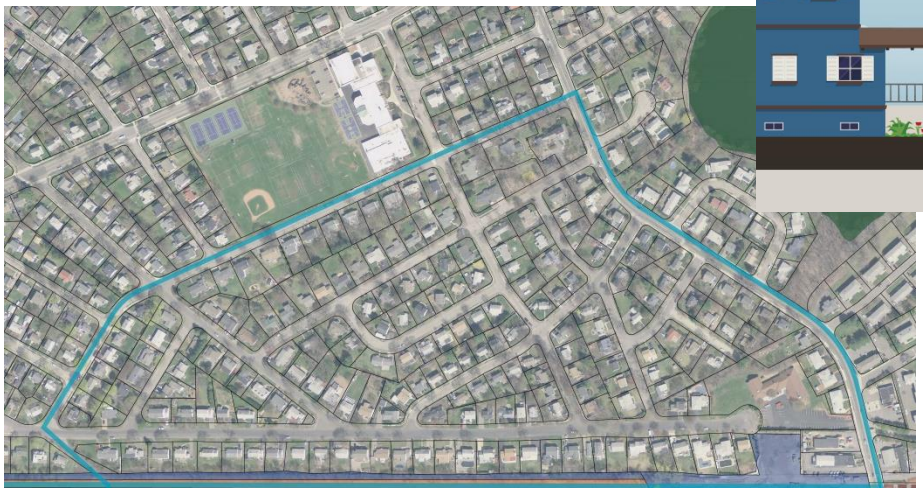




COST = $3.03M

ALEXANDER AVE TO BRIGHTON ST (E3)

- E3e: Alternative – Traverse Winn Brook Neighborhood
  - Makes connection to Winn Brook Elementary School
  - Avoids pinch point at F&M property



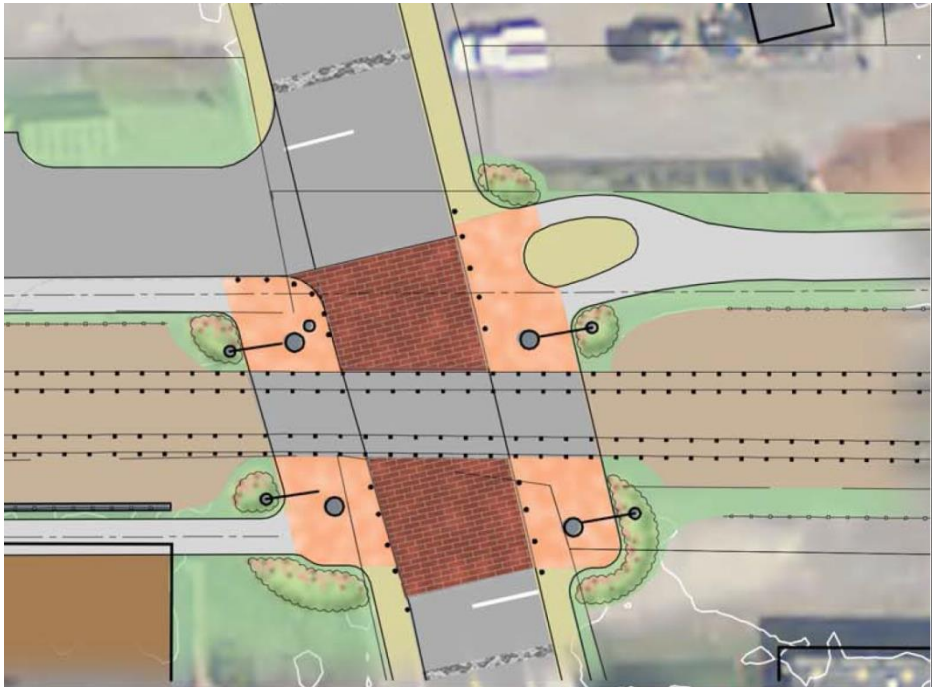
COST = $2.64M

SRTS = $0.78M

BRIGHTON STREET (E4)

- E4a: Cross Brighton Street At Grade
  - Use highly visible pave treatment
  - Adjust stop bar locations
  - Widen sidewalks

COST = $0.61M



BRIGHTON STREET (E4)

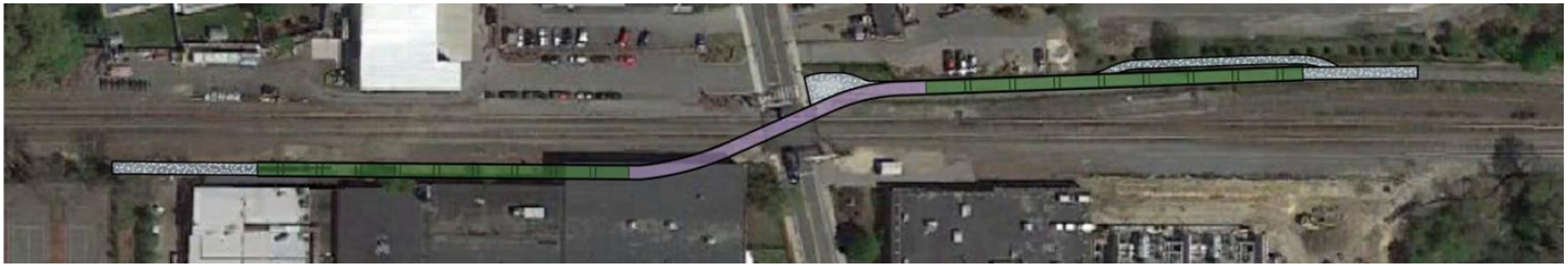
- E4b: Cross over Brighton from North Side of Rail
  - Must ascend to full height west of F&M building
  - Less than 15’ offset to rail for short pinch
  - Existing cutoff must pass under structure to maintain connection to neighborhoods
  - Remount rail signal on structure
  - Total fully elevated length = 700’

COST = $5.25M

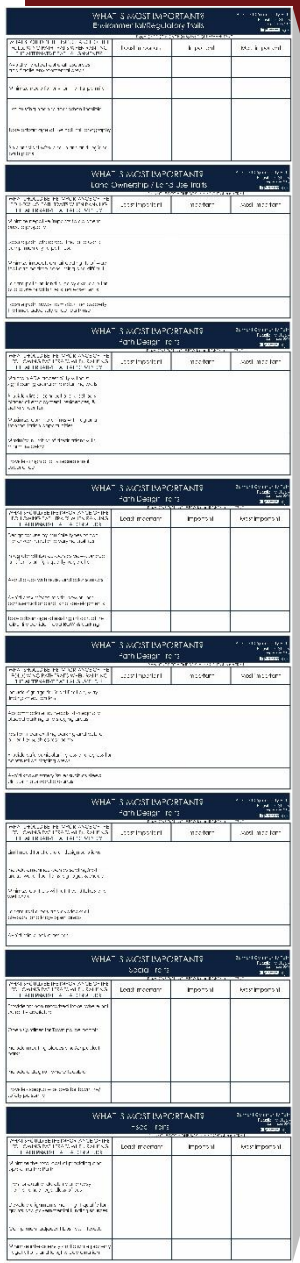
BRIGHTON STREET (E4)

- E4c: Cross over Brighton and Rail from South Side of Rail
  - Has impact to Crate Escape building
  - Maintains 15’ offset to rail
  - Existing cutoff must pass under structure to maintain connection to neighborhoods
  - Path structure passes over signal
  - Total fully elevated length = 275’

COST = $4.07M



MATRIX DEVELOPMENT



CRITERIA

- Based on community input – PAST AND PRESENT
- Refined to 21 subcategories

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

Matrix Definitions available at:
http://www.belmont-ma.gov/sites/belmontma/files/u151/matrix_definitions_02_08_17.pdf

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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Ease of Access
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Comfort
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MATRIX DEVELOPMENT

DESIGN ATTRIBUTES

- Encroachments necessary/MOU
- Fire and Safety - views, remoteness, interference
- Potential Partnerships - land acquisition, funding, and/or maintenance
- Distance to residential structures – concern for impacts based on proximity to resident, not owner

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Operations and Maintenance Costs
Qualify for Funding
Value Added

MATRIX DEVELOPMENT

TRANSPORTATION

- 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
- Impact on existing traffic/transportation
- Rail Conflict/proximity

CRITERIA
User Experience
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Rail conflicts/proximity
Cost
Range of Construction Costs
Operations and Maintenance Costs
Qualify for Funding
Value Added

MATRIX DEVELOPMENT

COST

- Range of Construction Costs
- Relative Operations and Maintenance Costs
- Qualify for various Funding sources
- Value Added

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Ease of Access
Aesthetics
Comfort
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Range of Construction Costs
Operations and Maintenance Costs
Qualify for Funding
Value Added

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	
Environmental and Cultural Impacts	
Wetlands	
Historic resources	
Mature Woodland	
Design Attributes	
Encroachments necessary/MOU	
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CRITERIA
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Operations and Maintenance Costs
Qualify for Funding
Value Added

Meetings #6 & 7 Priority – Directness

★ **Potential higher weight**

▬ **Potential lower weight**

MATRIX DEVELOPMENT: FATAL FLAWS

FATAL FLAWS – Not compatible with identified goal, eliminated from route consideration

1. Direct impact to an existing residential dwelling
2. Over 5,000 sf of loss to high quality wetlands
3. Path location is infeasible to patrol or too difficult to access in emergency situations or impedes access to other areas under Town responsibility
4. MBTA has rejected the proposed alignment/know private owner will not agree/requires speculation about usability of land at time of BOS determination
5. 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

WHERE WE LEFT OFF – CENTRAL AREA

FOR DISCUSSION

FOR DISCUSSION

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 adjust matrix as needed, complete assessment of overall routes and review funding sources.

- Cost/Matrix presentations and discussion:
  - Meeting 9: Cost Summary/Full Matrix/Funding – TBD

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

www.belmontmedia.org

jwheeler@belmont-ma.gov