BELMONT COMMUNITY PATH FEASIBILITY STUDY

Public Meeting #8 – Eastern End

March 8, 2017





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

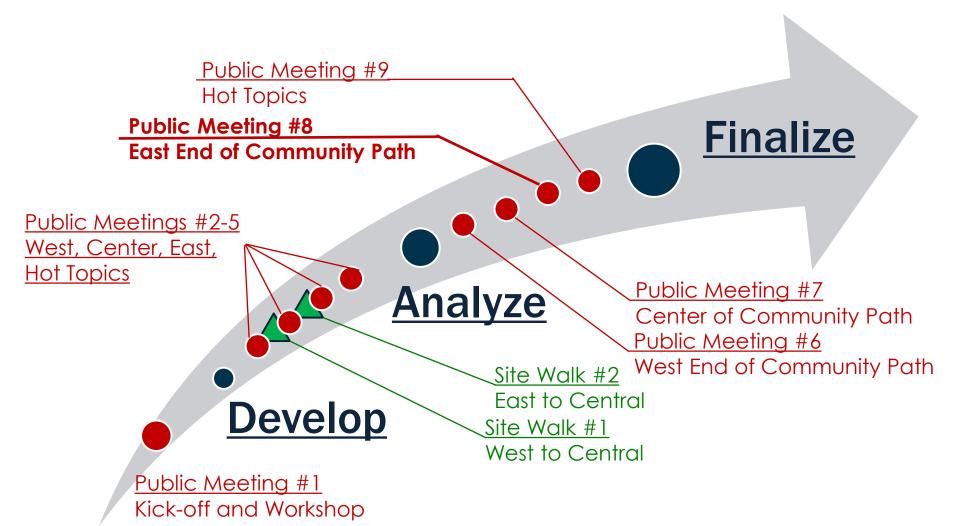
PURPOSE/LEVEL OF DESIGN

- 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

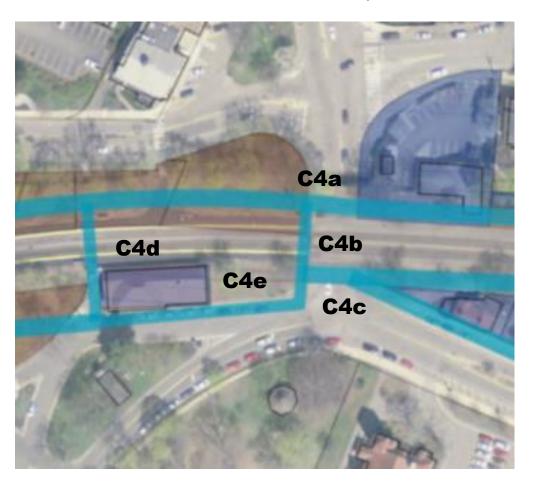
- A collaborative effort
 - Engaging and considering all stakeholders equally
 - Reflecting interests in project decisions
 - Responsibility of ALL to engage in respectful civil discourse

PROCESS



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.



- 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



- 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

- C4e: North to South or South to South → Connects to E1b
 - Ascend with switchback to track level

COST = \$0.84M

- Structure adjacent to Belmont Center Station
- Bridge parallel historic overpass



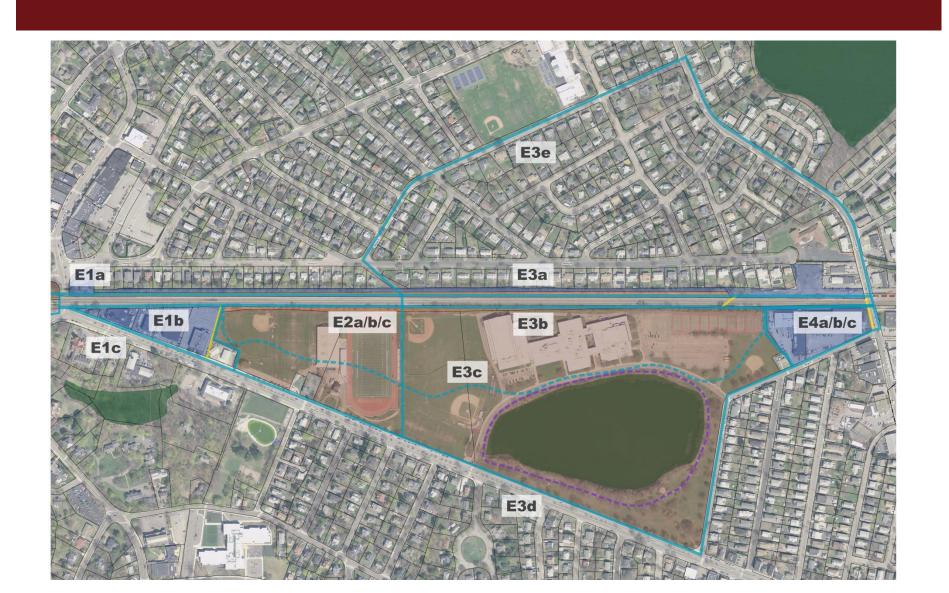
- C4b: North to South or South to North → Connects to E1c
 - Either Option: Descend or ascend to/from street through park
 - North to South must cross Concord
 Ave
 - Cost includes sidewalk reconstruction roadway resurfacing
- C4c: South to South → Connects to E1c
- Both require signalized crossing



C4b COST = \$0.79M

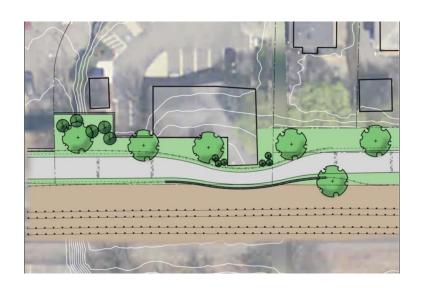
C4c COST = \$0.59M

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



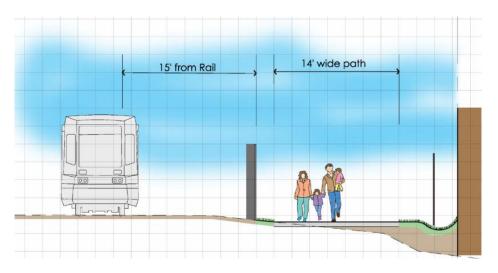


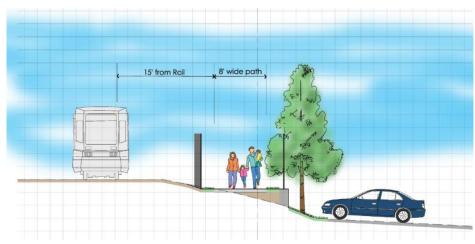
DOWNTOWN TO ALEXANDER AVENUE (E1)

- 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

COST = \$2.94M

Would require access management





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

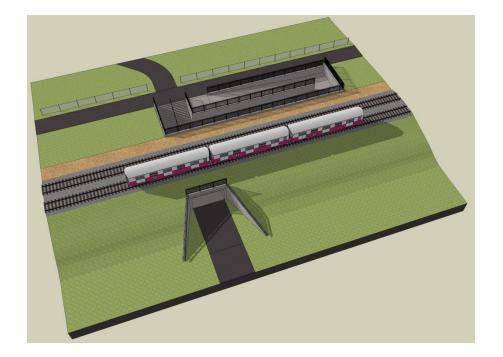
COST = 3.97M





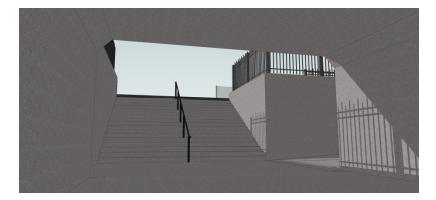


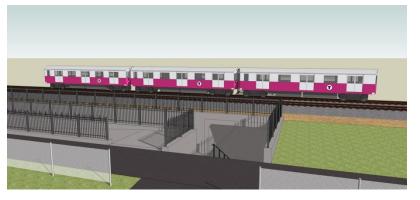
- E2b: Switchback
 - Works with any path location
 - Path running on north side of rail could bypass underpass
 - Less walls required than E2a



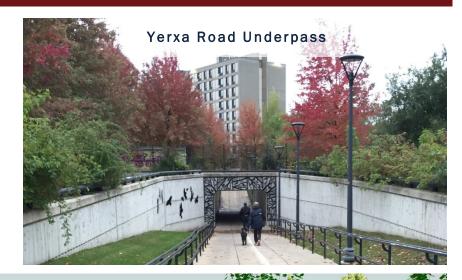
COST = \$2.46M







- 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



COST = \$2.75M





- 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

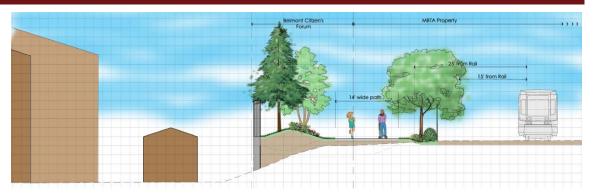


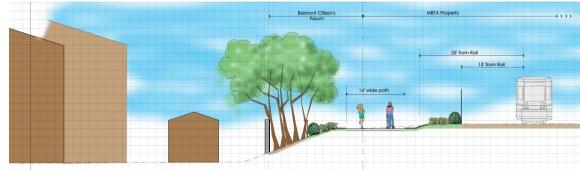


- E3a: CPAC Alignment
 - Continue east on combination of MBTA and BCF property.
 - Many options for edge treatments - 2 shown
 - Max. cost assumes retaining wall and separation wall

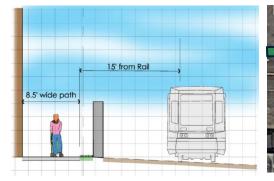
MAX = \$5.43M

MIN = \$2.75M





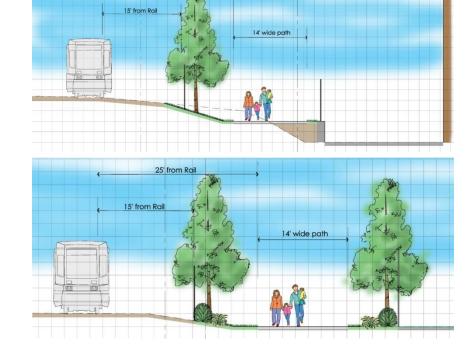




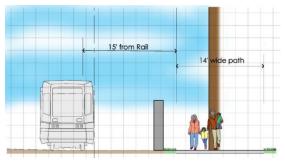


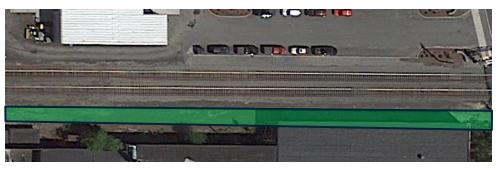
- E3b: CPAC Alignment
 - Along south side of rail
 - Path runs behind existing high school building
 - Minimum offset to rail
 - Retained to maintain drive aisle
 - Offset increases to recommended along tennis courts
 - Minimum offset and recommended width past crate escape – solid barrier required per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

COST = \$1.53M









- E3c: Alternative Traverse High School
 - Campus approved for reconstruction

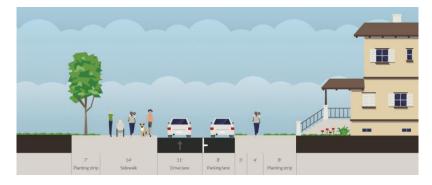
COST = \$2.05M

- Inclusion must be coordinated through MSBA
- Array of options replicate existing uses



- 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









- E3e: Alternative TraverseWinn 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





WHAT SAUDT INFORMATION PROFESSION OF THE PROFES

	S MOST IMPO Dwnership / Lond		BARRER O
HER CHARGES HE DRICK AND COMPE TO LODGE OF THE STANDARD PROPERTIES TO AN EXCHANGE A THE CASE OF	.com/months	vice form	west wooten
of older the megalities happed to take a single or cases, or program or			
anaropoli abadenti his a diserci accipinato grapidi ak			
Printed injection allered by the Har- Instant window new integrals differ to			
compain wheels respect to the			
Instant with the integral effort.			7

AHW -	WHAT IS MICHST EMPORTANTS Forh Design for to		
HA THAT DE HEVER AND OF HE TO CANADA PRODUCTION OF HAS THAT BEING A THICK STORY	.com/mporteri	nice form	sost and form
Vanta sATA accent (by the e og foar george broke nowb			
haddedes semantas costas a varieties cometiveles (A.			
actives scalar			
Paging on the Heart Cours			
auther worth: Maderic Carl Inc. Inc. (1 Cypical Inc. (1 Cypic			

VAHA*	S MOST IMPO Fach Deagn in		Summer Court Facility
MANUSCRIBERT PROVINCED IN TO COMPANY RECT A CORP. DA LARRONDE A A CORP. DO	Least meetarr	Important	Accordings:
Can great are by the fall-by-sector for the over faculty distance and call			
negotratises, compassource 2. a var (negote egotic			
Average continuos and take some as			
College received the service of the college of the			
incomb magneticating characters obs five identicating			

TAHW TAHW	3 MOST IMPO Faith Design Inc		b at the
PARTICIPATE TO CHARGO TO RE FOR THE SERVICE THE SERVICE THE REPORT OF THE SERVICE	.com/repriori	modeler	yed worte
seuro digraga fe la sel fection, e ny Indiapartes, ambre			
Assert colore is needly dynegric or decod colore is needly a case.			
rate care the are garded cost of a site of Grove Site.			
e salak sala senkulah gasa di elegisia ba Senementan digenga wasi			
And the comment of a resident states.			

White controval of the Julianess switches			
the real and participation areas			
A-Viting a vol. engrisor			
AHW	3 MOST IMPO	RTANTS	Served Contracts Tally Facility Tally Browns
MEGISTORIUSE PER PARTO ANTE DE PRE M. CARRONNE PRACTICATE, CALENCA E ALBONOMI A. A. CLAN. CO.	Load meetar	imports if	led stimportant.
"models on one sensutred those one is ort. A to 1 - unable to			
Dress peller between a server			
re administry along a war product water			
the white designs where the whole			
poste compare a positie littar (s) Locky poster ()			
AHW	S MOST IMPO		Served County to fall Funds to July Served ()
West profubilities perceivable to the		48.0	Market .

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
<u>User Experience</u>
Ease of Access
Aesthetics
Comfort
Vehicular conflicts
Conflicts with pedestrian way
Environmental and Cultural Impacts
Wetlands
Historic resources
Mature Woodland
<u>Design Attributes</u>
Encroachments necessary/MOU
Fire and Safety
Potential Partnerships
Distance to residential structures
<u>Transportation</u>
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
Cost Range of Construction Costs
Operations and Maintenance Costs
Qualify for Funding
Value Added

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

<u>User Experience</u>
Ease of Access
Aesthetics
Comfort
Vehicular conflicts
Conflicts with pedestrian way
Environmental and Cultural Impacts
Wetlands
Historic resources
Mature Woodland
<u>Design Attributes</u>
Encroachments necessary/MOU
Fire and Safety
Potential Partnerships
Distance to residential structures
<u>Transportation</u>
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
<u>Cost</u>
Range of Construction Costs
Operations and Maintenance Costs
Qualify for Funding
La company of the com

/alue Added

ENVIRONMENTAL/CULTURAL IMPACTS

- Wetlands
- Historic Resources
- Mature Woodlands

CRITERIA
<u>User Experience</u>
Ease of Access
Aesthetics
Comfort
Vehicular conflicts
Conflicts with pedestrian we,
Environmental and Cultural Impacts
Wetlands
Historic resources
Mature Woodland
<u>Design Attributes</u>
Encroachments necessary/MOU
Fire and Safety
Potential Partnerships
Distance to residential structures
<u> Transportation</u>
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
<u>Cost</u>
Range of Construction Costs
Operations and Maintenance Costs
Qualify for Funding
Value Added

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

CRITERIA
ser Experience
ase of Access
esthetics
omfort
ehicular conflicts
onflicts with pedestrian way
nvironmental and Cultural Impacts
etlands et and s
istoric resources
lature Woodland
esign Attributes
ncroachments necessary/MOU
re and Safety
otential Partnerships
istance to residential structures
ansportation
onnectivity to Destinations (Resources, menities and Transit)
ase of universal public accessibility
onsistency with regional plans ACRT/Wayside Trail)
npact on existing traffic/transportation
ail conflicts/proximity
<u>ost</u>
ange of Construction Costs
perations and Maintenance Costs

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
<u>ser Experience</u>
ase of Access
esthetics
comfort
ehicular conflicts
conflicts with pedestrian way
nvironmental and Cultural Impacts
/etlands
istoric resources
Nature Woodland
esign Attributes
ncroachments necessary/MOU
re and Safety
otential Partnerships
istance to residential sirectures
<u>ransportation</u>
Connectivity to Destinations (Resources,
menities and Transit) ase of universal public accessibility
consistency with regional plans
MCRT/Wayside Trail)
npact on existing traffic/transportation
ail conflicts/proximity
Cost
ange of Construction Costs

perations and Maintenance Costs

Qualify for Funding

/alue Added

COST

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

	CRITERIA
User E	xperience
Ease c	of Access
Aesthe	etics
Comfo	ort
Vehic	ular conflicts
Conflic	cts with pedestrian way
Enviro	nmental and Cultural Impacts
Wetlar	nds
Historia	cresources
Mature	e Woodland
Desig	n Attributes
Encro	achments necessary/MOU
Fire ar	nd Safety
Potent	tial Partnerships
Distan	ce to residential structures
	<u>portation</u>
	ectivity to Destinations (Resources,
	ties and Transit) of universal public accessibility
	tency with regional plans
	/Wayside Trail)
Impac	t on existing transcribers sportation
Railec	onflicts/proximity
<u>Cost</u>	
Range	of Construction Costs
Opero	tions and Maintenance Costs
Qualif	y for Funding

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
<u>Transportation</u>
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
<u>Cost</u>
Range of Construction Costs
Operations and Maintenance Costs
Qualify for Funding
Value Added

Meetings #6 & 7 Priority - Directness

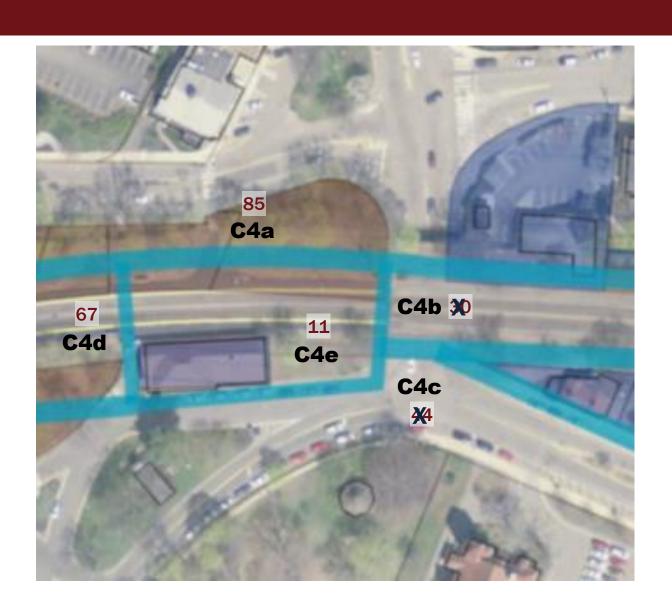


MATRIX DEVELOPMENT: FATAL FLAWS

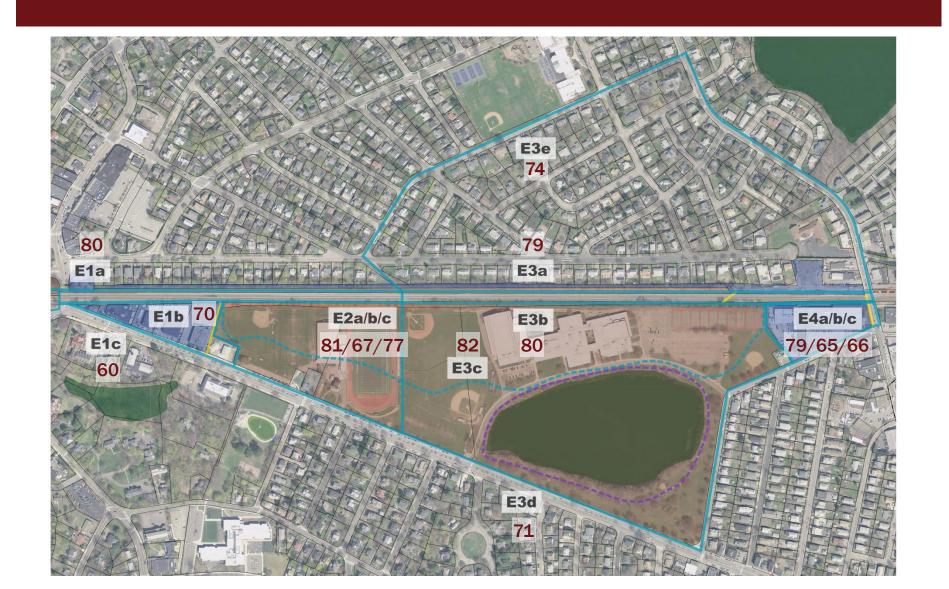
FATAL FLAWS – Not compatible with identified goal, eliminated from route consideration

- 1. Direct impact to an existing residential dwelling
- 2. Over 5,000 sf of loss to high quality wetlands
- 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

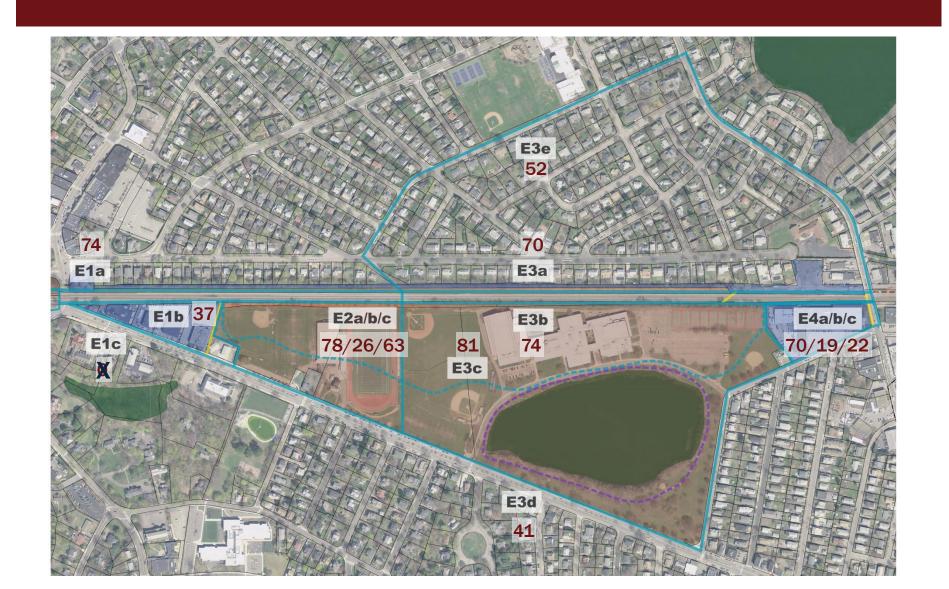
WHERE WE LEFT OFF - CENTRAL AREA



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-community-path-feasibility-study

www.belmontmedia.org

<u>jwheeler@belmont-ma.gov</u>