



GREEN LINE EXTENSION PROJECT



massDOT
Massachusetts Department of Transportation



November 20, 2017
MBTA Fiscal & Management Control Board

GLX Program Update

1. Design Build Entity Selection Process and Outcomes
2. Additive Option Scope Information
3. Apparent Successful Proposer (GLX Constructors)
4. Third Party Funding Usage
5. FTA Funding Status
6. Recommendation of DB Entity Selection and Board Action

Design Build Selection Process

- Evaluation Formula for “Best Value” determination:

$$\text{Overall Value Rating} = \frac{\text{Proposal Price}}{\text{Quality Score}}$$

Proposal Price includes the GLX Lump Sum, Allowances, and Additive Options Price

Quality Score is the Technical Proposal Score + AO points

- Affordability Limit: \$1.319 billion
- Successful Proposer has the lowest price per quality score, or lowest “Overall Value Rating”

Design Build Selection Outcome

- Overall Value Rating Outcome

Proposer Name	Proposal Price	Quality Score	Overall Value Rating
GLX Constructors		1213.7	
Green Line Partners		1277.2	

$$\text{Overall Value Rating} = \frac{\text{Proposal Price}}{\text{Quality Score}}$$

Design Build Selection Outcome

- Overall Value Rating Outcome

Proposer Name	Proposal Price	Quality Score	Overall Value Rating
GLX Constructors	\$954,618,600	1213.7	
Green Line Partners	\$1,052,600,000	1277.2	

$$\text{Overall Value Rating} = \frac{\text{Proposal Price}}{\text{Quality Score}}$$

Design Build Selection Outcome

- Overall Value Rating Outcome

Proposer Name	Proposal Price	Quality Score	Overall Value Rating
GLX Constructors	\$954,618,600	1213.7	786,535.882
Green Line Partners	\$1,052,600,000	1277.2	824,146.571



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Design Build Selection Outcome

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- Contract Price Determination

Proposer Name	Proposal Price	Owner Contingency	Contract Price
GLX Constructors	\$954,618,600	\$127,500,000	\$1,082,118,600
Green Line Partners	\$1,052,600,000	\$127,500,000	\$1,180,100,000



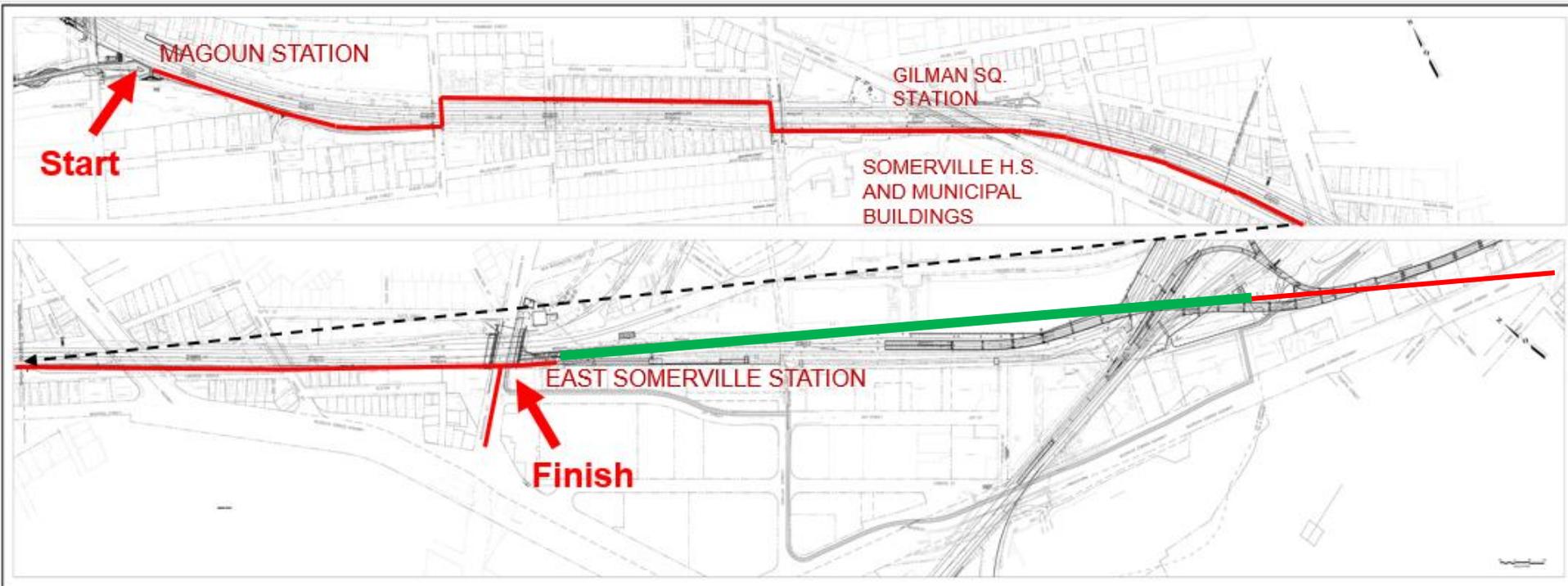
Additive Option Information

Determining the Apparent Successful Proposer

Priority	Additive Option
1.	Design and construction of station canopies to all stations.
2.	Design and construction of elevators to stations proposed for new/additional elevators.
3.	Inclusion of an art program. (This is structured as a \$720,000.00 allowance.)
4.	Design and construction of the community path connection to Chester Street.
5.	Design and construction of the community path connection from East Somerville to Lechmere.
6.	Design and construction of an enhanced VMF.



Additive Option – 5) Community Path Connection (East Somerville to Lechmere)



- Path with Additive Option included (conceptual)

Design Build Team Introduction



Design Build Team Introduction

- Info about Selected DB Team



- Fluor Enterprises Inc. (Team Lead)

- Founded 1912

- Annual Rev of \$19 billion in 2016

- Recent Capital Transportation Projects:

- Lead firm in \$2.2 billion Eagle P3 Rail Line (Denver, CO) completed in 2016

- Joint Venture partner in \$1.5 billion LA Exposition Line completed in 2016

Design Build Team Introduction

- Info about Selected DB Team
 - The Middlesex Corp.



- Founded 1972
- Operations in New England and Florida
- 2016 ENR Regional Best Project Award of Merit - Kenneth F. Burns Memorial Bridge Project (Design-Build)

Design Build Team Introduction

- Info about Selected DB Team
 - Herzog Contracting Corp.



- Founded 1969
- Specialize in both light rail and commuter rail construction projects
- West Rail Line (Denver) - \$370M completed in 2013
- FrontRunner South Commuter Rail Project (Utah) - \$529M completed in 2012

Design Build Team Introduction

- Info about Selected DB Team

Balfour Beatty

- Balfour Beatty

- Founded 1909
- 30,000 employees worldwide
- Rail systems transit infrastructure
- System Integrator in \$2.2 billion Eagle P3 Rail Line (Denver, CO) completed in 2016

GLX Program Funding Sources and Uses - Federal

- GLX Full Funding Grant Agreement (FFGA) serves as FTA's contractual commitment of \$996 million for federal share of eligible costs within the scope of the GLX Project as defined in the FFGA.
- FFGA not drawn down by MBTA for the GLX Project are not available for other uses.

GLX Program Funding Sources and Uses - State

- Commonwealth is providing funding up to \$1.35 billion through the use of Rail Enhancement Bonds to reimburse MBTA through an Interagency Services Agreement.
- Funds not used for the GLX Project are subject to be reprogrammed through the CIP process for SGR projects upon closeout of the GLX Project.

GLX Program Funding Sources and Uses – MPO and Municipal

- MPO contributed \$157M to the GLX Project.
- Cambridge agreed to provide \$25M to the GLX Project.
- Somerville agreed to provide \$50M to the GLX Project.
- Upon the closeout of FFGA, if the total costs of the GLX Project are less than \$2.3B, then the contributions from Somerville and Cambridge will be reduced by the same percentage of their participation.

Federal Funding Status

- GLX Full Funding Grant Agreement (FFGA) executed January 5, 2015
- FFGA serves as FTA's contractual commitment of \$996,121,000 of program funding.
- Since FFGA execution, Congress has approved annual appropriations for GLX funding:
 - 2015 \$100,000,000
 - 2016 \$150,000,000
 - 2017 \$150,000,000
- MBTA/MassDOT has transmitted all required and requested information to FTA to gain access to FFGA appropriated funds.

Recommendation

- That the Fiscal and Management Control Board approve and authorize the General Manager to award and execute MBTA Contract No. E22CN07, “Green Line Extension Design Build Project,” with GLX Constructors, a Joint Venture, in the Contract Price amount of \$1,082,118,600.





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Appendix

Design Build Selection Process

- Design-Build proposals submitted by 3 competing teams on September 28, 2017.
- Affordability Limit Certification opened on October 23, 2017, with 2 of 3 teams certifying their price proposal was at or under the Affordability Limit (\$1.319 billion)
- Evaluation of Base Technical Concepts completed November 1, 2017
- Additive Option evaluation completed November 13, 2017 (*final step of Quality Score development*)
- Public Price opening occurred Friday, November 17, 2017 (*final step of Proposal Price determination*)

Design Build Evaluation Outcomes

- Quality Score Outcomes
 - 1350 Points available

Criteria	%	GLX Constructors	Green Line Partners
Management Approach	45%	374.6	417.1
Technical Solutions	25%	220.5	229.7
Key Personnel	25%	222.8	235.0
Civil Rights	5%	45.8	45.4
Additive Options		350	350
Total Quality Score		1213.7	1277.2



Contract Price Interpretation

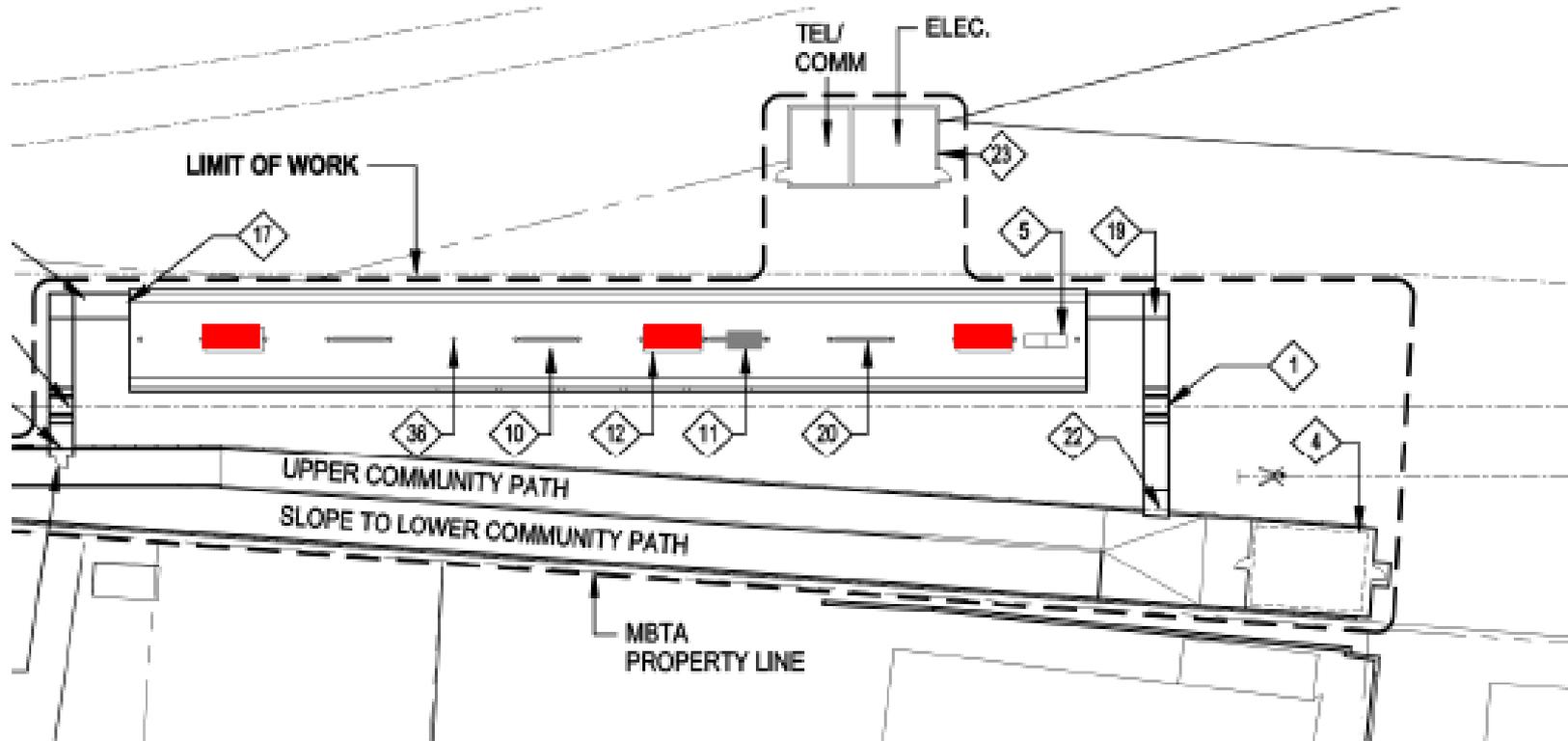
- Contract prices are \$237M and \$139M under Affordability Limit of \$1.319 billion, respectively.
 - De-risking project
 - Simplified design, optimal risk allocation
 - Changes to Process
 - Design Build procurement
 - Incentivized innovation in competitive environment
 - Alternative Technical Concepts
 - Affordability Limit
 - Attracted new players to local market
 - Established rapport between MBTA and each team during procurement process



Additive Option Information

Additive Option – 1) Station Canopies

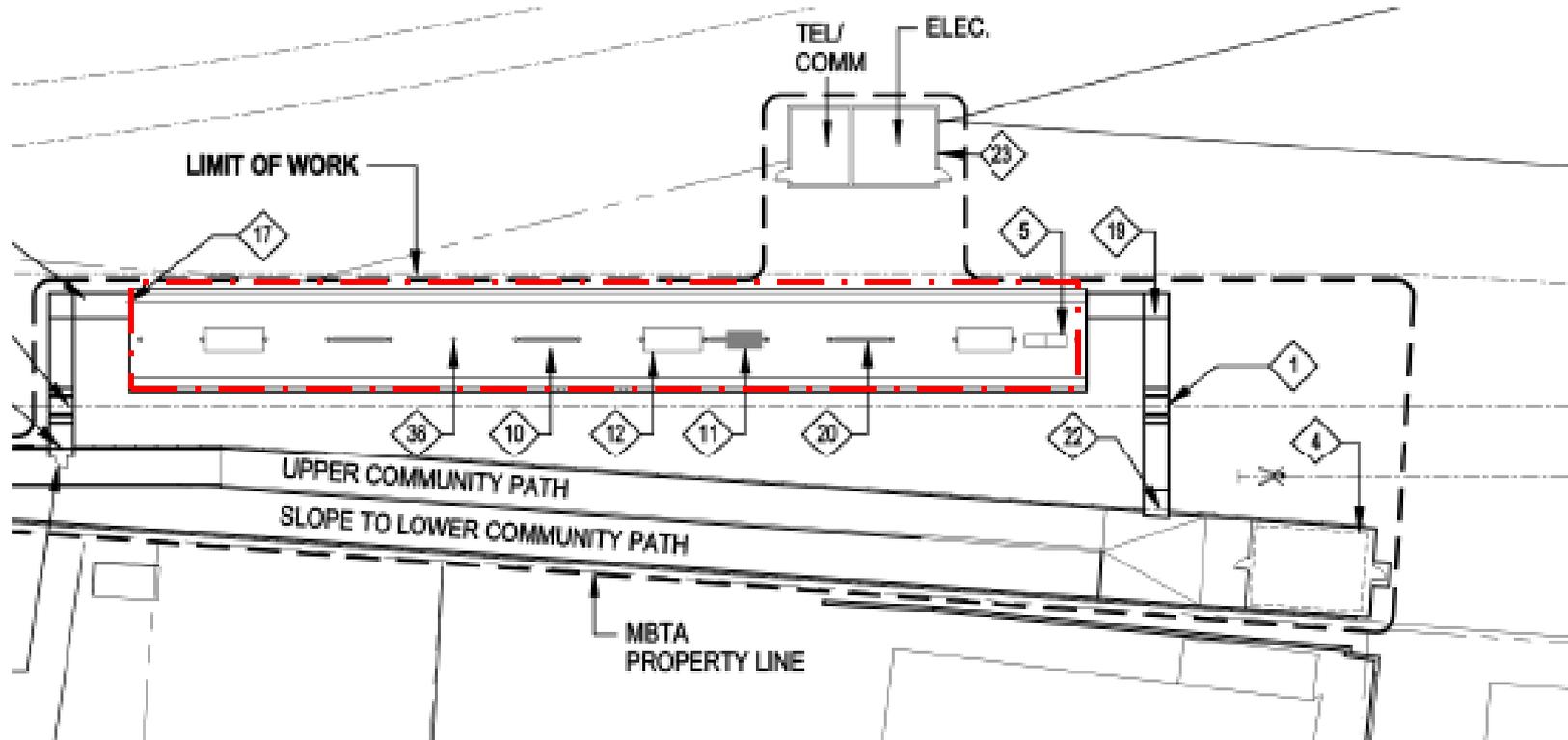
East Somerville Station



Base scope – Shelters on platforms - ■

Additive Option – 1) Station Canopies

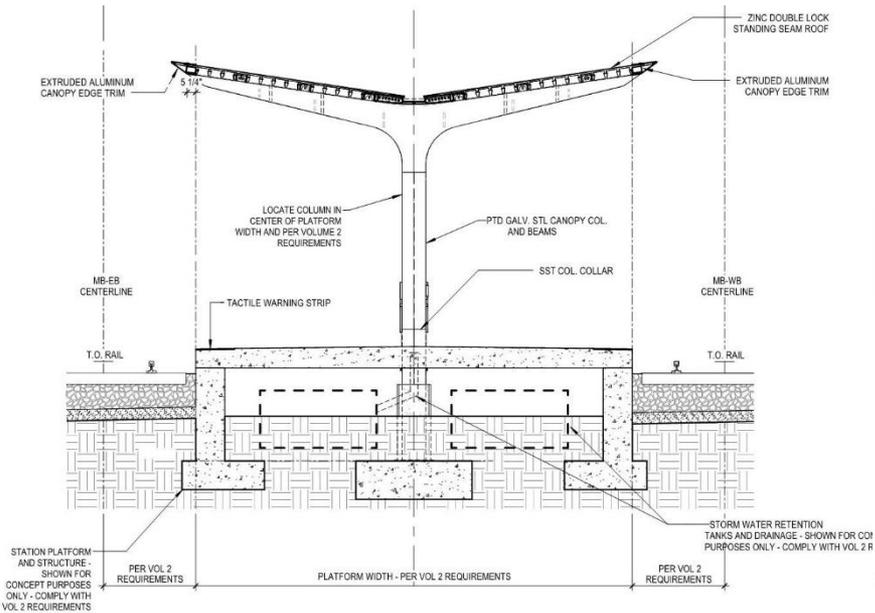
East Somerville Station



Additive Option – Canopies full length and width of the platform – 
Removes shelters required in base scope

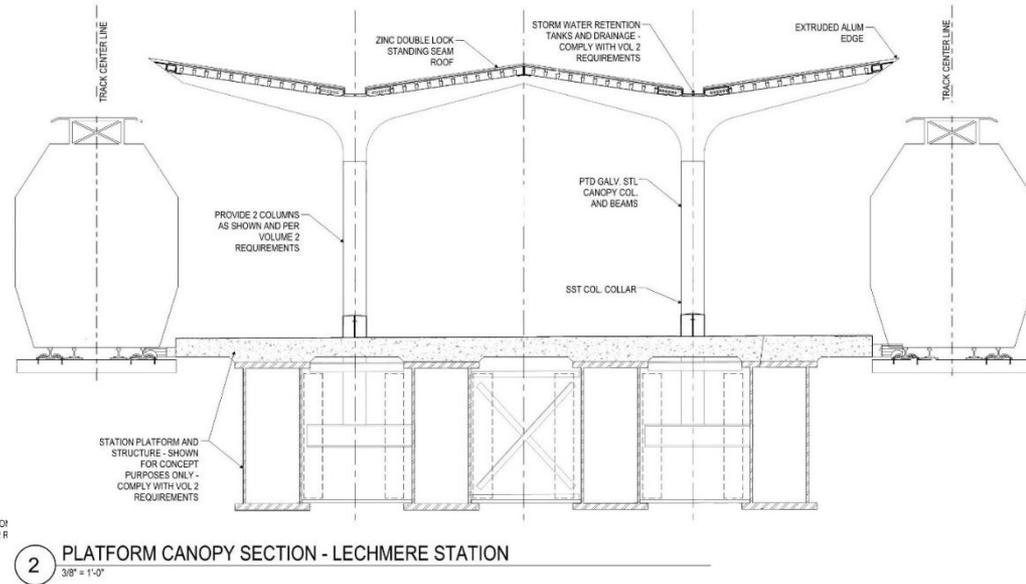
Additive Option – 1) Station Canopies

- Typical Cross section



1 PLATFORM CANOPY SECTION - ALL STATIONS (EXCEPT LECHMERE)
1/4" = 1'-0"

All Stations (except
Lechmere)



2 PLATFORM CANOPY SECTION - LECHMERE STATION
3/8" = 1'-0"

Lechmere Station

Additive Option – 2) Elevators

- Lechmere Station – Add 1 elevator at North Headhouse
- Gilman Square Station – Add 1 elevator and staircase from School Street (remove ramp at School Street from base scope)
- Magoun Square Station – Add 1 elevator adjacent to the elevator required in the base scope
- Ball Square Station – Add 1 elevator and staircase from Broadway Bridge to the southeast end of the platform



Additive Option – 3) Art Program

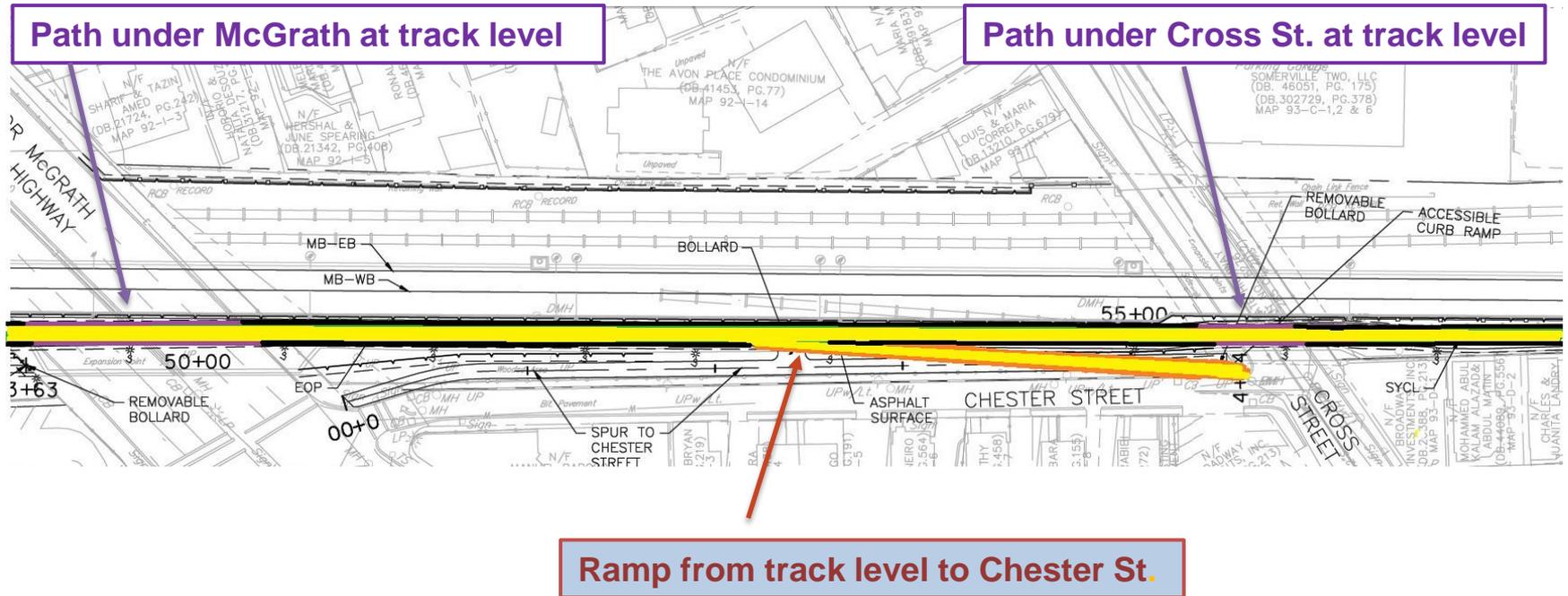
- Art program at all seven (7) stations
- \$100k (\$120k at Lechmere) Budget Allowance per station for:
 - design for installation of the artwork on site (not design of the artwork itself)
 - art materials
 - art fabrication
 - installation of the artwork by the DB Entity
- Artistic treatment of fences, screen walls, railings, porcelain enamel panels, site elements, retaining walls, glazing, lighting, ceilings, tile wall surfaces, or other features.



Additive Option – 4) Chester St Path Connection

- ADA Community Path Connection connecting **Community Path** to **Chester St** (between Cross Street and McGrath Highway)
- Path Connection shall not include switchback ramps

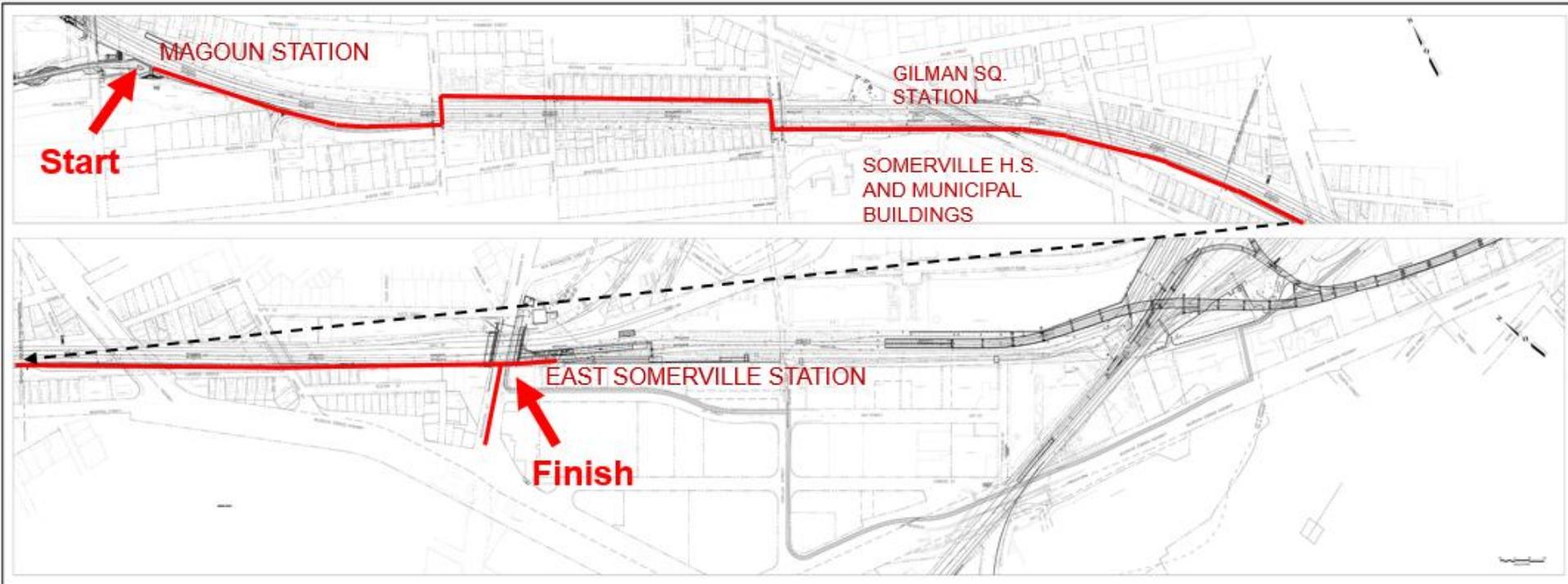
Additive Option – 4) Chester St Path Connection



Additive Option – 5) Community Path Connection (East Somerville to Lechmere)

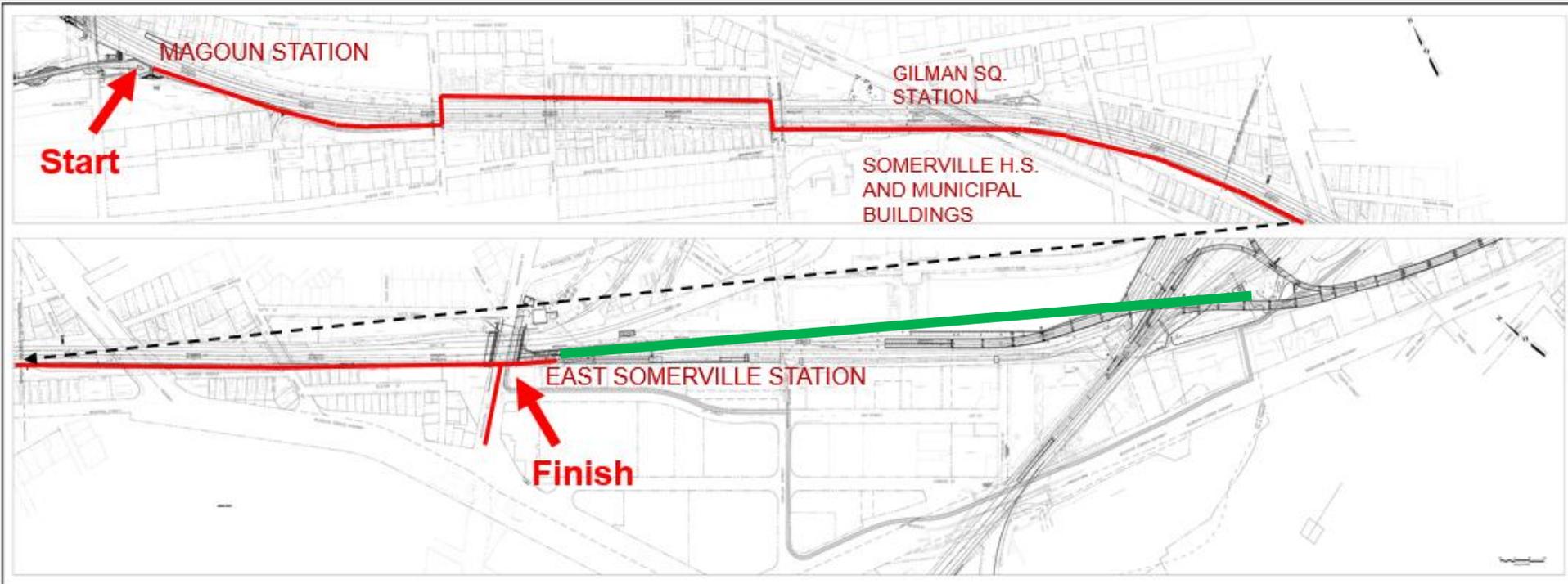
- One ADA compliant connection from East Somerville Station to existing North Point Path Terminus
- Path connection shall include emergency call boxes and all utility, power, signage, and drainage work required

Additive Option – 5) Community Path Connection (East Somerville to Lechmere)



- Path in the Base Scope

Additive Option – 5) Community Path Connection (East Somerville to Lechmere)



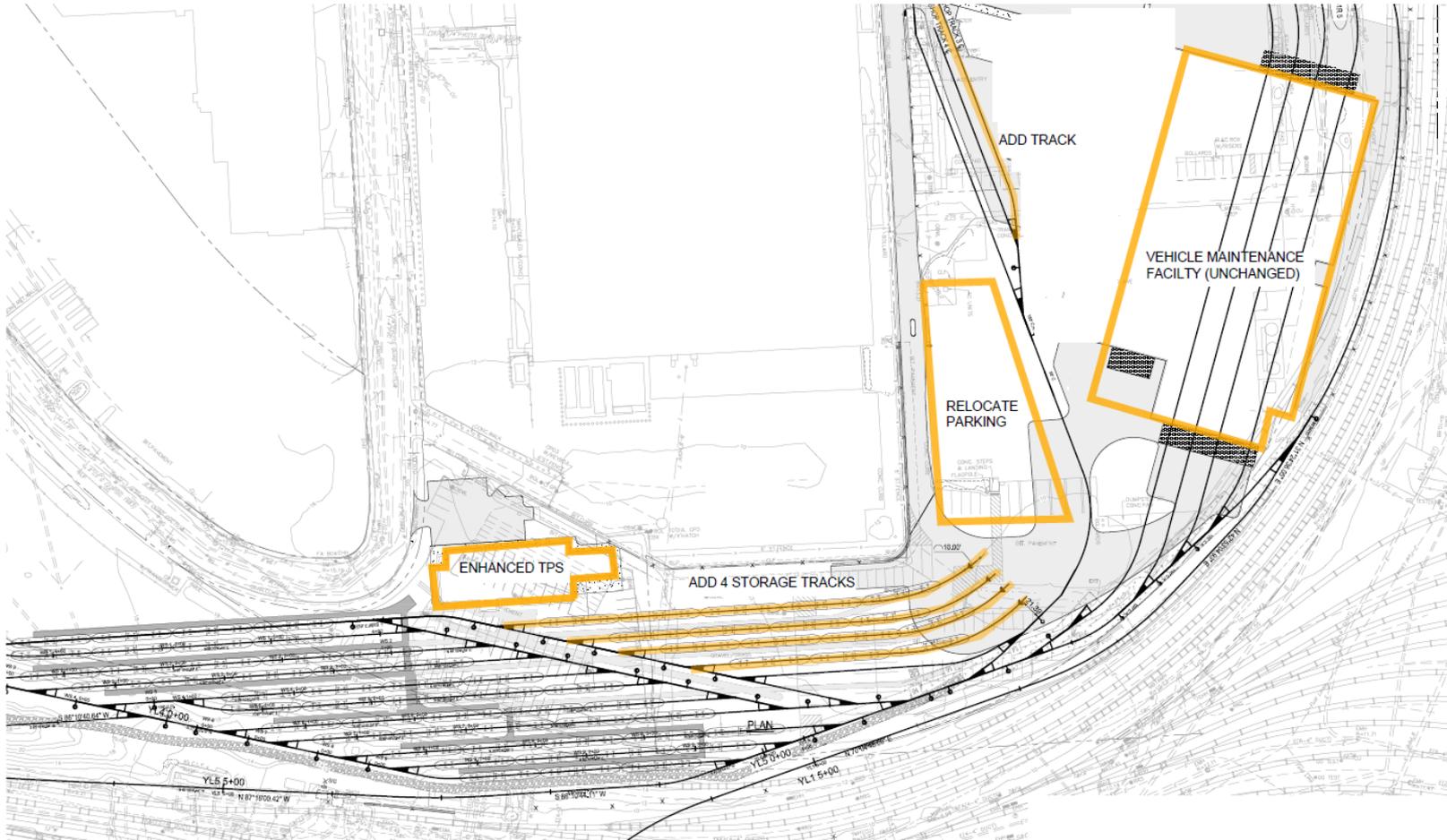
- Path with Additive Option included (conceptual)

Additive Option – 6) Enhanced VMF

- One wheel truing machine
- Additional 5 Storage Tracks (min 16 cars)
- Additional jacking equipment and bogie setout tracks
- Full height storage within the VMF Maintenance Building
- Enhanced VMF:
 - Site furnishings (benches, bike racks, etc.)
 - Additional landscaping requirements
- Enhanced Transportation Building:
 - Additional rooms/facilities ~4,800 SF (base scope ~1,425 SF)
 - Minimum lifespan of 50 years (base scope 25 years)



Additive Option – 6) Enhanced VMF



Highlighted contextual representation of changes in the Enhanced VMF

GLX Program Funding Sources and Uses – Municipal

“In the event that the Total Costs of the Project, at the Close-Out of the Project (as defined below), are determined by MassDOT to be less than \$2.3 billion (the difference between the actual lesser amount of the Total Costs of the Project and \$2.3 billion, referred to as the “Project Savings”), the City’s Contribution shall be reduced by the same percentage of its participation in the Project Funding Gap, pari-passu in relation to any Municipal Contributions. By way of example, if the Project is ultimately determined by MassDOT to have cost \$2.275 billion such that the Project Savings shall equal \$25M, and the other Municipal Contributions are \$25M, then the City shall be reimbursed 66% of the Project Savings, or \$16,666,666. Such reimbursement shall be made by MassDOT not later than three (3) months following the conclusion of the Close-Out of the Project. For the purposes of this Agreement, the phrase “Close-Out of the Project” shall mean that date that all obligations under the Full Funding Grant Agreement between the MBTA and the Federal Transit Administration, as the same may be amended, have been satisfied; provided, however, that the “Close Out of the Project” shall in no event occur later than a date which is ten (10) years from the Start of Construction [defined to be NTP, or December, 2027].”