



GREEN LINE EXTENSION PROJECT



massDOT
Massachusetts Department of Transportation



**GLX WORKING GROUP
PRESENTATION**
OCTOBER 2, 2014

Agenda

- **Welcome**
- **GLX Sustainability**
- **Project Overview & Updates**
- **Upcoming Public Meetings**
 - Station Meeting – Lechmere
 - Station Meeting – Union Sq. & Washington St.
- **Working Group Discussion**
- **Open Comment**



MBTA Sustainability Program

Green DOT



Sustainable Design Elements



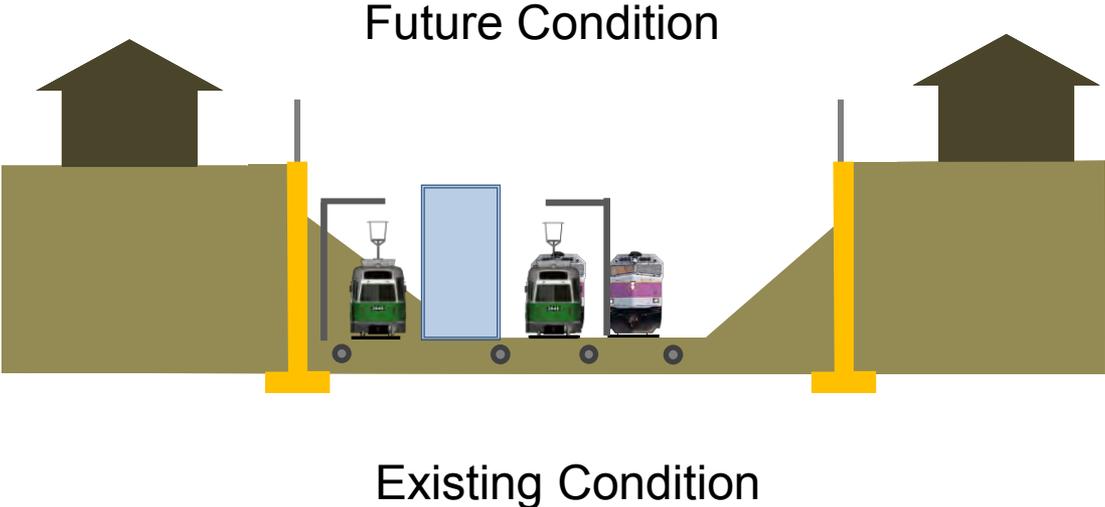
Improving Mode Share



Climate Change Adaptation

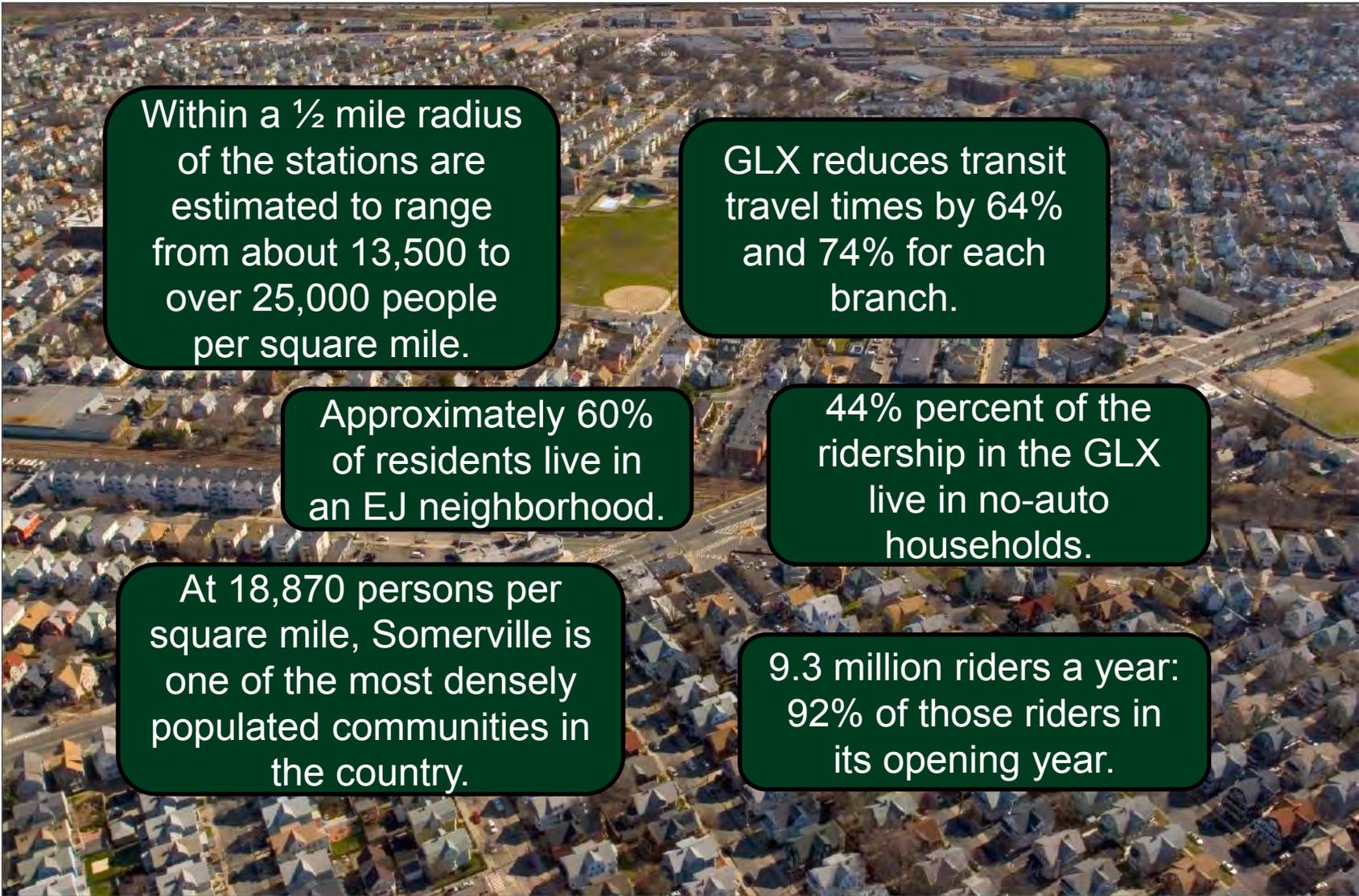


Existing/Future Condition



Typical Picture of Sustainability





Within a ½ mile radius of the stations are estimated to range from about 13,500 to over 25,000 people per square mile.

GLX reduces transit travel times by 64% and 74% for each branch.

Approximately 60% of residents live in an EJ neighborhood.

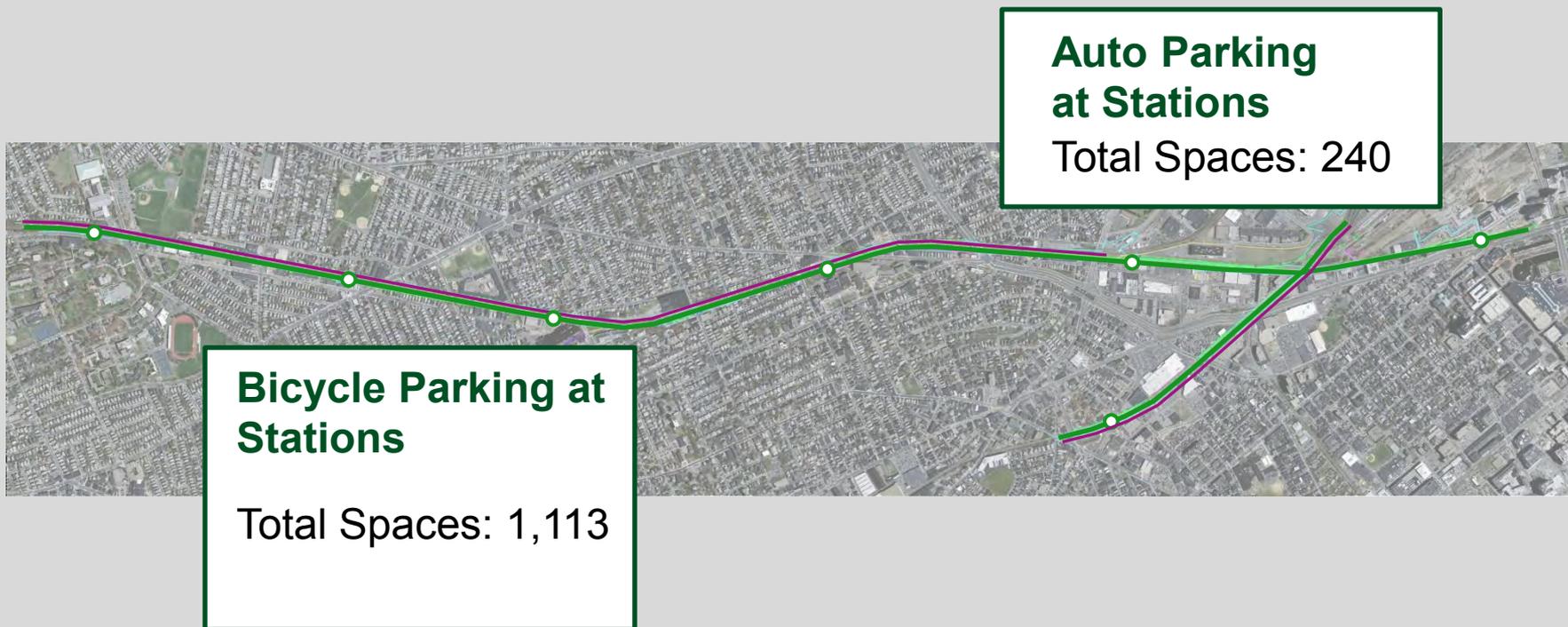
44% percent of the ridership in the GLX live in no-auto households.

At 18,870 persons per square mile, Somerville is one of the most densely populated communities in the country.

9.3 million riders a year: 92% of those riders in its opening year.



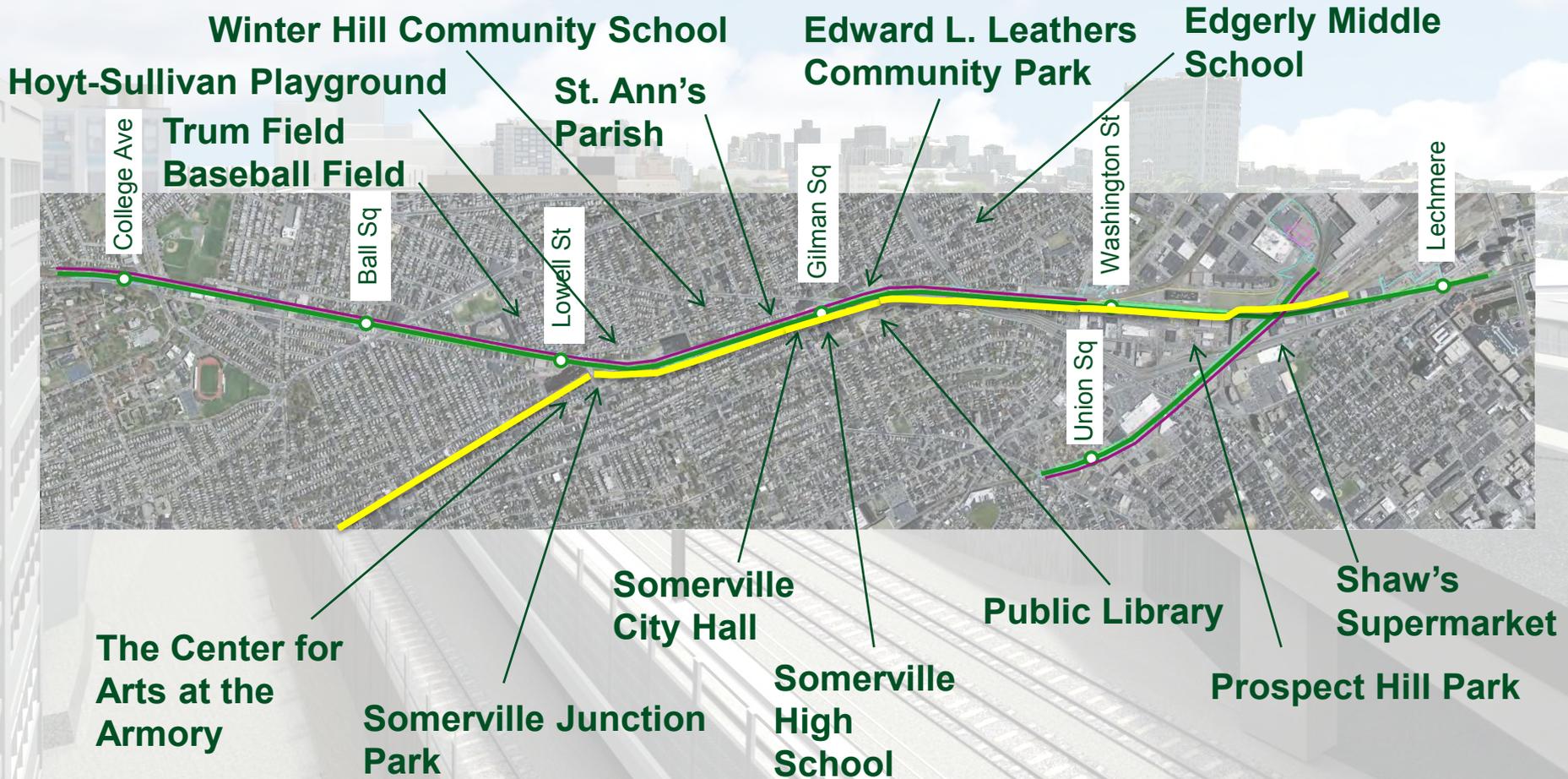
Automobiles Need Not Apply



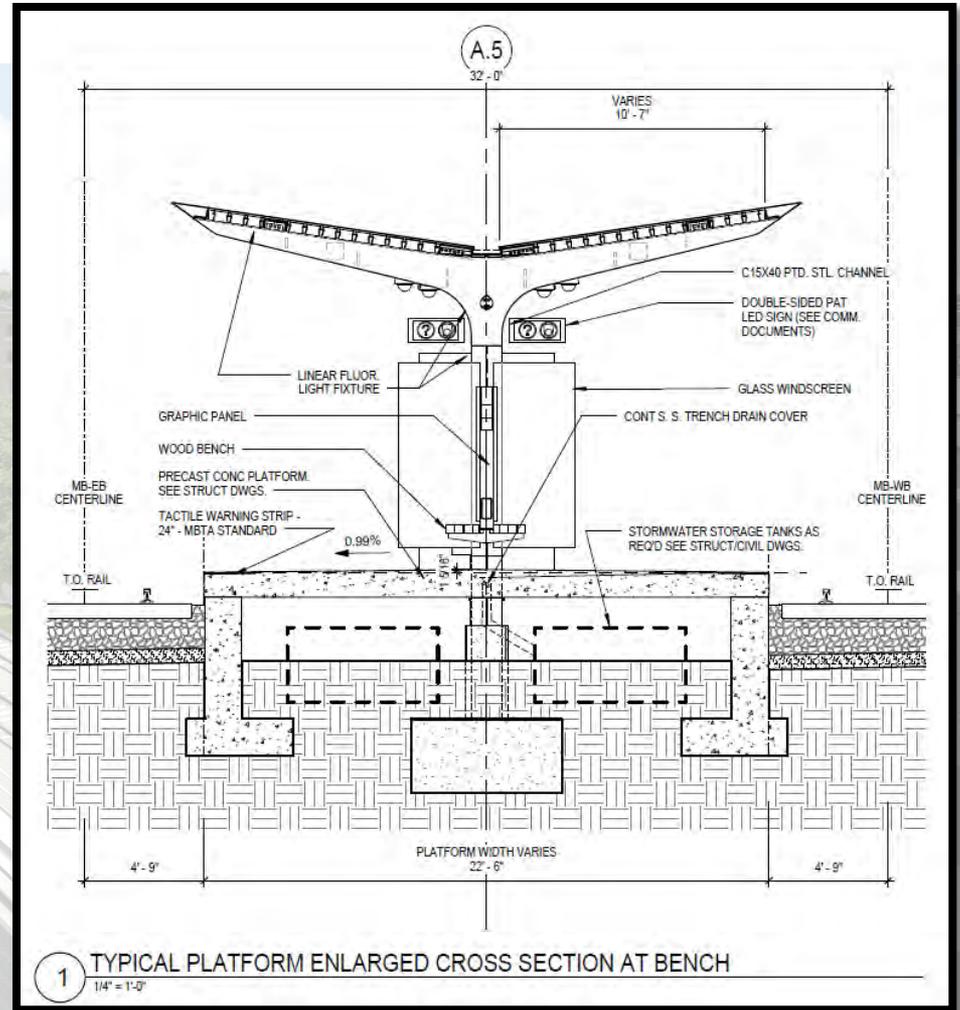
Pedal & Park



Somerville Community Path



Sustainable Design: Focus on Water Management



Sustainable Design: Focus on Water Management



Sustainable Design: Focus on Energy Management



Sustainable Design: Focus on Materials Management

- Repurposing granite blocks and an existing viaduct
- Reuse of soil on site
- Strong attention on using low toxic, sustainable materials in all elements of the design



Climate Change Adaptation/Resiliency



Washington Street



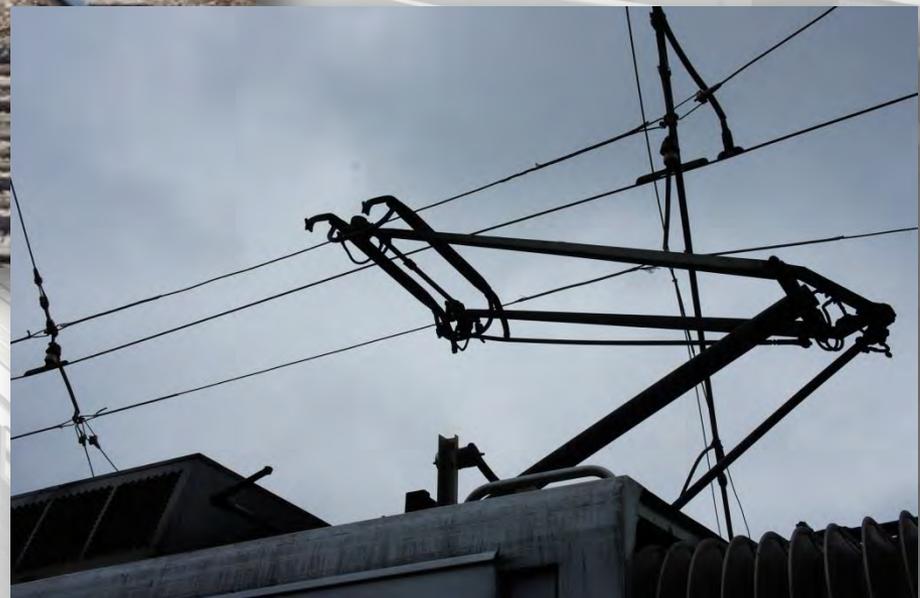
Climate Change Adaptation/Resiliency



Red Bridge Traction Power Substation

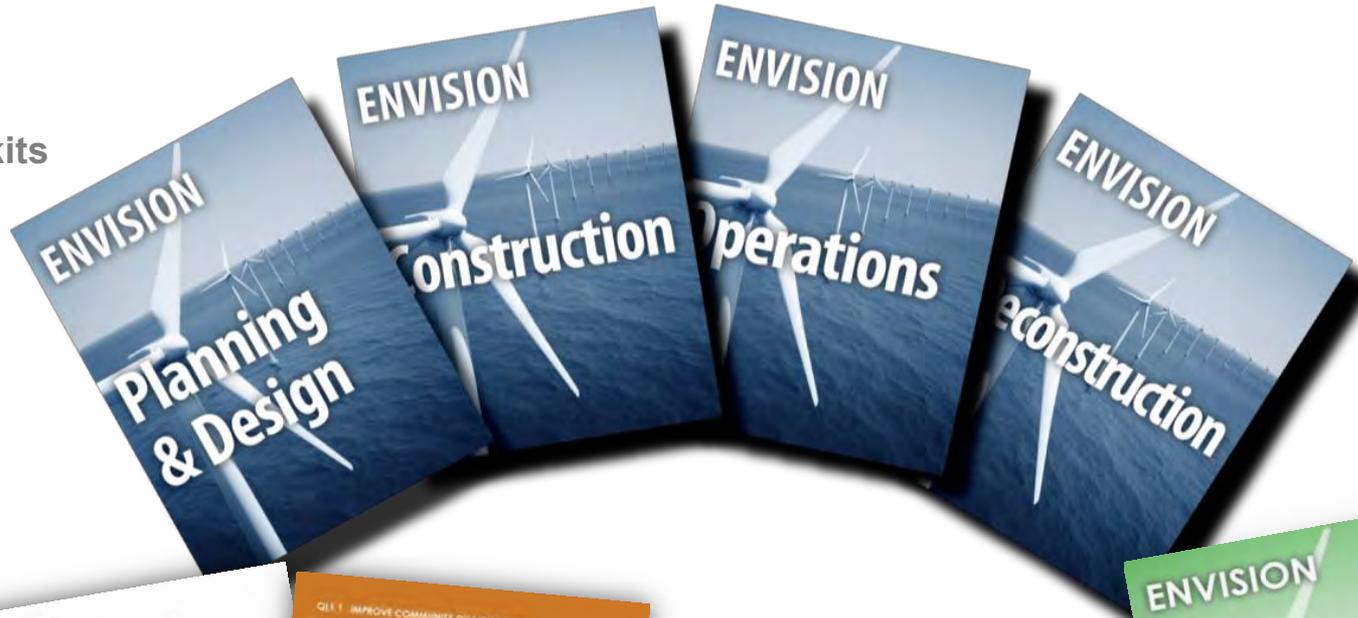


Climate Change Adaptation/Resiliency



What is Envision?

- Phase Toolkits

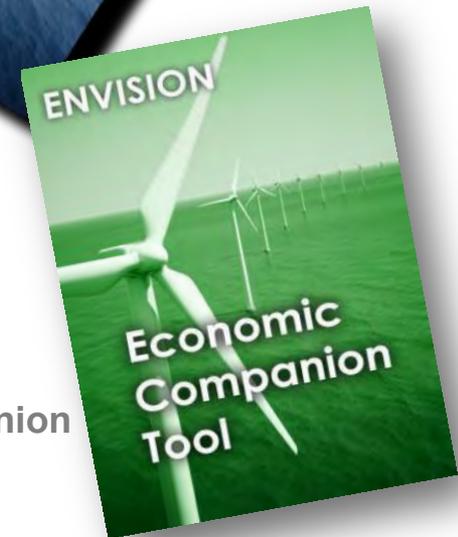


- Envision™ Checklist



- Verification and Recognition

- Companion Tool



Value to Projects Like GLX

- It is a powerful planning tool as well as a project evaluation tool
- Causes you to think about sustainability in an organized fashion and consistent with community values and priorities
- Allows informed decisions about value up front, where it matters most
- Includes metrics to identify and measure the value of a sustainable infrastructure investment over project life

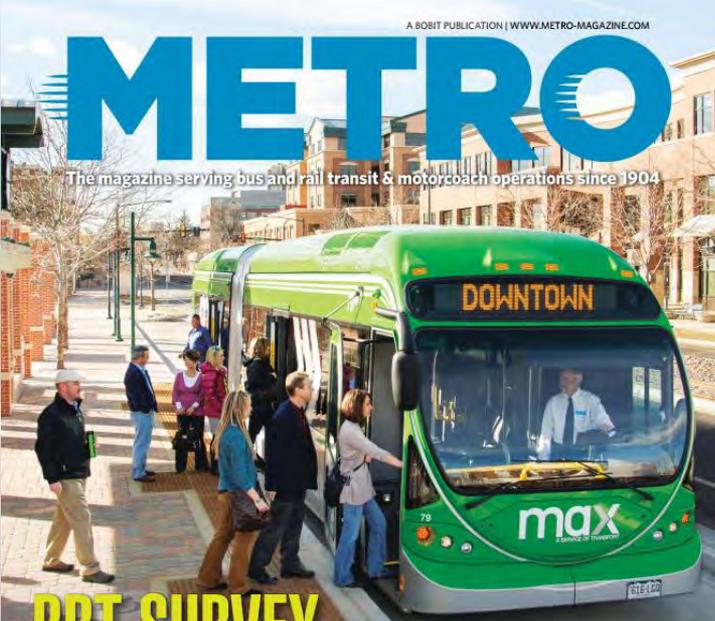


Keeping the Green in the Green Line

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BRT SURVEY

New Projects Flourish, Bring in the Bucks

GREEN-ER RAIL

Making Sustainability Key for Boston Plan

Mobile Surveillance
Doing Double Duty to Help Operations be More Effective

Atlanta Streetcar
Forging Connections for Today's, Tomorrow's Transit

UMA EXPO
Touting Partnerships, Vehicle Upgrades for Biz Boost

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Sustainable Service: Planning a Green(er) Line for Boston



The Green Line Extension will include seven new stations, the addition of 4.5 miles of light rail track and the development of two facilities, with emphasis placed on developing and implementing sustainable solutions wherever possible.

BY AMY GARROD, LEED AP BD+C

One of the largest infrastructure projects in the commonwealth and the Massachusetts Bay Transportation Authority's (MBTA's) first expansion project in 25 years, the Green Line light rail service project in Boston is set to greatly improve sustainable public transit service in some of the region's most densely populated municipalities.

PROJECT SCOPE

The project, known as the Green Line Extension (GLX), will include seven new stations — Lechmere, Union Square, Washington Street, Gilman Square, Lowell Street, Ball Square and College Avenue — which are all due to open by 2019; 4.5 miles of light rail track; the relocation of Lechmere station; the reconstruction of bridges along the corridor;

and the development of two new buildings, including a vehicle maintenance facility. In total, the project will add approximately 215,000 square feet of new facilities.

Due to the immense impact, the GLX project scope demanded sustainability objectives be established early on, are managed in an organized and meaningful way, and remained transparent so they can be communicated to all project stakeholders — especially the surrounding communities directly affected by the GLX and hold high expectations for the project. As the GLX runs through many neighborhoods, at times in extremely close proximity to homes, it has been critical to implement practices addressing sustainability in every aspect of the project's design and construction.

"The MBTA has a duty to responsibly design, construct, operate, and manage all aspects of the project to ensure continued community support and deliver a project that not only provides long-term operational benefits to the MBTA, but also showcases the need for sustainable transit and infrastructure projects," says Mary Ainsley, senior director, design and construction, for MBTA.

"The GLX project provides a vital service to the communities that will help connect and strengthen them," says Andrew Brennan, director, energy and environment, of the MBTA, who is leading the sustainability charge for the GLX. "Sustainability is one of the key principles of this entire project and is embedded at every decision point."

The project will be delivered by con-

Thank You



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GLX SUSTAINABILITY



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GLX PROJECT UPDATE



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OCTOBER 2, 2014

GLX Upcoming Milestones

- Submit FFGA Application Fall 2014
- Begin Early Work Construction Fall 2014
 - GMP#1-Procurement of Long Lead Items
 - GMP#2-Early Utilities Phases 2/2A & 4
 - GMP#3-Miller's River & Fitchburg Line
- Full Funding Grant Agreement Winter 2014-15
- Begin GMP#4 – Phase 2/2A Construction Spring 2015
- Service Begins:
 - Lechmere, Washington St. & Union Sq.: December 2017
 - Gilman Sq., Lowell St., Ball Sq. & College Ave.: Summer 2020

Full Funding Grant Agreement Application (FFGA)

- GLX is prepared to make the application and is working with FTA as to when it will be submitted.
- FFGA will include agreed upon budget of \$1.992B and completion date of June 2020 (plus an additional year of contingency).

GMP #1 – Procurement of Long Lead Items

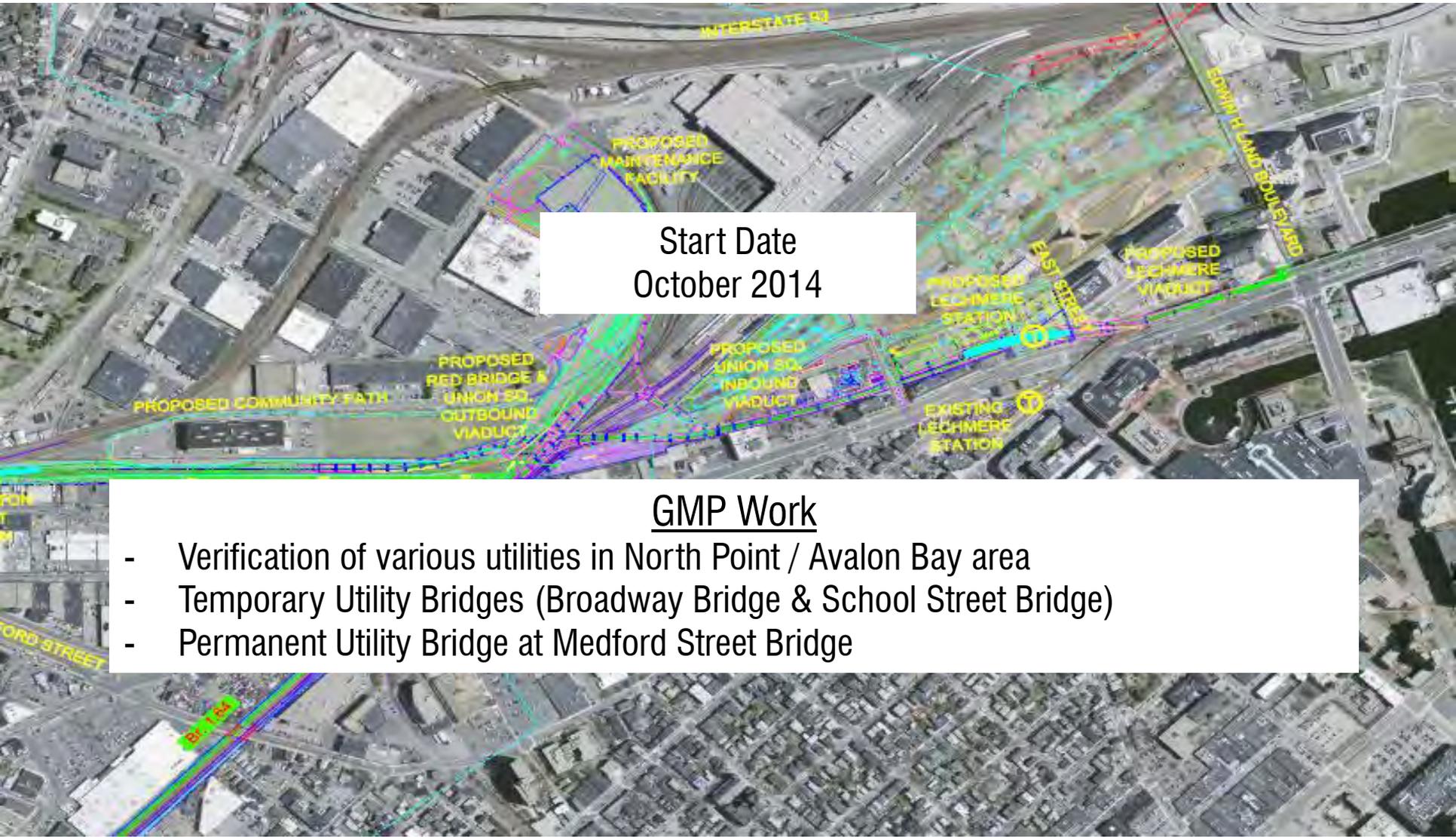
Start Date
October 2014

GMP Work

- Red Bridge Traction power substation equipment
- Track and signal material for Tufts interlocking
- Track and systems switches, signal bungalows for Fitchburg Mainline
- Steel materials for Washington Street Bridge



GMP #2 – Early Utility Work Phase 2/2A & 4



Start Date
October 2014

GMP Work

- Verification of various utilities in North Point / Avalon Bay area
- Temporary Utility Bridges (Broadway Bridge & School Street Bridge)
- Permanent Utility Bridge at Medford Street Bridge



GMP #3 – Miller's River and Fitchburg Line



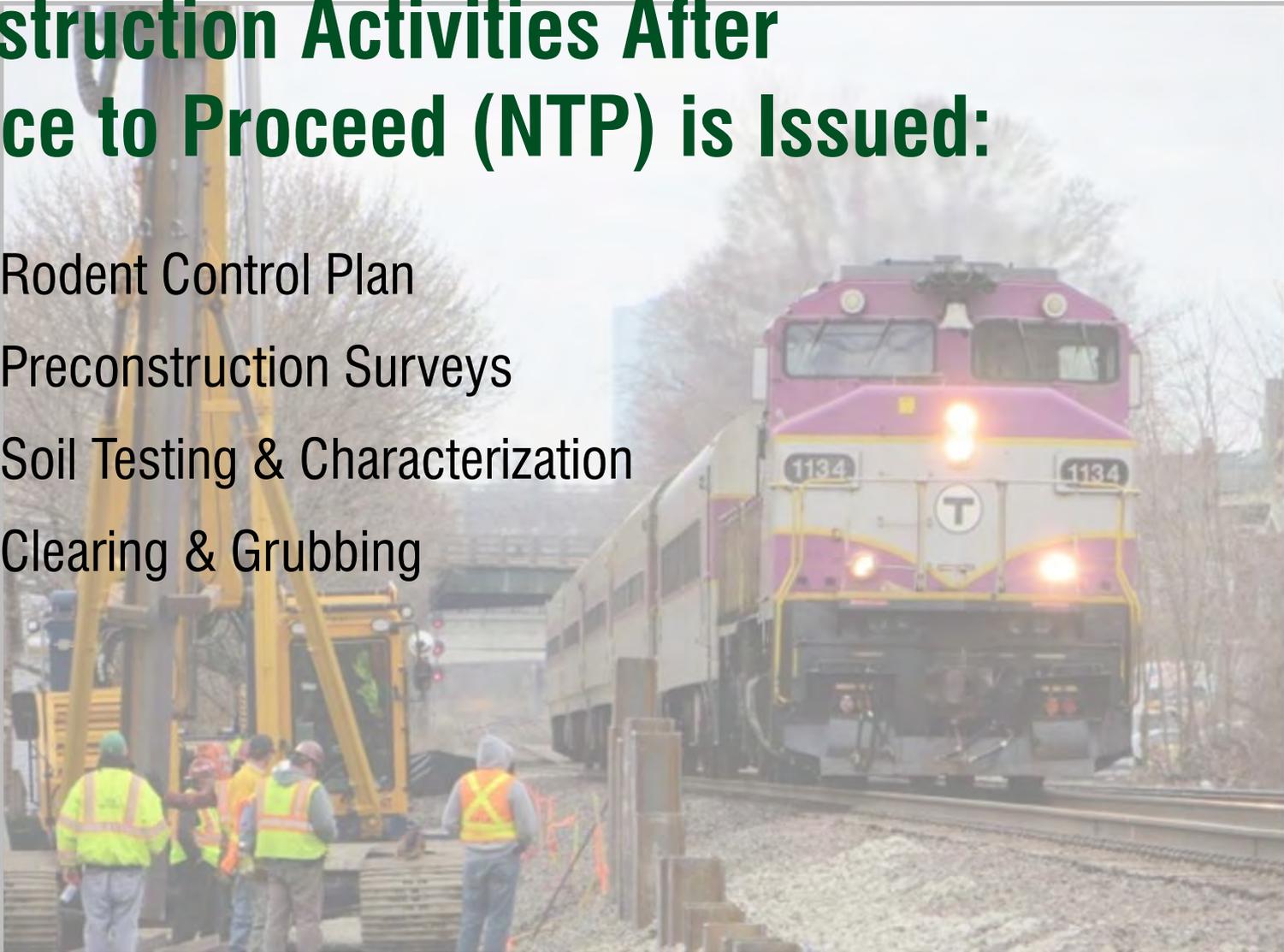
Start Date
October 2014

GMP Work – Millers River Drainage & Fitchburg Mainline

- Preliminary earthwork and grading
- Track relocations with drainage and utilities in track area
- Installation of Viaduct Foundations
- Replace drainage pipe and addition of new manholes
- Installation of Pump Stations at Washington Street and Red Bridge
- Construction of detention pond at Red Bridge
- Construction of Retaining Walls

Construction Activities After Notice to Proceed (NTP) is Issued:

- Rodent Control Plan
- Preconstruction Surveys
- Soil Testing & Characterization
- Clearing & Grubbing



Current Projected Phased Schedule



■ Phase 1 – Harvard & Medford St Rail Bridges; 21 Water Demo Award: Dec 2012/ Finish: Oct 2015

■ Phase 2 – Lechmere to Washington Street Start: Oct 2014 Finish: Jun 2017/
Start-up Testing to Dec 2017

■ Phase 2A – Union Square Branch Start: Oct 2014

- GMP 1 & 2 – Long Lead Items & Utility Work Start: Oct 2014
- GMP 3 – Miller’s River Drainage & Fitchburg Mainline Start: Oct 2014
- GMP 4 – Balance of Phase 2/2A Work Start: Mar 2015

■ Phase 3 – Vehicle Maintenance Facility Start: Feb 2016/ Finish: Jan 2019

■ Phase 4 – Washington Street to College Avenue Start: Oct 2014/ Finish: Jan 2020/
Start-up Testing to Jun 2020

- GMP 1 & 2 – Long Lead Items & Utility Work Start: Oct 2014
- GMP 4 – Tufts Interlocking Work Start: Mar 2015
- GMP 5 – Balance of Phase 4 Work Start: Nov 2015

Status of Design for GLX Stations:

100% Due Nov 21, 2014
(90% under review)

- Lechmere
- Union Square
- Washington Street



60% Delivered October 1, 2014
(review ongoing)

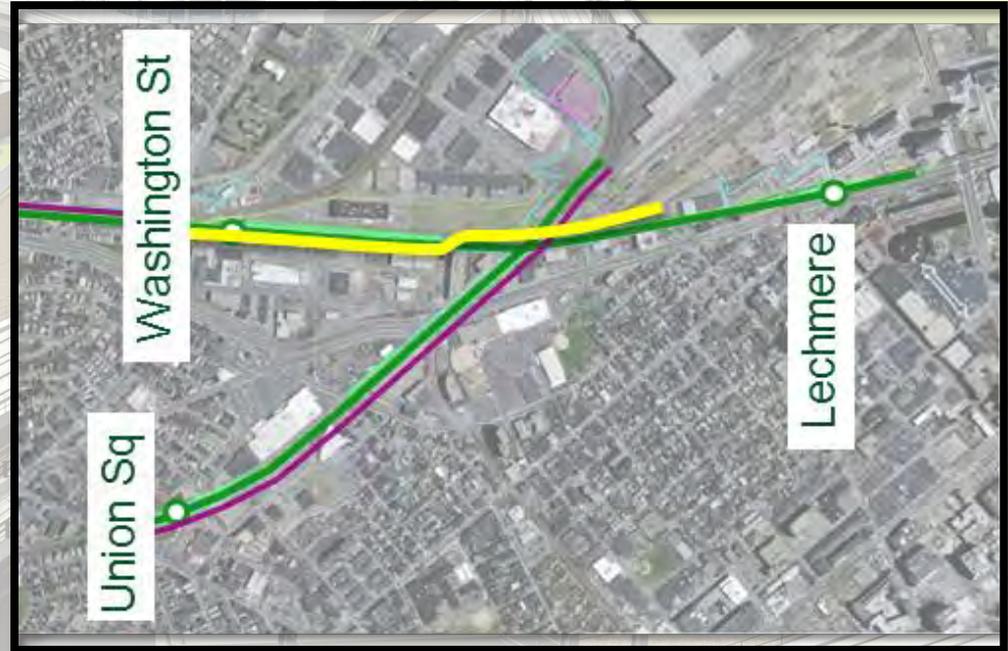
- Gilman Square
- Lowell Street
- Ball Square
- College Avenue



Somerville Community Path

Changes in design made along viaduct section of path due to comments/suggestions:

- Bump-outs on viaduct (2)
- Eliminated bollards
- Opened curved-in viaduct fencing to straight fencing where possible.
- Call boxes

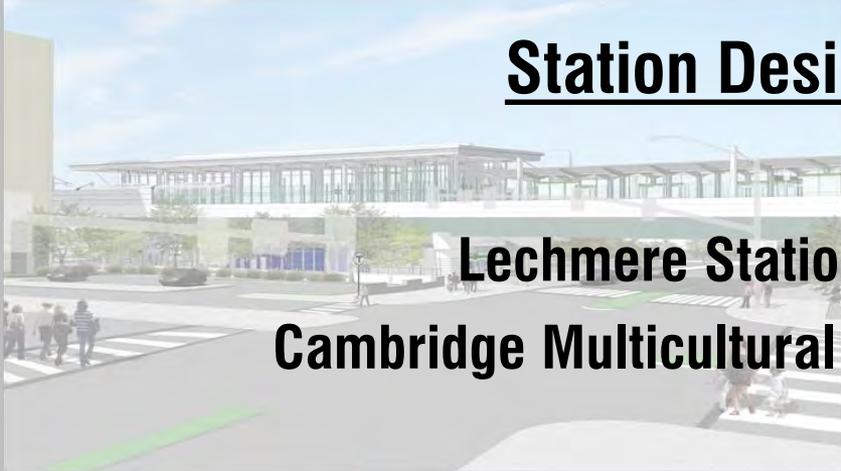


Community Path

KLEINFELDER

Upcoming Community Meetings

Station Design Meetings



Lechmere Station - October 28, 2014
Cambridge Multicultural Arts Center, East Cambridge

Union Square & Washington Street - November 6, 2014
Holiday Inn, Somerville



Next GLX Working Group Meeting in January 2015



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- **WORKING GROUP DISCUSSION**

- **OPEN COMMENT**



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COMMENTS/ QUESTIONS?

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