



# Green Line Extension Project

***Brickbottom District***

***December 29, 2008***



# Agenda



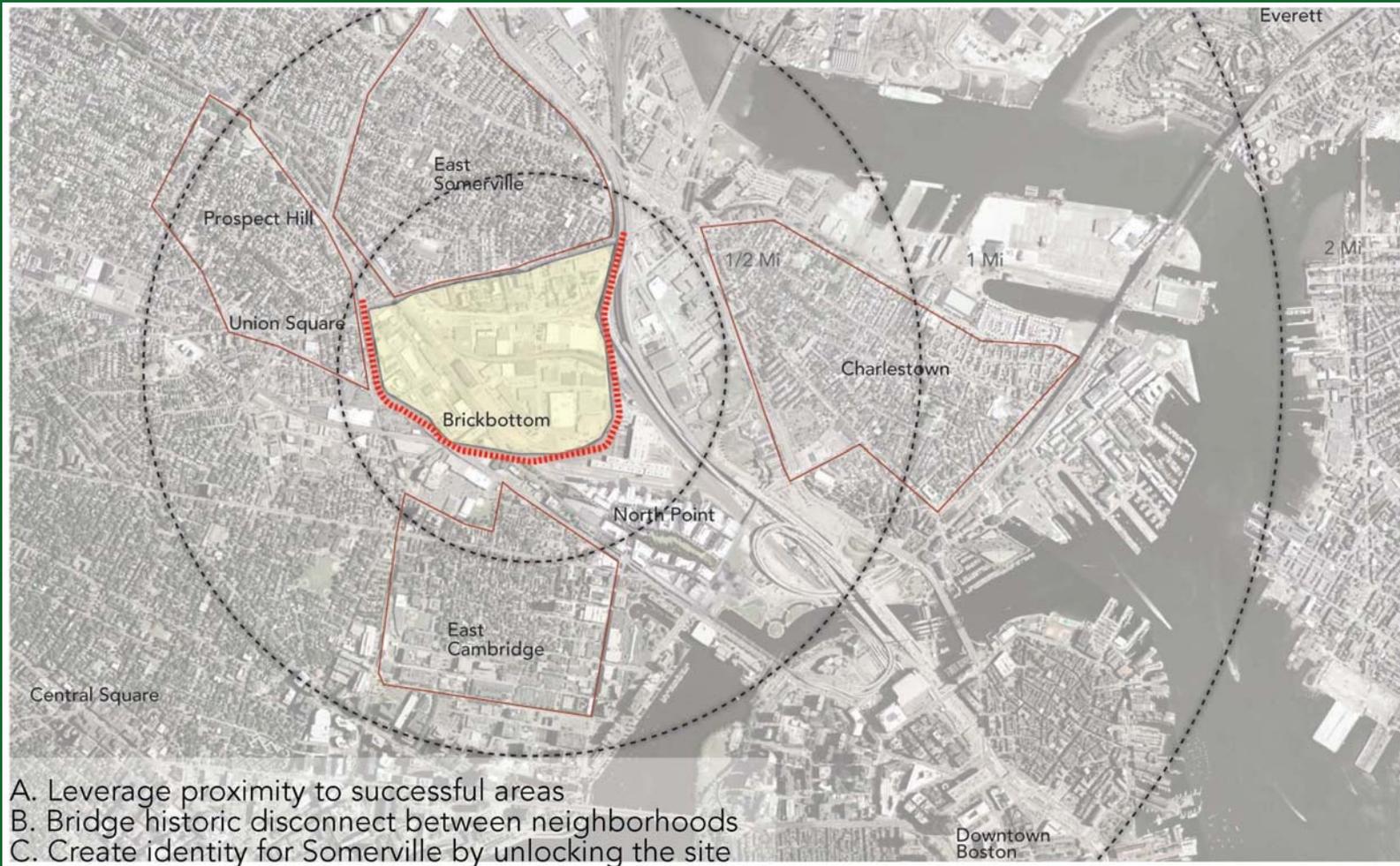
- **Planning for Inner Belt / Brickbottom**
- **Green Line Extension Process**
  - **Washington Street Station**
  - **Proposed Maintenance Facility**
- **Questions and Answers**



# Inner Belt / Brickbottom Master Planning



# Brickbottom Area



- A. Leverage proximity to successful areas
- B. Bridge historic disconnect between neighborhoods
- C. Create identity for Somerville by unlocking the site

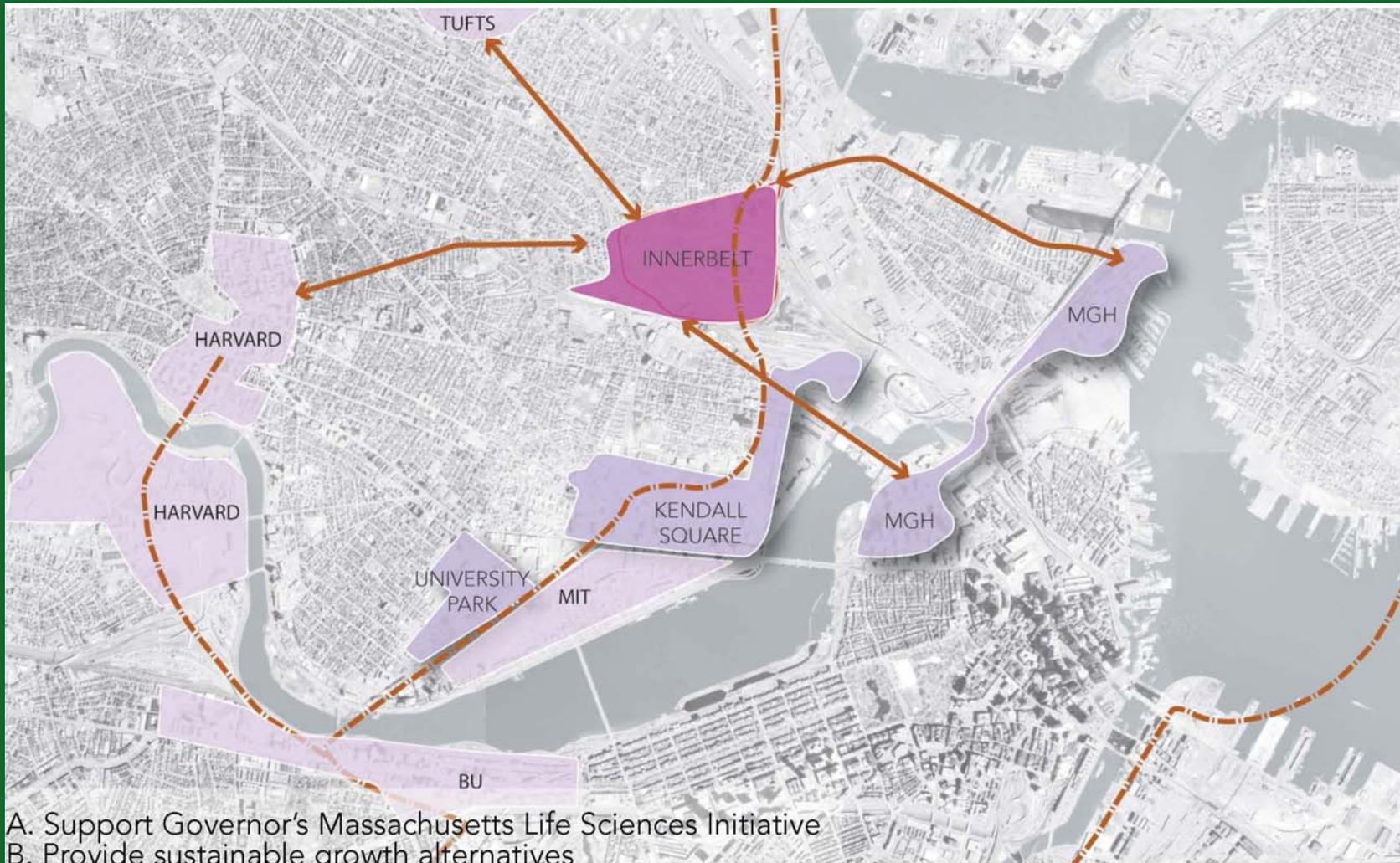


# Development Opportunity

- Excellent location for new mixed-use development
- Within the path of local/regional development growth
- Proximate to complementary activities/demand sources
- Potential to create excellent multi-modal transportation access and service
- Potential to create superior environment
- Improved quality of life



# Leverage Life Sciences & Institutional Convergence



- A. Support Governor's Massachusetts Life Sciences Initiative
- B. Provide sustainable growth alternatives



# Leverage Transit Access





# Strengthen Public Realm

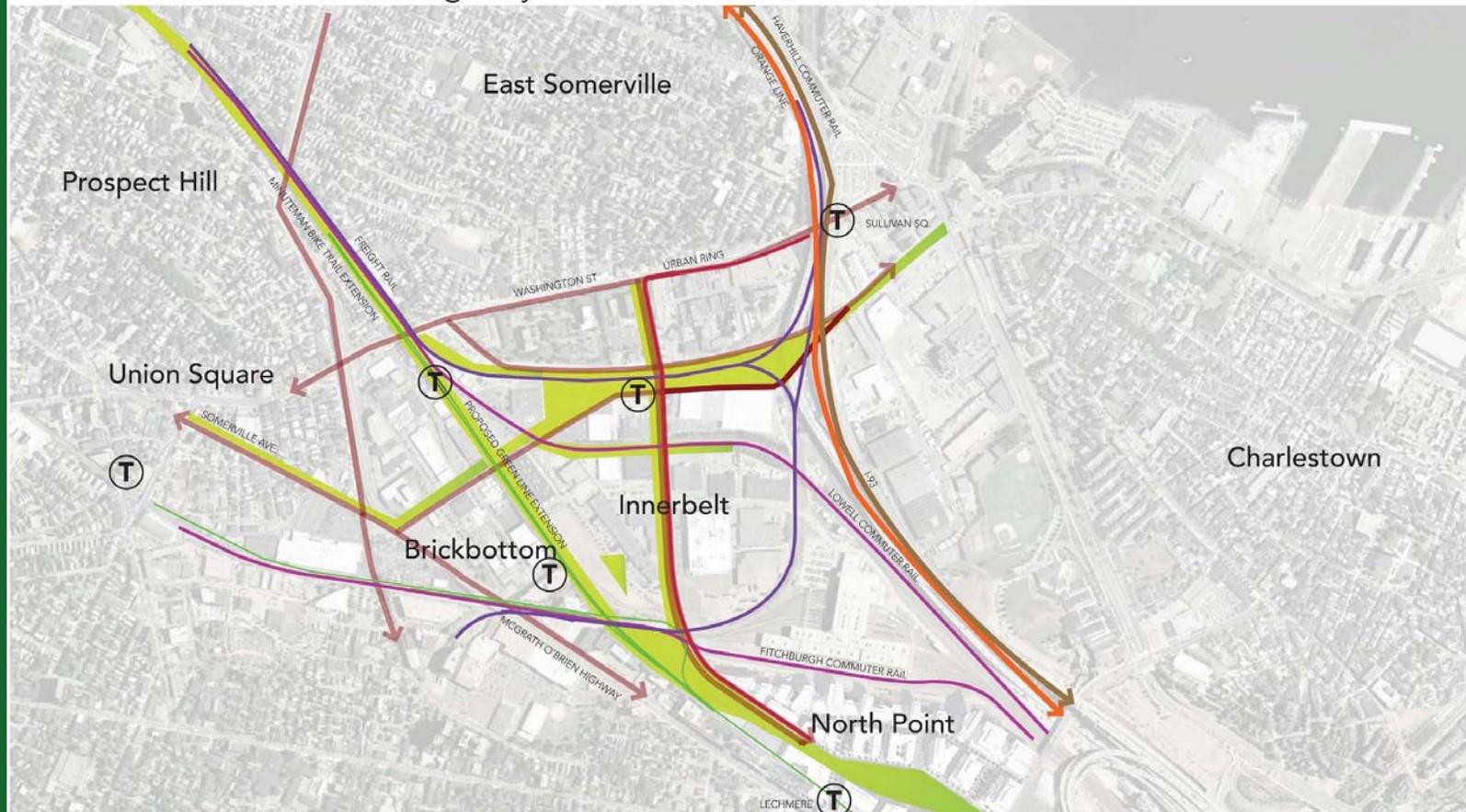




# Improve Connections

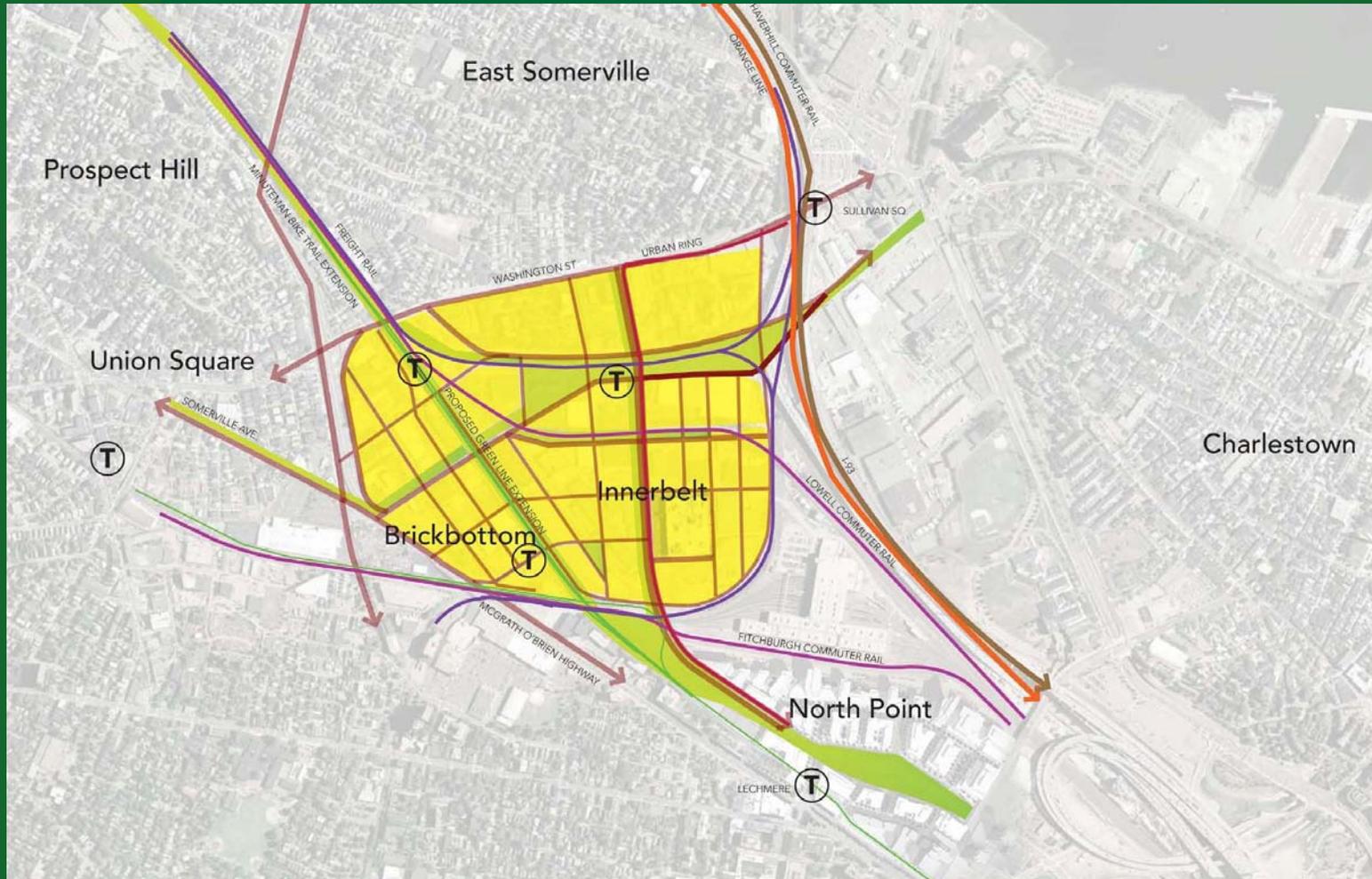


- A. Connect NorthPoint to Union Square through green/transit/pedestrian and vehicular connection
- B. Enhance transit connectivity with multiple stations
- C. Connect Union Square to Sullivan Square through green/transit/pedestrian connections
- D. Embrace Urban Ring and Green Line extension
- E. Re-envision McGrath Highway





# Create Street Network



Conceptual street and block network



# Determine Use Mix

## Current Program

Use	Units	GSF	Mix %	Avg Construction Increment (SF)	Real Time Construction (Yrs)	Absorption Time Frame (Yrs)	Average Annual Absorption
Retail	200,000 GSF	200,000	2.9%	25,000	8	8	25,000
Hotel	200 Keys	200,000	2.9%	200,000	1	2	100,000
Office	3,000,000 GSF	3,000,000	43.7%	200,000	15	30	100,000
Lab	2,500,000 GSF	2,500,000	36.4%	300,000	8	13	200,000
Residential	800 Units	960,000	14.0%	300,000	3	5	200,000
<b>Total SF</b>		<b>6,860,000</b>	<b>100.0%</b>	<b>1,025,000</b>	<b>7</b>	<b>30</b>	<b>228,667</b>

## Scenario 1 Resize Residential & Hotel (Office/Lab Remains Per Current Program)

Use	Units	GSF	Mix %	Avg Construction Increment (SF)	Real Time Construction (Yrs)	Absorption Time Frame (Yrs)	Average Annual Absorption
Retail	200,000 GSF	200,000	2.1%	25,000	8	8	25,000
Hotel	450 Keys	450,000	4.6%	200,000	2	5	100,000
Office	3,000,000 GSF	3,000,000	30.8%	200,000	15	30	100,000
Lab	2,500,000 GSF	2,500,000	25.6%	300,000	8	13	200,000
Residential	3,000 Units	3,600,000	36.9%	300,000	12	18	200,000
<b>Total SF</b>		<b>9,750,000</b>	<b>100.0%</b>	<b>1,025,000</b>	<b>10</b>	<b>30</b>	<b>325,000</b>

## Scenario 2 Rebalance Program Mix (Produces Slightly Smaller Program)

Use	Units	GSF	Mix %	Avg Construction Increment (SF)	Real Time Construction (Yrs)	Absorption Time Frame (Yrs)	Average Annual Absorption
Retail	200,000 GSF	200,000	3.1%	25,000	8	8	25,000
Hotel	450 Keys	450,000	6.9%	200,000	2	5	100,000
Office	1,000,000 GSF	1,000,000	15.3%	200,000	5	10	100,000
Lab	2,500,000 GSF	2,500,000	38.2%	300,000	8	13	200,000
Residential	2,000 Units	2,400,000	36.6%	300,000	8	12	200,000
<b>Total SF</b>		<b>6,550,000</b>	<b>100.0%</b>	<b>1,025,000</b>	<b>6</b>	<b>13</b>	<b>524,000</b>



# Green Line Extension

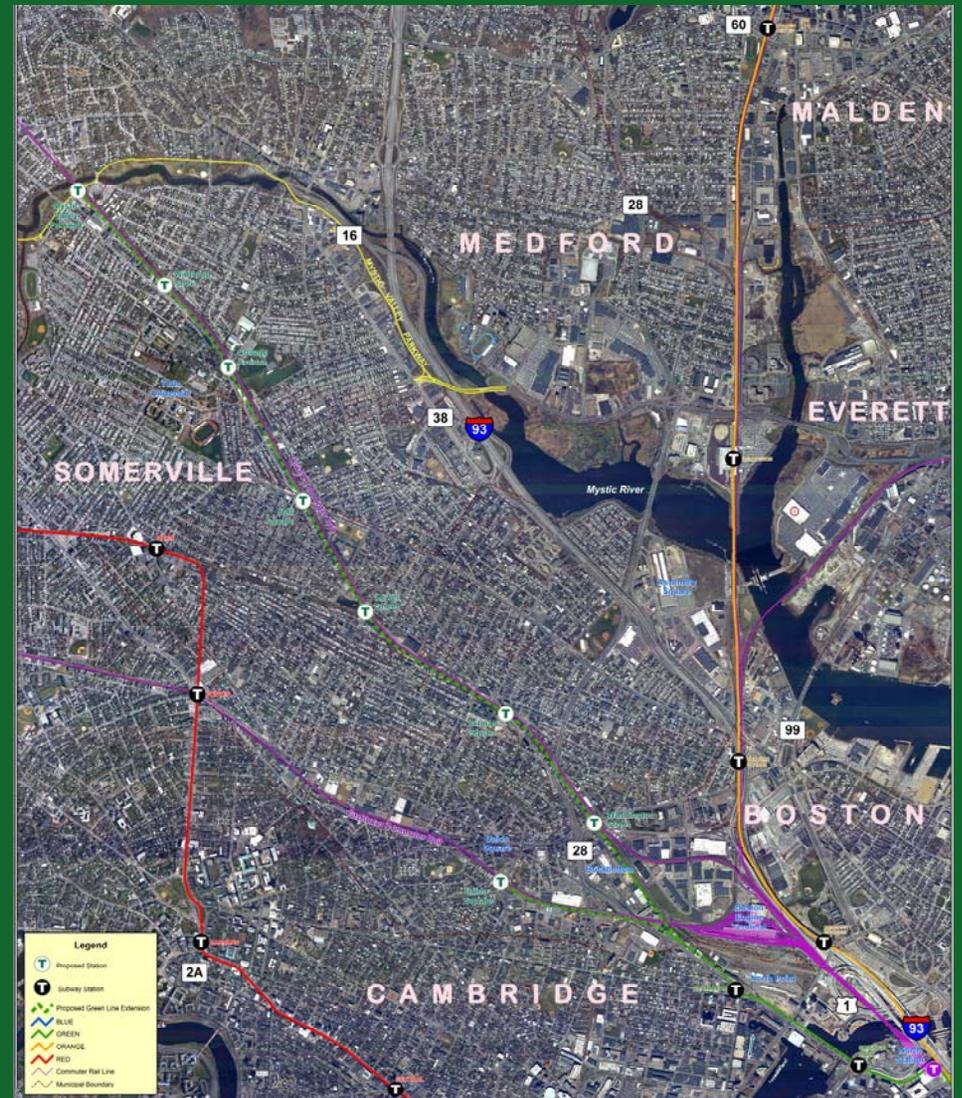


# Environmental Analysis

(Draft Environmental Impact Report)



- Operations
- Noise & Vibration
- Air Quality
- Land Takings
- Traffic, Parking
- Support Facility
- Construction Impacts
- Community Impacts





# Station Siting



- Union Square Station
- Washington Street Station
- Gilman Square Station
- Lowell Street Station
- Ball Square Station
- Mystic Valley/Rte 16 Station

## *EVALUATION CRITERIA*

- **STATION ACCESS**
  - ADA Consistency
  - Kiss & Ride
  - Transit Connections
  - Pedestrian and Bicycle
  - Signalized Intersections/Crosswalks
  - Traffic
- **TRANSIT OPERATIONS**
  - Ridership
  - Green Line Operational Impacts
  - Impact to Commuter/Freight Operations
  - Intermodal Connections
  - R-O-W
  - Safety and Security
  - Track Configuration
- **LAND USE COMPATIBILITY**
  - Compatible with Land Development Plans
  - Development Opportunities
  - Environmental Concerns
  - Public Perception
  - Impact to Abutters
- **PROJECT COSTS**



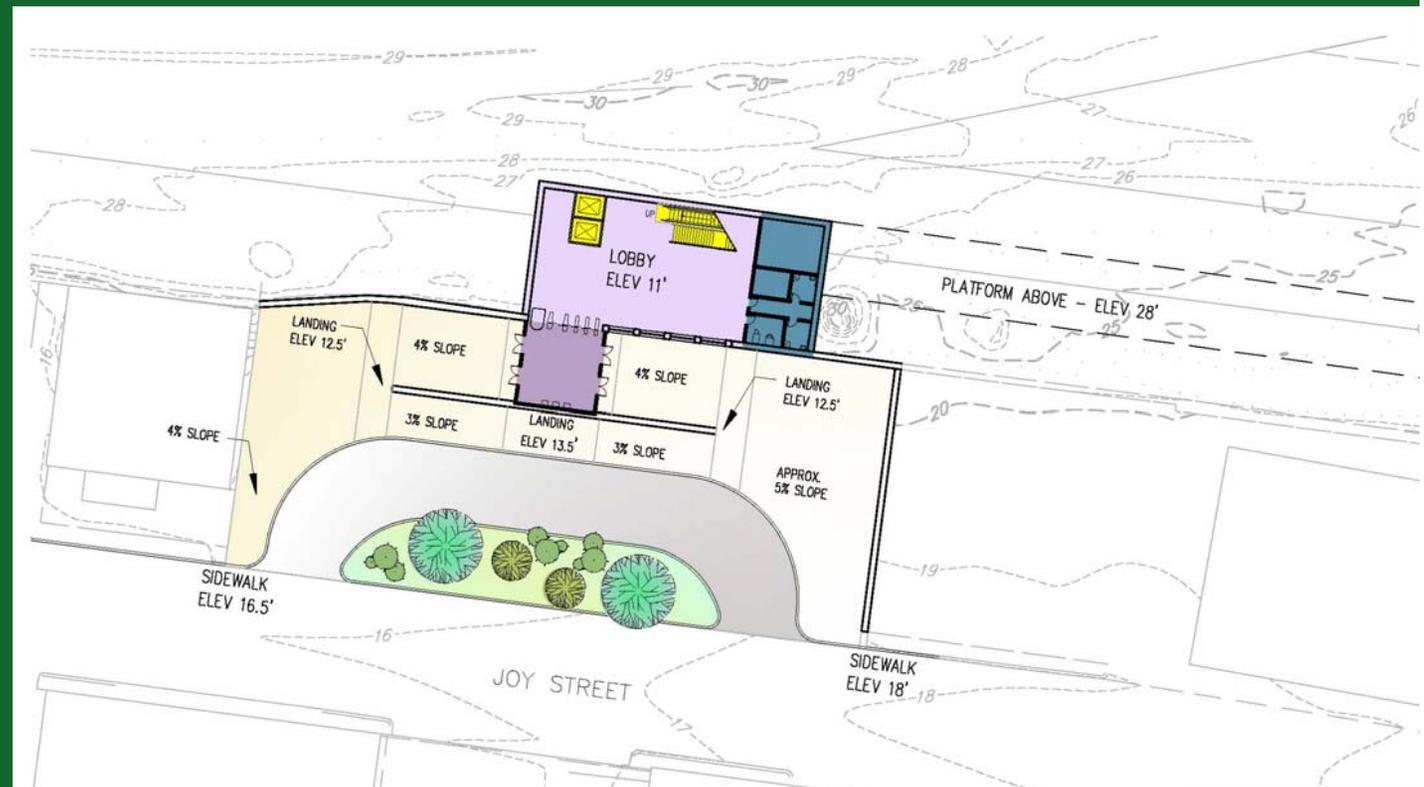


# Washington St. Station



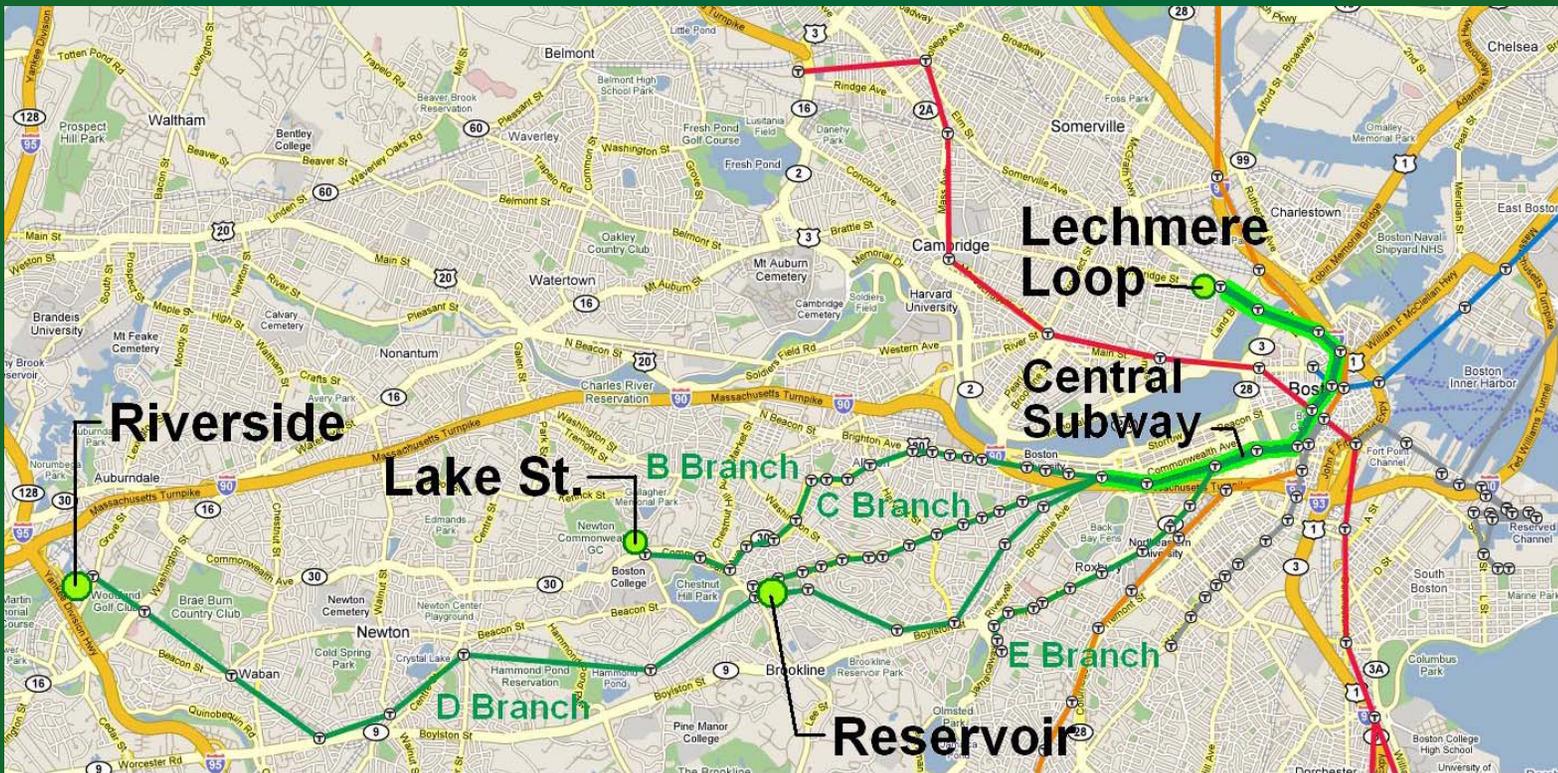
## City Comments to date

- No Kiss & Ride or Commuter Parking
- Adequate Bus, Bike and Pedestrian Access and Circulation
- Move to Washington Street and Provide Access from Both East and West
- Two Stations Needed in the Area due to Future Development Ridership





# Green Line Existing Facilities



Storage Facility	Yard Capacity – Revenue Cars	Comments
Riverside	90	
Reservoir	51	
Lake Street	22	
Lechmere Loop	17	Car storage only
Brattle (Gov't Ctr)	10	Car storage only
Total Capacity to support	190	Storage for revenue cars assumes free movement about yard. Use can exceed capacity through occupancy of critical tracks and facility tracks.
<i>Present fleet size</i>	<i>209</i>	Since storage only accommodates 190 cars, at least 19 cars are in repairs shops or stored in a yard in a location that impedes free movement.



# Maintenance Facility Need



- Proposed Green Line Service: 32 cars +  
North Side Service: 20 cars Lechmere +  
14 various locations = *Storage for ~80 cars*
- Service Frequency and Compliance
- Car Capacity



# Program



Layover Yard Components	Requirement
<b>Size of Parcel</b>	<b>5.5 Acres</b>
Storage Capacity	80 Vehicles
Yard Leads	300 ft. min.
Yard Configuration	Double ended (redundant ladder tracks)
Support Facility Components	Requirement
<b>Size of Parcel</b>	<b>5.0 Acres</b>
Service Tracks	5 (Total)
<i>Pit Tracks</i>	2 Tracks
<i>Hoist/Lift Tracks</i>	2 Tracks
<i>Wheel Truer Track</i>	1 Track
Track Configuration	Double ended (redundant ladder tracks)
Support Shops	Truck Repair Shop, Store Room w/ Loading Dock
Support Facility Building/Structure - Total	50,000 SF
<i>Inspections &amp; Running Repairs</i>	21,000 SF
<i>Heavy Maintenance</i>	14,000 SF
<i>Office Space</i>	5,000 SF
<i>Truck Shop</i>	5,000 SF
<i>Parts/Equipment Storage</i>	5,000 SF
Other Components	Requirement
<b>Size of Parcel</b>	<b>1.0 Acres</b>
Employee Parking	105 Spaces
Summary of Support Facility Program	Requirement
Layover Yard	5.5 Acres
Support Facility	5.0 Acres
Employee Parking	1.0 Acres
<b>Total</b>	<b>11.5 Acres</b>



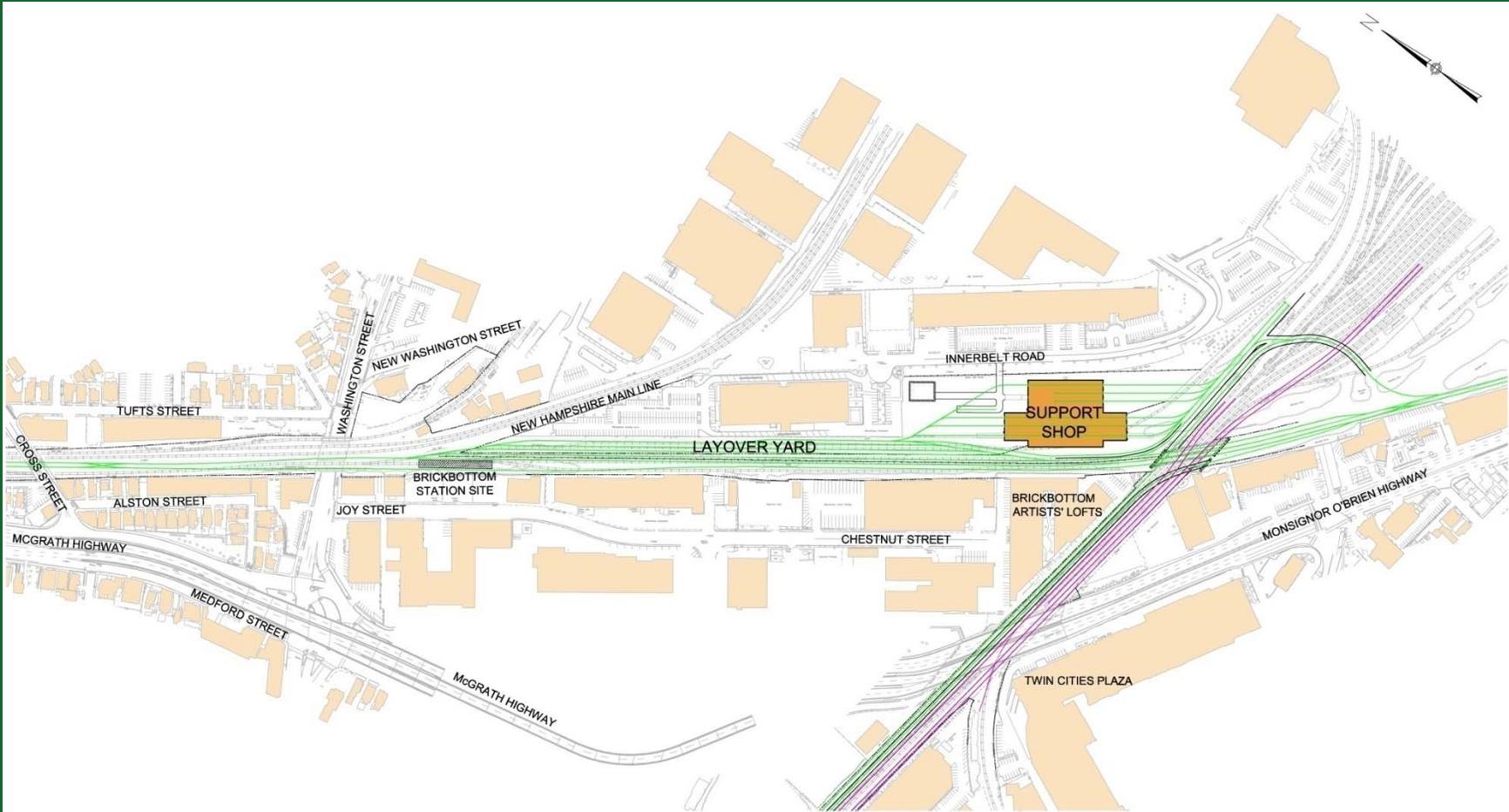
# Light Rail Maintenance Facilities



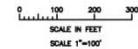
Agency	City	Area		Vehicle Capacity
		SQ. FT (building)	Acres (site)	
Valley Metro Rail Inc. (METRO)	Phoenix, AZ	136,000	35.00	100
SF Municipal Transportation Agency	San Francisco, CA	180,000	13.00	80
Sound Transit	Seattle, WA	162,000	25.00	104
Santa Clara Valley Transportation Authority	San Jose, Ca	110,000	25.00	100
Denver Regional Transportation District	Englewood, CO	105,000	9.50	100
MBTA - Riverside	Newton, MA	120,000	± 16.00	115
<b>Proposed Green Line Extension</b>		<b>50,000</b>	<b>11.50</b>	<b>80</b>



# EOT Proposed Layout

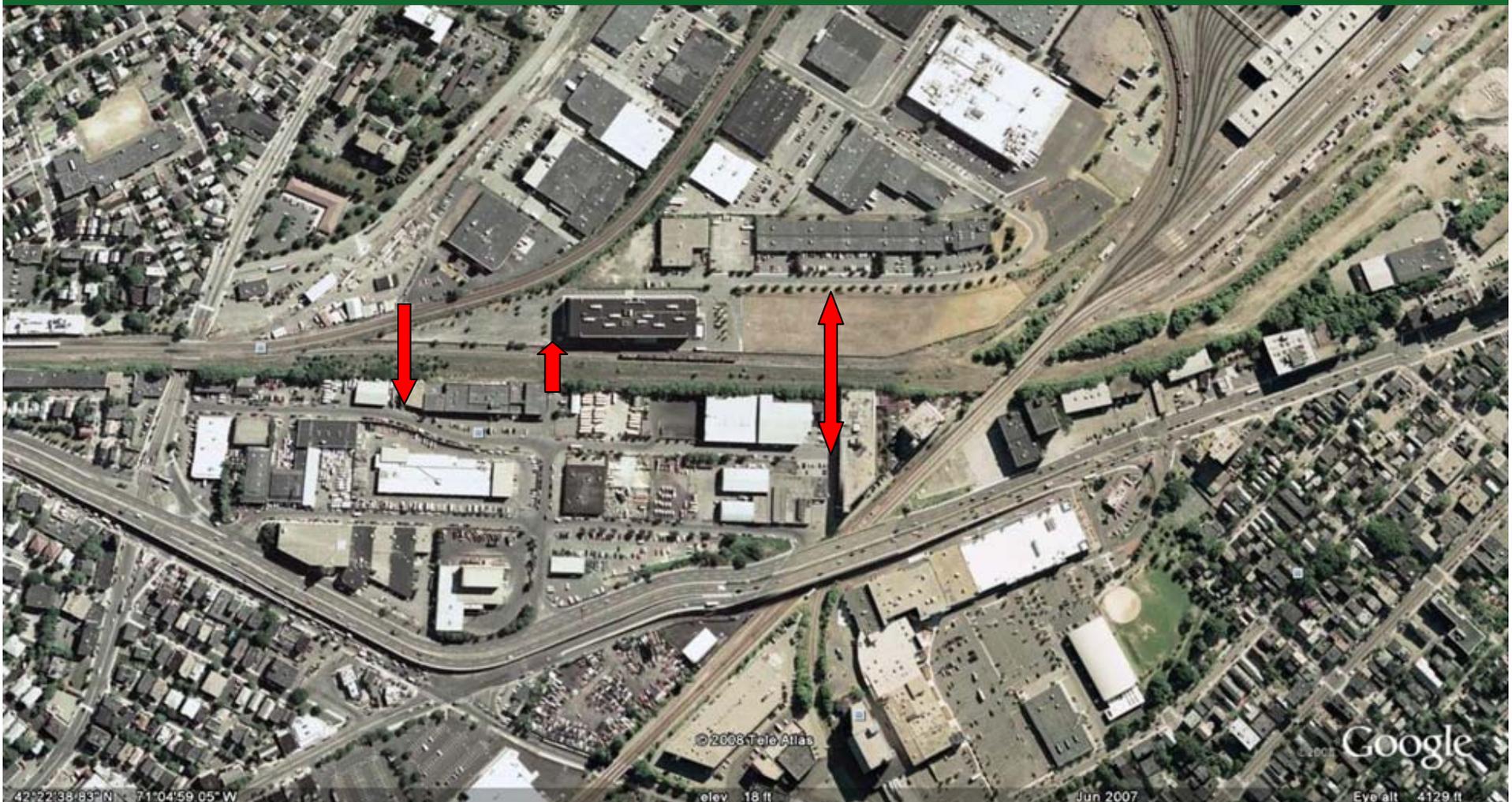


**GREEN LINE EXTENSION PROJECT**  
PROPOSED SUPPORT FACILITY SITE





- Adds to Existing Barrier
- 24/7 Operation Generating Noise/Vibration/Odor/Light at sensitive location
- Would Require Tunneling/Jacking 250'-300' (under the berm) for Connectivity



42°22'38.83" N 71°04'59.05" W

© 2008 Tele Atlas

elev 18 ft

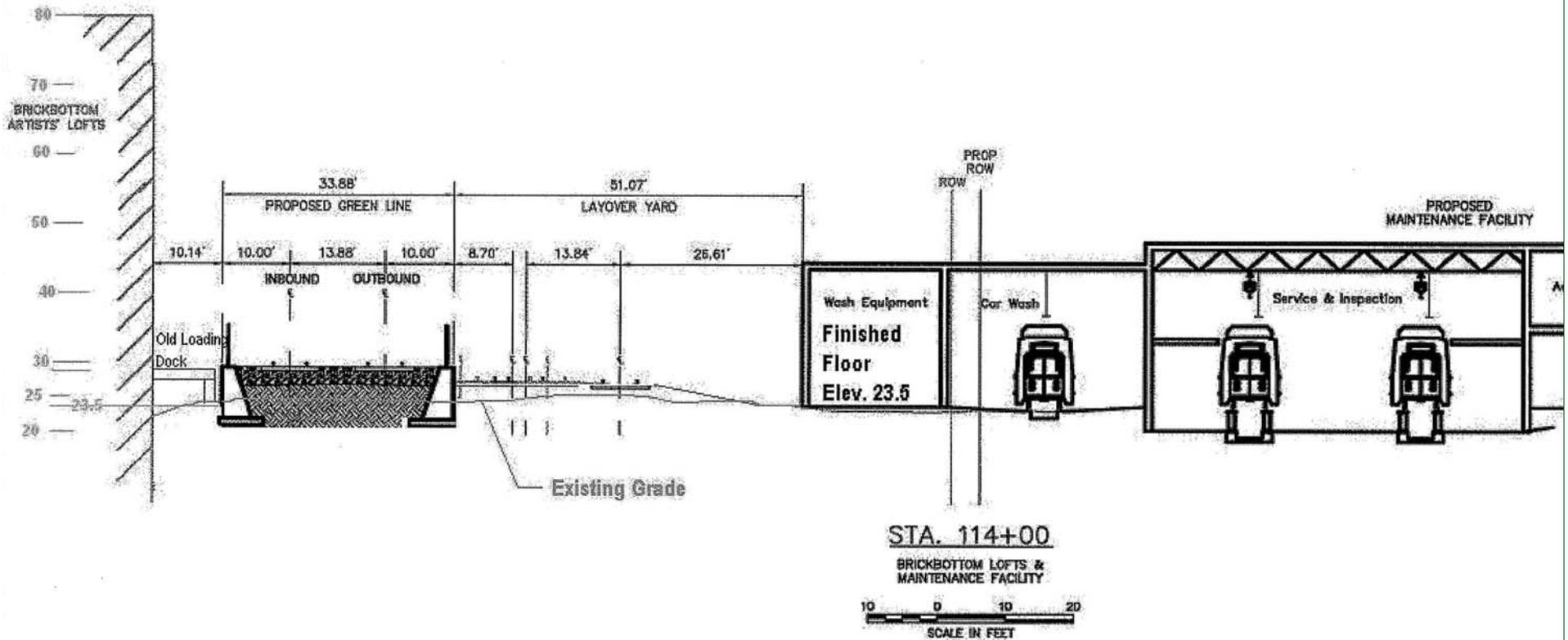
Jun 2007

Google

Eye alt 4129 ft



# Proposed Cross-Section



- Difference in Elevation 3' to 6' at Inner Belt Road, 10' to 12' at Joy Street
- Expected Highest Roof at Elevation 55
- No East – West Access



# Additional Alternatives



**Table 5-1 Additional Alternative Siting Schemes**

Alternative	Objective	Vehicle Storage Location	Vehicle Maintenance Location
Scheme A	Move Vehicle Maintenance Building	Yard 8	Yard 7 – “open storage area at BET plus NorthPoint Lots A & B (double-ended facility)
Scheme B	Move Vehicle Maintenance Building	Yard 8	NorthPoint Lots A & B (single-ended facility)
Scheme C (1)	Move Vehicle Maintenance Building	Yard 8	Yard 7, inside the Union Sq. jughandle (smaller, single-ended facility)
Scheme D (1)	Move Vehicle Maintenance Building	Yard 8	Yard 7, inside the Union Sq. jughandle (single-ended facility)
Scheme E	Move Vehicle Storage; allow Fitchburg St. cut-through	Yard 7 (partly on BET land, partly at back of Lots C/D/E/F of NorthPoint)	Adjacent to Yard 8 (singled-ended facility)
Scheme F	Move both functions	Yard 7 (Lots C/D/E/F of NorthPoint)	BET “open storage area” (split functions in 2 buildings)
Scheme G (2)	Move both functions	Elevated Green Line storage yard above existing commuter rail storage yard	BET “open storage area” (split functions in 2 buildings; maintenance functions are on “3rd floor” of buildings)
Scheme H	Move both functions (mix of Schemes A & E)	Yard 7 (partly on BET land, partly at back of Lots C/D/E/F of NorthPoint)	NorthPoint Lots A & B (double-ended facility)
Scheme J (City Scheme)	Move both functions; accommodate possible future stadium over yard	Inner Belt Road site east of Yard 8	Inner Belt Road site east of Yard 8
Site 10 (Yard 8 & Adjacent Parcel)	Retains both functions at or adjacent to Yard 8	Yard 8	Yard 8 and undeveloped parcel adjacent to it

(1) Schemes C and D are variations of Site 11 from Table 3-1.

(2) Scheme G is also described in the discussion of Site 8 (BET) in Section 4. See Figure 4-7.

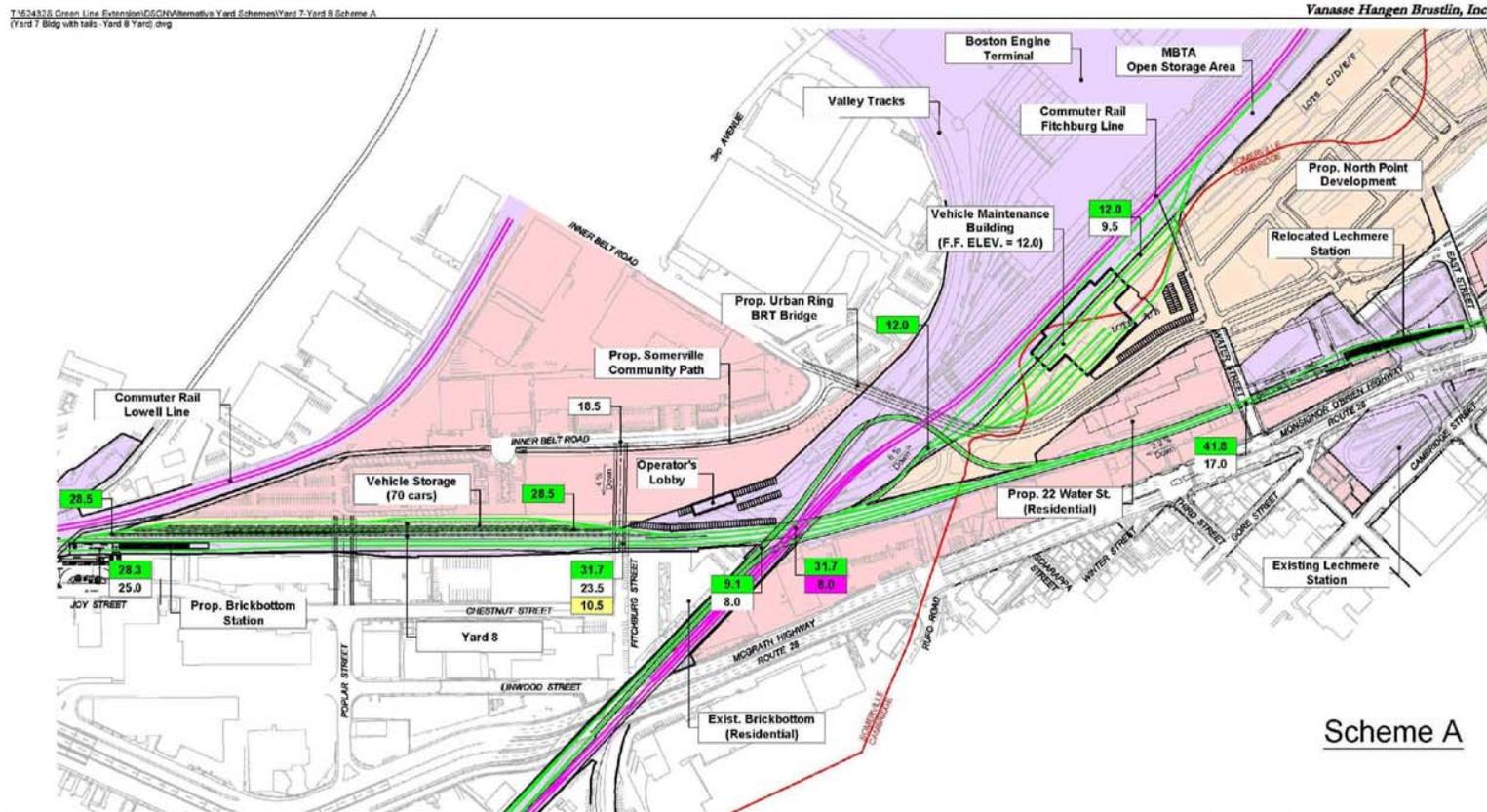


# Scheme A



\*\* Schemes A-D2 move the maintenance building to NorthPoint.

Figure 5-1: Scheme A



**LEGEND**

M.B.T.A. Property	20.0 Proposed Elevation	12.0 Prop. Road Elevation
B & M Property	19.0 Existing Elevation	1.5% Down Proposed Slope
Private Property	8.0 MBCR Elevation	



Green Line Extension

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Figure 5-1

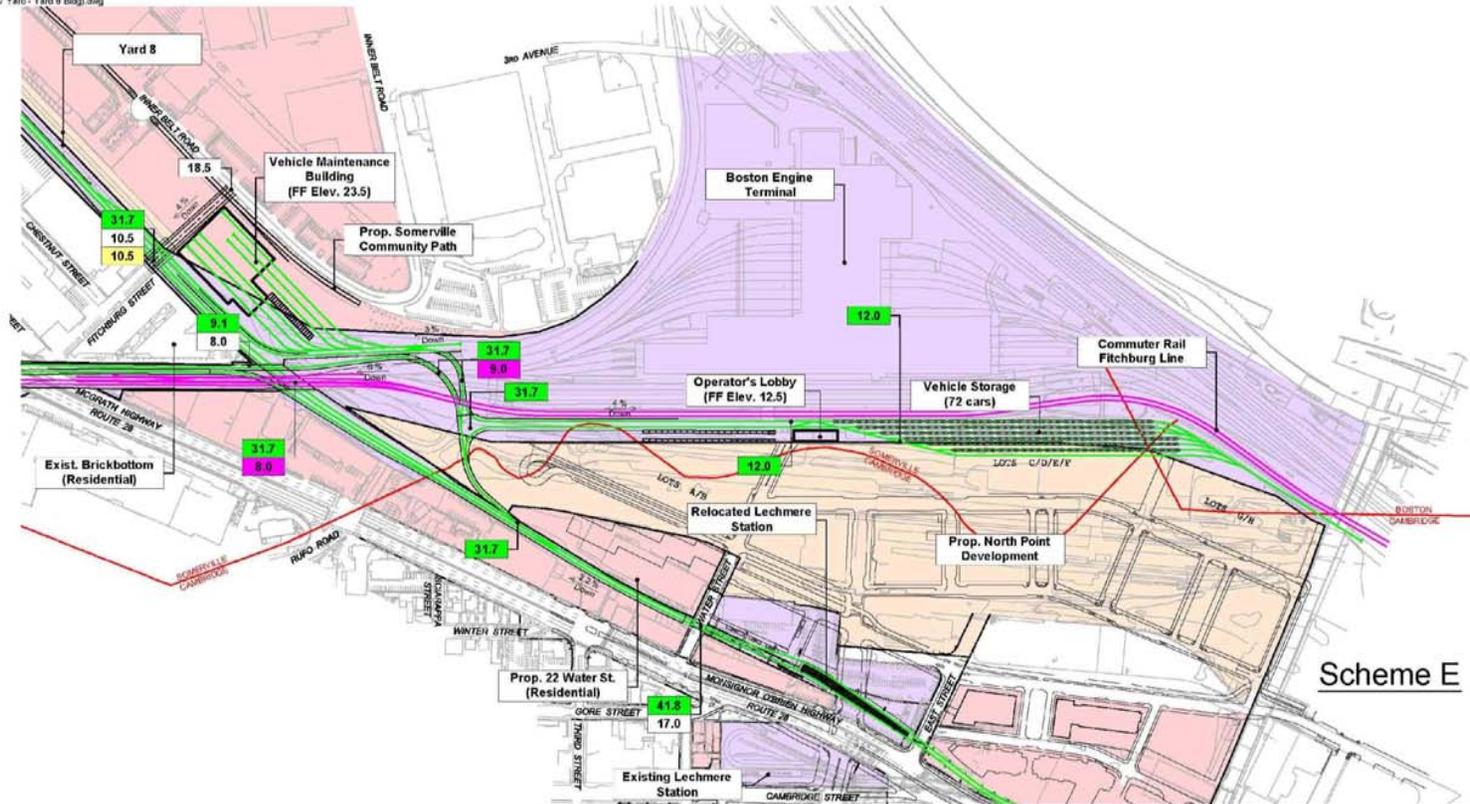


# Scheme E



T:\224320 Green Line Extension\224320\Alternative Yard Schemes\Yard 7-Yard 8 Scheme E (Yard 7 Yard - Yard 8 Bldg).dwg

Vanasse Hangen Brustlin, Inc.



**LEGEND**

- M.B.T.A. Property
- B & M Property
- Private Property
- 20.0 Proposed Elevation
- 19.0 Existing Elevation
- 8.0 MBCR Elevation
- 12.0 Prop. Road Elevation
- 1.5% Down Proposed Slope



Green Line Extension

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Figure 5-6

Figure 5-6: Scheme E



# Scheme H

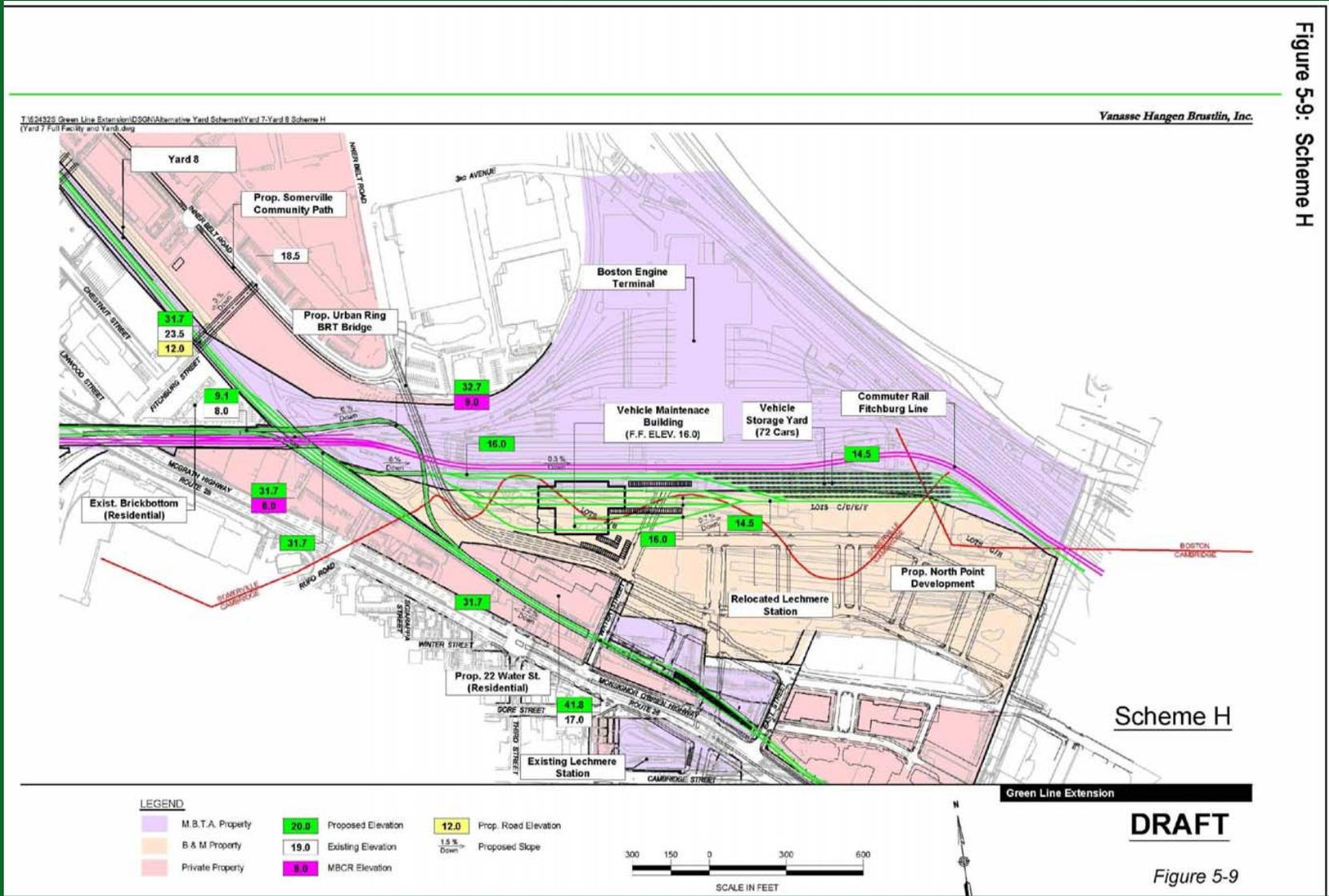


Figure 5-9: Scheme H



# Next Steps



- Publish Draft Environmental Impact Report (EOT)
- Public Meetings & written Public Comment (EOT)
- Determine whether can move direct to Final EIR (FTA)
- New Starts application process (FTA)
- Preliminary Engineering (EOT)



# Questions and Answers

