

Storrow Drive Eastbound Bridge Replacement



Project Limits



Existing Condition

Storrow Drive Bridge Eastbound over Ramps

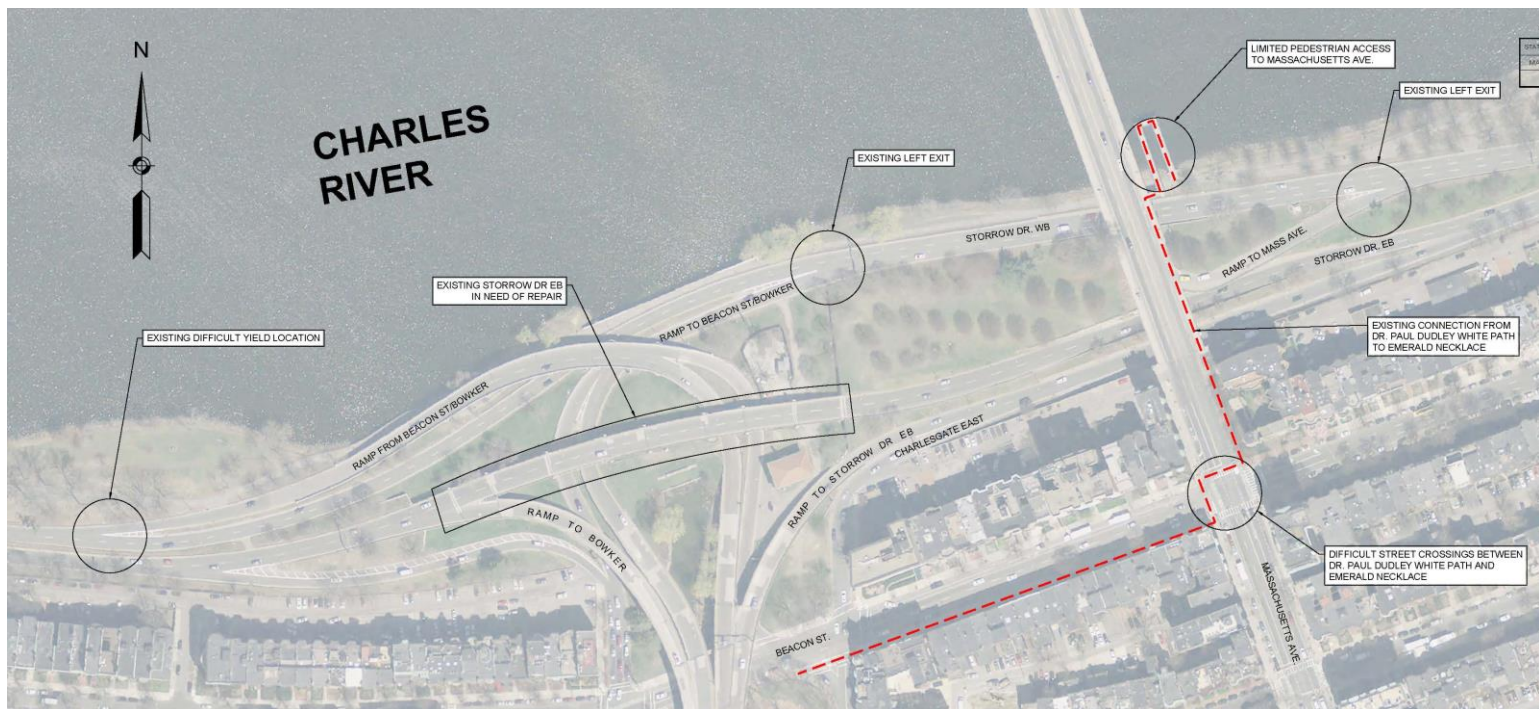
- Heavy steel corrosion
- Concrete cracking & spalling
- Deteriorated foundation with settlement issues



Additional Deficiencies

Storrow Drive/Bowker Interchange

- Left Exits
- Difficult Merges
- Low Clearance(s)
- Missing Ped – Bike Connections



Opportunity For Transformative Improvements

1. Dead-end pedestrian pathways

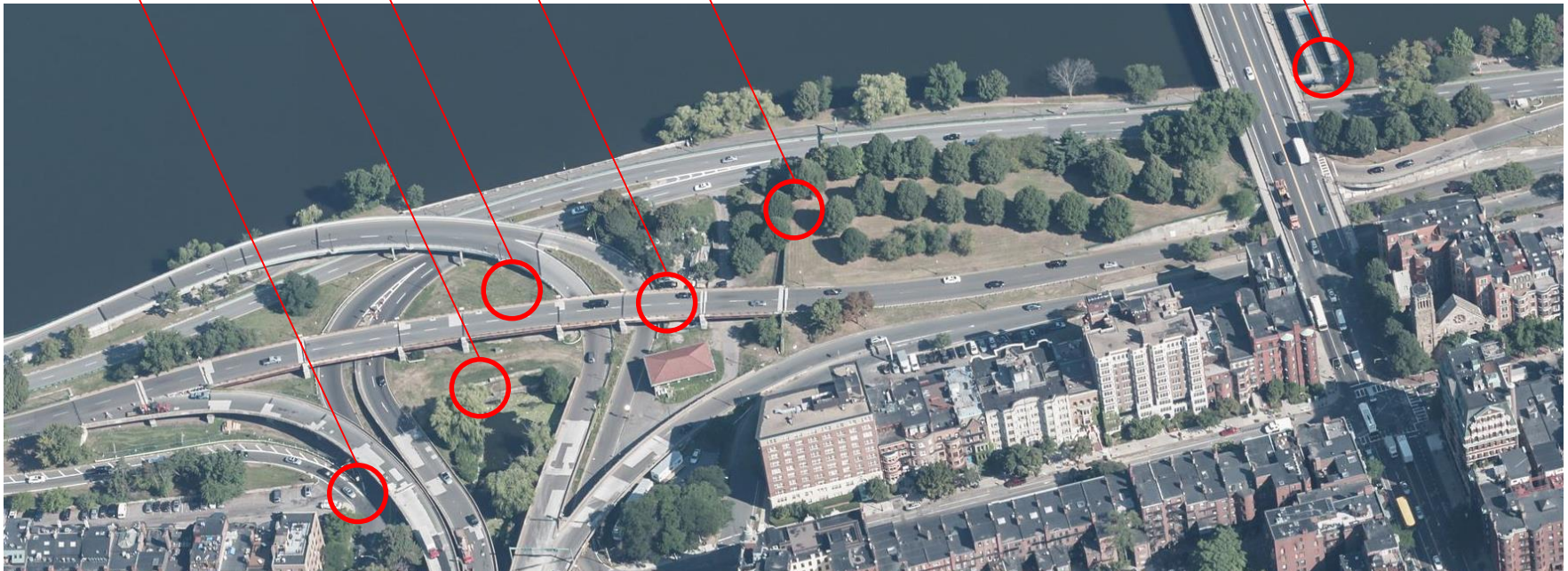
2. Trapped historic monuments

3. Buried Muddy River

4. Unmitigated drainage into impaired waterways

5. Fragmented and inaccessible landscape areas

6. Minimal connection to Esplanade

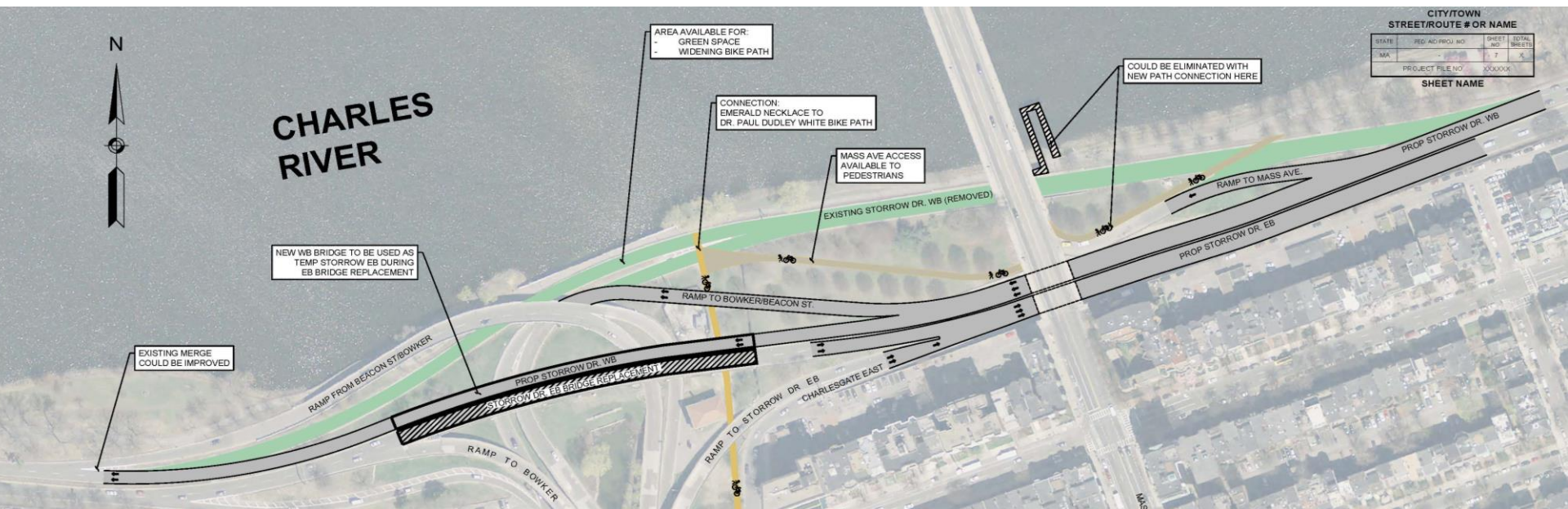


Reconnect Emerald Necklace

Connection Severed since 1951

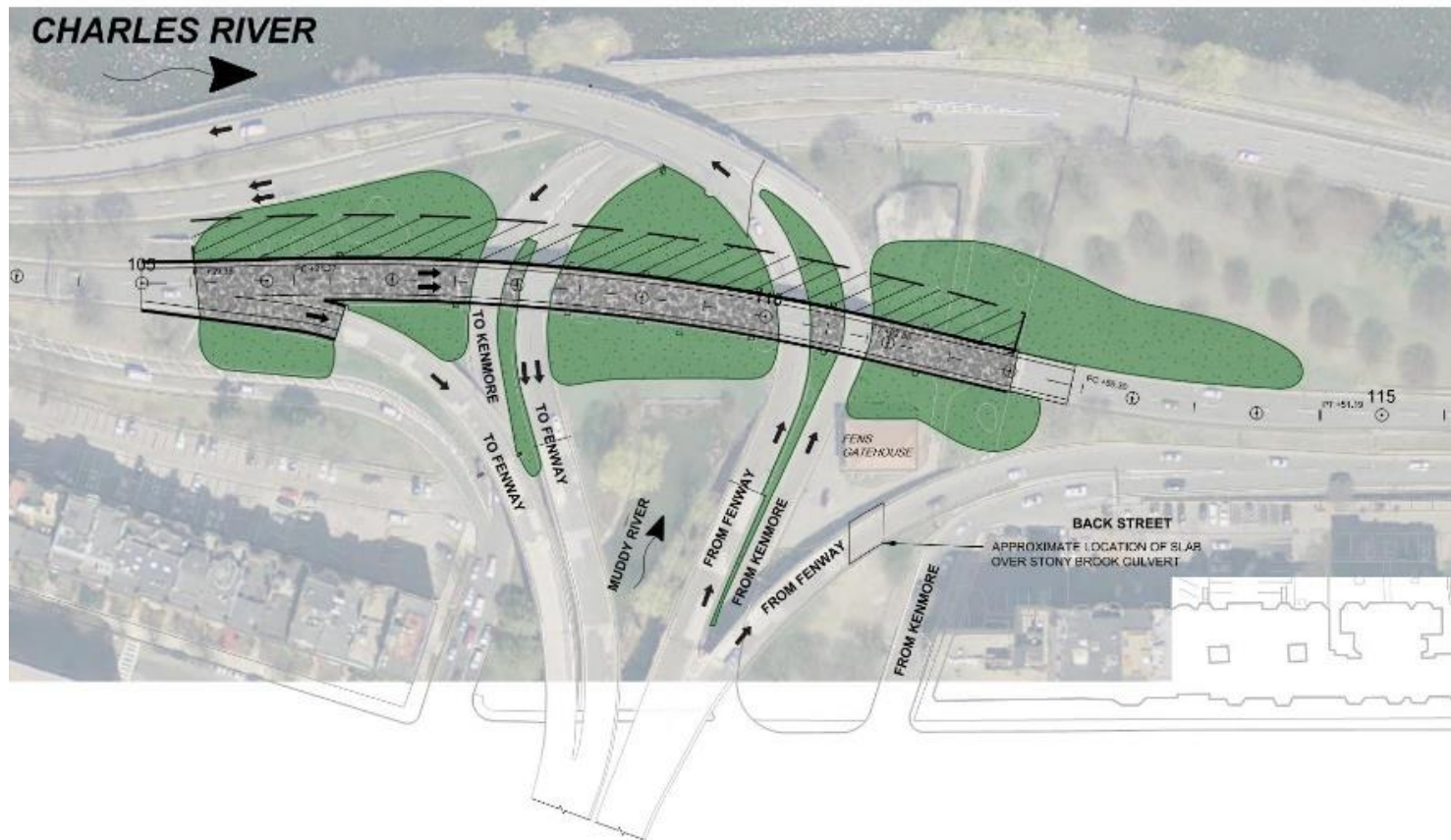
Restore Usable Open Space Along Charles River

Improve Storm Water Management for Impaired Waterways



Alternative 1A

- Footprint of the Eastbound bridge
- Includes a temporary bridge



Alternative 1A – Analysis

Advantages

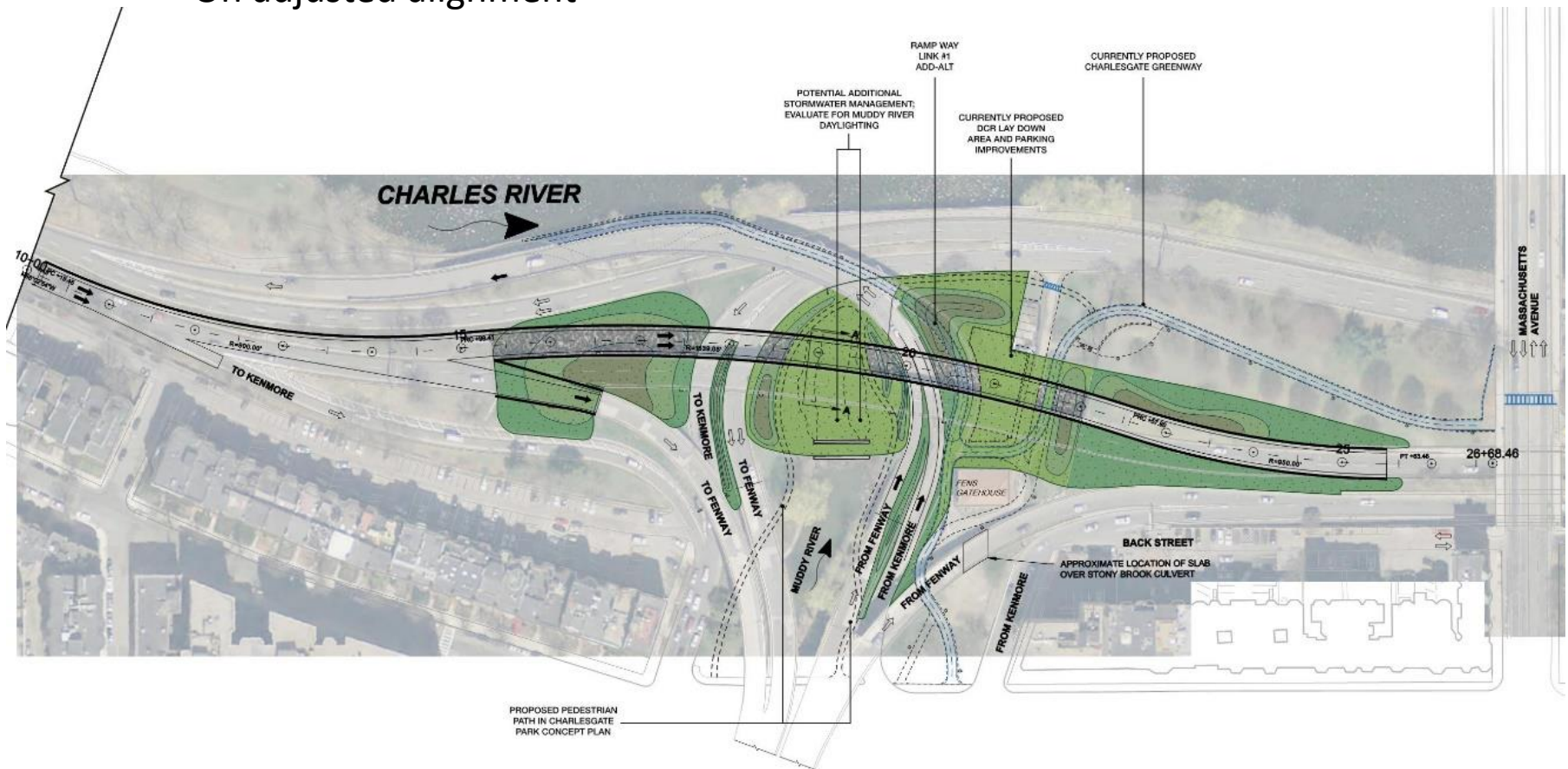
- Short project development, design and construction schedule
- Low cost to re-establish groundcover landscape

Disadvantages

- Minimal Storrow EB roadway improvements
- Storrow Drive VWB left-hand exits remain
- Esplanade and Emerald Necklace remain disconnected
- Emerald Necklace remains inaccessible to the urban context
- No improvement to stormwater run-off water quality
- No new recreation opportunities

Alternative 1B

- Footprint of Eastbound bridge
- On adjusted alignment



Alternative I B - Analysis

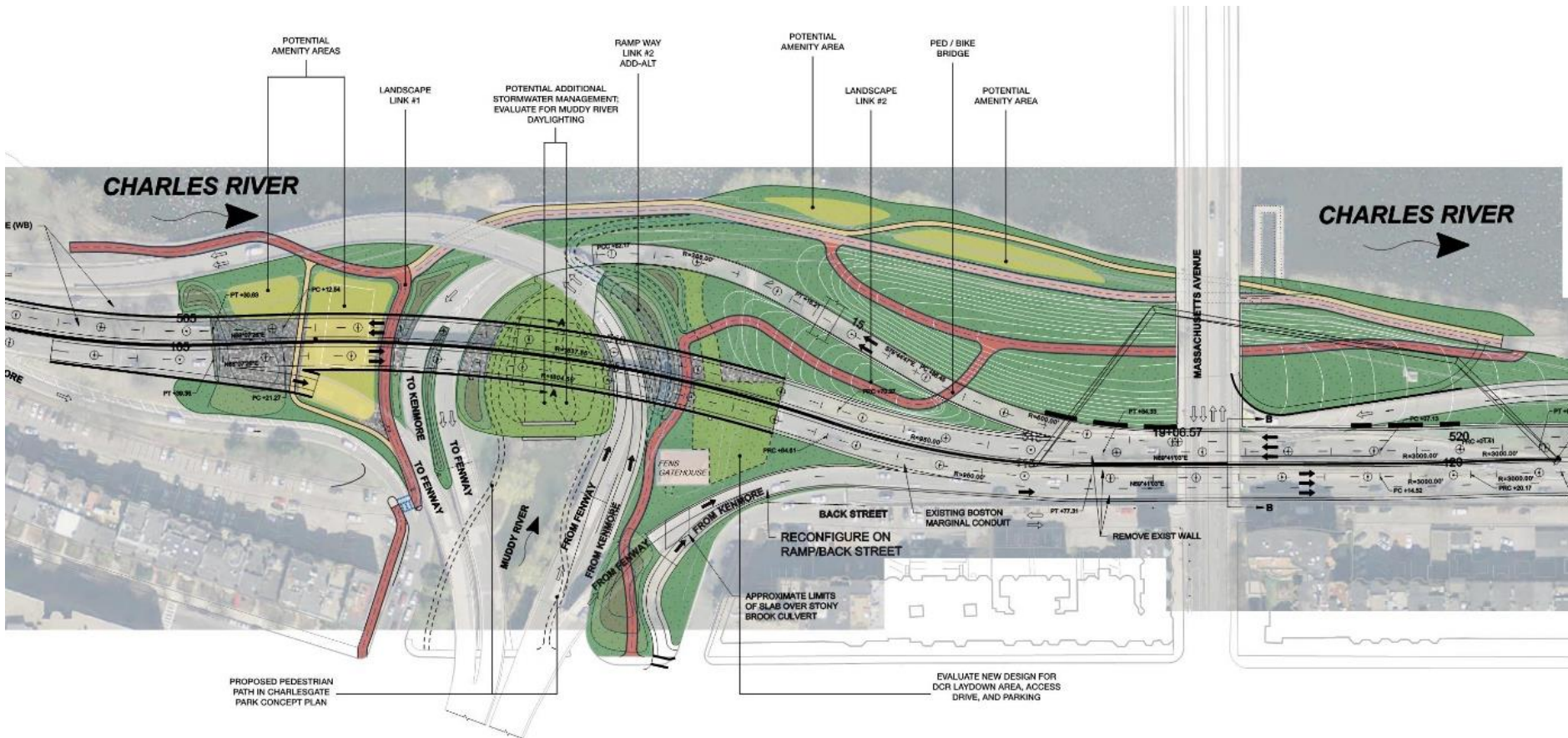
Advantages

- Shortest construction schedule – temporary bridge not required
- Low cost to re-establish landscape
- Water quality improvements w/planted bio-swales, retention basins
- Enables construction of Greenway Conservancy and DCR improvements
- Esplanade/Emerald Necklace bike/ped link by re-purposing roadway ramp
- Enables possible daylighting of Muddy River under Storrow EB bridge

Disadvantages

- Minimal Storrow EB roadway improvements
- Storrow Drive westbound left-hand exits remain
- Esplanade and Emerald Necklace remain disconnected
- Bike/ped link positions bicyclists/pedestrians adjacent to high-speed traffic
- Esplanade pathways remain highly constricted and detached from city

- Storrow Drive - Eastbound and westbound
- Moves the Boston Marginal Conduit



Alternative 2A - Analysis

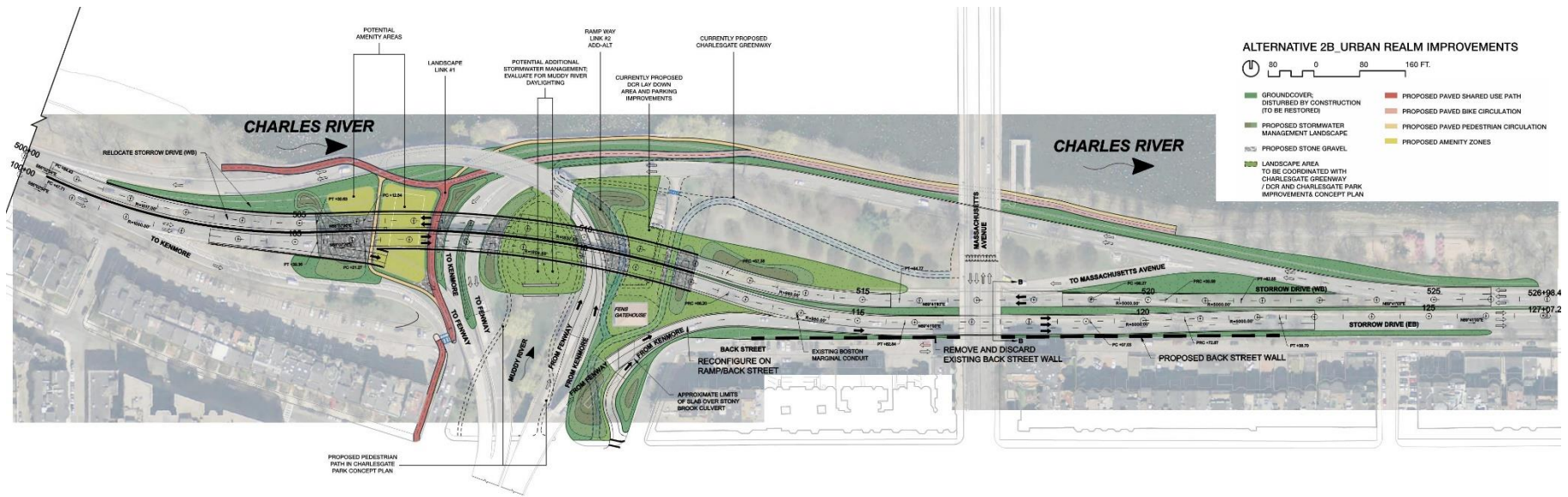
Advantages

- Eliminates left-side exits
- Water quality improvements w/planted bio-swales, retention basins
- Provides three new bike/ped connections between Emerald Necklace and Esplanade
- Provides direct bike/ped access between Mass Ave and Esplanade
- Provides 4.0 acres of new landscape areas for riverfront and near river recreation
- Reduces constriction of Esplanade pathways between Charles River and Storrow Drive
- Improves accessibility to Boston Marginal Conduit for maintenance and repairs
- Enables possible daylighting of Muddy River under Storrow EB bridge

Disadvantages

- Entrance ramp onto Storrow EB from Charlesgate E/Beacon St is forced to merge sooner, west of Mass Ave Bridge, degrading safety and operations along ramp
- Vertical clearance for Storrow WB beneath Mass Ave bridge will be reduced.
- New Storrow WB exit to Fenway/Kenmore Square will be constructed through existing parkland
- Land manipulation required between Storrow Drive and the Mass Ave Bridge
- Added costs for new urban connections and land-forming
- Added costs and agency coordination for reconstruction of Boston Marginal Conduit

Alt 2B EB/WB Bridge, Storrow WB to Span I, Narrow Roadways



Alternative 2B – Analysis

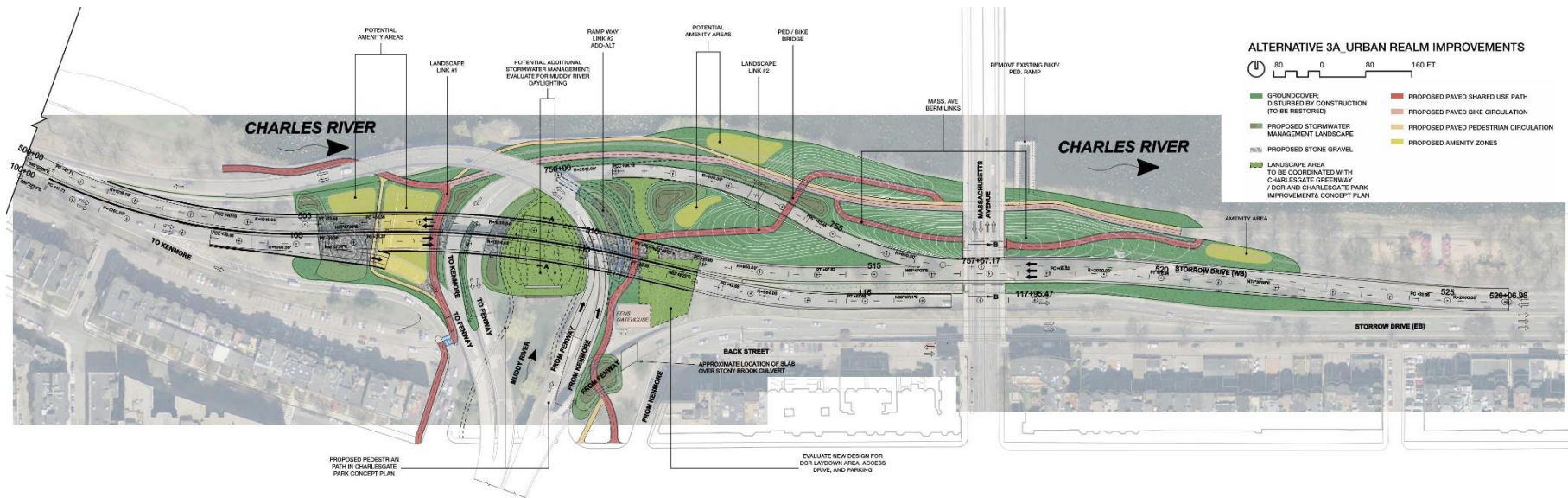
Advantages

- Eliminates Storrow VVB exit to Fenway/Kenmore Square left-side exit
- Water quality improvements w/planted bio-swales, retention basins
- Provides two new pedestrian/bicycle connections between Emerald Necklace and Esplanade
- Provides large new landscape area for riverfront and near river recreation
- Enables possible daylighting of Muddy River under Storrow EB bridge

Disadvantages

- Entrance ramp onto Storrow EB from Charlesgate E/Beacon St is forced to merge sooner, west of Mass Ave Bridge, degrading safety and operations along ramp
- Vertical clearance for Storrow VVB beneath Mass Ave bridge will be reduced.
- Does not provide direct pedestrian/bicycle access between Mass Ave
- Does not reduce constriction of Esplanade pathways as effectively as 2A, 3A or 3B.

Alt 3A EB/WB Bridge, Storrow WB to Span 2, Elim Mass Ave Exit



Alternative 3A - Analysis

Advantages

- Longer entrance ramp merge from Storrow EB to Charlesgate E/Beacon St than Alt 2A, 2B
- Water quality improvements w/planted bio-swales, retention basins
- Provides three new bike/ped connections between Emerald Necklace and Esplanade
- Provides direct bike/ped access between Mass Ave and Esplanade
- Provides 3.6 acres of new open space for riverfront and near river recreation
- Provides additional landscape area for recreation use east of Mass Ave Bridge (0.25 more acres than Alt 3B)
- Reduces constriction of Esplanade pathways between Charles River and Storrow Drive
- Avoids added cost and complexity of reconstructing the Marginal Conduit.
- Enables possible daylighting of Muddy River under Storrow EB bridge

Disadvantages

- Cost of construction of earthen berms between Storrow Drive and Mass Ave Bridge
- 0.4 acres less open land is provided than Alt 2A immediately east & west of Mass Ave Bridge
- Eliminates direct access ramp from Storrow VVB to Mass Ave (peak hr volume <200 vehicles)

Alternative 3B - Analysis

Advantages

- Reduced weaving/merging of Kenmore and Fenway on-ramps to Storrow WB
- Water quality improvements w/planted bio-swales, retention basins
- Provides three new bike/ped connections between Emerald Necklace and Esplanade
- Provides direct bike/ped access between Mass Ave and Esplanade
- Provides 3.35 acres of new open space for riverfront and near river recreation
- Reduces constriction of Esplanade pathways between Charles River and Storrow Drive
- Avoids the added cost and complexity of reconstructing the Marginal Conduit.
- Enables possible daylighting of Muddy River under Storrow EB bridge

Disadvantages

- Cost of construction of earthen berms between Storrow Drive and Mass Ave Bridge
- Provides less open land area than Alts 2A and 3A (0.65 acres and 0.25 acres, respectively)

Comparative Project Costs*

	Alt 1A	Alt 1B	Alt 2A	Alt 2B	Alt 3A	Alt 3B
Construction Cost Bridge/Highway	\$19M	\$15M	\$39M+	\$33M	\$35M	\$36M
Construction Cost Open Space/Landscape	\$200k	\$2M	\$12M	\$5M	\$10M	\$10M
Construction Duration	3 yrs	2 yrs	4 yrs	3 yrs	3 yrs	3 yrs

* Note: costs are order-of-magnitude estimates based on concept level design development, intended for comparison of alternatives, not for programming