



Urban Watershed Renewal with Public/Private Collaboration

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Building better communities with you

Project Partners



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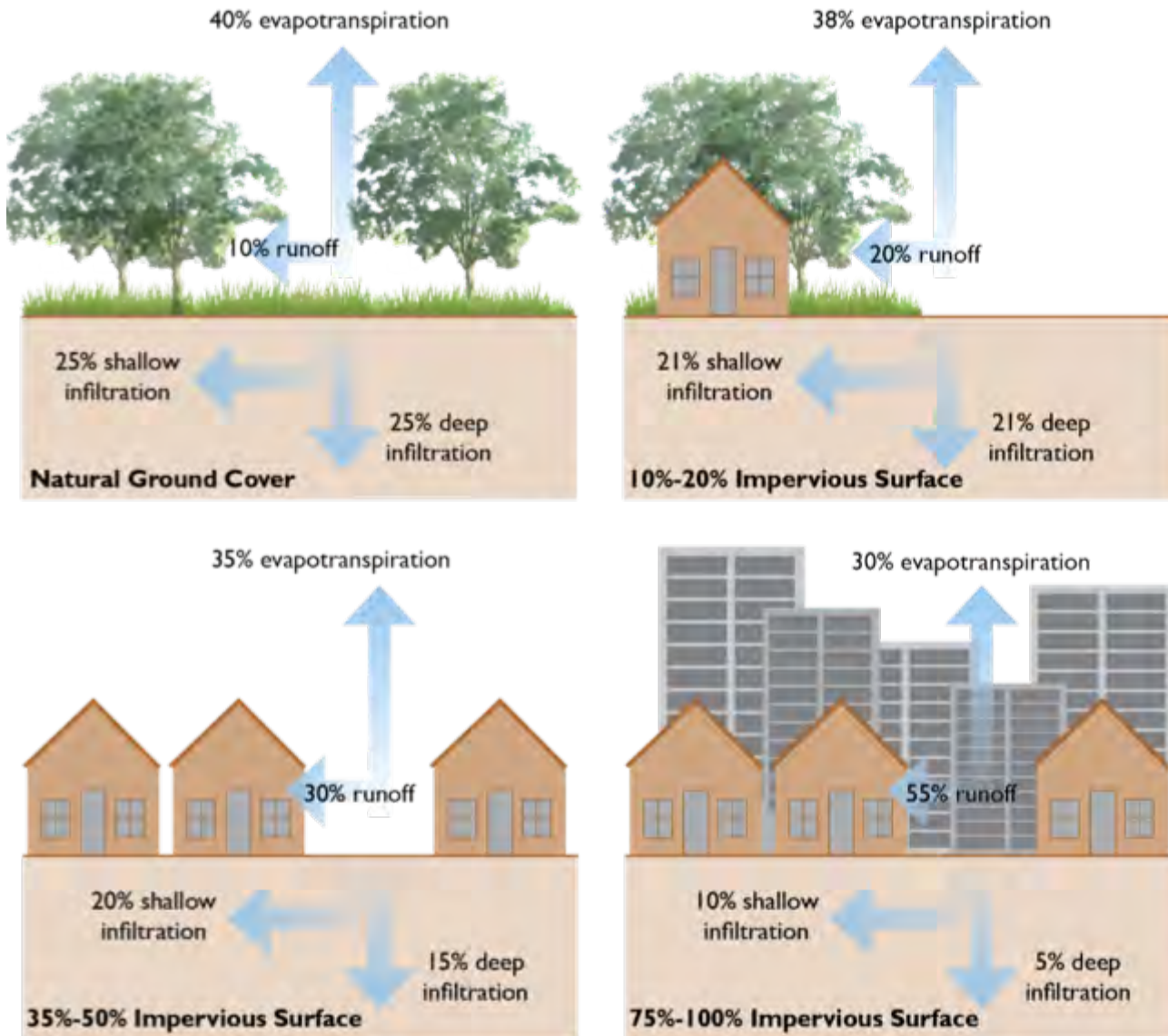


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Project Background



Natural Water Cycle vs. Engineered Water Cycle



How can we mimic the natural condition in urban environments?

CRWA's Blue Cities Initiative

Blue Cities is a **water-oriented approach** to urban development and redevelopment that promotes designs for the built environment and **engages with every stage of the water cycle.**

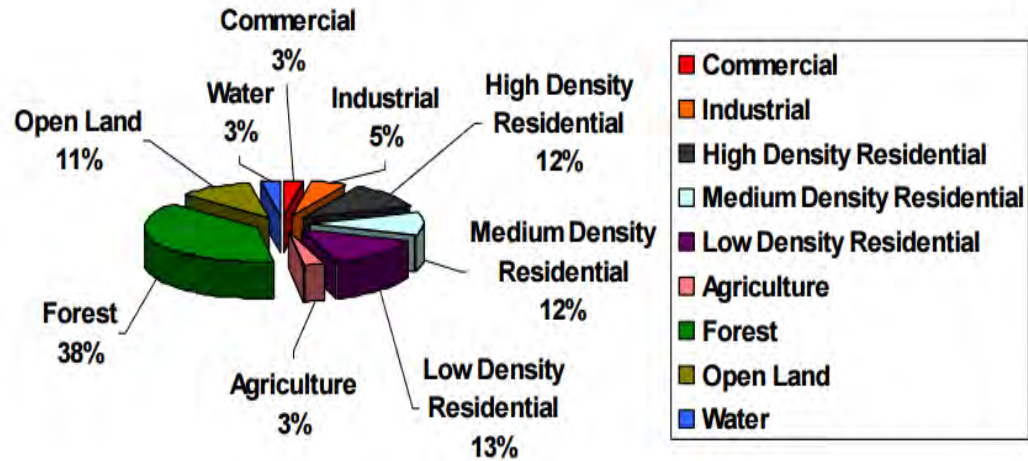
Blue Cities:

- Goes beyond “green” building
- Embraces green infrastructure design
- Restores the natural water cycle in the built environment



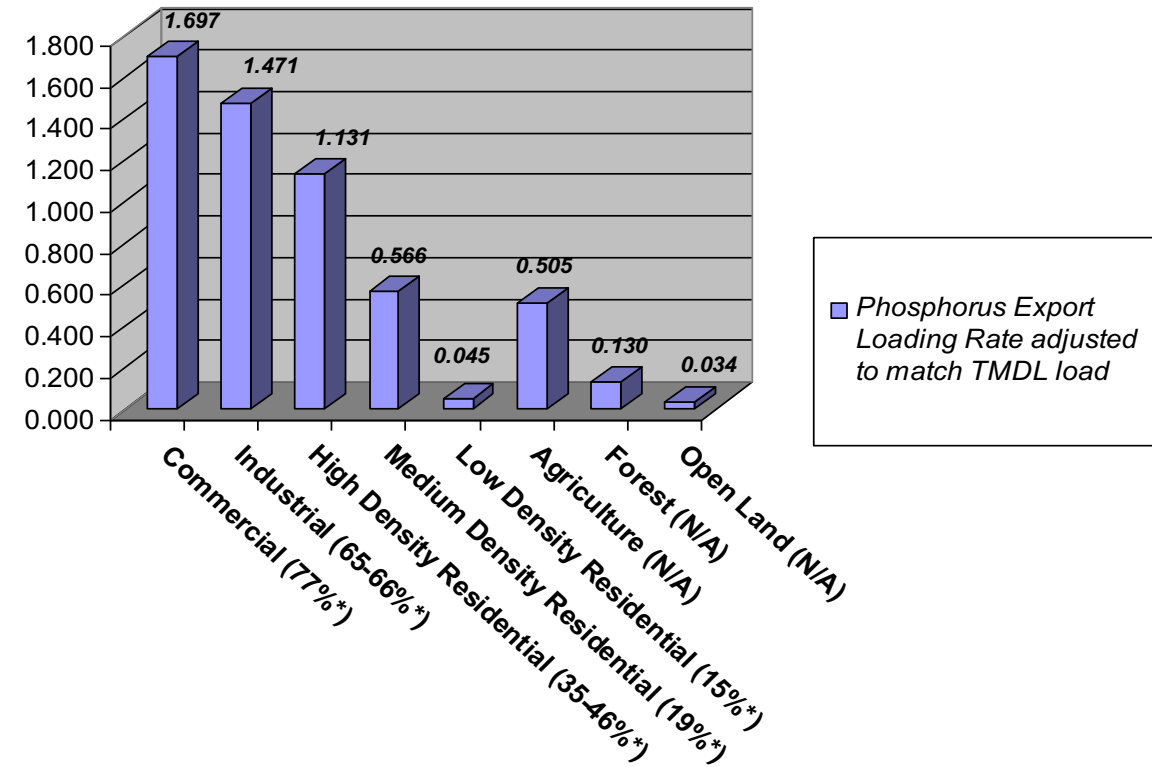
Charles River Nutrient Total Maximum Daily Loads (TMDLs)

Land Cover Distribution Charles River Watershed

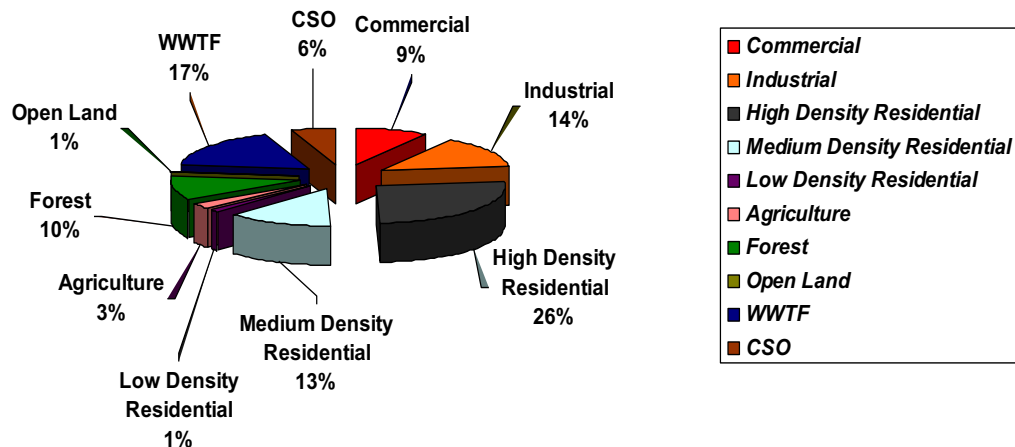


Phosphorus Export Loading Rate by Land Cover (Kg per hectare per year)

- Concluded river has twice as much phosphorus as it should
- Detailed in 2016 MS4 permit requirements



Distribution of Annual Phosphorus Load to the Charles River by Source Category (1998-2002)



Environmental Goals

Phosphorus Reduction Goal

Treat stormwater and reduce phosphorus load by **64%** by retrofitting areas of the watershed with green infrastructure

Benefits

- Increase evapotranspiration by increasing tree canopy and overall vegetation cover
- Increase groundwater recharge
- Improve connectivity between open spaces, neighborhood assets, and the Charles River





CAMBRIDGE

Lower Allston Priority Study Area

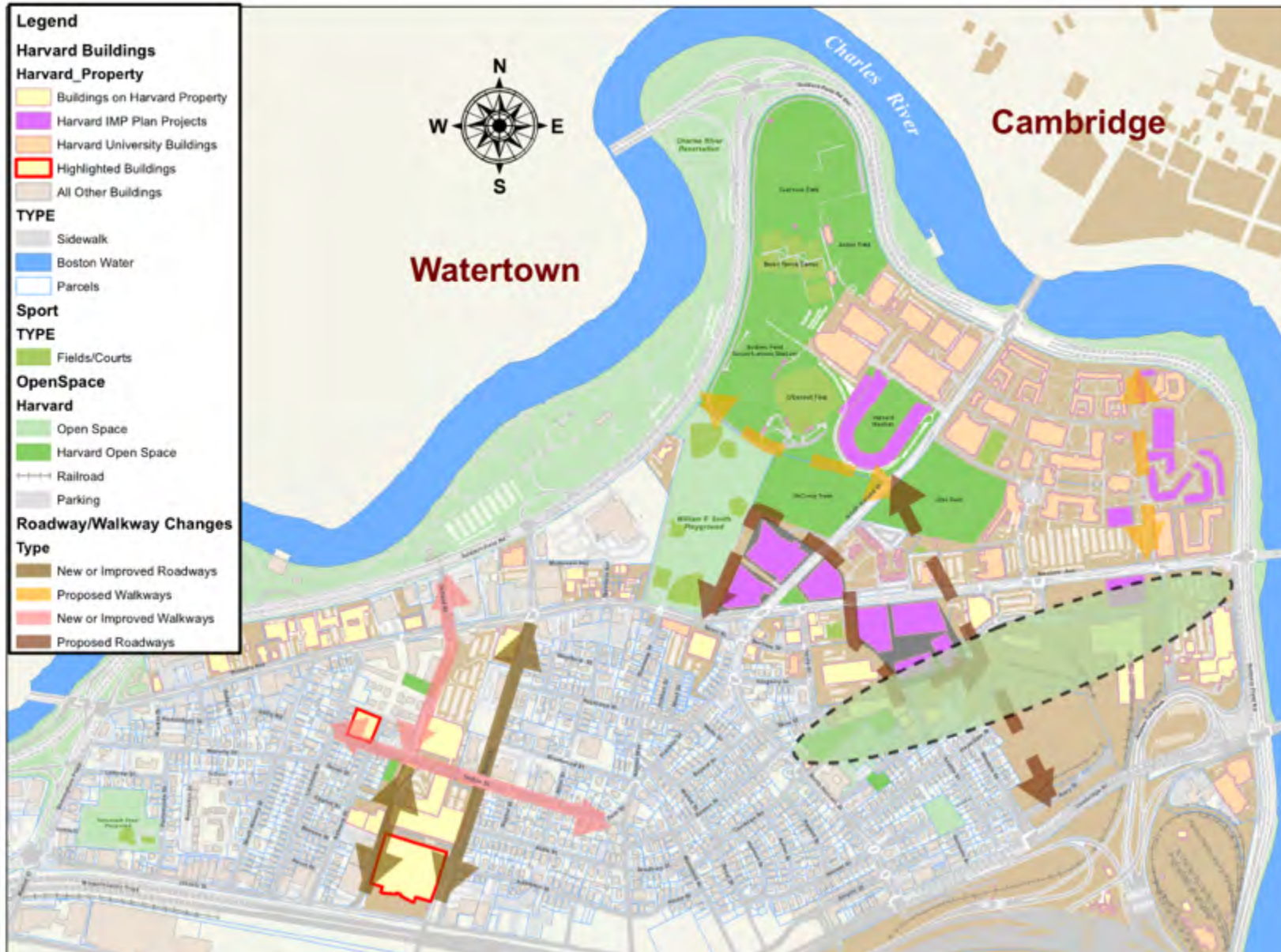
Lower Allston Subwatershed Study Area

BOSTON

Allston 1903



Harvard Campus Development

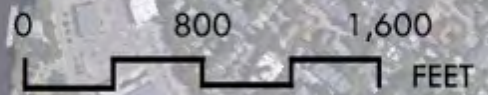


Project Focus Areas





- Priority Project Sites
- SS #1A: Residential
- SS #1B: Western Avenue
- SS #2: Industrial/Commercial
- SS #3: Long Term Harvard Redevelopment
- Charles River Outfall Location (BWSC)



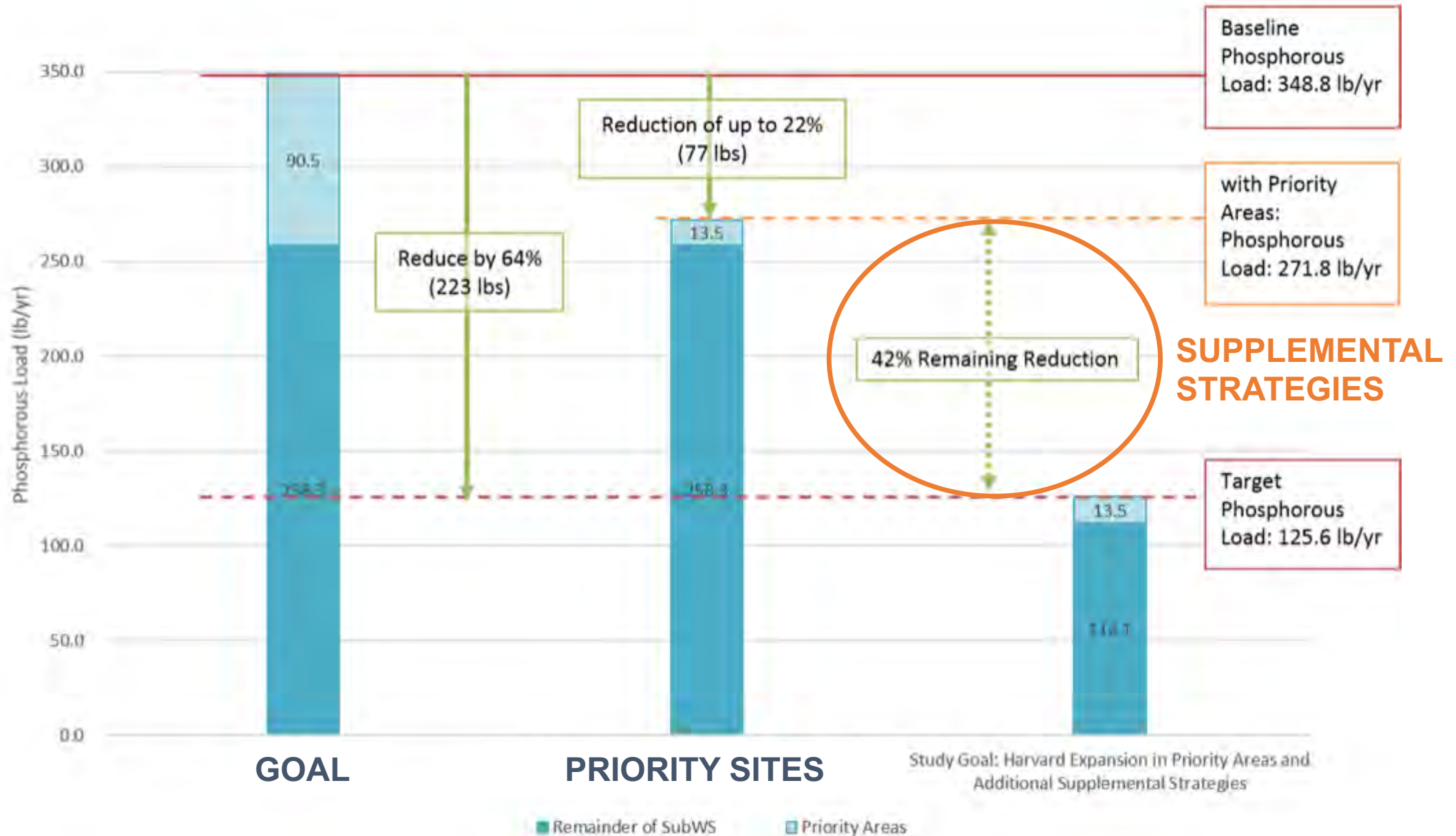
Priority Sites

Phosphorus Reduction Goal **64%**
 Priority Sites Phosphorus Reduction **22%**

Site	Development Status	
1	Rena Park	Planned
2, 11, 12	Greenway + Extension	Planned
3	Barry's Corner	Planned
4	Academic Way	Planned
5	Stadium Way	Planned
6	Hotel/Conference	Planned
7	SEAS	Planned
8	Klarman Hall	In Design
9	Chao Center	In Construction
10	Tata Hall	Built
a - f	Drainage Areas	Planned
Total		



Priority Sites





- Priority Project Sites
- SS #1A: Residential
- SS #1B: Western Avenue
- SS #2: Industrial/Commercial
- SS #3: Long Term Harvard Redevelopment



0 800 1,600
FEET

SS-1A Residential

Green Street Retrofits
10-50% Application

Phosphorus Reduction Goal 64%
SS-1A Reduction up to 11%



Legend

- Sidewalks in Residential
- Roads in Residential
- Residential

SS-1A Residential

Green Street Retrofit
10-50% Application

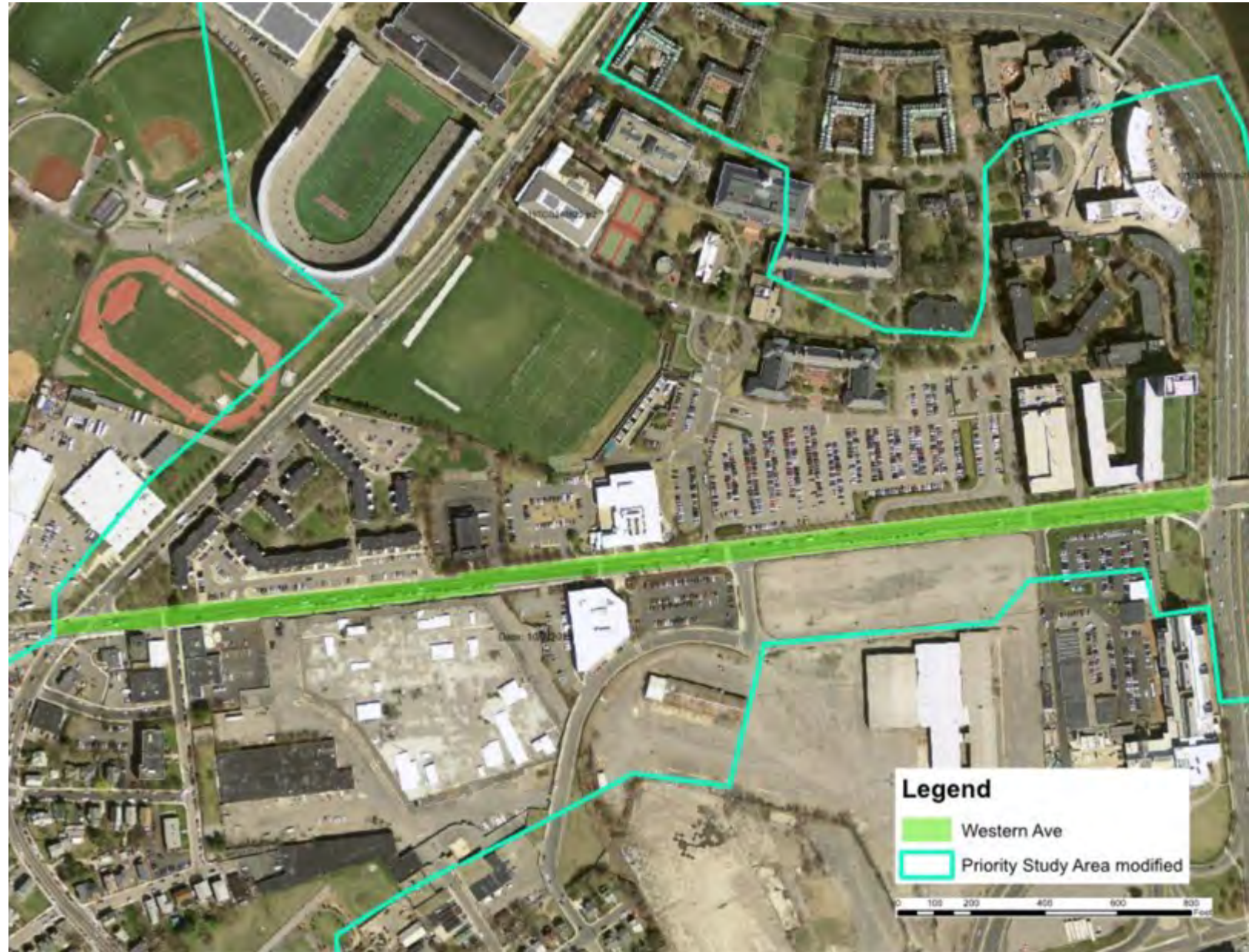
Phosphorus Reduction Goal 64%
SS-1A Reduction up to 11%



SS-1B Western Ave

Green Street Retrofit 20-100% Application

Phosphorus Reduction Goal 64%
SS-1B Reduction up to 2%



SS-1B Western Ave

**Green Street Retrofit
20-100% Application**

Phosphorus Reduction Goal 64%
SS-1B Reduction up to 2%



SS-2 Commercial/ Industrial

Parking Lot Green
Infrastructure Retrofits
10-50% Application

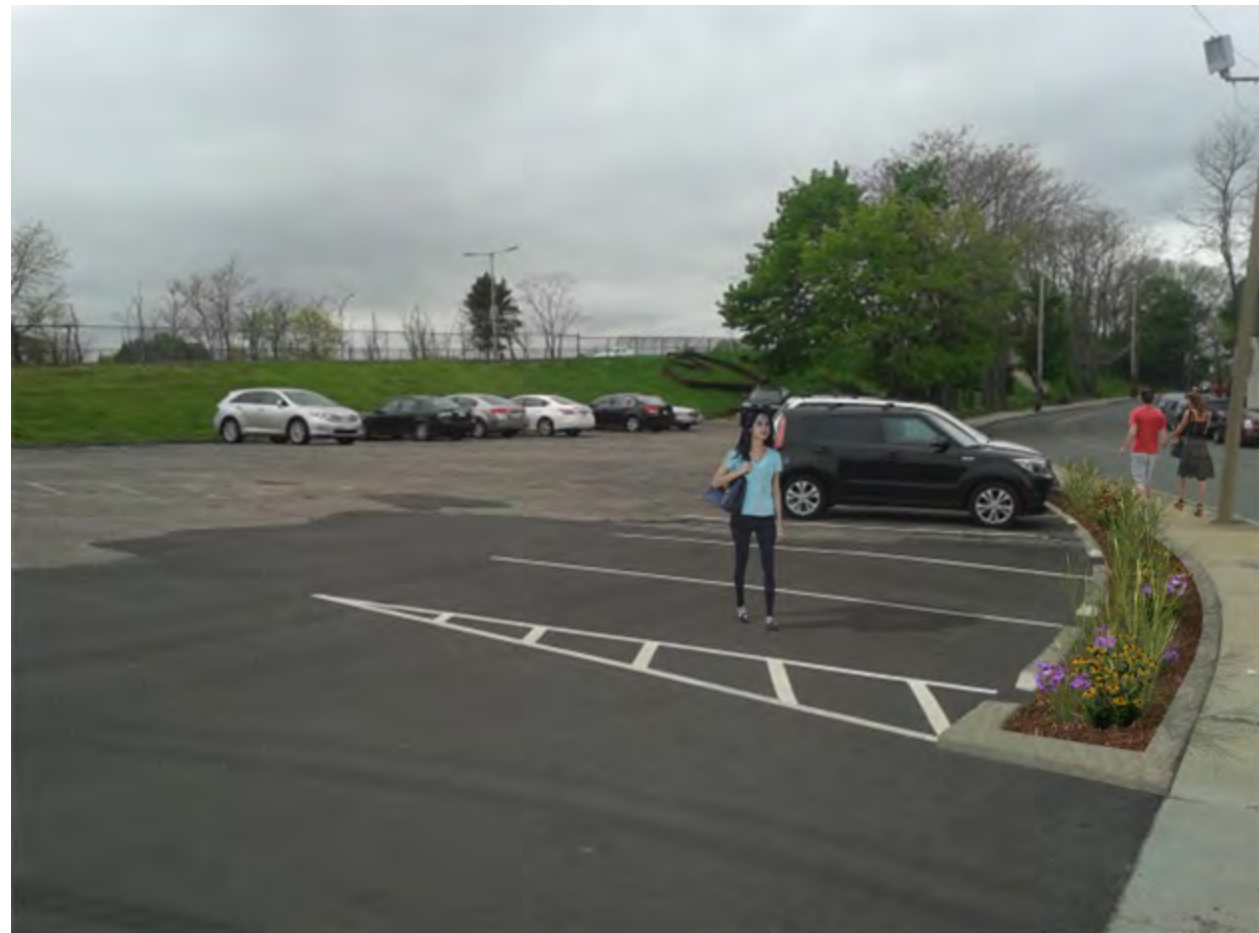
Phosphorus Reduction Goal 64%
SS-2 Reduction up to 4%



SS-2 Commercial/ Industrial

**Parking Lot Green Infrastructure Retrofit
10-50% Application**

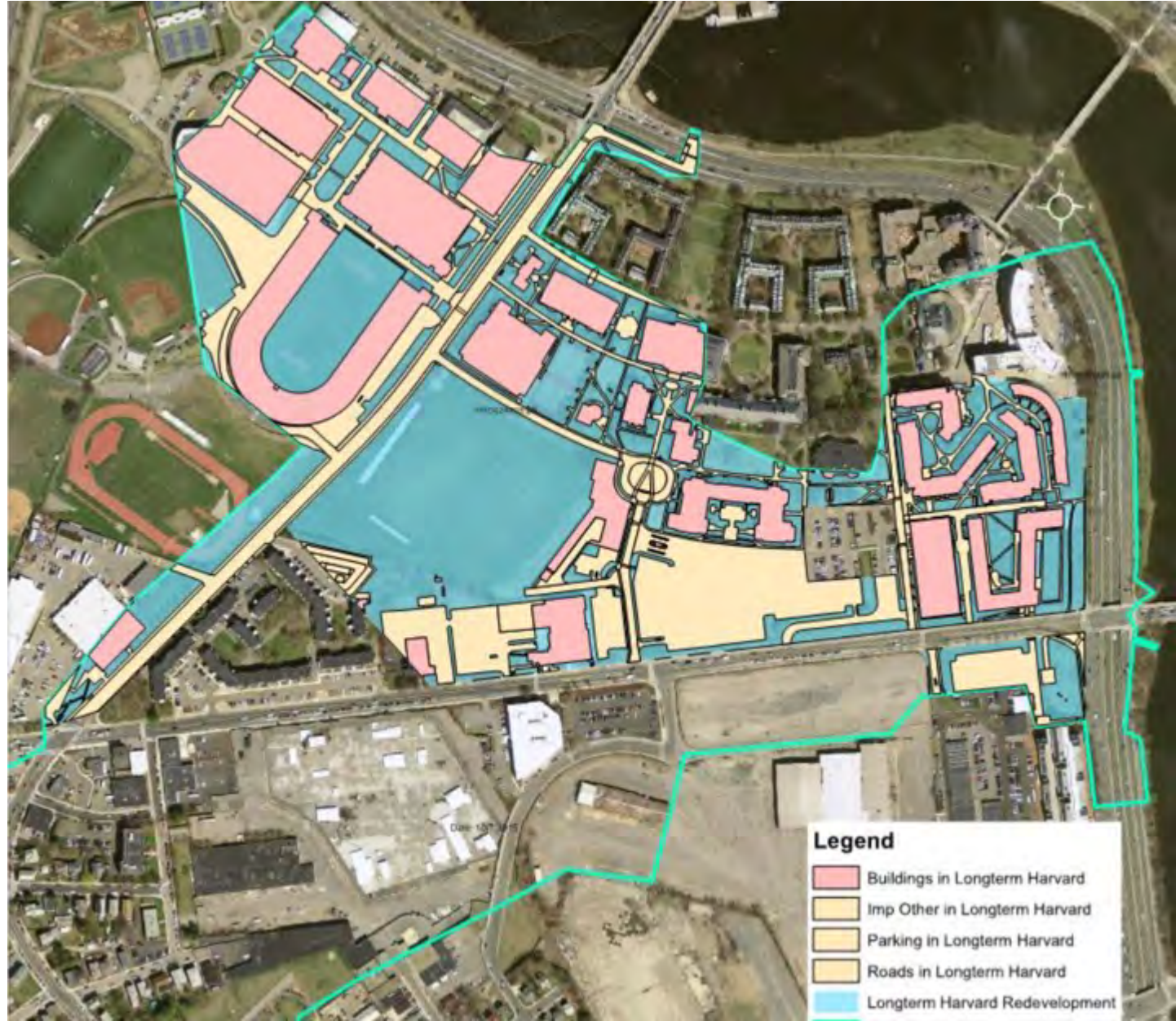
Phosphorus Reduction Goal 64%
SS-2 Reduction up to 4%



SS-3 Harvard Long Term Redevelopment

Building & Site
Green Infrastructure
10-50% Application

Phosphorus Reduction Goal 64%
SS-3 Reduction up to 12%



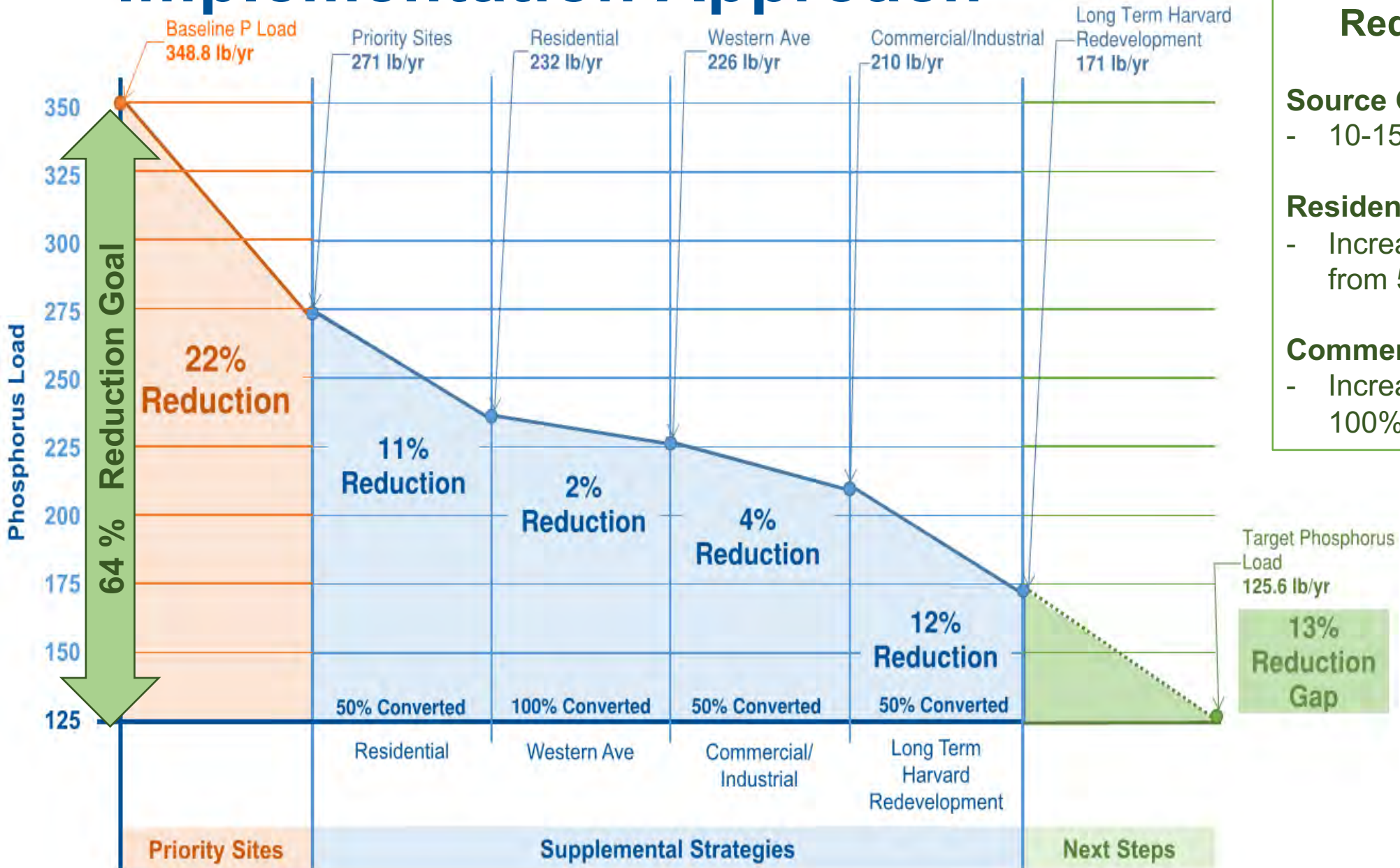
SS-3 Harvard Long Term Redevelopment

Building & Site Green Infrastructure
10-50% Application

Phosphorus Reduction Goal 64%
SS-3 Reduction up to 12%



Implementation Approach



Strategies to Increase Reduction to 64%:

Source Controls:

- 10-15% reduction credit

Residential:

- Increase green streets to from 50 to 75%

Commercial/Industrial:

- Increase retrofits from 50 to 100% of parking lots

Moving Forward



Questions?



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