



**Environmental
Protection**

New York City's Green Infrastructure Plan

C40 - Sao Paulo Summit
Urban Drainage & Adaptation

June 2, 2011

Why should we consider green infrastructure?

- water quality
- costs
- sustainability

What will NYC do to adopt green infrastructure?

- demonstration projects
- watershed planning
- funding and staffing
- interagency cooperation
- community engagement
- regulatory cooperation

Dense, Efficient Settlement is Impervious



13 Different CSO Drainage Areas

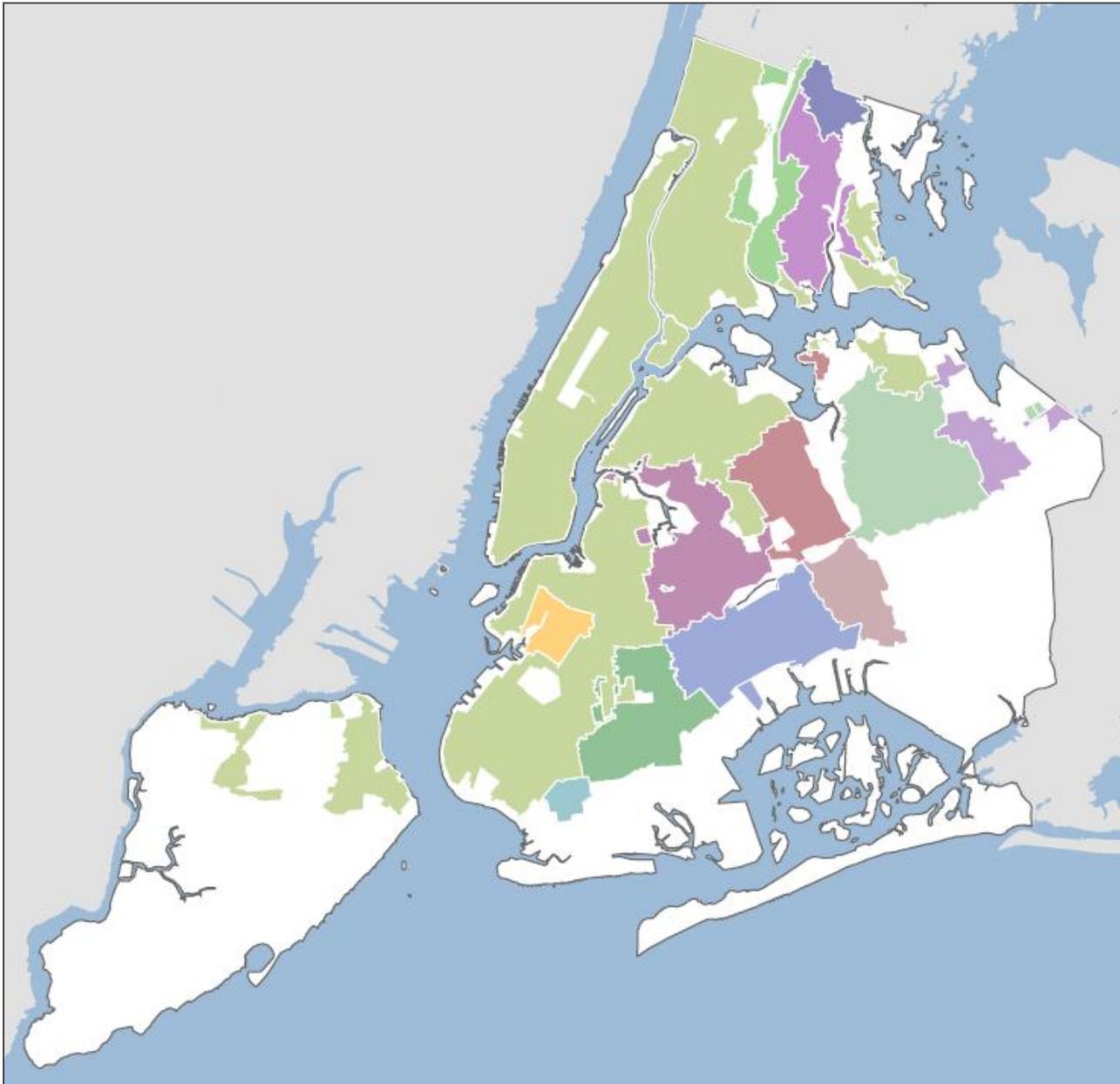
**Two-thirds of
NYC** served by
combined sewers

216,000 acres of
CSO drainage
area

7,400 miles of
sewers

**422 CSO
outfalls**

**30 billion
gallons of CSO
per year**



Portfolio for Water as a Waste and a Resource



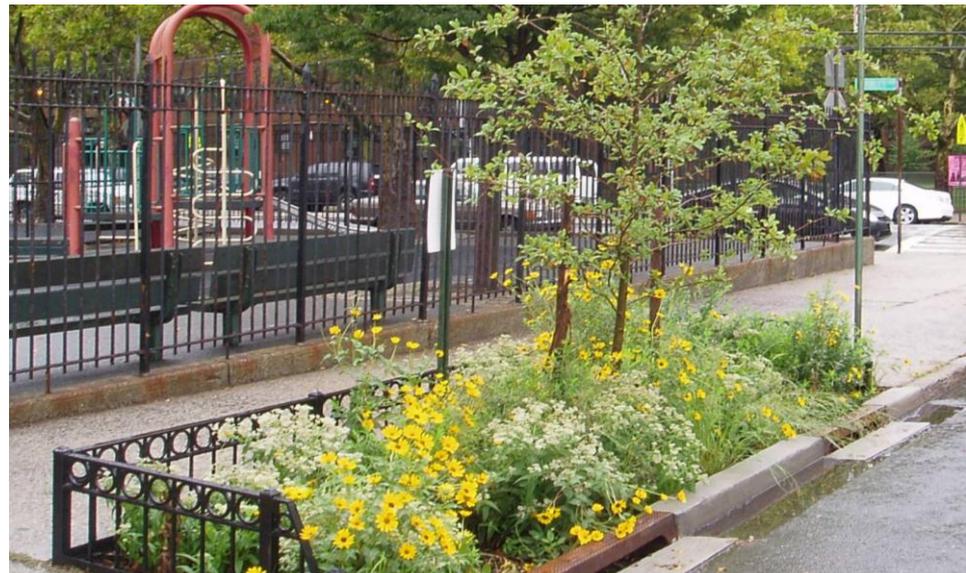
Paerdegat Detention Facility



Staten Island Bluebelt



Catch Basins



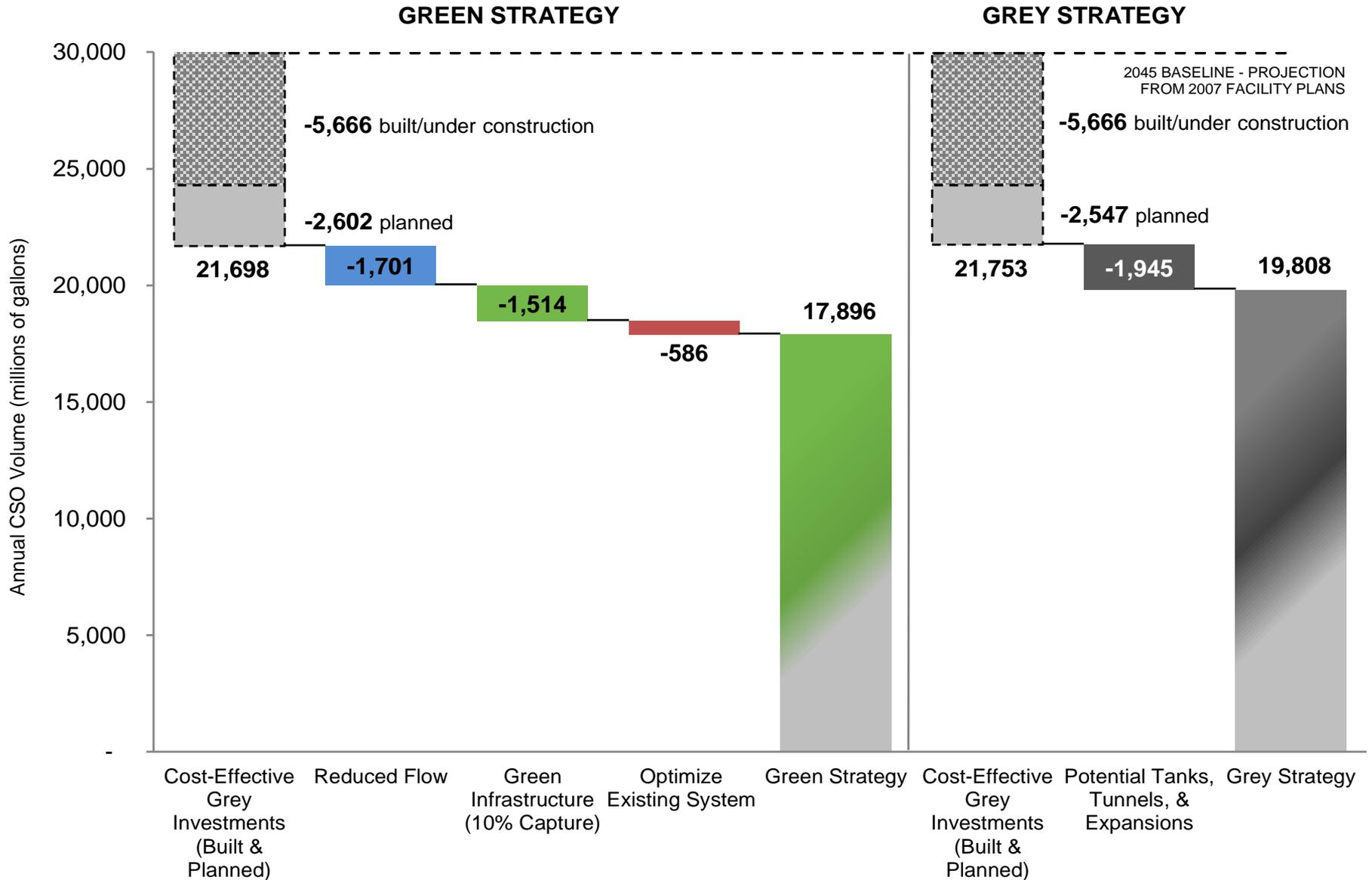
Enhanced Tree Pit

A Sustainable, Hybrid Approach

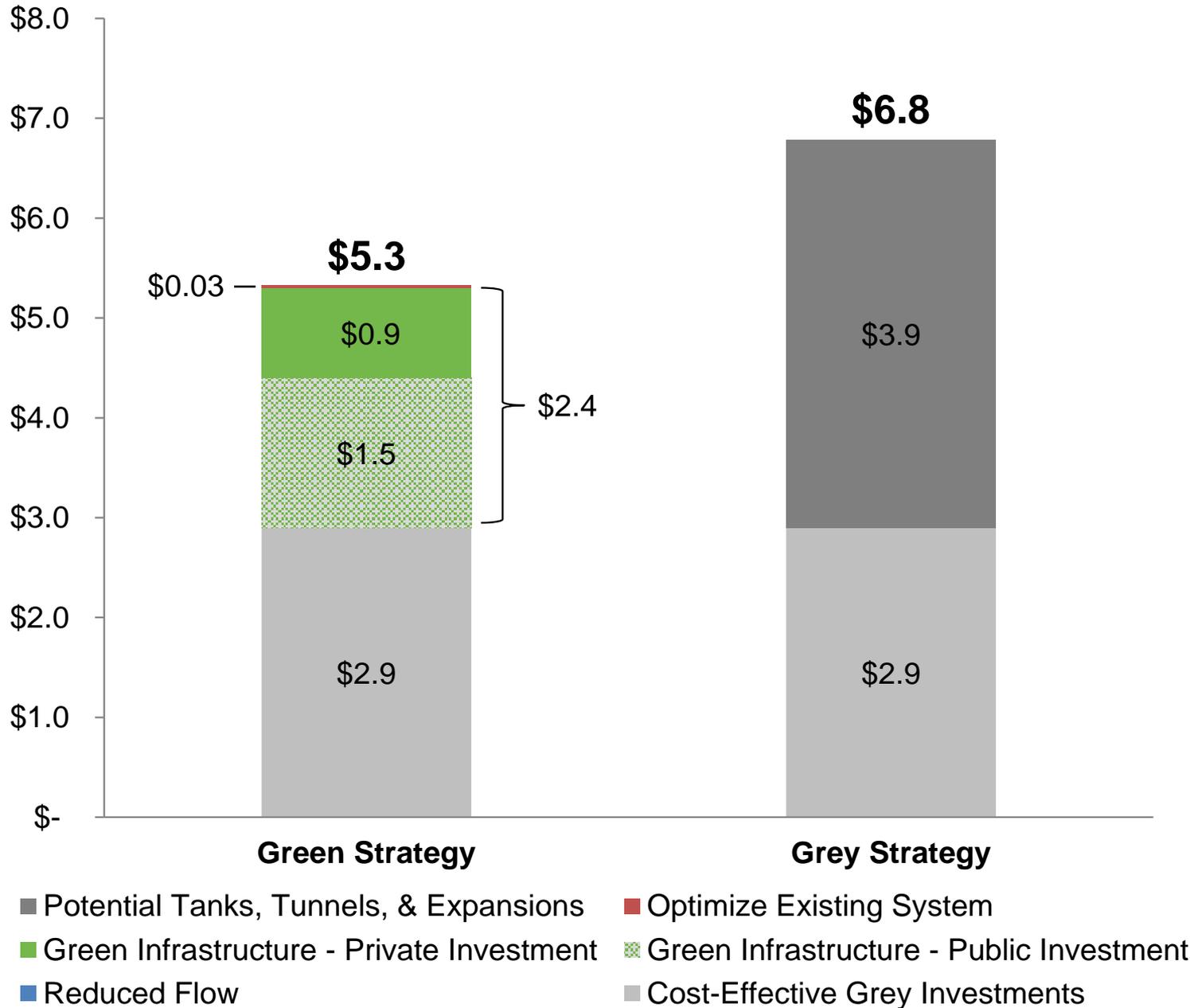


1. Build cost-effective grey infrastructure
2. Optimize the existing wastewater system
- 3. Control runoff from 10% of impervious surfaces through green infrastructure and other source controls**
4. Institutionalize adaptive management, model impacts, measure CSOs, and monitor water quality
5. Sustain stakeholder engagement

Performance



Costs

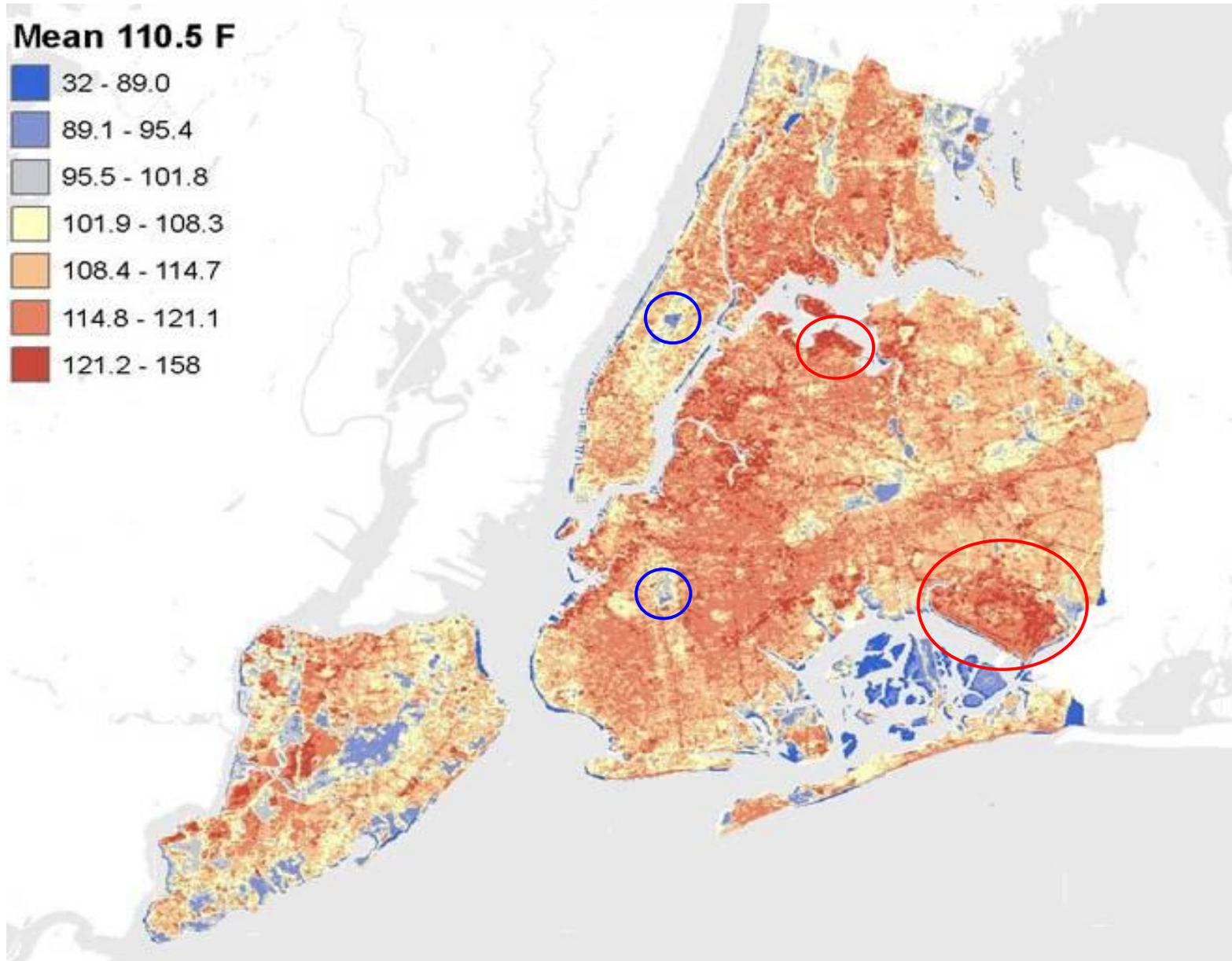




Construction of Stormwater Tree Pit Transforms a Commercial Strip Sutter Avenue, Brooklyn, June 2010



Proof that Plants Cool the City



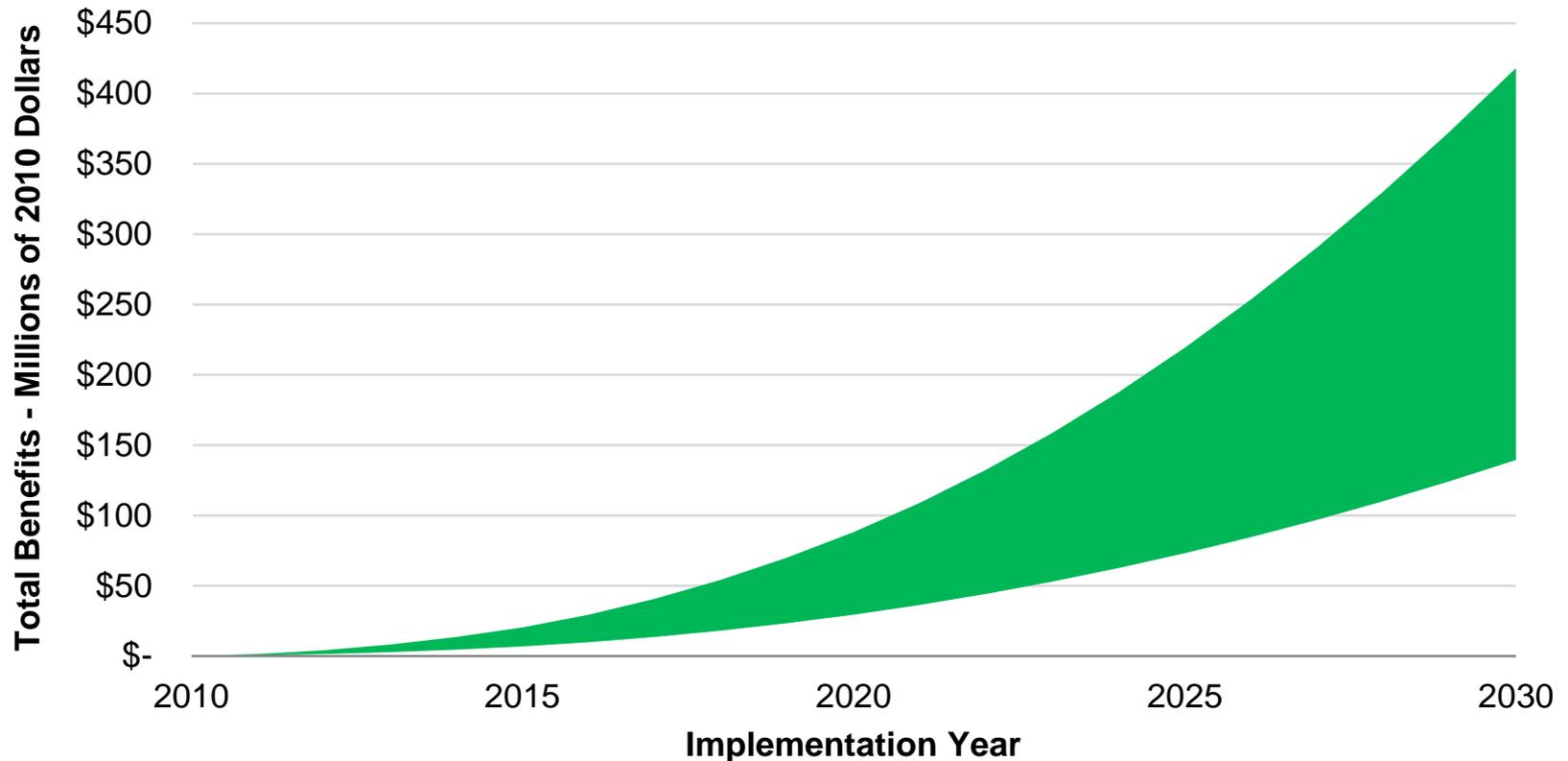
Positive Co-Benefits

Annual benefits of green infrastructure per acre

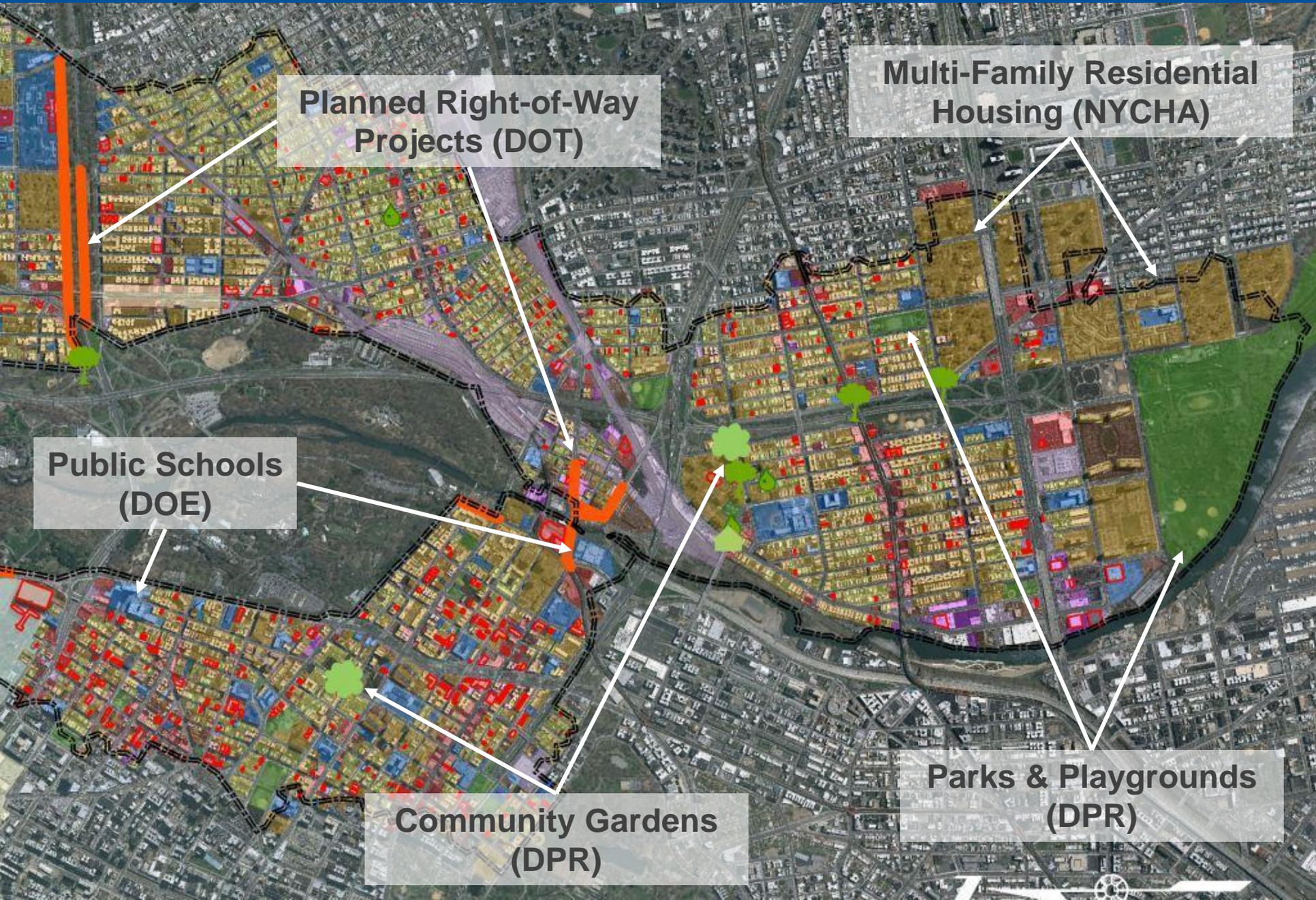
Reduced energy demand:	\$5,513
Reduced carbon dioxide:	\$117
Improved air quality:	\$759
Increased property value:	\$4,725

Acres of planted green infrastructure in 2030

25% planted green infrastructure	1,085 acres
75% planted green infrastructure	3,255 acres



Watershed Planning



**Planned Right-of-Way
Projects (DOT)**

**Multi-Family Residential
Housing (NYCHA)**

**Public Schools
(DOE)**

**Community Gardens
(DPR)**

**Parks & Playgrounds
(DPR)**

Blue Roof – Modular Trays



Green Roof Pilots



Right of Way Pilots



'Green Infrastructure for Clean Water Act of 2011' Introduced to House and Senate

Published on May 27, 2011 - 2:02:52 PM

By: American Rivers

WASHINGTON, D.C. May 27, 2011 - American Rivers, the nation's leading voice for clean water and healthy rivers, today applauded Senators Tom Udall (D-NM), Sheldon Whitehouse (D-RI) and Ben Cardin (D-MD) and Representatives Donna Edwards (D-MD) and Russ Carnahan (D-MO) for introducing the 'Green Infrastructure for Clean Water Act of 2011' to the Senate and House, respectively.

"Clean water is vital to our health, safety, and quality of life. This bill will help communities nationwide safeguard clean water and healthy rivers," said Stacey Detwiler, Clean Water Associate at American Rivers.

Pa., Philly sign \$2B landmark clean water plan

By JOANN LOVIGLIO

The Associated Press

5:46 p.m. Wednesday, June 1, 2011

PHILADELPHIA — Pennsylvania and the city of Philadelphia have embarked on what environmental officials say is the largest project in the U.S. to reduce stormwater pollution through eco-friendly measures, such as porous asphalt and rooftop gardens.

The state and city, the country's fifth largest with 1.5 million people, signed a "Green City, Clean Waters" plan Wednesday, kicking off a 25-year, \$2 billion effort to modify infrastructure to reduce the amount of rainwater tainted with road oil, litter and raw sewage flowing into rivers and streams.