Building a Better Future: Implementing Green Infrastructure to Reduce Combined Sewer Overflows

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RUTGERS

New York City Green Infrastructure Plan

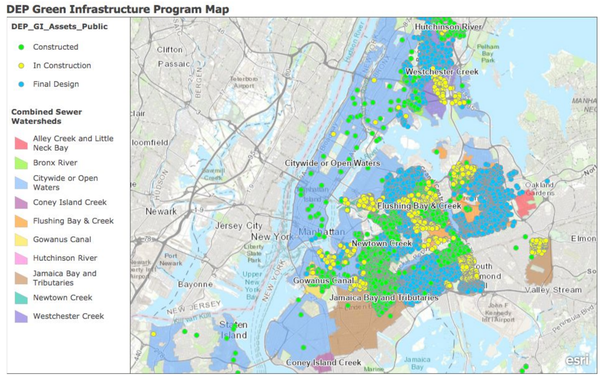
"Over **90%** of the pollution in NYC's waterways is from **[CSO] runoff**."

–Wang, 2014

"**52%** of the city's tributaries—the creeks and man-made canals that hug the shoreline and pass through neighborhoods—are **still unsafe** even for boating."

–PlaNYC A Greener Greater New York, 2007

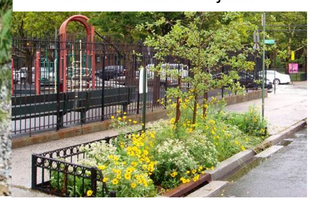
Implementation



4,000 Rain Gardens

71 Public Property Retrofits

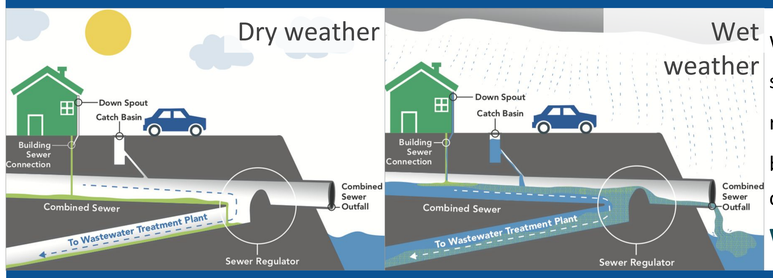
39 Parks/Playgrounds
25 Public Schools
5 Housing Projects
2 Other Public Projects



591 Greened Acres

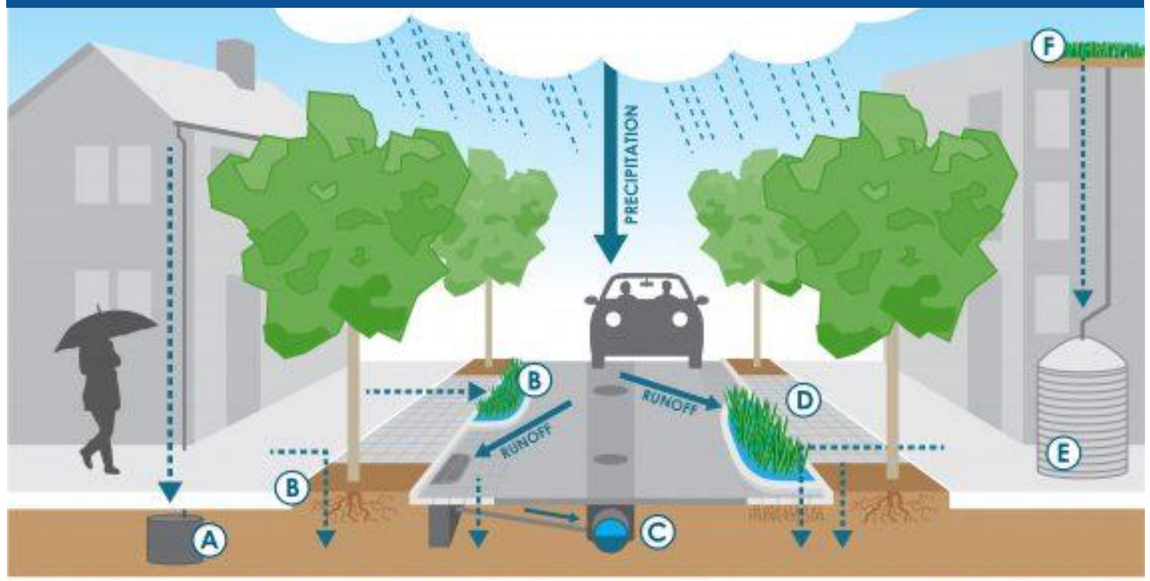
1 Rain Garden = **250 ft³** Managed Stormwater = **1** Greened Acre

Combined Sewer Overflow

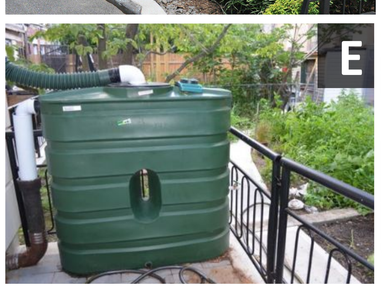


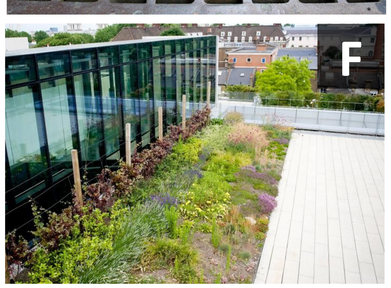
When heavy rain overloads a combined sewer system and **discharges** both runoff and **sewage** into local water bodies, causing **pollution**, beach closings, fishing restrictions, and other **water body impairments**.

Green Infrastructure



A: Dry Well B: Stormwater Planter C: Storm Drain D: Permeable Paving E: Rainwater Harvesting Cistern F: Green Roof





London Environment Strategy

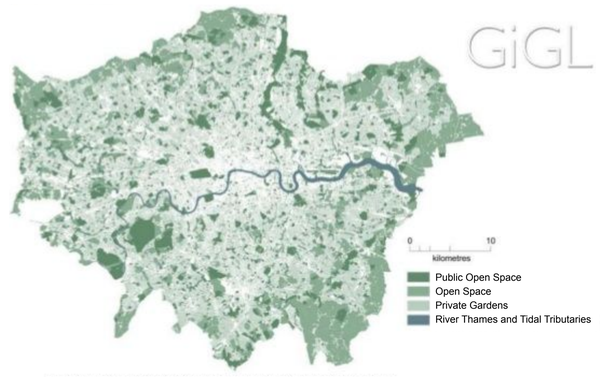
"It takes a few **millimeters** of rainfall to cause the 34 most polluting… CSOs to **discharge** into the Thames River."

–Thomas and Crawford, 2011

"**Only one** of London's 47 river water bodies is classed as **'good'** – **three** are **'bad'**, **five** are **'poor'** and **the rest** are **'moderate'**."

–London Environment Strategy

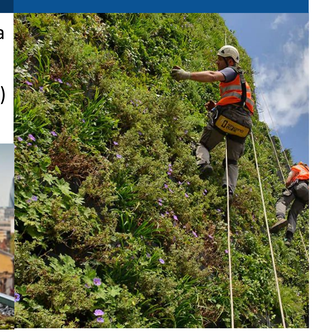
Implementation



1.5 million m² Green Roofs

1.26 m² of green roof per capita
40% of all green roofs in UK
80% rainfall retention (< 10 mm)
$9.06 saved per m²

51% Green Cover



First National Park City

Let's make London

Greener **Healthier** **Wilder**

NYC Environmental Protection
NEW YORK CITY DOT
NYC Department of Education
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NYC PLANNING
NEW YORK CITY HOUSING AUTHORITY
NYC DDC
NYC Parks
PORT OF LONDON AUTHORITY
LONDON RESILIENCE preparing for emergencies
Environment Agency
Thames Water
LONDON NATIONAL PARK CITY*
Forestry Commission