Reinvesting in Urban Water Infrastructure through Combined Sewer Overflow Long Term Control Plans
CAMDEN 1957
CAMDEN: A City of Great Need
CAMDEN: A City on the Rise

- Regional Waterfront Destination
- Multi-Modal Transportation Options
- Educational & Medical Hub
- Private Sector Expansion
- New Approach to Public Safety
- Growing Neighborhoods
- Environmental Improvements
Reinvesting In Our Infrastructure

- Infrastructure Investment Critical for Current Residents and New Development
- 100 Year Old Combined Sewer System
  - ~180 miles
- 22 City-owned CSO’s
- 1 CCMUA-owned CSO
- Delaware River, Cooper River, Newton Creek
Camden’s Struggle With Stormwater
Camden’s Struggle With Stormwater

July 2013 Flooding on the Camden Waterfront stranded concert goers and suspended regional transportation connections.
SMART – COLLECTIVE IMPACT

- Common Agenda
- Shared Measurement
- Mutually Reinforcing Activities
- Continuous Communication
- Backbone Support
THE SMART TEAM

City of Camden

Cooper’s Ferry Partnership

NJ Department of Environmental Protection

Rutgers Cooperative Extension Water Resources Program

Camden County Municipal Utilities Authority

NJ Tree Foundation
The Camden SMART Initiative a community-driven movement to protect human health, improve conditions for economic development, improve water quality, and enhance the quality of life for Camden City, its residents, and the Delaware River watershed through the broad use of green and grey infrastructure techniques for stormwater management.

EDUCATE. IMPLEMENT. ENGAGE.
Long-Term Control Plan
**Infiltration/Inflow Removal**

- Mixing a gallon of clean storm water or groundwater with a gallon of sewage results in **two gallons of sewage**.

- Infiltration of groundwater, or inflow from storm water, through leaky pipe joints, into wastewater increases pumping and treatment costs and increases the risk of flooding.
Optimization of Combined Sewer System Operations

- Maximize combined sewer storage capacity
- Clean stormwater inlets; jet sewer lines
- Minimize potable water loss
- Install solids/floataables control to minimize impact to water quality of receiving streams
• Green Infrastructure
• Neighborhood Beautification
• Key Infrastructure Upgrades
• River Access & Enjoyment
• Economic Development
• Innovative Technology Solutions
• Sustainability
• Brownfield Redevelopment
SMART Accomplishments 2011-2013

27 Green Infrastructure Projects Installed
992 Trees Planted
120 Rain Barrels Distributed
3,836,950+ Gallons of Stormwater

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Street Address</th>
<th>Neighborhood</th>
<th>Completion Date</th>
<th>Gallons of Stormwater Captured per Year</th>
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<tbody>
<tr>
<td>20th St. Community Garden Rain Gardens</td>
<td>N 20th at River Ave</td>
<td>Cramer Hill</td>
<td>June-10</td>
<td>63,000</td>
</tr>
<tr>
<td>Sumner Elementary School Rain Gardens</td>
<td>1600 S 8th Street</td>
<td>Liberty Park</td>
<td>June-10</td>
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<tr>
<td>Ferry Avenue Rain Garden</td>
<td>1645 Ferry Avenue</td>
<td>Waterfront</td>
<td>March-11</td>
<td>75,000</td>
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<tr>
<td>Waterfront South Native Plant Nursery</td>
<td>1645 Ferry Avenue</td>
<td>Waterfront</td>
<td>April-11</td>
<td>470,000</td>
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<tr>
<td>Waterfront South Rain Garden</td>
<td>S Broadway @</td>
<td>Waterfront</td>
<td>July-11</td>
<td>62,500</td>
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<tr>
<td>Ferry Avenue Library Rain Garden</td>
<td>852 Ferry Avenue</td>
<td>Centerville</td>
<td>April-12</td>
<td>32,500</td>
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<tr>
<td>Parkside Rain Barrel Workshop (25 Barrels)</td>
<td>Camden City</td>
<td>Parkside</td>
<td>April-12</td>
<td>81,000</td>
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<td>Brimm School Rain Garden</td>
<td>1626 Copewood</td>
<td>Whitman Park</td>
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<td>Camden County Technical School</td>
<td>6008 Browning Road</td>
<td>Pennsauken</td>
<td>May-12</td>
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<tr>
<td>RT Cream School Rain Garden</td>
<td>1875 Leon Huff Street</td>
<td>Centerville</td>
<td>June-12</td>
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<td>PRUP Rain Garden and Rainwater Harvesting</td>
<td>818 S. Broadway</td>
<td>Bergen Square</td>
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<td>Woodrow Wilson High School Rain Garden</td>
<td>3100 Federal Street</td>
<td>Stockton</td>
<td>July-12</td>
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<td>29th St. Rain Gardens</td>
<td>29th St @ Pierce St &amp;</td>
<td>Cramer Hill</td>
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<td>Park Blvd Rain Garden #1</td>
<td>Park Blvd @ Magnolia</td>
<td>Parkside</td>
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<td>Park Blvd Rain Garden #2</td>
<td>Park Blvd @ Vesper</td>
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<td>304 State St. Rainwater Harvesting</td>
<td>304 State Street</td>
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<td>Neighborhood Center Rain Garden and</td>
<td>278 Kaighns Ave</td>
<td>Central</td>
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<td>Front St. Community Garden Rainwater</td>
<td>N Front St at Penn</td>
<td>Cooper Grant</td>
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<td>Pyne Poynt Middle School</td>
<td>N 7th Street @ Erie</td>
<td>North Camden</td>
<td>April-13</td>
<td>47,700</td>
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<td>Yorkshire Elementary School Rain Garden</td>
<td>1251 Collings Ave</td>
<td>Fairview</td>
<td>May-13</td>
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<td>Urban Promise Academy Rain Garden</td>
<td>27 N 36th Street</td>
<td>Rosedale/East</td>
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<td>2013 Rain Barrel Program (95 Rain Barrels)</td>
<td>Camden City</td>
<td>Camden City</td>
<td>June-13</td>
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<td>St. Anthony’s Rain Garden</td>
<td>29th St @ River Ave</td>
<td>Cramer Hill</td>
<td>July-13</td>
<td>175,000</td>
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<tr>
<td>Liney Ditch Park Shelterbelt Tree Planting</td>
<td>Jasper Street</td>
<td>Waterfront</td>
<td>October-13</td>
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<tr>
<td>1108 Street Trees Planted (community-</td>
<td>Camden City</td>
<td>Camden-Wide</td>
<td>November-13</td>
<td>1,108,000</td>
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<td>Trenton Ave Rain Garden</td>
<td>Trenton &amp; Newton</td>
<td>Cooper Grant</td>
<td>June-14</td>
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<td>CSO Thorndyke Rain Garden</td>
<td>Route 30 &amp; Thorndyke</td>
<td>Marlton</td>
<td>June-14</td>
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<td>CSO Baird Blvd Rain Garden, C27</td>
<td>Baird Blvd &amp; Cooper</td>
<td>Marlton</td>
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<td>CSO Jackson Rain Garden, C03</td>
<td>200 Jackson Street</td>
<td>Waterfront</td>
<td>June-14</td>
<td>9,000</td>
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| 07/14/14 | TOTAL: | 3,836,950 |
John Mayor Dana L. Bucke

In celebration of the

GRAND REOPENING
of

Farnham Park

Park improvements include new amenities, stormwater management upgrades, and a connection to the Camden GreenWay trail network

Wednesday July 20th, 2011
11:00 AM

Park Blvd. & Kolpire Ave.
Camden, NJ

Join the pre-event
River to River Ride to Farnham Park
Find more info at www.coopersferry.com

For more information please contact Merigan Mulhern at (856) 757-9154.
Green Infrastructure on Brownfield Sites

Waterfront South Rain Gardens

• 1,850 tons of contaminated soil
• 12 USTs removed from site
• 4 rain gardens designed to manage about 1 million gallons of stormwater per year
• A green gateway into the Waterfront South neighborhood
Community Education & Outreach

CAMDEN COUNTY CONSERVES

Earth Week 2014

Sewer in a Suitcase

Educational Pamphlet
# 2014 Rainwater Harvesting Initiative

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Number</th>
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<tr>
<td>April 9</td>
<td>St. Joseph’s Carpenter Society</td>
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<td>April 21</td>
<td>Cooper Sprout’s Community Garden</td>
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<td>April 23</td>
<td>Puerto Rican Unity for Progress (PRUP)</td>
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<td>May 17</td>
<td>Camden Children’s Garden</td>
<td>16</td>
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<td>May 31</td>
<td>BPSOS</td>
<td>10</td>
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<td>June 5</td>
<td>Trenton Ave. Pocket Park</td>
<td>2</td>
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<tr>
<td>June 11</td>
<td>Eco-Charter School</td>
<td>4</td>
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<td>June 18</td>
<td>Fairview Neighbors</td>
<td>8</td>
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<tr>
<td>June 25</td>
<td>BPSOS-Community Garden</td>
<td>20</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>98</strong></td>
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</tbody>
</table>
Real Results?

70% Installed

860 Mt. Ephraim Ave.

916 Chelton Ave.

2739 Tyler Ave.
Research Policy & Planning

- Water Conservation Ordinance
- Sustainable Jersey Certification
- Sustainable land use pledge
- Green Infrastructure Handbook
- SMART Team Collective Impact Vision
- Sustainability Ordinance
CAMDEN SMART
2014 Infrastructure Initiative

- Von Nieda Park Stormwater Management Project, $2.5 million
- Baldwin’s Run Urban Daylighting Project, $1.1 million
- Green Infrastructure Projects, $1 million
- Sewer Rehabilitation Project, $2.5 million
- Wastewater Pump Station Rehabilitation, $14 million
- Water Storage Tank Rehabilitation, $5 million
- Phoenix Park Project, $1.4 million
- 4,000 LF of Sewer Replacement/Reconstruction
- Targeted Investment
- $1.5 million
GREEN INFRASTRUCTURE

17 Mid- to Large-Scale Green Infrastructure Investments

- Demonstration Projects
- Community Partners
- Public Commitment

- 3,100 square feet of permeable surfaces that promote groundwater recharge.
- Pervious paver stones for walkways and porous asphalt.
- 7 raised landscape boxes (36 square feet)
- 300 gallon rainwater harvesting cistern will collect the stormwater runoff from the rooftop of the building to water the raised landscape boxes.
- Overflow will be directed to the sewer system along Collings Road.

Yorkship School, Fairview
Brimm School

BEFORE

AFTER
Sustainability in Neighborhood Planning

NORTH CAMDEN AND CRAMER HILL WATERFRONT PARK PLANS
In October 2013, the City of Camden became one of only 20 municipalities statewide to receive Sustainable Jersey silver level certification.
The purpose of the Camden Collaborative Initiative is to eliminate gaps and barriers to sustainable development and smart growth.