Camden

SMART

Initiative

Stormwater Management and Resource Training

Stakeholder Meeting

01.26.12

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

A COMPLEX ISSUE

A COMPLEX CAUSE

=

= Green Infrastructure

= Neighborhood Beautification

= Key Infrastructure Upgrades

= River Access & Enjoyment

= Economic Development

= Innovative Technology Solutions

= Sustainability

=Brownfield Redevelopment

Park Boulevard Rain Garden in Parkside

Camden SMART Initiative
Stormwater Management and Resource Training

Program Goals:

1. Educate residents and community leaders about the benefits of stormwater management and green infrastructure
2. Establish a network of community organizations to advocate for sustainability in the City of Camden
3. Implement neighborhood green & grey infrastructure projects to alleviate flooding and achieve sustainable neighborhood revitalization
4. Provide training on green infrastructure techniques

SPECIAL THANKS

for your participation!

Over 100 residents attended the Camden SMART community meetings in February-April 2011

2011- KEY ACCOMPLISHMENTS

- 11 rain gardens planted in 4 neighborhoods
- Obtained $300,000 grant from NJ DEP for green infrastructure
- Over 300 street trees planted city-wide
- Camden SMART website
- Series of community outreach and education meetings
- Increased network of partners and volunteers
- Camden SMART Opportunities Analysis
- Rain garden installation training session
- Farnham Park Stormwater Management Project

FERRY AVENUE RAIN GARDEN

Installed in March 2011

FERRY AVENUE RAIN GARDEN

In bloom: summer 2011

→ Features three inlets for stormwater runoff and a variety of species like New England Aster and Goldenrod

→ Installed during a two-day training session for landscape professionals

PARK/MAGNOLIA RAIN GARDEN

Installed: April 2011

→Captures, treats and stores over 60,000 gallons of stormwater runoff each year

→Has multiple curb cuts for water entry and exit

→Features Purple Coneflower, Butterfly Weed, Red Bud Trees, and other species

PARKSIDE/VESPER RAIN GARDEN

Installed: October 2011

N. 20th STREET RAIN GARDENS

Installed: June 2011

→ Curb-cuts redirect water into two rain gardens

→ Future plans include an underground cistern to store and reuse stormwater at this community garden

WATERFRONT SOUTH RAIN GARDENS

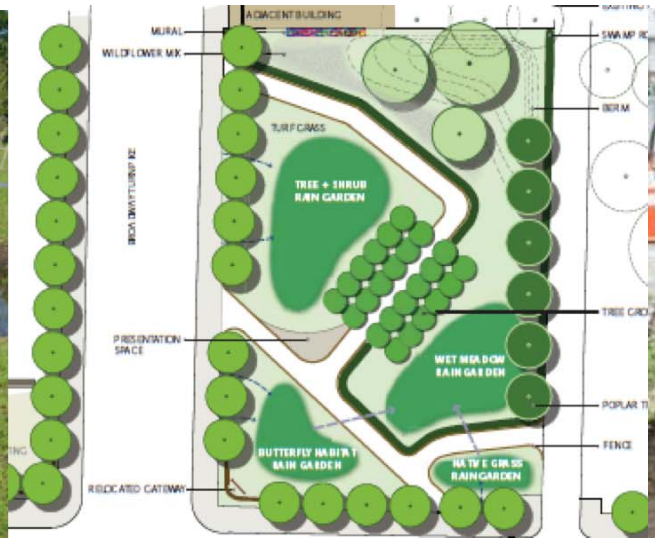
Green Infrastructure on Brownfield Sites

→ Built on the site of an abandoned gas station

→1,850 tons of contaminated soil & 12 USTs removed from site

→ 4 rain gardens designed to manage about 500,000 gallons of stormwater per year

→ A green gateway into the Waterfront South neighborhood



WATERFRONT SOUTH RAIN GARDENS

Green Infrastructure on Brownfield Sites

NJTF TREE PLANTINGS

Urban Airshed Reforestation Program (UARP)

1200 block of Whitman Avenue, Camden

→The planting of trees removes concrete and allows stormwater to infiltrate through the ground.

→ In nine years, NJTF has removed over 70,000 square feet of impervious surface to plant 4,402 trees in Camden.

NJTF TREE PLANTINGS

Urban Airshed Reforestation Program (UARP)

→Over 1,000 residents and volunteers engaged during spring and fall 2011

Pictured above: Mayor Dana Redd plants trees at Fellowship House in Waterfront South, Camden

SMART ACCOMPLISHMENTS

>800,000 gallons of stormwater treated per year

RECOGNITION FOR SMART

New Jersey Shade Tree Federation 2011 Green Community Achievement Award

Mayor Dana L. Redd, Jessica Franzini (NJTF), and Meishka Mitchell (CFP) accept the award for the Camden SMART Initiative on October 22, 2011

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

www.water.rutgers.edu

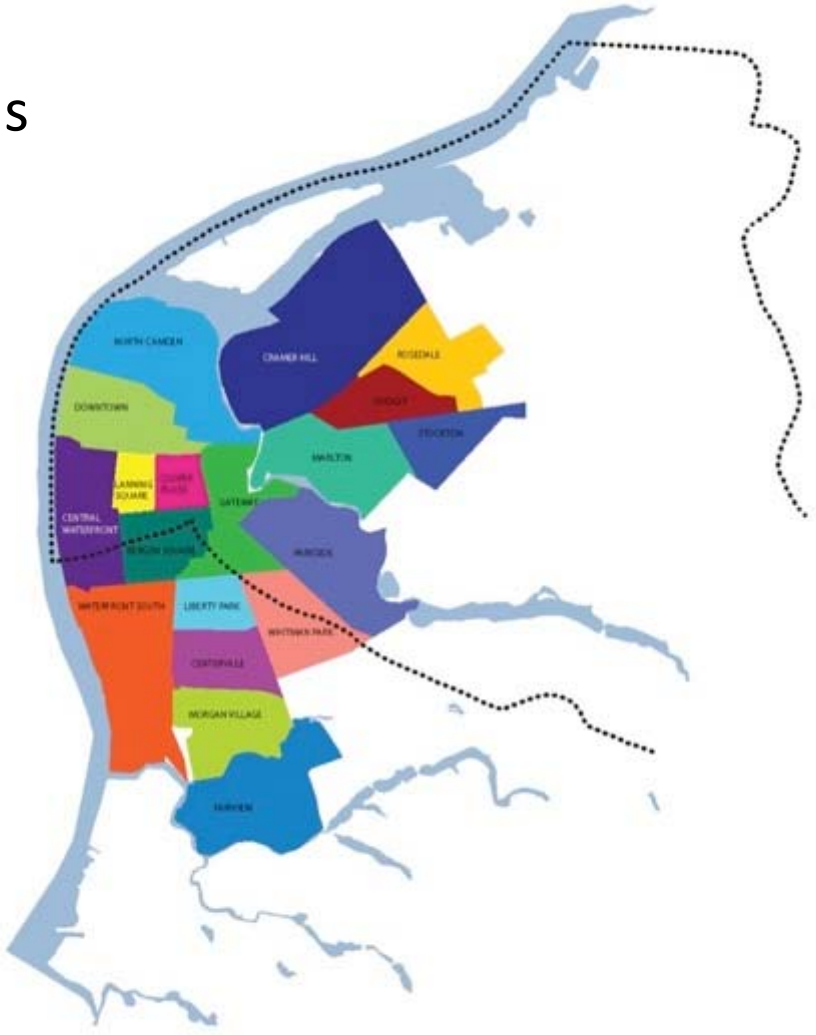
COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

- City-wide mapping
- Community meetings
- Site visits and City tours
- Conceptual designs

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

City-wide Mapping

- Geographic Information Systems
- 20 neighborhood maps
- Map information includes:
  - Churches
  - Schools
  - Parks
  - Community meeting input



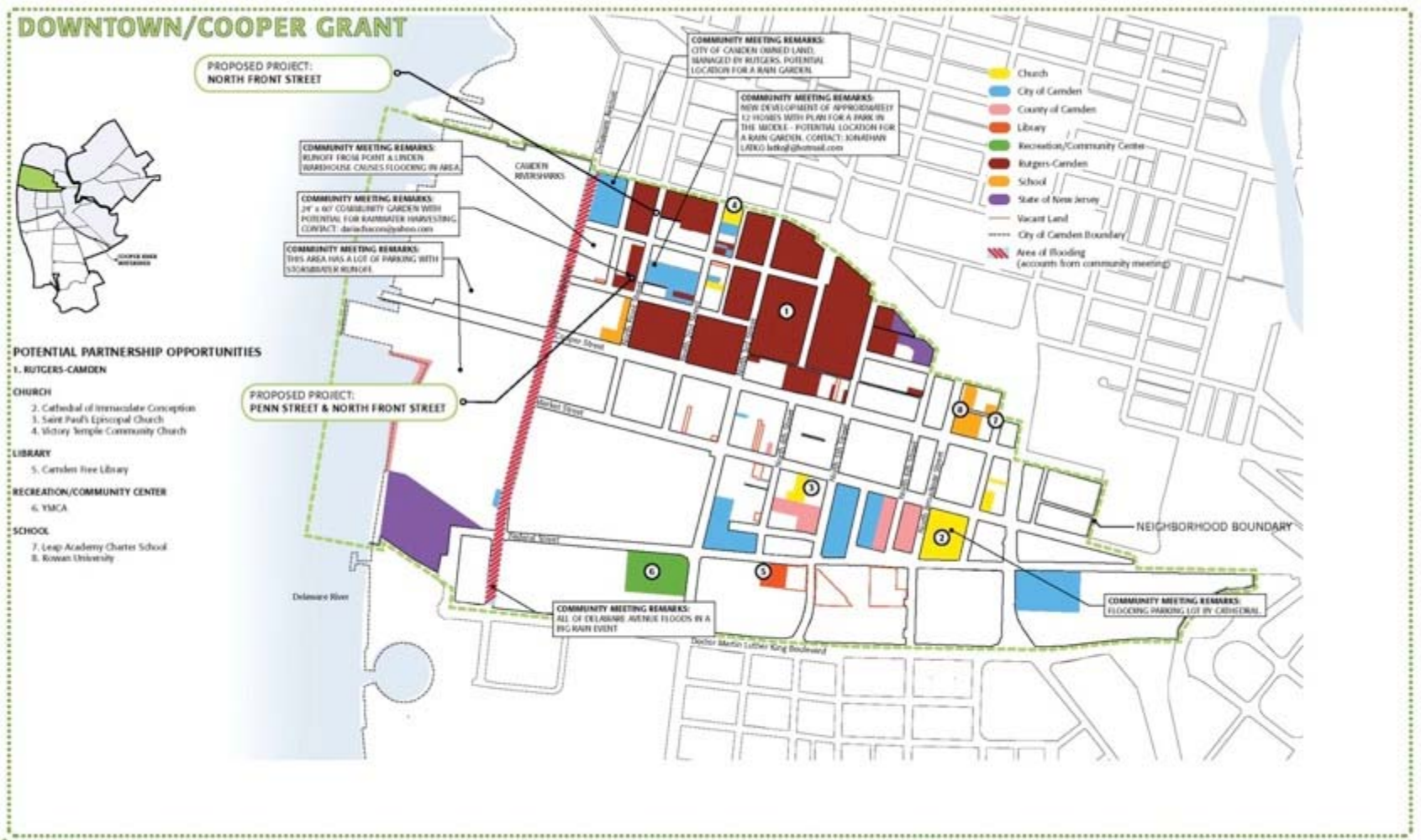
COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

Community Meetings

- 5 meetings across the City
- Residents completed short surveys and sketched on neighborhood maps to identify existing areas of flooding and potential areas for green infrastructure.

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

Neighborhood Maps



COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

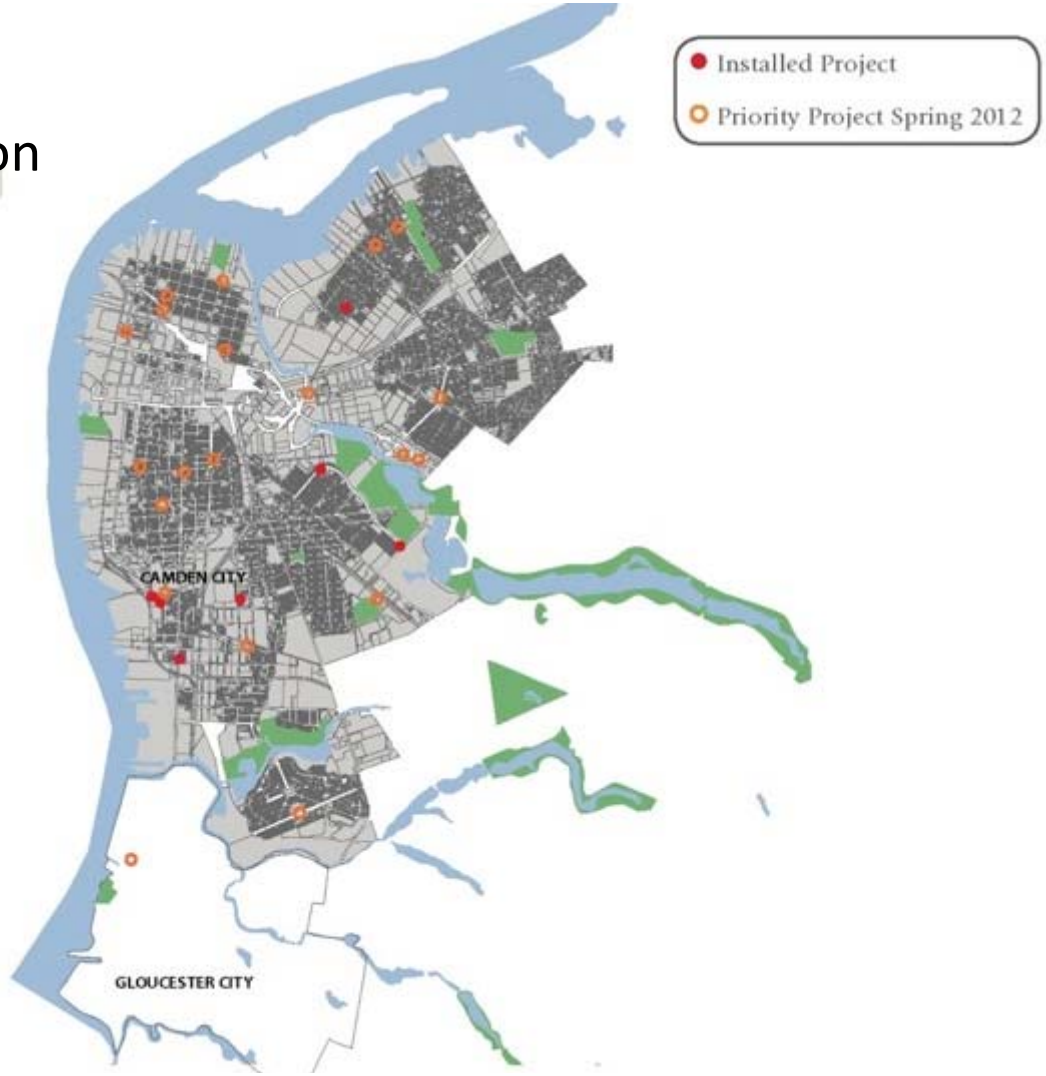
Site Visits and City Tours

- Conducted multiple visits and tours to individual neighborhoods
- Met with community leaders
- Photographed and measured green infrastructure opportunity sites

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

Conceptual Designs

- Identified 40 green infrastructure demonstration projects and programs
- Projects proposed in all of Camden's neighborhoods
- Selected 13 priority sites to begin work in 2012
  - Feasible project
  - Ready partnership
  - High visibility
  - Grant funds available



COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Projects

List of Demonstration Projects

BERGEN SQUARE (p. 26)
South Broadway & Pine Street ○
South Broadway & Walnut Street ○

CENTERVILLE (p. 29)
South 9th Street & Ferry Avenue ○
Master Street & Chelton Avenue

CENTRAL WATERFRONT (p. 32)
278 Kaighns Avenue
Riverside Drive & Mickle Boulevard

COOPER PLAZA (p. 35)
St. John Street & Clinton Street
South 7th Street & Pine Street ○

CRAMER HILL (p. 38)
North 20th Street & River Avenue ●
27th Street at Pierce Street & Dupont Street ○
29th Street between Pierce Street & Tyler Street ○

DOWNTOWN/COOPER GRANT (p. 44)
North Front Street
Penn Street & North Front Street ○

EAST CAMDEN - DUDLEY (p. 47)
Saunders Street & North 30th Street
Thompson Street at North 30th Street

EAST CAMDEN - MARLTON (p. 50)
Baird Boulevard ○
CSO Area C22 - Federal Street & River Road * ○
CSO Area C27 - Baird Boulevard & Route 30 * ○
CSO Area CMT - Thorndyke & Route 30 East * ○

EAST CAMDEN - ROSEDALE (p. 52)
North 39th Street

EAST CAMDEN - STOCKTON (p. 54)
Freemont Avenue & Burwood Avenue

FAIRVIEW (p. 56)
Sumter Road & North Common Road
Alabama Road & Independence Road
Collings Road * ○

GATEWAY (p. 59)
Kaighns Avenue & Louis Street - Challenge Square Academy
Kaighns Avenue & Louis Street - Sword of the Spirit Christian Center

LANNING SQUARE (p. 62)
South 3rd Street & Line Street ○

LIBERTY PARK (p. 64)
Jackson Street & North 8th Street ●

MORGAN VILLAGE (p. 67)
South 10th Street & Florence Street
South 9th Street & Woodland Avenue

NORTH CAMDEN (p. 70)
North 2nd Street & York Street
North 3rd Street & Main Street ○
North 7th Street & Erie Street ○
North 9th Street & Linden Street ○
304 State Street ●

PARKSIDE (p. 76)
Kaighns Avenue - Dr. Charles Brimm Boulevard
Park Boulevard & Magnolia Avenue ●
Park Boulevard & Vesper Boulevard ●

WATERFRONT SOUTH (p. 82)
Ferry Avenue & Jackson Street ●
South Broadway & Chelton Avenue ●
1645 Ferry Avenue ●
CSO Area C03 - Jackson Street * ○

WHITMAN PARK (p. 88)
Davis Street & Sayrs Avenue
1626 Copewood Street * ○

GLOUCESTER CITY (p. 90)
South 6th Street & Division Street
North King Street & Monmouth Street ○

● Installed Project
○ Priority Project Spring 2012

* denotes a site that is not included in this Study. The site survey will be completed Spring 2011.

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

BERGEN SQUARE

SOUTH BROADWAY & PINE STREET

PRIORITY PROJECT SPRING 2012

PROJECT DESCRIPTION

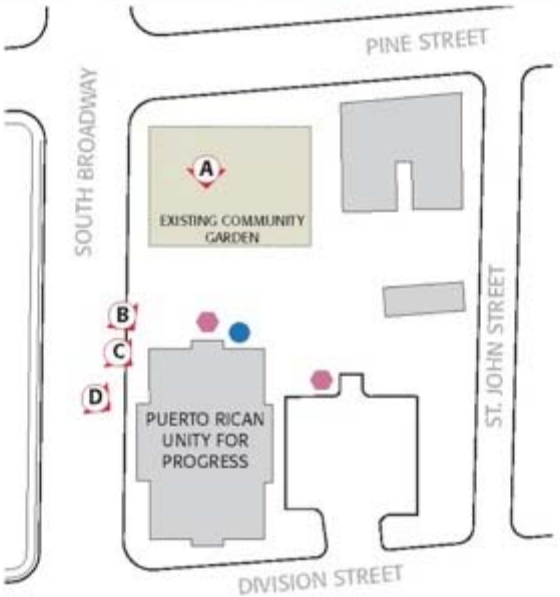
This project proposes to install two rain gardens and a rainwater harvesting system at the Puerto Rican Unity for Progress Center. The above ground cistern, designed to capture and store between 500-1,500 gallons of rainwater from the building's rooftop, will help irrigate the community gardens located on the site. In addition, rain gardens will manage both the overflow from the rainwater harvesting system as well as the stormwater runoff from the building's parking lot. This project would complement the existing NJTF tree and shrub plantings on the site.

POTENTIAL COMMUNITY PARTNERS

Puerto Rican Unity for Progress

PROPOSED GREEN INFRASTRUCTURE STRATEGIES

- rain garden
- rainwater harvesting
- downspout disconnection



CONCEPTUAL SITE PLAN
SCALE = 1:60

SITE LOCATION

GREEN INFRASTRUCTURE KEY:

- RAIN GARDEN
- RAINWATER HARVESTING/RAIN BARRELS

SITE PHOTOS

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

BERGEN SQUARE

SOUTH BROADWAY & WALNUT STREET

PRIORITY PROJECT SPRING 2012

PROJECT DESCRIPTION

This project includes a rain garden, strategically located within a busy intersection of Bergen Square, to capture the stormwater runoff from three converging streets. In addition to functioning as a stormwater management BMP, this rain garden will improve the aesthetic qualities of this neighborhood. Native plants planted in this sunny location could include species such as Black-eyed Susan, Purple Coneflower, False Sunflower, and Wild Bergamont.

GREEN INFRASTRUCTURE STRATEGIES

- rain garden

CONCEPTUAL SITE PLAN
SCALE = 1:50

SITE LOCATION

GREEN INFRASTRUCTURE KEY:
RAIN GARDEN

SITE PHOTOS

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

COOPER PLAZA

SOUTH 7TH STREET & PINE STREET

PRIORITY PROJECT SPRING 2012

PROJECT DESCRIPTION

This project, known as Cooper Sprouts, aims to revitalize a large vacant lot adjacent to an existing community garden. The site will have several rain gardens collecting roadway runoff from Pine Street, South 7th Street, and Newton Avenue. New pervious paved walkways and sidewalks will improve pedestrian ciculation around the site. NJTF planted trees on the site in fall 2011.

POTENTIAL COMMUNITY PARTNERS

Cooper Lanning Civic Association
Cooper University Hospital

GREEN INFRASTRUCTURE STRATEGIES

- rain garden
- rainwater harvesting
- pervious pavers

CONCEPTUAL SITE PLAN
SCALE = 1:120

SITE LOCATION

GREEN INFRASTRUCTURE KEY:

- RAIN GARDEN
- RAINWATER HARVESTING/RAIN BARRELS
- PERVIOUS PAVERS

SITE PHOTOS

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

CENTERVILLE

SOUTH 9TH STREET & FERRY AVENUE

PRIORITY PROJECT SPRING 2012

PROJECT DESCRIPTION

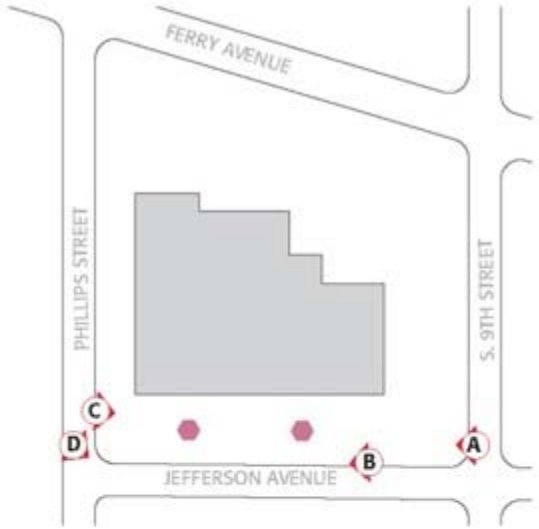
This project, located at the Camden County Ferry Avenue Branch Library, will disconnect the rooftop runoff and prevent it from flowing directly into the CSO system. Two rain gardens will be designed to capture, filter, and infiltrate the first one-inch of rainfall. Native herbaceous species planted within these rain gardens should be adapted to dry, sunny sites. This project could be an appropriate location for a rain garden training workshop.

POTENTIAL COMMUNITY PARTNERS

Ferry Avenue Branch Library

GREEN INFRASTRUCTURE STRATEGIES

- rain garden
- downspout disconnection



CONCEPTUAL SITE PLAN
SCALE = 1:80

SITE LOCATION

GREEN INFRASTRUCTURE KEY:

RAIN GARDEN

SITE PHOTOS

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

CRAMER HILL

29TH STREET BETWEEN PIERCE STREET & TYLER STREET

PRIORITY PROJECT SPRING 2012

PROJECT DESCRIPTION

This project proposes to direct stormwater into a large rain garden (bioretention swale) located on the vacant ½ acre lot between Pierce Avenue and Tyler Street. The bioretention SWALE should be offset from 29th Street by at least ten feet. Currently, stormwater runoff runs directly down these streets and into Von Nieda Park, which is frequently severely flooded. This project would alleviate some of that flooding. A row of street trees planted along 29th Street will work in coordination with the bioswale to improve ground infiltration.

POTENTIAL COMMUNITY PARTNERS

Cramer Hill CDC

GREEN INFRASTRUCTURE STRATEGIES

- bioswale

SITE LOCATION

SITE PHOTOS

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

CRAMER HILL

27TH STREET AT PIERCE STREET & DUPONT STREET

PRIORITY PROJECT SPRING 2012

PROJECT DESCRIPTION

This project consists of a rain garden and an underground infiltration system for an existing community garden site. The system would capture stormwater near the corner of Pierce Avenue and 27th Street, direct it into the rain garden, and then infiltrate into an underground stormwater detention chamber. A pump within this chamber could potentially provide irrigation water for the community garden. This project would complement the existing NJTF tree and shrub planting located on the site.

COMMUNITY PARTNERS

Cramer Hill CDC

GREEN INFRASTRUCTURE STRATEGIES

- rain garden
- rainwater harvesting

SITE LOCATION

SITE PHOTOS

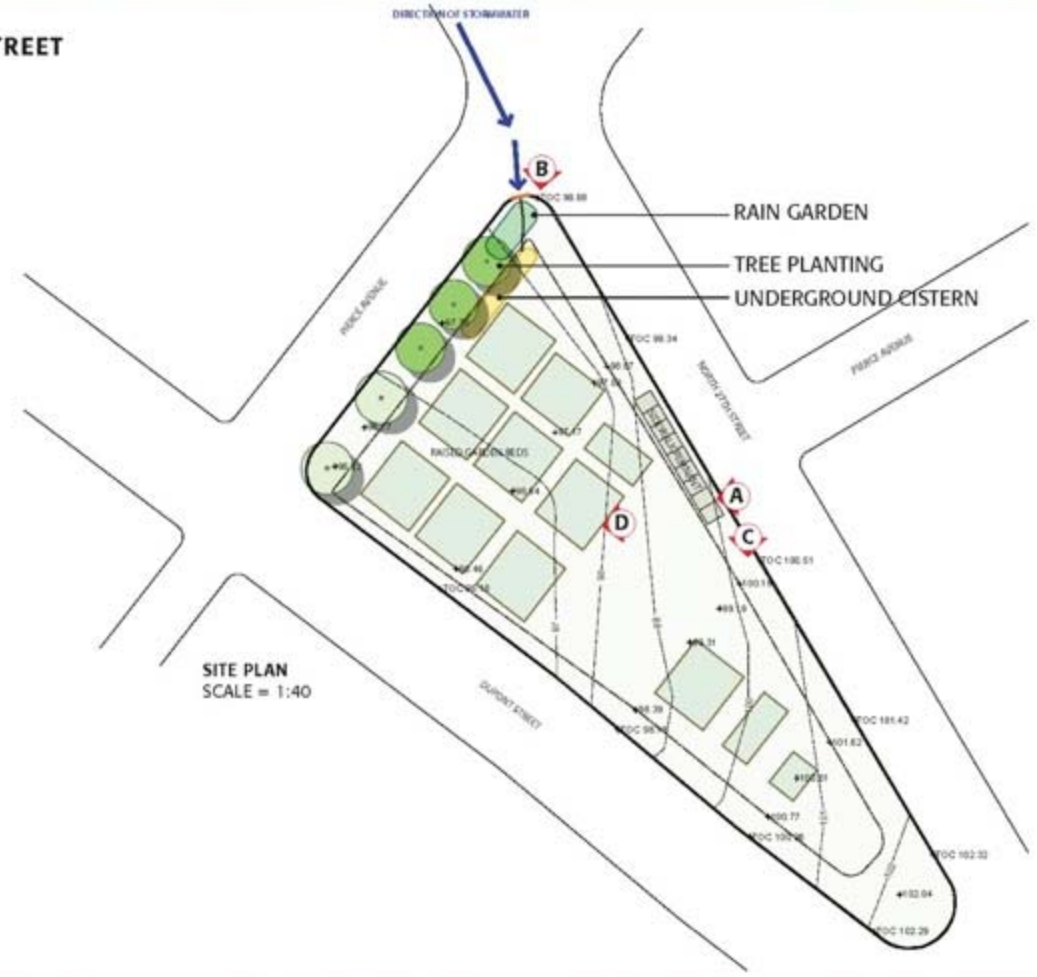
COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

CRAMER HILL

27TH STREET AT PIERCE STREET & DUPONT STREET

PRIORITY PROJECT SPRING 2012



SITE PLAN
SCALE = 1:40

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

LANNING SQUARE

SOUTH 3RD STREET & LINE STREET

PRIORITY PROJECT SPRING 2012

PROJECT DESCRIPTION

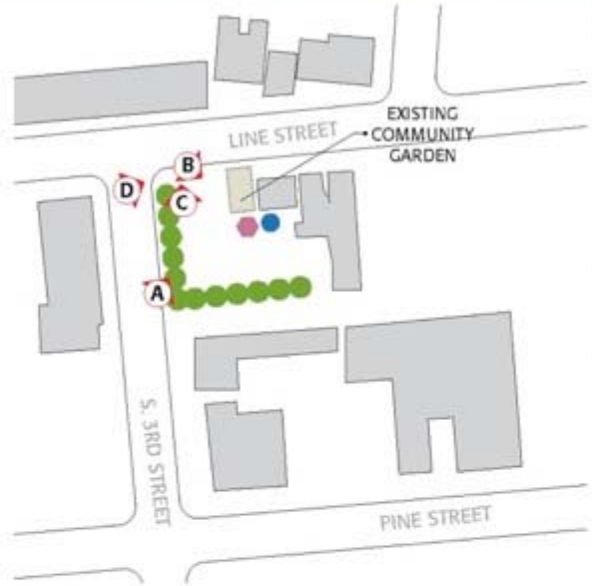
Responses from this community have indicated that rainwater harvesting for their community gardens would be the most beneficial stormwater BMP. To create a substantial source of water for the community garden, rooftop runoff from an adjacent residential building will be directed into a 1,000 gallon above-ground cistern. Tree and shrub plantings along South 3rd Street and Line Street will capture, filter, and infiltrate stormwater runoff from the vacant lot and will also beautify the neighborhood.

POTENTIAL COMMUNITY PARTNERS

Mary Rodriguez (resident)

GREEN INFRASTRUCTURE STRATEGIES

- rainwater harvesting
- tree plantings
- downspout disconnection



CONCEPTUAL SITE PLAN
SCALE = 1:80

SITE LOCATION

GREEN INFRASTRUCTURE KEY:

- RAIN GARDEN
- RAINWATER HARVESTING/RAIN BARRELS
- TREE PLANTINGS

SITE PHOTOS

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

NORTH CAMDEN

NORTH 3RD STREET & MAIN STREET

PRIORITY PROJECT SPRING 2012

PROJECT DESCRIPTION

This project will irrigate the existing plants, planted by NJTF, located on this triangular vacant lot. Runoff from surrounding roadways will be directed into the rain garden through several gravel filled infiltration trenches. Along with infiltrating stormwater runoff at the source, this rain garden will also enhance the visual appeal of this neighborhood.

POTENTIAL COMMUNITY PARTNERS

Respond, Inc.

GREEN INFRASTRUCTURE STRATEGIES

- rain garden
- tree plantings

CONCEPTUAL SITE PLAN
SCALE = 1:80

SITE LOCATION

GREEN INFRASTRUCTURE KEY:

- RAIN GARDEN
- TREE PLANTINGS

SITE PHOTOS

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

NORTH CAMDEN

NORTH 7TH STREET & ERIE STREET

PRIORITY PROJECT SPRING 2012

PROJECT DESCRIPTION

Street tree plantings and tree filter boxes are proposed to intercept stormwater runoff from roadways and to increase canopy cover in the North Camden neighborhood. In addition, a demonstration rain garden is proposed in partnership with the Pyne Poynt Family School to serve as a learning opportunity for staff and students. These efforts will reduce pressure on the CSO system, mitigate urban heat island effect during summer months, and enhance the appearance of the school.

POTENTIAL COMMUNITY PARTNERS

Pyne Poynt Family School
Respond, Inc.

GREEN INFRASTRUCTURE STRATEGIES

- rain garden
- tree plantings
- water conservation education program

CONCEPTUAL SITE PLAN
SCALE = 1:150

SITE LOCATION

GREEN INFRASTRUCTURE KEY:

- RAIN GARDEN
- TREE PLANTINGS

SITE PHOTOS

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

NORTH CAMDEN

NORTH 9TH STREET & LINDEN STREET

PRIORITY PROJECT SPRING 2012

PROJECT DESCRIPTION

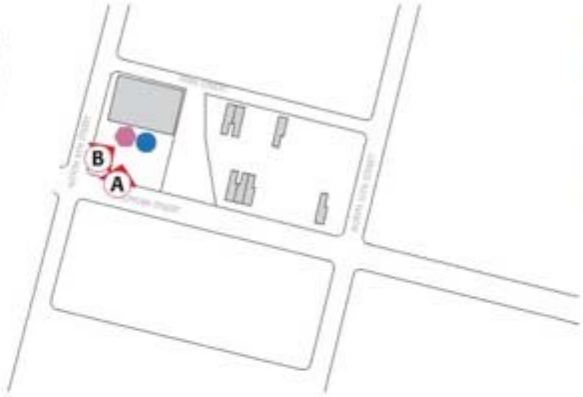
A demonstration rain garden and rainwater harvesting system is proposed at the Community Center maintained by Respond, Inc. Rain barrels will be used to capture rooftop runoff for watering raised planter beds. A rain garden will be installed to capture, filter, and infiltrate stormwater runoff from rooftop and paved playground areas.

POTENTIAL COMMUNITY PARTNERS

Respond, Inc.

GREEN INFRASTRUCTURE STRATEGIES

- rain garden
- tree plantings
- downspout disconnection



CONCEPTUAL SITE PLAN

SCALE = 1:20

SITE LOCATION

GREEN INFRASTRUCTURE KEY:

- RAIN GARDEN
- RAINWATER HARVESTING/RAIN BARRELS

SITE PHOTOS

A

B

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

DOWNTOWN/COOPER GRANT

PENN STREET & NORTH FRONT STREET

PRIORITY PROJECT SPRING 2012

PROJECT DESCRIPTION

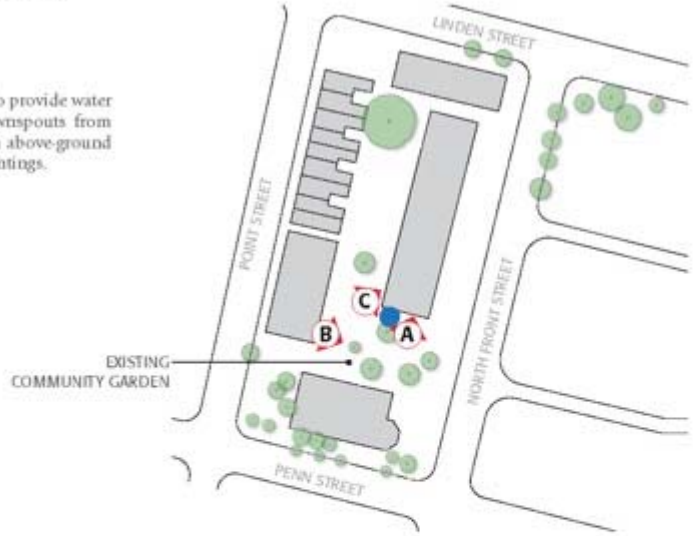
A 500 gallon rainwater harvesting system is proposed to provide water for the community garden located at this site. Downspouts from adjacent residential buildings will be diverted into an above-ground cistern, providing a free source of water for garden plantings.

POTENTIAL COMMUNITY PARTNERS

Cooper Grant Neighborhood Association
Rutgers-Camden

GREEN INFRASTRUCTURE STRATEGIES

- rainwater harvesting
- downspout disonnection



CONCEPTUAL SITE PLAN
SCALE = 1:100

SITE LOCATION

GREEN INFRASTRUCTURE KEY:

- RAINWATER HARVESTING/RAIN BARRELS

SITE PHOTOS

COMMUNITY-BASED GREEN INFRASTRUCTURE FOR THE CITY OF CAMDEN

2012 Priority Demonstration Project

EAST CAMDEN - MARLTON

BAIRD BOULEVARD

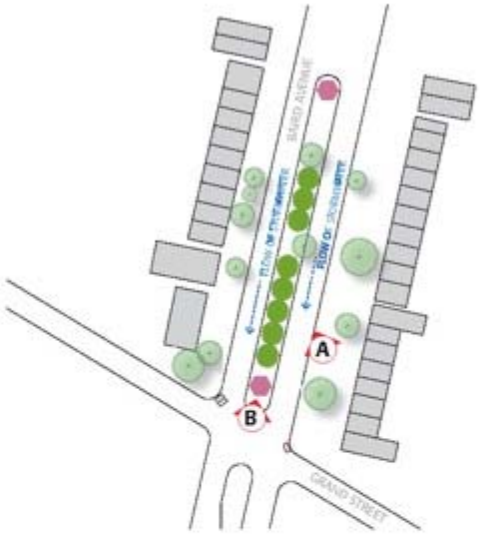
PRIORITY PROJECT SPRING 2012

PROJECT DESCRIPTION

There appears to be multiple opportunities for rain gardens, bioretention swales, and tree plantings in various locations along the vacant median of Baird Boulevard. Necessary efforts include excavating the existing soils, amending soils to promote infiltration, installing curb cuts, and planting low maintenance, native plants. Not only will these functioning systems reduce localized flooding, but they will also improve the aesthetic quality of this busy boulevard and minimize required landscape maintenance of the road right-of-way.

GREEN INFRASTRUCTURE STRATEGIES

- rain garden
- tree plantings



CONCEPTUAL SITE PLAN
SCALE = 1:120

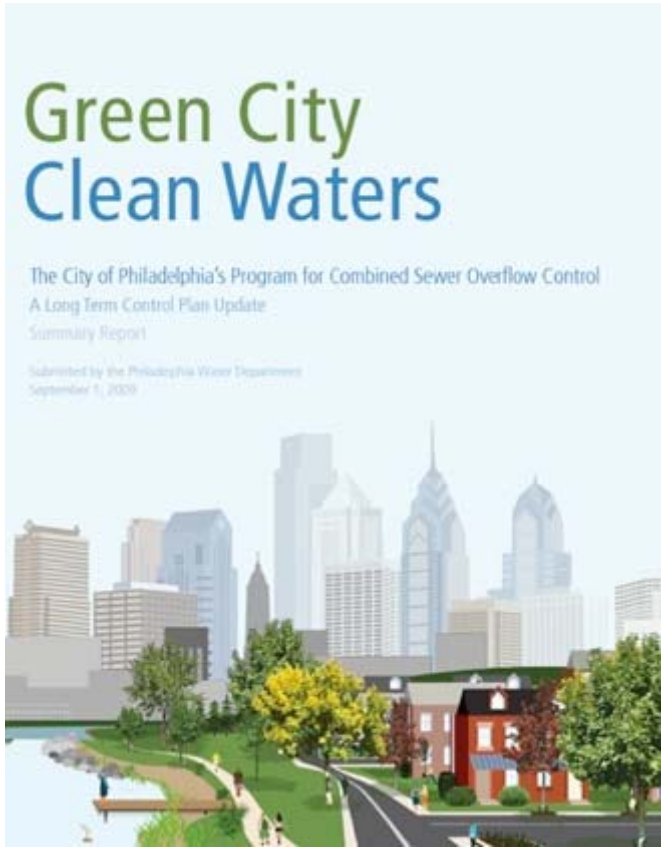
SITE LOCATION

GREEN INFRASTRUCTURE KEY:

- RAIN GARDEN
- TREE PLANTINGS

SITE PHOTOS

2012 SMART GOALS



The City of Philadelphia's Stormwater Management Plan

- Install 20 new rain gardens throughout Camden
- Solicit rain garden sponsors
- Develop Camden SMART Strategic Plan
- Break ground on Von Neida Park Stormwater Management Project & Phoenix Park
- Launch city-wide rain barrel initiative
- Provide additional opportunities for community engagement and education
- Increase network of partners and volunteers
- Environmental policy development
- Economic development

PHOENIX PARK

Former brownfield site in Waterfront South cleared for future 5-acre waterfront park

OPPORTUNITIES FOR STAKEHOLDER ENGAGEMENT

- Sponsor a Rain Garden
- Volunteer to support SMART projects in 2012
- Adopt a tree through NJTF
- Share SMART practices with your community
- Attend quarterly community workshops
  - March 20th, 6pm, CCMUA
  - June 7th, 6pm, location TBD
  - September 25th , 6pm, location TBD
- Participate in Earth Week 2012- *April 19th-25th*
- Invite the SMART team to explore partnership opportunities in your neighborhood

www.camdensmart.com

For more information, please contact Meishka Mitchell of Cooper's Ferry Partnership at (856) 757-9154 or meishka@coopersferry.com

Camden SMART Initiative

Stormwater Management and Resource Training