

Camden City's New Green Infrastructure Program- Protecting the Environment and the Public Health

Andrew Kricun, P.E., BCEE
Executive Director/Chief Engineer
Camden County Municipal Utilities Authority
Camden, NJ

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***Localized Flooding in Camden
from a 1 inch rain event***





City of Camden
Camden County Municipal Utilities Authority
Cooper's Ferry Development Association
New Jersey Department of Environmental Protection
Rutgers Cooperative Extension
NJ Tree Foundation



Stakeholder Group

- Rutgers Camden/Walter Rand Institute
- Cramer Hill Community Development Corporation
- Heart of Camden
- Center for Environmental Transformation
- South Jersey Land and Water Trust
- Camden County Soil Conservation District
- Rutgers Cooperative Extension of Camden County
- Camden County 4-H
- Delaware Riverkeeper Network
- Respond, Inc.
- Save Our Waterfront
- Gloucester City Tree Committee & Beautification Association
- NJDEP
- Concerned Citizens of North Camden
- NJ Conservation Foundation
- Camden DCCB
- Camden Community Development Association
- Greater Camden Partnership
- Cooper Lanning Civic Association
- Morgan Village
- Camden City Garden Club
- Holy Name School
- Camden Churches Organized for People
- Concerned Citizens of Whitman Park
- The Nature Conservancy

Camden's Five-Pronged Plan to Reduce Flooding By Restoring Sewer System Capacity

- **Green Infrastructure**- *capturing stormwater reduces the volume of flow in the sewer system*
- **Water Conservation**- *Using less water also reduces the volume of flow in the sewer system*
- **Infiltration/Inflow Removal**- *Eliminating extraneous rainwater and groundwater reduces the volume of flow in the sewer system*
- **Optimization of Combined Sewer System Operations**- *maximize sewer storage capacity*
- **Capital Upgrades**

Environmental & Economic Benefits Realized as Well...

- Green Infrastructure and I/I removal all help to preserve clean drinking water, stormwater and ground water
- Maximizing sewage storage capacity not only minimizes the potential for flooding but also raw sewage overflows to the Delaware River
- Netting systems at the end of outfalls capture solids from overflows
- Reductions in potable water costs, pumping costs and sewage treatment costs

WATERFRONT SOUTH RAIN GARDENS

Green Infrastructure on Brownfield Sites



Camden's **Green** & Grey Infrastructure Accomplishments...So far

- Water conservation ordinance adopted
- 52 rain gardens planted
- Over 1000 trees planted
- Stream daylighting project
- Depaving/creation of riverfront parks
- Optimization of Combined Sewer System O&M
- Combined sewer separations & replacements

Camden Collaborative Initiative

- Collaboration among USEPA, NJDEP, CCMUA, Camden City and 25 other environmental and community agencies to address environmental issues.
- Six working groups formed:
 - Flooding
 - Contaminated Sites
 - Air Emissions
 - Recycling
 - Environmental Justice
 - Environmental Education

Thanks for Listening!
If you would like more information,
please contact

Andrew Kricun. P.E., BCEE
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Camden County Municipal Utilities Authority

856.583.1223
andy@ccmua.org



Nationalities
Service Center

Nationalities Service Center (NSC) is a non-profit organization that provides social, educational and legal services to immigrants and refugees in the Greater Philadelphia area. Our strength lies in the diversity of our clients and services. Since NSC's founding in 1921, our mission has been to help immigrants and refugees participate fully in American society.



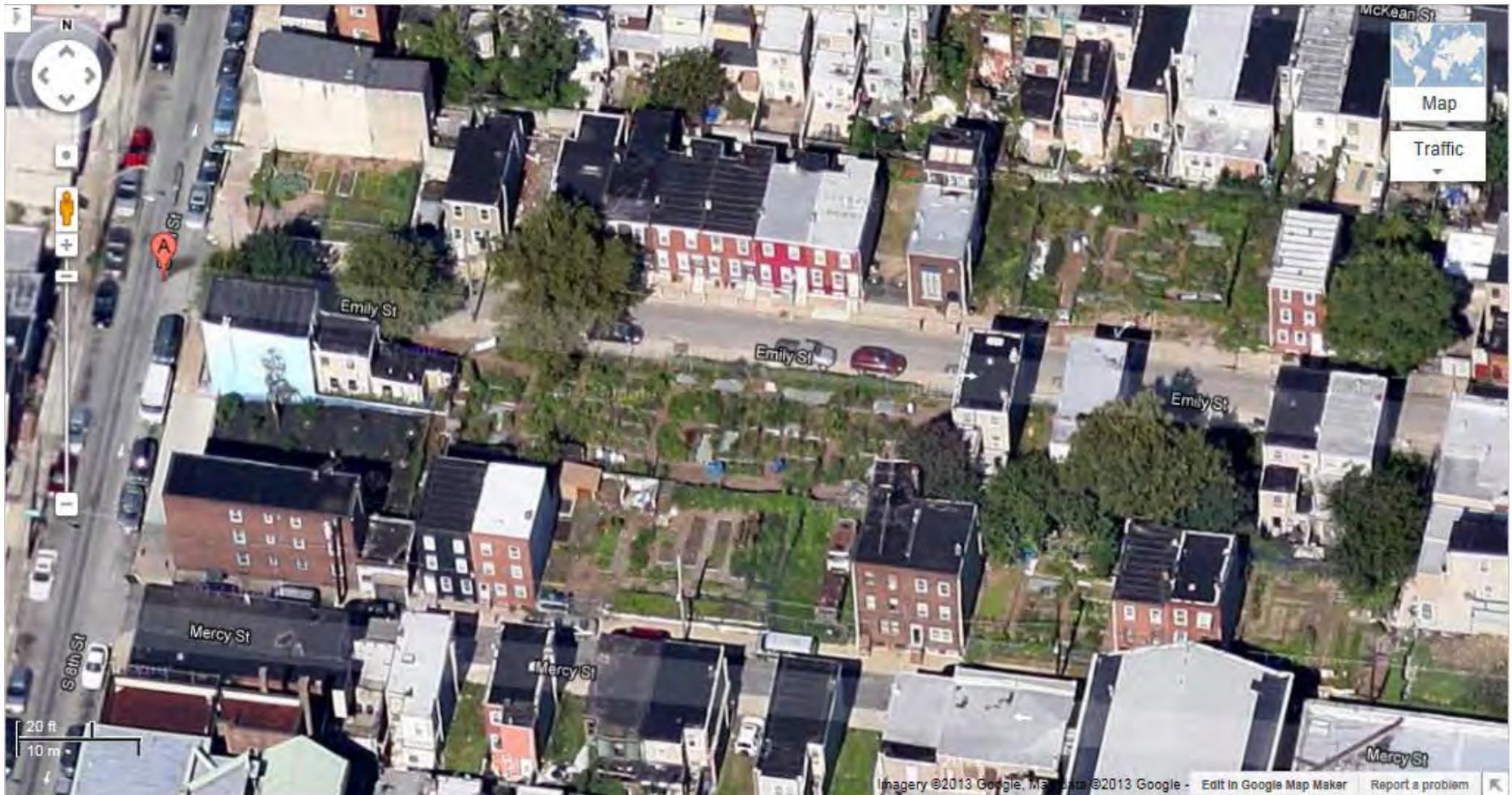
Nationalities
Service Center

Refugees and Refugee Resettlement



Growing Home Gardens, Ariel View

Philadelphia's Population Density: 4,337.3/km² (11,233.6/mi²)



Source: Google Maps, 2013

Growing Home Gardens

A Two Folded Objective:

1. Support Healthy Diets by providing nutritious produce indigenous to ethnic backgrounds
2. Offer newcomers a therapeutic Green Space in which to build community, reconnect to agricultural roots and engage in regular exercise



Outcomes



78 Families
3,000 lbs

84
Families
5,000 lbs

92 Families

107 Families

100+
families
New
location /
Expansion



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Nationalities Service Center



Nature is...



Good for the Mind

- *Improves attention*¹
- *Improves mood*²
- *Reduces stress*³

1. Kaplan, S (1995). *J. Environmental Psychology*. 15:169-182.
2. Morita, E., et al. (2007). *Public Health*. 121(1):54-63.
3. Yamaguchi, M., et al. (2006). *J Int Med Res*. 34(2):152-9.





Nature is...



Good for the Body

- *Physically active*^{1,2}
- *Lowers blood pressure*³
- *Boosts immune system*⁴

1. Cleland V, et al. *Int J Obesity* 2008; 32:1685-93
2. Burdette, H., et al. *Arch. of Ped. Adolesc. Med.*, 2004; 158(4): 353–357
3. Park B.J., et al. *Environ. Health Prev Med.* 2008; 15(1):18-26
4. Li Q, et al. *Int J Immunopathol Pharmacol.* 2007; 20 (S2): 3-8





Nature is...



Good for the Soul

- *Connection to life*
- *Emotional resilience*

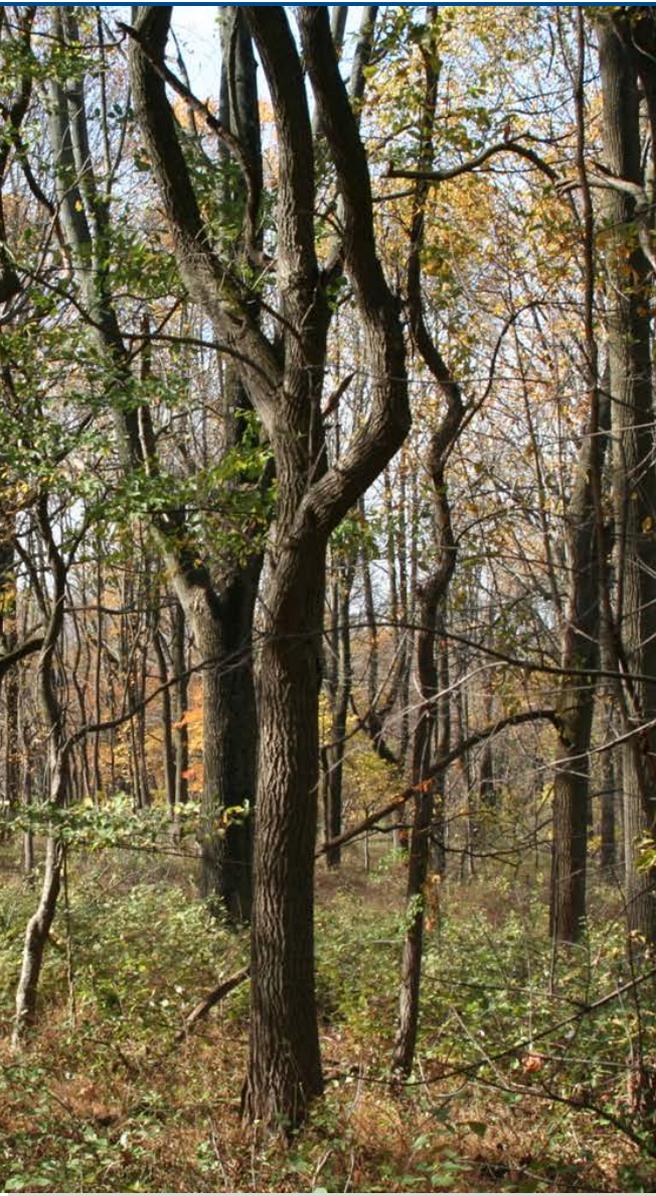


Children spend **1%** of
their free time
outdoors

Children spend **7.5**
hours per day in
front of screens.



Connecting Nature & Health



- *Healthy Parks, Healthy People, NPS*
- *D.C. Parks Rx*
- *Outdoors Rx, Boston*
- *Docs in Parks, Baltimore*

*...Portland, San Francisco,
North Carolina...*



Nature Rx: Go Out and Play



- *Environment*
- *Education*
- *Public Health*
- *Play & recreation*
- *Urban Planning*
- *Academic Research*



- *Collaborate*
- *Educate*
- *Activate*
- *Impact*



- **Educational Resources**
- **Finding local green spaces**
- **What to do at parks & trails**



Activate: clinicians

- Integrate Nature Rx into work flow at wellness check-ups
- Link resources to CHOP electronic medical records system
- CHOP Clinicians give Nature Rx and resources to patients





Activate: Patients/families

- Find park/trails nearest to their home
- Connect them with Nature Rx branded programs in pilot communities
- Self-guided activities via mobile device
- Incentives for participating and tracking



Four CHOP Clinics:

- Roxborough Primary Care
- Cobbs Creek Clinic
- Karabots Clinic
- South Philly Clinic



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- An aerial photograph of a city skyline, likely Pittsburgh, featuring a river (the Allegheny River) and a multi-lane highway (I-190) curving along the riverbank. The skyline includes several prominent skyscrapers under a clear blue sky. A semi-transparent white box is overlaid on the middle of the image, containing a bulleted list of project next steps.
- Engage more community stakeholders
 - Surveys and focus groups to test messaging and tools
 - Technology support & development
 - Park/trail audits

Nature Rx

Project Status & Next Steps



children

need

nature

Nature Rx

Any Questions?



Task Force Members:

- Children's Hospital of Philadelphia
- Get Healthy Philly, PPH
- Health Promotion Council
- Philadelphia Parks and Recreation, PPR
- National Park Service
- Bicycle Coalition of Greater Philadelphia
- John Heinz National Wildlife Refuge
- The Circuit
- Smith Memorial Playground and Philadelphia Declaration of Play
- PBS Kids, WGBH Boston
- Delaware Valley Regional Planning Commission
- Philadelphia Planning Commission, Healthy Communities
- Drexel, Schools of Public Health and Learning Technology
- UPENN, PennDesign and School of Public Health
- U of Sciences, School of Public Health