Greening the Streetscape: Complete Streets & Stormwater Management

Webinar begins at 1PM EDT
Greening the Streetscape: Complete Streets & Stormwater Management

July 10, 2017
Emiko Atherton
Director
@CompleteStreets
Urban Flooding

- Nationally, floods cause $7.82 Billion in damage per year
- Common flooding complaints:
  - Street, parking lot, & backyard flooding (90%)
  - Sewer backups into buildings (83%)
  - Overbank flooding from rivers, lakes, streams (40%)
Economic Impact

Aging infrastructure + increased rainfall = more urban flooding outside of floodplains

Much of this damage is not covered by insurance

Source: Center for Neighborhood Technology, RainReady Midlothian (IL)

The water problem is the worst; our neighbors are going to put their house for sale in the spring but we can’t afford to move.
Aaron Villere
Program Associate
@NACTO
NACTO’s Urban Street Stormwater Guide

Aaron Villere
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NACTO

48 US Cities

4 International Affiliates

6 Transit Agencies
Giving Cities a Permission Slip to Innovate
A street for cars ...
A street for people …
A street for water ...
A flooded street is not a complete street.
Cities are 60 – 90% impervious.

Source: National Geographic
Streets are an opportunity.
Streets are an opportunity.

40% Publicly controlled streets

Impervious surface
Don’t build **more infrastructure** …

**New York City:**

*Cost of CSO Control Scenarios*

$6.8 billion to replace only gray infrastructure
… Build more resilient infrastructure

New York City:
Cost of CSO Control Scenarios

$5.3 billion to blend gray and green stormwater strategies
Who is responsible for the street?

Transportation Departments
Who is responsible for the street?

Water & Sewer Agencies
A Permission Slip to Innovate

Spring 2011

Urban Bikeway Design Guide

Spring 2016

Transit Street Design Guide

Fall 2013

Urban Street Design Guide

Fall 2016

Global Street Design Guide
A Vocabulary to Collaborate

Urban Street Stormwater Guide

National Association of City Transportation Officials

Summer 2017

Urban Bikeway Design Guide

Spring 2011

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Fall 2013

Transit Street Design Guide

Spring 2016

Global Street Design Guide

Fall 2016
Complete Streets ...
... are Green Streets
Integrating green infrastructure ...
Integrating green infrastructure ...

Apply at Many Scales
Integrating green infrastructure ...

Apply at Many Scales

Align with Complementary Efforts
Integrating green infrastructure ...

Apply at Many Scales
Align with Complementary Efforts
Create Safe & Inviting Human Environments
Integrate Stormwater into Retrofits
Integrate Stormwater into Retrofits
Oak & Fell Streets, San Francisco

GSI is managing 90% of storm-water runoff

98% of people bicycling feel safer
Oak & Fell Streets, San Francisco

GSI is managing 90% of stormwater runoff

98% of people bicycling feel safer
Seek Opportunities to Do More
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Green Line, St. Paul/Minneapolis

1 million riders each month

1,000 trees planted

GSI is managing 50% of stormwater runoff

$3 billion in commercial/residential development
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Recapture Public Realm
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Argyle Street, Chicago

Impervious surface reduced 31%

89% stormwater diverted

Businesses enjoy improved streetscape and pedestrian environment
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1. GREEN CITY CLEAN WATERS:
   Philadelphia’s Green Approach to Stormwater Management

2. GREEN STREETS PARTNERSHIPS
   Philadelphia’s Collaborative Green Streets Effort

3. GREEN STREETS PROJECTS
   Retrofits, Greenways and Street Reconstruction
HOW COMBINED SEWER SYSTEMS WORK... AND SOMETIMES DON’T
HOW COMBINED SEWER SYSTEMS WORK...AND SOMETIMES DON’T

WET WEATHER

Downspout

Stormwater Inlet

Sewage Pipe

Dam

Outfall Pipe

Stormwater, sewage and pollutants overflow into rivers

Sewage to Treatment Plant
$2.4 Billion Green Approach

$9 Billion Tank and Tunnel

GREEN CITY, CLEAN WATERS
2009 Long Term Control Plan Update
2011 Consent Order & Agreement

- Clean Water Act – EPA
- Combined Sewer Overflow Act - PA Department of Env Protection
- Reduce Combined Sewer Overflow pollution by 85%
- 25 year program, $3 billion
- Manage stormwater from 34% of impervious surface citywide
- Enact stormwater management regulations on new development
- Recalculate stormwater fees to be based upon amount of impervious surface per parcel

GREEN CITY, CLEAN WATERS
**Why Green Transportation Assets?**

- **137 Project Packages**
  - PWD Projects: Streets, Parks, Vacant Lots
- **266 Projects**
  - Regulated Projects
- **38 Projects**
  - Grant-Funded Projects
- **837 Greened Acres**

**Green City, Clean Waters**
INTRO

Year 10 Target: 2150 GA

WHY GREEN TRANSPORTATION ASSETS?

GRANT-FUNDED PROJECTS
266 PROJECTS
38 PROJECTS

PWD PROJECTS: STREETS, PARKS, VACANT LOTS

PWD PROJECTS:
STREETS,
PARKS,
VACANT LOTS

REGULATED PROJECTS

137 PROJECT PACKAGES

837 GREENED ACRES

GREEN CITY, CLEAN WATERS
Green Streets Committee:
- Streets Department
- Commerce Department
- SEPTA (transit)
- Mayor’s Office of Transportation (pedestrian/bicycle amenities)
- Planning Commission

Focus:
- Design Standards
- Maintenance MOU
- Pilot Technologies
- Partnership Opportunities
- Joint Grant Applications
HOW DO YOU BRING IT TO SCALE?

GREEN STREETS PARTNERSHIP
1,045 Tree Trenches, 317 Stormwater Planters
283 Bumpouts, 12 Porous Streets
GREEN STREETS PROJECTS
HOW DO YOU BRING IT TO SCALE?

GREEN STREETS PROJECTS
Passayunk Avenue Lane Removal
PennDOT / Federal Transportation Funds (20% for drainage systems)
Streets, PennDOT
SEPTA Bus Depot

SEPTA
Batram’s Mile Greenway
Philadelphia Parks and Recreation, Schuylkill River Development Corporation
Safe Routes To School: 3 Schools, 12-15 Bumpouts

$1 million Congressional Earmark Funds
Streets, School District

Bumpout to wrap curb so that Limekiln DA filtered by it.
American Street: 2 miles, 30+ Greened Acres

$5 million TIGER Grant, $11 Federal Transportation Funds

Streets, Commerce, PennDOT, Planning Commission
What’s Next:

- Green Stormwater Infrastructure for Separated Bike Lanes
- Funding for Developers to Construct Green Streets
Jessica Noon, AICP, LEED AP
Green Stormwater Infrastructure Partnerships
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215-685-6035
Ultra-Urban
Green Infrastructure Guidelines
CDPHE Pilot Program

Current Standards

DESKTOP Reviews
Safety
Step out zones
Planter wall height
Depth
Access walks

Maintenance
Inlet Sizing
Pretreatment
Planting schemes
Responsibilities
Questions?

Type your questions in the ReadyTalk chat box
Implementation & Equity 201:
The Path Forward to Complete Streets

Our webinar series will return in September
Stay tuned for more information!