

Green Infrastructure Primer

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Presented by:

The Low Impact Development Center, Inc.

A non-profit water resources and sustainable design organization

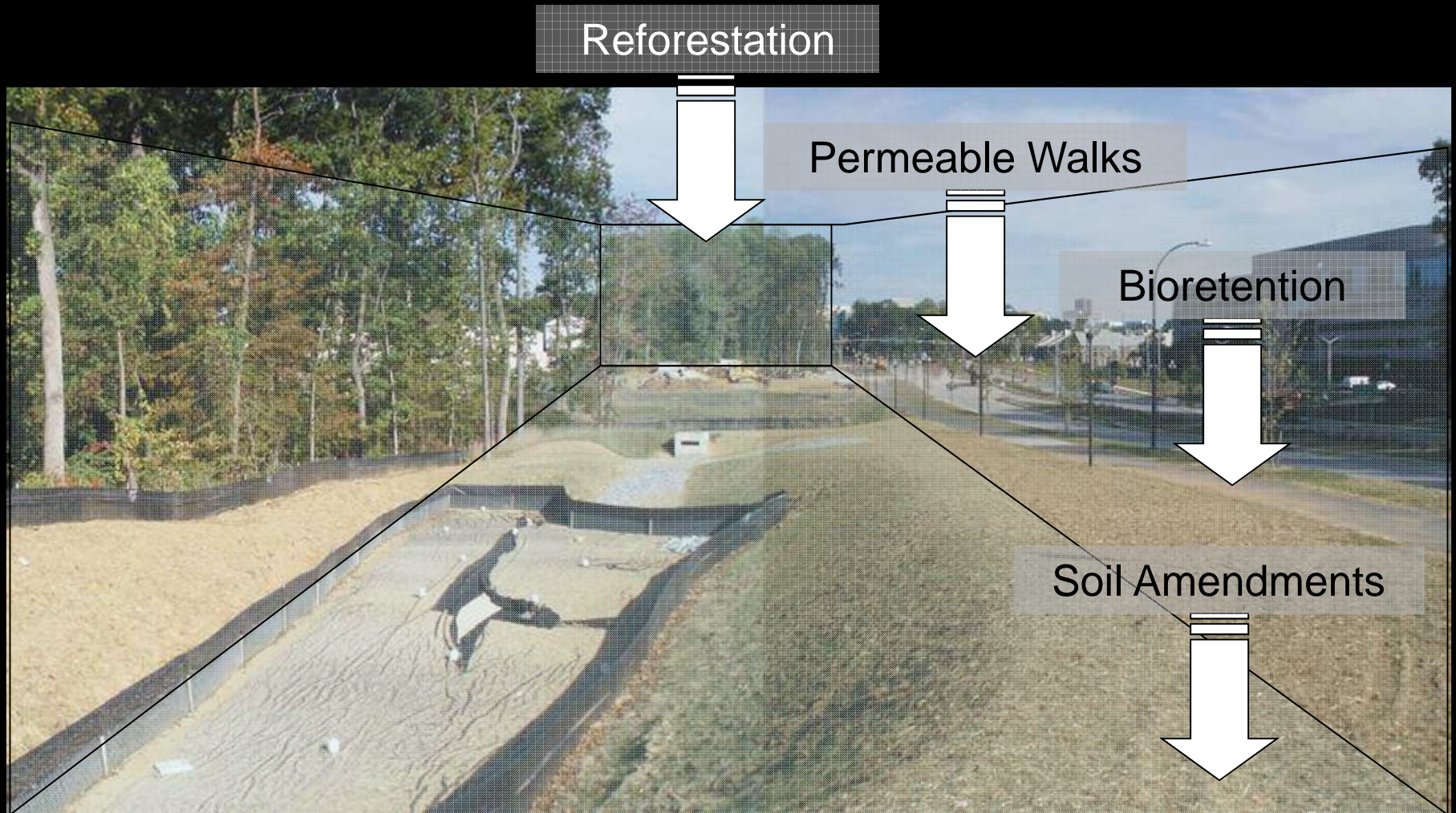
www.lowimpactdevelopment.org

What Green Infrastructure is all about!

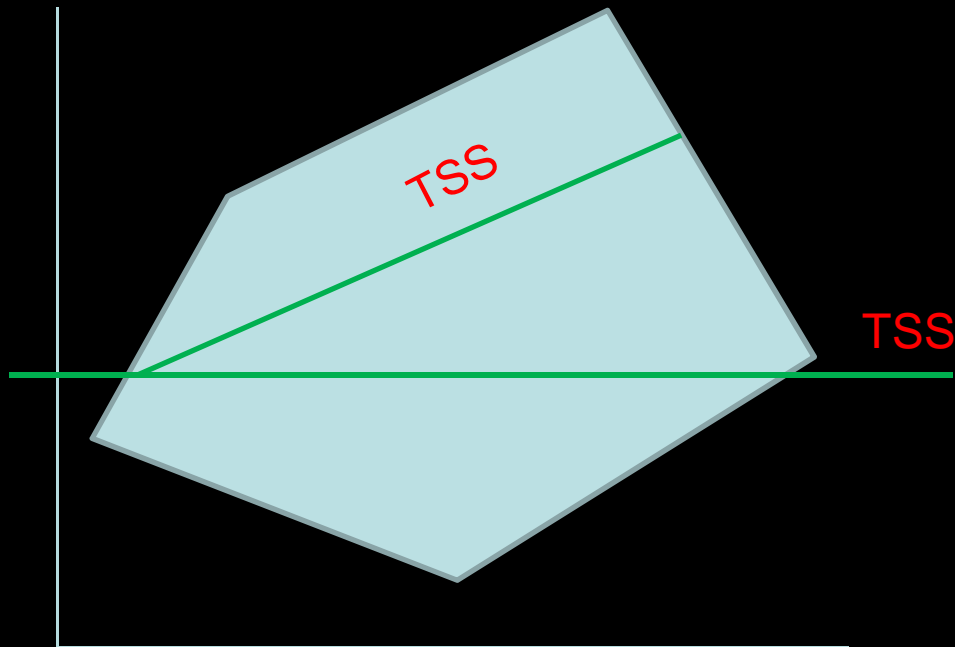
The Money!!!, of course

The use of the network of existing green space within a watershed to manage non-point source runoff. This includes the enhancement and creation of structural and non-structural distributed green controls that replicate pre-development hydrologic functions to protect or restore receiving waters or meet a targeted watershed management goal.

Green Strategies



What does it do?



Let the Marketplace drive the technology!

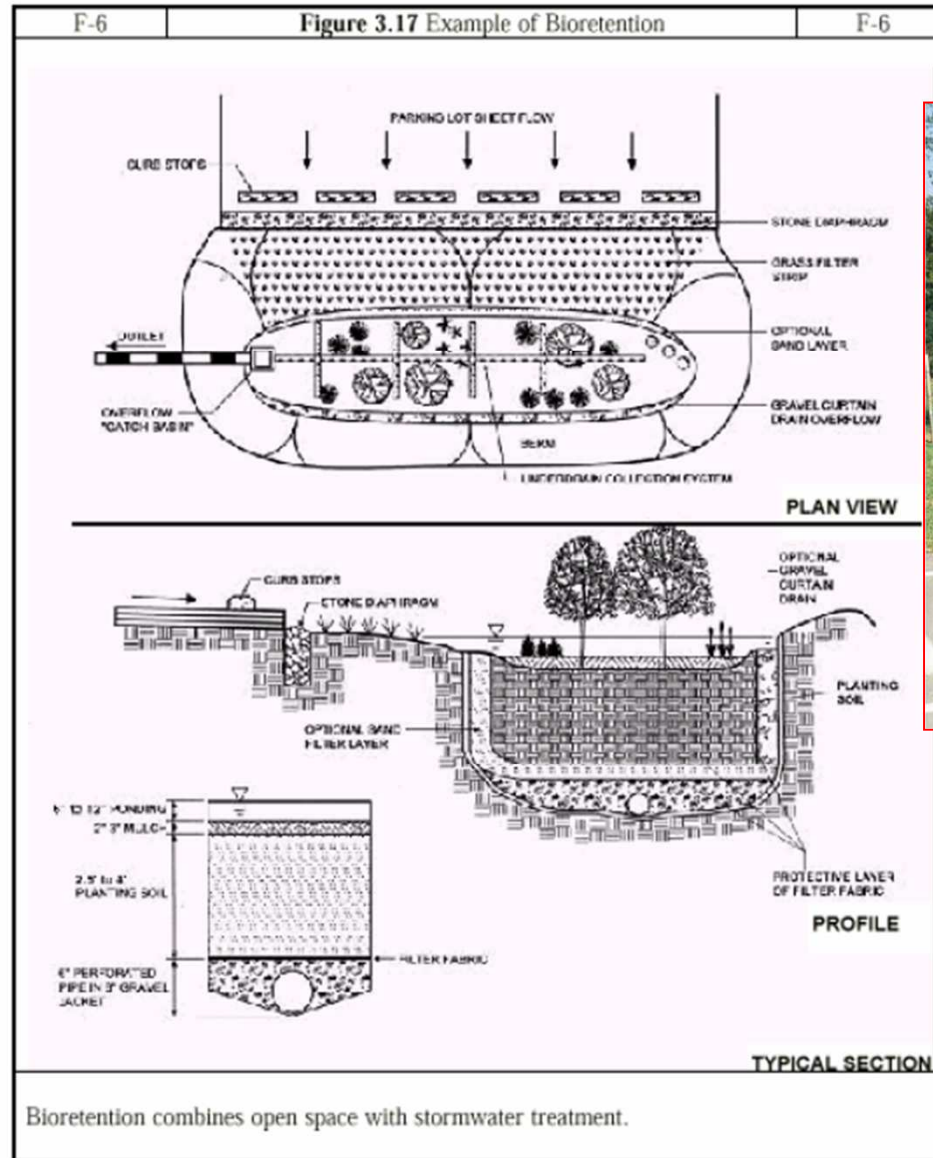
How Does it Work

Bioretention

Distributed landscaped areas that contain a specialized media and plants that use biological, physical, and chemical processes to treat runoff through the natural hydrologic functions found within the facility.

Early Designs

Example of Bioretention from the State Manual



Bioretention Cell



Bioretention Trench





Isolation of Hazards

Site Description:

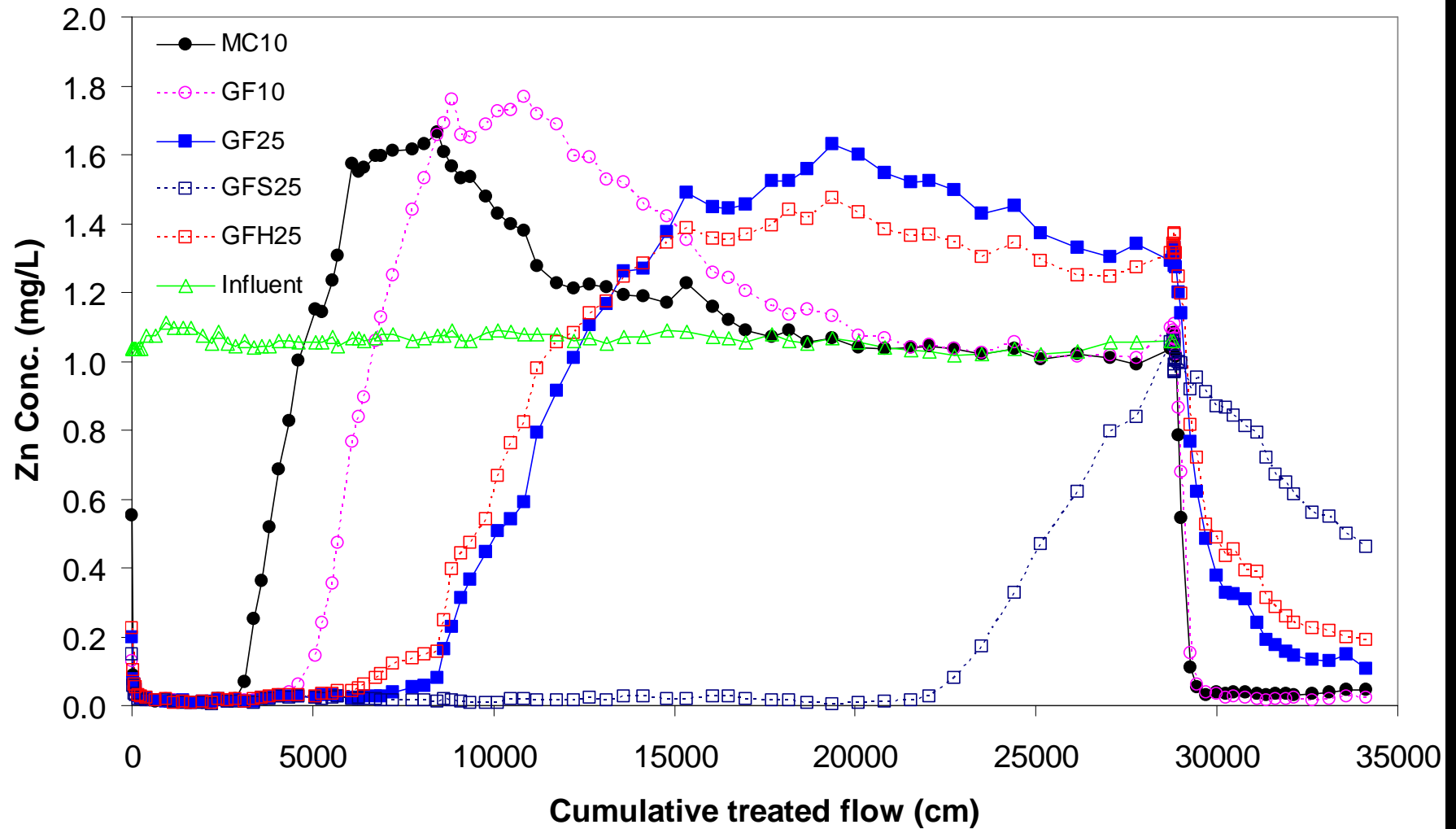
The APHIS (Animal and Plant Health Inspection Service) building at the Beltsville Agricultural Research Center in Beltsville, MD




- Exterior wall and roof are mainly made of Cu and Pb



Zn break-through (update)



Full Scale Implementation



**GREAT
STREETS**
www.greatstreets.org


Nannie Helen Burroughs Avenue Great Street

Proposed Low Impact Development Practices

Stormwater solutions which support sustainable urban design



d.
design



Bioswale

Linear Bioswale features, also known as natural stream channel form.

- Reduces runoff volume as water is captured
- Absorbs stormwater pollutants, organics, sediment, metals
- Provides habitat and green space

Possible locations:

- Near Golden Ave. (3rd) between 4th and 5th streets

Bioretention Cell


Shallow, vegetated depression absorbs runoff volume.

- Absorbs stormwater pollutants, organics, sediment, metals
- Provides habitat and green space

Possible locations:

- Near Golden Ave.
- Near 4th Street, north between 4th and 5th streets
- Near 5th Street, north between 4th and 5th streets



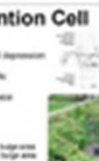


Permeable Pavement

Reduces runoff volume, captures pollutants, reduces urban heat island effect, reduces water and energy consumption.

Possible locations:

- Near 4th Street, north between 4th and 5th streets





Street Trees/ Walkable street

Permeable Pavement Parking Lot/ Cool Pavement

Compost amended soils/ Improves water quality


Green Roof/ Cools environment, Provides habitat

Tree conservation/ canopy connection

Rain Barrel/ Provides water storage for irrigation

Vegetative


Vegetative



**RAIN
WATER
MANAGEMENT**

Nannie H

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Baker



The Low Impact


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Anacostia Waterfront

Transportation Architecture Design Standards



Habitat and

Water

Integration

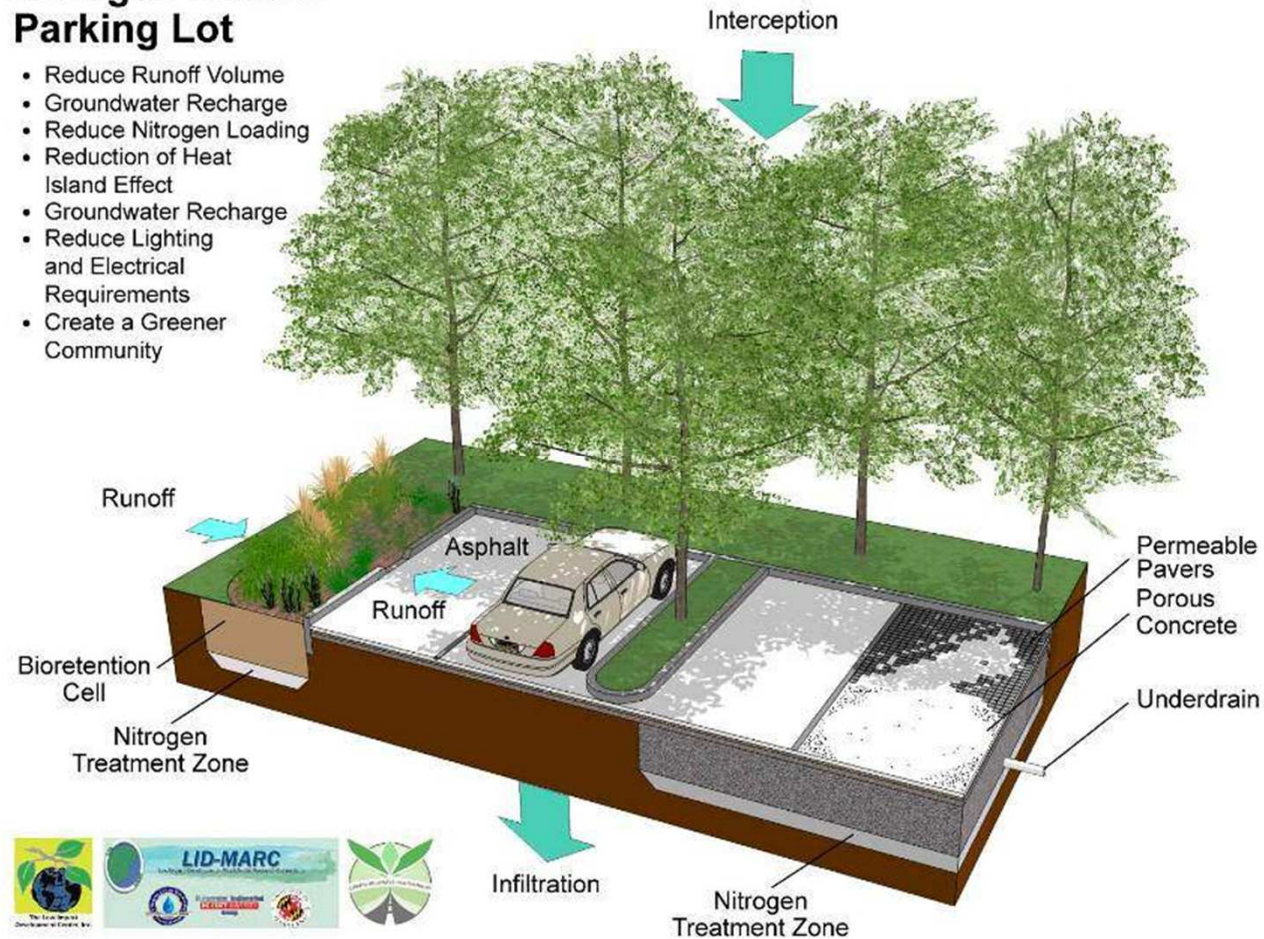
and Swale/
Lowered
Influence

Community

Linked and Emerging Issues

Nitrogen Neutral Parking Lot

- Reduce Runoff Volume
- Groundwater Recharge
- Reduce Nitrogen Loading
- Reduction of Heat Island Effect
- Groundwater Recharge
- Reduce Lighting and Electrical Requirements
- Create a Greener Community



Key Implementation Issues

- One Water Approach!
- Moving from cost to financing
- Performance Based Permits
- It's not just volume! Process and Technology
- Training and Enforcements
- Monitoring Approaches
- Program Performance, not necessarily integration
- Industry Validation

