ITEM 10 – Information
May 15, 2013

Update on Next Steps for Considering a
Regional Green Streets Policy
for the Washington Region

Staff Recommendation: Receive briefing on selected slides (2, 4, 6, 8, 13, 14, 16, 24, 30, 33, 34, and 35) from the attached Power Point presentation on the discussions at the April 8 workshop on Green Streets, and next steps for considering a regional Green Streets policy.

Issues: None

Background: At the December 19 meeting, the TPB received a request from the Anacostia Watershed Restoration Partnership to adopt a regional Green Streets policy, parallel to its adopted regional Complete Streets policy.

Item #10

Update on Next Steps for Considering a Regional Green Streets Policy for the Washington Region

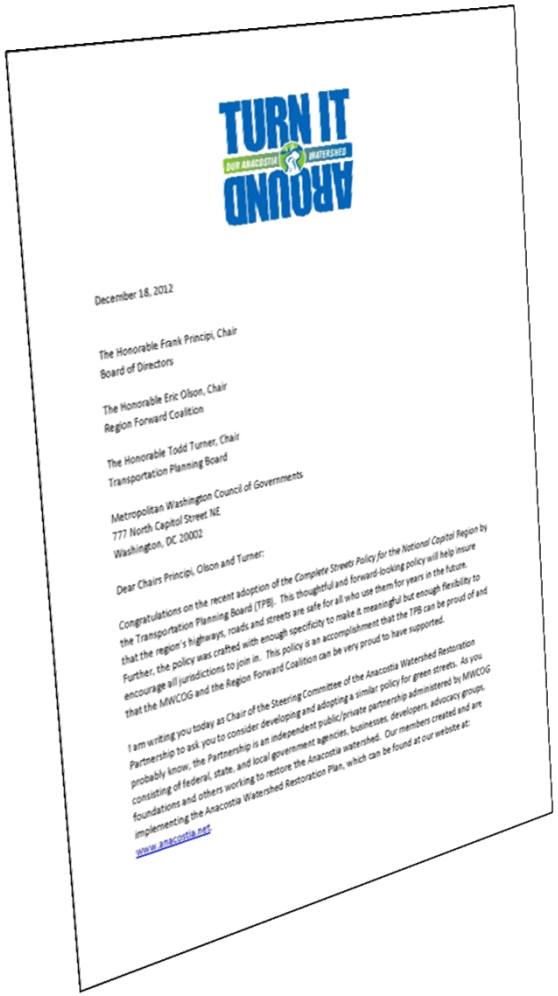
Michael Farrell
COG/TPB Staff

Transportation Planning Board
May 15, 2013

Overview

- Background
  - December 19th – Letter to TPB on from Anacostia Watershed Restoration Partnership
  - January 11th – TPB Technical Committee
    - Suggested a stakeholders workshop
    - Determine what gaps, if any, a regional policy could help fill, as well as potential obstacles
  - In response, TPB staff and COG's Department of Environmental Programs (DEP) staff organized a regional Green Streets workshop, held April 8th
- April 8th workshop findings and next steps

Background on Request for TPB to Look at Green Streets



December 18, 2012

The Honorable Frank Principi, Chair
Board of Directors

The Honorable Eric Olson, Chair
Region Forward Coalition

The Honorable Todd Turner, Chair
Transportation Planning Board

Metropolitan Washington Council of Governments
777 North Capitol Street NE
Washington, DC 20002

Dear Chairs Principi, Olson and Turner:

Congratulations on the recent adoption of the *Complete Streets Policy for the National Capital Region* by the Transportation Planning Board (TPB). This thoughtful and forward-looking policy will help insure that the region's highways, roads and streets are safe for all who use them for years in the future. Further, the policy was crafted with enough specificity to make it meaningful but enough flexibility to encourage all jurisdictions to join in. This policy is an accomplishment that the TPB can be proud of and that the MWCOG and the Region Forward Coalition can be very proud to have supported.

I am writing you today as Chair of the Steering Committee of the Anacostia Watershed Restoration Partnership to ask you to consider developing and adopting a similar policy for green streets. As you probably know, the Partnership is an independent public/private partnership administered by MWCOG consisting of federal, state, and local government agencies, businesses, developers, advocacy groups, foundations and others working to restore the Anacostia watershed. Our members created and are implementing the Anacostia Watershed Restoration Plan, which can be found at our website at: www.anacostia.net

- December 18, 2012 letter from Anacostia Watershed Restoration Partnership
- Offered congratulations on the regional Complete Streets policy
- Suggested development of a similar Green Streets policy
  - Cited Prince George's County Complete Streets/Green Streets policy as an example

What are Green Streets?

- Variety of definitions in the literature
- Generally speaking, the use of landscaping, trees, and related design elements to capture and filter stormwater runoff from streets
  - Alternative to reliance on traditional stormwater piping/drainage systems
- Related aspects of air quality, urban heat reduction, impervious surface reduction, pedestrian features, and aesthetics

Review of Green Streets Concepts: Information from the April 8th Workshop

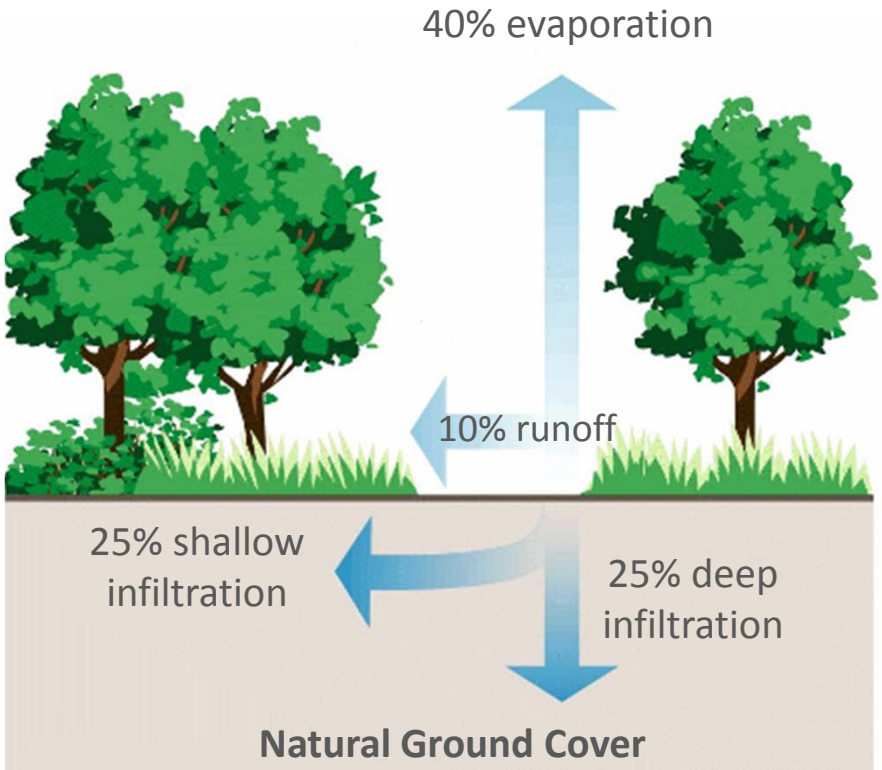
April 8th Green Streets Workshop

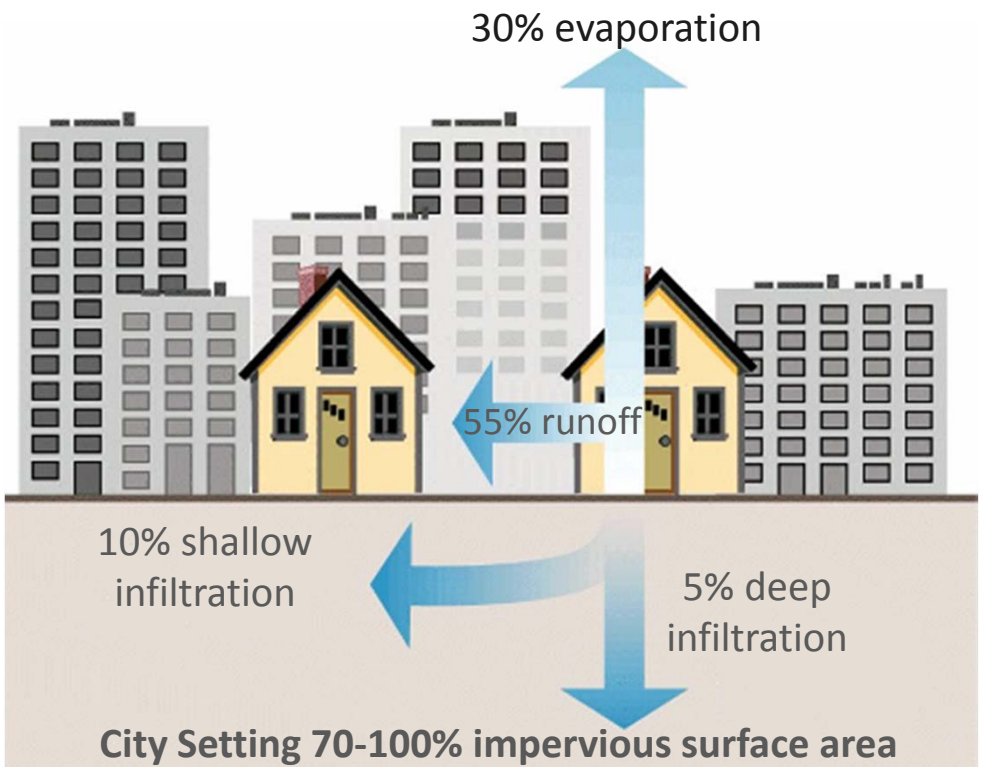
- 90 participants
  - Planners
  - DOT Public Works staff
  - Environmental Staff
  - Consultants and members of the public
- Nine Speakers
  - Keynote
    - EPA
    - Philadelphia Water Department
  - State Laws and Practices
    - DDOT
    - MDOT
    - VDOT
  - Local Policies and Practices
    - Fairfax County
    - Arlington County
    - Prince George's County

April 8th Keynote Speaker: Dominique Lueckenhoff, EPA

- *Green Streets in the Federal Government and Around the Nation: Valuable to the Nation's Environment and Economy*
  - Scope of the Stormwater Runoff Problem
  - Benefits of Green Infrastructure Solutions
  - Chesapeake Bay Watershed Stormwater Regulations
  - EPA Grant programs

EPA Overview:
Natural vs. Urban Stormwater Drainage





Stormwater infiltrates into the ground

Plants and trees work to absorb stormwater

Water hits impervious surface and runs off roofs, streets, parking lots etc.

Runoff goes into the sewers - worsens flooding

The Traditional Storm Water Approach

- Brick and mortar solutions
- Highly engineered solutions – Detention vs. Retention

- Slow pace of permit renewals and retrofit due to “sticker shock”
- Storm Water as pollution – not an asset

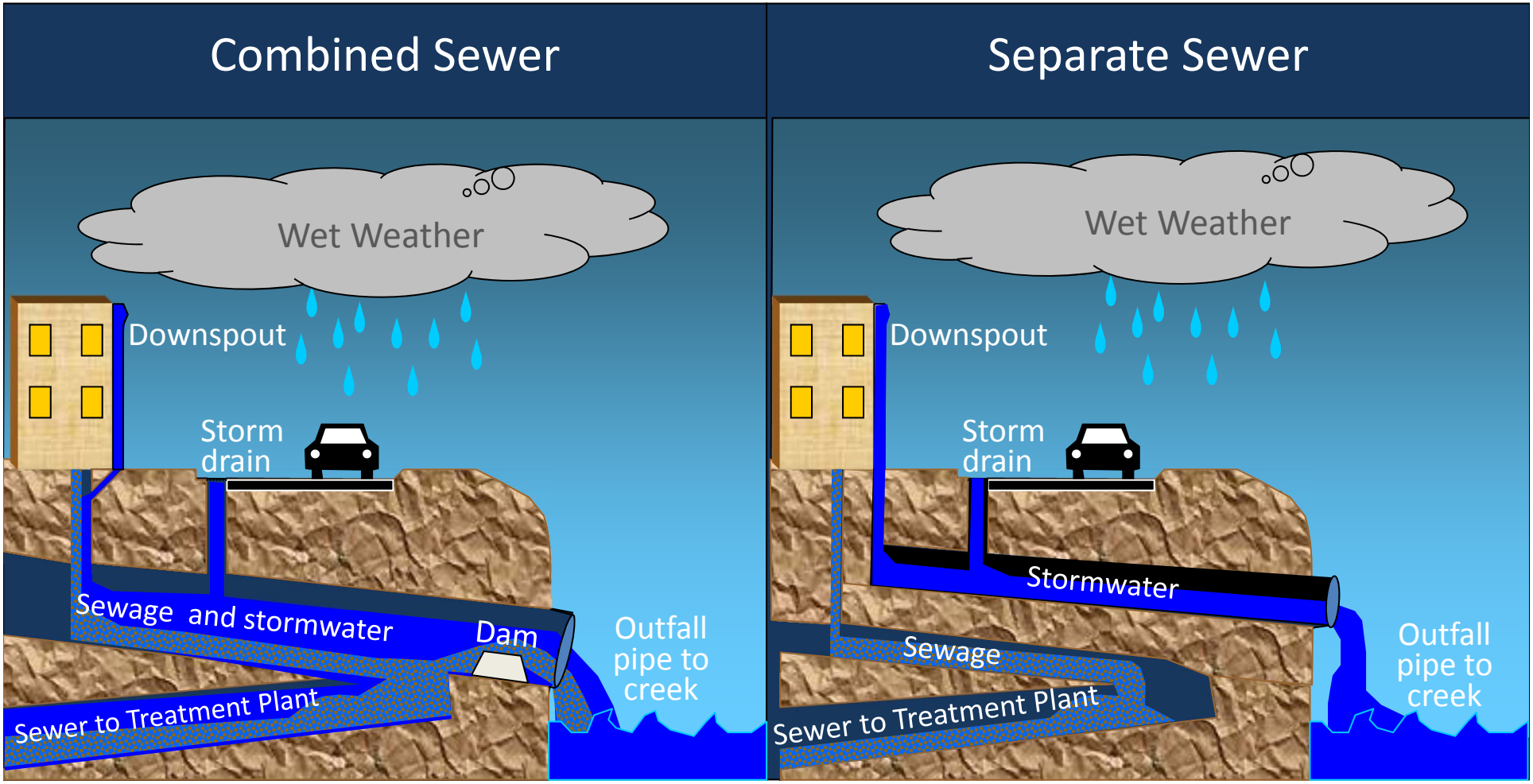
Why Green Streets?

- Urban roads, along with sidewalks and parking lots, are estimated to constitute almost **two-thirds** of the total impervious cover.
  - Mandates to reduce stormwater pollution
  - US communities are facing a total of $106 billion in needed stormwater management and combined sewer correction upgrades or improvements.
- Green Infrastructure often more Cost-Effective
- Added benefits - "Rain as a Resource rather than a Waste"
  - Augment water supplies
  - Beautification – Better Streetscapes – "Livability"

April 8th Featured Speaker: Christine Knapp, City of Philadelphia Water Dept.

- *A Green Street Perspective from another Region: Philadelphia's Green Street Policy Grows from Its Green City/Clean Water Agenda*
  - Philadelphia's problematic combined sewer system
  - Mitigation: Central Tunnel option vs. Green Infrastructure option

Types of Sewers in Philadelphia



60% of Philadelphia

40% of Philadelphia

Philadelphia Representative Spoke on Efforts to Reduce Combined Sewer Overflows (CSOs)

New Approach

- Design streets and urban sites so rainfall infiltrates, supports vegetation, and/or is reused
- Enforce strong stormwater **regulations** on development
- Create stormwater **billing** structure that rewards good practices

Goal: 9500 Impervious Acres converted to “Greened Acres”

Photo Credits: Philadelphia Water Department and Meliora Environmental Design

Workshop Presentations: State and Local Speakers

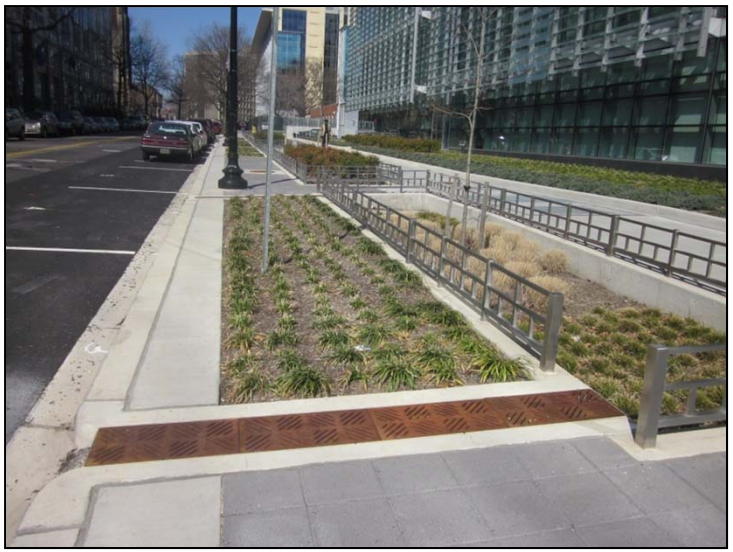
- Creating Green Streets in DC
- VDOT Stormwater Management
- Fairfax County Green Streets Programs
- Arlington Green Streets
- Maryland Stormwater Management
- Prince George's Complete and Green Streets Policy

Creating Green Streets in DC




DC Green Street Policy Evolution

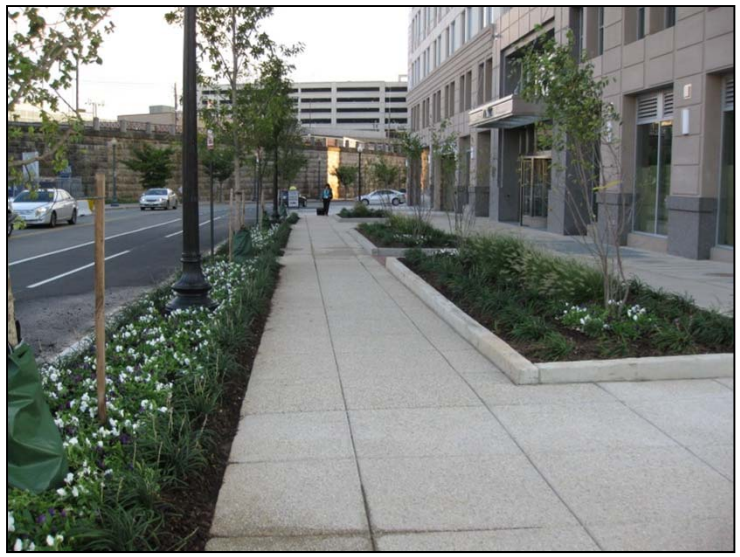
- Anacostia Waterfront Initiative Transportation Architecture Design Guidelines (2005)
- Great Streets Program (2005-present)
- DDOT Action Agenda (2010)
- DDOT Sustainability Plan (2010)
- DDOT Complete Streets Policy (2010)
- DDOT LID Action Plan (2010)
- DC MS4 Permit (2011- 3rd Permit)
- New Citywide Stormwater Regulations (2013)
  - Retain 1.2 inches of runoff



Completed 2012

Great Street: Pennsylvania Avenue SE

Street Tree Planting



- Larger Tree Spaces
- Increased Soil Volumes
  - Structural Soils
  - Structural Cells
- Permeable Pavements

Private Installations in Streets

Constitution Square

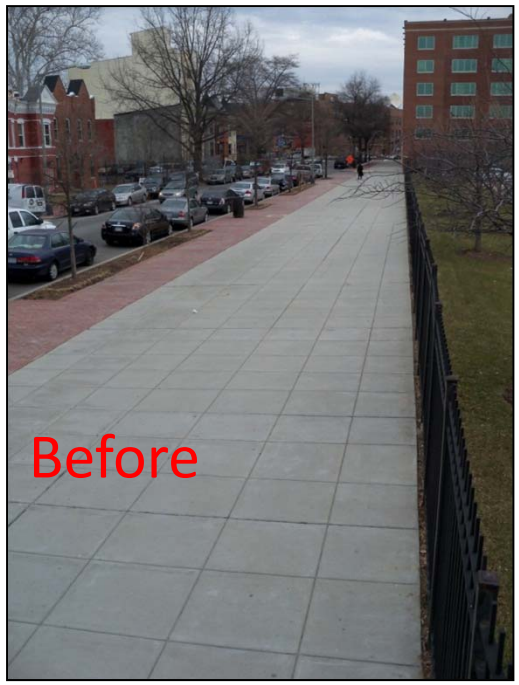

Golden Triangle BID


The Yards


Casey Trees

Paving Removal Program

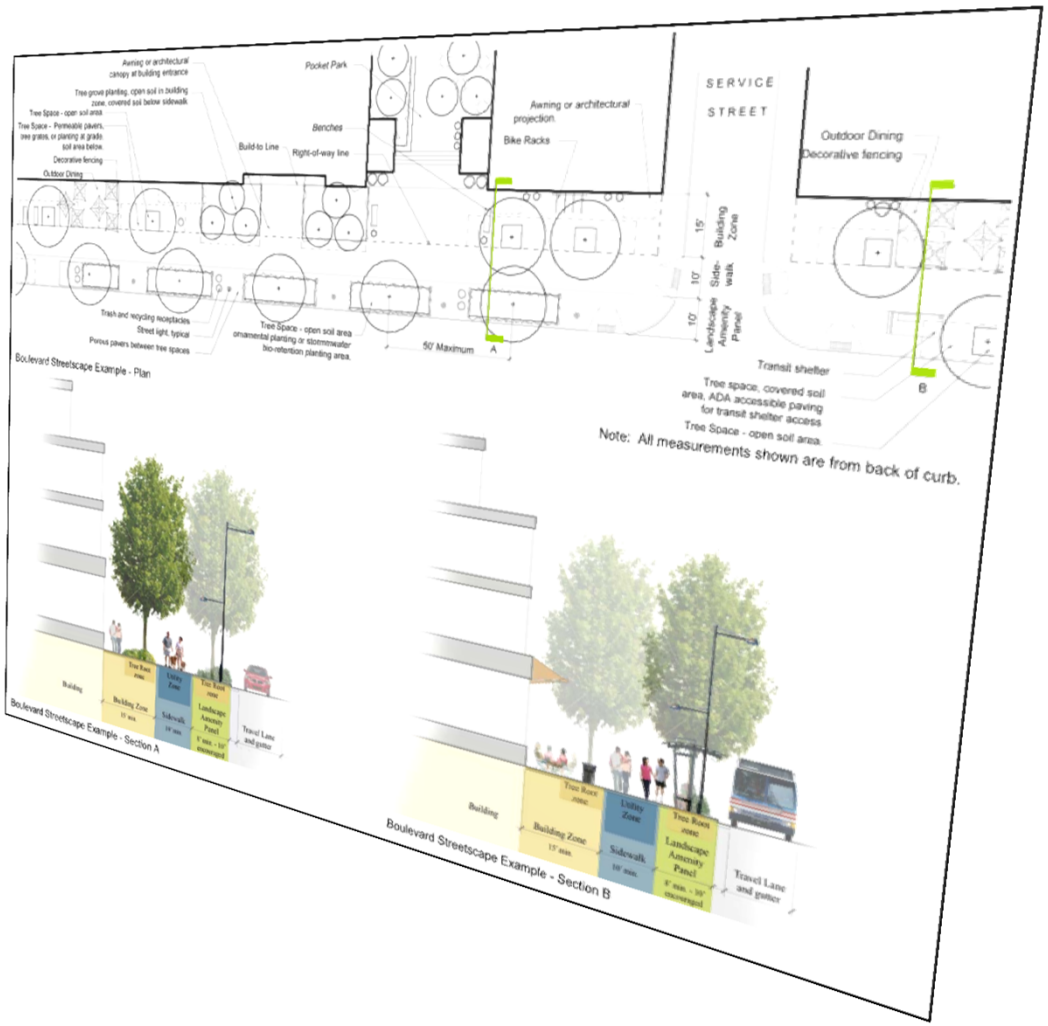
ARRA Funded project began 2010



P St & North Capitol St NE

Calvert St Median

Virginia

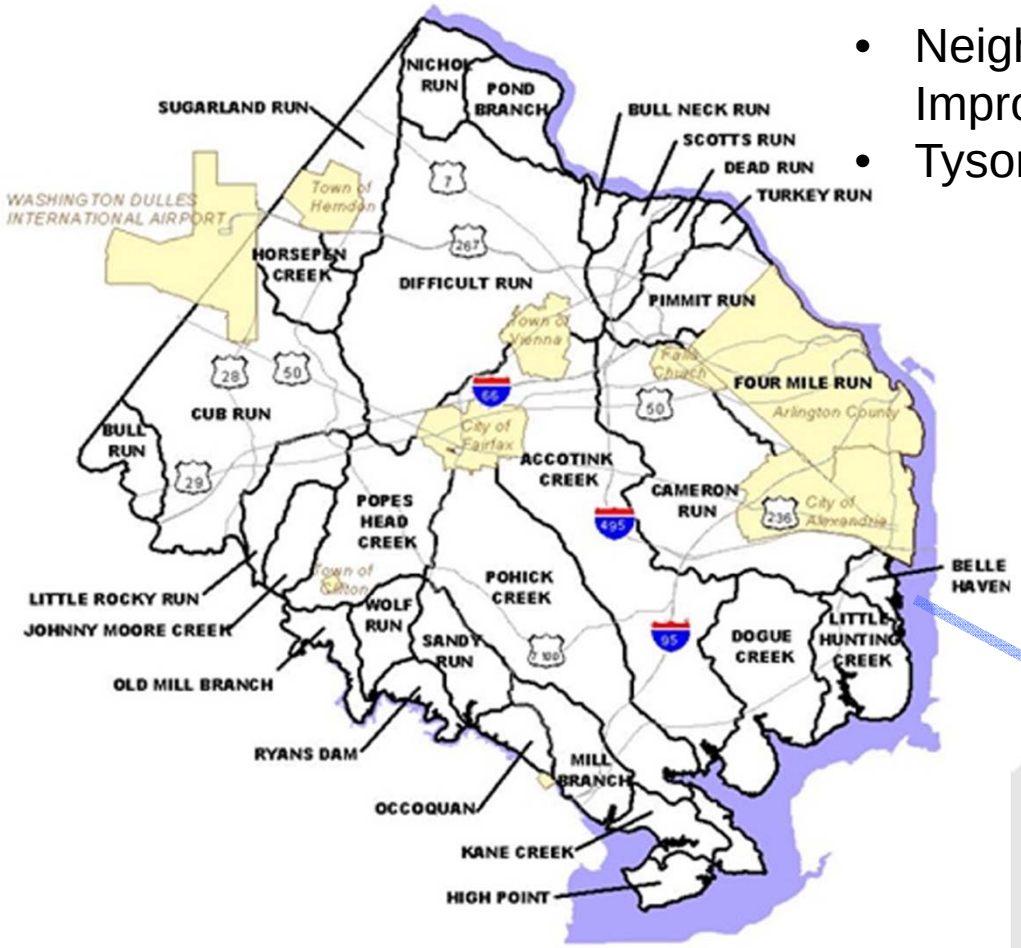

Awning or architectural canopy at building entrance
Tree grove planting, open soil in building zone, covered soil below sidewalk
Tree Space - open soil area
Tree Space - Permeable pavers, tree grates, or planting at grade, soil area below.
Decorative fencing
Outdoor Dining
Pocket Park
Benches
Build-to Line
Right-of-way line
Awning or architectural projection
Bike Racks
SERVICE STREET
Outdoor Dining
Decorative fencing
15' Building Zone
10' Side-walk
10' Landscape Amenity Panel
Trash and recycling receptacles
Street light, typical
Porous pavers between tree spaces
Tree Space - open soil area ornamental planting or stormwater bio-retention planting area.
50' Maximum
A
B
Transit shelter
Tree space, covered soil area, ADA accessible paving for transit shelter access
Tree Space - open soil area.
Note: All measurements shown are from back of curb.
Boulevard Streetscape Example - Plan
Boulevard Streetscape Example - Section A
Boulevard Streetscape Example - Section B
Building
Tree Room zone
Building Zone
Utility Zone
Sidewalk
Landscape Amenity Panel
Travel Lane and gutter

VDOT Stormwater Management

- The Virginia Stormwater Management Regulations are applicable to all Regulated Land Disturbance Activities (RLDA) undertaken by or for VDOT
- All routine maintenance activities exempted
- On-site retention not required.
- Low Impact Development (LID) permitted within VDOT ROW with maintenance agreement.
  - VDOT Subdivision Street Acceptance Policy encourages LID practices
- Central office staff develop Municipal Separate Storm Sewer (MS4) program wide policies and procedures, handle annual reporting, training, and assessment of VDOT's operations.
- District staff responsible for implementation

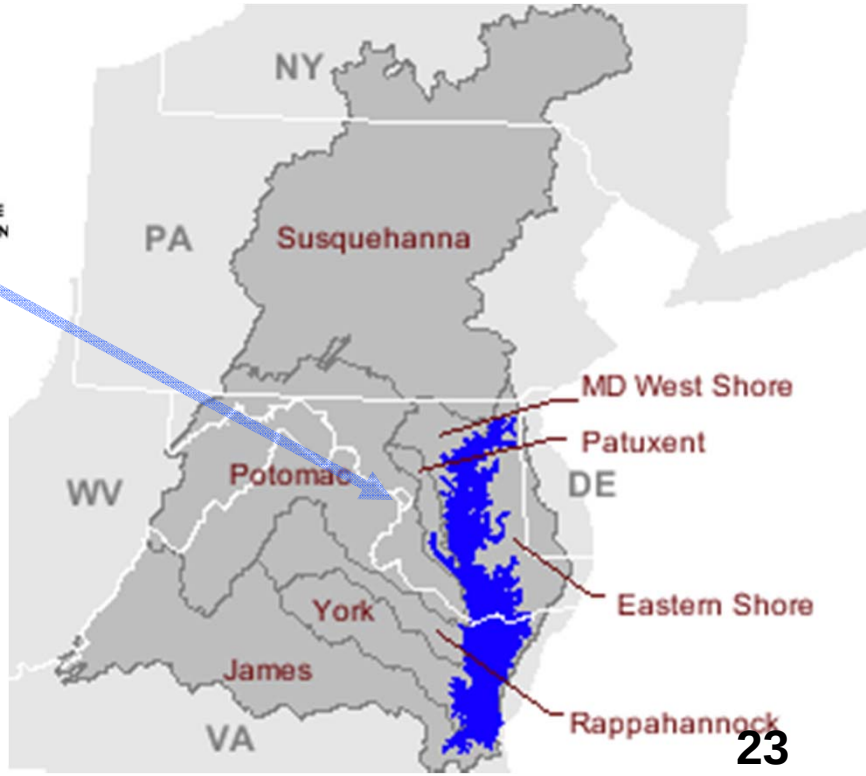
VDOT Virginia Department of Transportation

Green Street Discussion



- Neighborhood Drainage Improvements
- Tysons Corner Plan

Chesapeake Bay Watershed



Size: 395 sq. miles

Population: 1.2 million

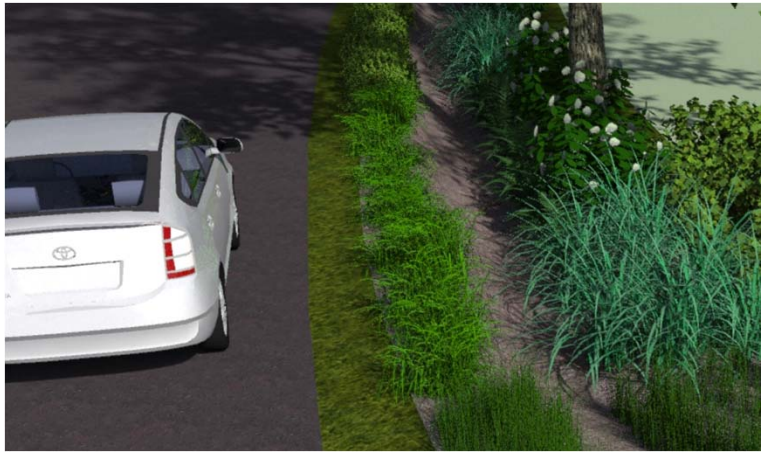
MS4 - Phase 1 Community

Fairfax County Neighborhood Drainage Project Goals:

- ✓ Reduce flooding and erosion
- ✓ Collect runoff at the source
- ✓ Improve water quality
- ✓ Improve tributary stability
- ✓ Use innovative & functional designs
- ✓ Make it aesthetic

Solutions:

- ✓ Swales
- ✓ Permeable Pavement
- ✓ Infiltration Trenches



Arlington Green Streets

- Green Streets are the core element of Arlington's stormwater program
- "More than a filter"
  - Reduced volume, heat island, beautification, traffic calming
- Opportunities
  - Road Diets, Traffic Calming, Redevelopment, Pedestrian Improvements
- Challenges
  - Utilities, parking
- "Design, Learn, Design"
  - Green Streets designs are still evolving; learn from performance.
- Long term plan
  - Projects scored and ranked
- Maintenance obligations will grow over time

ARLINGTON
VIRGINIA

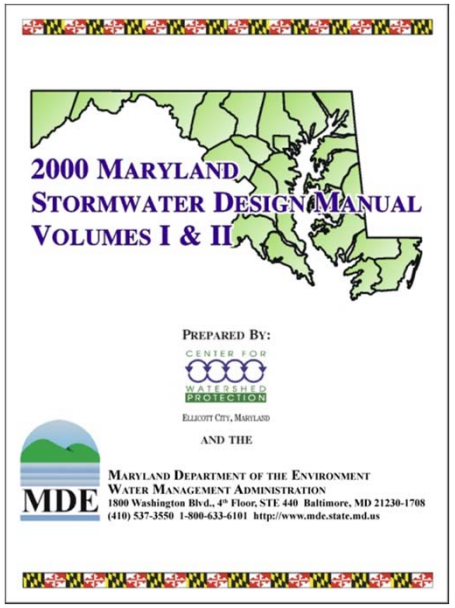
Patrick Henry Drive

Maryland

Maryland's SWM Framework

- The State Highway Administration (SHA) is responsible for only one quarter of the lane miles in MD
- Statewide Stormwater Manual 2000.
- New Regulatory Drivers
  - Stormwater 2007
  - The Bay TMDL and Maryland's Watershed Implementation Plans
  - Sustainable Growth & Agricultural Preservation Act of 2012

Critical Area Commission
Chesapeake and Atlantic Coastal Bays



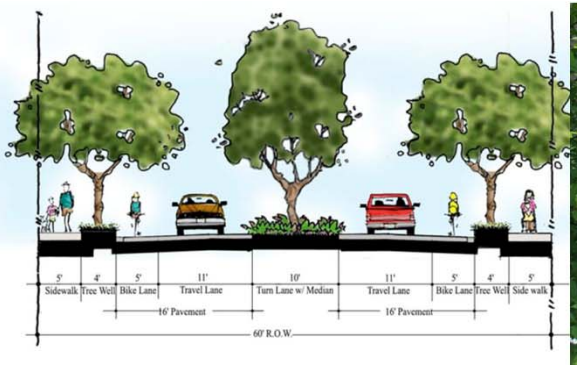
From this…

to this.

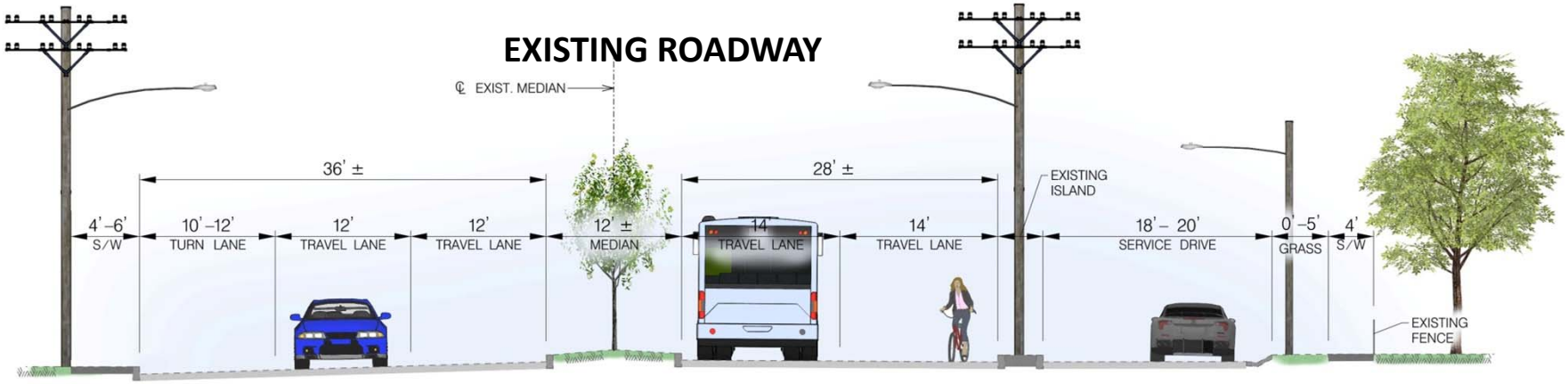
Prince George's County Complete and Green Streets Policy (12/2012)

SUBTITLE 23. ROADS AND SIDEWALKS.
DIVISION 7. COMPLETE AND GREEN STREETS.
Sec. 23-615. Complete and Green Streets Policy.

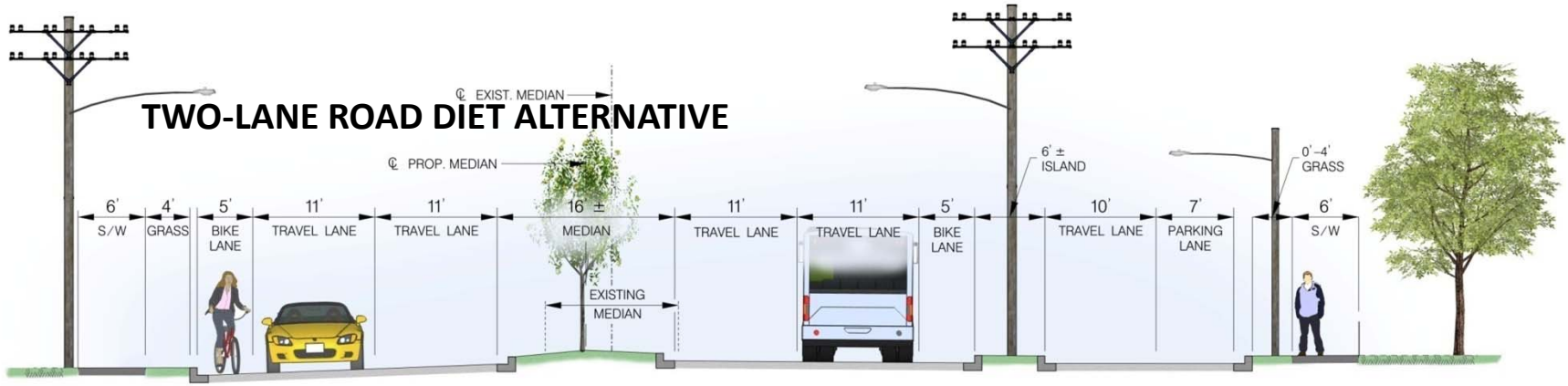
- Create more livable communities and places
- Manage stormwater in an environmentally-friendly way
- Increase tree canopy
- Make it easier for people to walk, bike, and use public transportation



Ager Road Green/Complete Street Design



SERVICE DRIVE



SERVICE DRIVE

Overall April 8 Workshop Findings

Workshop Findings (1 of 2)

- Stormwater runoff pollution must be reduced
  - Worsens flooding, water quality
  - Regulations require it
  - Long term process
- Green Infrastructure is often more cost-effective
- Multiple Benefits from Green Streets
  - Enhanced water supplies, beautification, reduced heat island, enhanced property values, economic development
- Green Streets can be Complete Streets
  - Traffic calming, road diets, and streetscaping projects provide opportunities for, benefit from Green infrastructure
  - But trade-offs cannot always be avoided

Workshop Findings (2 of 2)

- Laws have changed
  - Agencies are still working out strategies for complying with new requirements
- Design is still a work in progress
  - West coast designs need adaptation to eastern climate
  - “Design, Learn, Design” (Learn from field performance. Local soil conditions affect performance)
  - Challenges - utilities, competing uses, soil conditions, connections to drainage
  - Maintenance
- Cooperation between multiple agencies and developers is needed
  - Transportation cannot do it alone
  - Watershed strategy vs. site strategy
  - A directive from the top of a government or agency can help bring multiple departments and agencies together

Next Steps

A. Compile Current and Best Practices
   - Continue to share information on evolving Best Practices through the relevant committees and periodic workshops
   - Ensure understanding of requirements and current practices

B. Develop Options for Regional Approaches
   - Additional technical-level discussions
   - Bring back to TPB following these discussions

Questions?

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