Educating & Engaging One Million Residents

Department of Environmental Protection
Montgomery County Maryland

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Montgomery County, MD

Watershed Management Division

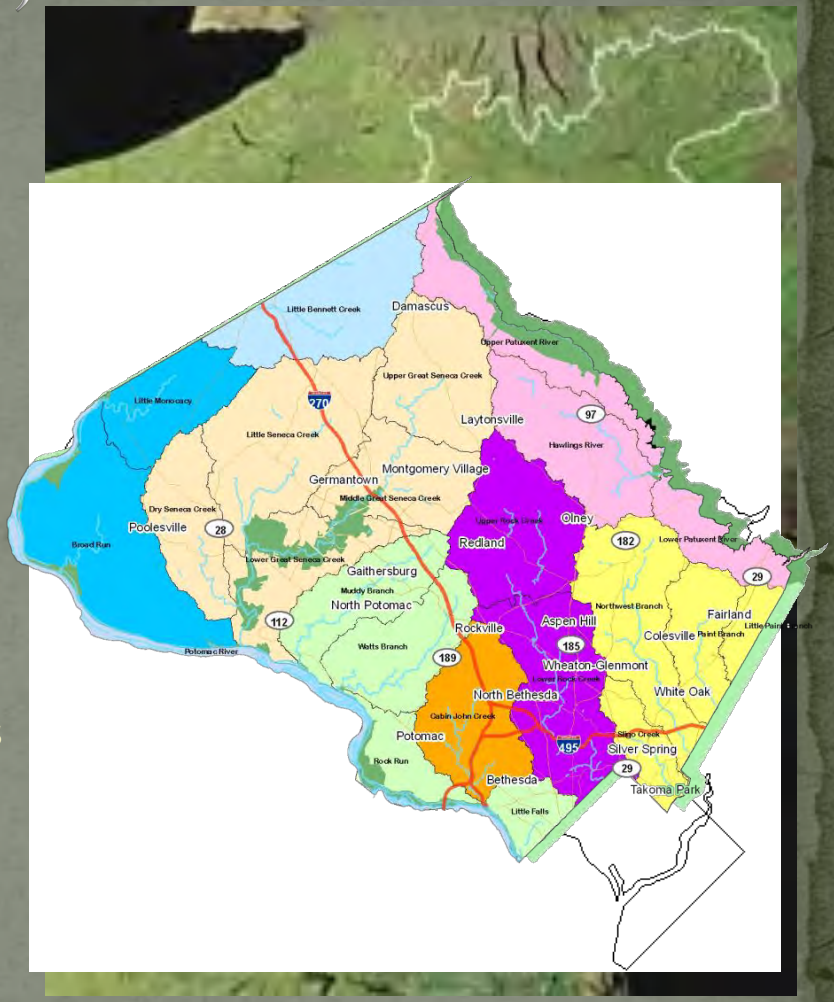
Presentation Outline

- County Overview and Stormwater Permit
  - Funding – Water Quality Protection Charge
  - Green Streets Program
  - RainScapes – Voluntary Rebate Program

- Outreach and Community Engagement
- Focusing Outreach Efforts
- Priorities for Implementing Behavior Change
- Current Outreach Programs
- *On the Horizon…*

Montgomery County, MD

- 507 sq. miles
- Over 1 million people
- Nearly 400,000 homes
  - Second only to Baltimore City within MD in average people per square mile
  - Very Diverse - 184 languages spoken - Spanish, Chinese (Mandarin), Korean, Vietnamese, Amharic (Ethiopia)
- About 12% impervious surface overall
  - About the size of Washington DC – 61 sq. miles or about 39,000 ac
- Over 1,500 miles of streams
- Two major river basins:
  - Potomac (88% of drainage)
  - Patuxent (12% of drainage)
- Eight local watersheds



Impervious: Not allowing water to soak through the ground.

Watershed Management Division

- Stormwater Permit Coordination
  - Reporting, Monitoring, and Watershed Outreach
- Stormwater Management Facilities
  - Inspections and Maintenance
- Watershed Restoration
  - Stormwater Retrofits and Stream Restoration
  - RainScapes
- Construction Management
  - Oversees project construction
  - Administers contracts and procurement

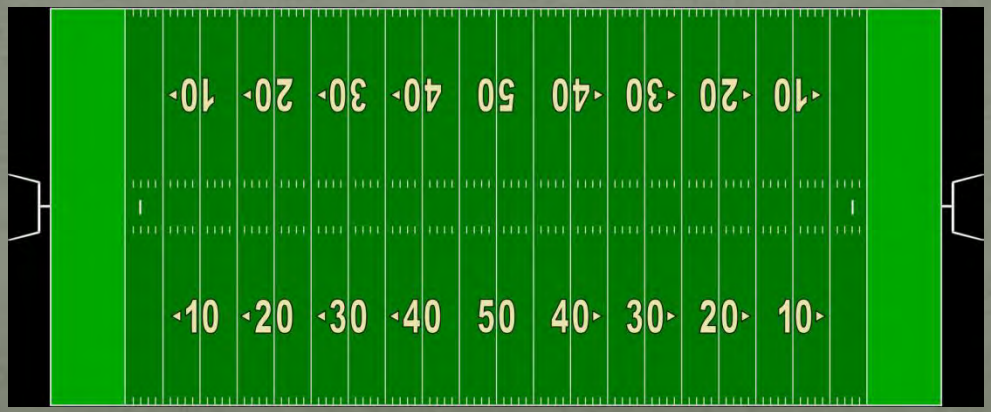
Meeting the permit requirements:

- Restore Local Streams and Watersheds
- Reduce Trash entering the Potomac and Tributaries
- Increase Public Outreach and Stewardship

- Requires additional stormwater management for **20 percent** of impervious surfaces (4,292 acres = 6.7 square miles).

1.5 times the size of Pottstown

Equivalent to 3,307 football fields!



Meeting the permit requirements:

- Reduce stormwater volume
- Manage pollution from urban sources
  - **Bacteria** - pet waste, wildlife, and sewer leaks
  - **Nutrients –** fertilizers: nitrogen and phosphorus
  - **Sediment –** erosion
  - **Trash**
- Involve the Community to Influence Behavior Change

Reporting Progress (FY10-FY13)

- 3rd round permit (4,292 acres)
- Reached 62% of the impervious acre goal
  - ~2,700 acres (~900 projects)
- 2,224 acres in design (135)
- 306 acres in construction (20)
- 110 acres completed (87)

- RainScapes – 21 acres
  - 42% of goal
  - Rebates (500+) – 15.4 ac
  - Neighborhoods (78) – 2.7 ac
  - Schools/Demos – 2.7 ac
- Street Sweeping – 19 ac
- Outreach - ???

As of Oct. 2013

Water Quality Protection Charge (WQPC) - Structure

2002-2012: Flat rate based on housing type	**2013***
•Multi-family residential - Apartments and condominiums •Single Family Attached & Detached •Non-residential (Common areas – HOAs)	All property owners including agriculture, businesses, and non-profits.
Charge ~$30-$90 as of 2012	**Tiered approach - Charge based on amount of impervious surface on the property

*In 2013, Maryland legislature enacted a law that required all jurisdictions to charge a stormwater fee.

**Starting in July 2013, Montgomery County created a WQPC credit program, a phase-in program and a hardship exemption.

Marketing Projects

Involve the public in every aspect

- Letters
- Public Meetings
- Project Specific Websites
- Community Walks
- Volunteer Participation

Watershed Restoration Project Process

PHASE 1 — WATERSHED STUDY

Evaluate the overall condition of the watershed and identify critical issues. Highly critical sites are then selected for further assessment and survey to determine feasibility of the project. Residents may be contacted if access is needed to conduct the evaluation and survey.

PHASE 2 — DESIGN

Multiple public meetings and community walks may be held throughout this phase. During the meeting(s), drafts of the design will be presented to collect residents' input.

PHASE 3 — CONSTRUCTION

Residents will be informed when project construction will begin. The project will undergo construction.

PHASE 4 — COMPLETE

Once the project is completed, residents will be notified and depending on the project, a community walk may be held to look at and celebrate the completed project.

STEP 5 — MONITORING

Projects may be monitored to evaluate the success of project goals.

Community Project Walks

- Public Meetings –at different design stages
- Before & After Community Walks

Green Streets Construction

Green Streets Construction

Green Streets Planting

- Officially County Maintained
- Work with Volunteers also

Stream Walks

Booze Creek example

- 1.5 mile restoration
- 8 education stations
- Watershed group table
- Biomonitoring station
- 65 in attendance
- Video & Plant Cam
- Social Media
- Project Life 2005-2013
- Letters
- Presentations
- Cleanups & Invasives
- Volunteer plantings
- Project Webpage
- Civic Association

RainScapes

- **Rainscapes Rewards Rebates**
  - Rain Gardens
  - Conservation Landscaping
  - Urban Tree Canopy
  - Permeable Pavers
  - Green Roofs
  - Water Harvesting
    - Cisterns
    - Rain Barrels
  - Dry Wells
- **Targeted Neighborhoods**
- **Rainscapes for Schools (pilot program)**
  - High School Growing Program

RainScapes Rewards

- Started as pilot in 2004
  - CBT grant
  - Demonstrations
- Fully Funded in 2008
  - (WQPC)
  - Rebates
- 2014 - 10 yr anniversary
- Treatment goal:

  50 impervious acres controlled for the first 1" of rain by Feb 2015

RainScapes Rewards

Incentive Program

- **Rebates for single family residences:**
  - $2,500 per property, with lifetime project caps
- **Rebates for multi-family/commercial / institutional:**
  - $10,000 per property, with lifetime project caps

RainScapes Resources for Residents

- Public Outreach & Workshops
- Presentations to groups
- Watershed Group Capacity Building
- Staffing events like the County Fair, Green festivals, School events, etc
- Professional training for landscape professionals
- Field Days for professionals

Residential Workshops

What is covered:

- How to assess a site
- How to choose a project
- How to site a project and determine appropriate size
- How to design and install a project with professionals
- How to make it beautiful….and more!

RAINSCAPES
For Healthy Watersheds:
www.RainScapes.org

Landscape Professionals Series

1. ***Classroom instruction (prerequisite class)***
   - Program overview

2. ***Rain Garden Site Assessment & Design Charette & Course***
   - Rain Garden specifics – design exercises
   - Site assessment Classroom + Field work & Design exercise

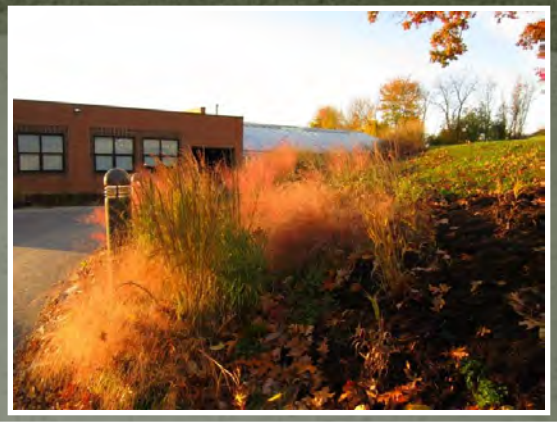
3. ***Rain Garden Field Day***
   - Hands on Site assessment & Rain Garden build

Other courses offered through Montgomery College Landscape Technology Program

Green Landscaper Certification

RainScapes for Schools

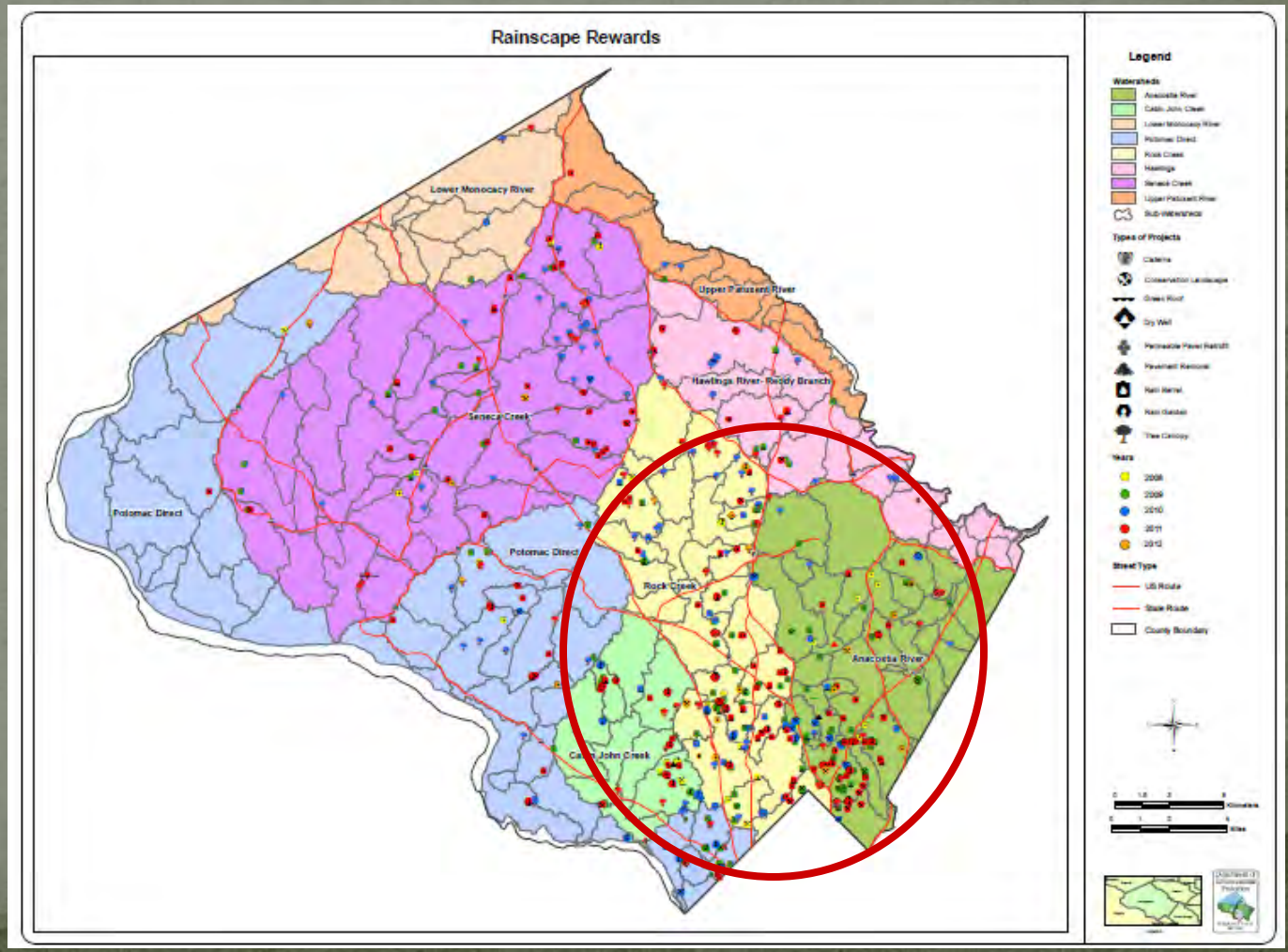
- Work with community
- Curricular focus to projects
- Volunteer labor
- RainScapes provides design, materials, oversight
- Coordinate with MCPS Division of Construction
- HS Growing Program
  - 8 schools
  - 800 plants
  - 75% return, 25% retain
  - School projects & Fundraisers
  - ROW projects
  - Event giveaways



Where are the projects?

RainScapes Rewards are mainly in 3 watersheds

- Rock Creek
- Anacostia
- Cabin John



How many projects in the ground so far?

RainScapes Rewards	**454 (paid)**
RainScapes Neighborhoods	**18**
RainScapes for Schools	**14**
RainScapes Partnership Projects / Watershed groups /Demos	**31**

~500 as of Oct. 2013

There are many more still “in process”

RainScapes Rewards

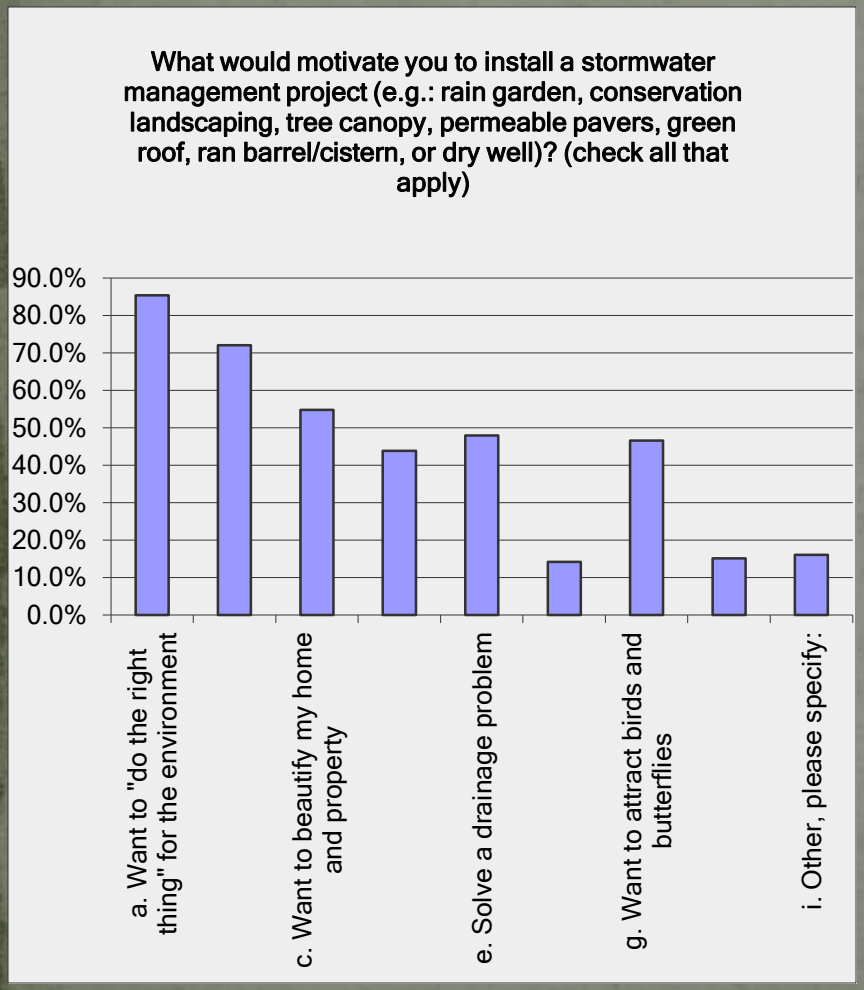
Building_Type	Project_ Size	IA_SF	Paid_Amount	HOME_ COST	number
Commercial, Institutional	1287.97	3812.05	$2,182.11	3879.1	37
Single-family	309.87	620.22	$517.67	1408.82	412
Town-home	107	109.8	$101.84	46.04	5

Rebate doubled in 2012

Impervious area treated-table does not include trees

*Chart shows Preliminary analysis figures

Surveying the Participants – Why do people RainScape?



- Do the right thing for the environment (85%)
- Financial incentive (72%)
- Add beauty to my home & property (55%)
- Solve a drainage problem (48%)
- Attract birds & butterflies (47%)
- Reduce erosion in yard (44%)

Market Research -Qualitative Results from Participants

- Didn't realize they could do more even though they wanted to
- Didn't realize the rebate & program cap had changed
- Wanted to continue to beautify the home, solve erosion problem or do their part for the Bay
- **Were excited they were still able to participate.**

What did people find helpful?

- “The part that most helped me was when DEP Staff visited my property and gave me on-the-spot ideas for shaping the garden and specific plants I could use. -I don't have design talents.”

- “More staff! It's a wonderful program, and I'm so glad it was recommended to me.”

RainScapes Customer survey Residents Summer 2013

Technical assistance matters

- *"DEP Staff were helpful, and the landscapers we dealt with made it easy."*

- *"The landscapers took over and submitted the plans so I did not have to do the paper work—they were more than happy to do it."*

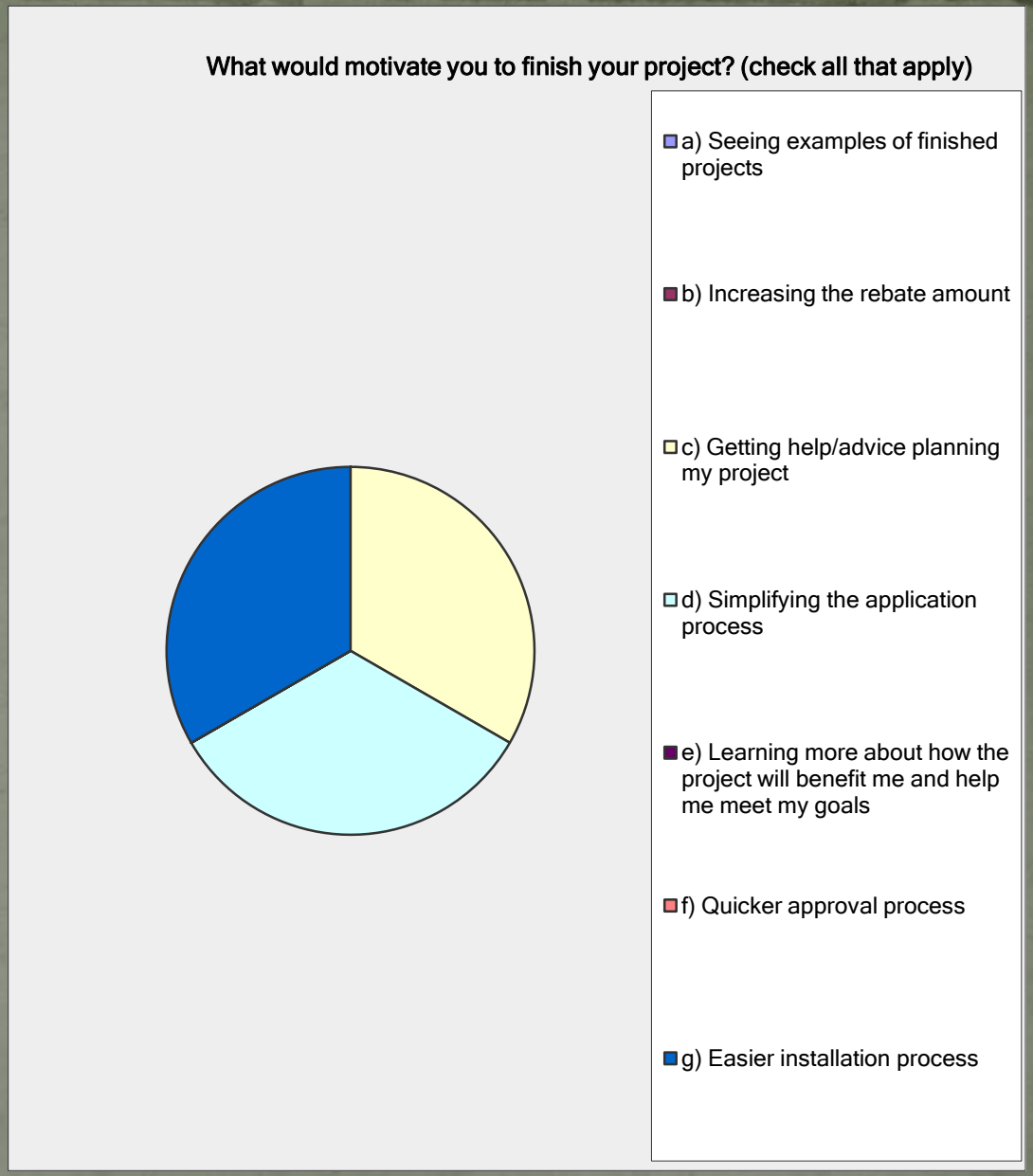
Money matters

Most participants, felt that the rebate amounts they received from the RainScapes program were “the right amount.”

- *“It was not trivial. Reasonable enough to encourage me.” (Residential)*
- *“I thought it was fair – it paid for about 50% of the project. (Commercial)*
- *“It makes sense where it is. The new limit is a good size for the homeowner.” (Landscaper)*

What helps to get projects finished?

1. Seeing examples of finished projects
2. Getting help/advice planning my project
1. Simplifying the application process



RainScapes Customer survey Residents Summer 2013

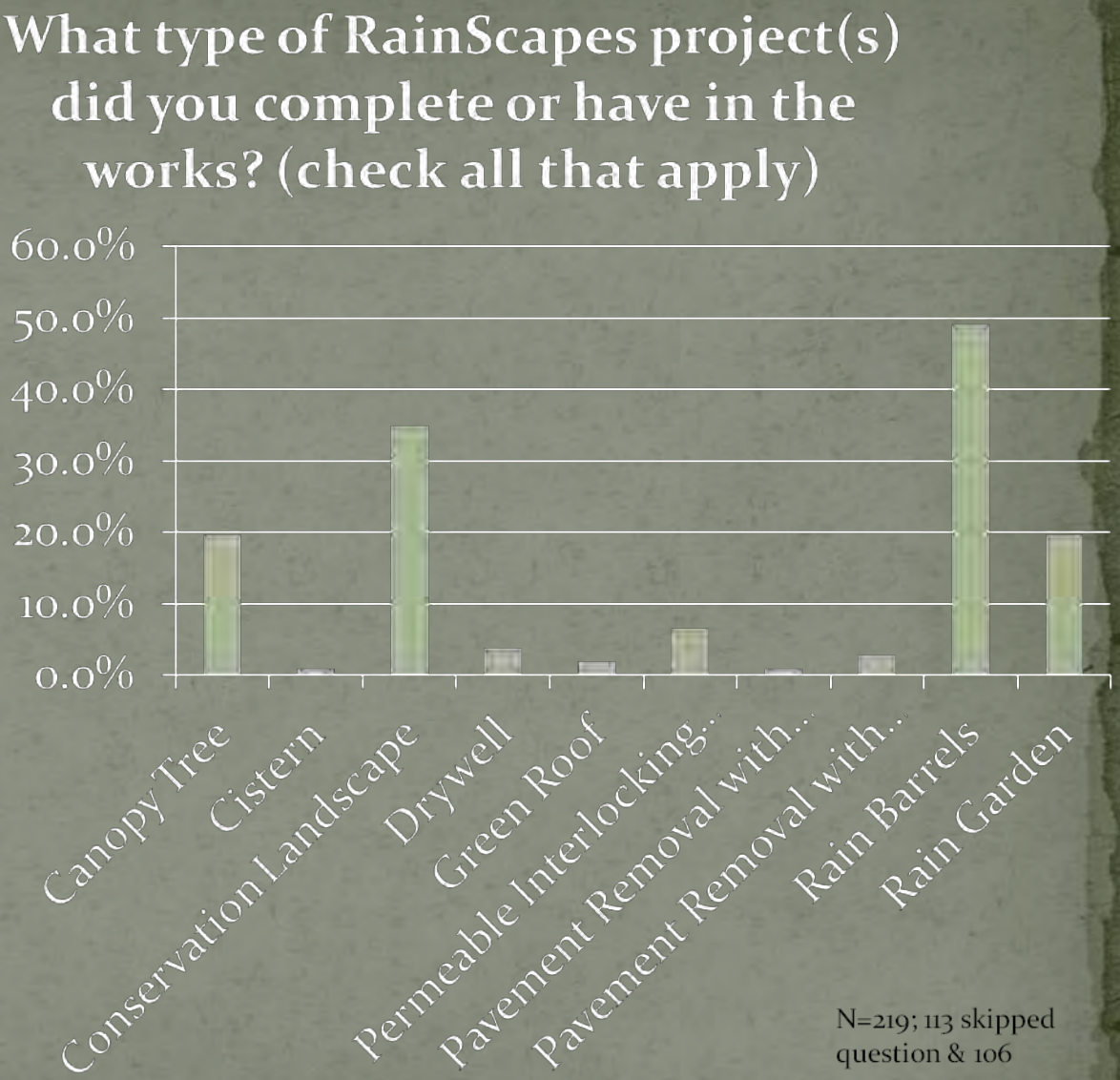
How did you hear about the RainScapes program or a similar stormwater management program? (check all that apply)

Answer Options	Response Percent	Response Count
From a friend, neighbor, or family member	15.50%	34
From a landscaping professional	11.00%	24
From a Master Gardener	7.30%	16
At a workshop or class	12.80%	28
Through an online search that took me to the RainScapes website	29.20%	64
Through a community/ neighborhood listserv or email group	13.70%	30
From nursery or garden center staff	6.80%	15
From a flier/brochure	15.50%	34
From a school or community demo project	2.70%	6
Don't remember	10.00%	22
Other, please specify:	21.90%	48
		N= 219

No clear marketing winner.

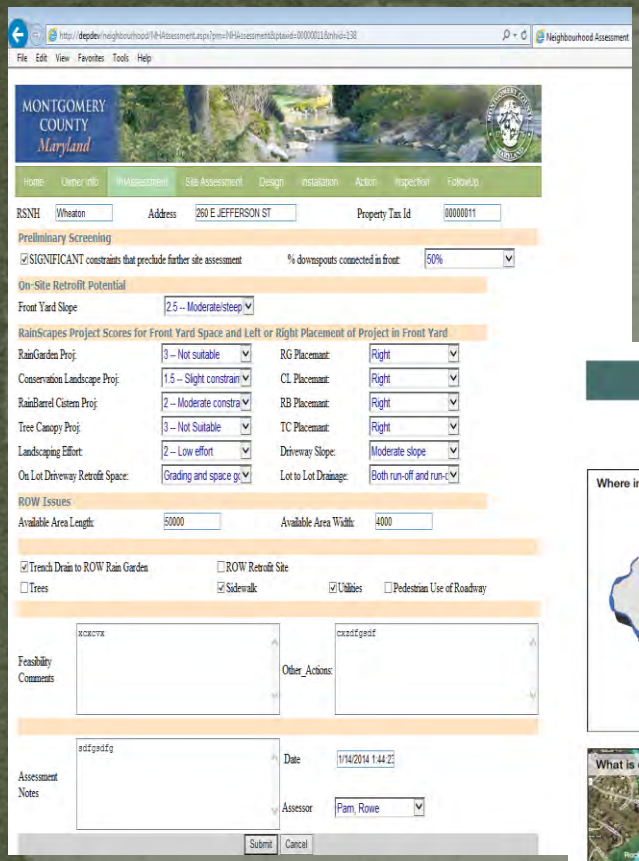
RainScapes Customer survey Residents Summer 2013

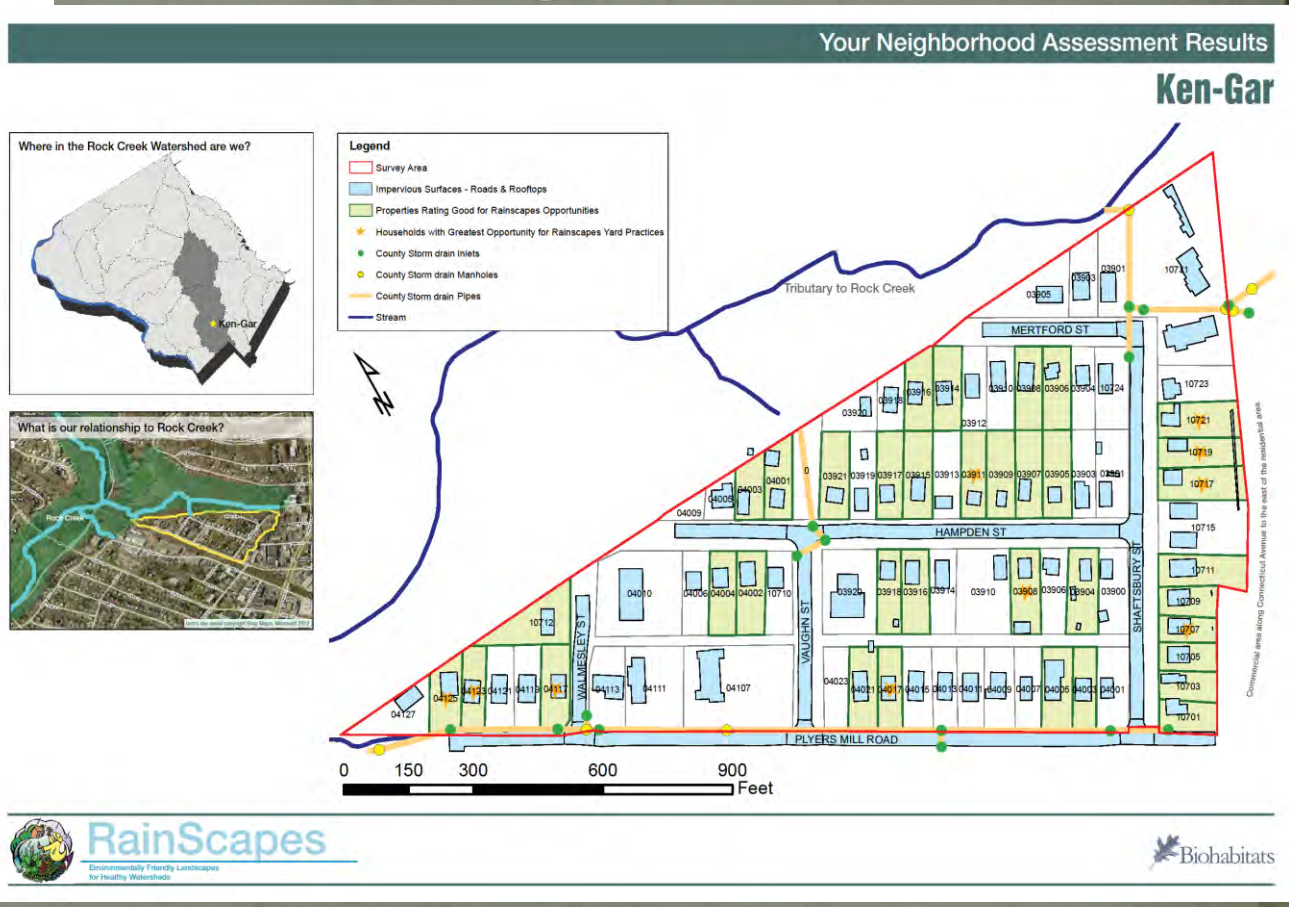
- Most said the project took as long as expected (75%)
- Almost all achieved their project goals (98%)
- Most said they completed their projects (88%)*



RainScapes Customer survey Residents Summer 2013

Mapping Neighborhood Screening Results





- 100% County Funded
- Access Issues
- Coordination

30% Implementation Goal

So much done, so much to do…

RainScapes Rewards

- Over $1 million in receipts
- Nearly $300,000 in rebates
- 42% of goal with 16 months to go!

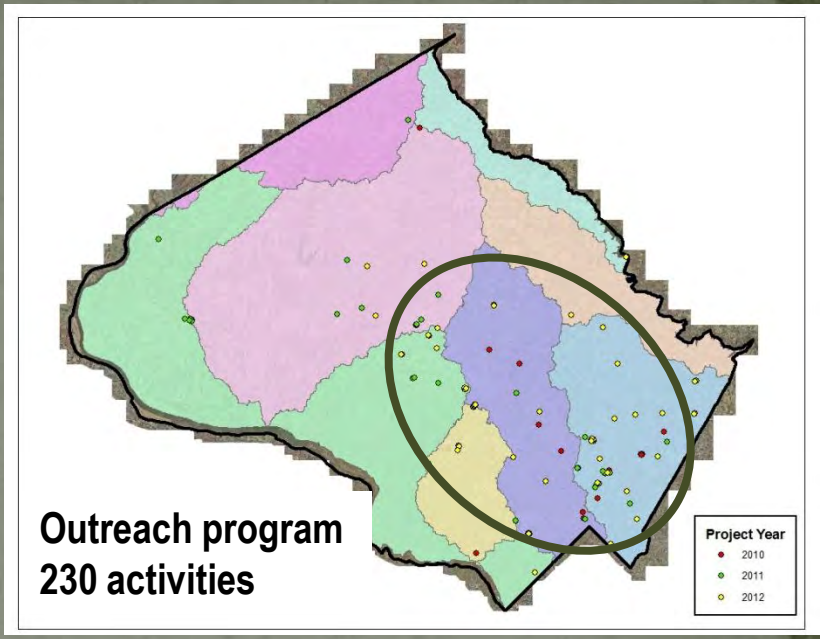
Program evaluation – lesson learned and next steps

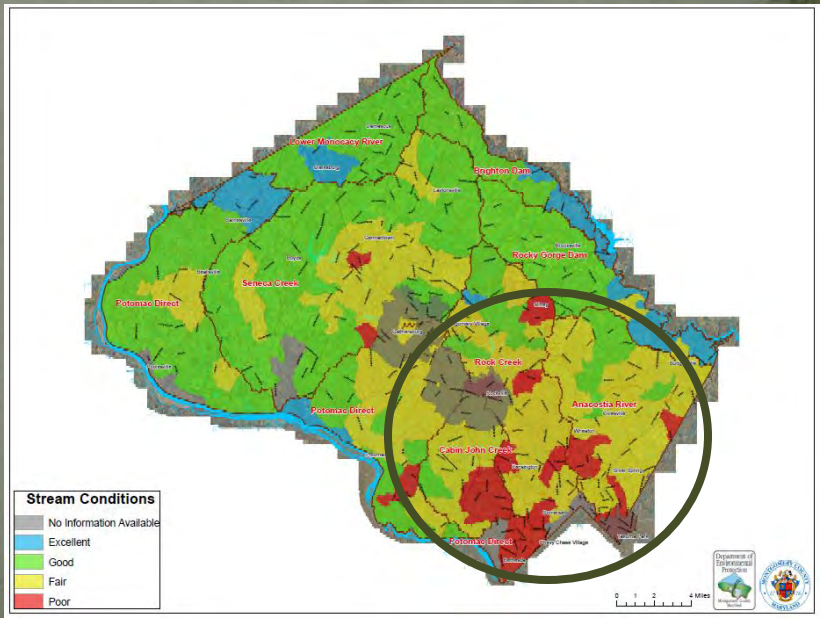
- RainScapes is like marketing SWM door-to-door: Marketing is time consuming
- Messaging & Branding
- Sometimes projects don't last
- People like what we do but say we need to market more aggressively
- Expand Workshops & Trainings
- "Set it & Forget it"-maintenance
- Limit use of stormwater – focus on the aesthetic benefits

Focusing Outreach

- Plan Developed in 2010
- Majority of outreach focused in the most impacted County watersheds
  - Anacostia and Rock Creek
- Link events to Restoration Projects
- Increase number of residents reached
  - More than 630% from FY 10-FY13
  - 66% increase last year
- Document Awareness and Behavior Change
  - Pre- and Post-Project Surveys

Challenge – Linking Outreach to Restoration Efforts and Measuring Change





8 Priorities for Implementing Behavior Change

**Vital roles for watershed and community groups*

Most cost-effective reduction approach:

- Bacteria from urban sources (Pet Waste)
  - *Surveys, & educational materials **
  - *Installing pet waste stations (pilot program)*
  - incentive program for installations
- Anti-littering
  - *Advertising campaign*
  - increased enforcement
  - Training public and private property staff

Programs providing additional reductions:

- Lawn fertilizers
  - *Distributing outreach materials**
  - *Providing landscaper training and homeowner assistance*
- Tree plantings and establishing stream buffers
  - Advertising and coordinating tree planting projects*

8 Priorities for Implementing Behavior Change
**Vital roles for watershed and community groups*

- Increase awareness of Stormwater management
  - *Supporting tours of ESD practices **
  - *Developing a Geocaching Stormwater Awareness Trail**
  - Installing signs
- Reduce impervious surfaces (parking lots & driveways)
  - Encourage property owners to reduce their impervious footprint
- Establish Stream Stewards Volunteer program
  - *Volunteer, peer to peer program**
- Increase residential runoff management
  - *Increase promotion of RainScapes Program**

Outreach and Community Engagement

- Role of Watershed Groups
- Establishing New Partnerships
  - Commission on Common Ownership Communities
  - Office of Community Partnerships
  - Alice Ferguson Foundation
  - Faith Based Organizations
  - Granito de Arena – Diversity
    - Rain Barrel Workshops & presentations
- Property Managers Training
- Realtors Stormwater 101 Workshop
  - Greater Capital Area Association of Realtors
    - 89% increased their knowledge of stormwater

Outreach and Community Engagement

- H2O Summit Partners
  - University of Maryland Extension
  - Cities of Gaithersburg and Rockville
  - Montgomery County Parks
  - Washington Suburban Sanitary Commission (WSSC)

- Baseline surveying & Post event surveys
- Eventbrite
- Advertising

Year I: Watershed groups (150)
Year II: Local Agency partners (180)
Year III: WSSC (400+) added Fair
Year IV: ???

- 54% of attendees increased their knowledge about local watershed groups
- 24% changed their attitudes or behaviors

Outreach and Community Engagement

- Anti-Litter campaign- Regional effort
  - Annual Potomac River Watershed Clean Up
  - Radio spots—Fall 2011 (50 ads)
  - Bus Transit (~80 ads/yr) and Bus Shelters (95 ads/yr)
    - Fall 2011 thru Fall 2013
  - Posters to Schools, Libraries, Recreation centers
  - Recycling Truck Fleet (125 trucks)
    - Conducting follow up surveys to determine impact
  - White Oak Community (2014)
    - Eyes of Paint Branch
    - Community leaders

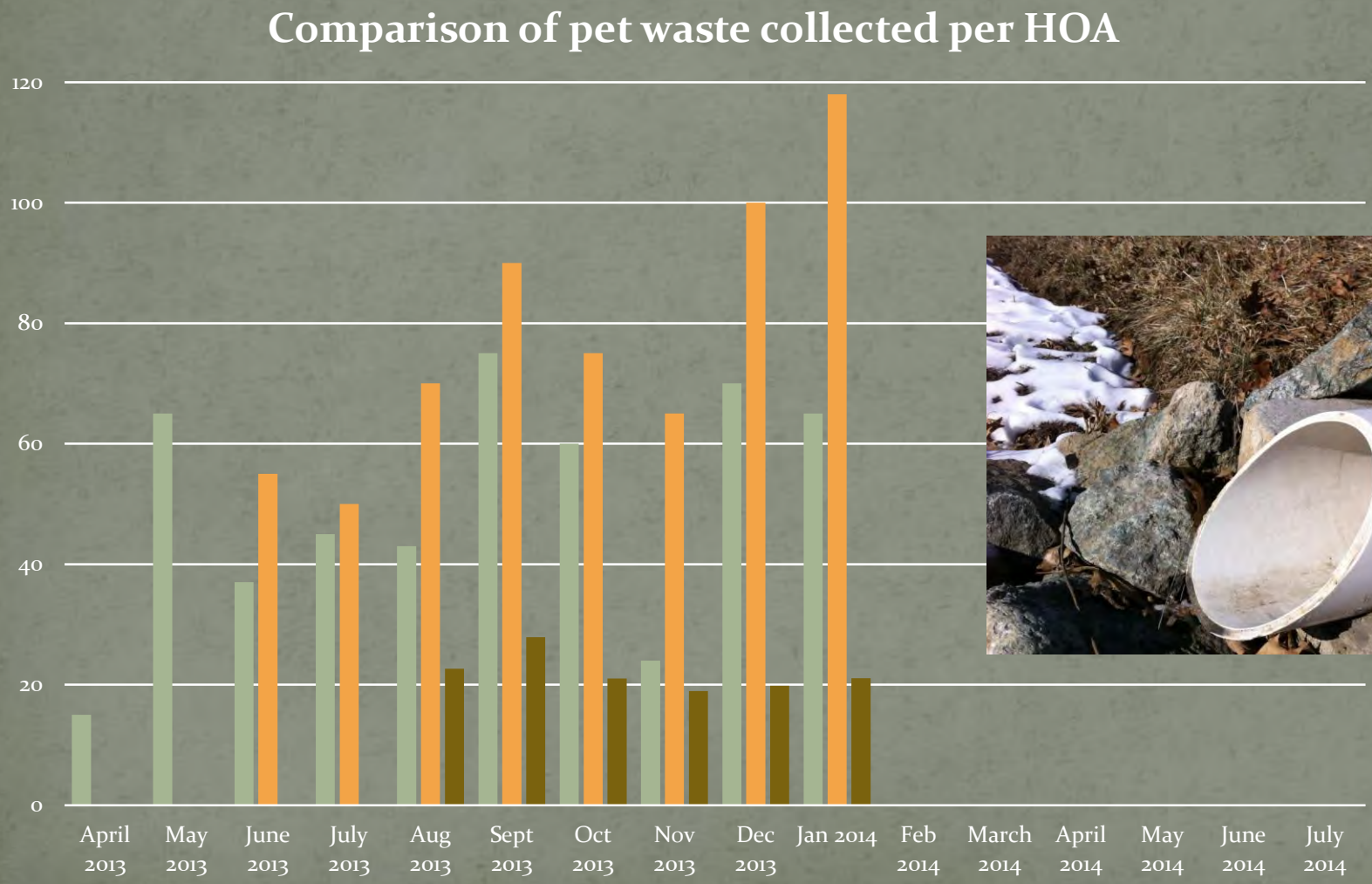
Outreach and Community Engagement

- Pet Waste Prevention– March 2013 Pilot project
  - Contract
    - Rock Creek Conservancy
    - Interstate Commission on the Potomac River (ICPRB)
  - Home owners Associations
    - Bacteria TMDL & Distance to Stream
    - "Managed or controlled" land or open space
    - Identified waste issues by HOA board (mailed survey)
    - High Pet Ownership, No previous control, Interest
  - Stations (7) cleaned, weighed, & reported weekly
  - Pre-Surveys (perception based) & Follow up surveys (2014)
- Results to Date: 1250 lbs waste collected
- Expanding to other areas
  - 27 HOAs surveyed
  - 13 responded – no reported issues but wanted outreach material

Are you
in the
Poop Loop?
Clean up after your pet

Bacteria
1. Pickup Pet Waste

Pet Waste – Rock Creek Watershed Pilot project



Outreach and Community Engagement

- Watershed Group Capacity Building - Contract with Interstate Commission on the Potomac River Basin

- Watershed Group Support and Trainings
  - 2011-2013 Chesapeake Watershed Forum attendance
  - Train the Trainer Workshops
  - Surveyed Needs
  - River Network Assessment Tool
  - 3 new watershed groups
  - Strategic Planning
  - Outreach & Volunteer Recruitment

- Hands-on projects
  - Conservation Landscaping Demonstration Projects
  - Storm drain Marking (1200)
  - Pet Waste Management Pilot

Geneva Day School Demonstration Garden

Watershed Group Capacity Building

- Surveyed Response
  - 65% viewed the trainings as helpful
  - 72% felt their knowledge had greatly improved in strategic planning
  - Most felt they would benefit from further guidance from DEP and training opportunities.
  - *"I'm surprised how much it engaged my board and made them more active".*

Outreach and Community Engagement

Faithfully Picking up the Potomac

- Organized by local watershed group
  - 2012 – 35 attendees, 3 faith based organizations
  - 2013 – 72 attendees, 8 faith based organizations
  - 2014 – 65 attendees, 10 faith based organizations
- Speaker series
- Followed by local cleanups

Conducted by Muddy Branch Alliance

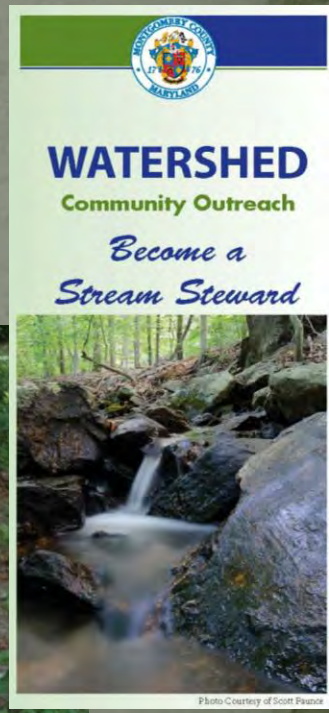
Watershed group activities 2013

- Included in Annual Reporting
- 9 watershed groups
- Over 4,200 volunteers recruited
- Over 10,000 volunteer hours - *service value of over $230,500*
- Over 300 public events hosted
- Over 1,000 bags of litter and recyclables collected and pulled from local streams

Stream Stewards Program

Reaching Beyond the Choir

- Mission
- Structure
- Policies and procedures
- Measurable goals
- Tracking system
- Training modules
- Implementing program



- Started in 2012
- Participation: 75 volunteers
  - 215 receiving updates
- Service Hrs: 678 donated hrs

Social Media

- Blogs, Twitter, Facebook
- My Green Montgomery TV
  - 8 episodes

- DEP website
  - 280,000 web hits
  - 96,000 unique to water themed content pages
  - Over 4,000 listserve subscribers
    - 27% increase from 2012
- My Green Montgomery
  - 5,500 unique visitors
  - 1,400 unique page views on water themed content
    - 24% increase from 2012

Stormwater Awareness GeoTrail

- Conservation Corps Volunteer
- Maryland Geocaching Society
- Public Libraries
- Dept. Of Recreation
- Watershed Groups
- Schools

“Caching the Rain”

Montgomery County’s Stormwater Awareness Geocaching Program

By: Virginia Vassalotti
Chesapeake Conservation Corps Volunteer
Montgomery County Department of Environmental Protection
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What is Stormwater Runoff and Stormwater Pollution?

Stormwater runoff is the excess water that is not absorbed in the ground during a precipitation event.

Many people believe stormwater is treated after entering our storm drains. This is not the case; stormwater typically flows **untreated** into streams, rivers, lakes, and ultimately the Chesapeake Bay.

Stormwater is a major cause of pollution to our waterways. It picks up trash, debris, sediment, chemicals, and pollutants and flows directly into our waterways.

About 12% of overall cover in Montgomery County is ***impervious*** (not allowing water to soak through the ground).

This is about the size of Washington D.C.!

What is Geocaching?

Geocaching is an outdoor scavenger hunt to find “geocaches,” or treasures that anyone with a GPS enabled device, such as a smartphone, can participate in.

What is in a typical geocache?

A *traditional* geocache consists of:

- a waterproof container
- a logbook
- a pencil to record time and date of discovery, as well as code name of the finder

Are there other types of geocaches?

Yes! There are many types of geocaches.

Some of them include:

- *Multi-cache:* two or more geocaches with clues leading from one GPS coordinate location to another
- *Mystery/puzzle:* involves solving a puzzle or riddle to find the coordinates of the geocache
- *Event caches:* involves a group search or gathering to discuss the location of a geocache
- *Earthcaches:* include educational earth science lessons online

“Caching the Rain”

How does geocaching and stormwater pollution fit together?

Montgomery County Department of Environmental Protection is working to create an innovative stormwater awareness geocaching program that incorporates family-fun with personal engagement in stormwater pollution prevention.

The Program:

Geocaches will be placed at or near stormwater facilities within Montgomery County public property and include an educational component.

There will be a variety of types of geocaches to engage the public’s interest.

Once proven successful through the initial pilot, geocaches will remain for future searches and citizen engagement. Additional geocaches may also be added following the pilot.

Potential Locations

Bioswale

Conservation landscaping

Rain barrel

Rain gardens

Reason for Need

The County is responsible for retrofitting 4,292 acres (6.7 square miles) of impervious surfaces. That’s the equivalent of 3,307 football fields!

We need the residents’ help to reach this goal!

Goals:

The final goal of the program is to change residents’ behavior to prevent stormwater pollution, including encouraging installation of stormwater facilities on their property.

Some stormwater facilities include:
- Rain gardens
- Dry wells
- Rain barrels
- Conservation landscaping

Evaluation:

Preliminarily, participation and popularity will be tracked through an online geocache account. Participants in the program will be surveyed periodically on the program’s influence on their decisions and behaviors towards preventing stormwater pollution. Based on user feedback, the program will be improved as needed.

Acknowledgements:

Special Thanks to:

Ryan Zerbe - Watershed Outreach Planner, Montgomery County Department of Environmental Protection

Meosotis C. Curtis – Manager, Stormwater Permit Coordination, Montgomery County Department of Environmental Protection

Tara Baker – Program Coordinator, Chesapeake Bay Trust

For More Information:

Contact: Ryan Zerbe at Ryan.Zerbe@montgomerycountymd.gov
or Virginia Vassalotti at Virginia.Vassalotti@montgomerycountymd.gov
or
http://www.geocaching.com/

In process & going forward:

- New DEP Logo & Branding Contract
- Program Surveying
- Implementing RainScapes Marketing Plan
- Increase efforts for Watershed group capacity building
  - Strategic Planning, Volunteer Recruitment, & Marketing
- Expanding Pet Waste Program
- White Oak Anti-Littering Campaign
- Expanding Stream Stewards Program
  - Maintaining ESD facilities
  - FrogWatch program
- Riparian Buffer Restorations
- Lawn Care Stewardship campaign

Take home:

- Stormwater fee structure makes a world of difference*
- Neighborhood advocates or liaisons are key
- Identify the target audience(s)
  - General public is ***not*** a target audience
- Plan, plan, plan; Evaluate, evaluate, evaluate
- Go to where the people are.
- Just like Diet pills, there's no cure all.
  - Multiple approaches are necessary.

Questions?
Department of Environmental Protection
Montgomery County Maryland
Save the Streams for our Future!!
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