

Montgomery County Green REALTOR® Education Session

Montgomery County Dept. of Environmental Protection

Staff (contact email and topic)

[Ann English](#)

Stormwater Management & Site Techniques

[Laura Miller](#)

Trees

[Eileen Kao](#)

Waste Reduction, Reuse, and Recycling

[Michelle Vigen](#)

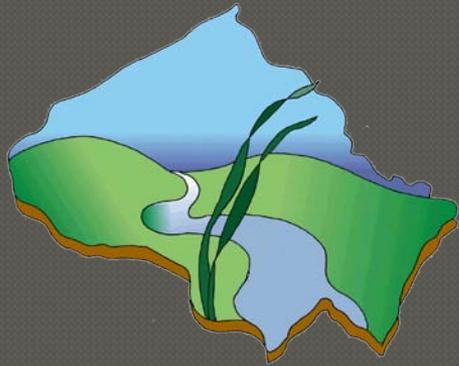
Energy and Home Performance

[Stan Edwards](#)

Indoor Air Quality, Pesticides and Noise

[Jessica Jones](#)

Resources



RainScapes Program



Montgomery County Department of
Environmental Protection



Ann English, RLA, ASLA, LEED AP BD+C
RainScapes Program Manager
November 13, 2014

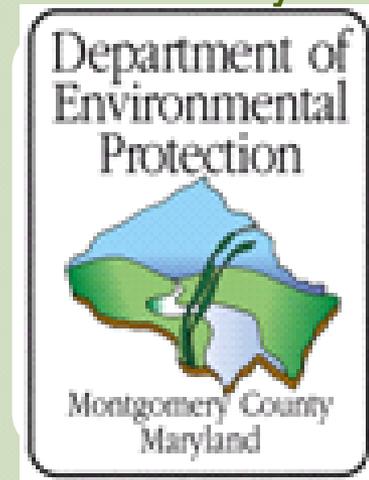
Federal



State



County



EPA

Clean Water Act
(1972)

Expanded to
require
municipalities to
get permits for
stormwater runoff
discharge (1987)

NPDES MS4

Permit Program

Maryland
Stormwater Act
2007

requires
ESD to the MEP
effective May
2009 with new
Chapter 5 and
local ordinance

Montgomery
County

NPDES MS4

Stormwater
Discharge
Permit

2010-2015

National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit Requirements

By February 2015 (end of permit), Montgomery County is required to add ESD runoff management to impervious acreage equal to **20% of the impervious acreage** that currently lacks MEP management

RainScapes is required to add treatment to 50 IA

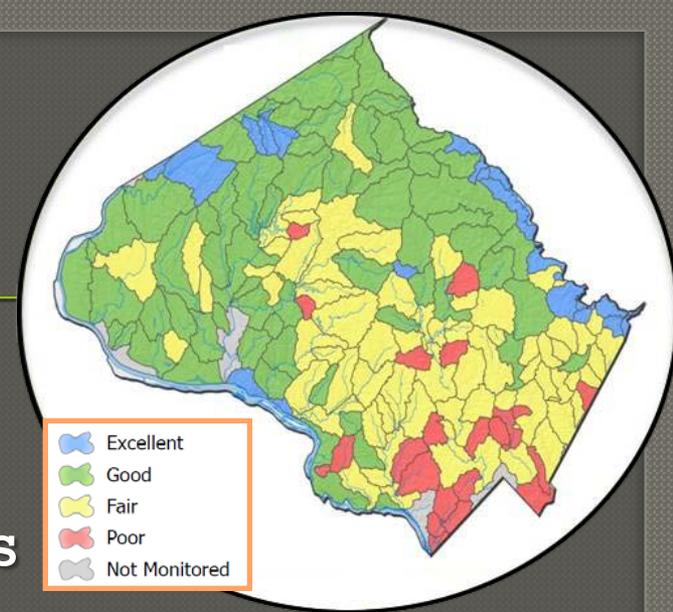


MS4 Permit

What is the County doing to protect our Streams?

- Restore our streams and watersheds
 - *Add runoff management*
- Meet water quality protection goals (TMDLs)
 - *Reduce pollutants getting into our streams*
 - *Focus on watersheds showing greatest impacts*
- Requires additional stormwater management for **20 percent** of untreated impervious surfaces (4,292 acres = 6.7 square miles).

Equivalent to 3,307 football fields!
- Educate and engage all stakeholders
 - *Individual actions make a difference!*



Watershed Management Division

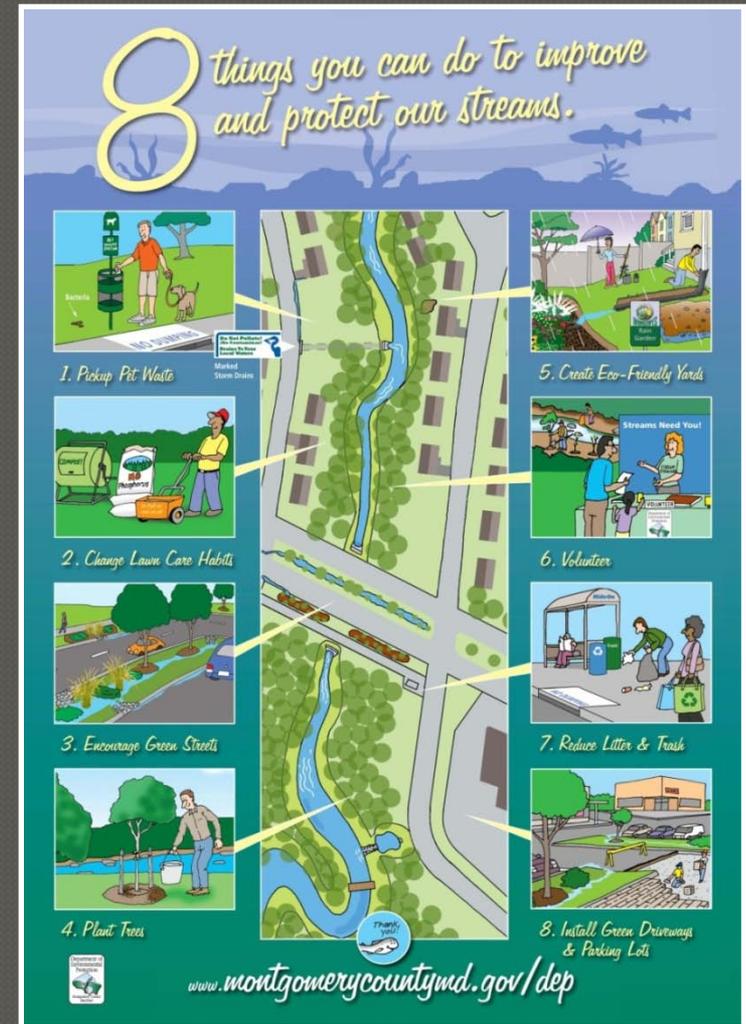
- ◉ Stormwater Permit Coordination
 - Reporting, Monitoring, and Watershed Outreach
- ◉ Stormwater Management Facilities
- ◉ Watershed Restoration
 - CIP & RainScapes
- ◉ Construction Management



Outreach and Community Engagement

8 Priorities

1. Pet Waste Management
2. Lawn Stewardship
3. Encouraging Green Streets
4. Outreach and Implementation of Riparian Buffers
5. RainScapes Projects
6. Community and Volunteer Involvement
7. Anti-littering
8. Reducing Parking Lot Runoff



Watershed Restoration: Going upstream !

Retrofits, Green Streets and RainScapes: Getting to the Source

Urban Stormwater Management

- Slow It Down
- Spread It Out
- Soak It in



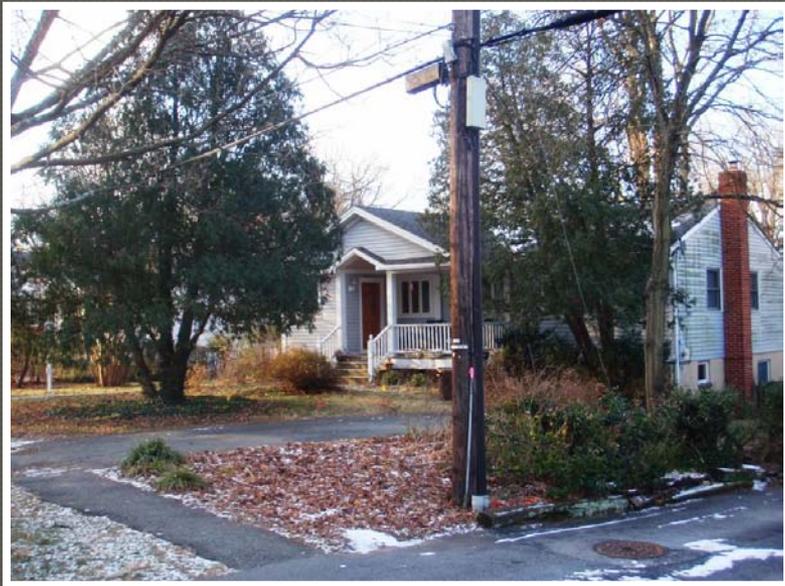
Green Streets – Look like gardens, work like a stormwater treatment plant



RainScapes convert yard spaces into attractive and functional spaces that soak up the rainwater



What was lawn is now a Rain Garden



Asphalt Drive
before



Permeable Interlocking Concrete Pavement
after

What Does a RainScape Look Like?



Many scales and settings



Bank planting slowing runoff



HOA entrance

How does it function?



Often, like an attractive dish shaped garden



Other times, like a pink cloud....



Sometimes like a big tank

A photograph of a bioretention area. In the foreground, there is a wooden bench on the left. The middle ground is dominated by a dense bed of tall, green grasses and several large, bright red flowers. In the background, there is a parking lot with several cars, a wooden fence, and a tall street light. The sky is overcast.

Improve Water Quality

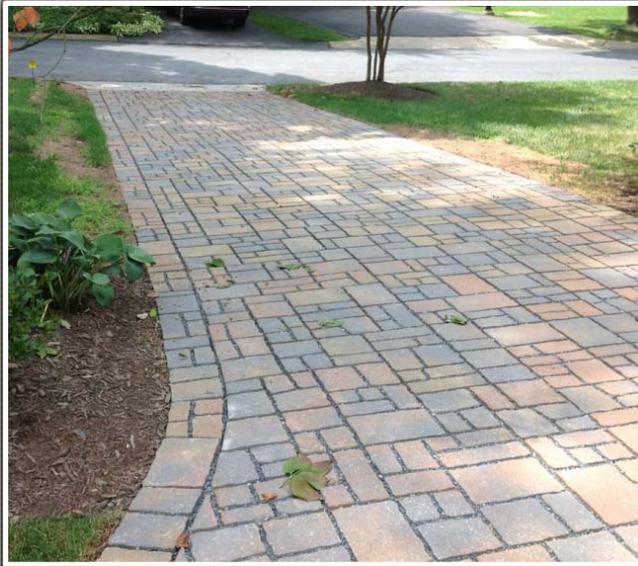
Bioretention example

- Capture and treat the required water quality volume
- Remove 80% of total suspended solids (TSS)
- Remove 40% of total phosphorus (TP)
- Have an acceptable longevity rate in the field

Sometimes it looks like part of the hardscape



Rain garden/ stormwater
planter

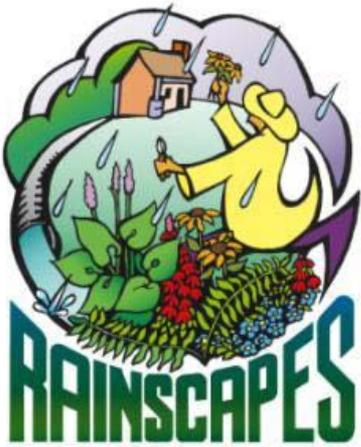


Permeable Interlocking
Concrete Pavement
Driveway



Cistern

RainScapes Techniques at home



Green Roof

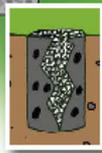
" .623 gallons of water falls on each sq. ft. of roof during the during a normal rainstorm of 1". A 1000 sq. ft conventional roof can shed 623 gallons when there is an inch of rain. Green roofs reduce and clean this stormwater runoff before it hits the ground.

Conservation Landscape

Loosened and improved soil, planted with easy-to-maintain native plants that soak up the rain.

Dry Well

collects stormwater from rooftops or driveways and filters the rainwater through a small stone-filled pit, then into the underlying soils



Canopy Trees

Leaves intercept raindrops and retain them, thus reducing stormwater runoff

Pavement Removal

allows more water to soak into the ground when you plant native plants.

Rain Gardens

A spoon-like, concave area filled with a special soil mix that collects rainfall and allows it to filter into the ground

Cistern

Larger than a rain barrel, cisterns perform the same water harvesting benefits and are no more aesthetically intrusive than an air conditioner.

Rain Barrels

collects and stores rain water from rooftops

Permeable Surfaces

allow rainwater to rapidly infiltrate and enter the ground where it is naturally filtered



Rewards Rebate Program:

Rain Gardens

Site must pass a perk test

Whichever is greater: \$1,200 per garden or a Square foot amount based on soil depth



Townhome Community Project

5 roofs of drainage



Rewards Rebate Program: Conservation Landscaping

- \$2.00-\$3.00 per square foot
- Minimum 250 square foot conversion of turf area or invasive species.
- Impervious surface must drain into site





Steep site, before Conservation
Landscape



Steep slope after Conservation
Landscape
Terracing and native plants installed

Rewards Rebate Program: Tree Canopy

- **\$200 per tree**
- Number of trees determined by available space
- Must be providing shading or cover to impervious surface
- Must be on our canopy tree list
- Planted between September 15 and April 30th



Rewards Rebate Program: Permeable Paver Retrofits

- **\$1,200 or \$4.00** a square foot IA treated. Whichever is greater.
- Installed by a certified ICPI contractor with an additional certification in PICP
- Replaces existing impervious surface
- A downspout filter must be used if the downspout is connecting into the pavement.

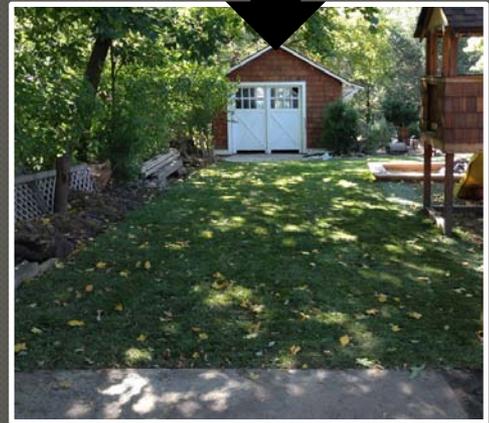


Rewards Rebate Program: Pavement Removal

\$4 per square foot for conversion to a
conservation landscape

\$2 per square foot for conversion to turf.

- Must be replaced with with conservation landscape or sod
- Sub-base needs to be removed
- 9" of de-compaction with 2" of compost



Rewards Rebate Program: Green Roofs

- **\$10/ SF**
- **Minimum 250 square feet**
- *Must be on an existing roof*



Rewards Rebate Program: Water Harvesting: Cisterns



Rewards Rebate Program: Rain Barrels

- **\$250 per property**
- *must capture 200 gallons*



Rewards Rebate Program: Dry Wells



- **\$600 per property**
- May be linear drywell
 - DIY
- OR
- conventional drywell
 - contractor installed

Check out our website for more info on designs



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Overview

The RainScapes Program



RainScapes are watershed-friendly ways to reduce rainfall runoff. The County's RainScapes Program provides information and guidance to County property owners who are interested in protecting the environment. When it rains in Montgomery County, some of the water soaks in the ground. Unfortunately, most of that stormwater flows across hard surfaces like driveways, roofs and patios collecting pollution along the way and reaching our streams. Runoff from hard

surfaces can account for 80 percent of the stormwater runoff in some areas. Runoff enters the County storm drain (a.k.a. storm sewer) system, and then enters our streams causing damage to the streams and ultimately the Bay by causing erosion, and mixing in other pollutants such as trash, nutrients and pet waste.

RainScapes projects are designed to slow the runoff, and reduce the amount of runoff and pollutants entering our streams. Stormwater that soaks into the ground is filtered by the soil and replenishes groundwater and stream levels, and keeps our streams healthy and able to support a wide

range of functions. Additional environmental benefits of these projects include reduced energy and water consumption and improved air quality in our suburban landscape.

The Montgomery County Department of Environmental Protection (DEP) is offering rebates to encourage property owners (residential, commercial, and private institutional) to reduce runoff from their properties by using RainScapes techniques for natural drainage projects. RainScapes techniques are onsite stormwater management tools that reduce stormwater runoff, improve the County's water quality, and may add value to your property.

The RainScapes Rewards Rebate Program

The Montgomery County DEP RainScapes Rewards Rebate Program offers financial incentives in the form of rebates to property owners who install RainScapes techniques.

- Eligible drainage projects include:
- Planting rain gardens
 - Replacing turf grass with conservation landscaping
 - Planting rain tree canopy
 - Replacing existing hard surfaces with permeable pavers

- Installing rain barrels, cisterns, dry wells or a green roof to replace an existing roof
- Removing pavement

A property is eligible for a rebate whether it is residential property or commercial, multi-family, or institutional property. Annual funds for the programs are limited, so rebates will be awarded on a first come, first served basis.

This manual provides planning and installation guidance for homeowners about the voluntary stormwater management practices

highlighted in the County's RainScapes Program.

The RainScapes Program is funded by the County's Water Quality Protection Program.

You must submit your project to DEP for approval prior to the construction of your project. After completion of an approved project, you will submit your receipts to receive your rebate check in the mail.

For more information or to submit an application, please visit www.rainscapes.org.

Overview

page 1 of 7



RainScapes

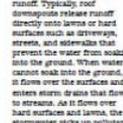
Environmentally Friendly Landscapes for Healthy Watersheds

Rain Gardens

Why should I install a rain garden?



One inch of rain falling over a 1,800 square foot home on a small lot can produce over 6,000 gallons of stormwater runoff. Typically, roof downspouts release runoff directly onto lawns or hard surfaces such as driveways, streets, and sidewalks that prevent the water from soaking into the ground. When water cannot soak into the ground, it flows over the surface and enters storm drains that flow to streams. As it flows over bare surfaces and lawns, the stormwater picks up pollutants such as sediment, grease and oil from cars, and pesticides and fertilizers from lawns. The storm drain pipes collect the stormwater and send it into the streams in surge, which can cause downstream erosion, flooding, and stream habitat problems.



Rain gardens are functional landscaping features. In addition to making your landscape look more attractive, they can address flooding and erosion problems in your yard and neighborhood.

What is a rain garden? Rain gardens are attractive landscape features constructed to capture stormwater runoff from hard surfaces such as your roof, driveway, patio, or sidewalk. A rain garden is a garden with a shallow depression that collects and drains stormwater. Rain gardens typically are planted with native plants with deep roots that loosen the soil, so stormwater can soak into the ground more easily. Then gardens help to meet the RainScapes' goal of using innovative natural approaches to reduce water pollution, stream channel erosion, and drainage problems caused by stormwater runoff.

Typical rooftop downspouts release runoff directly onto lawns or hard surfaces such as driveways, streets, and sidewalks that prevent the water from soaking into the ground. When water cannot soak into the ground, it flows over the surface and enters storm drains that flow to streams. As it flows over bare surfaces and lawns, the stormwater picks up pollutants such as sediment, grease and oil from cars, and pesticides and fertilizers from lawns. The storm drain pipes collect the stormwater and send it into the streams in surge, which can cause downstream erosion, flooding, and stream habitat problems.

Rain gardens are functional landscaping features. In addition to making your landscape look more attractive, they can address flooding and erosion problems in your yard and neighborhood.

(continued on page 2)

Rain Gardens

page 1 of 1



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Conservation Landscaping Techniques

Why should I implement conservation landscaping?



Each year, Americans spend countless hours tending to over 30 million acres of grass on their lawns. Millions of pounds of pesticides and millions of tons of fertilizer are applied annually. Lawn mowers use a quart of gasoline each hour and emit as much as 10 times the amount of hydrocarbons as a typical car. Thousands of gallons of water are used to water a single yard multiple times a week. On the East Coast, an estimated 30 percent of residential water "use" is for lawn irrigation. Traditional lawn and garden care takes time and uses non-renewable resources. What if there was a way to reduce these practices while maintaining a healthy, aesthetically pleasing landscape?

In Montgomery County, much of the native prairie is being replaced during the development process, and if that soil is not carefully replaced, many homeowners are left with soil that is mostly compacted. The clay is typically planted with non-native turf grasses which lack the deep roots to penetrate compacted

What is conservation landscaping? Conservation landscaping is a type of landscaping that benefits the environment by improving water quality, preserving native species, and providing wildlife habitat. Conservation landscaping replaces some of the turf grass of a traditional lawn with native plants that have adapted to Montgomery County's local rainfall and soil conditions and require less water and maintenance than the lawn grasses. Montgomery County, Maryland is located in the Piedmont region.

The Chesapeake Conservation Landscaping Council defines conservation landscaping through "Eight Essential Elements":

1. Is designed to benefit the environment and function efficiently and sustainably for human uses as well being
2. Uses locally native plants that are appropriate for site conditions
3. Includes a management plan for the removal of existing invasive plants and prevention of future nonnative plant invasions
4. Provides habitat for wildlife
5. Promotes healthy air quality and minimizes air pollution
6. Conserves and cleans water
7. Promotes healthy soils
8. Is managed to conserve energy, minimize waste, and eliminate or minimize the use of pesticides and herbicides.

A conservation landscape:



Conservation Landscaping Techniques

page 1 of 6



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Tree Canopy

Why should I plant trees?



A tree canopy is the crown of one or many trees that create an overhead cover of leaves. This cover and branches provide shade, capture dust and pollutants, and reduce noise. They also provide habitat for birds and other wildlife. Trees also help to cool the air and reduce the heat island effect. They provide shade for the ground and buildings, reduce water runoff, and help to improve air quality.



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Green Roofs

Why should I install a green roof?



A green roof is a roofing system of a building covered with a specially designed soil and vegetation system. Green roofs capture long green spaces on flat roofs and help to reduce runoff and improve water quality. They also help to reduce noise and improve air quality. They can also help to reduce energy costs by insulating the building and reducing the need for air conditioning.



Extensive green roofs are designed to be lightweight and to maximize the performance and environmental benefits.



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Dry Wells

Why should I install a dry well?



A dry well collects stormwater from rooftops or hard surfaces and allows it to infiltrate the ground. It is a good alternative to a storm drain. It can be used to collect runoff from a roof or driveway. It can also be used to collect runoff from a parking lot. It can help to reduce runoff and improve water quality. It can also help to reduce noise and improve air quality.



Some dry wells are designed to be lightweight and to maximize the performance and environmental benefits.



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Permeable Pavers

Why should I choose permeable pavers for my hard surfaces?



Permeable pavers allow water to infiltrate the ground through the pavers. They are a good alternative to concrete or asphalt. They can help to reduce runoff and improve water quality. They can also help to reduce noise and improve air quality.



Some permeable pavers are designed to be lightweight and to maximize the performance and environmental benefits.



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Rain Barrels and Cisterns

Why should I install a rain barrel or cistern?



Rain barrels and cisterns collect rainwater from rooftops or hard surfaces and store it for later use. They are a good alternative to a storm drain. They can be used to collect runoff from a roof or driveway. They can also be used to collect runoff from a parking lot. They can help to reduce runoff and improve water quality. They can also help to reduce noise and improve air quality.



Some rain barrels and cisterns are designed to be lightweight and to maximize the performance and environmental benefits.



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Pavement Removal

Why should I remove pavement from my property?



Removing pavement allows water to infiltrate the ground through the soil. It is a good alternative to concrete or asphalt. It can help to reduce runoff and improve water quality. It can also help to reduce noise and improve air quality.



Some pavement removal projects are designed to be lightweight and to maximize the performance and environmental benefits.



Some pavement removal projects are designed to be lightweight and to maximize the performance and environmental benefits.



Some pavement removal projects are designed to be lightweight and to maximize the performance and environmental benefits.



Some pavement removal projects are designed to be lightweight and to maximize the performance and environmental benefits.

Subscribe to our Gazette for e-mail Bulletins

What are RainScapes?

lements projects which reduce **stormwater** in properties within Montgomery County. The County (the form of RainScapes Rewards Rebates) to eligible RainScapes techniques on their property.



Rain gardens are one type of RainScapes

On this Page...

[RainScapes](#)

[Types of RainScapes](#)

[Benefits of RainScapes](#)

[Who Can Participate?](#)

[Resources and Calendar](#)

[Partnerships](#)

Related Links...

[RainScapes Rewards Rebates](#)

[RainScapes for Landscape Professionals](#)

[RainScapes for Schools](#)

[RainScapes Neighborhoods](#)



Scapes for Landscape Professionals

s, landscape architects, landscape designers, stone success of widespread adoption of RainScapes on county. The RainScapes program offers these s that educate them on all aspects related to he landscape professionals will be added to our (B) allowing county property owners to pick the best ect.

Who is a RainScapes Professional?

Professionals who attend RainScapes trainings and are

Environmental and "green" communities.

and other outreach campaigns.

of Montgomery County. Stormwater runoff is a suburban communities and the skills learned will only

event stormwater runoff through landscaping could within the RainScapes program.

RainScapes Landscape Professionals Gazette



On this Page...

[Benefits of RainScapes to Professionals](#)

[Resources & Course Content](#)

Related Links...

[What are RainScapes?](#)

[RainScapes Rewards Rebates](#)

[RainScapes at Schools](#)

[RainScapes Neighborhoods](#)



Go to Rainscapes.org and
Click "Rainscapes for
Landscape Professionals"

Click "Sign up for The
RainScapes Newsletter"



RainScapes Landscape Professionals List

-Attended RainScapes Training-

Updated on:
Monday, March 11, 2013

Firm	# of Rainscapes	RainScapes Installed	Company Website	E-Mail	First Name	Last Name	Phone
Stadler Nurseries	80	Tree Canopy	http://www.stadlergardencenters.com/index.php	debbie.fried@gmail.com	Debbie	Friedmann	301-944-1190
Goshen Enterprises, Inc.	20	Tree Canopy	www.goshenenterprises.com	kevin@goshenenterprises.com	Kevin	Bohrer	301-869-8544
Backyard Bounty	9	Rain Garden, Conservation Landscape	www.backyardbounty.net	info@backyardbounty.net	Edamarie	Mattei	301-221-4931
John Shorb Landscaping Inc.	7	Rain Gardens, Conservation Landscapes	http://jsli.com	rasma@johnshorblandscape.com	Rasma	Plato	301-897-3503 x105
American Plant Landscape Division	6	Rain Garden, Dry Well, Conservation Landscape, Tree Canopy	susy@apfgarden.com	dsaltman@gmail.com	Susana S.	Altmann	301-351-9909
Father Nature Restorative Landscaping	5	Rain Garden, Conservation Landscape, Rain Barrels		info@father-nature.com	Luke	Jessup	240-602-1235
Fine Earth Landscape, Inc.	4	Conservation Landscape, Permeable Paver Retrofit	www.fineearth.com	Joel@fineearth.com	Joel	Haffner	301-370-0470
J & G Landscaping Design, Inc.	4	Permeable Paver Retrofit, Pavement Removal, Dry Well	www.jglandscape.com	jpotter@jglandscape.com	Jeffrey	Potter	301-476-7600
Matts Habitats	4	Conservation Landscape, Tree Canopy		thenturalcapital@gmail.com	Matt	Cohen	202-841-1874
Rain Barrels by Aquabarrel.com	4	Rain Barrels, Cistern		info@aquabarrel.com	Barry	Chenkin	301-253-8855
American Plant	3	Rain Garden, Conservation Landscaping		donnae@apfgarden.com	Donna	Evans	(cell) 240-388-3752
AW Landscapes	3	Rain Garden		Alan@awlandscapes.com	Alan	Walcoff	

Check out our website for more info on design standards



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Overview

The RainScapes Program



RainScapes are water-reduced, friendly ways to reduce rainfall runoff. The County's RainScapes Program provides information and guidance to County property owners who are interested in protecting the environment. When it rains in Montgomery County, some of the water soaks in the ground. Unfortunately, most of that stormwater flows across hard surfaces like driveways, roofs and patios collecting pollution along the way, and reaching our streams. Runoff from hard

surface can account for 60 percent of the stormwater runoff in some areas. Runoff enters the County storm drain (i.e., storm sewer) system, and then enters our streams causing damage to the streams and ultimately the Bay by causing erosion, and making it other pollutants such as trash, nutrients and pet waste.

RainScapes projects are designed to slow the runoff, and reduce the amount of runoff and pollutants entering our streams. Stormwater that soaks into the ground is filtered by the soil and replenishes groundwater and stream levels, and keeps our streams healthy and able to support a wide

range of functions. Additional environmental benefits of these projects include reduced energy and water consumption and improved air quality in our suburban landscape.

The Montgomery County Department of Environmental Protection (DEP) is offering rebates to encourage property owners (residential, commercial, and private institutional) to reduce runoff from their properties by using RainScapes techniques for natural drainage projects. RainScapes techniques are cost-effective stormwater management tools that reduce stormwater runoff, improve the County's water quality, and may add value to your property.

The RainScapes Rewards Rebate Program

The Montgomery County DEP RainScapes Rewards Rebate Program offers financial incentives in the form of rebates to property owners who install RainScapes techniques.

- Replacing rain gardens
- Planting turf grass with conservation landscaping
- Planting low tree canopy
- Replacing existing hard surfaces with permeable pavers

A property is eligible for a rebate whether it is residential property or commercial, multi-family or institutional property. Annual funds for the programs are limited, so rebates will be awarded on a first-come, first-served basis.

This manual provides planning and installation guidance for homeowners about the voluntary stormwater management practices

- Installing rain barrels, cisterns, dry wells or a green roof to replace an existing roof
- Removing pavement

highlighted in the County's RainScapes Program.

The RainScapes Program is funded by the County's Water Quality Protection Program.

You must submit your project to DEP for approval prior to the installation of your project. After completion of an approved project, you will submit your receipts to receive your rebate check in the mail.

For more information or to submit an application, please visit www.rainscapes.org

Overview

page 1 of 7

www.rainscapes.org



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Rain Gardens

Why should I install a rain garden?



One inch of rain falling over a 1,800 square foot home on a small lot can produce over 6,000 gallons of stormwater runoff. Typically, roof downspouts release runoff directly onto lawns or hard surfaces such as driveways, patios, and sidewalks that prevent the water from soaking into the ground. When water cannot soak into the ground, it flows over the surface and enters storm drains that flow to streams. As it flows over hard surfaces and lawns, the stormwater picks up pollutants such as sediment, grease and oil from cars, and pesticides and fertilizers from lawns. The storm drain pipes collect the stormwater and send it into the streams or bays, which can cause downstream erosion, flooding, and stream habitat problems.

Rain gardens are functional landscaping features. In addition to making your landscape look more attractive, they can address flooding and erosion problems in your yard and neighborhood.

(continued on page 1)

What is a rain garden?

Rain gardens are attractive landscape features constructed to capture stormwater runoff from hard surfaces such as your driveway, patio, or sidewalk. A rain garden is a garden with a shallow depression that collects and drains stormwater. Rain gardens typically are planted with native plants with deep roots that loosen the soil, so stormwater can soak into the ground more easily. Rain gardens help to meet the RainScapes goal of using innovative natural approaches to reduce water pollution, stream channel erosion, and drainage problems caused by stormwater runoff.



Left: Rain garden. Right: Rain garden.



Left: Rain garden. Right: Rain garden.

Rain Gardens

page 1 of 1



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Conservation Landscaping Techniques

Why should I implement conservation landscaping?



Each year, landscape spend countless hours tending to over 20 million acres of grass on our lawns. Millions of pounds of pesticides and millions of tons of fertilizer are applied annually. Lawn mowers use a quart of gasoline each hour and emit as much as 10 times the amount of hydrocarbons as a typical car. Thousands of gallons of water are used to water a single yard during one summer. On the East Coast, an estimated 30 percent of residential water use is for lawn irrigation. Traditional lawn and garden care takes time and uses non-renewable resources. What if there was a way to reduce these practices while maintaining a healthy, aesthetically pleasing landscape?

In Montgomery County, much of the native species is wiped out during the development process, and if that soil is not carefully replaced, many homeowners are left with soil that is mostly compacted clay. The clay is typically planted with non-native turf grasses which lack the deep roots to penetrate the deep soil.

(continued on page 2)

What is conservation landscaping?

Conservation landscaping is a type of landscaping that benefits the environment by improving water quality, preserving native species, and providing wildlife habitat. Conservation landscaping replaces some of the turf grass of a traditional lawn with native plants that have adapted to Montgomery County's local rainfall and soil conditions and require less water and maintenance than the lawn grasses. Montgomery County, Maryland is located in the Piedmont region.

The Chesapeake Conservation Landscaping Council defines conservation landscaping through "Eight Essential Elements":

1. Is designed to benefit the environment and function aesthetically and ecologically for human use and well-being
2. Uses locally native plants that are appropriate for site conditions
3. Includes a management plan for the removal of existing invasive plants and prevention of future nonnative plant incursions
4. Provides habitat for wildlife
5. Promotes healthy air quality and reduces air pollution
6. Conserves and cleans water
7. Promotes healthy soils
8. Is managed to conserve energy, reduce waste, and eliminate or minimize the use of pesticides and herbicides.



Left: Rain garden. Right: Rain garden.

Conservation Landscaping Techniques

page 1 of 6



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Tree Canopy

Why should I plant trees?



Planting trees is an easy, affordable way to reduce the amount of stormwater runoff.

What is a tree canopy? A tree canopy is the crown of one or many trees that create an overhead cover of leaves. This cover and branches provide ground surfaces, such as sidewalks, driveways, and patios, reducing the amount of stormwater runoff. This cover also provides shade for the water that hits the ground and cools down stormwater runoff. This provides more benefits to the water and soil than a lawn.



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Green Roofs

Why should I install a green roof?



Typical rooftops are hard surfaces that prevent water from soaking into the ground. Green roofs are made of soil and plants that help to capture runoff and reduce stormwater runoff. This captured water may be used by plants on the roof, or retained.

What is a green roof? A green roof is a roofing quality of a building covered with a specially designed soil and vegetation system. Green roofs capture rain water on top of a building and prevent it from reaching the ground. This helps to reduce runoff and reduce stormwater runoff. This captured water may be used by plants on the roof, or retained.

Extensive green roofs are designed to be lightweight and to maximize the performance and environmental benefits.

Extensive green roofs are designed to be lightweight and to maximize the performance and environmental benefits.



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Dry Wells

Why should I install a dry well?



Directing roof or driveway runoff to a dry well can help to reduce runoff from your property because you are capturing the

What is a dry well? A dry well collects stormwater from rooftops or hard surfaces and directs it into the ground. The dry well is an underground structure that has walls or a grate. Once water enters the dry well, it passes through the walls or grate and then soaks into the ground. Dry wells then capture stormwater runoff between the area and surrounding soil. Dry wells reduce runoff from your property because you are capturing the

water from your property because you are capturing the



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Permeable Pavers

Why should I choose permeable pavers for my hard surfaces?



Permeable pavers allow water to soak into the ground. This helps to reduce runoff and reduce stormwater runoff. This captured water may be used by plants on the roof, or retained.

Permeable pavers allow water to soak into the ground. This helps to reduce runoff and reduce stormwater runoff. This captured water may be used by plants on the roof, or retained.

Permeable pavers allow water to soak into the ground. This helps to reduce runoff and reduce stormwater runoff. This captured water may be used by plants on the roof, or retained.

Permeable pavers allow water to soak into the ground. This helps to reduce runoff and reduce stormwater runoff. This captured water may be used by plants on the roof, or retained.



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Rain Barrels and Cisterns

Why should I install a rain barrel or cistern?



One inch of rain falling on a 1,800 square foot home can produce over 6,000 gallons of stormwater runoff.

What are they? Rain barrels and cisterns collect rainwater from your roof. The rainwater is stored in a barrel or cistern and can be used for watering plants, lawns, and trees that are difficult to water.

What are they? Rain barrels and cisterns collect rainwater from your roof. The rainwater is stored in a barrel or cistern and can be used for watering plants, lawns, and trees that are difficult to water.

What are they? Rain barrels and cisterns collect rainwater from your roof. The rainwater is stored in a barrel or cistern and can be used for watering plants, lawns, and trees that are difficult to water.



RainScapes

Environmentally Friendly Landscapes for Healthy Watersheds

Pavement Removal

Why should I remove pavement from my property?



Replacing pavement with turf grass or other vegetation can help to reduce runoff and reduce stormwater runoff. This captured water may be used by plants on the roof, or retained.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

What are the benefits and incentives? The RainScapes Rewards Rebate Program offers a rebate payment for removing a minimum of 100 square feet of pavement and installing permeable pavers and a minimum of 200 square feet of permeable pavers on each property. Homeowners must also have a water quality assessment performed on the property. The program is a voluntary program and participation is optional. The program is a voluntary program and participation is optional.

Pavement Removal

page 1 of 4

Water Quality Protection Charge Credit Program



Apply for a Stormwater Treatment Credit

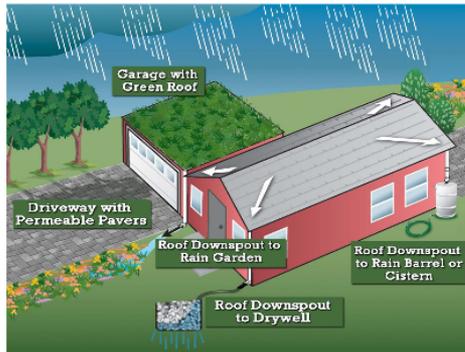
Stormwater management practices capture and treat rain water so that the water does not flow directly into storm drains or streams. They remove pollutants, protect public health and prevent flooding, stream damage and erosion.

WQPC credit is provided to property owners who own and maintain onsite stormwater management practices, and is based on the volume of water captured. The goal of the credit program is to provide incentives to property owners for meeting stormwater standards which best mimic pre-developed conditions and controls and treats stormwater to the maximum extent practicable.

- ▶ [Download the Water Quality Protection Charge Credit Guide \(PDF, 772KB\)](#)
- ▶ [Download the Stormwater Management Techniques Poster \(PDF, 3.26MB\)](#)

Types of stormwater management practices eligible for a credit include:

- Rain gardens
- Permeable pavement
- Green roofs
- Conservation landscaping
- Stormwater Ponds
- [View the List of Stormwater Management Practices Eligible for Credit.](#)



There are currently more than 7,000 stormwater facilities in the County.

How Do Stormwater Credits Work?

Property owners who own and maintain stormwater management practices on their property are eligible to receive the credit (reduction to the WQPC).

On this Page...

WQPC Credits

How are the Credits Calculated?

How to Apply for a Credit

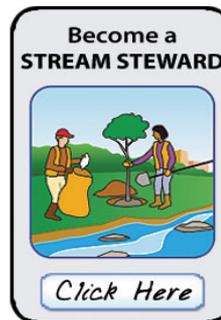
Related Links...

What is the WQPC?

Rates and Calculations

File for an Appeal or Waiver

Build a RainScape



Montgomery County Department of Environmental Protection
WATER QUALITY PROTECTION CHARGE
SINGLE FAMILY RESIDENTIAL CREDIT APPLICATION
Regulated by the Code of Montgomery County Regulations (COMCOR) 19.35.01.05

APPLICATION MUST INCLUDE A COPY OF PROPERTY TAX BILL AND SUPPORTING DOCUMENTATION INCLUDING PHOTOS OF THE PRACTICES FOR THE CREDIT

EMAIL TO:
WQPC.Credits@montgomerycountymd.gov

MAIL TO:
WQPC Credits, Dept. of Environmental Protection, 255 Rockville Pike Suite 120, Rockville, MD 20850

I am the (check one): Owner Authorized Agent
(If Authorized Agent, please attach copy of document creating authorization)

Property Account No: _____ (eight digit number)

Owner Name: _____

Premise Address: _____

Owner/Agent Address: _____

Phone Number: _____

Phone Number (Premise): _____

Email Address: _____

Application Checklist

1. Complete the stormwater treatment calculator
2. Complete the maintenance checklist/agreement
3. Provide photos of stormwater treatment

Print and sign the credit application and submit all required and supporting documentation by either email or mail. The email and mailing addresses are listed on this page and on the instructions.

Include photographs of each stormwater management facility or system. At least one of the photographs must feature picture of the entire house showing the location(s) of each facility or

Ready

How to Look up the WQPC ...

Montgomery County, MD
Environmental Protection

Water Quality Protection Charge

- Streams & Watersheds
 - What is a Watershed?
 - Watershed Health
 - Monitoring Our Waters
 - Special Protection Areas
 - Help Stop Water Pollution
- Watershed Restoration
 - How the County Restores Streams
 - Find a Restoration Project
 - County Implementation Strategy
 - Volunteer & Outreach
- Stormwater
 - What is Stormwater?
 - Types of Stormwater Management Best Practices
 - Stormwater Facility Inspections & Maintenance
 - How is Stormwater Regulated?
- RainScapes
 - What are RainScapes?
 - RainScapes Rewards
 - Rebates
 - Landscape Professionals
 - RainScapes for Schools
 - RainScapes Neighborhoods
- Water Quality Protection Charge
 - What is the WQPC?
 - [View Your Bill](#)
 - How was My Charge Determined?
 - Apply for a Credit
 - Waivers & Appeals
- Water Supply & Wastewater
 - Public Water & Sewer Service
 - Private Well & Septic Service
 - County Water & Sewer Plan
 - Water & Sewer Categories
 - Category Change Requests
 - Development Process Resources

What is the Water Quality Protection Charge?

The Water Quality Protection Charge (WQPC) raises funds to support the County's clean water initiatives to **improve stream and water quality and prevent stormwater pollution**. It is part of the Montgomery County property tax bill.

The WQPC is calculated based on the potential for a property to contribute to stormwater pollution. The bigger, more developed a property, the higher the WQPC.

Montgomery County first approved the WQPC in 2001 for single-family homes, condos and multi-family properties. The charge has appeared on residential property tax bills since 2002. A state law passed in 2012 now requires all large counties in Maryland, like Montgomery County, to have such a charge, and to apply the charge to all property owners, including nonresidential properties.

Become a STREAM STEWARD

MONTGOMERY COUNTY Maryland

Residents Businesses Government Departments Online Services MC311

Search for Tax Year: 2014

Search by Account ID: [Input Field]

-- or --

Search by Street Address: [Input Field]

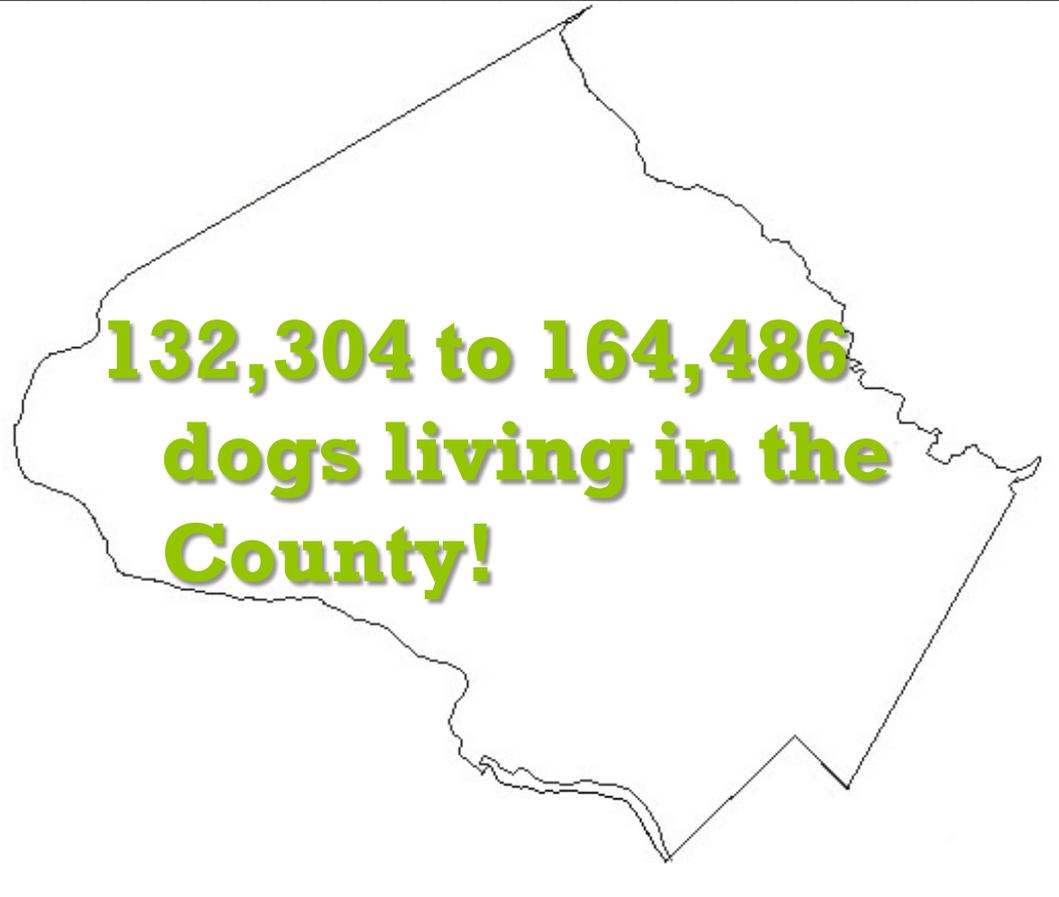
Search

Summary	
Charge Amount	\$176.80
Charge After Adjustments	\$176.80
Building Area (sq ft)	
Driveway/Parking Area (sq ft)	
Other Impervious Area (sq ft)	
Total Impervious Area (sq ft)	
Lot Area (sq ft)	
Property Category	
Account ID	
Address	

Learn more about the Water Quality Protection Charge

Select Language

Pet Waste?



**132,304 to 164,486
dogs living in the
County!**

The poop calculator

- A 40lb dog produces about 0.75lbs of waste.
- In Montgomery County daily
 - 0.75 pound/day equals 99,318 lbs. to 123,477 lbs. or
 - **Approx 50-60 TONS DAILY**

How many people leave the
waste behind?

40%



2 to 3 truck loads per day!

ESD to the MEP - permitted “facilities”

New construction & Additions

- Rain Gardens
- Infiltration Trenches
- Green Roofs
- Rain Barrels
- Cisterns
- Dry Wells
- Permeable Pavement



REALTORS:

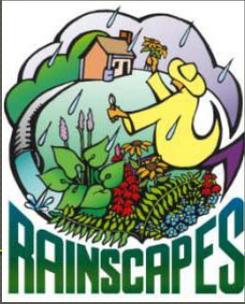
Properties/ Owners

- Individual homeowners
- Businesses
- Institutions
- Multi-family...

- Nurseries
- Landscape Designers
- Remodeling contractors
- Landscape Architects
- Pavement contractors

Green Contractors

- Stormwater management
 - Urban Tree Canopy Restoration
 - Watershed Restoration
 - Habitat Enhancement
- ## Department of Environmental Protection



RainScapes Team

Program Contacts

- **RainScapes Program**

- www.rainscapes.org

- **Email:**

- rainscapes@montgomerycountymd.gov

Ann English, RLA, ASLA, LEED AP BD+C
RainScapes Program Manager
ann.english@montgomerycountymd.gov
240-777-7759

Carla Ellern, RLA, ASLA, LEED AP BD+C
RainScapes Planner
carla.ellern@montgomerycountymd.gov
240-777-7756

Donna Evans, LEED GA
RainScapes Planner
donna.evans@montgomerycountymd.gov
240-777-7798

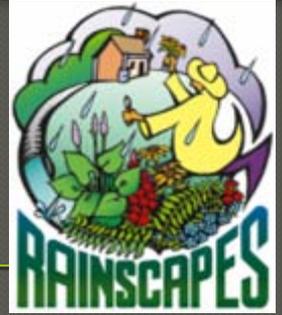
Pamela Rowe
RainScapes Planner
pamela.rowe@montgomerycountymd.gov
240-777-7714

Adam Ohl
RainScapes Principal Administrative Aide
adam.ohl@montgomerycountymd.gov
240-777-7702

How can GCAAR work with Watershed Management Division?

- Look outside the “informational” packet
- Promote RainScapes and other WMD programs
 - Stream Stewards
 - Volunteer programs in DEP
- Utilize things you are already doing to stay in touch with your client (How can this fit into your daily Routine?)
 - Regular Newsletters/coupons
 - Listserve’s and websites
 - Incentives & Promotions for a “RainScaped” or “Green” home
 - Contests

Questions?



Department of
Environmental
Protection



Montgomery County
Maryland

- www.rainscapes.org
- rainscapes@montgomerycountymd.gov

Break!

Please be back in 10 minutes!

Next up:

Trees

Waste Reduction, Reuse, and Recycling

Trees



Trees

Benefits of Trees

Trees add value to property... residential and businesses alike.



Photo courtesy of Bob Haight, USFS NRS

Trees



Two major questions to answer:

- When do you need a permit?
- When do you need an expert?

Trees

Is any part of the tree in a right-of-way?

Maryland Roadside Tree Law

- A permit is required to plant, trim, or remove a tree in any right-of-way.
- The permit requires permission from the owner.
- The permit usually requires a replacement.
- Cost is \$25



Trees

Is any part of the tree in a right-of-way?

Montgomery County Roadside Tree Law

- Requires a right-of-way permit for any building permit or sediment control permit when any part of a tree in a county-maintained right-of-way is impacted.



- Requires a tree protection plan.
- Requires replacement of one tree and payment for two more.

Trees

Do you need a sediment control permit?

- A sediment control permit from Montgomery County is required for:
 - New primary dwelling or non-residential building;
 - 5,000 square feet or more of ground disturbance; or
 - 100 cubic yards or more of earth movement.
- The cutting of 5,000 square feet or more of canopy is considered ground disturbance.
- Many municipalities require their own sediment control permits.

Trees

Forest Conservation Law



The Forest Conservation Law generally applies on properties over 40,000 sq. ft. when a sediment control permit is needed or subdivision occurs.

Trees

Is there a conservation easement?

- Mitigation is usually on land protected by permanent conservation easements.
- Conservation easements are recorded on plats.
- Use the Easement Locator Tool to find easements.



Trees

Conservation Easements

- Activity within an easement is limited.
- Buildings, sheds, benches, tables, most fences, and paths are generally not allowed.
- Hazardous trees may be felled but not removed.
- The Planning Department must authorize all activity within a conservation easement.

Trees

The Tree Canopy



The Tree Canopy Law generally applies if a sediment control permit is required.

It requires trees to be planted on-site or payment of fees into a dedicated fund.

Trees

Planting Programs



Fees from the Tree Canopy Law provide for tree planting programs. DEP is developing programs to plant trees on residential properties, in parking lots, and in multi-family communities.

Trees

Does the Tree Canopy Law apply?



The Law does NOT apply when a sediment control permit is not required.

Therefore, individual trees and small groups of trees are not regulated by the new Tree Canopy Law.

Trees

Are you in a municipality?

Many municipalities have their own laws and regulations concerning trees.



Trees

Is there an historic designation?

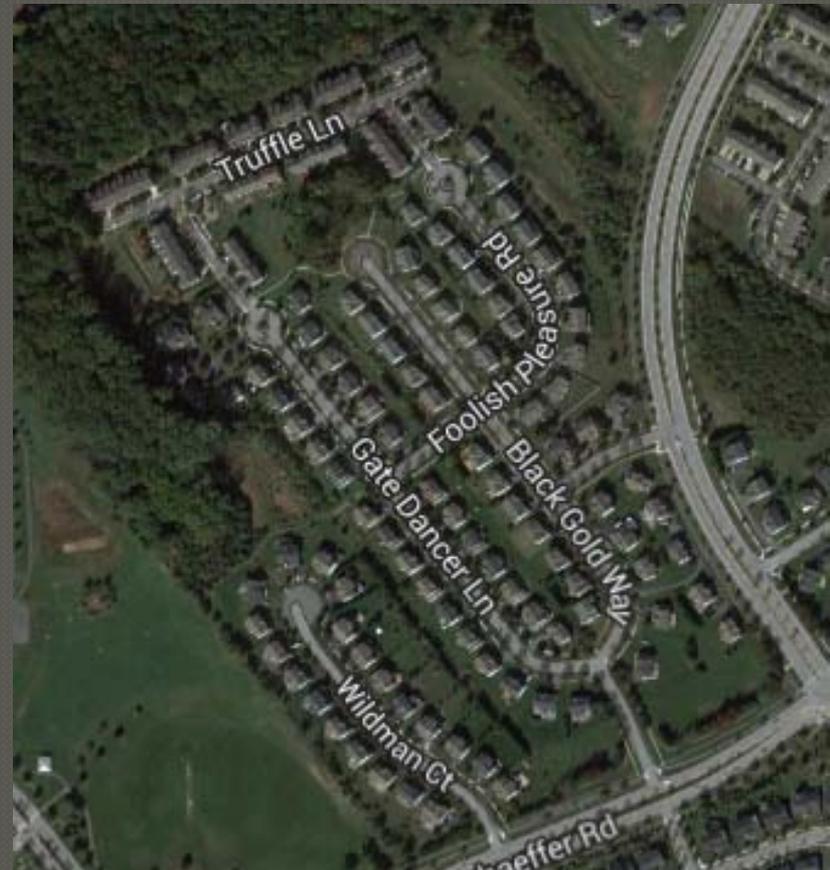
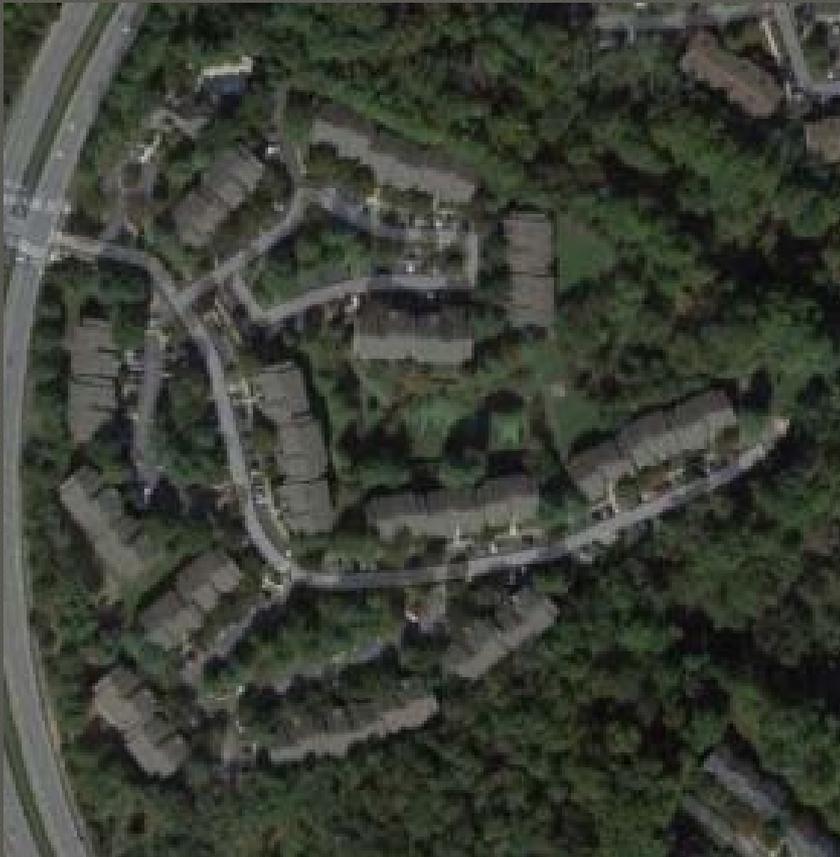
An historic designation often includes consideration of trees. Use the [Historic Designation Locator Tool](#).



Trees

Is there a Home Owner's Association?

Many communities have active Home Owner's Associations with by-laws concerning trees.

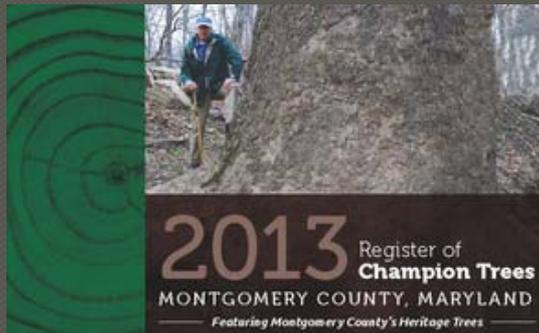


Trees

Is it a Montgomery County Champion Tree?

Champion Trees in Montgomery County are regulated by the Forest Conservation Law wherever they stand.

The Champion Tree Register is published every two years.



Trees

When may a permit be required to remove trees?

- ⦿ Is any part of the tree in a right-of-way?
- ⦿ Do you need a sediment control permit from Montgomery County?
- ⦿ Is there a conservation easement on the property?
- ⦿ Are you in a municipality with their own regulations?
- ⦿ Is there an historic designation on the property?
- ⦿ Is there a home owner's association with by-laws?
- ⦿ Is the tree a Montgomery County Champion Tree?

Trees

When do you call an expert?



Photo courtesy of cityofmandan.com

Trees

When do you call an expert?

Holes in the main stem



Trees

When to call an expert?

Fungus and mold



Trees

When to call an expert?

More than a third of the crown missing



Photo courtesy of bouldercolorado.gov

Trees

When to call an expert?

More than a third of the tree has leaves of the wrong color, shape, or size



Photos courtesy of elkrivernm.gov and fs.usda.gov

Trees

When to call an expert?

Leaning trees



Photo courtesy of capitolhillseattle.com

Trees

When do you need an expert?

And there needs to be a target.



Photo courtesy of crh.noaa.gov

Trees

When do you need an expert?

It is time to call an expert when you see:

- Holes in the main stem,
- Fungus and mold,
- More than a third of the crown missing,
- More than a third of the leaves are the wrong color, shape, or size, or
- A leaning tree.

And there needs to be a target.

Trees

Who are the tree experts?

- Maryland Licensed Tree Experts – To verify a licensed, call MD DNR Forest Service at 410-260-8531.
- Certified Arborists and Accredited Programs
 - International Society of Arboriculture (ISA)
 - Maryland Arborists Association
 - Tree Care Industry Association
 - American Society of Consulting Arborists



Photo courtesy of fallschurchva.gov

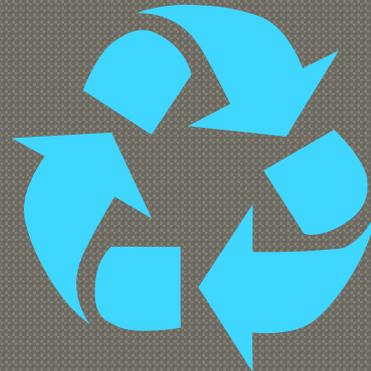
Trees

Questions?



Photo courtesy of A,D, Wheeler via Flickr

Waste Reduction & Recycling



Eileen Kao
Chief, Waste Reduction and Recycling Section
Division of Solid Waste Services
Montgomery County Department of Environmental Protection

Montgomery County's Recycling Goal

**70% by
2020**

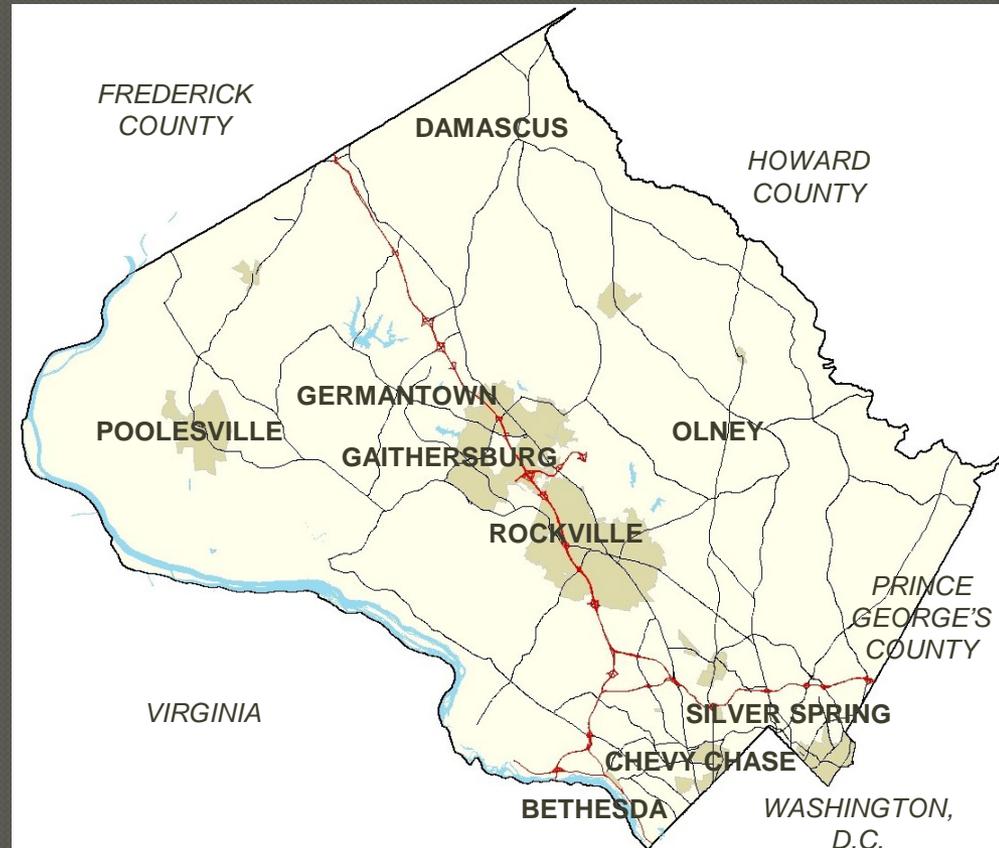
Minimize Waste & Maximize Recycling



Montgomery County Recycles!

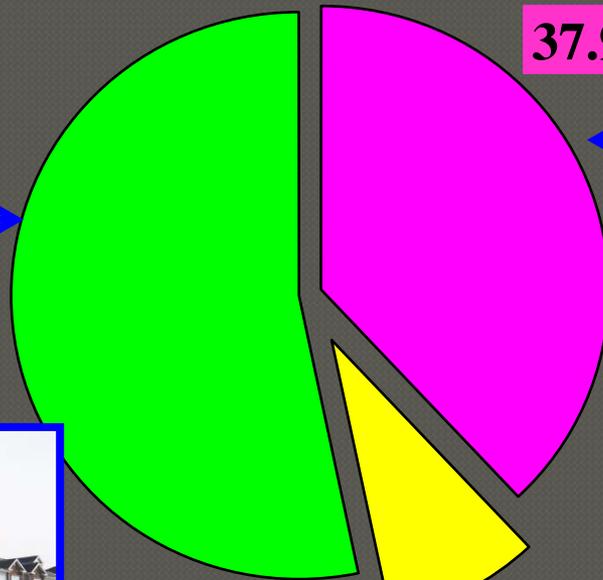
- ~700 multi-family properties
 - ~ 115,000 dwelling units
- ~213,000 single-family households
- ~37,000 businesses
 - ~520,000 employees

More than 1.5 million residents and employees living and working in Montgomery County



The Sources of Waste

1,080,344 tons of waste generated during Calendar Year 2012



53.3%

37.9%

8.7%



- Single-family
- Multi-family
- Commercial

Regulatory Framework

- First Recycling Regulation 109-92AM (1993)
- Revised Recycling Regulation 15-04AM (2005)
- Regulation 18-04 (2005)

 MONTGOMERY COUNTY EXECUTIVE REGULATION Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850	
Subject Residential and Commercial Recycling	Number 15-04AM
Originating Department DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	Effective Date February 8, 2005
Montgomery County regulation on: SOLID WASTE AND RECYCLING DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION REGULATION Issued by: County Executive Regulation No. 15-04AM COMCOR 48.00.03, Solid Waste and Recycling, Chapter 48 Authority: Montgomery County Code, 1994, Sections: 48-6, 48-24 and 48-51 Supersedes: Regulation 109-92AM Council Review: Method (1) under Code Section 2A-15 Register Vol. 21 No. 9 Effective Date: February 8, 2005 Sunset Date: None Summary: The proposed regulation describes the residential recycling requirements for single-family and multi-family dwellings (including reporting requirements for multi-family property owners), nonresidential recycling and reporting requirements, and recycling requirements for collectors of solid waste and recyclable materials. Comment deadline: September 30, 2004 Effective date: Address for comments: Director, Department of Public Works and Transportation Executive Office Building Tenth Floor 101 Monroe Street Rockville, Maryland 20850 Staff contact: Eileen Kao, Recycling Coordinator 240-777-6400	

What's the Best Thing to Do?

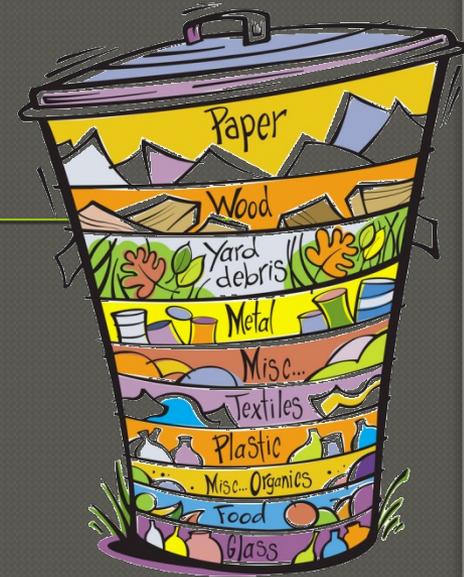
○ Reduce waste!

- Reduce the amount of waste you create to begin with!
- How can you do this?
 - **Use both sides of paper**
 - **Use reusable containers, mugs and utensils**
 - **Buy only what you need**
 - **Choose products with less packaging and buy in bulk**
 - **Choose products that come in packaging that CAN be recycled**



Waste Reduction

- Have a yard sale
- Donate unwanted books
- Reuse one-sided paper
- Reuse items before recycling/disposing them
- Make your own crafts



Waste Reduction

○ Reuse opportunities

- “Use It Again” Guide

www.montgomerycountymd.gov/useitagain

- Don't Dump. Donate! (DDD) Program
- Value Village, Goodwill, Salvation Army, your local library...
- Schools, senior centers, day care centers, art programs
- www.freecycle.org



Recycle Everywhere!



Recycle at Home



**Recycle at Your
Apartment/Condo**

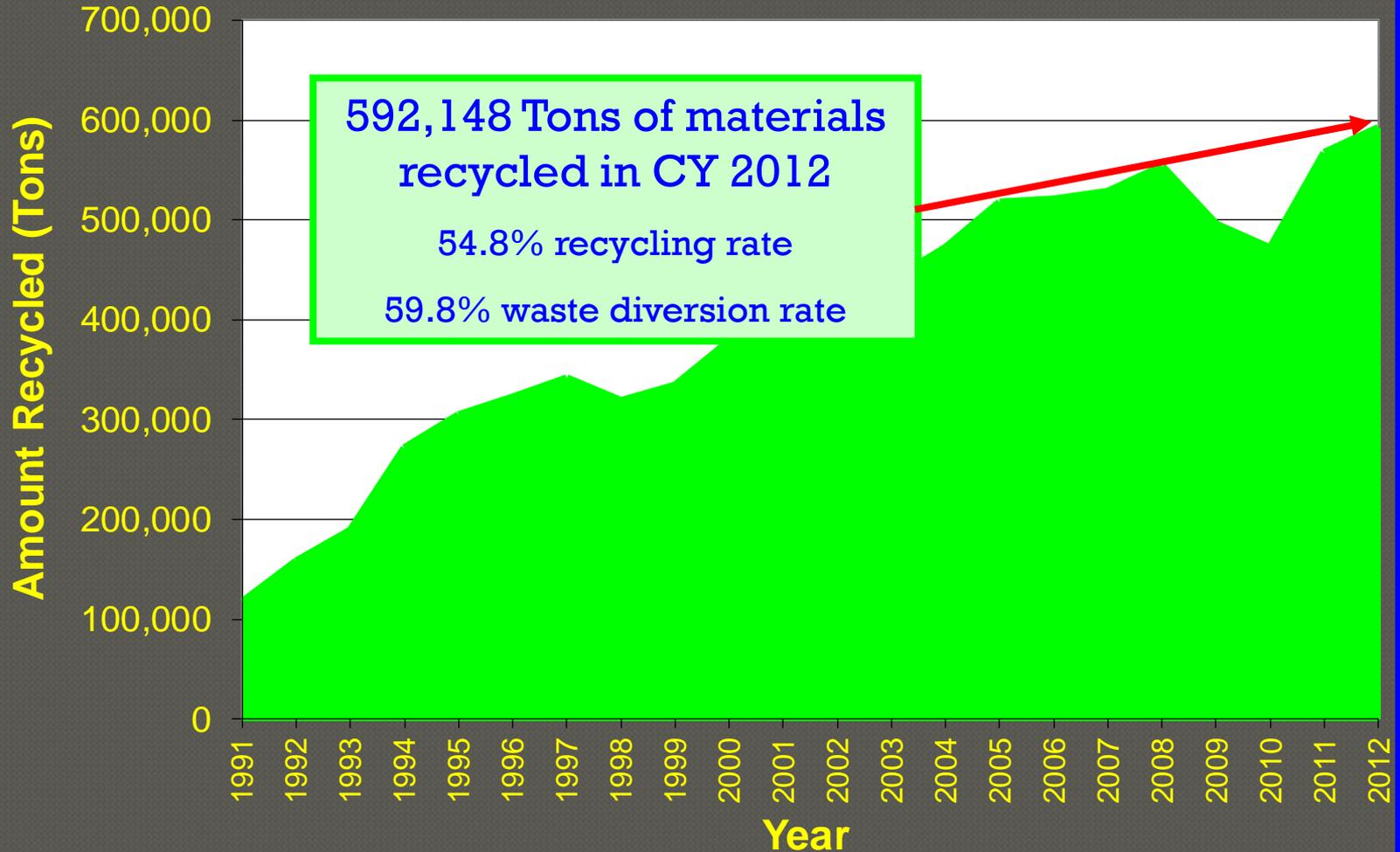


Recycle at Work



Recycle at School

Steady Increases in Recycling



Per Maryland Waste Diversion Rates & Tonnages 1/17/14

CY12 Recycling Rate by Sector



Recycling...



- Conserves limited natural resources
- Saves energy
- Reduces pollution

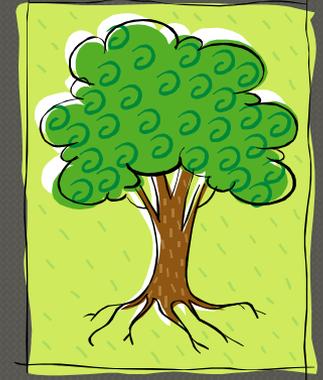


- Creates jobs and new technologies
- Reduces costs in making products
- Is important for our economy

RECYCLING...DID YOU KNOW?



- The energy saved from recycling one aluminum can will run a TV for 3 hours.
- Recycling 1 ton of paper saves 17 trees and 7,000 gallons of water.
- America's daily use of computer paper could go around the world 4 times.
- The energy saved from recycling one glass bottle will operate a 100-watt light bulb for four hours.
- Recycling one ton of glass saves the equivalent of nine gallons of fuel oil.
- Recycling creates jobs – recycling creates 36 jobs for each 10,000 tons of material recycled compared to 6 jobs for every 10,000 of tons of material brought to disposal facilities.



Single-Family Residential Recycling Collection



Split-body Recycling
Collection Vehicles

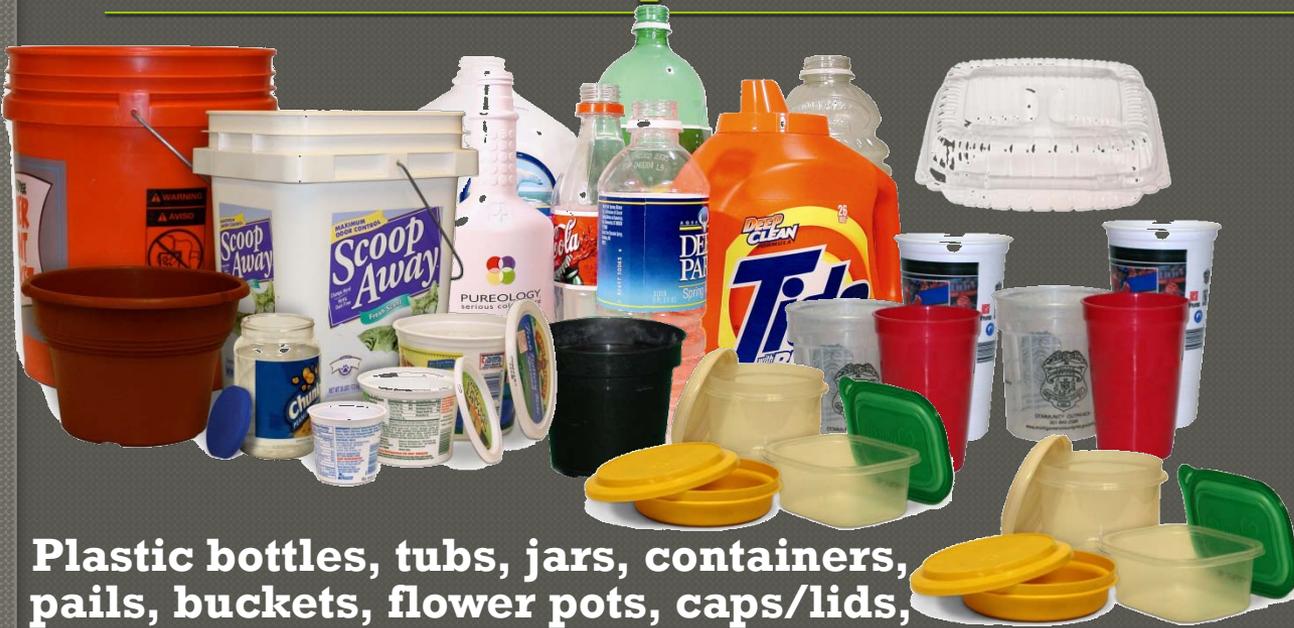
All powered with
Compressed Natural Gas
(CNG)



<http://www6.montgomerycountymd.gov/apps/dep/solidwaste/collectionday/index.asp>

Commingled Materials

All Recyclable Containers



Plastic bottles, tubs, jars, containers, pails, buckets, flower pots, caps/lids, clamshell containers, trays, and more

Glass bottles and jars



Bi-metal (steel/tin) and empty non-hazardous aerosol cans



Aluminum cans, foil, and foil products

Mixed Paper

All Clean and Dry Paper

Paperboard and cardboard boxes



Newspaper and inserts



Unwanted mail, envelopes, office paper, magazines, phone books, books, etc.



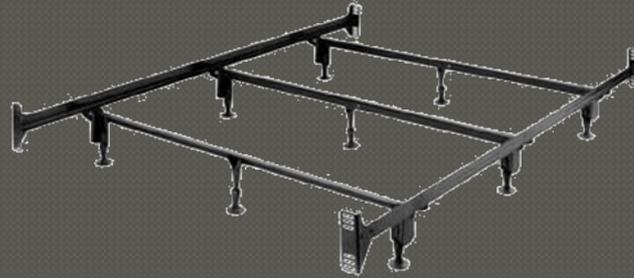
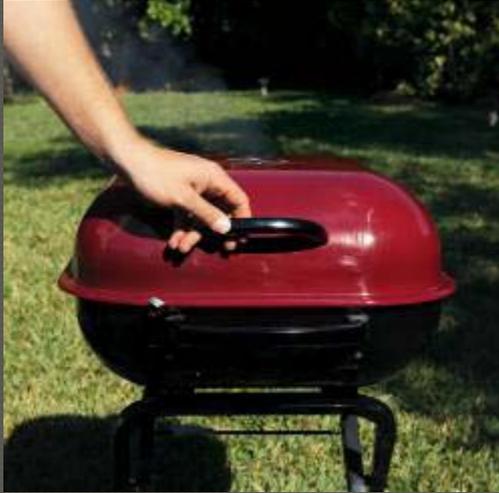
Coated paper items



Shredded paper



Scrap Metal Items



Yard Trim & Christmas Trees



Grass



Leaves



Branches



Christmas Trees

Backyard Composting

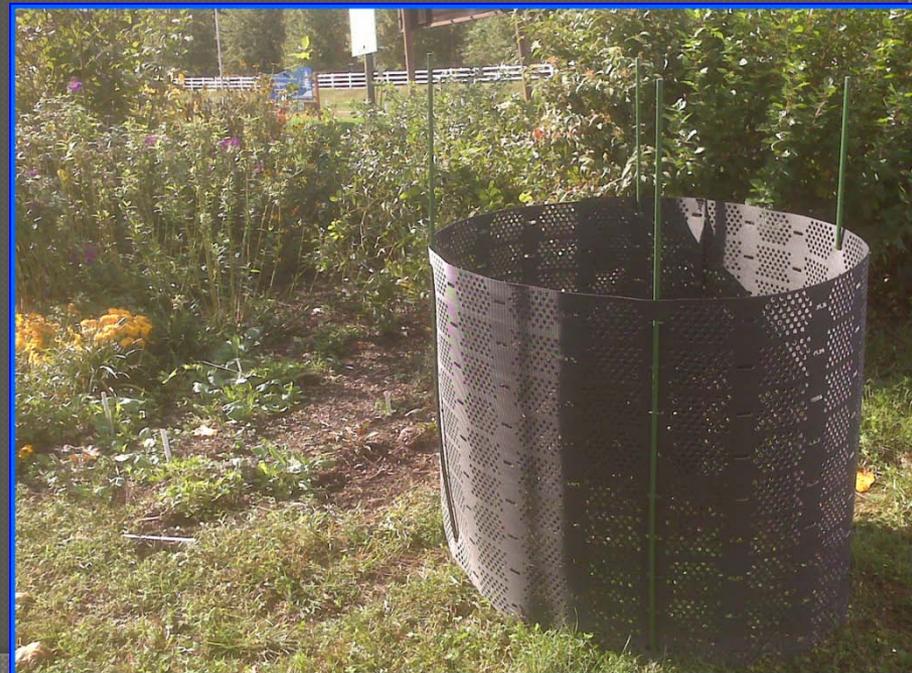
Instead of recycling this way...



Compost bins are available to residents at 19 locations throughout the County.

<http://www.montgomerycountymd.gov/sws/composting/bins.html>

try composting in
your backyard!



Waste Reduction & Recycling Information

www.montgomerycountymd.gov/recycling



Eileen.Kao@montgomerycountymd.gov

240-777-6406

Break!

Please be back in 10 minutes!

Next up:

**Energy and Home Performance
Indoor Air Quality, Pesticides and Noise
Resources!**

Energy on Sale: Deciphering and Increasing the Value of Energy in the Home

Presentation for GCAAR
November 13, 2014



Michelle Vigen
Senior Energy Planner
Montgomery County Department of Environmental Protection

Topics

DECIPHERING

- Green Home Labels: What's the Difference?
- Home and Appliance Energy Ratings
- Energy Disclosure Policy
- Energy Assessments

INCREASING VALUE

- Energy Efficiency and Renewable Energy Incentives
- Home Performance and Maintenance
- Buying and Selling Homes with Solar

Energy, the wealth between the walls

Energy is an invisible but necessary service (you wouldn't sell a house without it, right?). The value proposition around energy isn't about additional amenities...

Energy efficiency improvements and renewable energy systems aren't just granite counter tops and high ceilings. Energy systems are **CENTRAL** to the experience of living in a home and will either **DRAIN** the homeowners or **GENERATE** wealth. *What would you rather sell?*

1. Deciphering the energy value of a home
2. Ways to increase the energy value of a home

Green Construction Labels

These labels indicate inclusion of sustainability measures, including water, air quality, and energy

- ◉ ENERGY STAR Certified Homes by US EPA
 - Energy efficiency standard plus WaterSense and Indoor Air+
- ◉ LEED Homes by US Green Building Council
- ◉ EarthCraft: for southeastern climes
- ◉ NAHB Green Certification: code-based
- ◉ Zero Energy Ready Homes by US DOE
- ◉ Passive House: efficient and tight homes

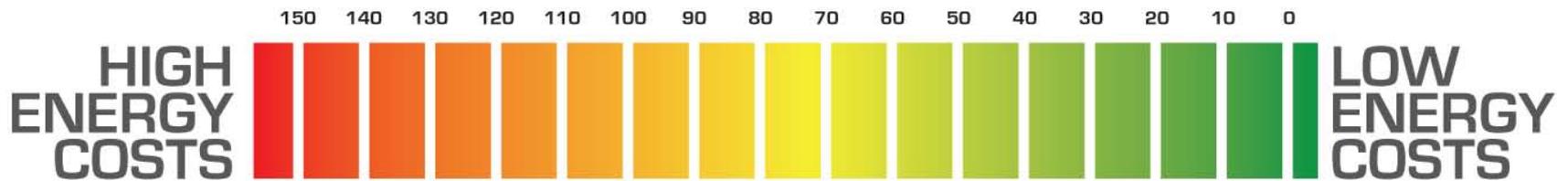


Green Home Ratings

Rating systems can convey how well the home performs energy-wise.

- ◉ Home Energy Score (HES) by US DOE/BPI
- ◉ Home Energy Rating System (HERS) by RESNET
- ◉ Home Energy Yardstick by US EPA
 - Do-it-yourself online benchmark

These ratings and scores are usually calculated via a home energy assessment or audit and should be accompanied with energy efficiency saving measures. Ask for a copy of this report for prospective buyers.



130 A typical existing home

100 A typical new home



This home is **36%** more energy efficient than a typical new home, & **66%** more energy efficient than a typical existing home.

1528 Fawn Run Crossing • Deerfield (Norman)
 1,556 sf. ft. (m.o.l.) 3 beds 2 baths \$149,491

Home Energy Rating System (HERS) by RESNET

Energy Disclosure Policy

- The law requires that sellers provide an energy cost and consumption history along with the benefits of home energy audits and efficiency improvements; for single family homes and individually metered condos
 - 12 months prior to listing and updated every 6 months it remains on the market
- Data
 - Collect at time of listing from previous owner
 - Copies of bills or cost & usage data (owner can get from utility online)
- Intended to inform buyers of the home's energy performance before sale
 - Encourage including energy assessment in home inspection process
 - Financing and energy efficiency opportunities at the time of sale
- Disclosure fact sheet (sellers / consumers)

Home Energy Assessments

A home energy assessment offers more than an evaluation; professionals will inspect systems and equipment and can alert you to any issues; can include in inspection.

The energy assessments below will make basic adjustments to equipment and replace bulbs and showerheads – perfect for someone's new home!

- Home Performance with Energy Star (HPwES)
 - \$400 (\$100 with \$300 discount from utilities)
- Quick Home Energy Checkup (QHEC)
 - Basic assessment (no cost from utilities, e.g. Pepco)

Energy Efficiency Incentives

You can use all of these incentives at once...

● Incentives

- Utilities: [Pepco](#) / [BGE](#) / [Potomac Edison](#)
 - Washington Gas – coming soon!
- County: \$250 [tax credit](#) for energy efficiency improvements
- Federal: \$500 tax credit [expired end of 2013](#), extension pending

● Financing

- [MD Home Energy Loan](#) for energy efficiency (by [MCEC](#))
 - Unsecured loans of up to \$20,000 at as low as 6.99% interest rate

● Energy Efficiency Pays

- Greater comfort in summer and winter
- Lower energy bills
- Recognition through Ratings and Certifications (previous slides)

Renewable Energy Incentives

Increase the value of the home; reap energy cost savings

● Incentives

- Local: Bulk rates for solar via [community solar](#) initiatives
- County: Currently back-logged
- Federal: [30% rebate](#) via tax credit through Dec. 2016

● Financing

- [Maryland Clean Energy Grant](#) (by [MCEC](#))
 - \$1,000 / solar electric; \$500 / solar water heating;
 - \$3,000 / geothermal heating and cooling installation

● Renewable Energy Produces Value

- Visible and significant amenity and asset (sources: [NYT](#)/[Sandia Labs](#))
- [Renewable Energy Credits](#) (if system is owned) generate income
- Lower energy costs

Home Performance & Maintenance

Some things every new home owners should want done before move-in...

◉ DIY

- Clean air filters
- Thermostat battery and check schedule and temps

◉ Contractor Check-up

- Electric: Confirm fidelity of electrical connections
- HVAC general: Condensate drain clear, controls ensure proper operation, oil moving parts
- A/C: Condensate drain, clean coils and check evaporator, refrigerant levels
- Heating: Gas/oil connections, heat exchanger

Source: [ENERGY STAR Maintenance Checklist](#)

Homes with Solar

● Value of Solar

- Homes with solar produce wealth due to lower energy costs, [SREC](#) income, and “status”

● Owned vs. Leased Panels

- Both will need to be considered in the sale/purchase of a home

● Resources

- [PV Value Real Estate Tool](#): estimate value to home
- [Making the case](#): Solar energy savings and ROI
- “\$5,900 Resale Value Per Kilowatt” ([LBNL](#))
- [Hanley Wood payback](#): Solar 97% (Forbes)
- Solar [price premium](#) = 3.5% (generation & social status)
- Solar installation models and appraisal impacts ([Sandia Labs](#))
- Transferring leased panels to new owner ([NPR](#))
- MD/DC/VA Solar Energy Industries Association ([MDV-SEIA](#)) has information on incentives and a directory of solar consultants and installers

Resources

- [MC DEP Energy](#)
 - Energy tab includes information on energy efficiency and renewable energy
- [Utilities](#) have programs/funds to reduce energy costs
 - [Pepco](#) / [Potomac Edison](#) / [BGE](#)
- [Maryland Energy Administration \(Residential\)](#)
- [DSIRE](#)
 - Database of State Incentives for Renewables and Efficiency
- **Contact: Michelle Vigen, Sr. Energy Planner**
 - Michelle.Vigen@montgomerycountymd.gov

Radon

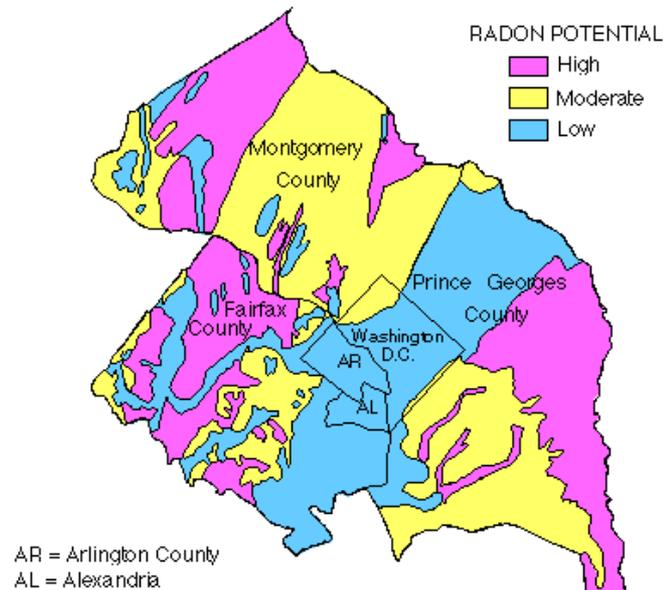
Background

- Radon is an odorless, tasteless and invisible gas produced by the decay of naturally occurring uranium in soil and water.
- According to the US EPA, exposure to radon is the second leading cause of lung cancer after smoking.
- How big a problem is radon in Montgomery County?

Radon

Background

**Radon Potential of Rocks and Soils in the
Greater Washington D.C. Metropolitan Area**
by the U.S. Geological Survey



Everyone should test!

Radon

What realtors should know

- There are no federal, state, or local laws that specify an acceptable level of radon in a home.
- EPA recommends homes be fixed if the radon level is 4 pCi/L (picocuries per liter) or more.
- Because there is no known safe level of exposure to radon, EPA also recommends that consideration be given to fixing a home if the radon levels are between 2 pCi/L and 4 pCi/L.

Radon

What realtors should know

- There are no federal, state, or local laws that require testing of a home for radon prior to sale.
- Radon testing as part of a real estate transaction is a negotiating point between the buyer and the seller.
- If the transaction involves financing, the financing company may have requirements.

Radon

What realtors should know

CAUTION

U.S. Department of Housing and Urban Development
Federal Housing Administration (FHA)

OMB Approval No. 2502-0038
(Rev. 02/21/2014)

**For Your Protection:
Get a Home Inspection**

Why a Buyer Needs a Home Inspection

A home inspection gives the buyer more detailed information about the overall condition of the home prior to purchase. In a home inspection, a qualified inspector takes an in-depth, unbiased look at your potential new home to:

- ✓ Evaluate the physical condition: structure, construction, and mechanical systems;
- ✓ Identify items that need to be repaired or replaced; and
- ✓ Estimate the remaining useful life of the major systems, equipment, structure, and finishes.

Appraisals are Different from Home Inspections

An appraisal is different from a home inspection. Appraisals are for lenders; home inspections are for buyers. An appraisal is required to:

- ✓ Estimate the market value of a house;
- ✓ Make sure that the house meets FHA minimum property standards/requirements; and
- ✓ Make sure that the property is marketable.

FHA Does Not

If you find problems and FHA can not be an independent and give you the

Radon Gas Test

The United States recommended the toll-free National Radon Information Line at 1-800-SOS-Radon or 1-800-767-7236. As with a home inspection, if you decide to test for radon, you may do so before signing your contract, or you may do so after signing the contract as long as your contract states the sale of the home depends on your satisfaction with the results of the radon test.

Be an Informed

It is your responsibility to have the right to arrange to do so before the sale states that the sale

CAUTION

HUD-92564-CN (L001)

HUD Form 92564-CN

Radon Gas Testing

The United States Environmental Protection Agency and the Surgeon General of the United States have recommended that all houses should be tested for radon. For more information on radon testing, call the toll-free National Radon Information Line at 1-800-SOS-Radon or 1-800-767-7236. As with a home inspection, if you decide to test for radon, you may do so before signing your contract, or you may do so after signing the contract as long as your contract states the sale of the home depends on your satisfaction with the results of the radon test.

Radon

What realtors should know

- In Montgomery County, homes built in 1995 and later are required to be “radon resistant.”
- Radon resistant homes incorporate features such as a gas permeable layer below the foundation, sealing of foundation penetrations, and a vent pipe from the gas permeable layer through the foundation to the outside.
- These features make installation of an “active” radon mitigation system easier if testing indicates such a system is needed.

Radon

Resources for realtors and homeowners

- US EPA Guide for home buyers and sellers
 - <http://www.epa.gov/radon/pubs/hmbyguid.html>
- MC DEP website on radon
 - <http://www.montgomerycountymd.gov/DEP/air/radon.html>
- MC DEP information on managing radon in the home, including finding a contractor for testing and mitigation
 - <http://www.montgomerycountymd.gov/DEP/air/radon.html#managing>

Mold

Background

- Molds are types of fungi found throughout the natural environment. Mold spores can be found in both indoor and outdoor air, as well as settled on indoor and outdoor surfaces.
- When molds grow indoors, they can damage building materials, furnishings, clothes, and other organic materials. They can also cause respiratory and other health problems for building occupants.

Mold

Background

- ◉ Mold needs three things to grow:
 - A wet or damp environment.
 - A food source such as leaves, wood, paper products, wall board, insulation materials, ceiling tiles, and other organic based materials.
 - A temperature range similar to the average residential household temperature.

Mold

Background



Mold

What realtors should know

- There are no federal, state, or local standards that specify a acceptable level of mold in a home.
- Visible signs of mold indicate a clear problem that should be addressed.
- Sampling for mold should be conducted by professionals who have specific experience in designing mold sampling protocols, sampling methods, and interpreting results.

Mold

What realtors should know

- Common sites for indoor mold growth include areas where water and humidity may be present, including:
 - Bathrooms and kitchens
 - Basement walls
 - Around windows and doors (particularly glass doors)
 - Anywhere moisture condenses

Mold

Resources for realtors and homeowners

- US EPA Guide for home buyers and renters
 - <http://www.epa.gov/mold/moldguide.html>
- US EPA website on mold
 - <http://www.epa.gov/mold/index.html>
- MC DEP website on mold
 - <http://www.montgomerycountymd.gov/DEP/air/mold.html>

Pesticides & Fertilizers

Background

- A *pesticide* is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest.
- A *fertilizer* is a chemical or natural substance added to soil or land to increase its fertility.
- In Maryland, the use of both pesticides and fertilizers is regulated primarily by the Maryland Department of Agriculture (MDA).

Pesticides & Fertilizers

Background

- Maryland's Lawn Fertilizer Law regulates:
 - The type and quantity of fertilizer that can be applied
 - The timing of fertilizer applications
- The Lawn Fertilizer Law applies to professional lawn care providers and do-it-yourself homeowners.

Pesticides & Fertilizers

Background

- MDA's Pesticide Regulation Section:
 - Administers Maryland's Pesticide Applicator's Law
 - Enforces federal laws on the sale and use of pesticides
 - Investigates pesticide accidents or incidents and consumer complaints on pesticide misuse
- The Pesticide Regulation can be reached at 410-841-5710.

Pesticides & Fertilizers

Resources for realtors and homeowners

- ◉ MDA Pesticide Regulation website
 - http://mda.maryland.gov/plants-pests/Pages/pesticide_regulation.aspx
- ◉ MDA Q&A for realtors regarding pest or pesticide issues
 - <http://mda.maryland.gov/plants-pests/Documents/Answers%20to%20Questions%20Realtors%20Should%20Know%20About%20Pesticides.pdf>
- ◉ Brochure on Maryland's Lawn Fertilizer Law
 - http://mda.maryland.gov/resource_conservation/Documents/fertilizerwebpage.pdf

Noise

Background

- Noise is regulated in Montgomery County under Chapter 31B of the Montgomery County Code.
- Although the noise law regulates a wide variety of activities, complaints from homeowners typically focus on noise from:
 - Construction activities
 - Emergency generators and HVAC equipment
 - Amplified music

Noise

Resources for realtors and homeowners

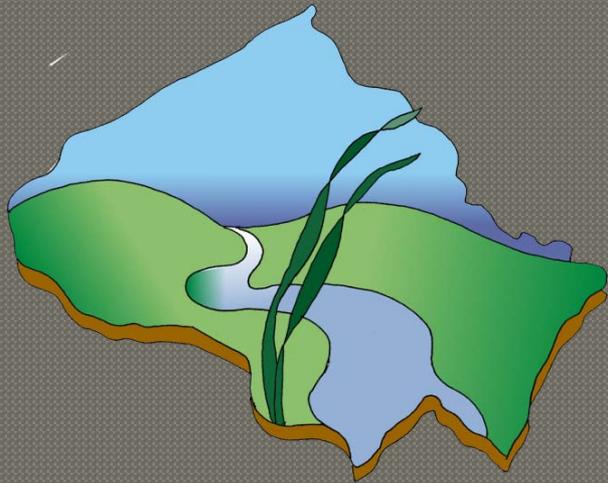
- DEP website on noise

- <http://www.montgomerycountymd.gov/DEP/community/noise-ordinance.html>

- Montgomery County's noise control law

- <http://www.montgomerycountymd.gov/DEP/Resources/Files/downloads/compliance/Noise-control-ordinance.pdf>

Resources





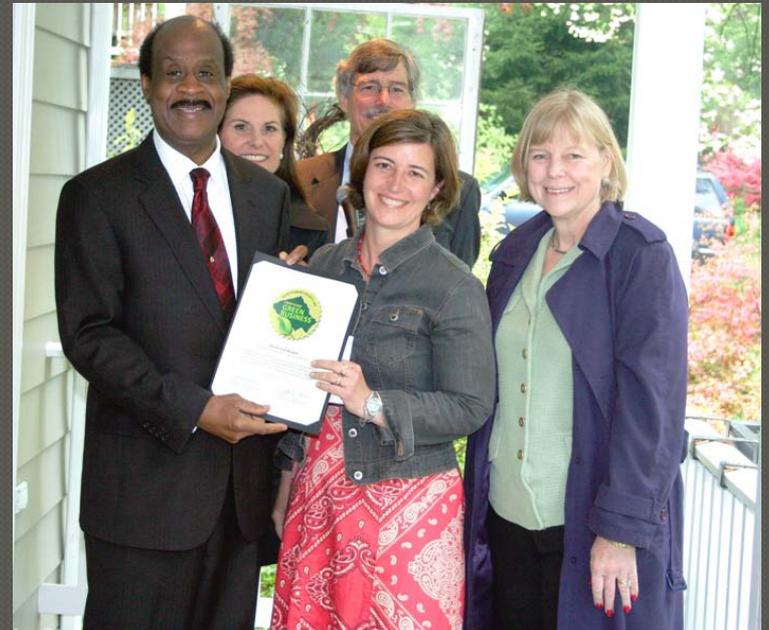
Green Business Certification Program

- Voluntary, County-based certification
- Currently, only office based businesses and landscape companies

mcgreenbiz.org

Stats:

- 59 certified businesses
- 10 are landscaping firms





Benefits to Your Clients

- The Directory

mcgreenbiz.org/directory

- “Greener” choice for RainScapes

- Accountants, banks, energy efficiency firms, and more...



- All Eco Design Center
- Elysian Energy
- Sol Vista
- Standard Solar



Why Green Your Real Estate Business?

- Enhanced reputation and recognition
- Competitive advantage
- Save money
- Align your operations with your values

Already Certified:

- Lend Lease
- NewTower Trust Company
- Maven Group





MyGreenMontgomery.org

○ The County's one-stop website for green living.

- Blog
- Calendar
- Green Projects
- Incentives and Programs



Compost

Recycle

ENERGY STAR

Plant a Tree!

Reduce Water Use

Volunteer



MyGreenMontgomery.org

- ◉ Invite clients to share their “green” accomplishments as blogs
- ◉ Post pictures and share them on social media
- ◉ Find calendar events

- ◉ On Social Media:
 - [Instagram](#) & [Twitter](#): @MyGreenMC
 - [Facebook](#): @MyGreenMontgomery



Get Your Questions Answered

- When will my trash & recycling get picked up?
- What is my Water Quality Protection Charge?
- How do I report illegal dumping?
- What is the air quality for this week?
- What is the holiday trash schedule?
- How do I file a noise complaint?

All these questions and more are answered at

MontgomeryCountyMD.gov/dep



Who Do You Call?

- Contact 3-1-1 first!
- 3-1-1 will be able to help direct you to the department best suited to answering your question.

To help guide yourself (and 3-1-1) to the right place, here is a list of appropriate agencies by topic area:

Who Does What?:

Permitting Services

- permits
- inspections
- building codes & regulations
- zoning
- private well & septic

Montgomery Planning

- forest conservation easements

Dept of Transportation

- street trees
- storm drains
- snow plows

DEP

- environmental complaints
- issues with stormwater facilities
- trash & recycling

Dept of Housing & Community Affairs

- housing code violations

WSSC, Cities of Rockville & Poolesville

- drinking water
- public water & sewer

Contact Info

Ann ENgli