

Catch The Rain: Your Guide to Rainwater Harvesting

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Department Of Energy and Environment



GOVERNMENT OF THE
DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

AGENDA



- ❖ RiverSmart Homes Overview
- ❖ Rain Barrel Program
- ❖ Environmental Impact
- ❖ Case Study: Pollutants in Rain Water
- ❖ Q&A



GET RIVERSMART!
doee.dc.gov/riversmart





Rain and snow melt that is unable to soak into the ground become stormwater runoff



Stormwater runs off of hard surfaces such as roofs, roads, and sidewalks, and can pick up pollution from anything it touches

For example:

Greasy equipment

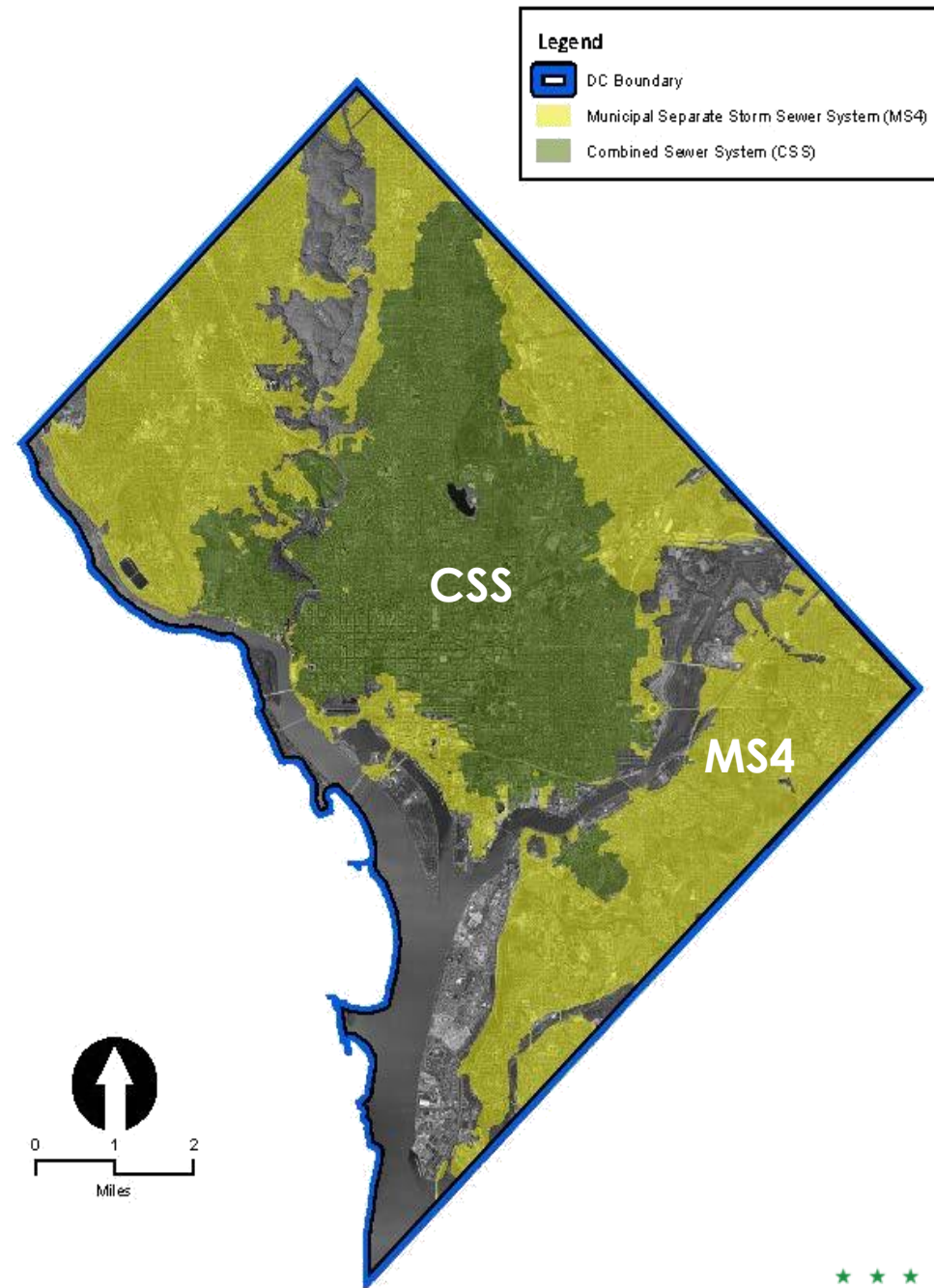
- Underneath storage piles
- Trash cans
- The ground



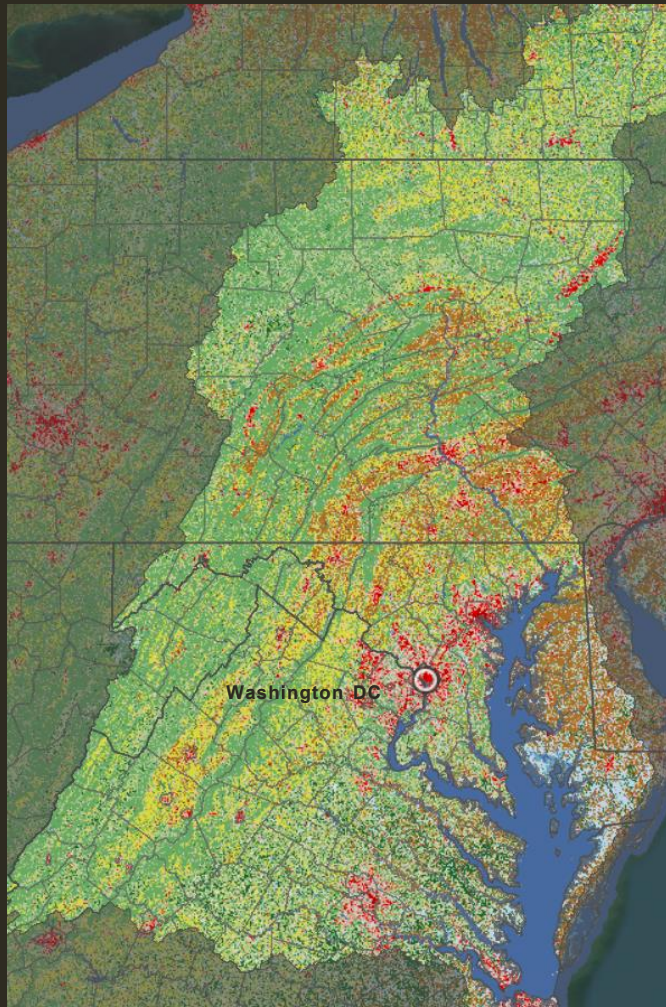
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of the District
drains into local rivers
and streams with little
to no treatment

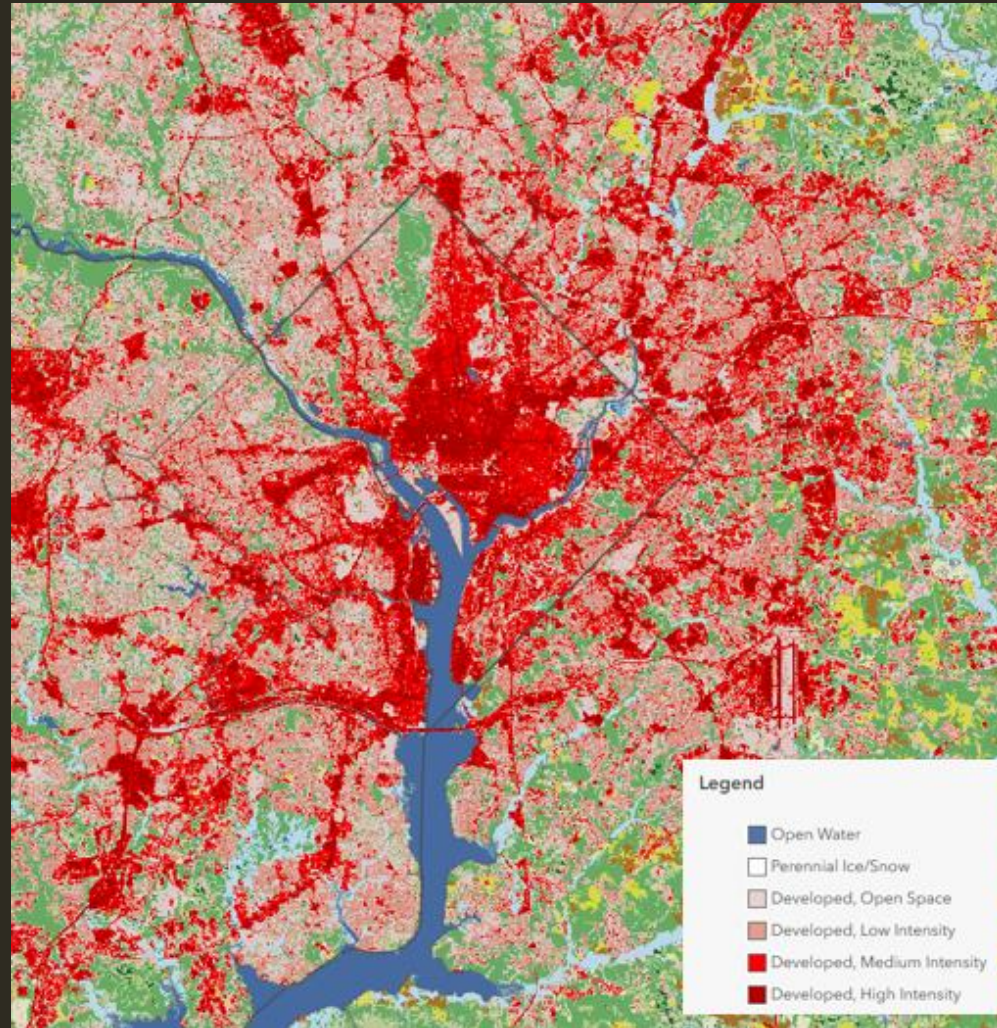
- Municipal Separate Storm Sewer System (MS4)
- Combined Sewer System (CSS)



IMPERVIOUS AREA IN THE DISTRICT OF COLUMBIA RELATIVE TO CHESAPEAKE BAY WATERSHED



Map of impervious area in Chesapeake Bay watershed



Map of impervious area in Washington DC

IMPACTS

WILDLIFE



FISHING



RECREATION



DISEASE



CHESAPEAKE BAY



WHAT CAN WE DO ABOUT STORMWATER?

- Reduce quantity and improve quality of stormwater runoff
- Recharge groundwater
- Increase habitat diversity
- Promote water conservation
- Encourage community watershed engagement



RIVERSMART HOMES PRACTICES

Rain Barrels



- Volume: 132 gallons
- Dimensions: 51" x 27"
- Manufacturer: RiverSides

Rain Gardens



- Depth: 24"
- Min. Area: 50 s.f.

BayScaping



- Min. Area: 120 s.f.

Shade Trees



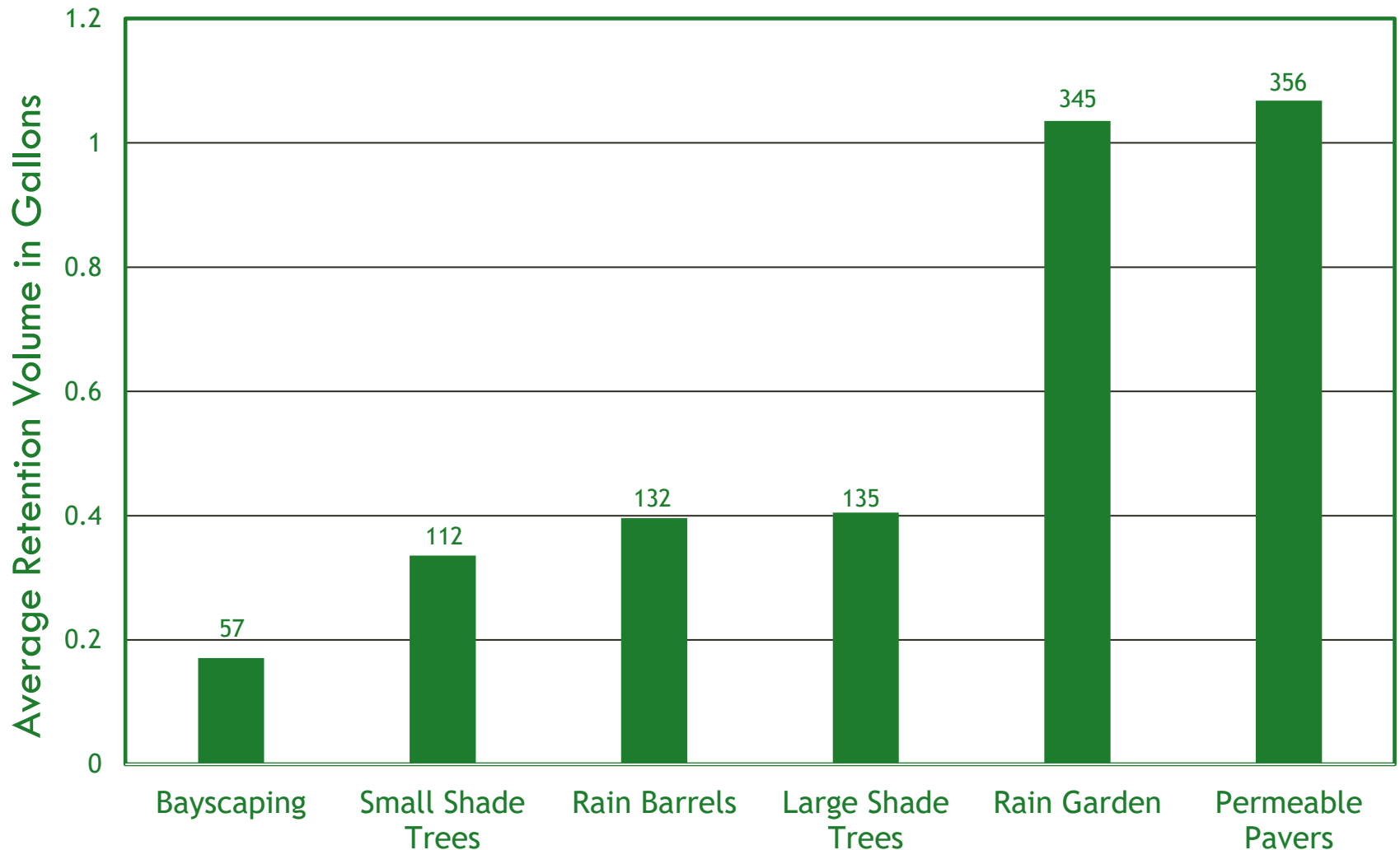
- Options limited to 19 native species

Permeable Pavement

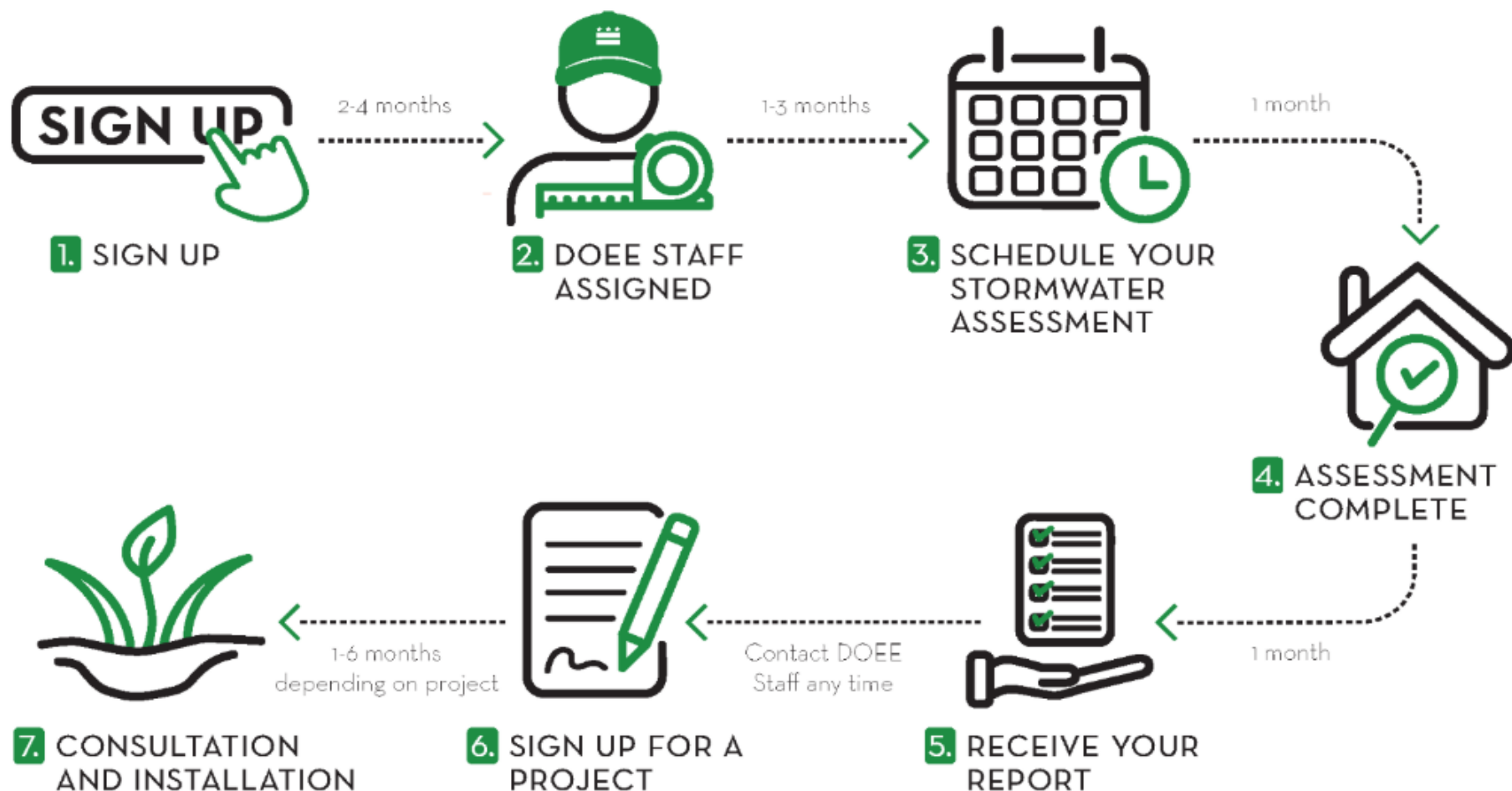


- Driveways and patios
- Must be removing existing impervious surface
- Min. Area: 100 s.f.

RIVERSMART HOMES PRACTICES



STEPS TO BECOMING A RIVERSMART HOMEOWNER



CONTACT US:

Email: riversmarthomes@dc.gov

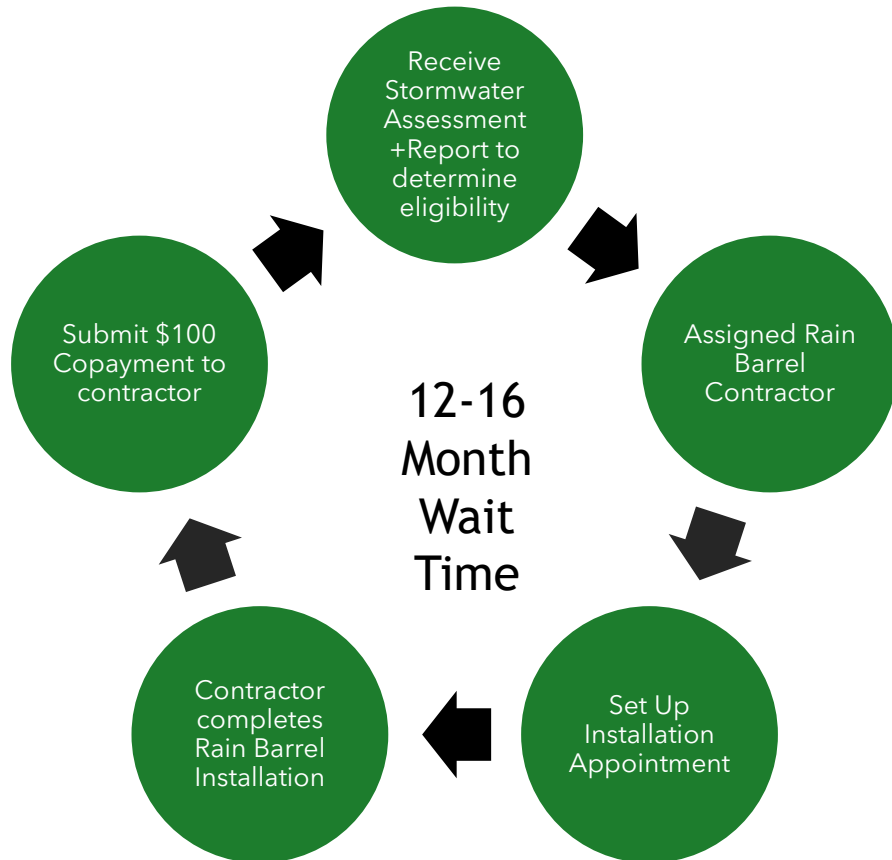
Phone: (202) 535-2252

Website: doee.dc.gov/service/riversmart-homes

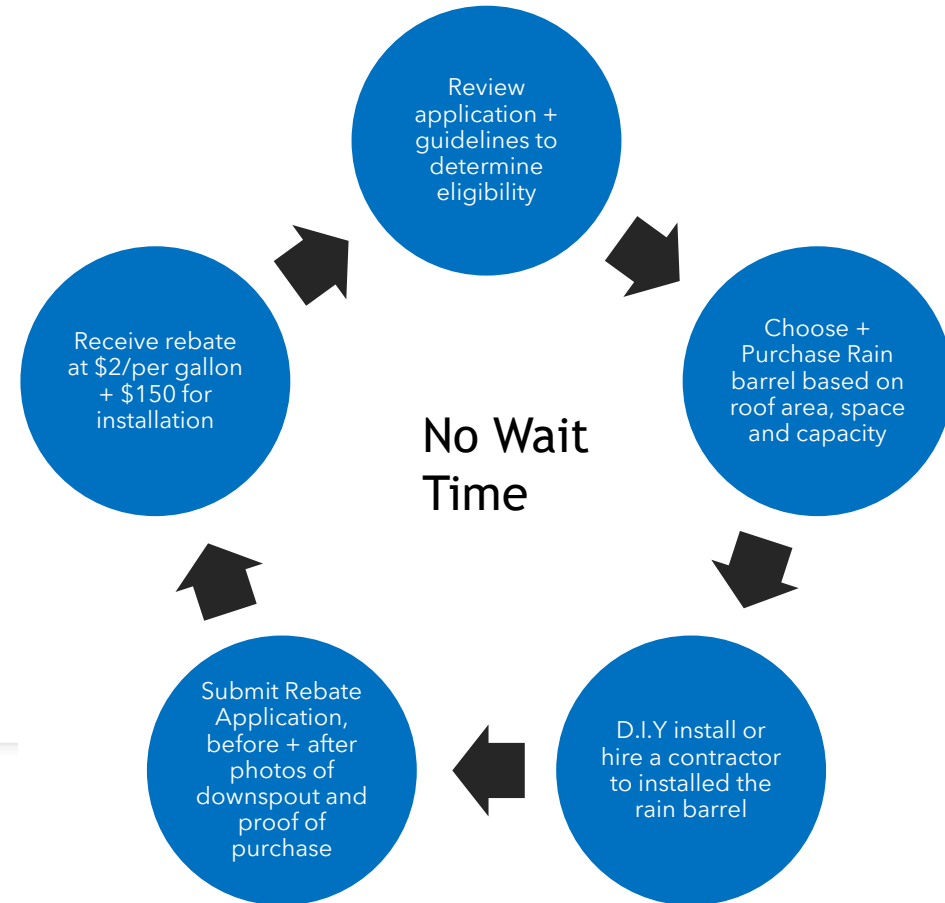


Riversmart Rain Barrel Program

Grant Program



Rebate Program



Rain Barrels



- Minimizes runoff that carries pollutants into, rivers, lakes, and oceans. It also reduces soil erosion
- By capturing water from rooftops and surfaces, it helps reduce the volume and velocity of stormwater, easing the pressure on municipal drainage systems and reducing localized flooding.
- Excess harvested water can be used to replenish, or "recharge," underground aquifers, which maintains healthy groundwater levels.
- Rainwater is ideal for irrigation because it is free from chemicals like chlorine and fluoride, which helps keep plants, gardens, and crops healthy.

Environmental Impact



1 Rain Barrel collects 132
gallons of stormwater runoff
during 1.2 inch rain event



8,000 residential homes with 1
Rain barrel collects 1 million
gallons of stormwater runoff
during 1.2 inch rain event

Installing Rain Barrel: Key Components

Downspout: vertical pipe running from your gutter down to the ground

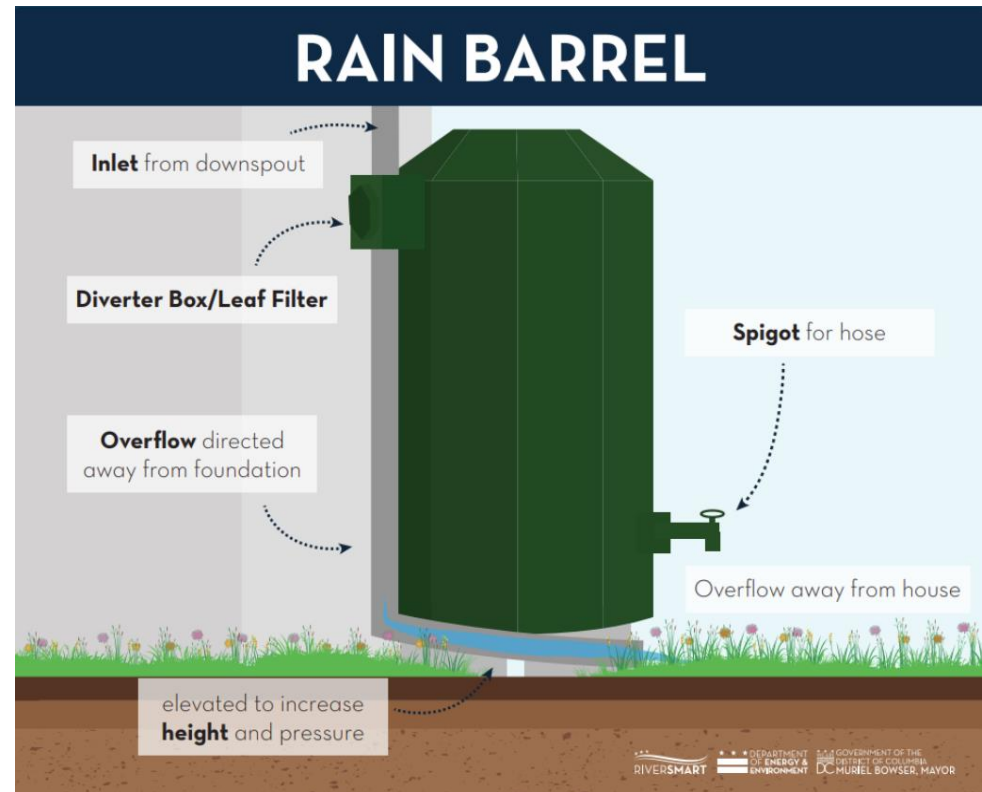
Inlet: downspout connection into the barrel often has a screen

Screen: filter mesh that keeps bugs, mosquitoes, and debris from entering the barrel.

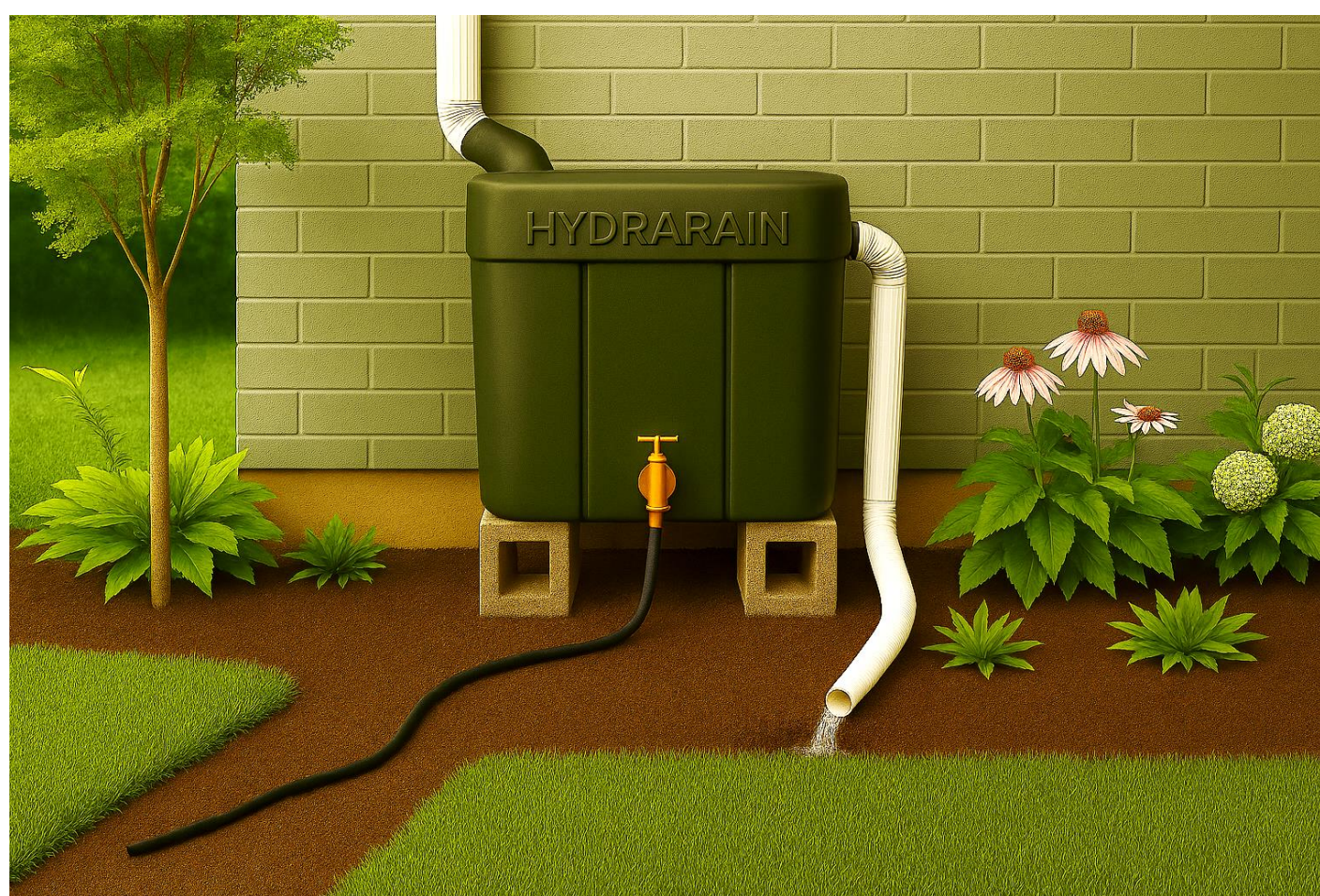
Overflow: water that will safely exit the barrel once it has filled. Often built into a diverter kit

Spigot / faucet: area to access water via a hose, pump, or watering can.

Base: elevated at least 8 in above the ground, flat, and level foundation for the barrel.



Installing Rain Barrel: Select Location



Where is water needed?

Slope

Accessibility of:

- Downspout
- Barrel components

Installing Rain Barrel: Choosing Your Barrel

Comparing Components:

- Filter screen location
- Type of Overflow /diverter
- Spigot location
- Inlet size vs. downspout size

Additional Considerations:

- Opacity

Size

- Roof area
- Use

Rain Barrel Inlet Size vs. Downspout Size



3" Rain Barrel Inlet



2" x 3"
Downspout



Installing Rain Barrel: Downspout Connection



- Measuring Space
- Leveling the Ground
- Measuring the Downspout
- Cutting downspout

Installing Rain Barrel - Downspout (DS) Connection



- 1) Align the base with the DS & check stability of base & DS
- 2) Measure and cut the DS for connection

Installing Rain Barrel - Downspout (DS) Connection



3) Connect DS to barrel through appropriate kit (ex: diverter box)

4) Align overflow to lead away from the home.

Daisy Chain Rain Barrel - Downspout (DS) Connection



Rain Barrel Maintenance

Seasonal

- Spring: spigot closed, barrel collecting
- Winter: Spigot open, not collecting

Cleaning

- Spigot clogged
- Debris in barrel
- Downspout or filter clogged

Avg. Lifespan of Barrel

- Smaller market barrels: 3-5 years
- Larger industry barrels: 8-10 years



Rain Barrel Maintenance: Winterize

WINTERIZING A RAIN BARREL



Rain Barrel: Case Study

Pollutants In Rainwater?

Rainwater is rarely pure, often containing contaminants picked up from the atmosphere and collection surfaces (roofs/gutters). The most common pollutants include microbiological pathogens (bacteria, viruses), heavy metals (lead, zinc, copper), PFAS ("forever chemicals"), microplastics, dust/soot, and animal waste, which can make untreated rain unsafe for drinking.

