

Stormwater Management

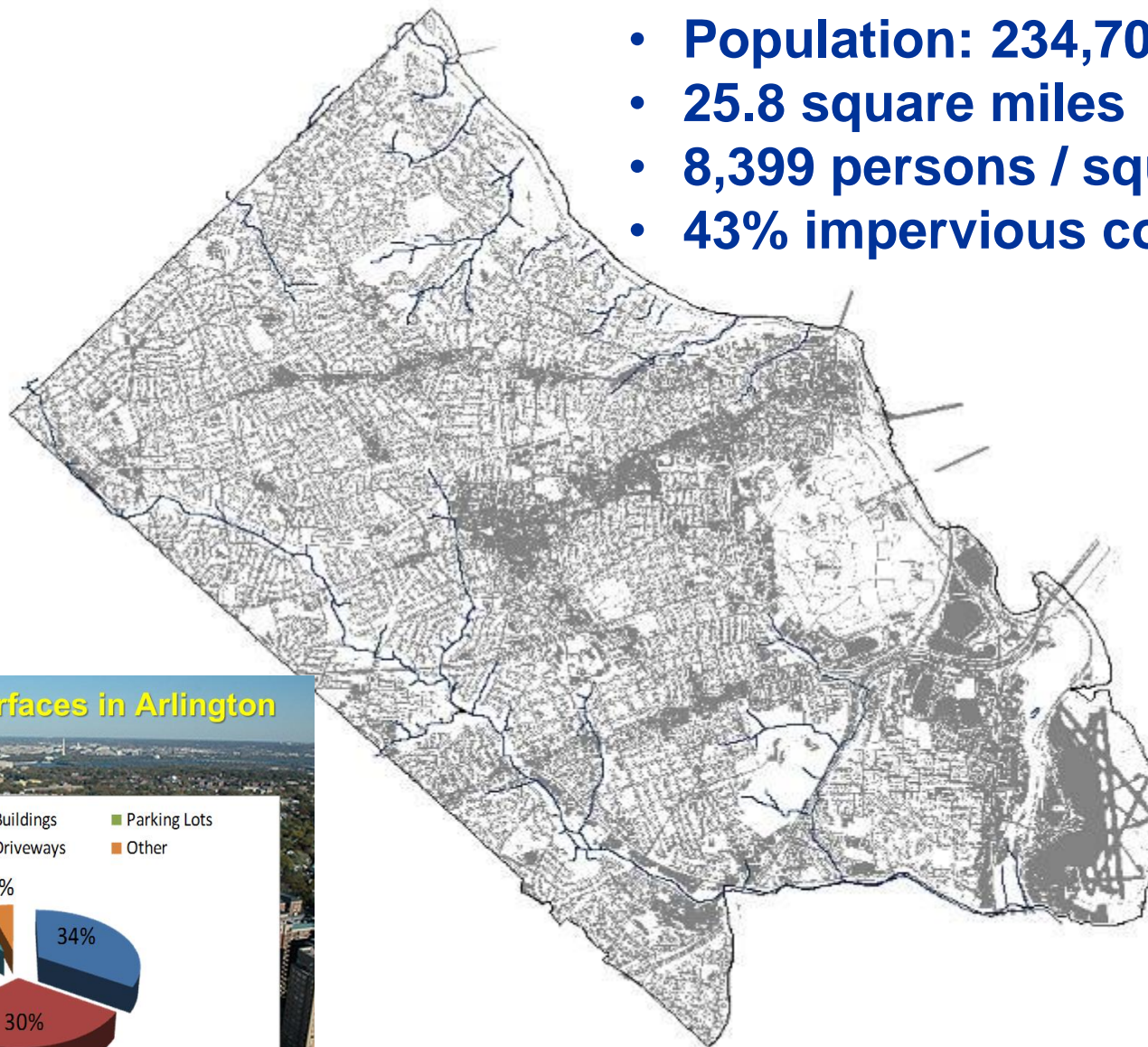
November 20, 2019

DES - Stormwater



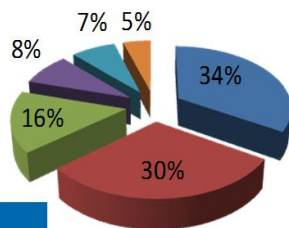
Arlington Watershed Facts

- **Population: 234,700**
- **25.8 square miles**
- **8,399 persons / square mile**
- **43% impervious cover**



Impervious Surfaces in Arlington

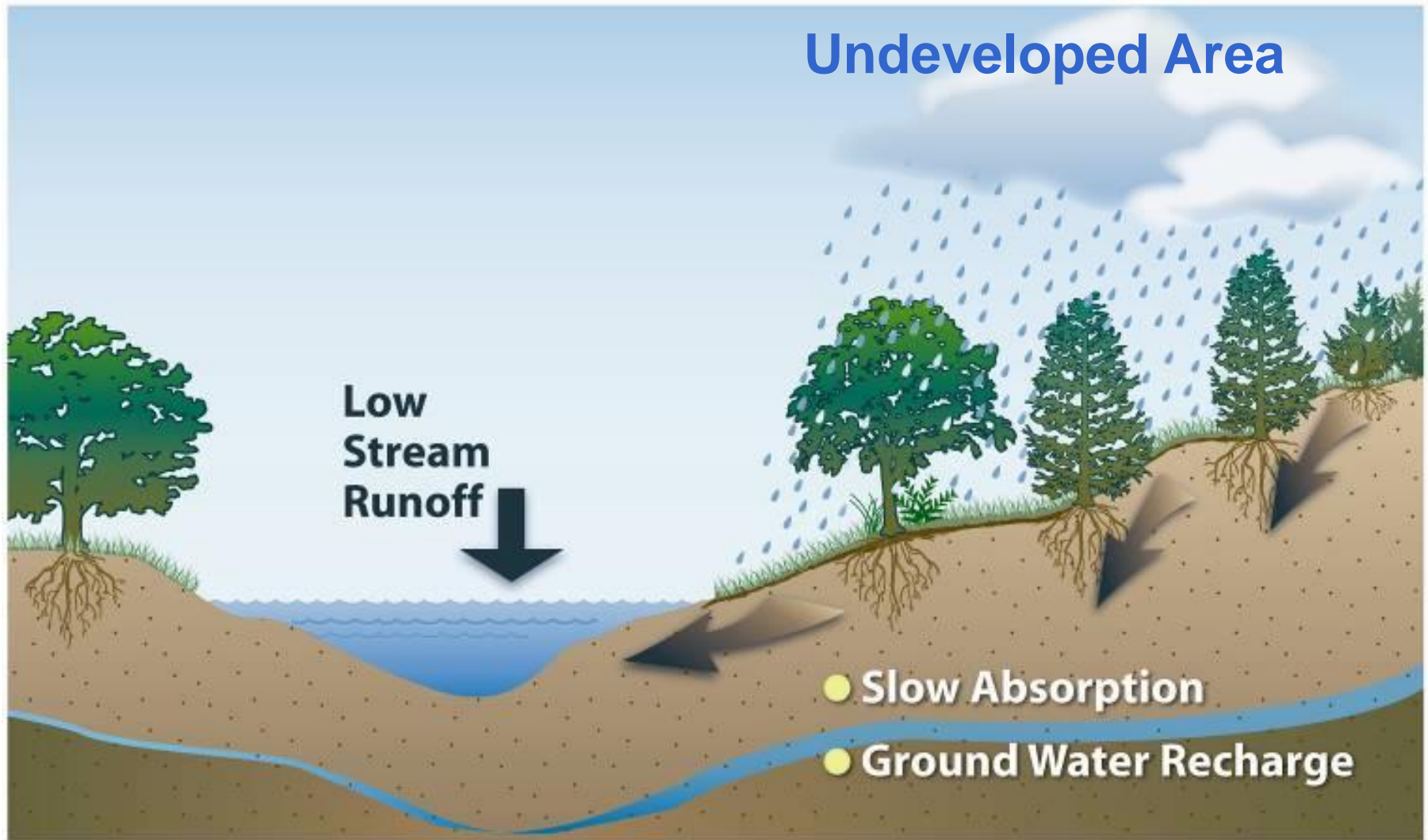
■ Roads ■ Buildings ■ Parking Lots
■ Sidewalks ■ Driveways ■ Other



Impervious cover
in Arlington =
42%

What is this?






Water percolates through the ground slowly

Developed Watersheds

**Erosion
Flooding
Pollution**

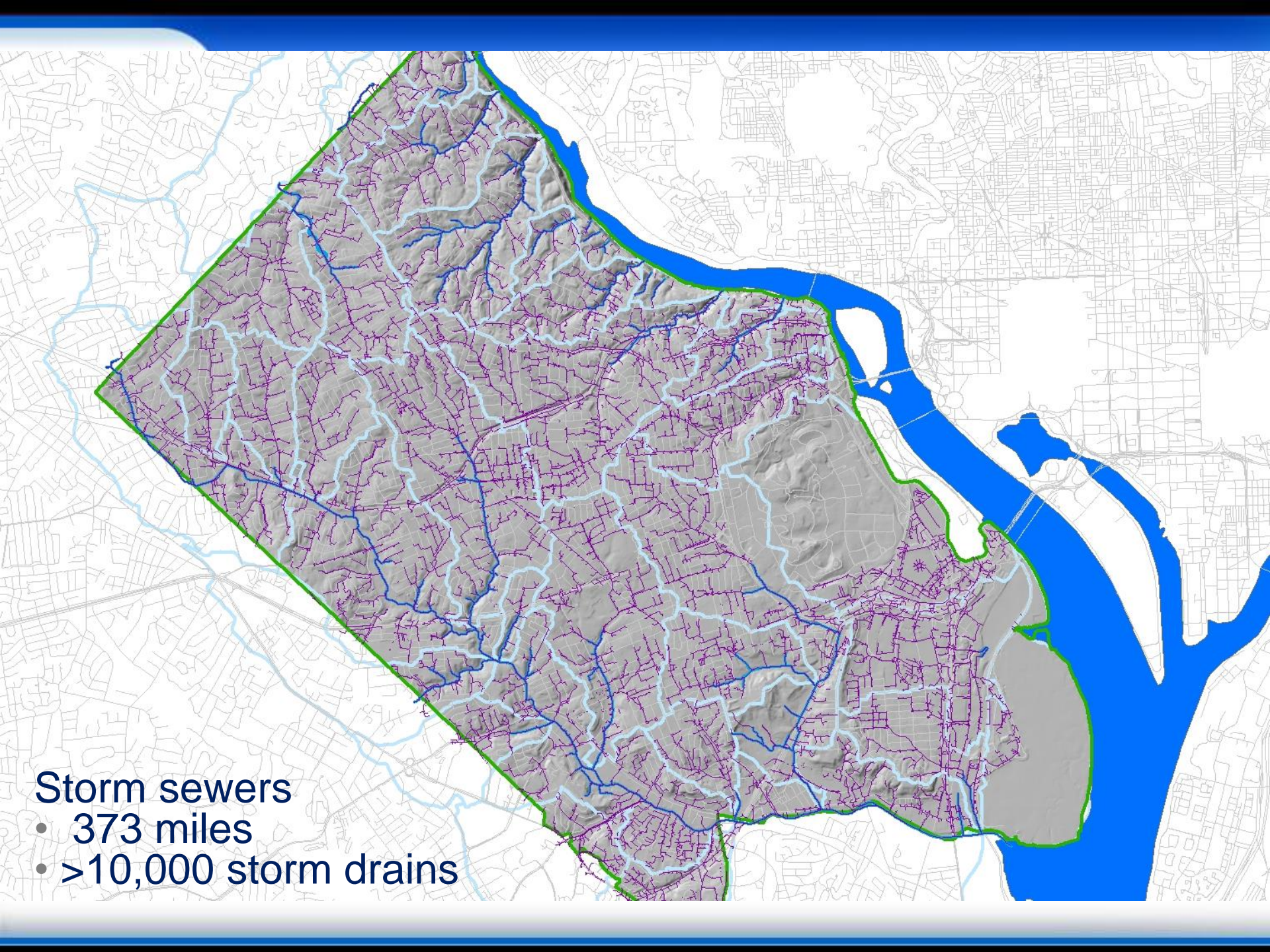


- 
- More and Faster Runoff
 - No Recharge/Absorption
 - Pollutant Washoff



Remaining
streams in Arlington

33 miles of streams



Storm sewers

- 373 miles
- >10,000 storm drains

Stormwater Challenges

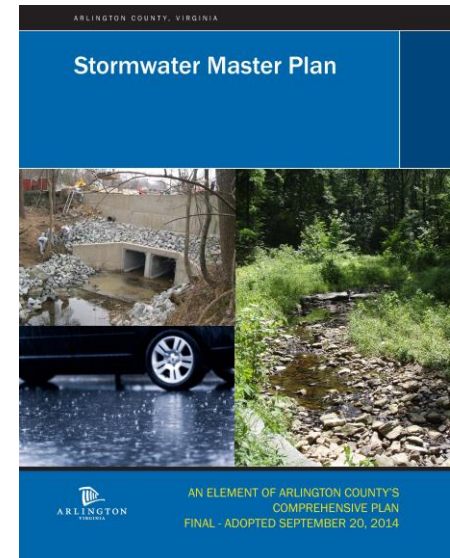
- **Existing Development** - *Most of Arlington was developed before stormwater regulations existed, so most stormwater runoff in the County is not managed (detained or treated).*
- **More stringent regulations** - *Required to reduce water pollution and protect Chesapeake Bay.*
- **Aging Infrastructure** - *More than half of the storm sewer network is over 50 years old.*
- **Climate change** – *Models predict increased frequency of higher intensity storms, which we have experienced since 2018.*

★ **Having an effective stormwater drainage network that simultaneously minimizes the adverse effects of urban stormwater**



Stormwater Management Strategy

- Maintain and upgrade storm pipe infrastructure
- Add new stormwater treatment facilities for existing development
- Require stormwater management for new development
- Restore stream channels
- Urban housekeeping / pollution prevention
- Education and outreach
- Monitoring



Storm Infrastructure Projects

- Stormwater master plan includes prioritized list of infrastructure projects. These have been completed:
 - John Marshall Drive
 - Williamsburg at Harrison
 - Sycamore at 24th St.
 - West Little Pimmit Run
 - 9th St and Liberty
 - Woodmont Swale

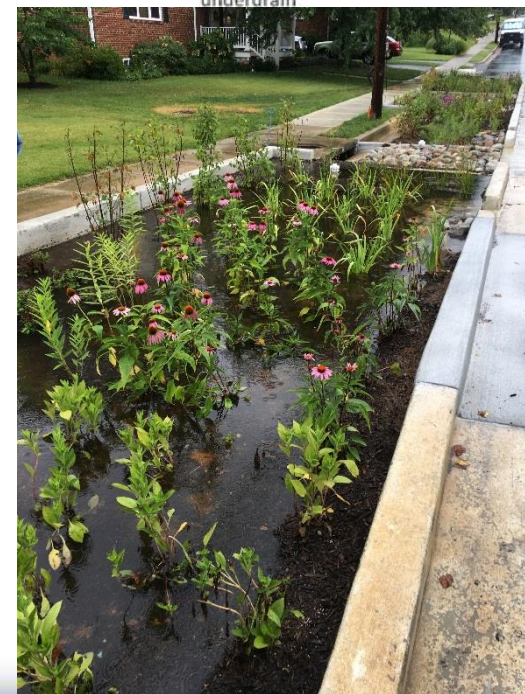
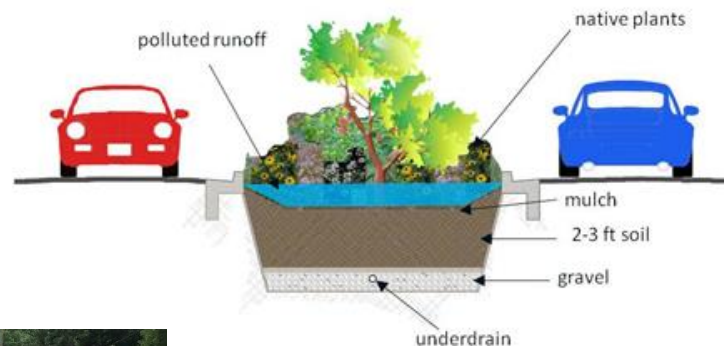


Stormwater Management Practices

A stormwater “Best Management Practice” (BMP) is a structure or action that reduces the water quality impacts of stormwater runoff.



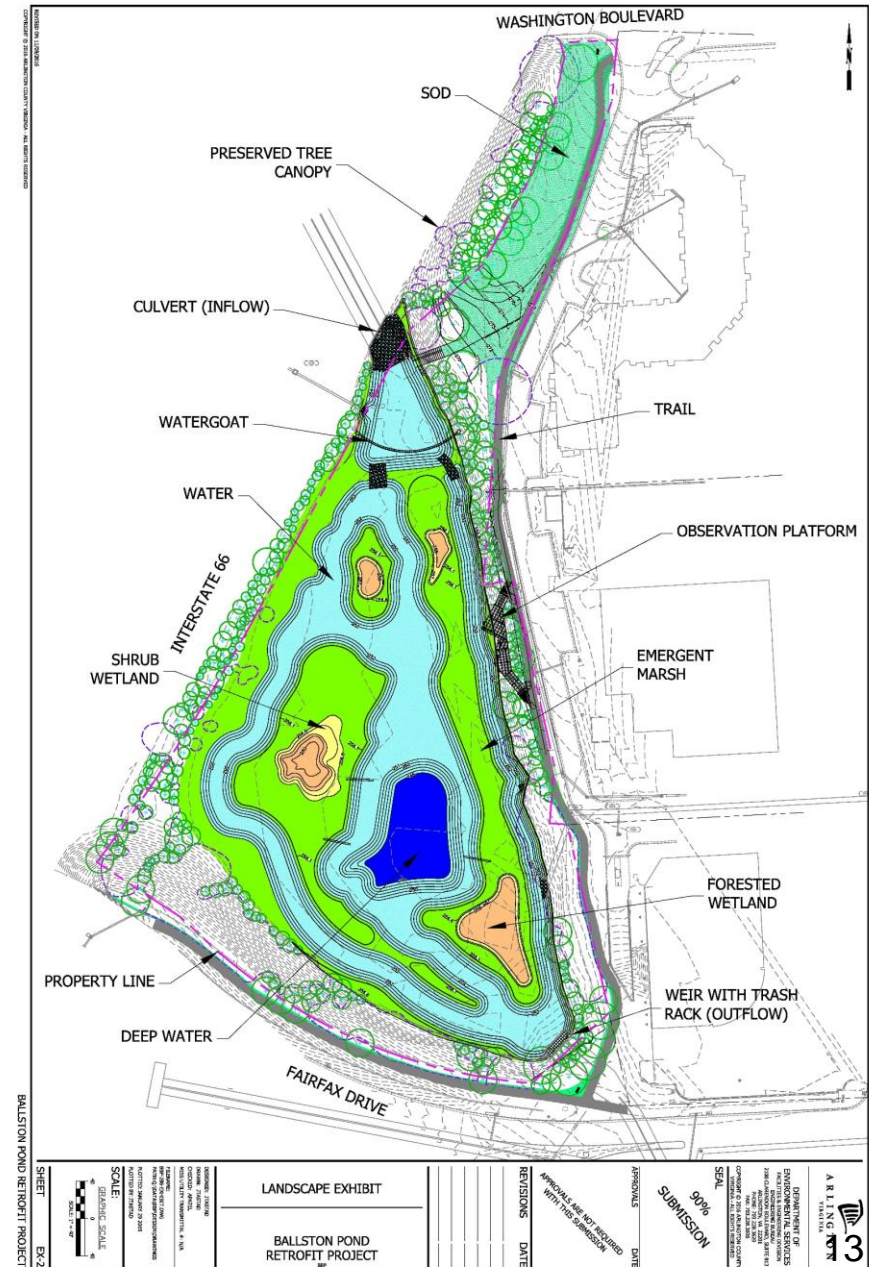
Bioretention Typical Cross-Section



Ballston Pond

- Pond was built as dry pond for I-66 in 1980 (to temporarily hold runoff).
- Has gradually filled in with sediment over the years.
- Project will convert it to a stormwater wetland, which will hold runoff and also remove pollutants
- Extensive public engagement process (with advisory group)
- Design addresses concerns about wildlife habitat, trash, and cyclist/pedestrian flow
- Awaiting final permits and should go to bid this spring and construction next summer

<https://projects.arlingtonva.us/projects/ballston-pond-restoration/>



Stormwater Requirements for New Development

- Redevelopment projects disturbing 2,500 square feet or more are regulated by the Stormwater Ordinance (2014).
- This covers all new single-family home infill projects, as well as large home additions.
- County outreach and incentive programs target smaller projects disturbing less than 2,500 square feet.
- The new stormwater standards are the most stringent allowed by the State, but will not eliminate all runoff impacts from larger new homes.

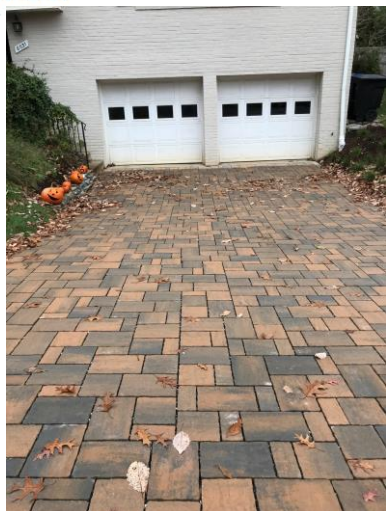


Stormwater Requirements for New Development

- County is only able to regulate the pollution from a redevelopment project, not the total volume of runoff itself.
- New ordinance provides more authority to limit impacts from sheet flow to neighbors that will cause or contribute to erosion, sedimentation, or flooding.
- Requires at least a 10 percent net reduction in pollutant loads relative to existing conditions using stormwater management techniques.
- With an average impervious cover increase of 50% for a single-family home redevelopment project, it is difficult to offset the added runoff impacts from new homes with the ordinance alone.

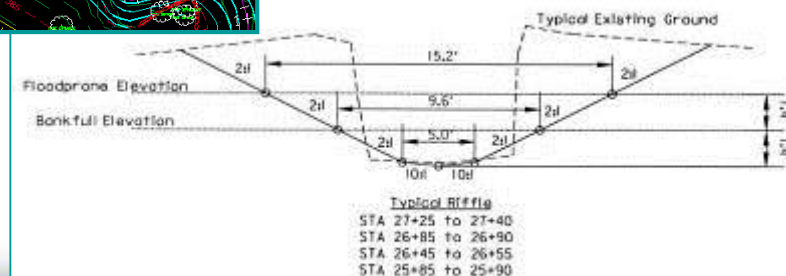
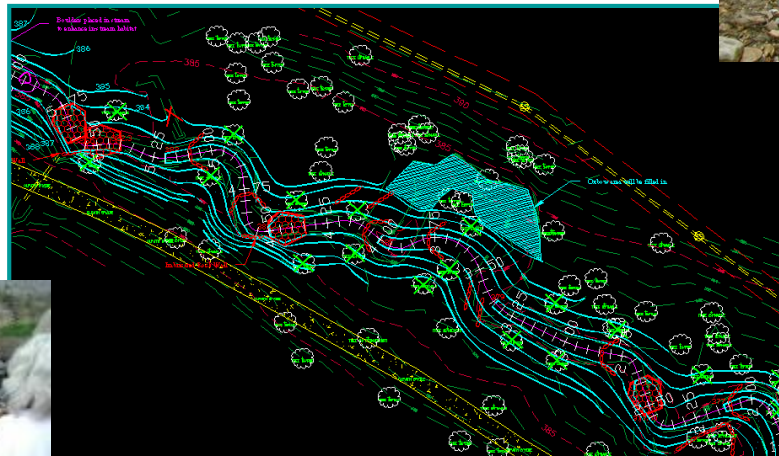


Stormwater facilities – examples



Stream Restoration

- Key component of urban watershed management
- Protect infrastructure
- Reconnect stream to floodplain
- Stabilize stream bed and banks
- Improve riparian and aquatic habitat



Donaldson Run Stream Restoration

Before



After

Outreach, Education, Monitoring

- Stream monitoring
- Media campaigns to prevent pollution
- Community engagement and outreach
- Rain barrel and rain garden workshops

Northern Virginia
Clean Water Partners
Only Rain Down the Storm Drain!



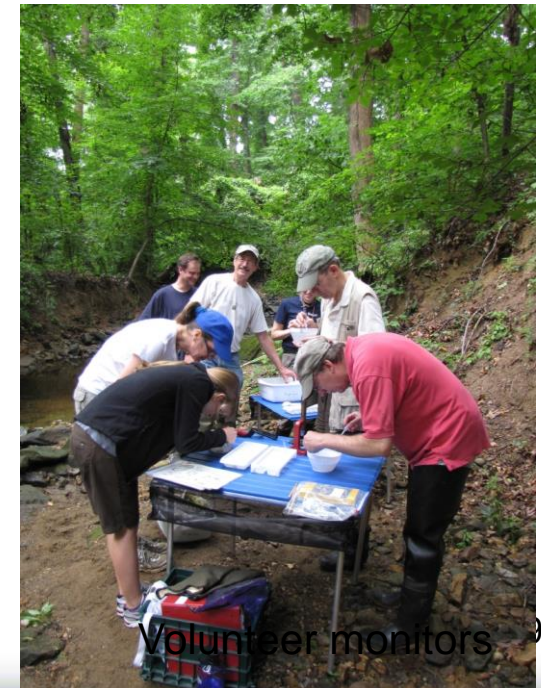
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About Us



Green It
ARLINGTON

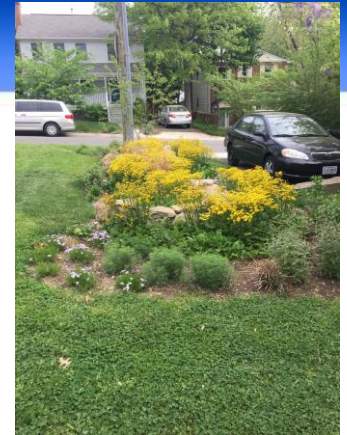


Volunteer monitors

Outreach Programs

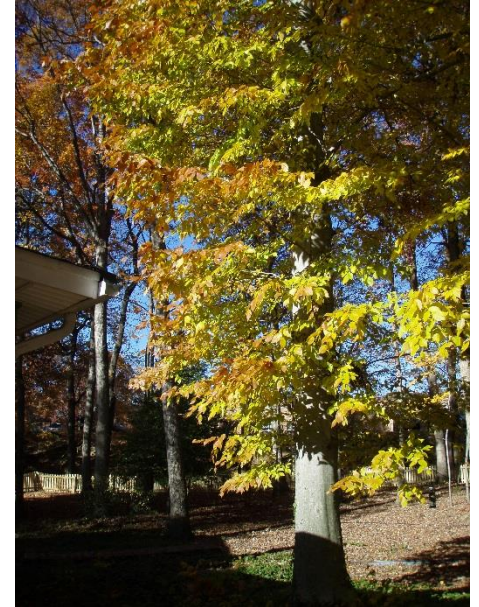
- **StormwaterWise Landscapes**
 - Incentive program for residents to install stormwater management. Applications accepted February 2020.
- **Green Home Choice**
 - Technical assistance program for new homes, additions, and renovations to be more environmentally friendly

<https://environment.arlingtonva.us/>



Preserving and Replacing Trees

- County has limited authority to require tree preservation on private property.
- There are tree canopy coverage requirements for development projects.
- County does provide more credit for keeping an existing tree (vs. planting a new tree) for development projects.



Tree Programs

- Tree Distribution Program – free trees for residents each fall.
- Tree Canopy Fund – applications accepted until December 20. Larger trees available to plant on private property.
- <https://environment.arlingtonva.us/trees/plant-trees/tree-planting-programs/>
- County planted over 1700 trees in FY19

Flood Insurance

- Flood Resilient Arlington Workshops – video and presentations are online: www.arlingtonva.us/flooding
- Less than 3% of Virginians have flood insurance
- 20% of flood claims are from outside FEMA high risk flood areas



Post July 8th Actions

- The Capital Improvement Plan (CIP) presents an opportunity for flood control investment. Provide your input to the CIP process
<https://www.engage.arlingtonva.us/>
- New inter-departmental workgroup looking at many options for increasing stormwater detention.
- Engineering solutions:
 - Upgrade storm sewer system – piping solutions
 - Detention – large tanks for water storage
 - Detention with pumping
 - Property acquisition option for overland relief
- Site visits were provided for the most impacted homes, connecting residents with technical resources on how best to mitigate impacts to their properties.
- Flood Resilient Arlington workshops - with experts on floodproof design, flood insurance and installation of floodproof measures.
- Other possibilities include an incentive program that would provide reimbursement for floodproofing measures in high-risk areas.

Census 2020



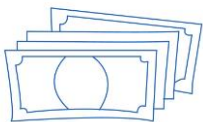
EVERYONE COUNTS

The **CENSUS** counts every person living in the U.S. once, only once, and in the right place.



FAIR REPRESENTATION

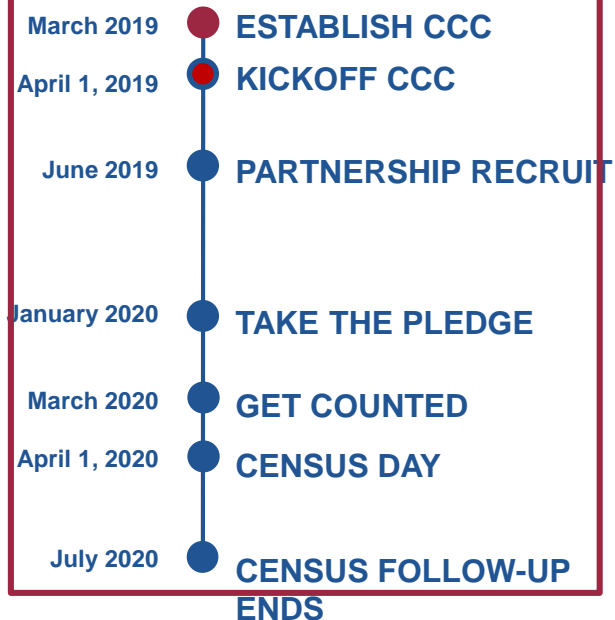
Every 10 years, the results of the census are used to apportion the House of Representative, determining how many seats each state gets.



\$675 BILLION

Census data determine how more than \$675 billion are spent, supporting our state, county and community's vital programs.

TIMELINE



For more information: www.arlingtonva.us/Census2020

Shape
your future
START HERE >

United States®
Census
2020

Questions?

- Aileen Winqvist
- awinqvist@arlingtonva.us
- 703-228-3610
- [Flood Resilient Arlington Storymap](#)