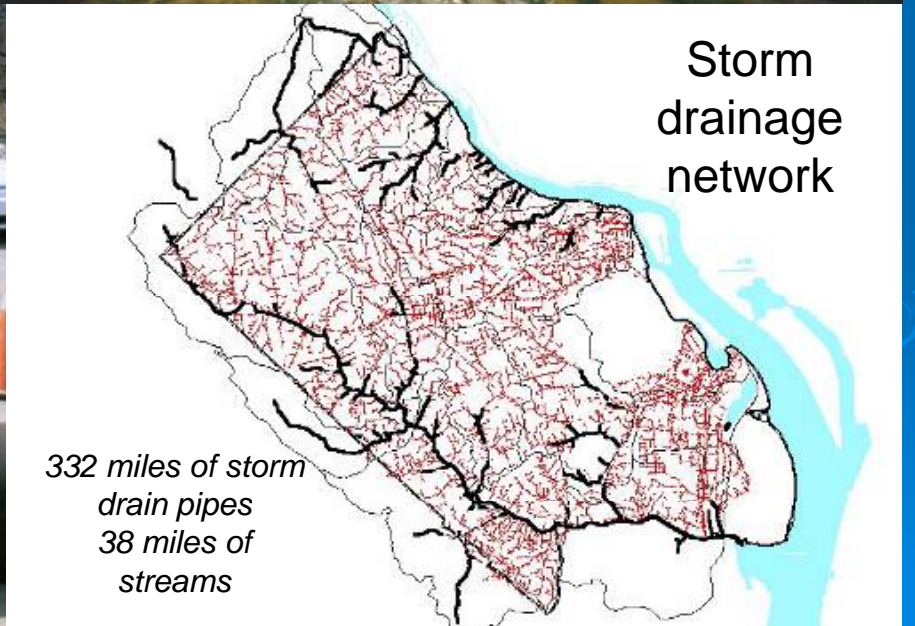
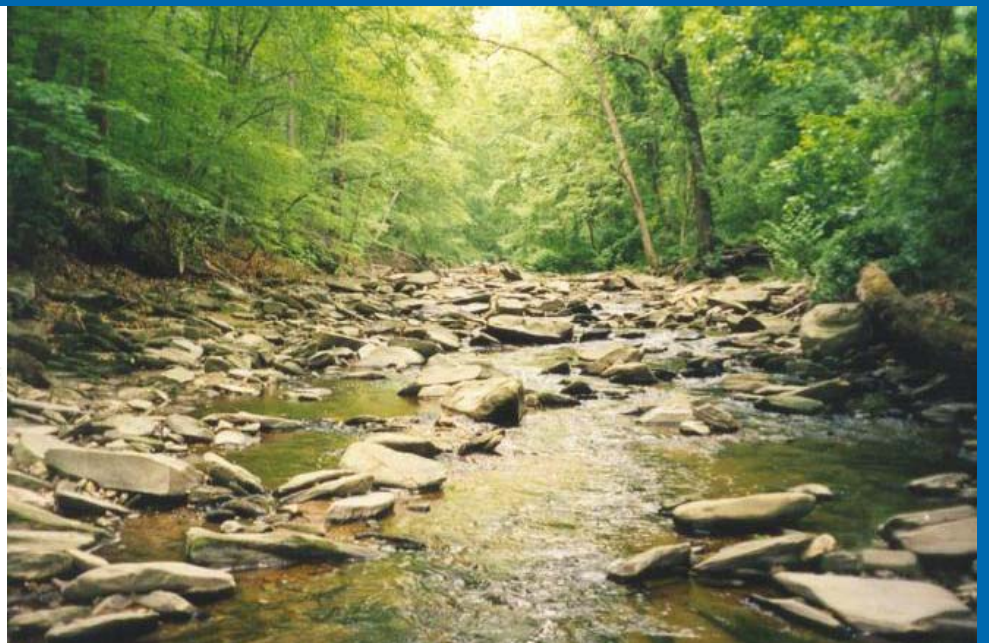
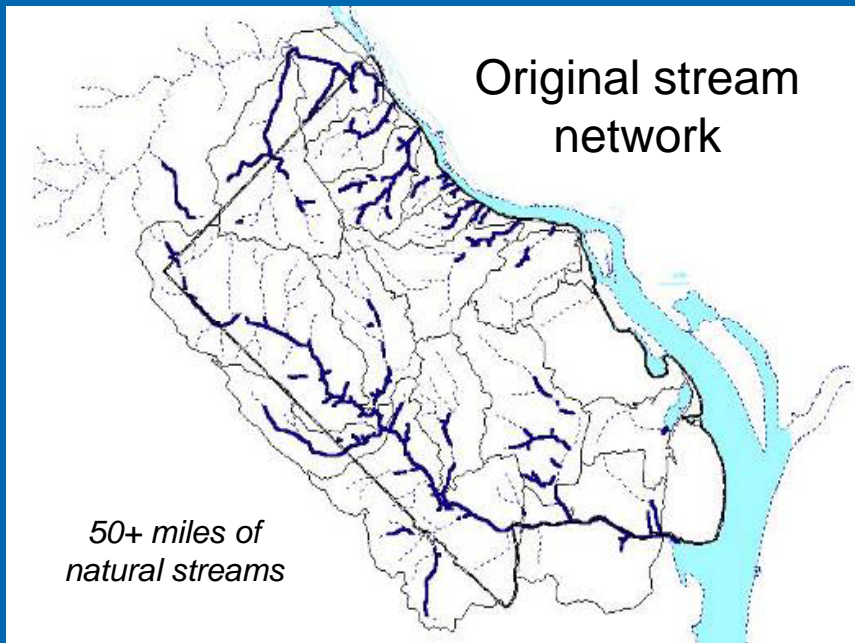


Arlington County Storm Sewer Capacity Study

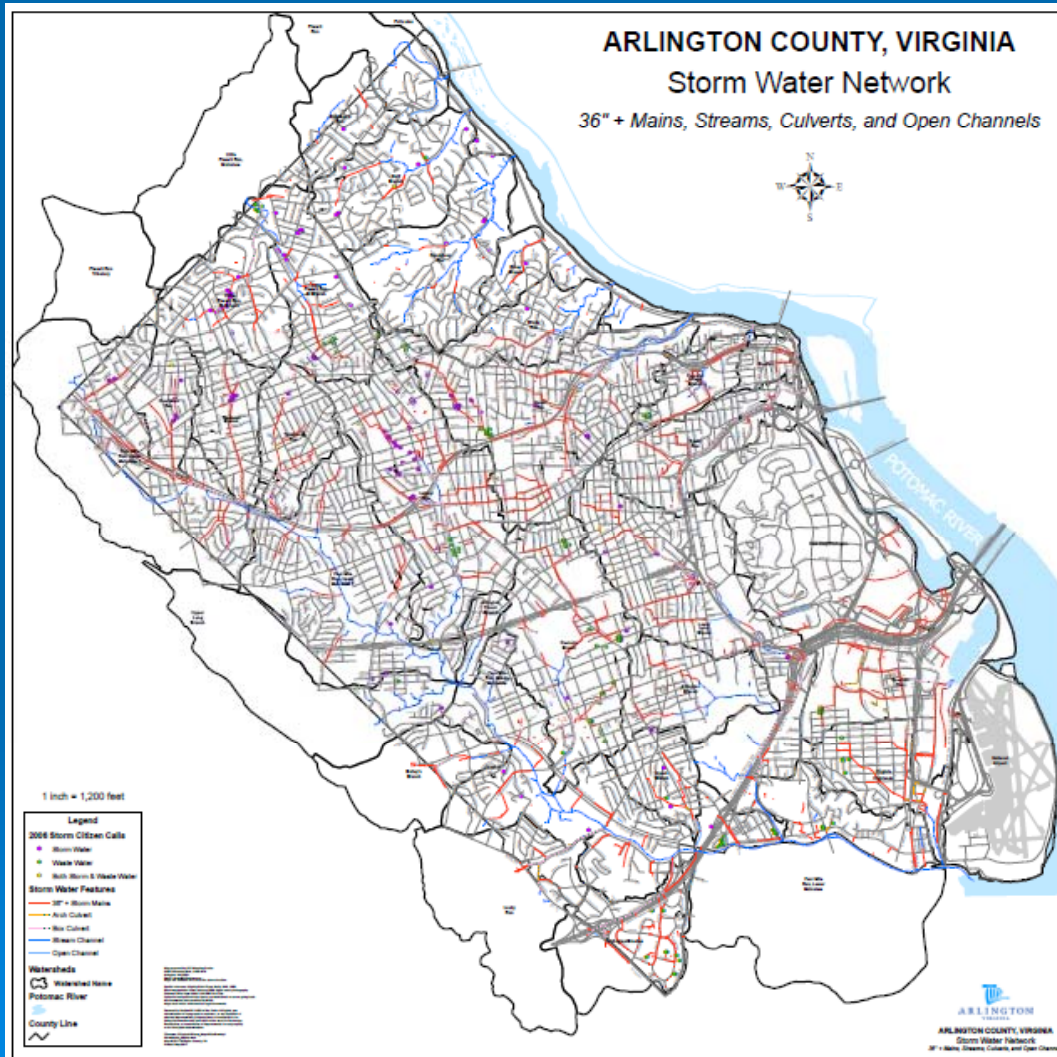
July 30, 2013

Department of Environmental Services,
Office of Sustainability and Environmental
Management





June 25, 2006 storm



- 350+ calls reporting storm and sanitary sewer issues
- June 2006 storm peak intensity 4.8 in/hr
- June 2006 storm volume 5.4 in

Storm Sewer Capacity Analysis Goals

- Reduce potential stormwater threats to public health, safety, and property
- Develop system models that can provide a roadmap for upgrades to the system
- Ability to prioritize proposed storm sewer system upgrades
- Comply with State and Federal stormwater and floodplain management regulations

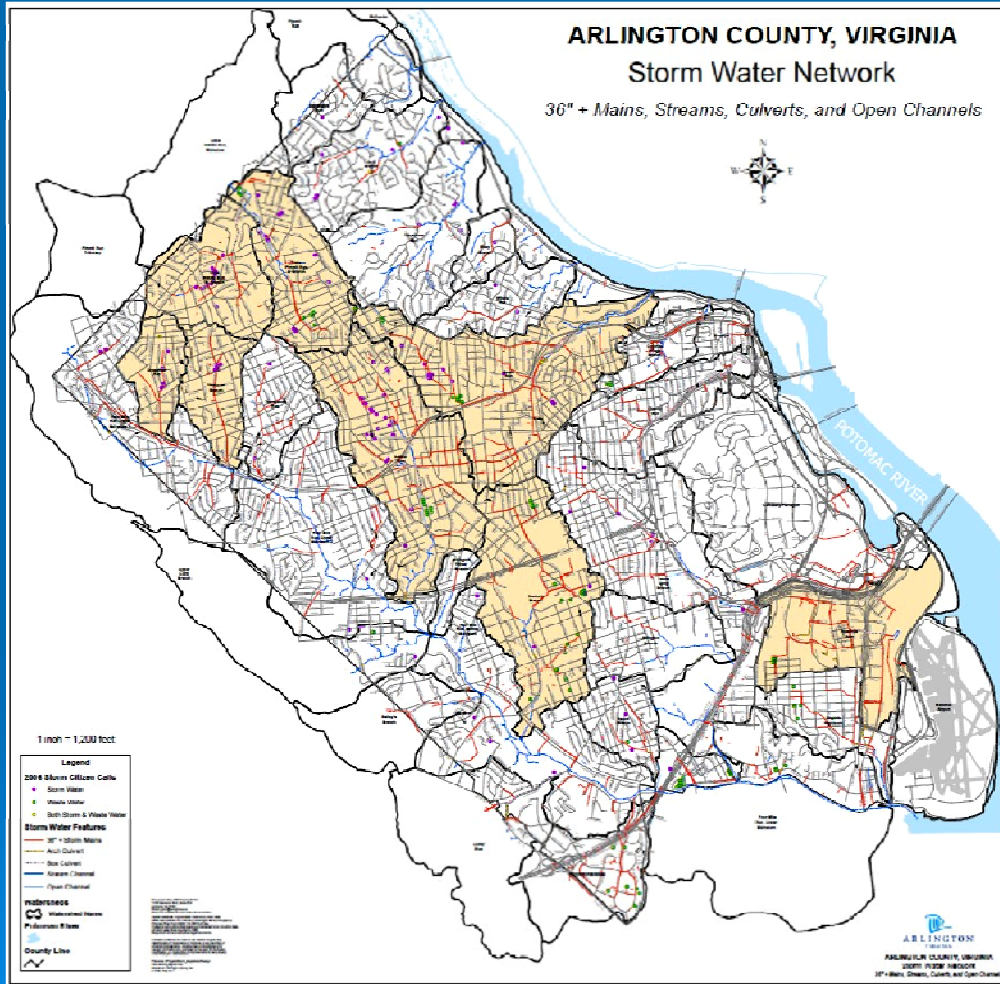


Modeling Approach

- 36" diameter pipes and larger
- Surveyed stream cross sections
- Utilize existing plans for pipe diameters, length, inverts
- Pilot study modeled 11 storm distributions
- Analysis model 2 storms
 - June 2006 storm from Donaldson Run gage
 - 10yr-24hr SCS Type II storm

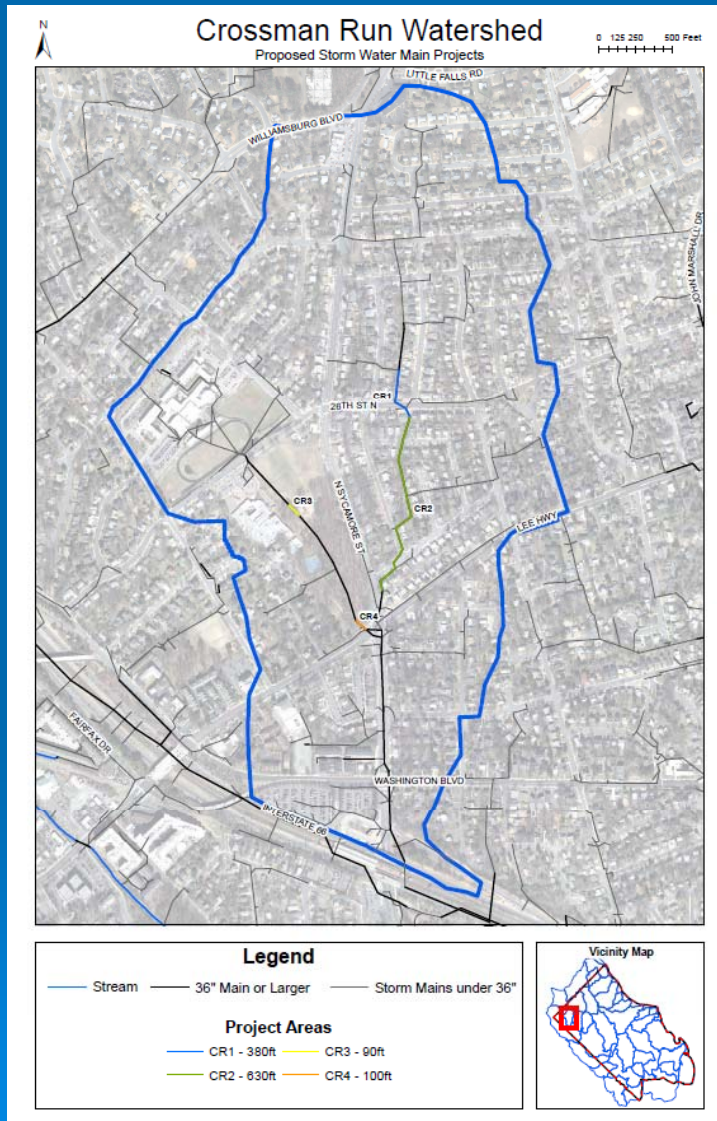


Capacity Analysis Scope



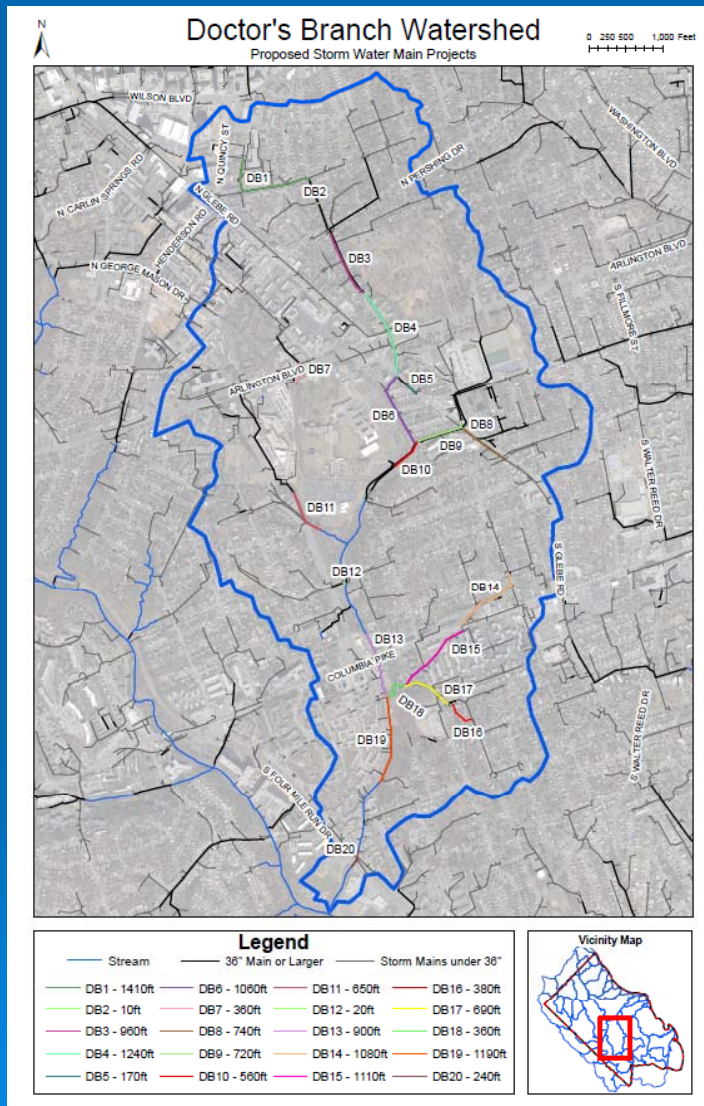
- 7 Watersheds
 - Crossman Run
 - Westover Branch
 - Little Pimmit Run
 - Lubber Run
 - Doctor's Branch
 - Spout Run
 - Roaches
- Modeled 36% of the land area to be modeled
- Modeled 45% of pipes 36" diameter and larger to be modeled
- Majority of the June 2006 calls are from these watersheds

Crossman Run



- 230 Acres
- 44% Impervious, mainly residential land use
- 5,800 LF Pipe Modeled
- 22% of the storm sewer system
- 1,200 LF Pipe to be Upsized
- 21% of the modeled system
- 4 Potential Projects for upsizing
- Entire system is piped

Doctor's Branch



- 890 Acres
- 43% Impervious, mainly residential land use
- 30,500 LF Pipe & 4,100 LF Stream Modeled
- 30% of the storm sewer system
- 13,800 LF Pipe to be Upsized
- 45% of the modeled system
- 20 Potential Projects for upsizing

Little Pimmit Run

- 970 Acres

- 37% Impervious, mainly residential land use

- 20,900 LF Pipe & 3,700 LF Stream Modeled

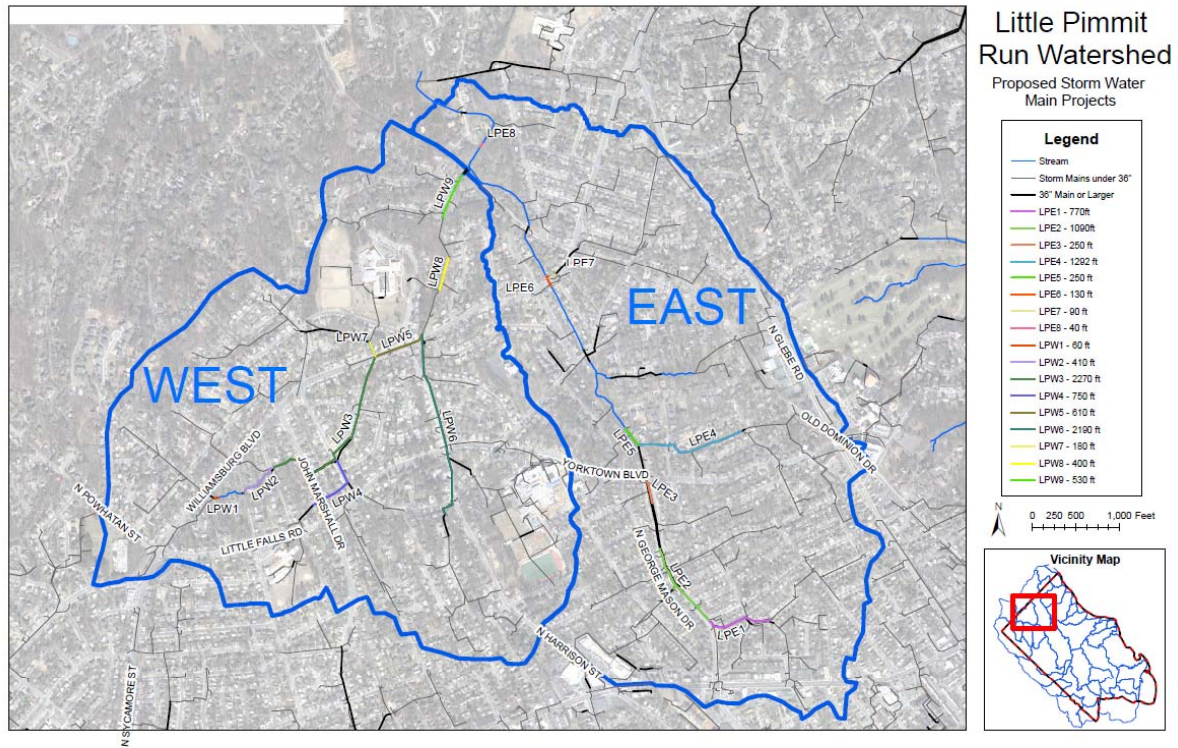
- 20% of the storm sewer system

- 11,300 LF Pipe to be Upsized

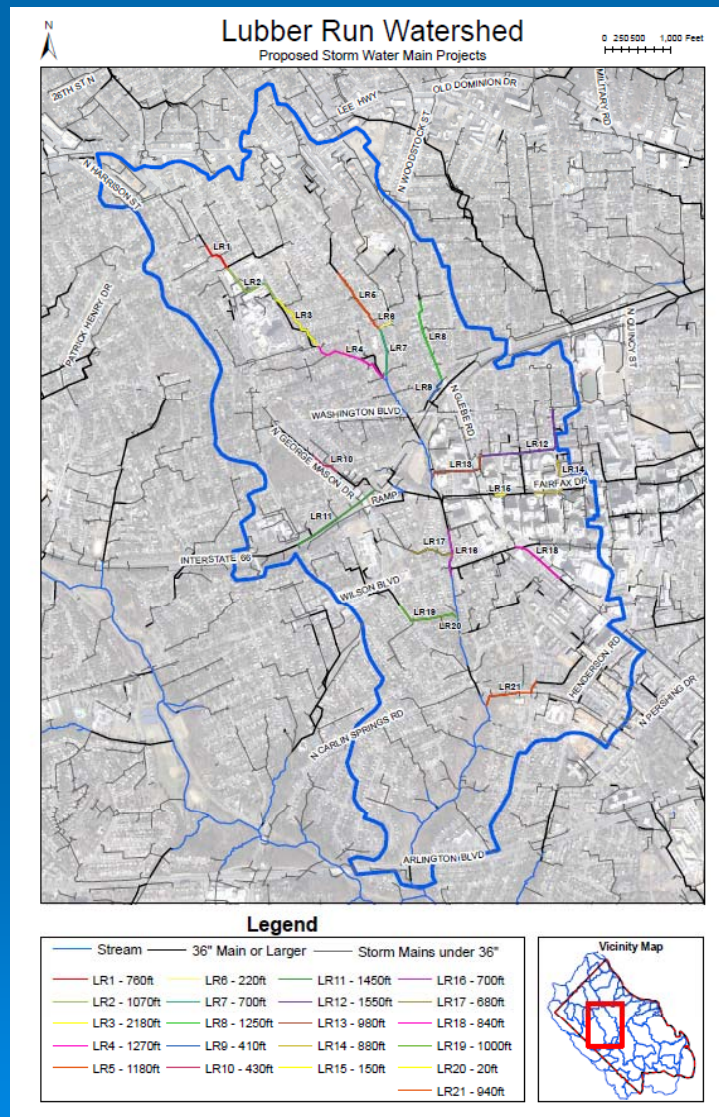
- 54% of the modeled system

- 17 Potential Projects for upsizing

- 1 Project currently in design

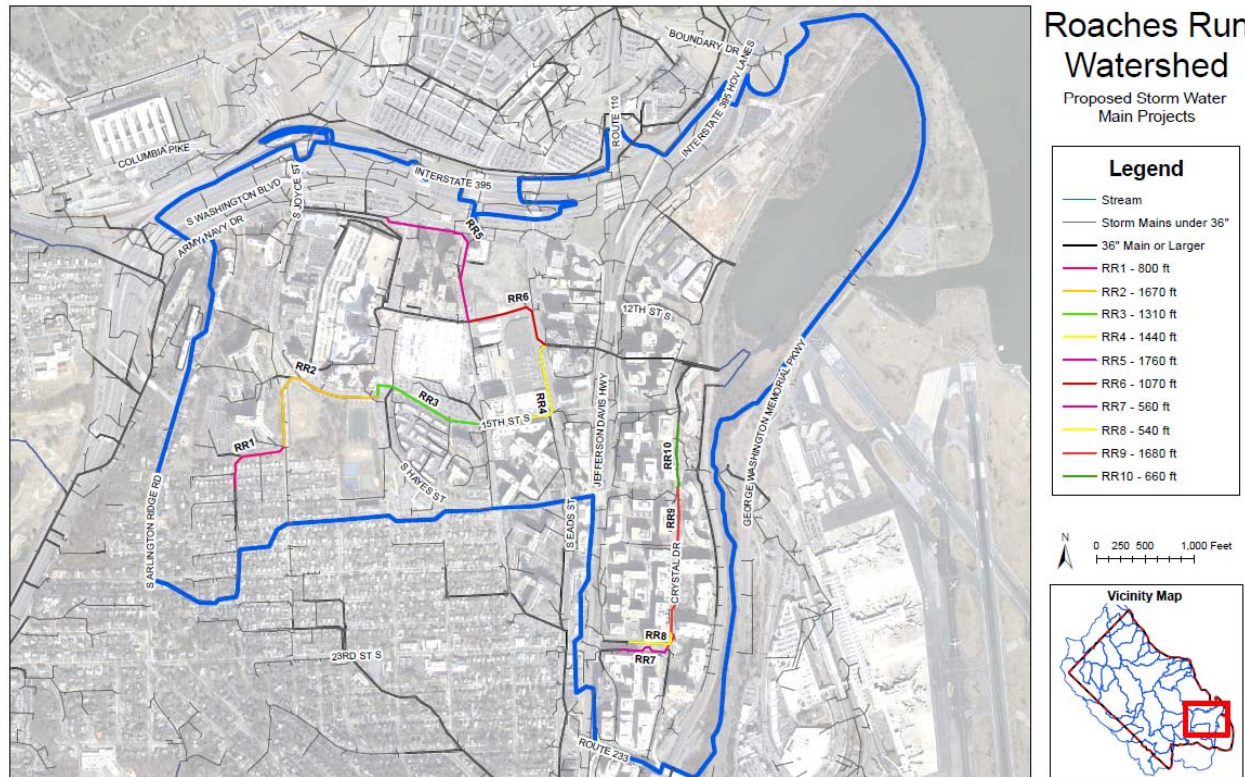


Lubber Run



- 1,030 Acres
- 46% Impervious, mainly residential land use
- 35,200 LF Pipe & 5,500 LF Stream Modeled
- 29% of the storm sewer system
- 18,600 LF Pipe to be Upsized
- 53% of the modeled system
- 21 Potential Projects for upsizing

Roaches Run



- 625 Acres
- 67% Impervious, mainly commercial use
- 29,300 LF Pipe modeled
- 26% of the storm sewer system
- 11,500 LF Pipe to be upsized
- 39% of the modeled system
- 10 Potential Projects for upsizing

Spout Run

- 1,070 Acres

- 50% Impervious

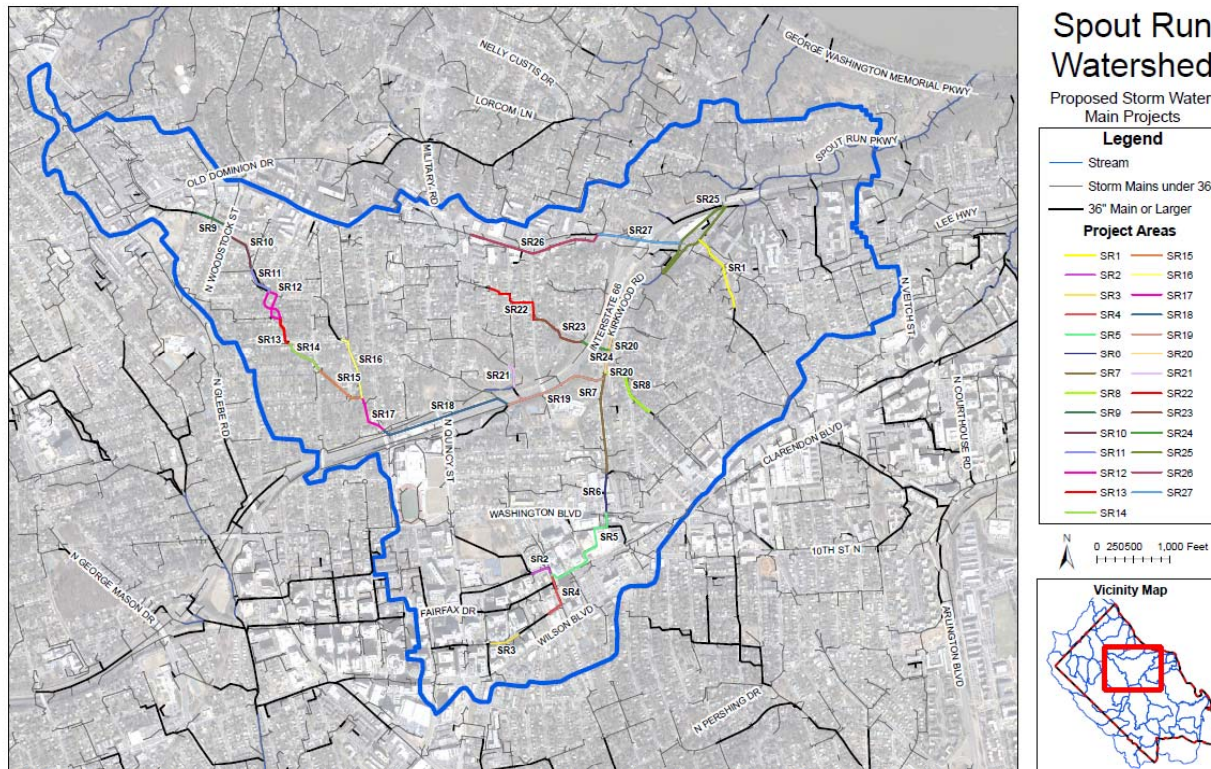
- 41,500 LF Pipe & 3,500 LF Stream modeled

- 25% of the storm sewer system

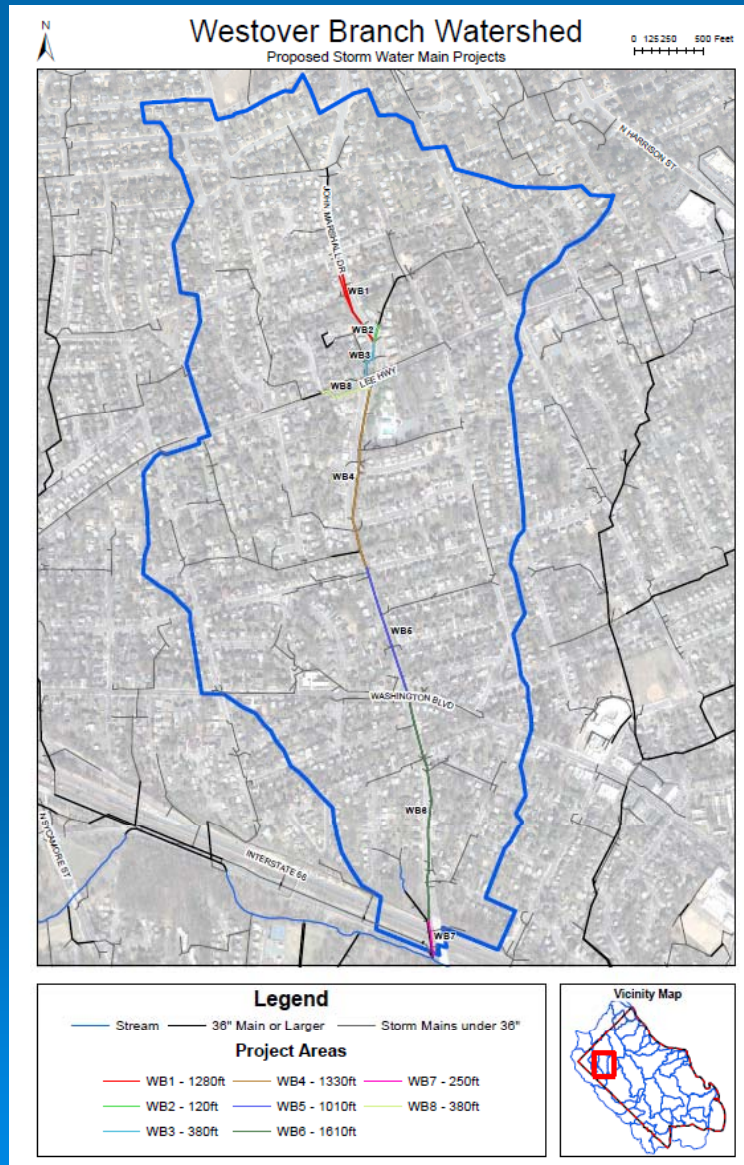
- 26,000 LF Pipe to be upsized

- 63% of the modeled system

- 28 Potential Projects for upsizing



Westover Branch



- 300 Acres
- 38% Impervious, mainly residential land use
- 8,000 LF Pipe Modeled
- 23% of the storm sewer system
- 6,400 LF Pipe to be Upsized
- 80% of the modeled system
- 8 Potential Projects for upsizing
- Entire system is piped
- Project at Lee Hwy/John Marshall essentially complete.

Capacity Analysis Results

Watershed	LF Modeled Pipe to be upsized	% Modeled Pipe to be upsized	Planning level cost estimate (\$1000)
Crossman Run	1,200	21	700
Doctor's Branch	13,800	45	7,500
Little Pimmit Run	11,300	54	5,400
Lubber Run	18,600	53	8,400
Roaches Run	11,500	39	6,700
Spout Run	26,000	63	17,900
Westover Branch	6,400	80	4,500
Total	88,800	52	51,100

- Based on the 10yr-24hr SCS Type II Storm
- John Marshall Drive at Lee Hwy in Crossman Run already completed
- Little Pimmit Run has already had several projects completed to reduce flooding
- 111 Potential Projects (The 8 High Priority projects already identified in the CIP)

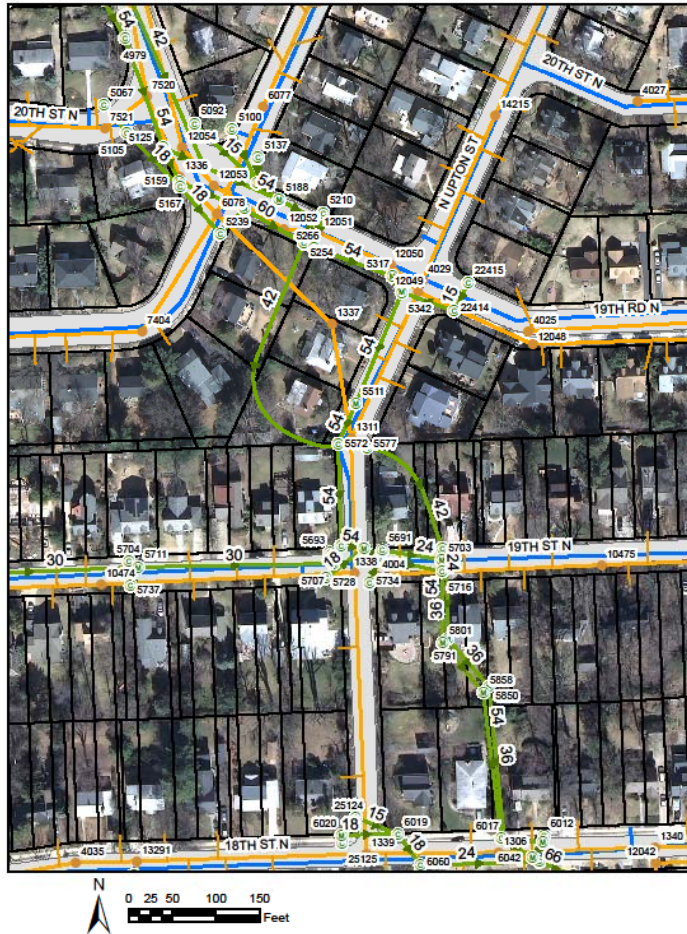
Potential Storm Sewer Upsizing



Less challenging projects

- Minimal existing utilities
- Existing pipes within Right-of-Way
- Minimal property owners to coordinate on construction impacts
- Larger roadway width for installation

Potential Storm Sewer Upsizing



More challenging projects

- Many existing utilities – sanitary, water
- Existing parallel pipe systems already in place
- Pipes on private property require easements and agreement from all property owners to be completed
- Small roadway width for pipe installation

Next Steps

- Prioritize Projects (on the County website)

<http://www.arlingtonva.us/departments/EnvironmentalServices/Sustainability/page89756.aspx>

- Incorporate projects into the SW Master Plan and CIP
- Coordinate with other County projects in the immediate vicinity: stormwater retrofits, sanitary sewer improvements, water mains, etc.

Questions?

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