Stormwater 5-Year Budget FY14-21

This presentation was modified on 2/25/14 to incorporate the County Executive’s recommended budget

February 20, 2014
Fairfax Federation of Citizens Association
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703-324-5732
Drivers

- Chesapeake Bay TMDL (Total Maximum Daily Load)
  - Phosphorus,
  - Nitrogen
  - Sediment

- MS4 Permit (Municipal Separate Storm Sewer System)
  - Inspection,
  - Maintenance,
  - Retrofit,
  - Training
  - Administration

- Local TMDLs
  - Planning
  - Retrofitting,
  - Plan Implementation

- Infrastructure
  - (Inspection & Reinvestment)

- Dam Safety
Stormwater Budget (By Project Area)
Fully Funded Annual Comprehensive Program (Est.)

- Stormwater Regulatory Program: $7.0M
- Emergency and Flood Response Projects: $1.0M
- Dam Safety and Facility Rehabilitation: $16.6M
- Conveyance System Rehabilitation: $10.0M
- Stream and Water Quality Improvements: $36.5M
- Stormwater Contributory Agencies: $0.7M
- Stormwater Operations: $25.0M
- Transfers: $1.0M

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• Total: $97.8M
Stormwater Regulatory Program

FY 14 = $5.0M       Fully Funded = $7.0M Est.
FY 15 = $5.5M       Current Balance = $1.8M

- MS4 Permit
  - Mapping
  - Facility Inspections
  - Industrial and High Risk Program
  - Data Collection and Reporting
  - Monitoring
  - Outreach
  - TMDL Action Plans

- Dams - State Regulations Updated November 2012
  - Annual inspections of state-regulated dams - 19 DPWES (engineers and owners inspections)
  - Emergency Action Plans Required (19)
    - Updated annually
    - Annual EAP drills or exercises
    - A new EAP for each dam prepared every six years
    - Required flood monitoring for each dam

- FEMA Flood Insurance Program
  - Community Rating System
  - Mapping
  - Outreach
  - Audits
  - Up-Dates
MS4 Permit
Municipal Separate Storm Sewer System

- Watershed Management
- Stormwater Management
  - Structural and Source Controls
  - Areas of New Development and Significant Redevelopment
  - Roadways
  - Retrofitting for Existing Discharges
  - Pesticide, Herbicide, and Fertilizer Application
  - Illicit Discharges and Improper Disposal
  - Spill Prevention and Response
  - Industrial and High Risk
  - Construction Site Runoff
  - Storm Sewer Infrastructure Management
  - **County Facilities (New)**
  - Public Education
  - **Training (New)**
  - Water Quality Screening Programs
  - **TMDL Action Plans (New)**
  - **Chesapeake Bay TMDL Action Plan (New)**
  - Monitoring and Reporting
Local TMDLs

• 84 Impaired Waters (2012)
  – 2004 -24 Impairments

• 10 TMDLs to Date
  – 6 Bacteria
  – 3 Sediment
  – 1 PCB

• Within 24 months Develop Action Plan
• Action Plans
Chesapeake Bay TMDL

• 15 yr. Estimated Construction cost
  • Regulated Area Est. = $660M or an average of $44M/yr.
  • Total County Stormwater Est. = $1,500M an average of $100M/yr.

• MS4 Permit Holders Must Achieve Reductions:
  • 5% of Required Reductions in First 5 Years
    – Regulated Area = $6.6M/yr.
    – Total County STW = $15M/yr.
  • 35% of Required Reductions in Second 5 Years
    – Regulated Area = $46M/yr.
    – Total County STW = $105M/yr.
  • 60% of Required Reductions in Third 5 Years
    – Regulated Area = $79M/yr.
    – Total County STW = $180M/yr.

• Chevy Stormwater Model – Budgeted at $45M/yr.
  – 100% Stream and Water Quality = $36.5M/yr.
  – 50% Dam Safety and Facility Reinvestment = $8.3M/yr. ($16.6M/2)
Bay TMDL

Pounds of Phosphorus

FY 11 FY 12 FY 13 FY 14 FY 15 FY 16 FY 17 FY 18 FY 19 FY 20 FY 21 FY 22 FY 23 FY 24 FY 25 FY 26 FY 27 FY 28 FY 29 FY 30
## Quarter Cent Multi Year CIP

<table>
<thead>
<tr>
<th>Project Title/ Project Number</th>
<th>FY 2015</th>
<th>FY 2016</th>
<th>FY 2017</th>
<th>FY 2018</th>
<th>FY 2019</th>
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<td><strong>STORMWATER MANAGEMENT</strong></td>
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<tr>
<td>1 Stormwater Regulatory Program / 2G25-006-000</td>
<td>$0.0225</td>
<td>$0.0250</td>
<td>$0.0275</td>
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<td>Stormwater Allocation to Towns</td>
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<td>Transfers</td>
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<td><strong>TOTAL Capital</strong></td>
<td><strong>30,109</strong></td>
<td><strong>32,069</strong></td>
<td><strong>35,969</strong></td>
<td><strong>39,869</strong></td>
<td><strong>43,669</strong></td>
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Emergency and Flood Response Projects

FY 14 = $0.9M  Fully Funded = $1.0M
FY15 = $0.9M  Current Balance=$1.0M

• Mitigate Structure Flooding where County Determined Liable
• Repeat Flooding due to Undersized Conveyance System

Brookview Drive - Lee
Dam Safety and Facility Rehabilitation
FY 14 = $4.0M  Fully Funded = $16.6M
FY15=$4.5M Current Balance = $5.1M*

• Management Facilities
  — 1,540 County Maintained – Current Value
  — 3,720 Privately Maintained

• PL-566 Dams
  — Spillway Upgrades
    • Only Huntsman Lake remaining
    • Barton, Woodglen, Royal completed
  — Dredging
    • Barton Complete
    • Huntsman being Awarded $3.5M *
      • Woodglen to Bid this Spring
      • Royal to Bid this year

• Estimate
  — $500M/40yr life = $12.5M/yr
  — System Growth  = $4.1M/yr.
Lake Barton Dredging and Lake Management
Conveyance System Rehabilitation

FY 14 = $4.5M   Fully Funded = $10.0M Est.
FY15 = $5.0M Current Balance = $3.6M

• Conveyance System
  – 1,600 miles pipe and paved channel
  – 43,000 structures
  – >$1B value

• Estimating Assumptions
  – 100 year life
  – 1% reinvested annually
  – $10M/yr.
7,277 linear feet of storm sewer cured-in-place pipe lining was completed during the second half of FY 2013 in several areas within the County @ $1.2M:

- Agin Ct
- Bernane Forest Ct (2)
- Bright Meadows La
- Caris Glenne Dr
- Cedar Mill Ct (4)
- Clover Leaf Dr (2)
- Dartford Dr (4)
- Forest Hill Dr - Golden Eagle Dr
- Great Owl Ci - Hatteras La
- Houston Ct
- Indian Run Pkwy
- Lake Newport Rd
- Nedra Dr
- Northern Neck Dr
- Payne’s Church Dr (2)
- Sheldon Dr
- Sideburn Rd - Sweet Mint Dr
- Taji Ct
- Vintage Pl
- Weatherstone Ct
- Wilhelm Dr (2)
- Ashgrove House La (2)
- Brennanhill Ct
- Candlewood Dr
- Carol La
- Cider Barrel Ci
- Corsica St
- Durand Dr
- Great Owl Ci - Hatteras La
- Huntsman Bv
- Kathleen Pl
- MacBeth St (2)
- Noman Cole
- Orr Dr
- Saint Edwards Pl
- Sherando La
- Tori Glen Ct
- Wagon Wheel Rd
- Wildmere Pl
Infiltration Gusher

Bernane Forest Ct.
Dranesville, Difficult Run

Candlewood Dr.
Mt. Vernon, Little Hunting Creek

Caris Glenne Dr.
Hunter Mill, Sugarland Run

Cedar Mill Ct.
Providence, Difficult Run
Repair Condition

Dartford Dr.
Providence, Scotts Run

Dartford Dr.
Providence, Scotts Run

Hatteras La.
Braddock, Accotink Creek

Durand Dr.
Hunter Mill, Difficult Run
For additional Information, please call
Irene Haske, Public Information Officer
703-324-5821, TTY 711
SWPDmail@fairfaxcounty.gov
www.fairfaxcounty.gov/dpwes

Before

After
Stream and Water Quality Improvements

FY 14 = $8.6M  Fully Funded = $36.5M

FY15=$13.2M  Current Balance = $0.0

• Stream Restorations
  • Physical Improvement
  • Improved Habitat
  • Meet Bay and Sediment TMDLs

• Ponds Retrofits
  • Water Quality Improvement
  • Protect Streams
  • Meet Regulatory Requirements

• LID Techniques
  • Reduce Runoff
  • Improve water Quality
  • Meet Regulatory Requirements

• Estimate - $36.5M
  • Watershed Plans
  • Bay TMDL

Dead Run  Dranesville
Stream Restoration

Before: Exposed sanitary sewer line and highly eroded channel.

After: Stream bottom was raised to protect sanitary line and address safety issues related to the steep banks.
Pre-Existing Condition: Stream Channel Downstream From Pedestrian Bridge
Post Construction: Stream Restoration at existing Culvert at Follin Lane with Armored Step Pools
# Extended Detention Pond

**Cinnamon Oaks**

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<th></th>
<th>TP</th>
<th>TN</th>
<th>TSS</th>
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<td>Removal (lb/yr)</td>
<td>6.20</td>
<td>28.25</td>
<td>1,215</td>
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<td>Capital Cost Per Removal ($/lb/yr)</td>
<td>$ 16,140</td>
<td>$ 3,545</td>
<td>$ 82.43</td>
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Bioretention

Reforestation

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<td>Removal (lb/yr)</td>
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<td>Capital Cost Per Removal ($/lb/yr)</td>
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Bioretention

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<td>Removal (lb/yr)</td>
<td>1.70</td>
<td>9.88</td>
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<tr>
<td>Capital Cost Per Removal ($/lb/yr)</td>
<td>$42,353</td>
<td>$7,287</td>
<td>$258</td>
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Farm Pond Retrofit and Harvesting?
Non Capital Stormwater

• Stormwater Contributories: FY14= $0.57M FY15=$0.58M FF = $0.7M
  – Northern Virginia Soil and Water District = $460,000
  – Occoquan Laboratory = $113,000

• Transfers to General Fund for Support : $1,000,000

• Operations: FY14=$16.4M FY15=$18.1M FY21= $25M
  – Includes Staff, Vehicles, Materials
    • Stormwater Reimbursed for non Stormwater activities- Snow, Trails, Ect.
  – Funds Routine Facility and Conveyance System Maintenance
    • Litter Collection/Grass Cutting/Pipe Cleaning/ Catch Basin Cleaning/Small Repairs
    • Stormwater Emergency Responses/Trouble Call Investigations
  – Funds Administration, IT, and other Support Functions
Recommendation

• Move Forward Steadily but Slowly
  – Projects take 12-24 Months
  – Review Progress and Learnings Each year
  – Evaluate Progress, Funding and Staffing each year
    – Initially Plan on 1/4 Cent/Year

• Continue to Evaluate Alternative Solutions
  – Trading with Wastewater
  – Stream Restoration – But Not Alone
    – Non-Structural Practices

• Redevelopment Provides Opportunities
Uncertainties in Stormwater

- MS4 Service Area?
- Accounting for Nutrients?
- Trading?
- Staffing?
- Federal Rule Making?
- Local TMDLs
- O&M Costs for Treatment?
Randy Bartlett, P.E., Deputy Director
Fairfax County
Department of Public Works and Environmental Services
12000 Government Center Parkway
Fairfax, VA 22035
www.fairfaxcounty.gov/dpwes/stormwater

Thank you.

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