



A Fairfax County,
Virginia Publication
February 2014

Stormwater 5-Year Budget FY14-21

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

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Fairfax Federation of Citizens Association

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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 |

| | |
|---------|---------|
| ----- | ----- |
| • Total | \$97.8M |

Stormwater Regulatory Program

FY 14 = \$5.0M Fully Funded = \$7.0M Est.

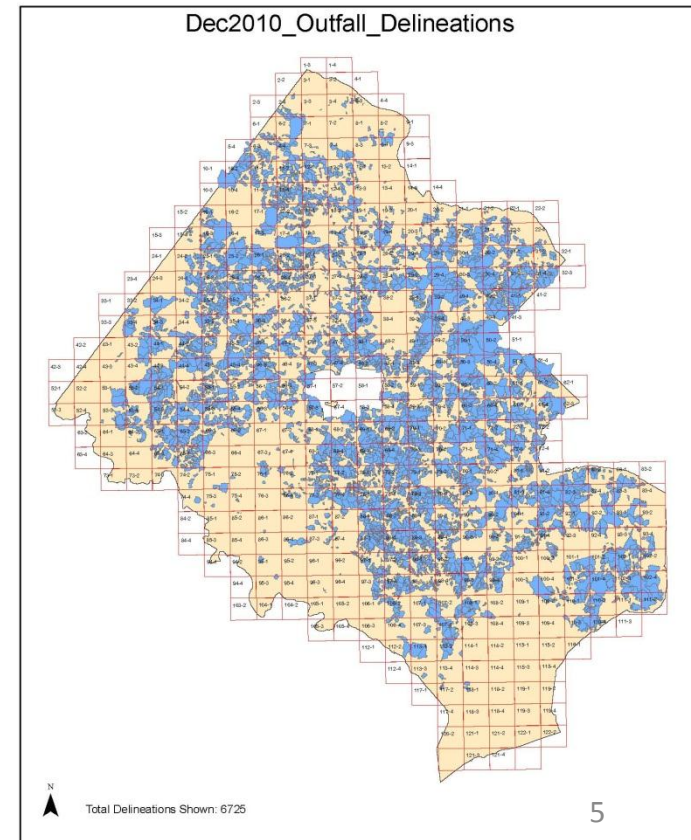
FY15 = \$5.5M Current Balance = \$1.8M

- 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)

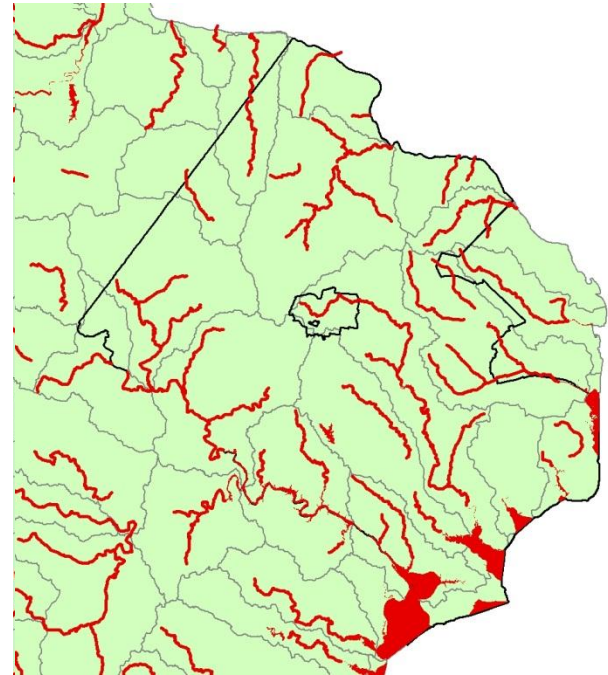
- 2004 -24 Impairments

- 10 TMDLs to Date

- 6 Bacteria

- 3 Sediment

- 1 PCB



- Within 24 months Develop Action Plan

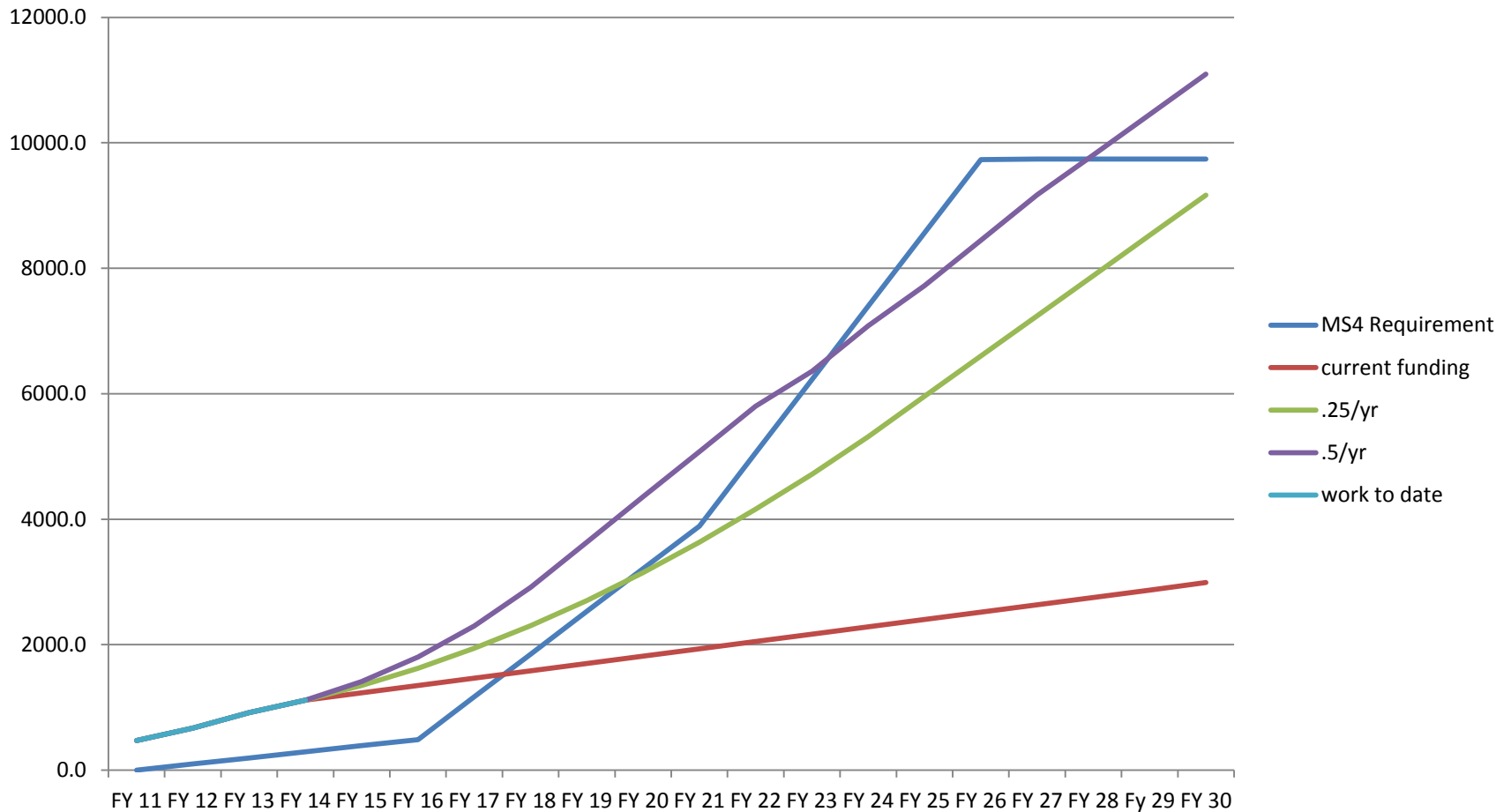
- Action Plans

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



Quarter Cent Multi Year CIP

| | Project Title/ Project Number | FY 2015 | FY 2016 | FY 2017 | FY 2018 | FY 2019 | Fully Funded Comprehensive Program |
|---|---|---------------|---------------|---------------|---------------|---------------|------------------------------------|
| | <u>STORMWATER MANAGEMENT</u> | \$0.0225 | \$0.0250 | \$0.0275 | \$0.0300 | \$0.0325 | |
| 1 | Stormwater Regulatory Program / 2G25-006-000 | 5,500 | 6,000 | 6,500 | 6,500 | 7,000 | 7,000 |
| | | | | | | | |
| 2 | Emergency and Flood Response Projects / SD-000032 | 900 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| | | | | | | | |
| 3 | Dam Safety and Facility Rehabilitation / SD-000033 | 4,500 | 5,000 | 5,500 | 6,000 | 6,500 | 16,600 |
| | | | | | | | |
| 4 | Conveyance System Rehabilitation / SD-000034 | 5,000 | 5,500 | 6,000 | 6,500 | 7,000 | 10,000 |
| | | | | | | | |
| 5 | Stream and Water Quality Improvements / SD-000031 | 13,240 | 13,600 | 16,000 | 18,900 | 21,200 | 36,500 |
| | | | | | | | |
| 6 | Stormwater Contributories / 2G25-007-000 & 2G25-008-000 | 598 | 598 | 598 | 598 | 598 | 700 |
| | | | | | | | |
| | Stormwater Allocation to Towns | 371 | 371 | 371 | 371 | 371 | |
| | Transfers | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | |
| | TOTAL Capital | 30,109 | 32,069 | 35,969 | 39,869 | 43,669 | \$97,800 |

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.



Compton Heights - Sully

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.



Lee, Dogue Creek



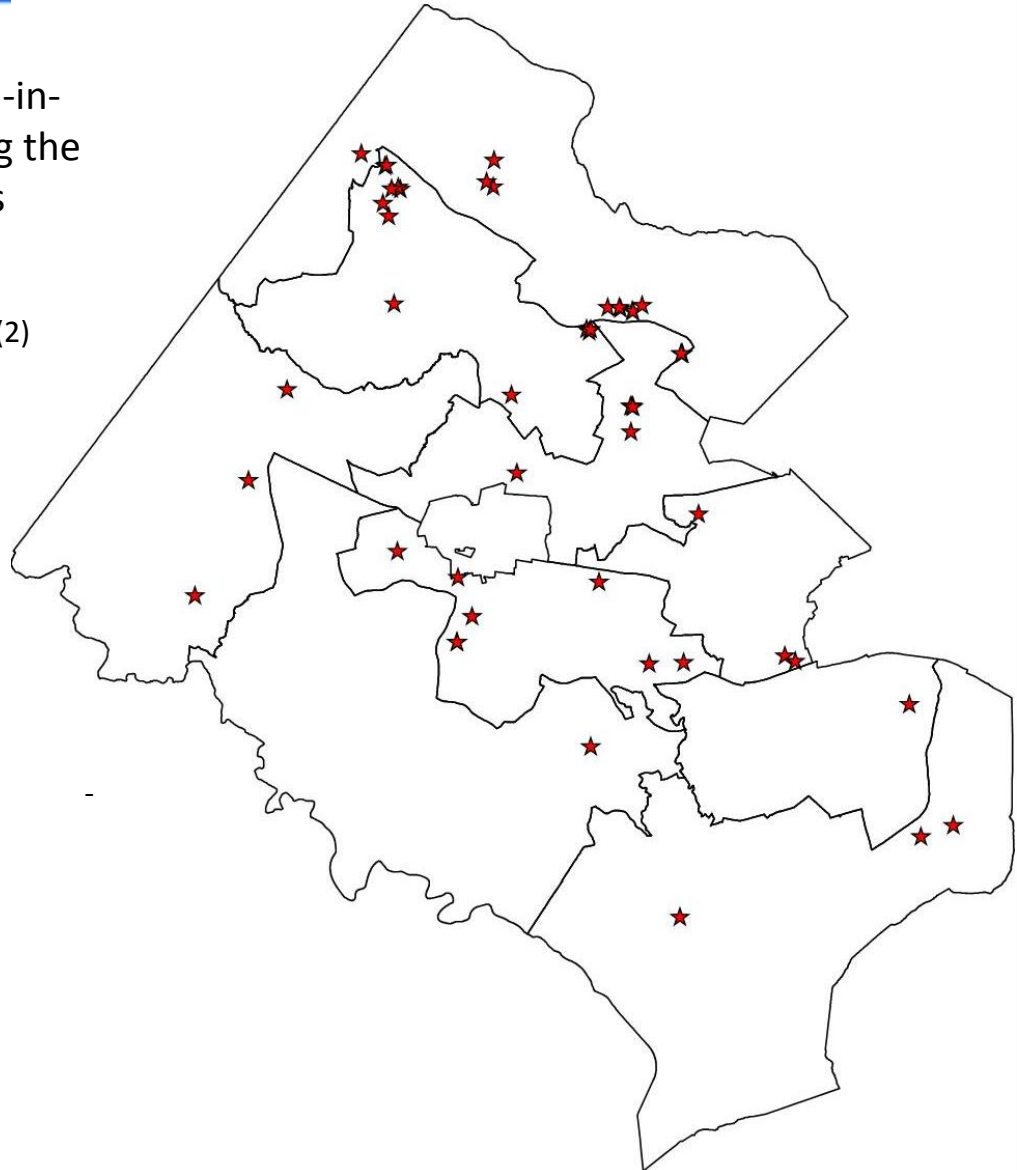


2nd Half of FY13 Storm Sewer Pipe Rehabilitation County Wide Fairfax County, Virginia



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
- Huntsman Bv
- Kathleen Pl
- MacBeth St (2)
- Noman Cole
- Orr Dr
- Saint Edwards Pl
- Sherando La
- Tori Glen Ct
- Wagon Wheel Rd
- Wildmere Pl





Repair Condition



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

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SWPDmail@fairfaxcounty.gov

www.fairfaxcounty.gov/dpwes



Working For You!

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

Sanitary Sewer



Before: Exposed sanitary sewer line and highly eroded channel.

Approximate location of Sanitary Sewer



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





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Cinnamon Oaks

Extended Detention Pond



| | TP | TN | TSS |
|-------------------------------------|-----------|----------|----------|
| Removal (lb/yr) | 6.20 | 28.25 | 1,215 |
| Capital Cost Per Removal (\$/lb/yr) | \$ 16,140 | \$ 3,545 | \$ 82.43 |





Kings Park West

Bioretention

Reforestation



| | TP | TN | TSS |
|-------------------------------------|----------|--------|-------|
| Removal (lb/yr) | 6.87 | 50.13 | 1,076 |
| Capital Cost Per Removal (\$/lb/yr) | \$ 4,411 | \$ 605 | \$ 28 |

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Franklin Middle School



Bioretention

| | TP | TN | TSS |
|-------------------------------------|-----------|----------|--------|
| Removal (lb/yr) | 1.70 | 9.88 | 280 |
| Capital Cost Per Removal (\$/lb/yr) | \$ 42,353 | \$ 7,287 | \$ 258 |

2011/05/11

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



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Thank you.

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