

DPWES – Wastewater Management Program

Presentation to: Planning Commission – CIP Committee

Department of Public Works and Environmental Services
Working for You!



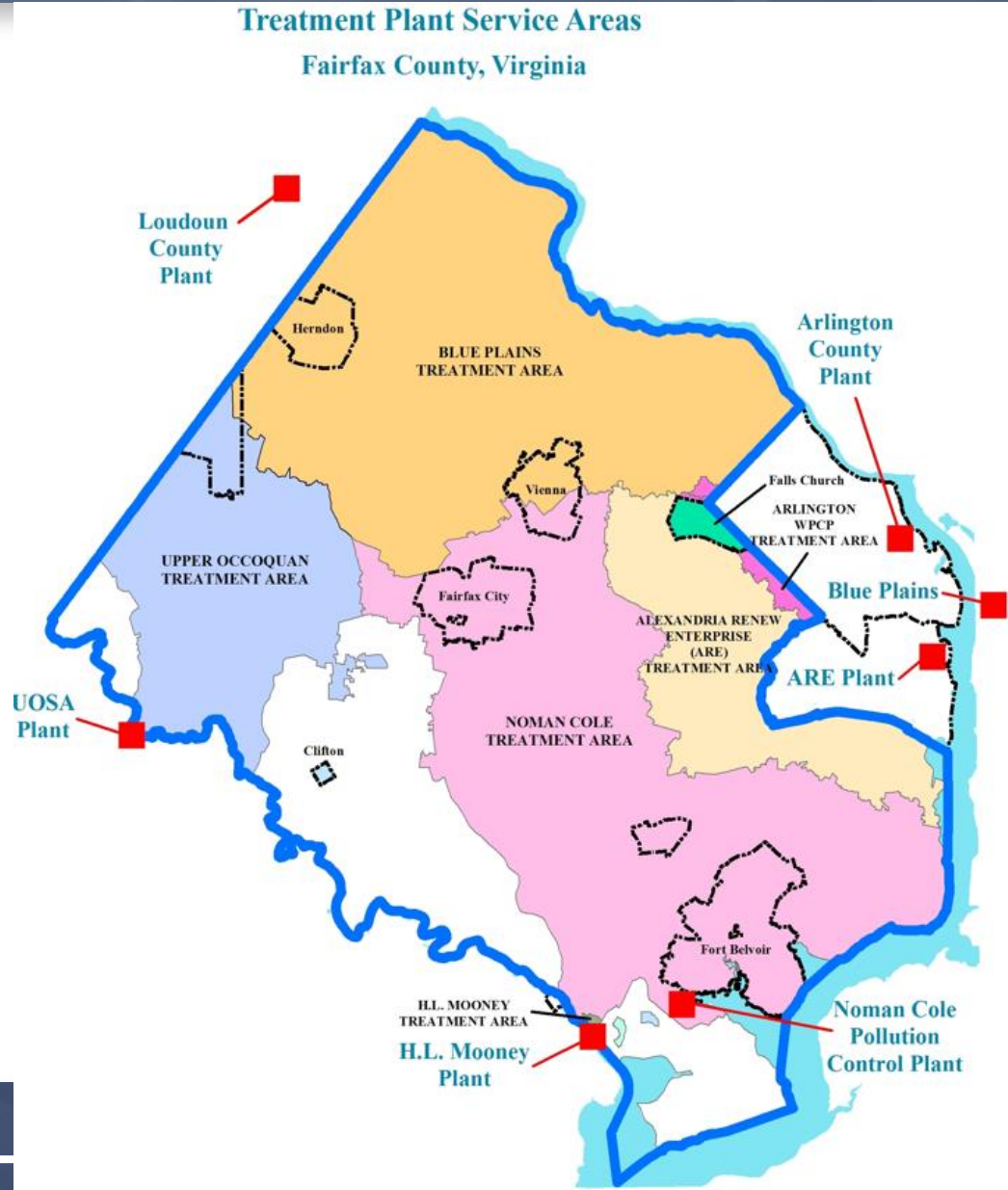
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Agenda

- Wastewater System Overview
- Capacity Matters
- Capital Improvement Program
- On the Horizon
- Questions



Wastewater System Overview



- Serve ± 300 mi² of the county's 400 mi²
- Collect 100 millions gallons /day - 372,000 customer accounts
- Over 3,100 miles of pipes (8" to 72") and 63 pump stations and force mains
- Wastewater is conveyed to seven advanced regional treatment plants
- Service is fee-based, not tax supported, budget of \$285 M /yr.

Awards & Recognition



- WEF Utility of the Future Today recognition
- NACWA Peak Performance Awards for Clean Water Act discharge permit compliance for more than 30 years
- Extraordinary Environmental Enterprise (E4) in the Virginia DEQ's Environmental Excellence Program
- NACWA Excellence in Management Recognition Award
- Governor's Environmental Excellence Award for Stewardship
- Institute for Sustainable Infrastructure Envision Gold Award
- Excellence in Financial Reporting by the Government Finances Officers Association of the U.S. and Canada



First Triple AAA Sewer Utility Bond Rating – Saves CIP Finance \$\$

- **Triple AAA Bond Rating Due to:**
 - Excellent financial management
 - Continued business and residential growth in Fairfax
 - Incremental sewer rate increases
 - Asset Management Program
 - Growth pays for growth policy
 - Rehab/reinvestment built into existing customer rates



Wastewater Treatment Capacity

- Total available capacity 157 Million Gallons Per Day (MGD)
- Current Flow 100 MGD
- Available capacity for growth 57 MGD (approximately 570,000 people)
- Plants serving the County
 - Noman M. Cole, Jr. Pollution Control Plant
 - Blue Plains
 - Arlington County
 - Alexandria Renew
 - Occoquan Service Authority
 - Loudoun Water
 - Prince William Service Authority

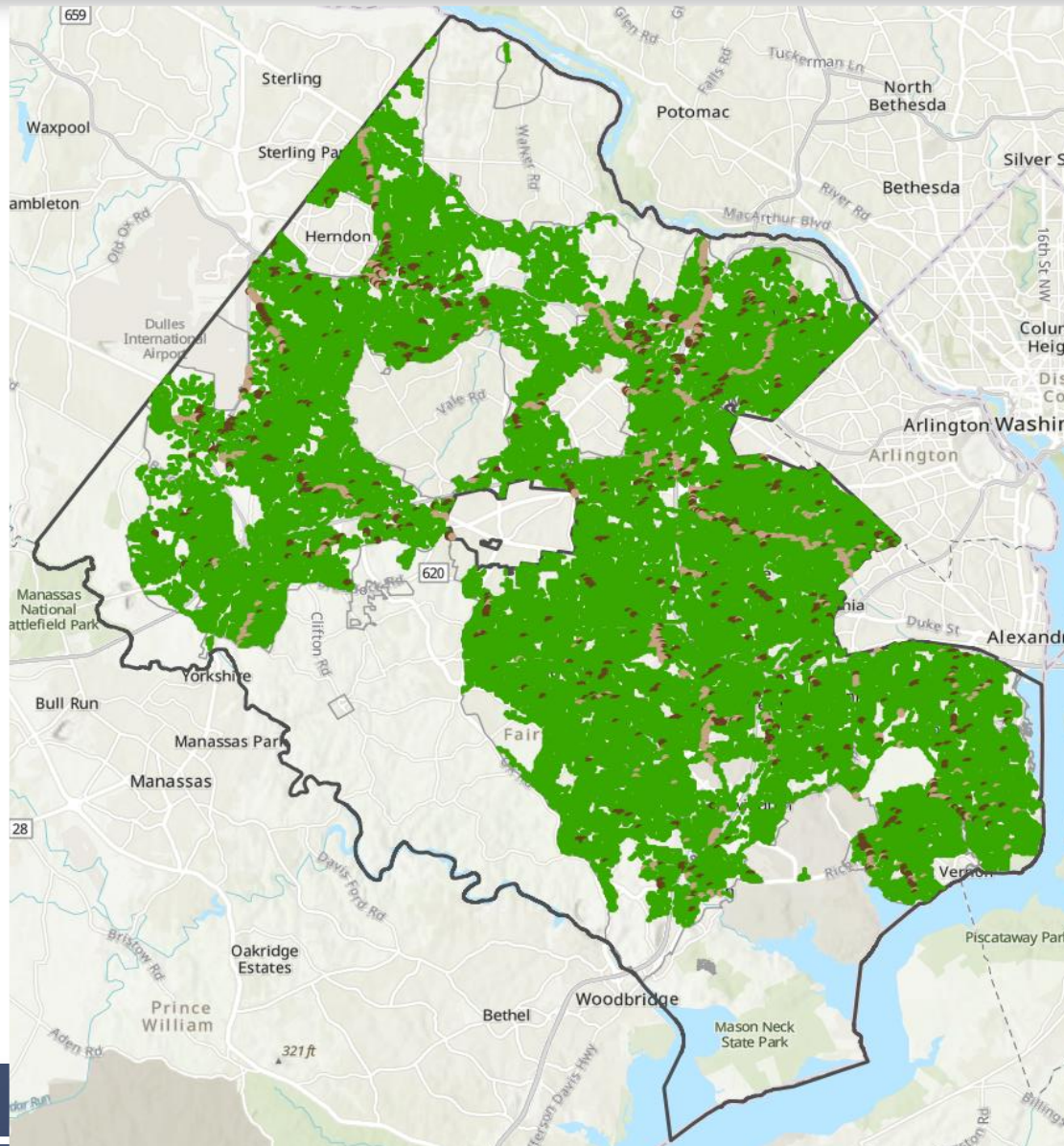


Wastewater Conveyance Capacity – Planning Level Hydraulic Modeling





- Adequate capacity is available for existing customers
- 1% of existing lines do not meet new sewer design standards
- Current wastewater is conveyed without capacity related issues
- County's Sanitary Sewer Overflows (SSOs) are 3 times lower than national median
- SSOs are not capacity related
- County system is recognized by US Environmental Protection Agency as a model system



Wastewater Hydraulic Modeling Result



Legend

-  Sewers with Adequate Theoretical Capacity
-  Sewers lacking Theoretical Capacity (PF)
-  Sewers lacking Theoretical Capacity (PFM)
-  County Border



Conveyance System Enlargement

- **Developers**

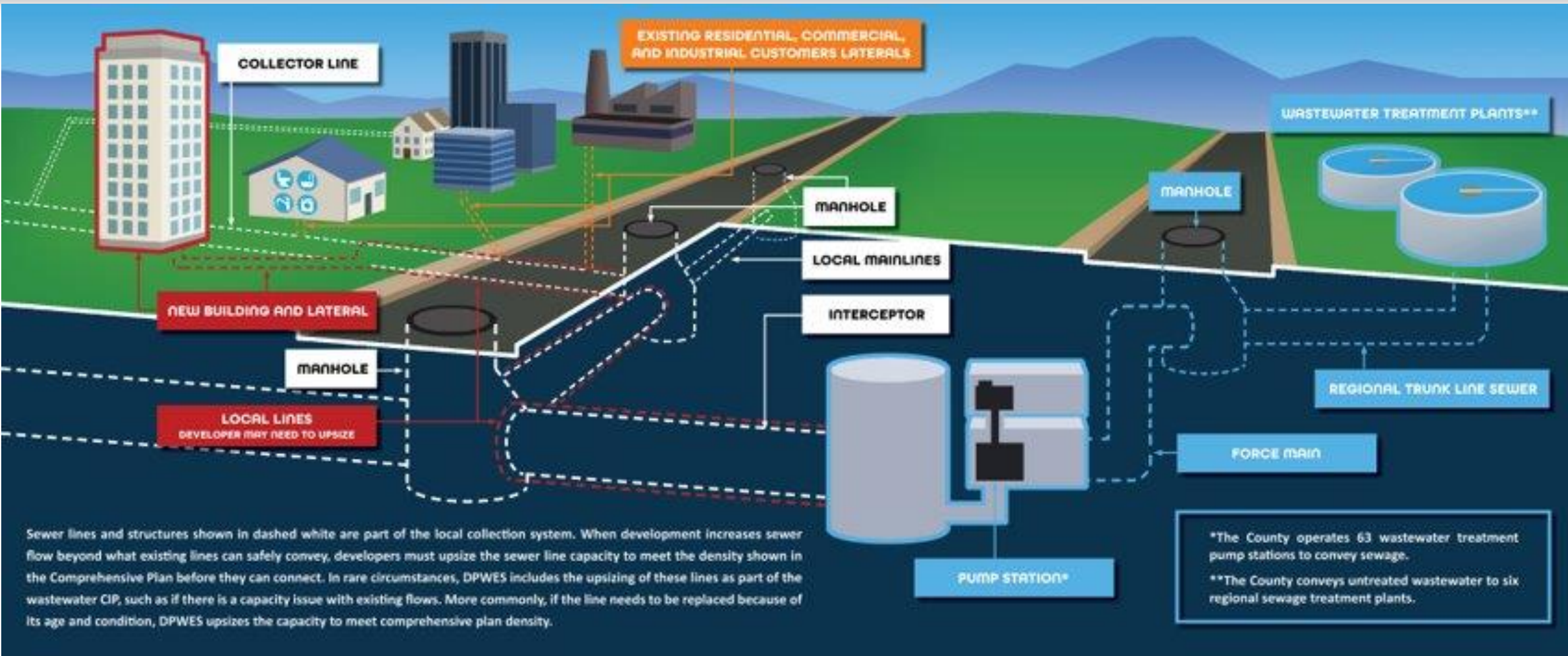
- If capacity is available, no action is needed
- 2016 to 2021 developer-led projects
 - 90% did not require enlarging sewer lines
 - 10% enlarged at \$3.15M /yr.
- High density “vertical growth” amplifies impact on local sewer lines
- If capacity is not available, must enlarge local sewer lines to Comp Plan level per Sewer Service Policy
- Reimbursement is available for enlarging to Comp Plan level
- Enlarge local sewer lines as needed for most efficient use of funds as development timelines change

- **County**

- Do not enlarge local lines for redevelopment – Growth-pays-for-growth
- Enlarge treatment plants to meet future growth
- Enlarge pipes to comp plan level when replaced for condition
- Enlarge major pump stations, and sewer lines carrying large flows to treatment plants
- Use Asset Management Program to minimize risk and prioritize capital investment
- See next slide



Wastewater System Schematic



Current County CIP Projects

Projects in Planning:

1. Evaluation of DC Water's Potomac Interceptor for projected capacity limitations
2. New Sugarland Pump Station and Force Main for projected growth around Herndon Metro Station
3. New Tysons East Pump Station and Force Main for future growth
4. Increase Difficult Run Pump Station capacity for growth in Herndon and Reston

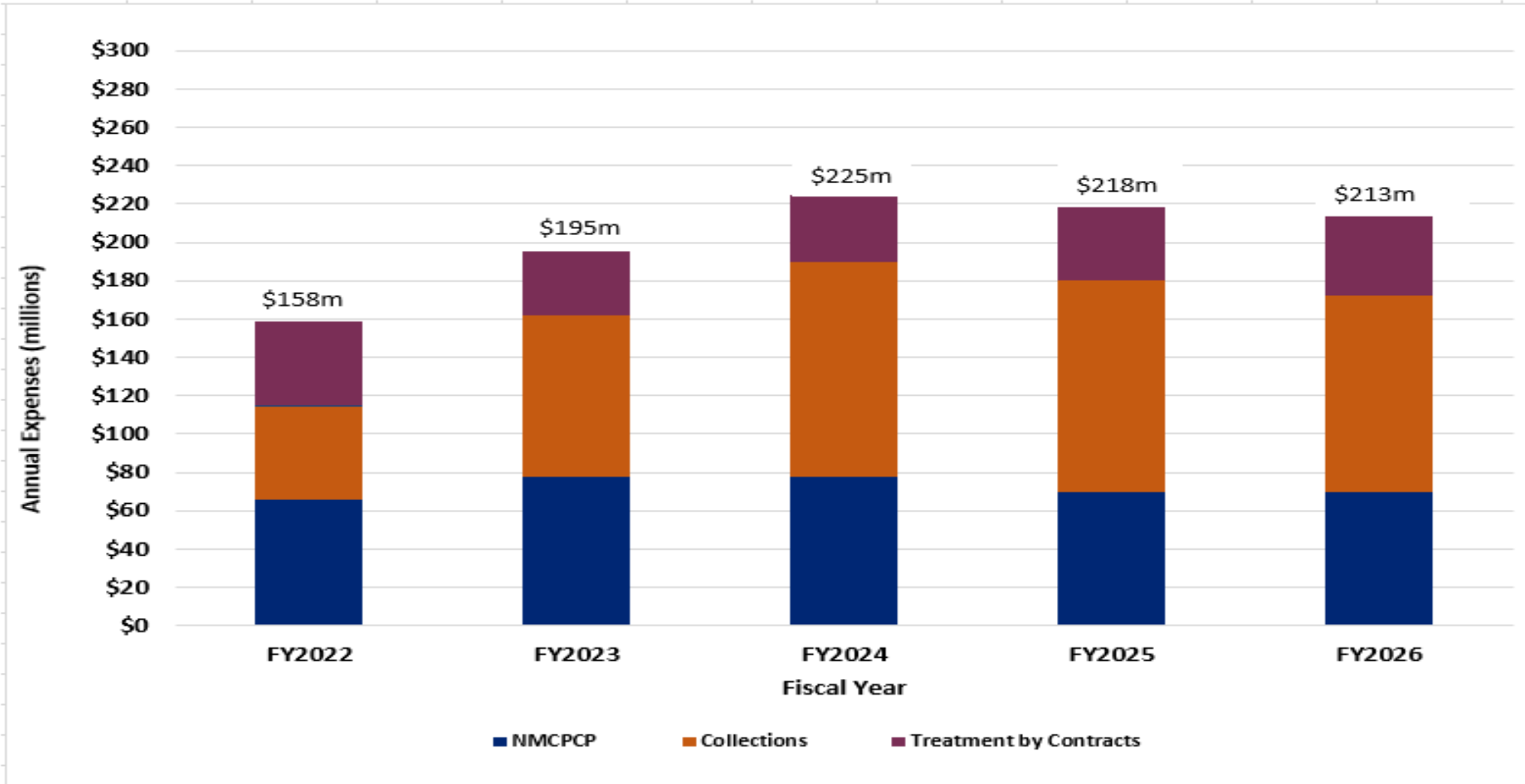
Projects in Design:

1. Wastewater Utility Management Plan for a County-wide evaluation of the entire sewer system capacity needs, among other things
2. Tysons West Pump Station, Force Main, and gravity sewer for future growth in Tysons and Reston
3. Enlarge Accotink Interceptor from 30" sewer to 42" sewer to handle future growth
4. Lakevale sewer project for capacity constraints in the Lakevale area
5. Enlarge 12" sewer to 18" sewer for future growth in Merrifield
6. Enlarge and relocate gravity sewers along Route 1 BRT /Embark project for future flows and avoid conflicts with BRT

Project in Construction: Upsizing of Alexandria Renew line carrying County flow

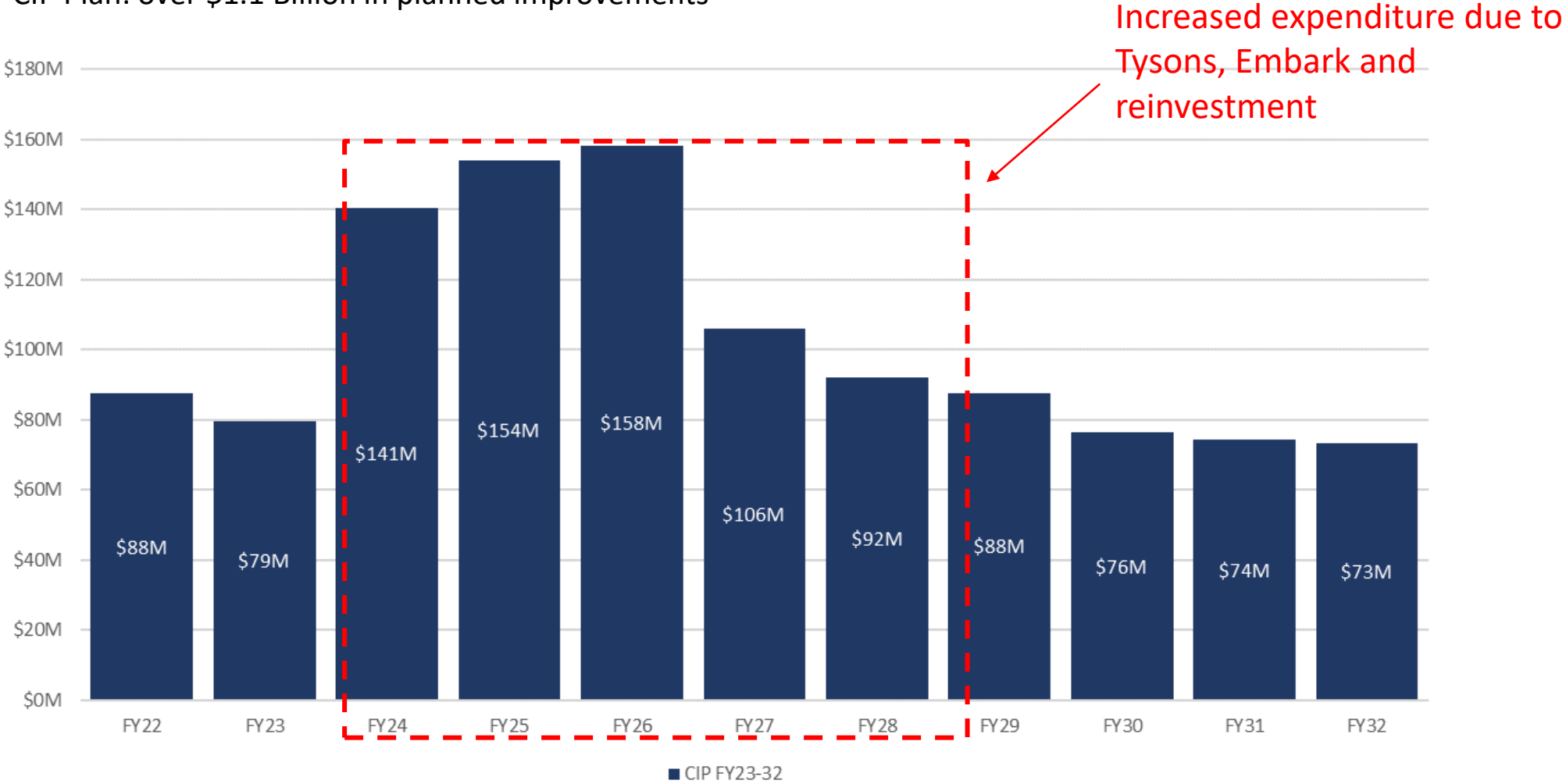


Wastewater CIP as of June 2021



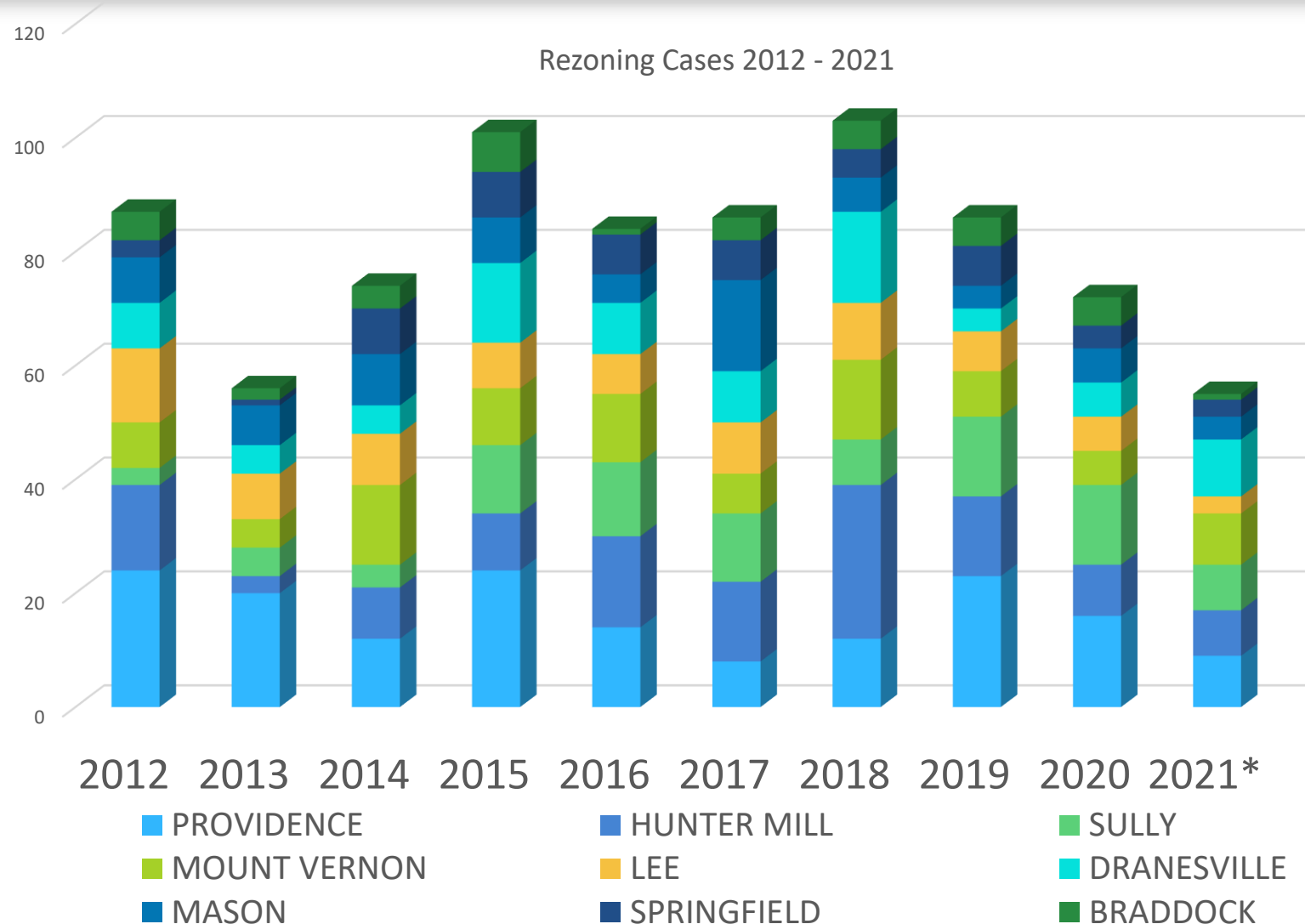
Conveyance CIP

Current 10-year CIP Plan: over \$1.1 Billion in planned improvements

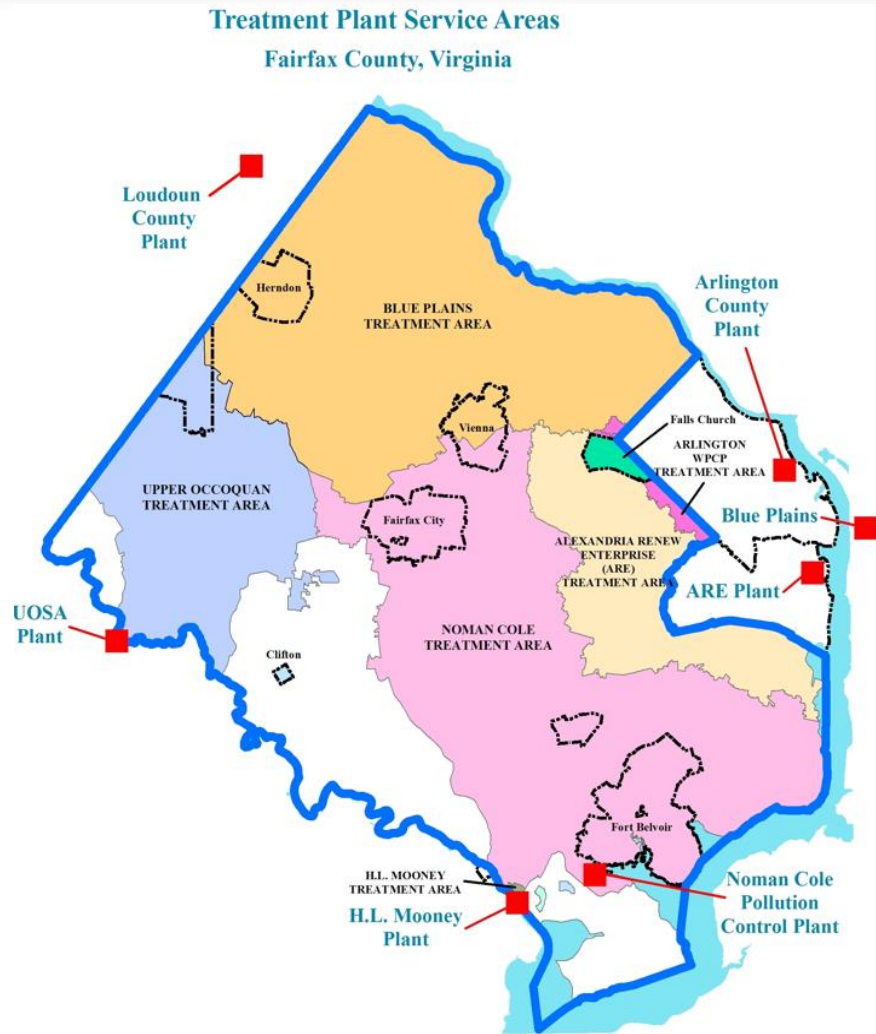


Development Trends and Capacity Demands

- Capacity demands centered in Tysons, Reston and Merrifield
- Anticipated capacity demands along Route 1
- Herndon and Falls Church need more capacity



On the Horizon for Board of Supervisors Consideration



- Modified Reimbursement Policy
- Impact on sewer rates
- Modified PFM requirements on flow rates
- Major ramp up of CIP in 2023 – 2028 due to age and capacity
- Regional partners CIP also ramping up
- Items for us to consider that you did not hear today?

Questions?

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