



# **2021 Sanitary Sewer Master Plan Update**

Master Plan Amendment #2021-00008  
City Council Public Hearing  
November 13, 2021

# What is the Sanitary Sewer Master Plan?

- Planning level document to address existing sanitary sewer needs and future needs as a result of growth
- First adopted in 2013 as a chapter to the City's Master Plan
- Intent of plan to be periodically updated to account for:
  - ✓ Updated growth/development forecasts
  - ✓ Updated assessment of sanitary sewer needs
  - ✓ Changes in regulatory requirements
  - ✓ Review of sanitary funding

# Sewer Master Plan Objectives

- Understand How the System Works
- Analyze Impacts of Growth
  - Sewer System Capacity
  - Identify System Improvements
- Discuss Ongoing and Future Wet Weather Mitigation Strategies
- Perform Sanitary Fee Study and Provide Recommendations

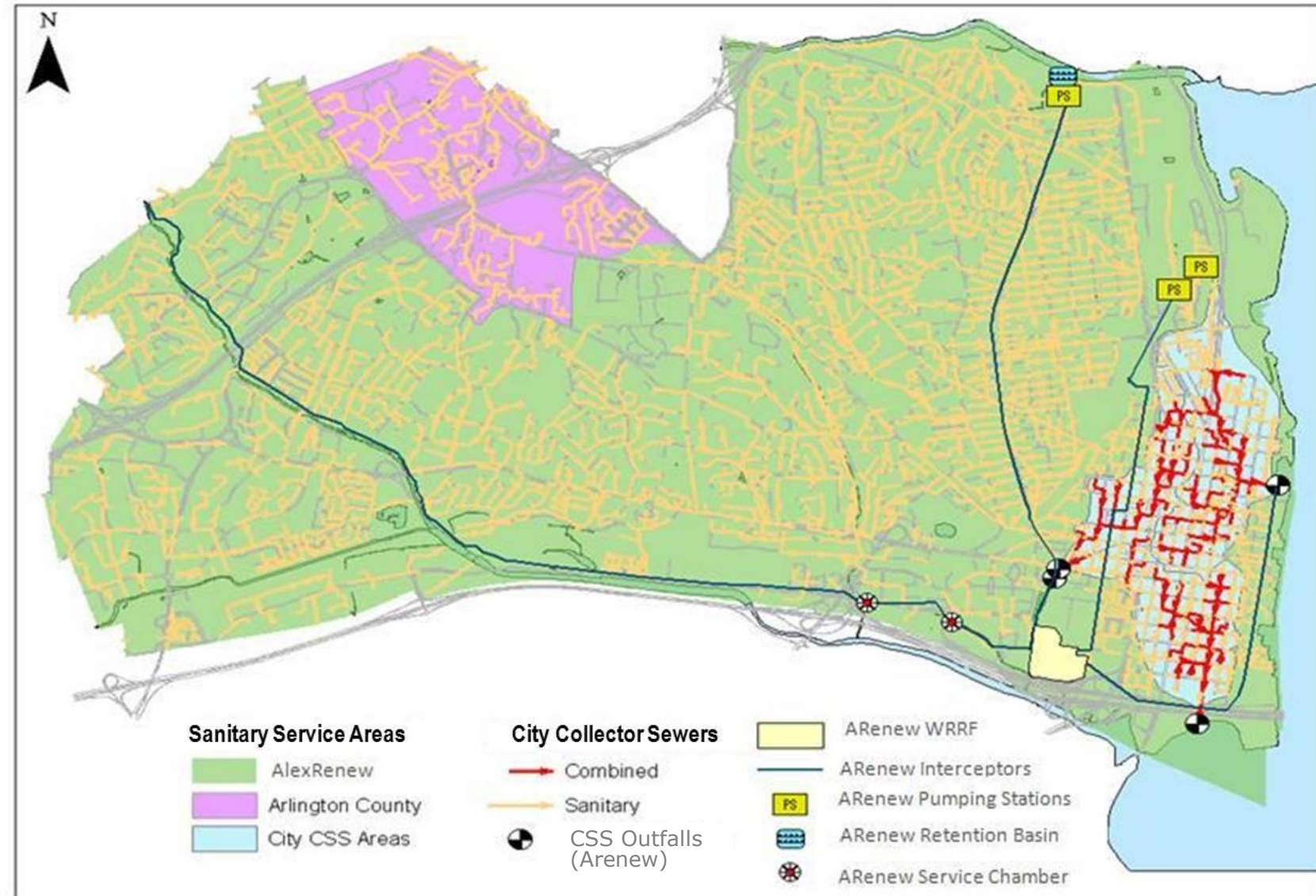
# System Overview

## City:

>240 miles of sanitary and combined sewers  
- 60 miles rehabilitated

## AlexRenew:

Wastewater Treatment Facility  
Interceptor Sewers  
Pumping Stations  
Combined Sewer Outfalls (RiverRenew Project)



# Sewer Capacity Needs

## Wastewater Treatment Capacity (AlexRenew)

- Build-out need: 4 million gallons per day wastewater treatment
- Timing of need: Between 2040-2045
- No additional need at Arlington County

## Interceptor Sewer Capacity (AlexRenew)

- Upper Holmes Run Trunk Sewer
  - Future improvements to be shared between City and Fairfax County (joint use sewer)
- Potomac Yard Trunk Sewer
  - Developer: all sewer improvements within Potomac Yard area
  - City: lower trunk sewer capacity improvements

## Collection System Capacity

- City: Existing sewer capacity improvements
- Developers: Growth-related capacity improvements



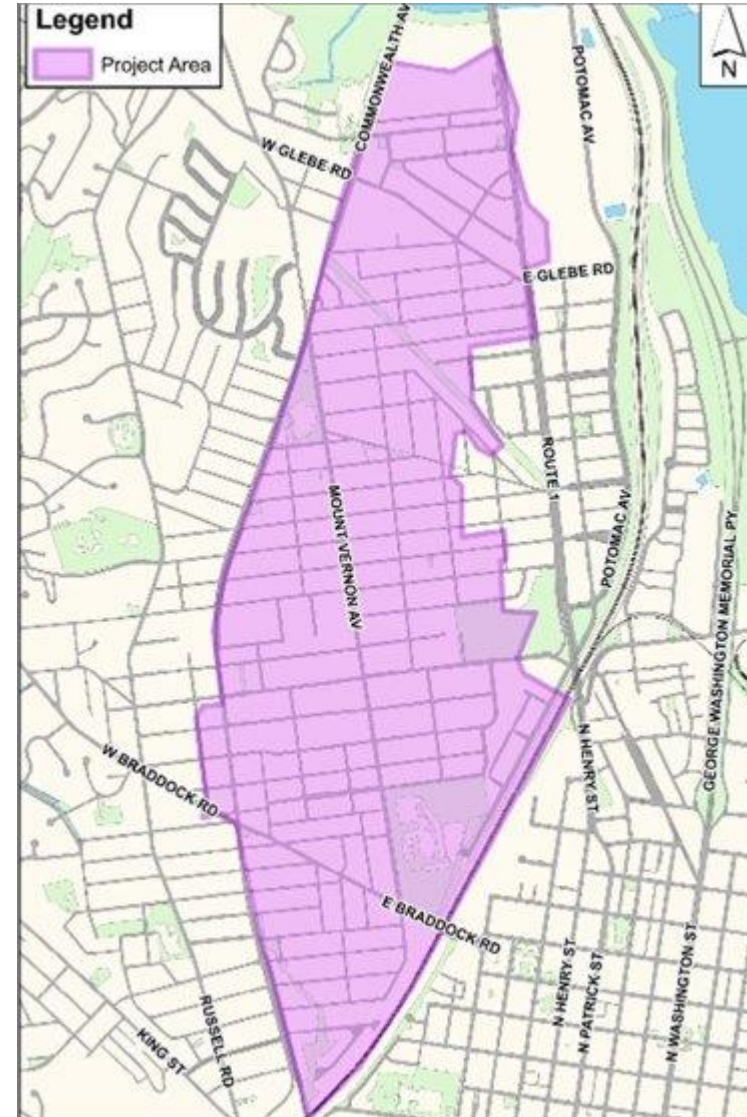
# Wet Weather Mitigation Strategies

Sanitary  
Sewer  
Asset  
Renewal  
Program

Sewer  
Capacity  
Upsizing  
Projects

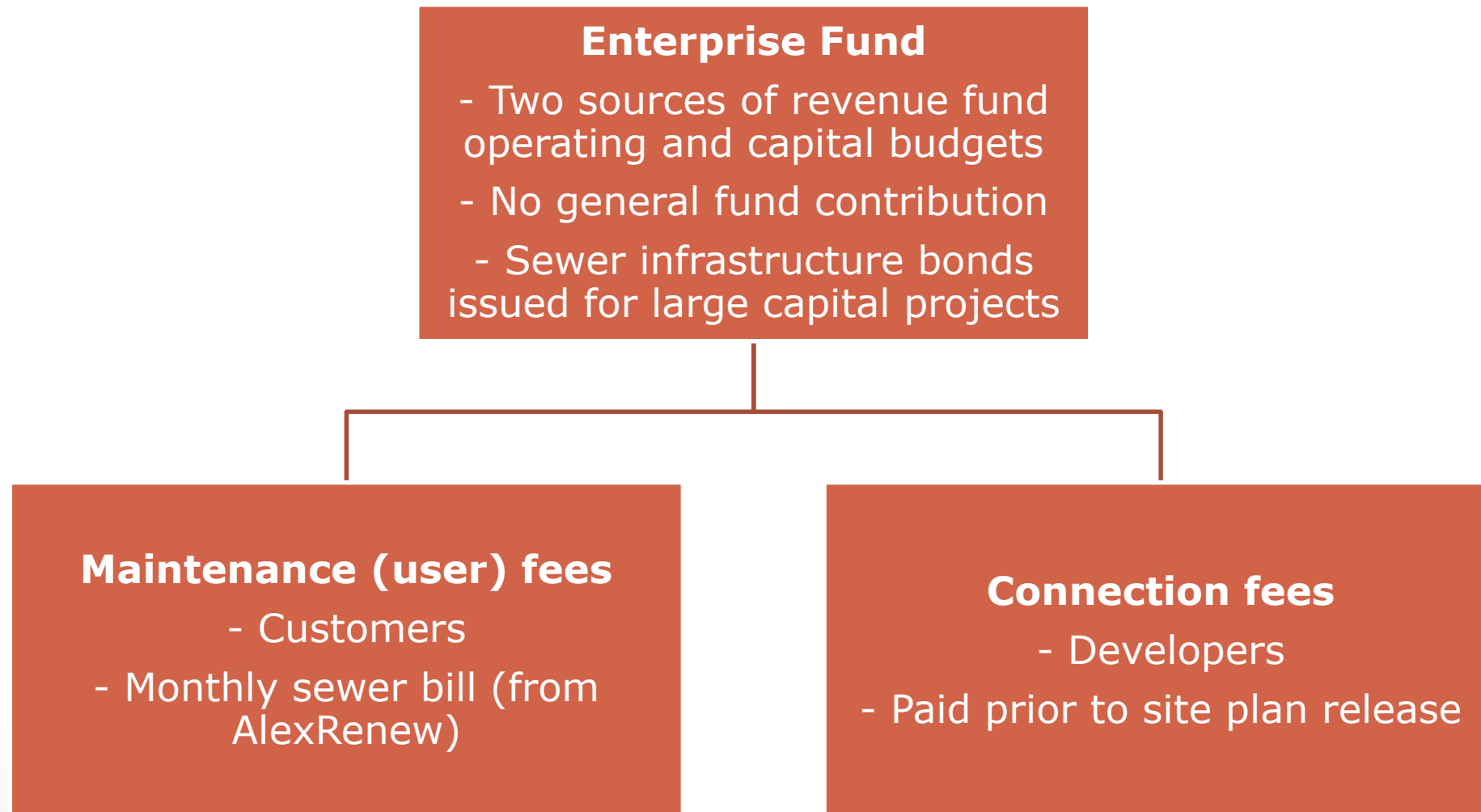
Sewer  
Separation  
Projects

Backflow  
Preventer  
Assistance  
Program



Area of ongoing sewer inspections

# Sanitary Sewer Funding



# Sewer User Fee (Customers)

- Current fee = \$2.28/1000 gallons (billed monthly)
  - Based on monthly water consumption
  - Typical residential charge: \$10-12 per month
- Winter average analysis
  - Basis for AlexRenew charges
  - More accurately reflects flows in sewer system
  - Seasonal savings of \$1-2 per month on City's sewer bill charges
  - Does not impact current fee

**Master Plan Recommendation: Update sewer user fee in City Code to winter average basis, proposed effective date July 1, 2022**



# Connection Fee Recommendations

- Increase teardown credit from 50 to 100 percent
  - Consistent with neighboring jurisdictions
- Establish senior living facilities as their own use at 75 percent single-family rate
  - Based on water usage study
- Update non-residential fees based on water usage study
- Proposed effective date: July 1, 2022
  - Requires update to City Code 5-6-25.1

# Connection Fee – Non-Residential

Meter Size	City of Alexandria (Existing)	Prince William County	Loudoun County	MASTER PLAN RECOMMENDATION
3/4-inch or smaller	\$9,446*	\$10,800	\$13,067	<b>\$13,224</b>
1-inch	\$15,773	\$43,200	\$26,134	<b>\$28,338</b>
1.5-inch	\$31,452	\$75,600	\$56,624	<b>\$56,676</b>
2-inch	\$50,342	Range: case-by-case basis \$129,600 minimum	\$104,357	<b>\$141,690</b>

\*equal to single-family fee

Updated values represent analysis of existing water usage data for all non-residential properties within the City based on a single-family Equivalent Residential Unit (ERU)

# Community Outreach



# Recommendation and Next Steps

- Staff Recommendation: That City Council approve resolution MPA 2021-00008 to amend the Sanitary Sewer Master Plan chapter of the 1992 Master Plan, by replacing the existing chapter with the updated plan
- Next Steps: Staff to bring ordinance to update the City Code with respect to the Sewer User Fee and Sewer Connection Fees



# Questions?

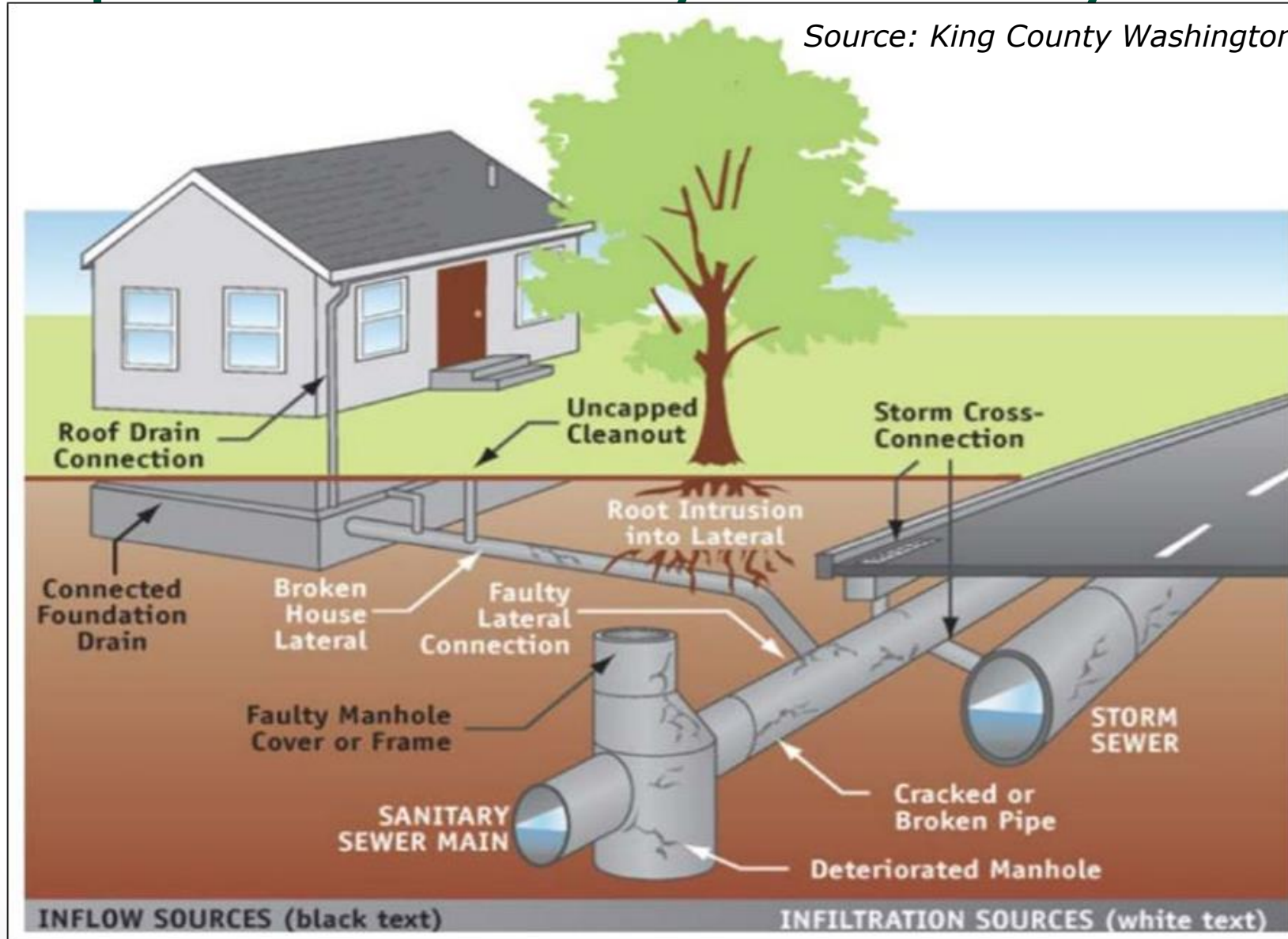


# **Additional Slides**



# How Does Stormwater Enter the Separate Sanitary Sewer System?

Source: King County Washington



# Connection Fee – Non-Residential

## Analysis of City commercial meters

	$\leq \frac{3}{4}"$ (1218)	1-inch (384)	1.5-inch (174)	2-inch (614)
City Fee	\$9,446	\$15,773	\$31,452	\$50,342
City ERU (based on existing fee)	1.0	1.67	3.33	5.33
Average metered water usage (gpd)	157	353	688	1,750
ERU based on water usage (1 ERU=115 gpd)	<b>1.4</b>	<b>3</b>	<b>6</b>	<b>15</b>
Fee based on ERU	\$13,224	\$28,338	\$56,676	\$141,690

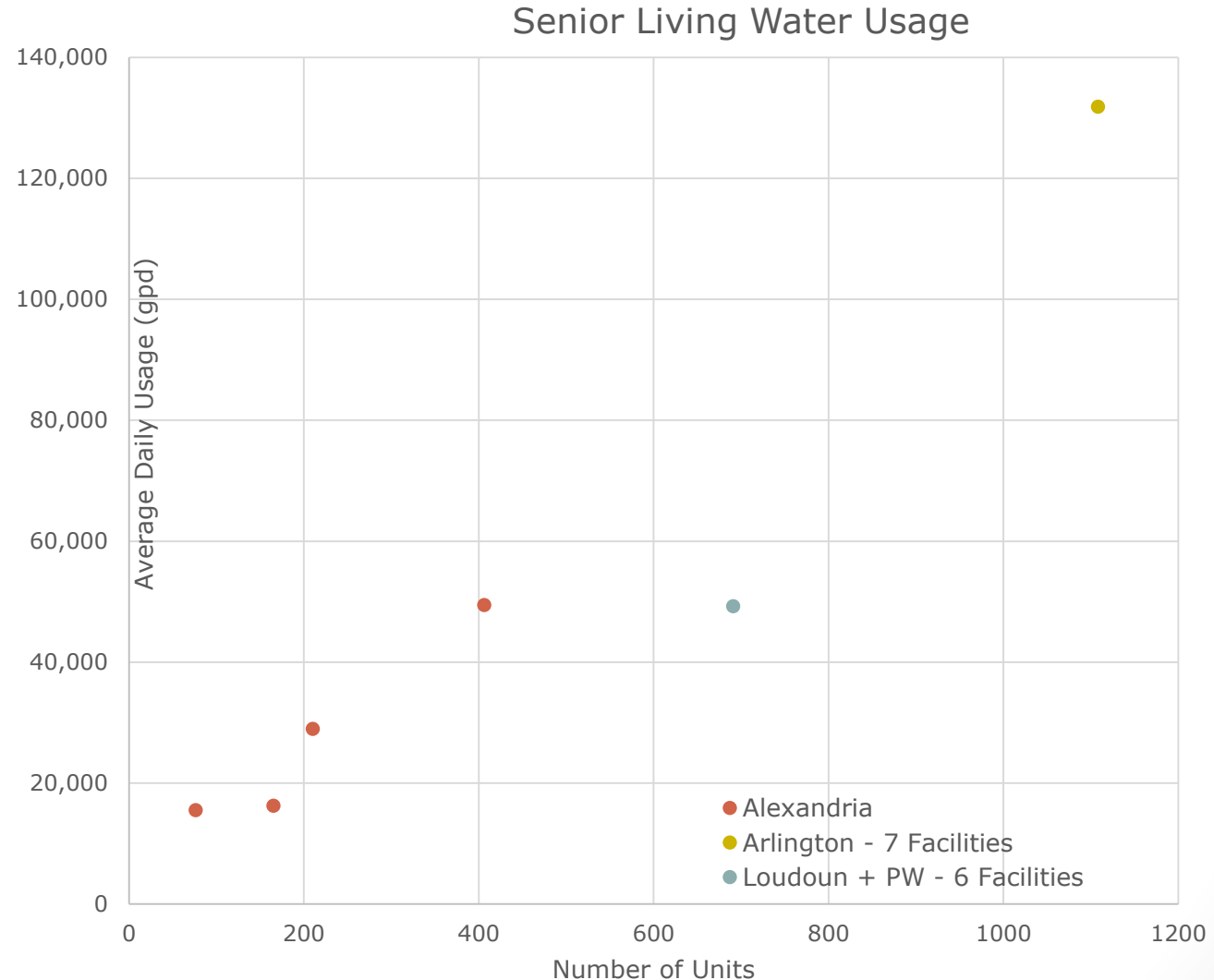
# Connection Fee – Senior Living

Varies Across Jurisdictions

Jurisdiction	Senior Living Calculation
City of Alexandria	Memory care – non-residential; assisted living – multi-family (90% single family)
Arlington County	N/A – all connection fees based on number of drainage fixture units
Fairfax County	Fee same as hotel and dormitories
Loudoun County	Established fee per unit/room plus separate fee for commercial kitchen
Prince William County	Commercial if less than 2-inch water meter; otherwise case by case

# Senior Living/Memory Care Water Usage Comparison

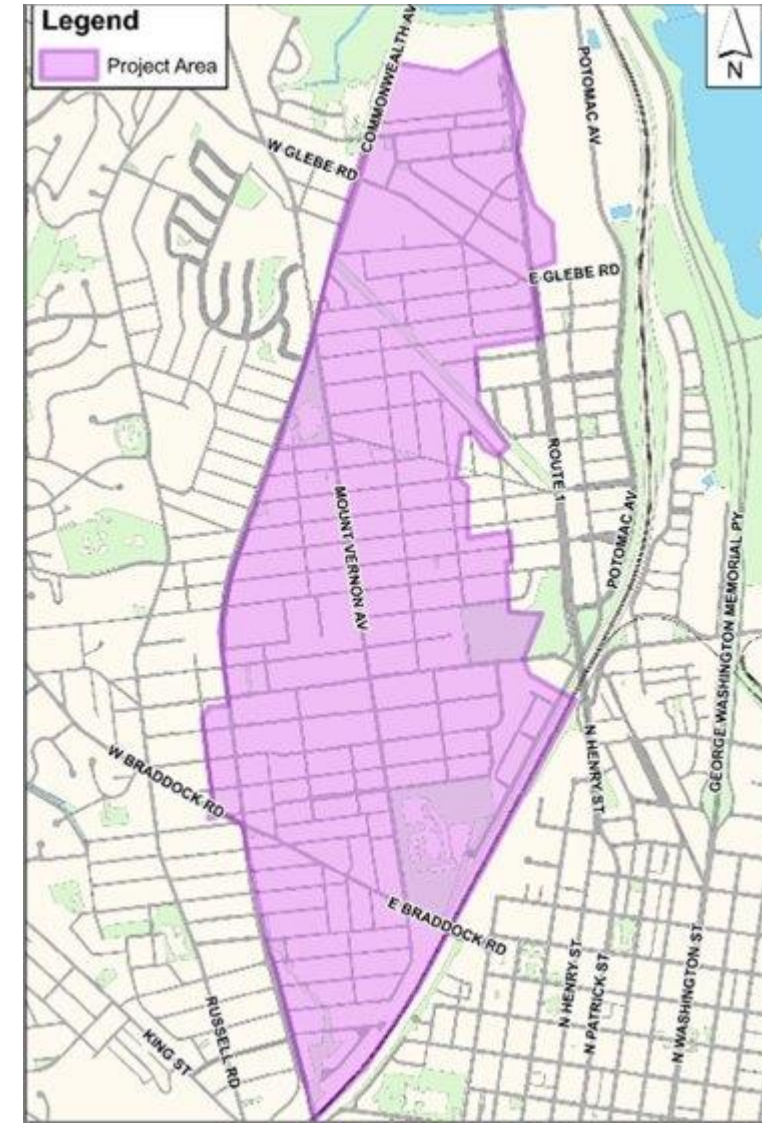
- Arlington and Alexandria approximately equal to Alexandria multi-family (90% of single-family rate)
- Loudoun and Prince William Facilities 62% of Alexandria's single-family water usage
- **Master Plan Recommendation:**  
**Establish rate at 75% single-family. Continue to monitor and reassess.**



# Moving Forward: Wet Weather Mitigation Strategies

## Sanitary Sewer Asset Renewal Program

- Goal: inspect 10% of sewer system each year, rehabilitation to follow
- Inspections include CCTV of mainline sewers and City-owned lateral sewers, manhole inspections
- 2021: Inspections east of Commonwealth Ave
- 2022: Rehabilitation from 2021 inspections, next round of inspections to commence





# Moving Forward: Wet Weather Mitigation Strategies

## Backflow Preventer Assistance Program

- Continue to fund in 2022
- 50% reimbursement up to \$2,000
- Program refinements as needed

## Sewer Capacity Upsizing Projects

- Implement in areas subject to repeat sanitary sewer backups
- Developing implementation plan; construction to start in 2023
- Includes potential combined sewer separation projects

## Private I/I Program Framework

- Review of other jurisdiction programs
- Develop framework for City leaders to consider
- Potential implementation TBD