

# Valley Ave Neighborhood Stormwater Improvement Project

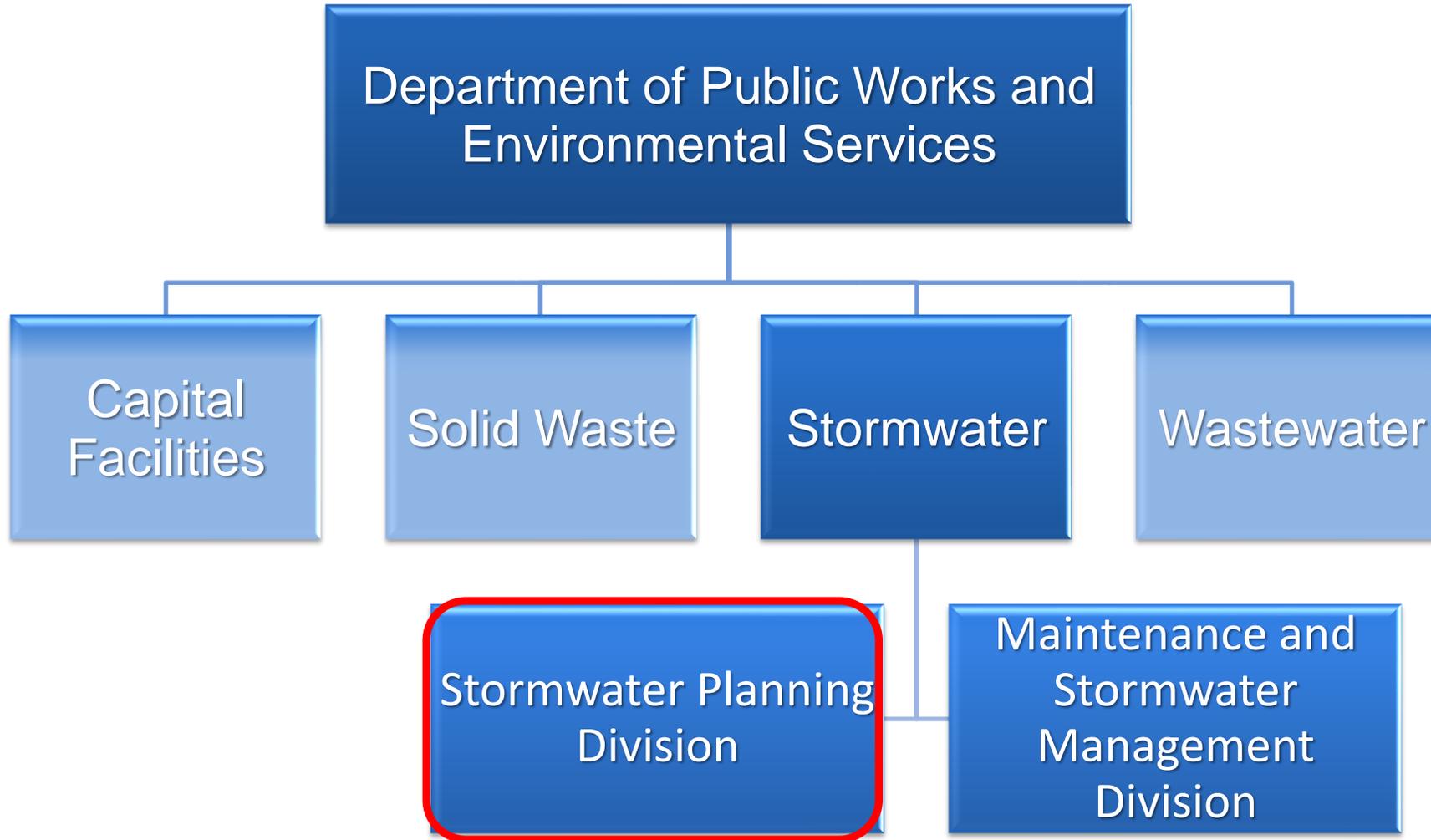
Concept Design Community Meeting

Department of Public Works and Environmental Services  
*Working for You!*



A Fairfax County, VA, publication  
June 7, 2022

# Who are we?



# Agenda

- Meeting Purpose
- Project Area
- Project Background
- Project Goals
- Assessment of Existing Conditions
- Proposed Concept Design
- Next Steps
- Contact Information



July 8, 2019 Storm Event (image courtesy of resident)

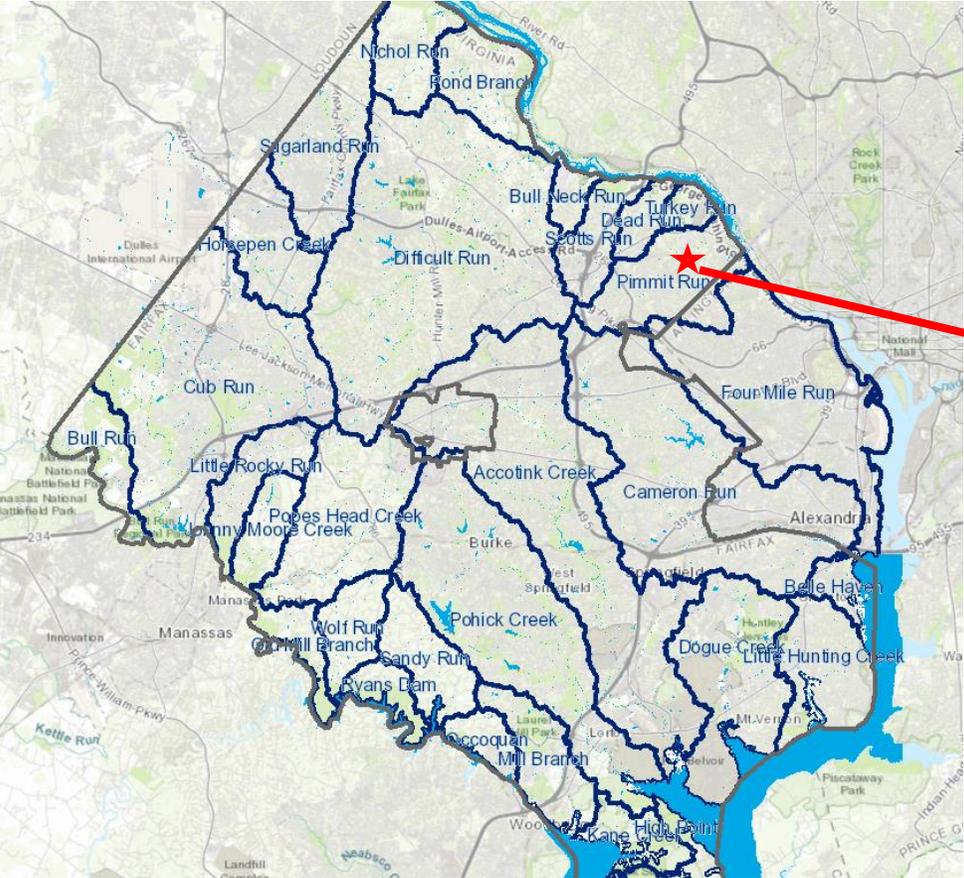
# Meeting Purpose

- To provide information on the proposed solution to mitigate structural flooding from future large storm events\*
- Request feedback and input from the community on the proposed solution
- Provide information on project schedule



\* A large storm event is defined as a 100-year, 24 –hour rain event, or 1% chance of storm occurring in any given year

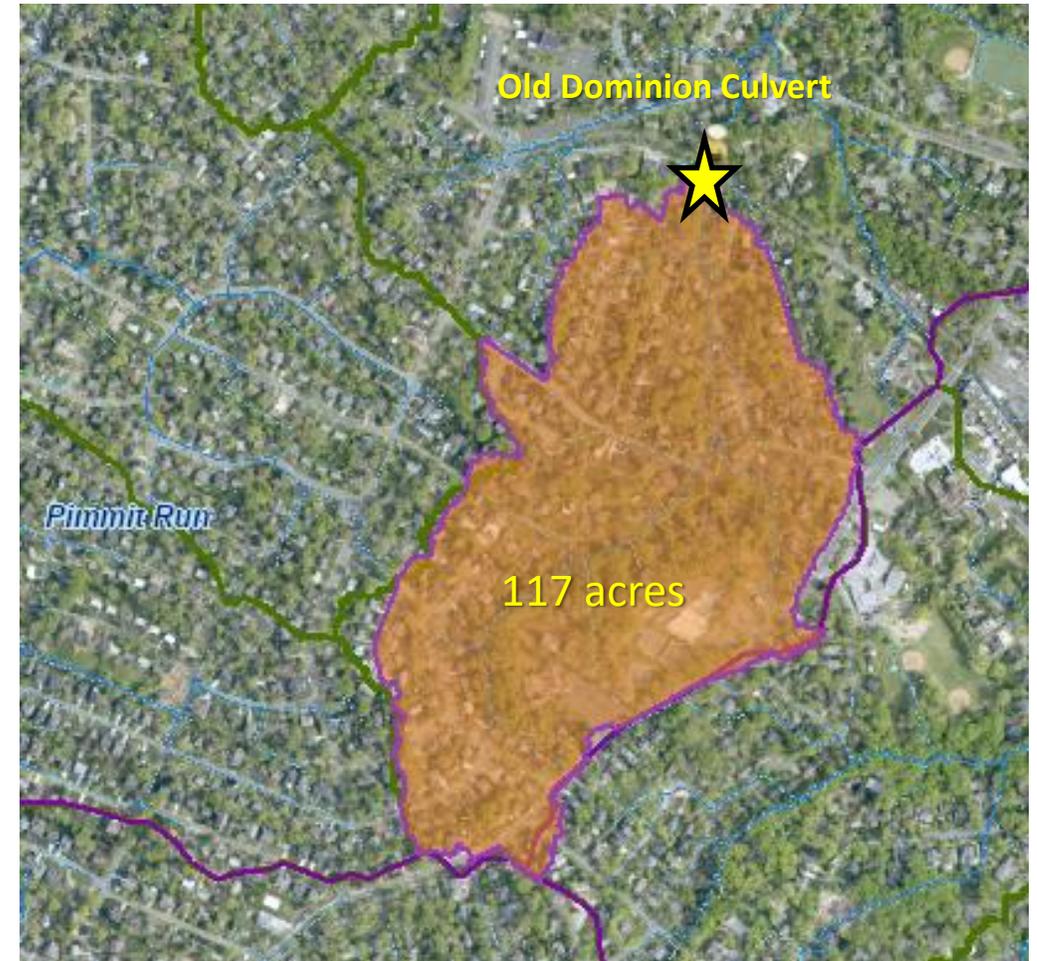
# Project Area



Valley Ave Neighborhood Stormwater Improvement Project

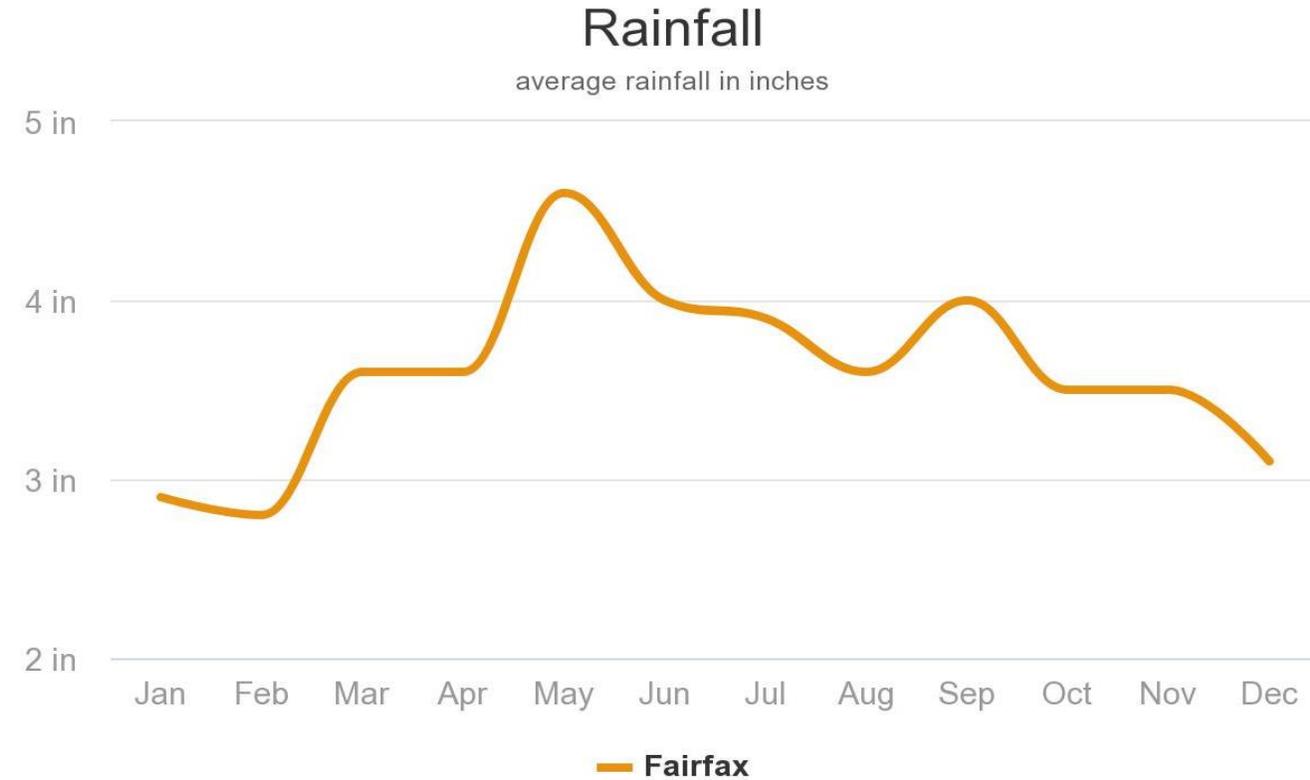
# Project Area Description

- 117 acres drain to culvert at Old Dominion Dr.
- Residential subdivision in the late 1950s
- Minimal stormwater management to reduce runoff in the drainage area
- Former railroad bed acts as dam
- Valley Ave block located in a low-lying area or 'sump'



# Project Background – July 8, 2019 Storm Event

- Storm was exceptionally severe
- July 8, 2019 storm event flooded homes in the neighborhood
- 5.3” of rainfall in 2 hours. This is greater than any monthly average rainfall.
- On average, 4-inches of rain is typical for the total rainfall in the month of July



BestPlaces.Net



# Project Goals

The primary goals of the project are to:

- Improve the drainage system and reduce localized flooding and erosion by designing adequate drainage systems as defined in the County codes and Public Facilities Manual.
  - Specifically, evaluate the potential to convey the 100-year 24-hour storm within the storm drainage system.
- Address public safety concerns.
- Partner with the community to develop sound, cost-effective solutions that can be collaboratively implemented and maintained.
- Use innovative, sustainable, and functional designs.



# Assessment of Existing Conditions

- Existing Conditions
  - Evaluate how water moves across the land and through drainage pipes
  - Topographic and utility surveys
- Evaluate Improved Conditions
  - Does the current drainage infrastructure convey stormwater generated from the 10-year, 24-hour storm event?
  - How well does current drainage system convey stormwater from a large storm event and is there any structure flooding?
    - A 100-year, 24 hour storm event (cumulative 8.41” of rainfall over 24-hours)
    - July 8, 2019 storm event (cumulative 5.29” of rainfall over storm event)



# County stormwater drainage requirement

- **Fairfax County Stormwater Management Ordinance**
  - Control and manage stormwater to protect water quality, natural stream channels and localized flooding
  - Man-made storm drainage infrastructure designed to convey stormwater runoff from a 10-year storm event
- **Existing system complies with this requirement**

Rainfall for a 10-year, **24-hour** storm event is 4.87”



# Existing Conditions

- Storm drainage function during a June 2020 event (video courtesy of resident)
- Water moving into the storm drains, yard flooding evident
- July 8, 2019 event was much larger and overwhelmed the current system



# Existing Conditions – 100-year, 24-hour Storm Event



Existing storm drainage pipes and inlets



Areas of flooding

- Where is the water coming from?

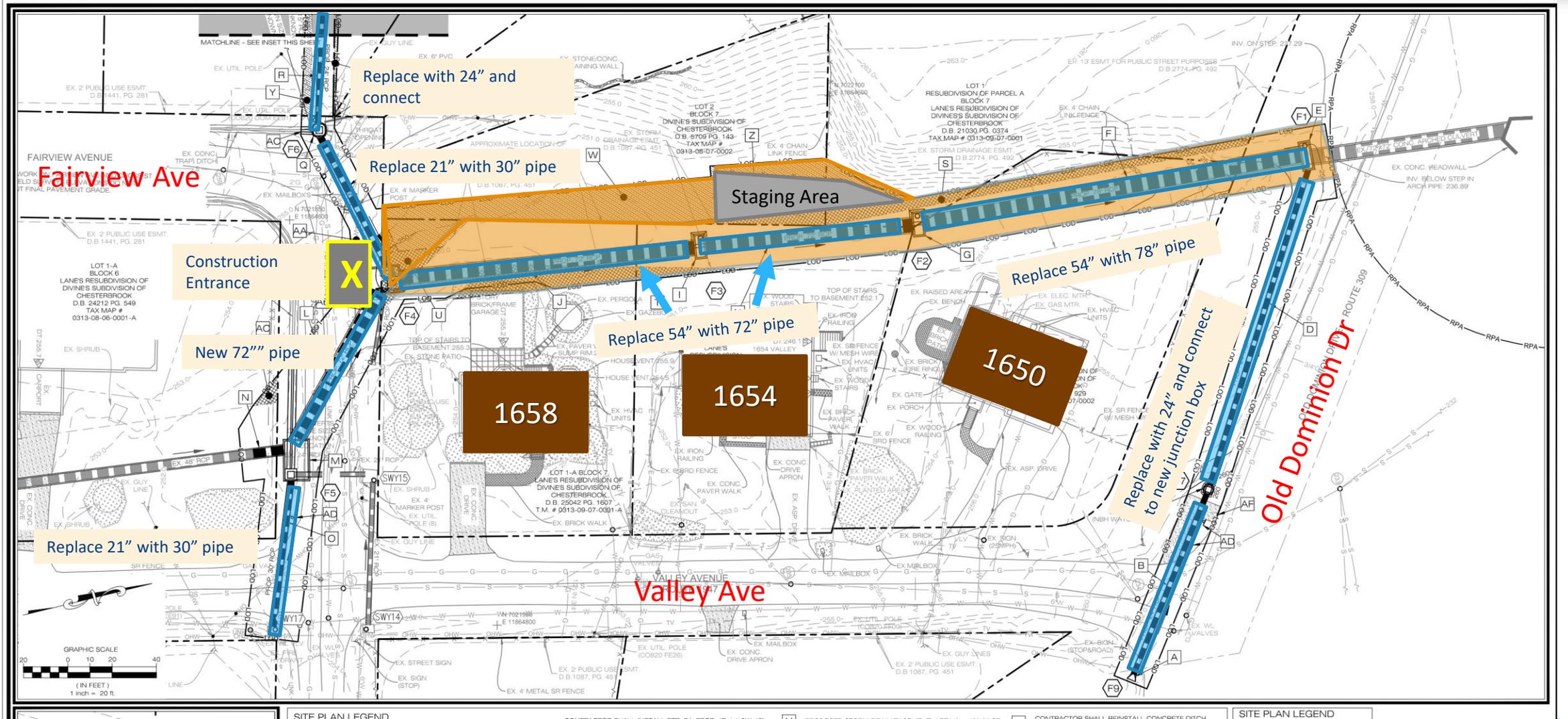
- 100 acre drainage area
- Valley Avenue
- Old Dominion Drive

- Where is the water going?

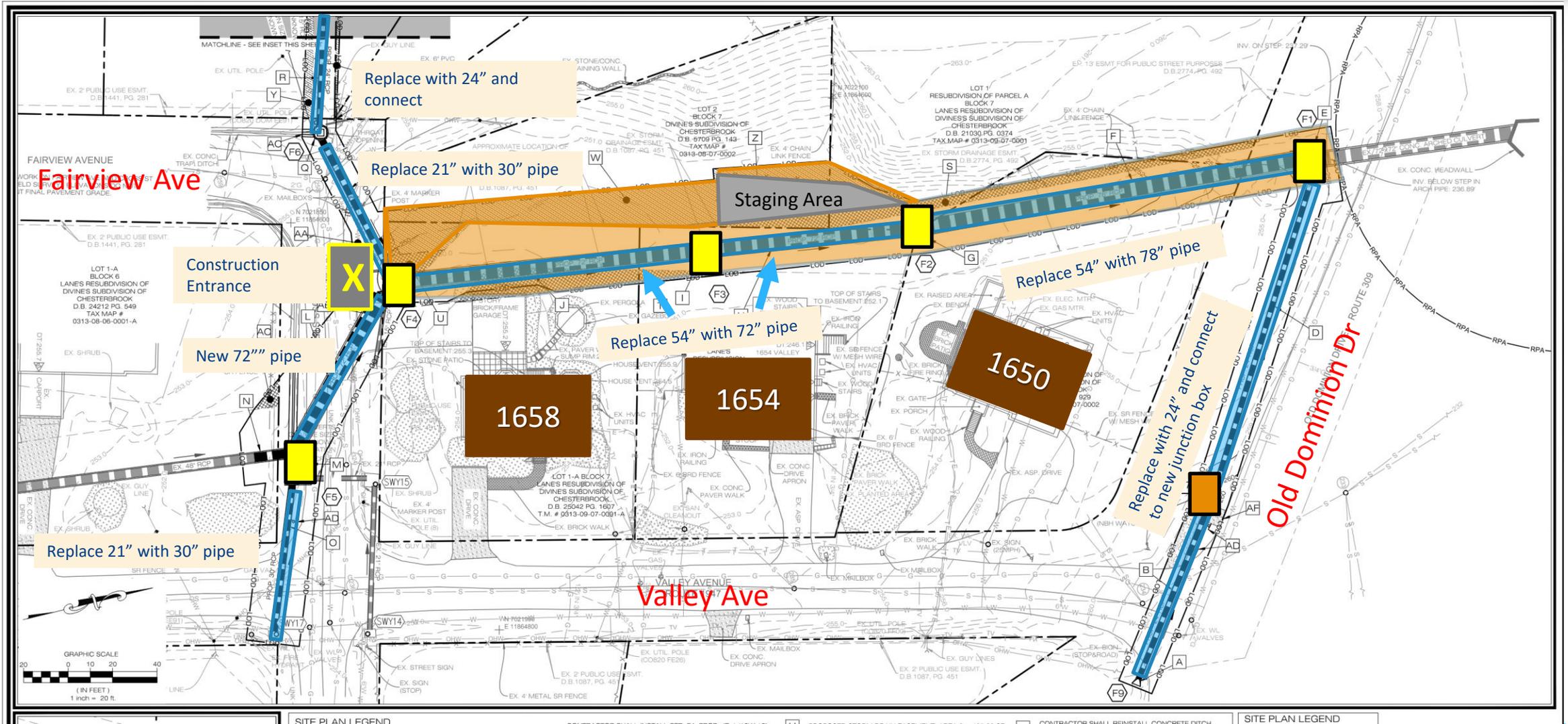
- Into the storm drains but overall system is over capacity
- Culvert at Old Dominion Dr. then stream daylight



# Proposed Solution – Storm Drainage Improvements



# Proposed Solution – Storm Drainage Improvements



# Proposed Improved Stormwater Drainage for 100-year, 24-hour event

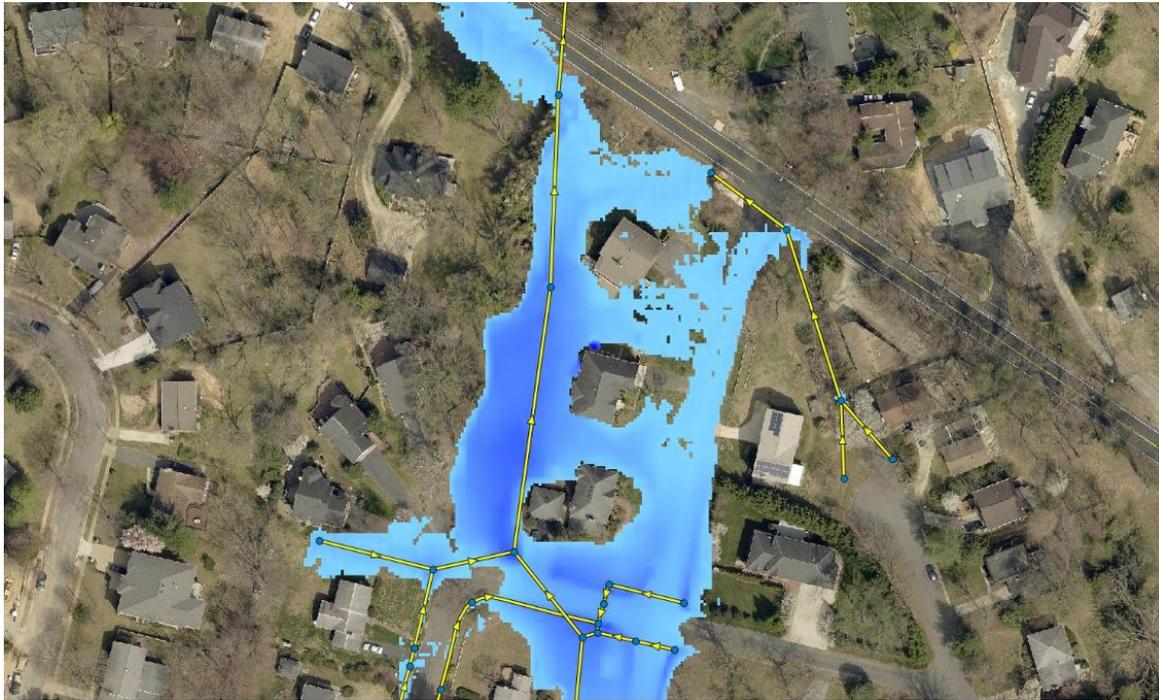


Existing storm drainage pipes and inlets



Areas of flooding

EXISTING CONDITIONS



IMPROVED CONDITIONS



# Proposed Solution – Potential Impacts

- Land disturbance during construction
- Temporary construction access easements
- Need for additional permanent stormwater drainage easements
- Small increase in water surface elevation for the 100-year, 24-hour storm event between Old Dominion Drive and Linway Terrace from “A-A” to “D-D”
  - Maximum of 2.5 inches
- Decrease in water surface elevation at “E-E”



# Next Steps

- Project schedule
  - April: Review Proposed Design
  - June: Modify Design based on input
  - August: 95% Design Plans
  - September: Review and finalize
  - October/November : Authorize for construction



# Additional Information

**For additional information, please contact**

**Neely Law**

**703-324-6527**

**[Neely.law@fairfaxcounty.gov](mailto:Neely.law@fairfaxcounty.gov)**

*[www.fairfaxcounty.gov/publicworks](http://www.fairfaxcounty.gov/publicworks)*

