

Langley School Pump Station and Force Main Project Community Meeting

October 22, 2020

Presented by:
Wastewater Design and Construction Division

Department of Public Works and Environmental Services
Working for You!



A Fairfax County, VA, publication
October 2020

Introduction

- Introductions
 - Matthew Doyle, PE, CCM
 - Branch Chief, Wastewater Design and Construction Division
 - 15 years with Capital Facilities, Department of Public Works and Environmental Services (DPWES)
 - Lizzy Merin,
 - Engineer II
 - Project Manager for this project for Fairfax County
 - Black and Veatch (Designer)
 - Water/Wastewater Engineering Firm
 - David Hill, PE
 - Alana Gildner, PE

The Purpose

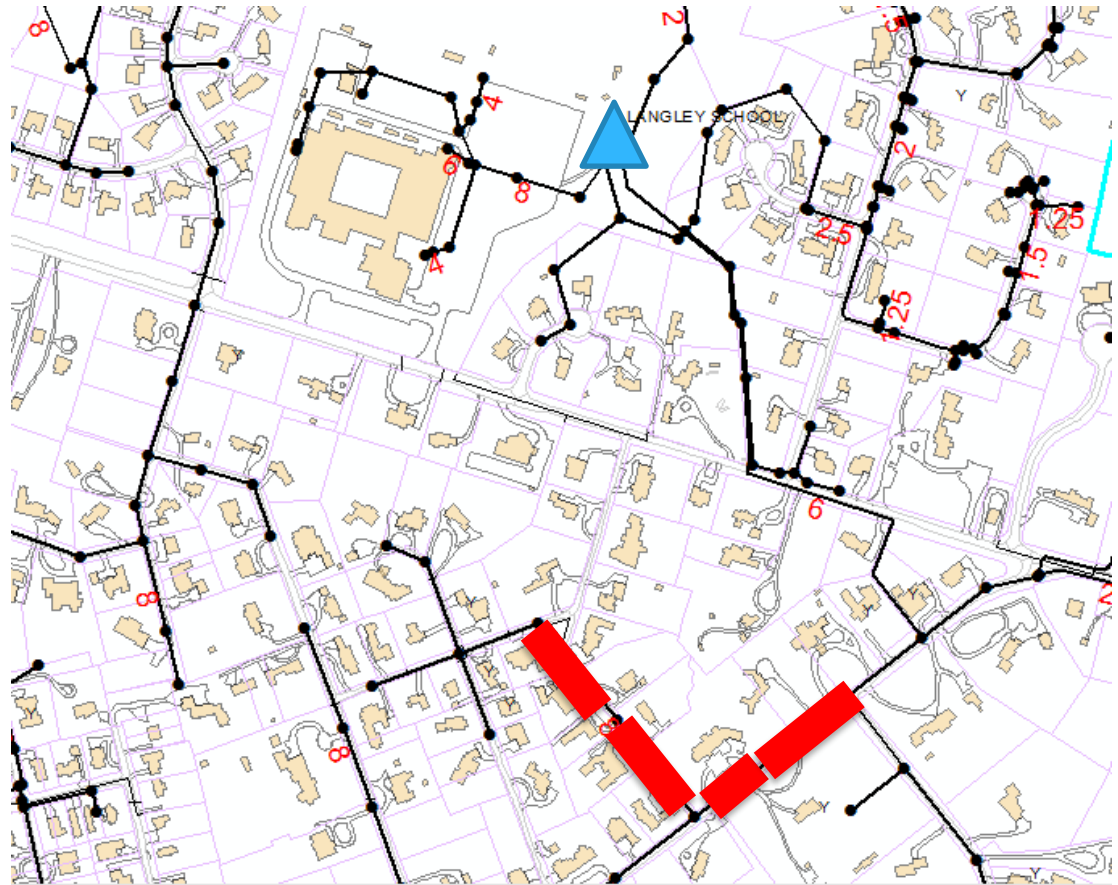
- The Purpose
 - Inform the community about the upcoming project,
 - Solicit community input starting at the beginning of the project,
 - Show the community our preliminary ideas,
 - Gravity Sewer,
 - Pump Station,
 - Forcemain,



EXISTING WASTEWATER SYSTEM

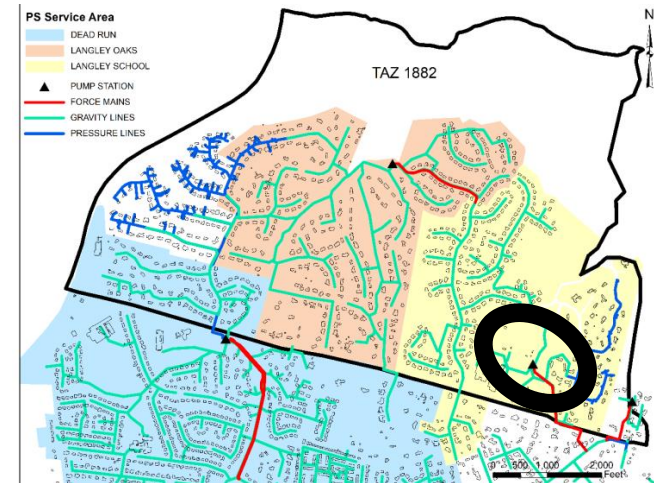
Existing Gravity Sewer

- The Gravity Sewer (Drain by Gravity to the Lowest Point)
 - Various Diameters
 - Various Ages
 - Various Material Types
 - Four pipes that need To be replaced and/or repaired



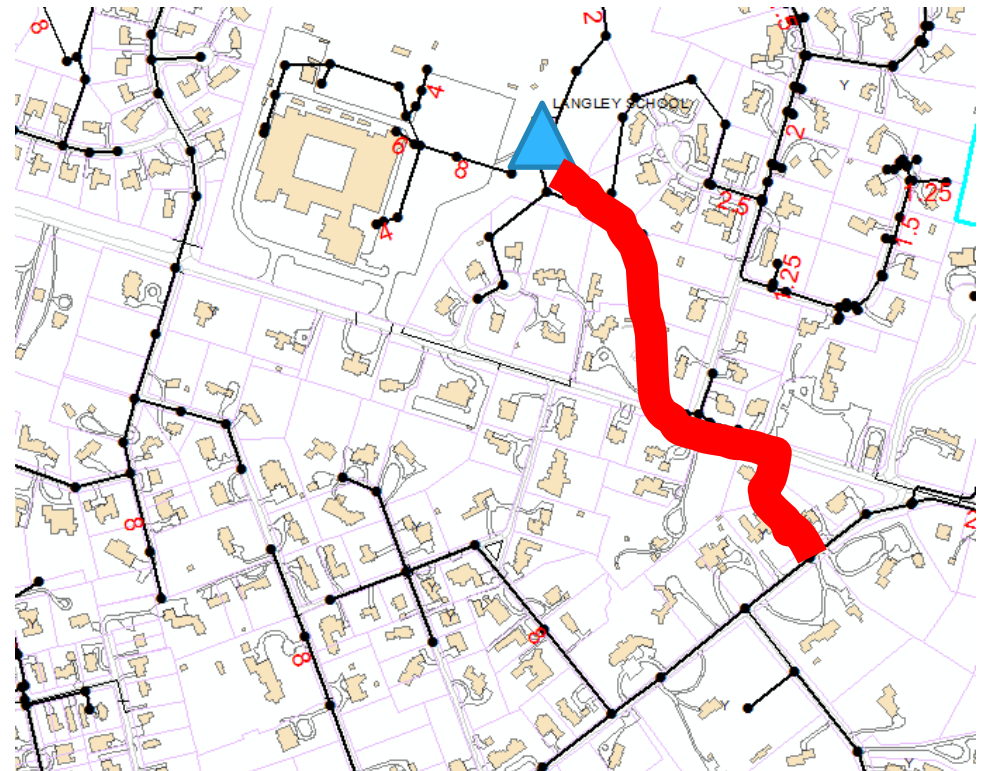
Existing Pump Station

- The Pump Station Building and Site
 - The station pumps wastewater away for the surrounding community
 - Built in 1966 with a major re-build in 1993
 - 0.43 Million Gallons Per Day
 - Two Pumps, Generator and other Associated Equipment
 - The Age and Condition Prompts a full replacement of the station
 - Approximately 80' x 80' site (+/-)



Existing Forcemain

- The Forcemain (Pressure Pipe)
 - Forcemain Alignment shown in red on the map
 - Nearing the end of its useful life (50-70 year life span)
 - Built in 1966
 - 6" Diameter, Cast Iron
 - Showing its age,
 - Travels along easements
 - Many backyards
 - Wooded Alignment
 - Approximately 4-6 feet deep,



Preliminary Ideas to repair/replace the system

Background Information

- Background and Various Documents



- 2017 Preliminary Engineering Report

- Recommended repairing the existing forcemain using a fiberglass liner



- 2019 Comparison of Alternative Force Main Alignments

- Horizontal Directional Drilling (HDD)
- Recommended Open Trenching

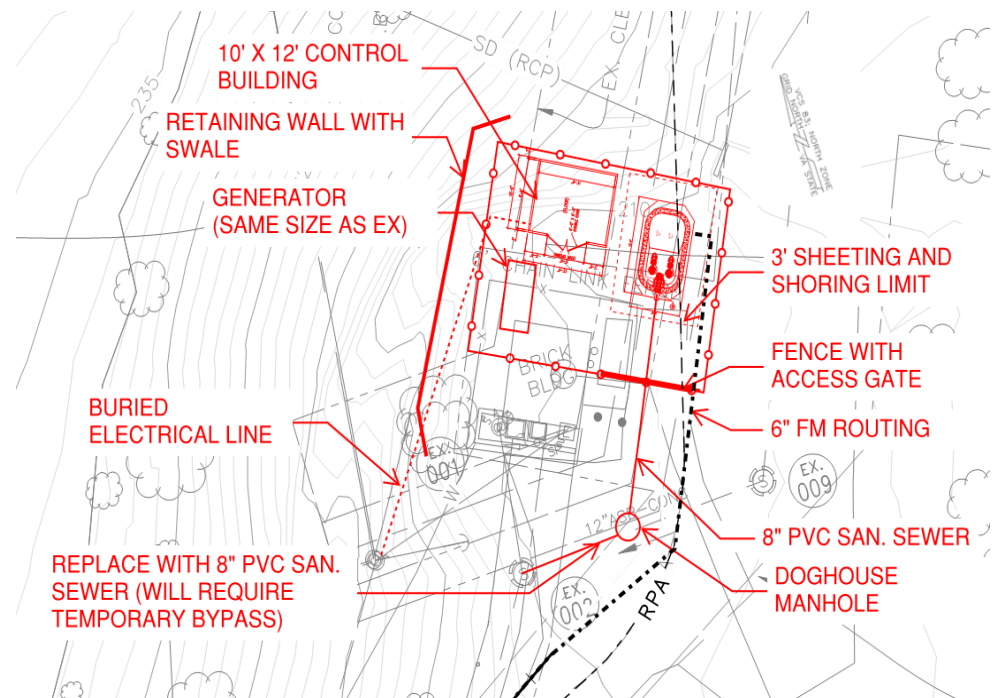


- 2020 Preliminary Engineering Report (**STILL IN DRAFT FORM**)

- Replace the existing Pump Station (Same location)
- Relocate the Existing Forcemain into the VDOT ROW (in the street)
- Replace existing gravity sewer (Same location)
- Abandon the Existing Forcemain in place

New Pump Station

- New Pump Station right next to the existing one.
- Three trees will need to be removed
- Same Size Station, Same location
- Reliable Pumps
- Generator
- Small Controls Building
- Fence
- Landscaping
- Repave Driveway





Typical Utility Shed
(Existing)



Concession Stand



Small Barn



Garden Shed

Other Options will be considered !

New Pump Station (Finishes)



Various types of concrete finishes to selection from.



Typical Chain Link



Wrought Iron



Chain Link with Vinyl Slats



Douglas Fir



Arborvitae



Blue Spruce

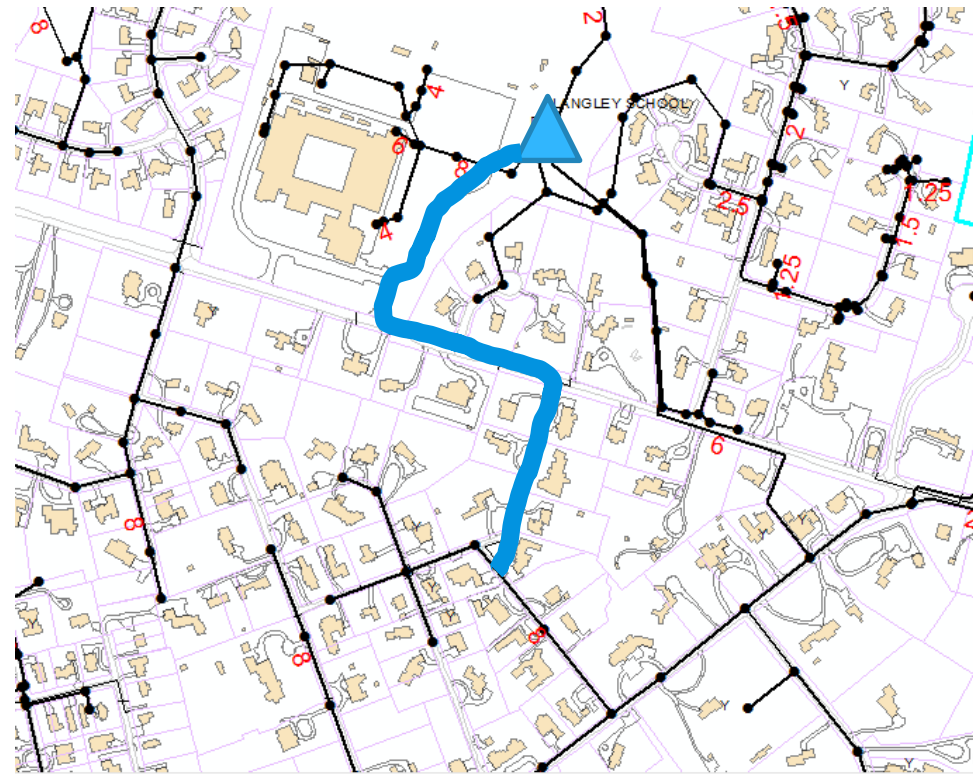


Leyland cypress

Other Options will be considered !

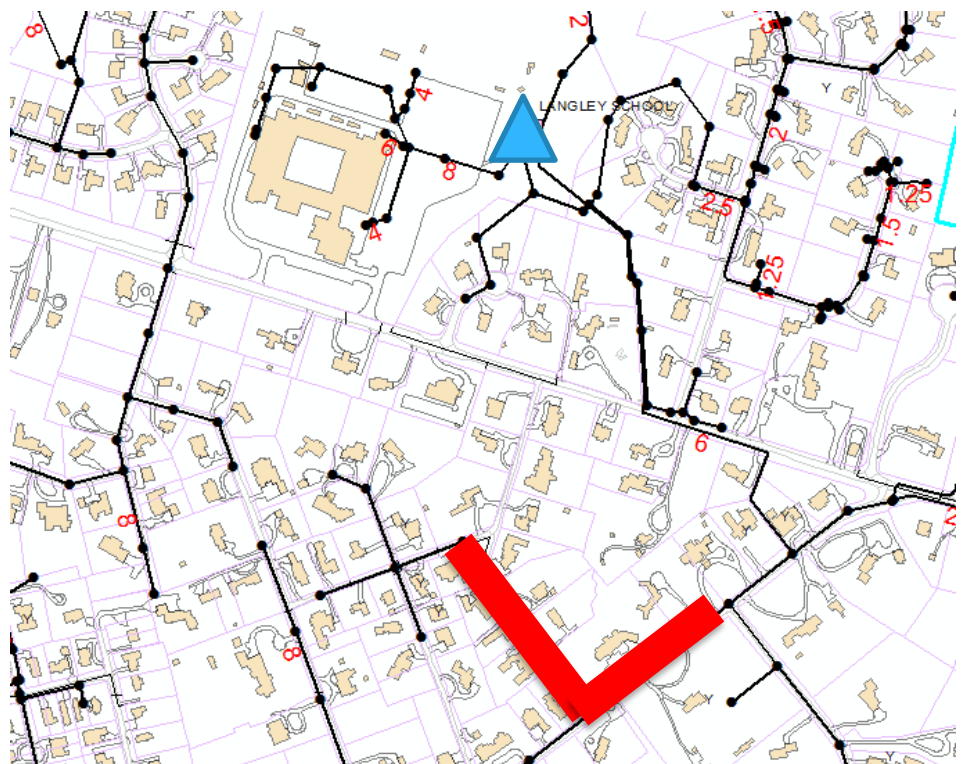
New Forcemain

- The New Forcemain (Pressure Pipe)
 - No removal of any trees
 - New 6" Ductile Iron Pipe (80-year life)
 - 4—6 feet below the ground
 - Move it out of the back yards
 - Keep it in the paved roads
 - New Asphalt Replacement for:
 - Pump station Access Road
 - High School Entrance
 - Georgetown Pike
 - Langley Lane (Full Width)



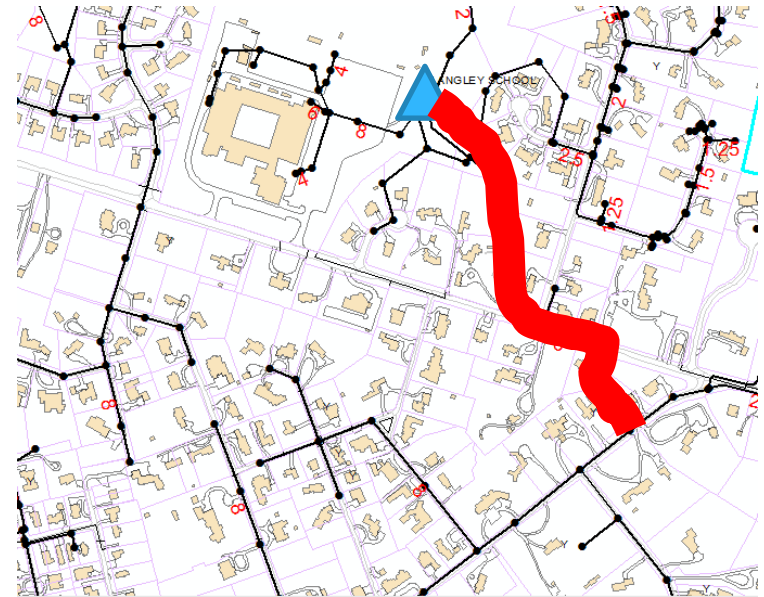
New Gravity Sewer

- The Gravity Sewer (Drain by Gravity to the Lowest Point)
 - New 12" PVC Pipe (80-year life)
 - Same Location
 - New Asphalt Replacement for:
 - Langley Lane (Full Width)
 - Chain Bridge Rd (Full Width)



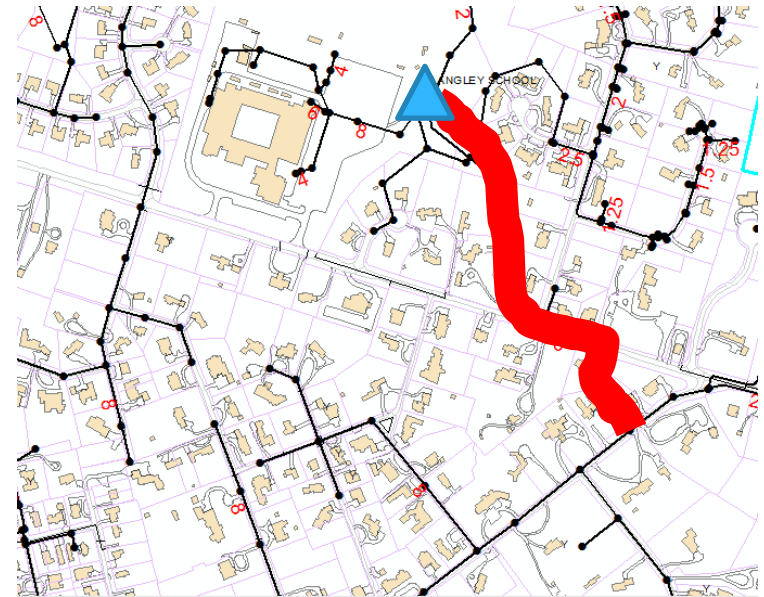
The Old Forcemain

- We have three options with what to do with the old forcemain
 - Each option will include the vacate of the forcemain easement unless you have a gravity sewer in the easement.
 - We will fill the pipe with grout under Georgetown Pike and Langley HS property
 - Option #1 (Dig it up)
 - Option #2 (Fill full of grout)
 - Option #3 (Abandon in Place)



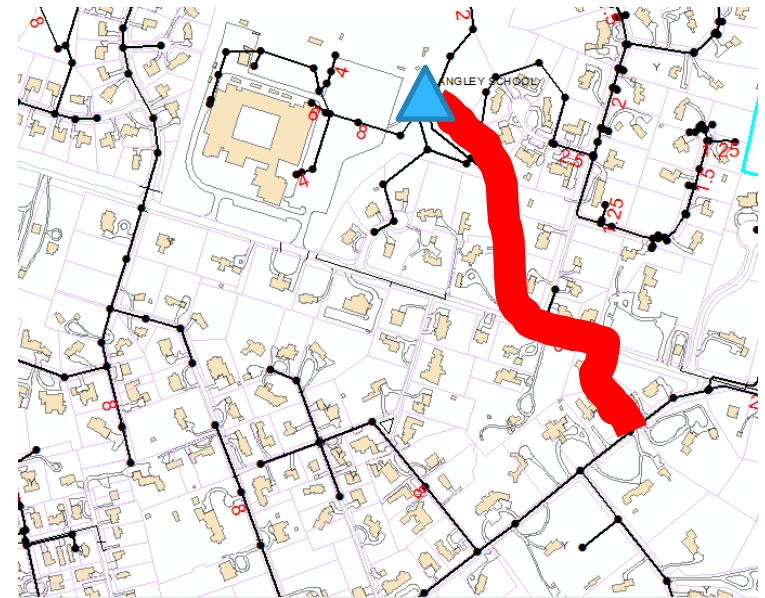
The Old Forcemain

- Option #1 (Dig it up..... aka complete removal)
 - Most Impact to the Property Owner
 - Temporary Access from your own property (from road frontage)
 - The pipe will be removed forever
 - Heavy Machinery will be needed
 - Most Tree Removal
 - Most Landscaping Impacted
 - Most Expensive for the County
 - **Not recommended by the County**



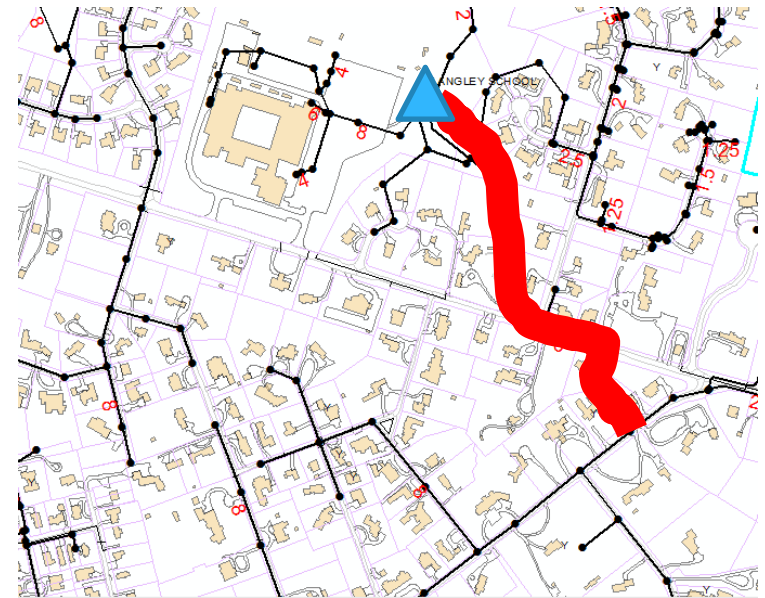
The Old Forcemain

- Option #2 (Fill it full of Grout)
 - Medium Impact to the Property Owner
 - Temporary Access from your own property (from road frontage)
 - Some Landscaping Impact for Property Owner
 - Two Small Dig Pits (8'x8'x4)
 - Little to No Tree Removal
 - Medium expense for the County
 - Small machinery will be needed
 - Recommended by the County

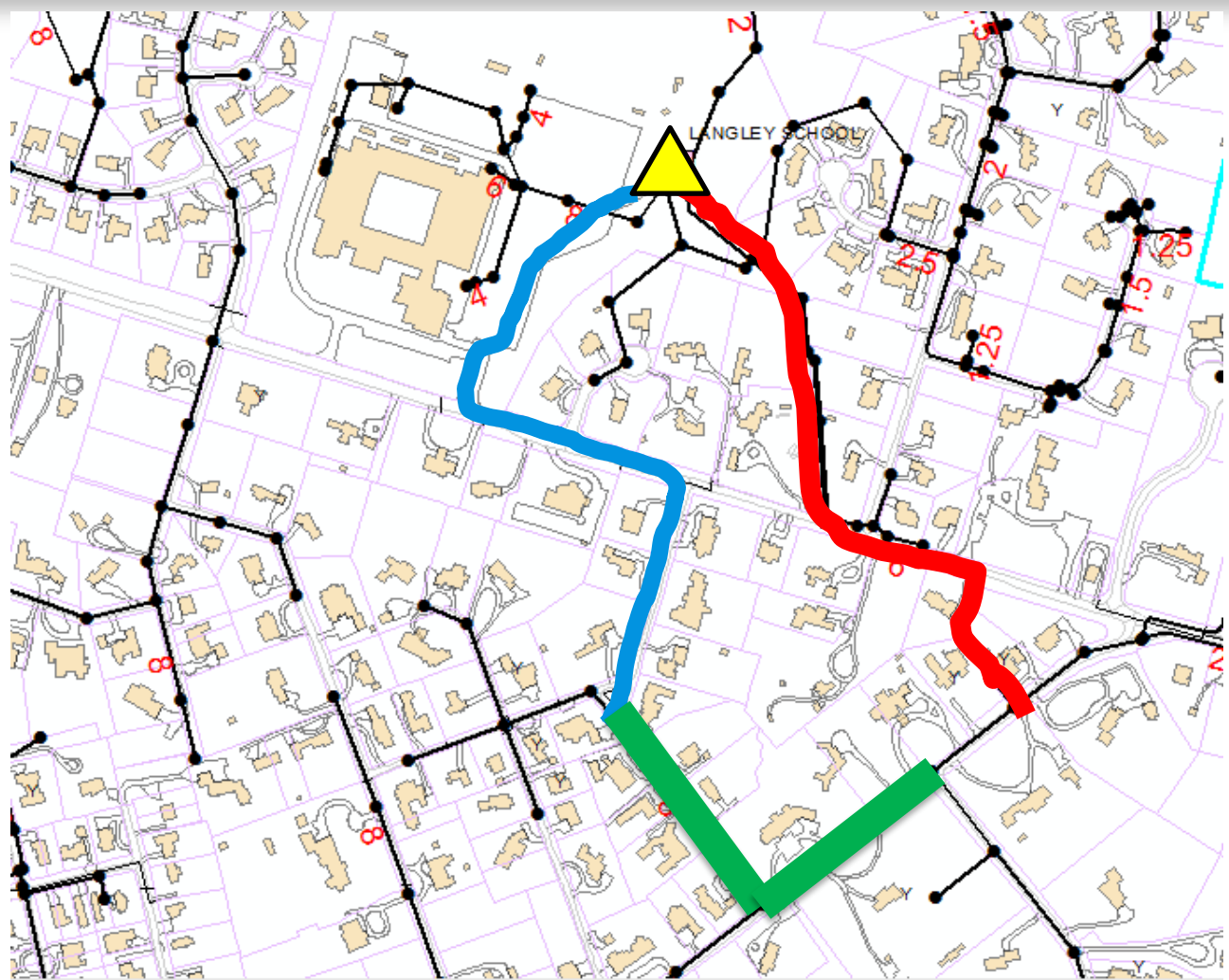


The Old Forcemain

- Option #3 (Abandon in Place)
 - We will dewater, and disinfect the pipe
 - Cap the pipe on both ends
 - In 20-plus years the pipe will corrode into the ground
 - Very Little Impact to the Property Owner
 - No Tree/Landscaping removal
 - The pipe will remain on the property
 - Least cost for the County



Overall Summary



Project Schedule and Cost

Project Timeline

TIMELINE

Phases	Date
Notice to Proceed	June 2020
Land Survey	July 2020
Alternative Analysis	September 2020
50 percent Preliminary Engineering Report	October 2020
Public Input and Open Discussion	November 2020
Final Preliminary Engineering Report	December 2020
Begin Detailed Design	December 2020
Public Input and Open Discussion	March 2021
Begin Construction	June 2021



Project Timeline

- Construction Phase
 - June 2021 Start Forcemain in School Parking Lot
 - Finish this work before students come back to school.
 - August 2021 Start Remaining Forcemain and Gravity Sewer
 - Finish before November so we can pave before Winter
 - November 2021 Pump Station
 - Finish before June 2022 so its not to hot for planting landscaping

Project Cost and Funding Source

- Project Cost and Funding Source
 - The project estimate is \$3.4 million.
 - As of January 25, 2019, funding in the amount of \$9,631,000 is available in Fund 690C69300, Project Number WW-000001-024, to fund this project.
 - The Langley School Pump Station project is included in the FY 2021 – FY 2025 Adopted Capital Improvement Program (with future fiscal years to 2030) identified as the Sanitary Sewer Replacement, Rehabilitation and Reinvestment Program.



Community Meeting

- More information available at:

<https://www.fairfaxcounty.gov/publicworks/capital-projects/langley-school-pump-station-and-force-main-project>

- Future meeting notices will be posted here and not mailed to your address. We will post this presentation on the website,
- Our Contact Information:
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 - matthew.doyle2@fairfaxcounty.gov

Community Meeting

Thank you for listening !

