

Waverly Hills Stormwater Update

June 9, 2021

and

Efforts to Coordinate with Plan
Lee Highway

- Previously Held Community Meetings:
 - September 23, 2020
 - February 19, 2020



In September 2020, we outlined the next steps for the Spout Run Watershed Scale Project in Waverly Hills:

- Continue working with Parks regarding Woodstock Park ✓
- Continue with land acquisition pilot case ✓
- Refine concept plans and estimates ✓
- Continue with budget process – especially CIP ✓
- Continuing dialogue and outreach with Spout Run CAs and Neighbors ✓



Progress continues to be made on all of the above!

Project Team

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1. Review Background Information
2. Discuss Plan Lee Highway Coordination
3. Update Community Regarding Woodstock Park Project

Goals for Today's Meeting

After the Community Meeting in September 2020

- Developed web-based information regarding flood risk for residents

<https://newsroom.arlingtonva.us/release/stormwater-flooding-flood-resilient-arlington/>

<https://www.arlingtonva.us/flooding/>

[Spout Run Stormwater Improvements - Environment \(arlingtonva.us\)](#)

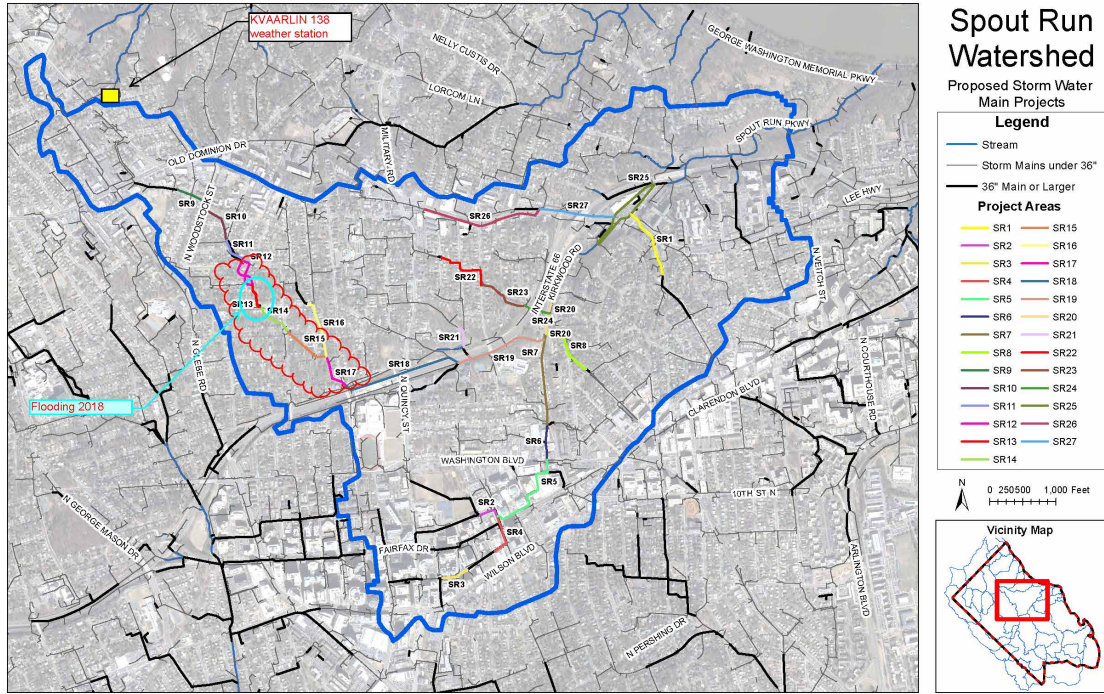
- RAMP is proceeding
- **Three Year CIP in process**

Stormwater

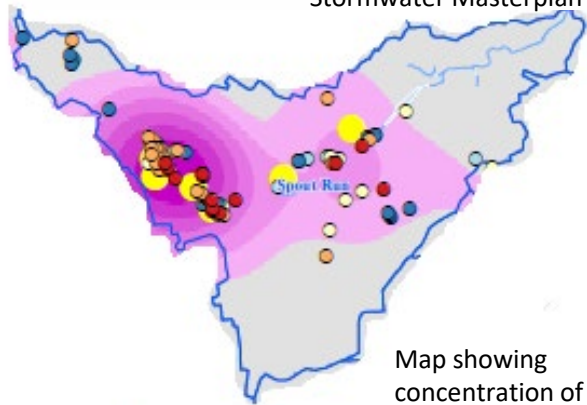
Investments in the Stormwater program total \$95.9 million over this three-year CIP. Highlights include \$26.8 million for the Spout Run Watershed, \$16.7 million for the Cardinal Elementary School Stormwater Detention, and \$5.4 million for the Ballston Pond Watershed Retrofit. These investments reflect the significant effort that will be required to update the County's stormwater infrastructure. Several significant projects underway include the Donaldson Run Tributary B Stream Restoration, and Ballston Pond.

STORMWATER MANAGEMENT					
Spout Run Watershed Capacity Infrastructure, Phase 1	First of three planned phases project with blended engineering (distributed detention, pipe improvements, tertiary assets installed, and overland relief)	Bonds	\$30,160,000	Design	Spring 2025

Spout Run Watershed – Background Information



Stormwater Masterplan Projects



• Multi-phase & Watershed Scale Analysis

Phasing still under development

Additional flooding has occurred in some areas

• Blended approach

- Distributed detention (public / private land)
 - **Current focus is Woodstock Park**
- Overland relief (property acquisition)
- Pipe expansion and tertiary infrastructure

• Mitigate repetitive loss/threats

- Residential
- Affordable Housing Complex(es)
- Transportation interruptions
- Commercial property
- Public safety

• Key Assumption

- Passage of bond referendum



DONE

**Coordination with Plan Lee
Highway**

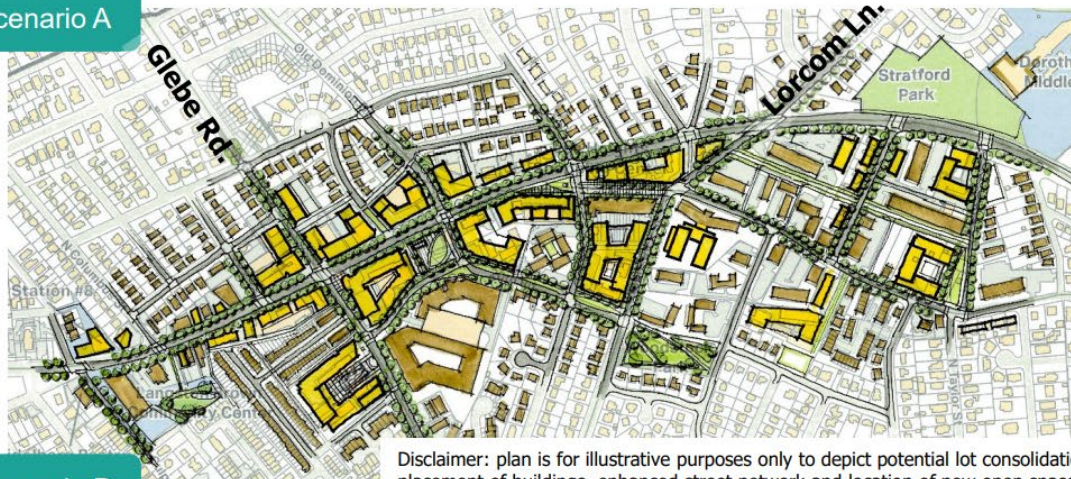
and to

**Evaluate Impacts
with Woodstock Park**

Plan Lee Highway:

Area 3: Scenario Analysis

Scenario A



Scenario B



Disclaimer: plan is for illustrative purposes only to depict potential lot consolidation, placement of buildings, enhanced street network and location of new open spaces.

Existing buildings New buildings Existing & new open Space

Overview:

- 3 distinct zones, each with unique challenges & opportunities:
 - West of Glebe Road
 - Glebe Road to Lorcom Lane and
 - East of Lorcom Lane
- Analysis tests development scenarios unique to these zones

Objective is to identify opportunities for:

- Mixed-use development along Lee Highway;
- diversity of housing options, including affordable housing and housing for elderly;
- establishing a good transition (height and density) to avoid potential impacts to surrounding neighborhood
- enhancing Lee Highway to accommodate wider sidewalks, street trees and bike facilities;
- relieving pressure at key intersections and reducing curb cuts along Lee Highway to eliminate vehicular, pedestrian and bicycle conflicts (Vision Zero goal for no serious injuries or fatalities);
- additional publicly accessible open spaces;
- strengthening the Lee heights Shops and areas around it so that it continuous to be the social hub of activity; and
- providing additional stormwater detention that will augment the underground detention vault that is being considered at Woodstock Park.





Criteria for Sites Analyzed with Plan Lee Highway Goals:

- Upstream of Flooding Areas
- Adjacent to existing Trunk Storm Sewers
- Large Impervious Surfaces



Potential
Redevelopment Sites
Analyzed with Plan Lee
Highway Goals:

- Improve detention requirements for new development
- Improve overall storm conveyance system with added detention and overland relief pathways
- Reduce construction impacts of Woodstock Park Vault

Challenges with Relying on Private Development along Lee Highway to Reduce Flooding in Spout Run Watershed, and Waverly Hills in Particular:

1. County does not control land.
2. County does not control timeline/schedules.
3. Development process will require many years.
4. Flooding will continue in the most vulnerable areas.
5. Risk to vulnerable properties is too great to wait for development to occur.

New Potentially Promising Development:

Development of Arlington Partnership for Affordable Housing Parcel (County may have some control over Development timelines)

Site is situated directly adjacent to Woodstock Park

Reduces Reliance on Woodstock Park somewhat. Reduces flooding upstream where the overland flow path is in the streets, not though lots. Augments storage in Woodstock Park. In conjunction with other developments, will help Waverly Hills and other areas, over time.

Analysis of site potential underway.

Analysis is very high-level and conceptual in nature, not detailed.

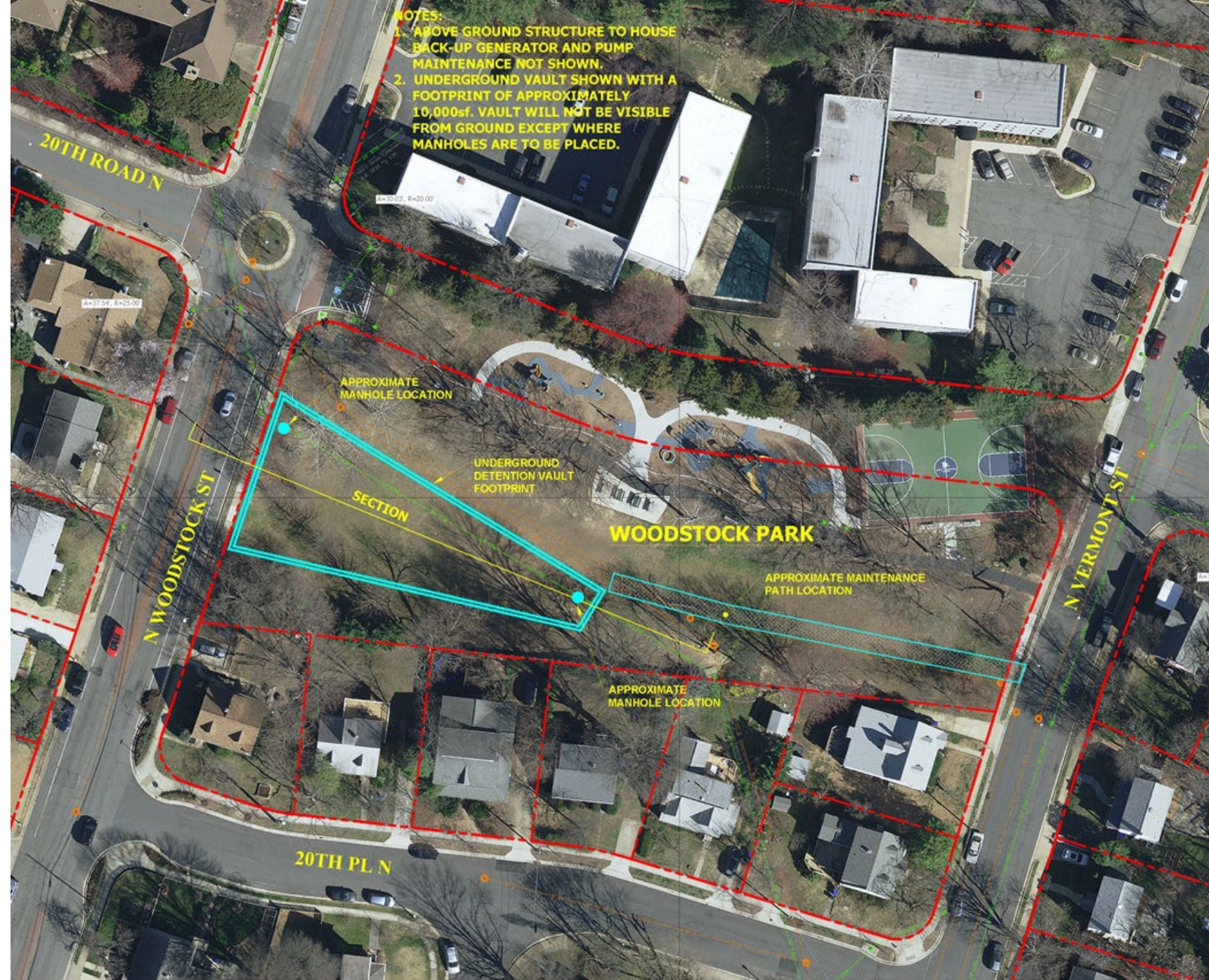




Woodstock Park Detention Vault Details

Woodstock Park Selected Option

1. Footprint (10,000 sf.) Minimizes Park Disruption
2. Underground vault not visible from surface
3. Vault provides approximately 270,000 cf storage. Represents approximately 80% of volume needed to minimize flooding in targeted area with most severe flooding (19th and 18th St. areas)
4. Minimizes Tree Impacts
5. Provides Storage for 10-Year Storm
6. Requires Pump and maintenance access.
7. A small above ground structure to house pump and backup generator needed.
8. Structural, geotechnical, and mechanical preliminary design underway



Site Design

- Removal of several trees
- Re-route of sanitary sewer
- Proposed grading to replicate existing conditions
- New storm sewer around ADA parking

Completed:

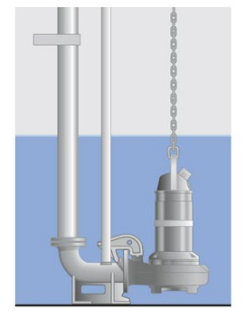
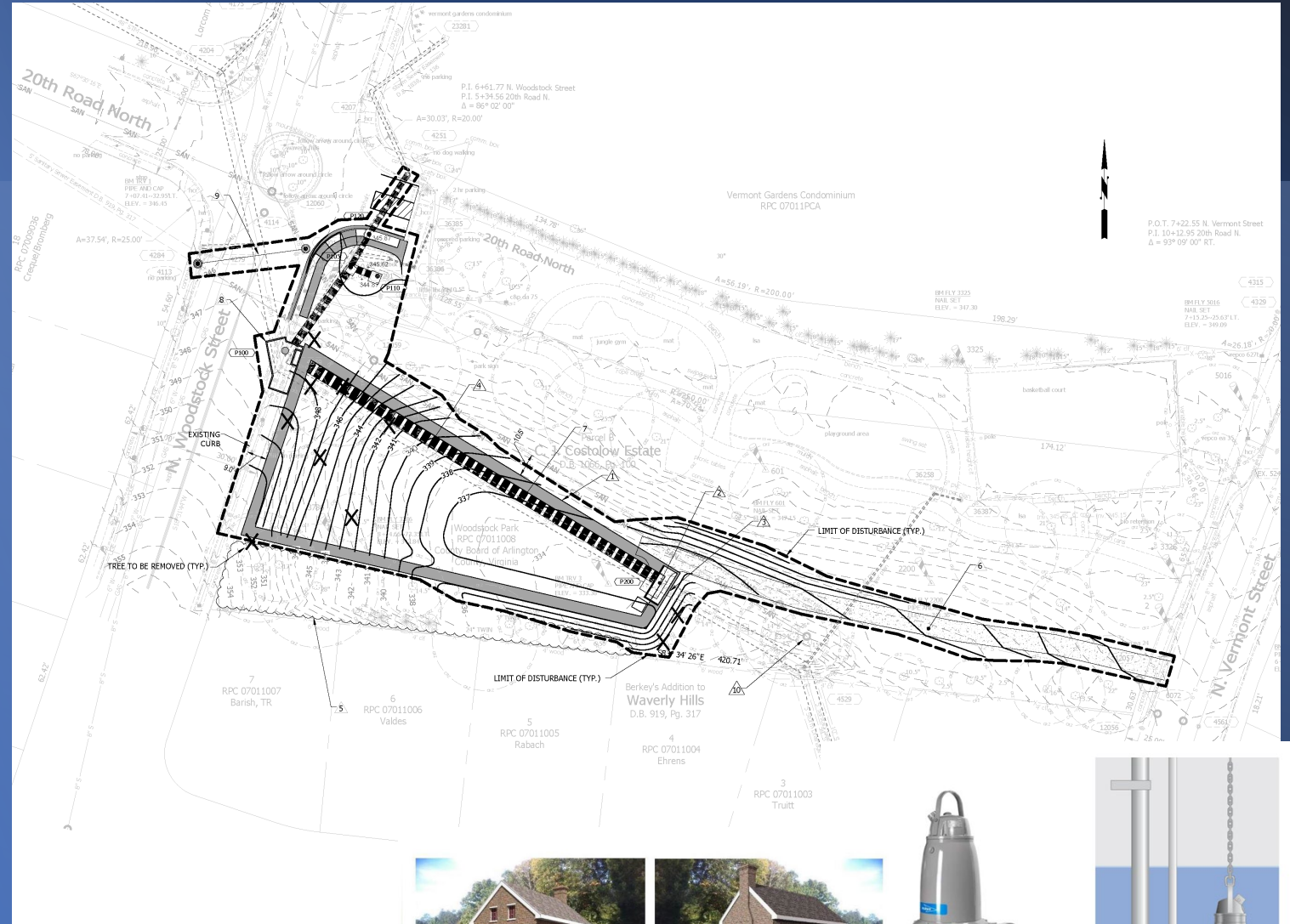
- Geotechnical investigation
- Tree survey
- Topographic survey

Currently Developing:

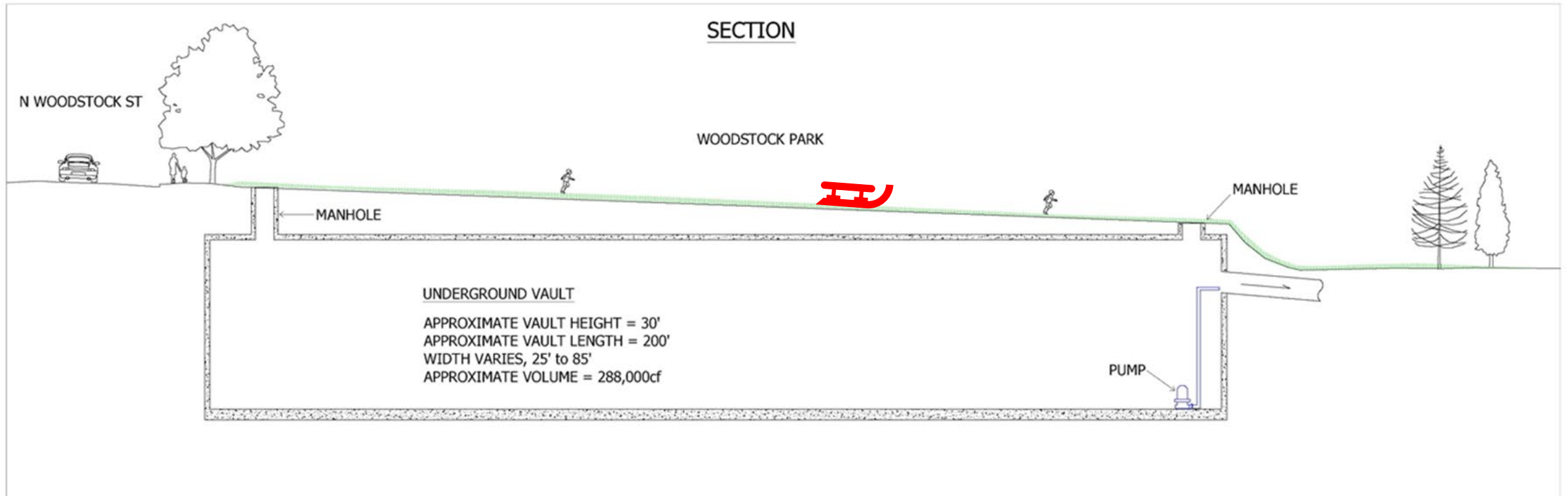
- Refined concept plans
- Cost estimates
- Schedules

Pump

- Pump functions during storm events
- Pump power and back up
- Pump monitoring



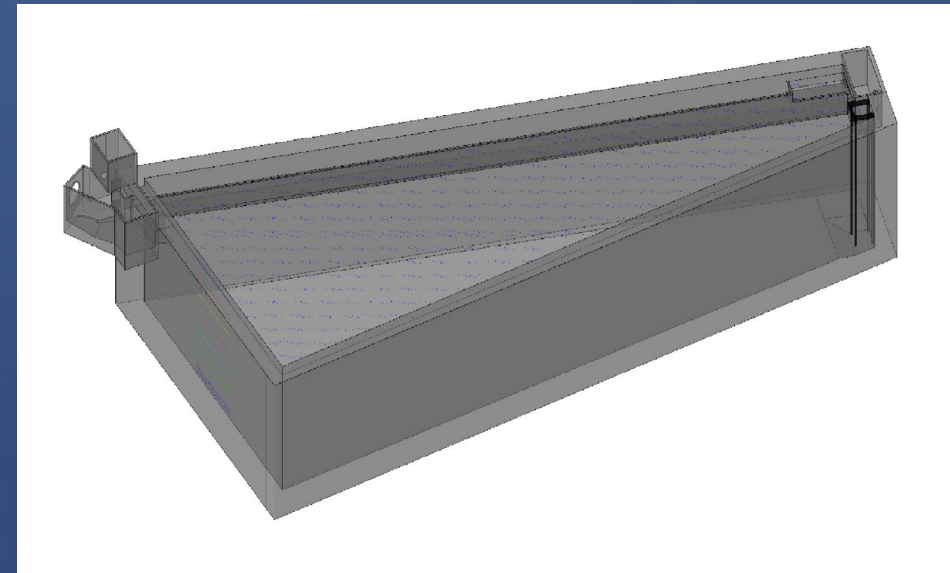
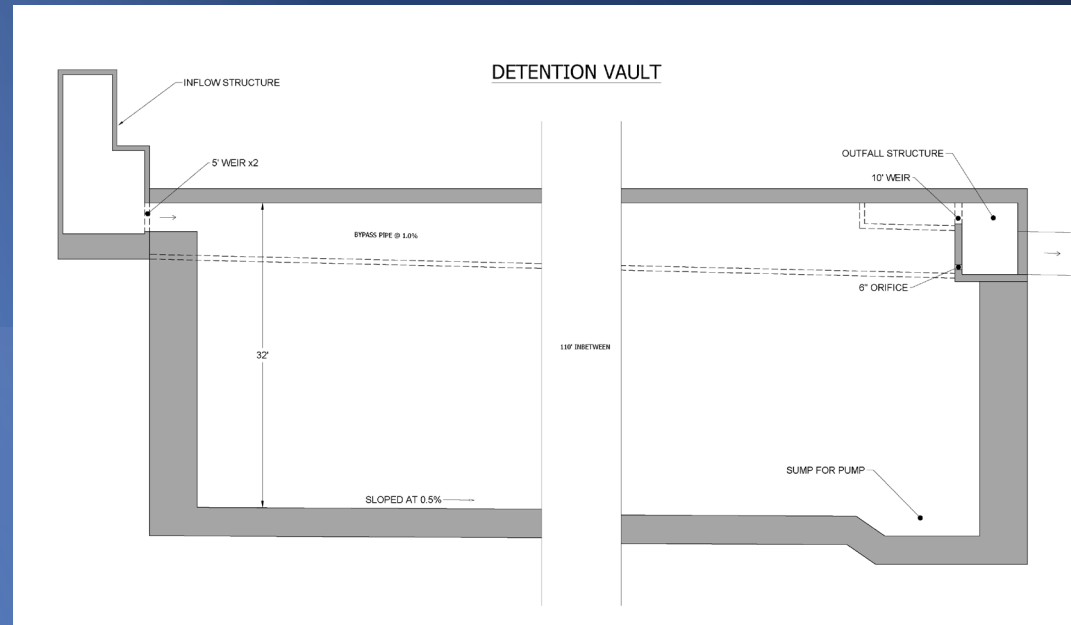
Woodstock Park – Detention Vault, Section



- Sledding hill remains and minimizes visibility from above the ground
- Pump is needed due to depth of vault in comparison to outfall

Vault Design

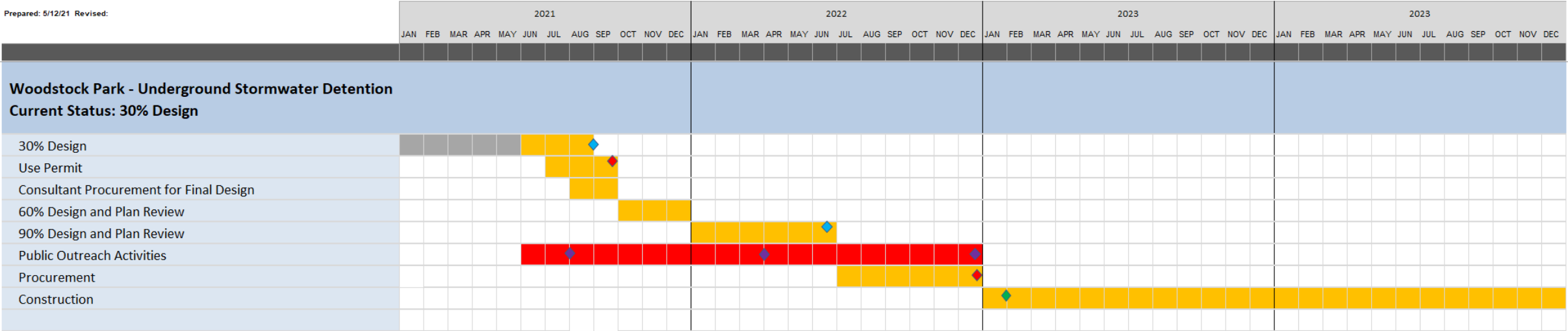
- 3D rendering
- New Structures (inflow, vault, outflow)
- Interior Volume = 282,972cf
 - Specific volume is dependent on design adjustments/details



Project Schedule (DRAFT)

Woodstock Park - Underground Stormwater Detention

Prepared: 5/12/21 Revised:



- ◆ Plans Approved
- ◆ County Board Actions
- ◆ NTP Issued to Contractor
- ◆ Community Outreach Event