

# Heritage Hunt Pump Station Replacement Project 60% Design Update

Community Meeting #3

March 7, 2017

SA Project Manager:

Debbie J. Maxwell, P.E., CCM

Program Mgmt. Consultant:

Rummel, Klepper & Kahl, Inc.

Design Engineer:

Dewberry Consultants LLC



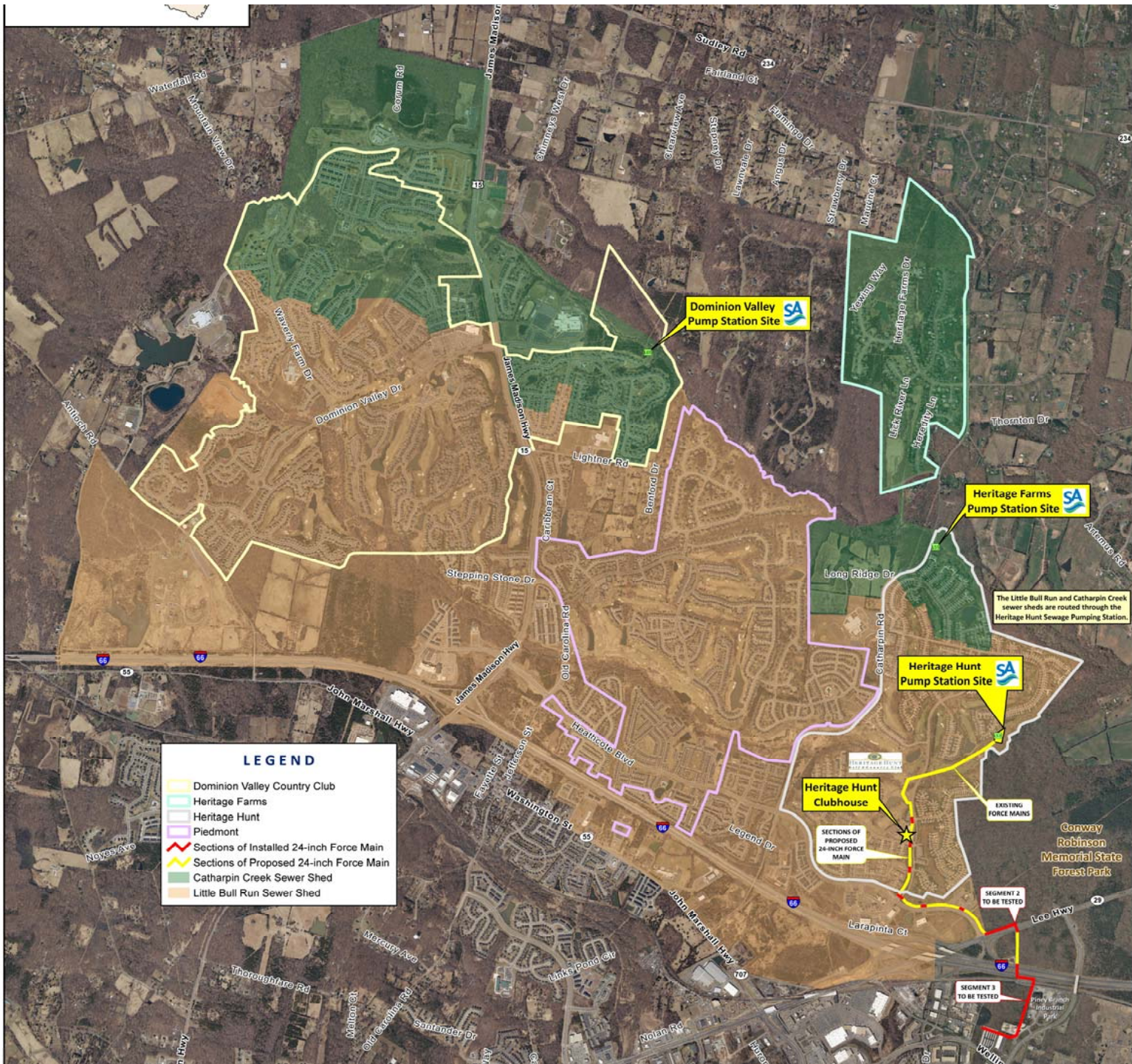
# Agenda

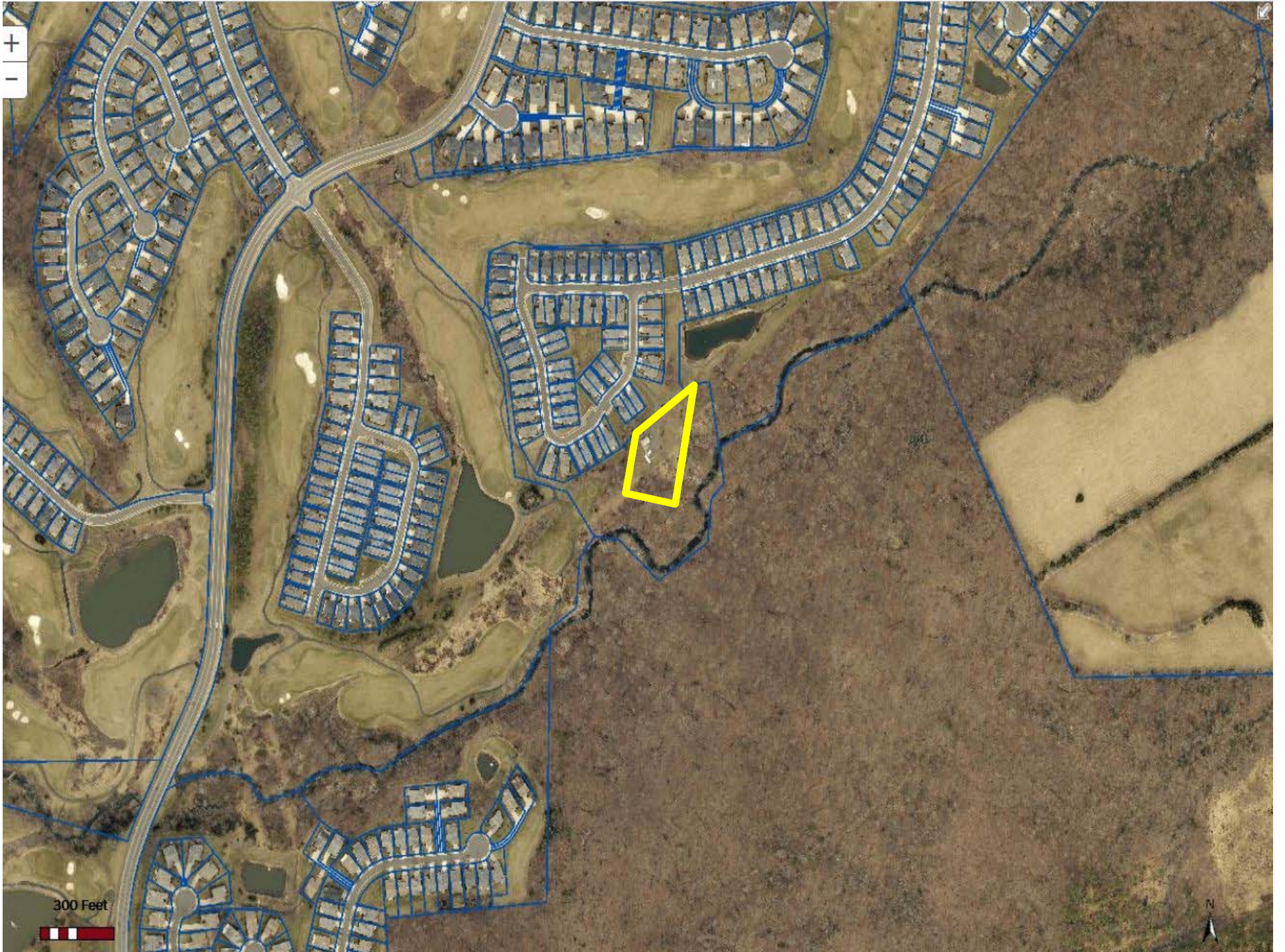
- ◆ Existing Facility History & Purpose of Project
- ◆ Review Project Status
- ◆ Current Pump Station Design
  - ◆ Siting
  - ◆ Architecture
  - ◆ Noise & Odor
  - ◆ Landscaping
  - ◆ Access
- ◆ Force Main Project Status
- ◆ Remaining Schedule
- ◆ Q&A

# Existing Facility History

## History of Regional Sewage Pump Station and Force Mains

- The existing Interim Regional Sewage Pump Station was constructed in 2001 by US Home Corporation before development could progress in Heritage Hunt
- The interim regional facility was always planned to be expanded to meet sewershed demands of region.
- The parcel was proffered & deeded by US Home Corp.
- Two (2) pressure force mains and portions of a third were constructed in 1998.
- Existing sewer sheds serve approx. 8,000 homes and expect an increase of 600 to 1,400 residences.





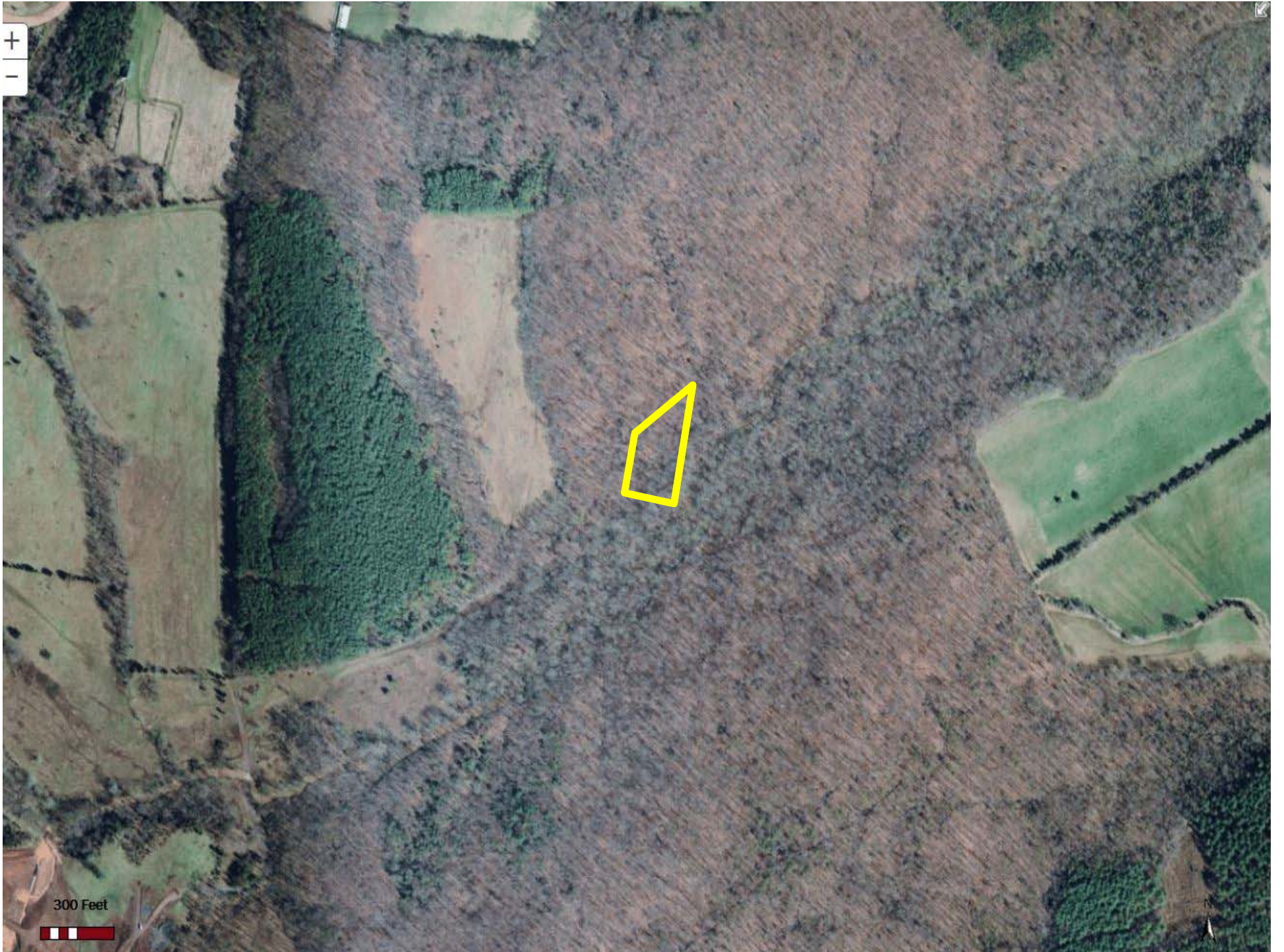


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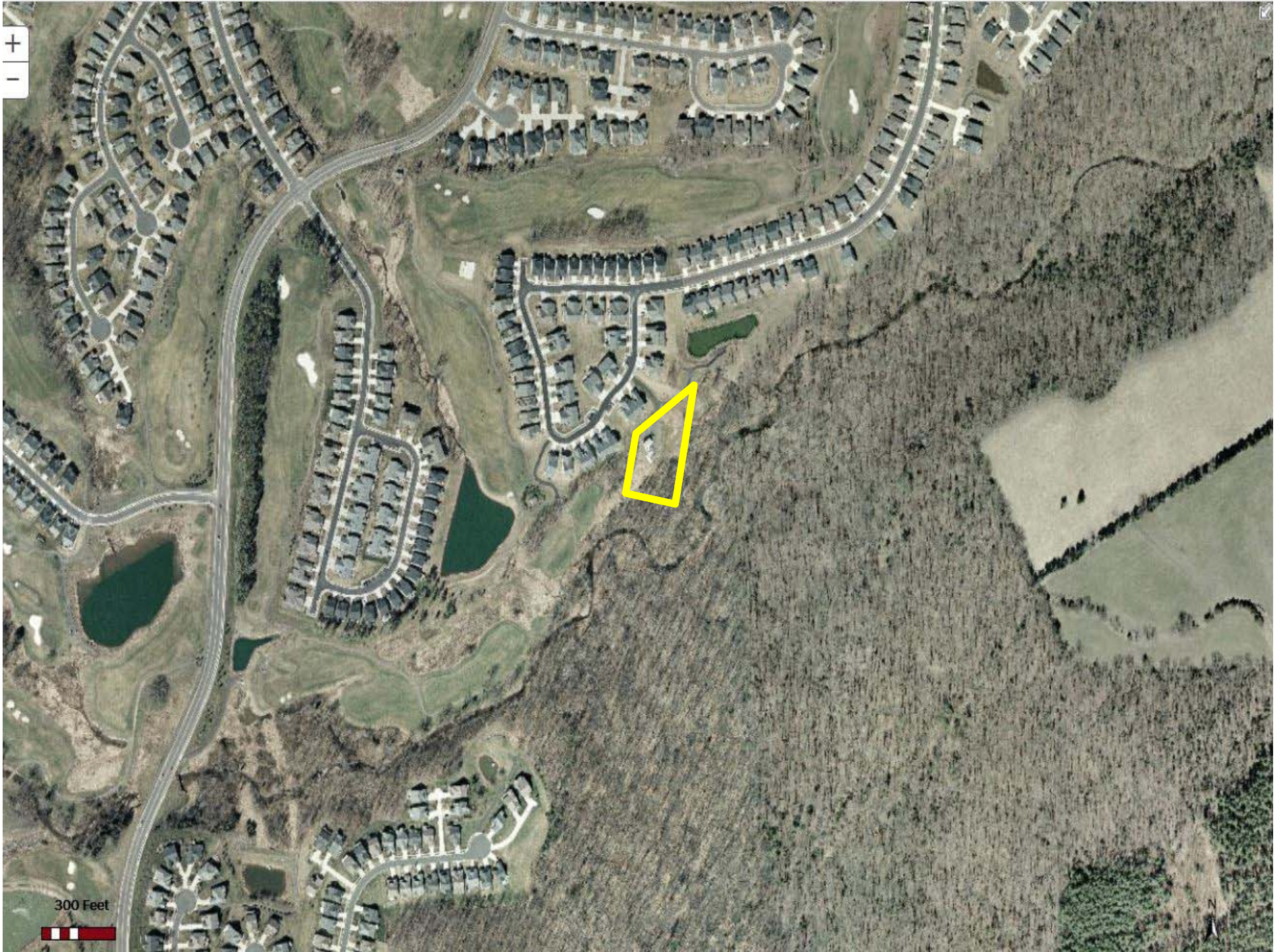
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Heritage Hunt Subdivision

Fieldstone Way

Heritage Hunt Dr.

Heritage Hunt Clubhouse

Alderwood Way

Service Authority Pump Station Site

**OVERALL MAP**

GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, IGN, IGP, swisstopo, and the GIS User Community



# Purpose of the Project

## • Purpose Of Project

- Replace existing pump station facility with a larger station equipped to handle current and future flows.
- Avoid potential sewer overflows.
- Install the remaining sections of the third force main.

## • Benefits Of Project

- Increase system capacity.
- Maintain service reliability.
- Reduce noise and odors.

# 60% Design Update

## Progress On Permitting

- County's Public Facilities Review is complete; approval on February 1, 2017.
- The Service Authority will follow key commitments, which are:
  - 1) Pump station building to have a residential appearance.
  - 2) Use best available technology – odor control.
  - 3) Use best available technology – sound control.
  - 4) Plant Riparian Forest area over old station bldg. site.
  - 5) Supplement landscaping in buffer adjacent to station.
  - 6) Present plan to address noise/odors at existing station.
  - 7) Restore damaged property, due to our construction activities, to existing or better condition.

# 60% Design Update

## • Progress On Regional Pump Station Design

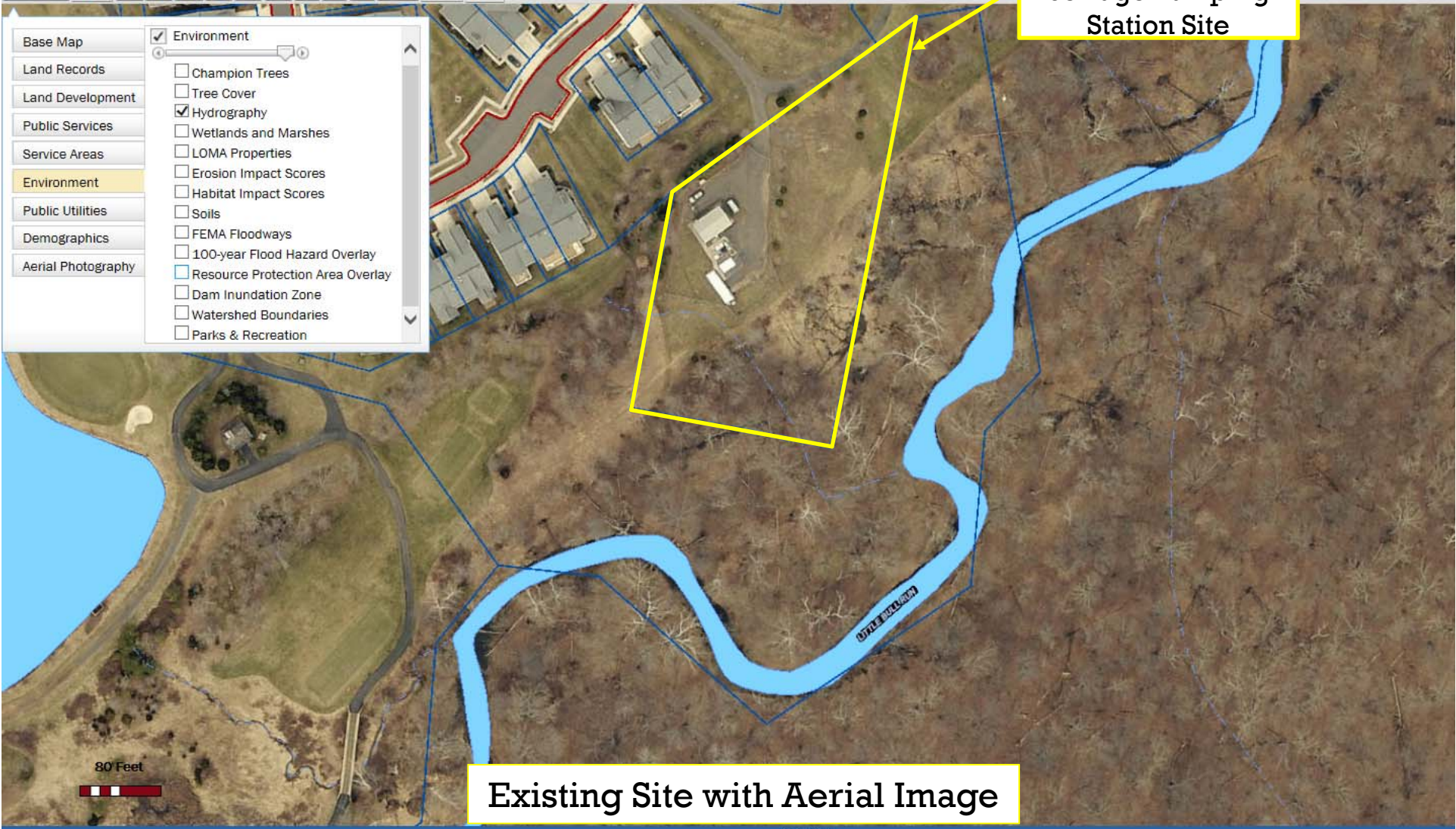
- Peak capacity designed for up to 8.0 MGD.
- New odor control system is included.
- Odor control system blowers are enclosed.
- Backup power generator is located inside the building.
- Brick screening wall to hide the odor control equipment and to provide additional sound attenuation is included.
- To the extent possible, fuel and other deliveries are scheduled to be offloaded at the back of the station.
- Building architecture does match the Community.
- Landscaping plans (draft) have been prepared.

# COUNTY MAPPER

Layers

- Base Map
  - Land Records
  - Land Development
  - Public Services
  - Service Areas
  - Environment
  - Public Utilities
  - Demographics
  - Aerial Photography
- Environment
    - Champion Trees
    - Tree Cover
    - Hydrography
      - Wetlands and Marshes
      - LOMA Properties
      - Erosion Impact Scores
      - Habitat Impact Scores
      - Soils
      - FEMA Floodways
      - 100-year Flood Hazard Overlay
      - Resource Protection Area Overlay
      - Dam Inundation Zone
      - Watershed Boundaries
      - Parks & Recreation

Heritage Hunt Sewage Pumping Station Site



Existing Site with Aerial Image

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Heritage Hunt Sewage Pumping Station Site



Existing Site with Aerial Image and 100-Yr Flood Hazard Overlay

http://gisweb.pwcgov.org/webapps/CountyMapper/ PWC-County Mapper

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Convert Select

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Heritage Hunt Sewage Pumping Station Site

80 Feet

Existing Site with Aerial Image and Tree Cover Overlay

1 : 1,200

# COUNTY MAPPER

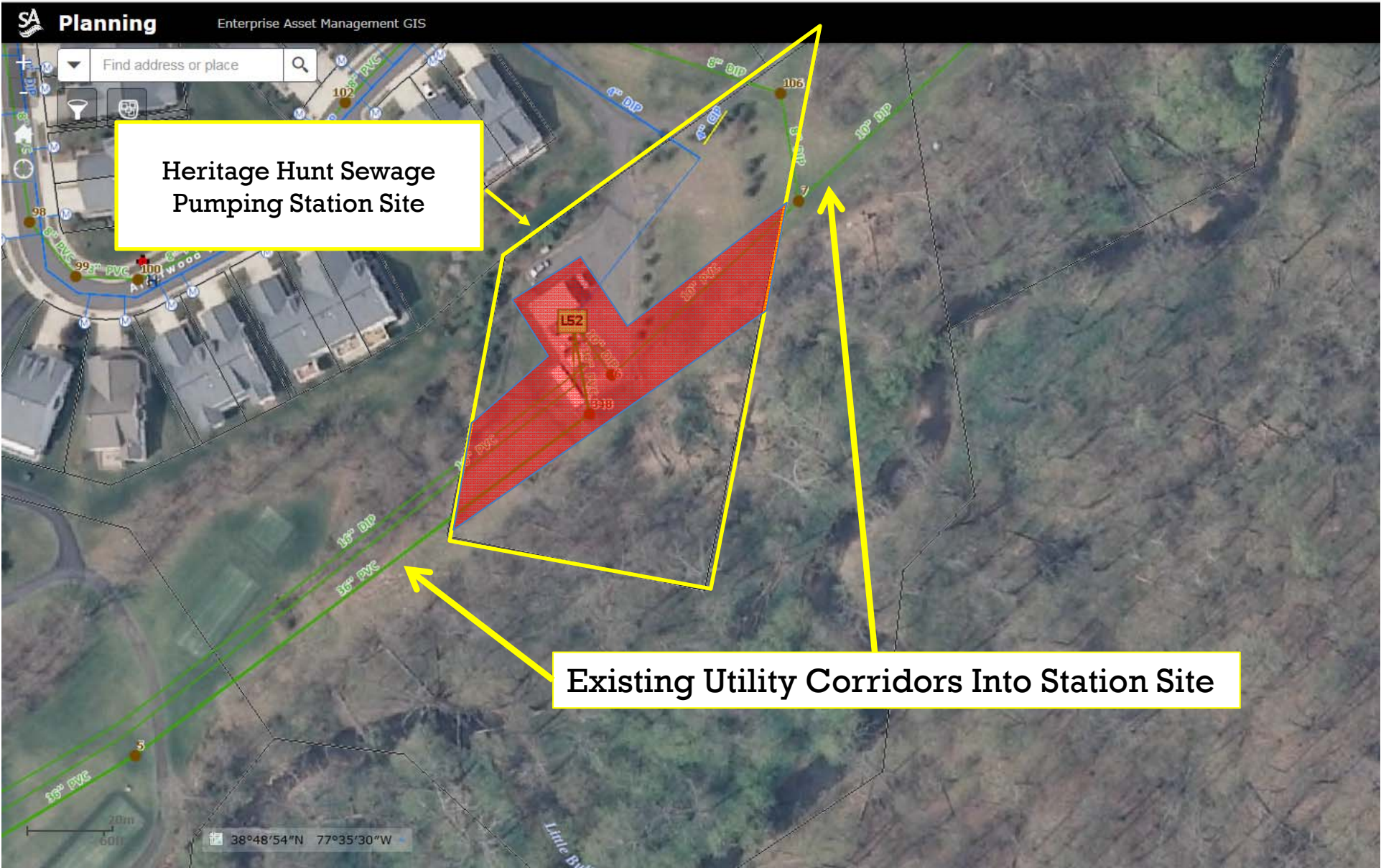
Layers

- Base Map
  - BaseMap
  - Spot Elevation
  - Roadways
  - Railroads
  - Jurisdictions
  - Contours
- Land Records
- Land Development
- Public Services
- Service Areas
- Environment
- Public Utilities
- Demographics
- Aerial Photography

Heritage Hunt Sewage Pumping Station Site

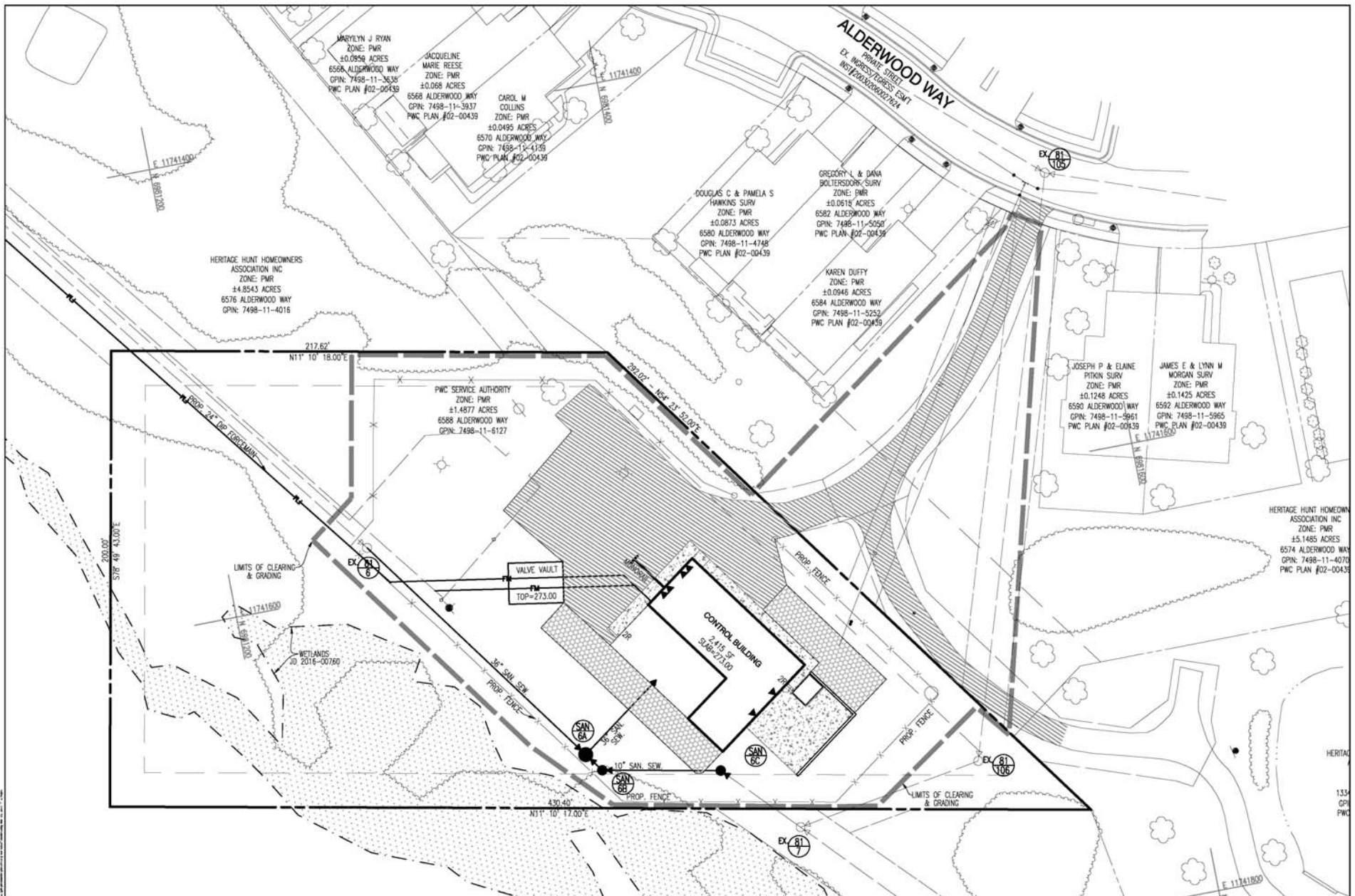


Existing Site with Aerial Image and Contour Lines





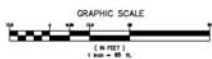
Heritage Hunt Sewage  
Pumping Station Site



**HERITAGE HUNT  
SEWAGE PUMPING STATION  
PROPOSED SITE PLAN**

GAINESVILLE MAGISTERIAL DISTRICT  
PRINCE WILLIAM COUNTY, VIRGINIA  
MARCH 1, 2017

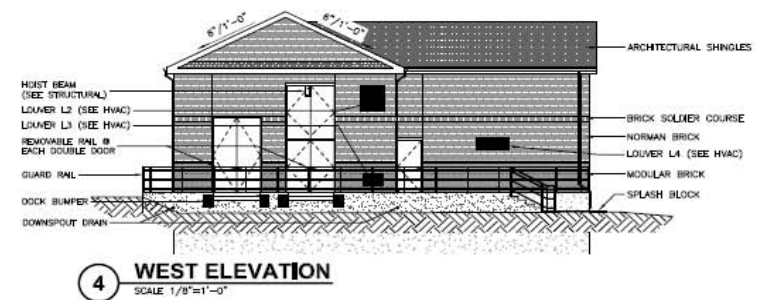
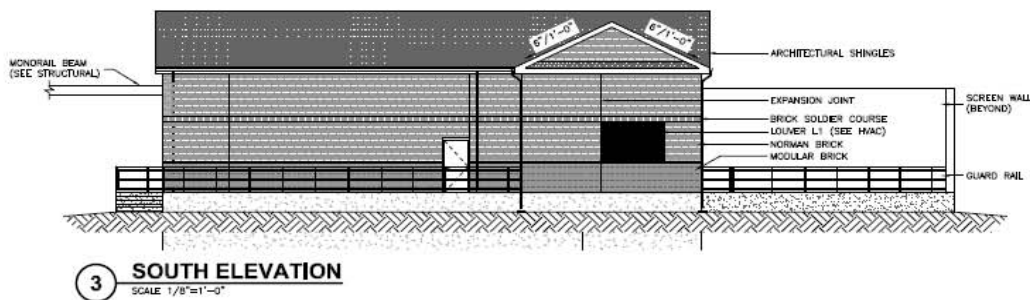
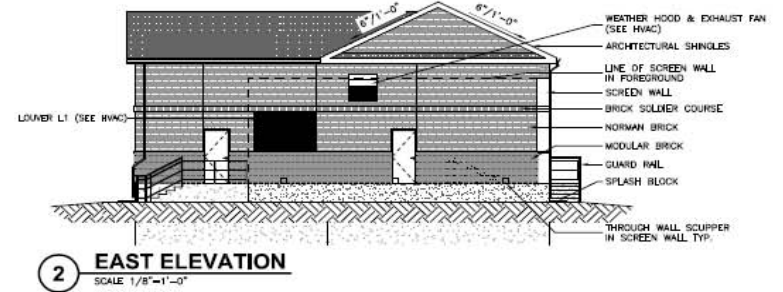
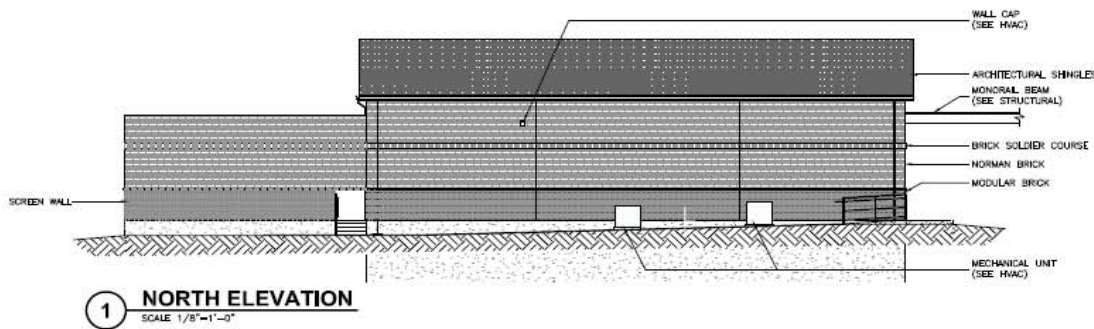
NOTE: THIS PLAN IS FOR INFORMATION PURPOSES ONLY.



Dewberry  
Consultants LLC

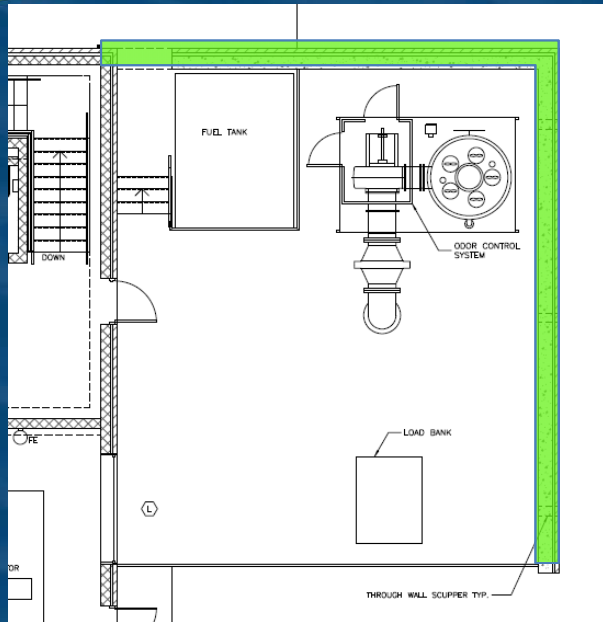
13575 HEATHCOTE BLVD.  
SUITE 150  
GAINESVILLE, VA 20155-0683  
PHONE: 703.468.2211  
FAX: 703.468.2212

# Building Architecture



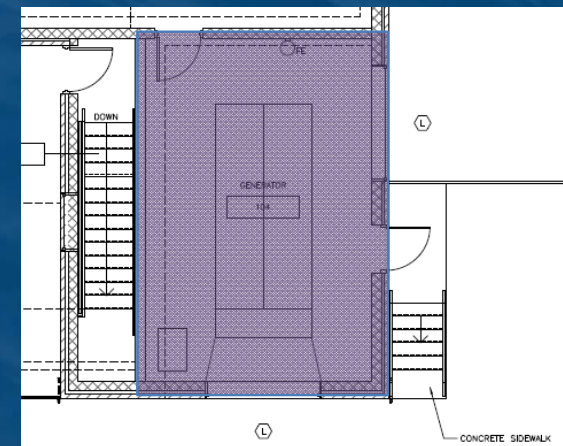


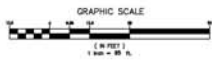
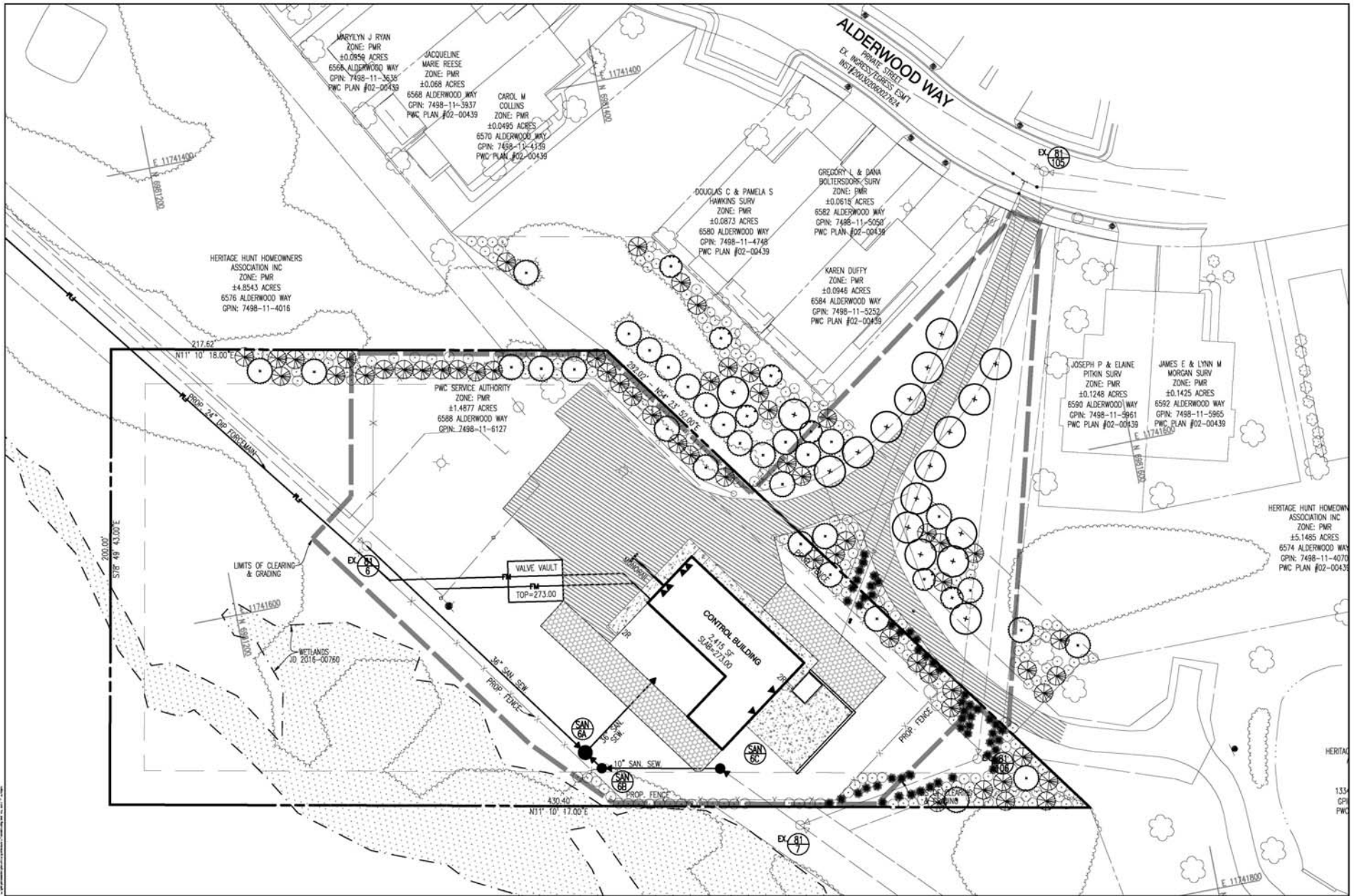
# Noise & Odor Reduction Features



- Odor Control will have sufficient capacity to handle the entire facility.
- Behind screening Wall.
- Blowers will be enclosed.

- Generator and channel grinder motors are inside the building.
- Generator room will have noise control features.





**HERITAGE HUNT  
SEWAGE PUMPING STATION  
PROPOSED LANDSCAPE PLAN**

GAINESVILLE MAGISTERIAL DISTRICT  
PRINCE WILLIAM COUNTY, VIRGINIA  
MARCH 1, 2017

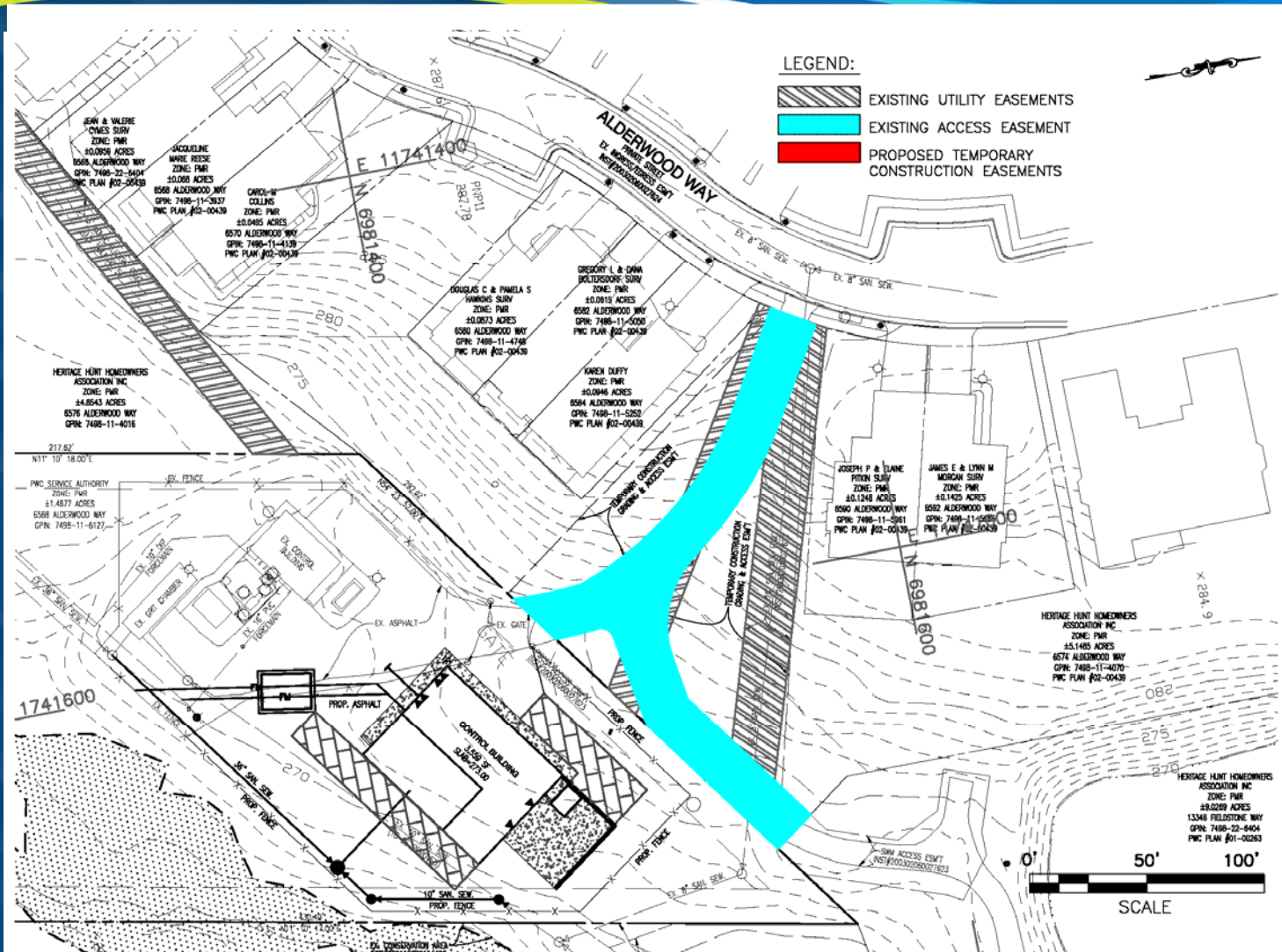
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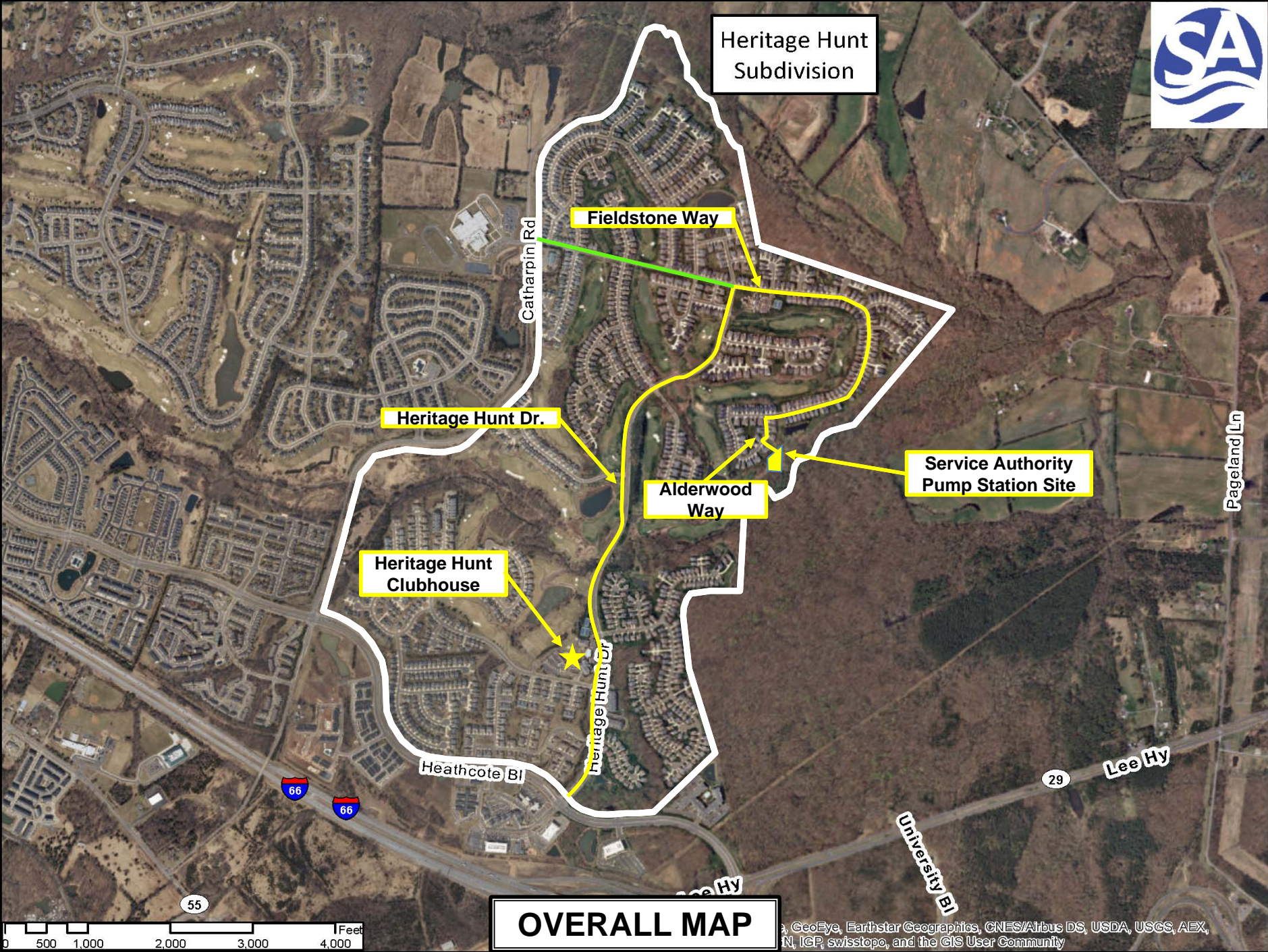
Dewberry  
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13575 HEATHCOTE BLVD.  
SUITE 150  
GAINESVILLE, VA 20155-0683  
PHONE: 703.468.2211  
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# Proposed Temporary Easement for Efficient Access to Site







Heritage Hunt Subdivision

Fieldstone Way

Heritage Hunt Dr.

Heritage Hunt Clubhouse

Alderwood Way

Service Authority Pump Station Site

Catharpin Rd

Pageland Ln

Heathcote Bl

Heritage Hunt Dr

University Bl

Lee Hy

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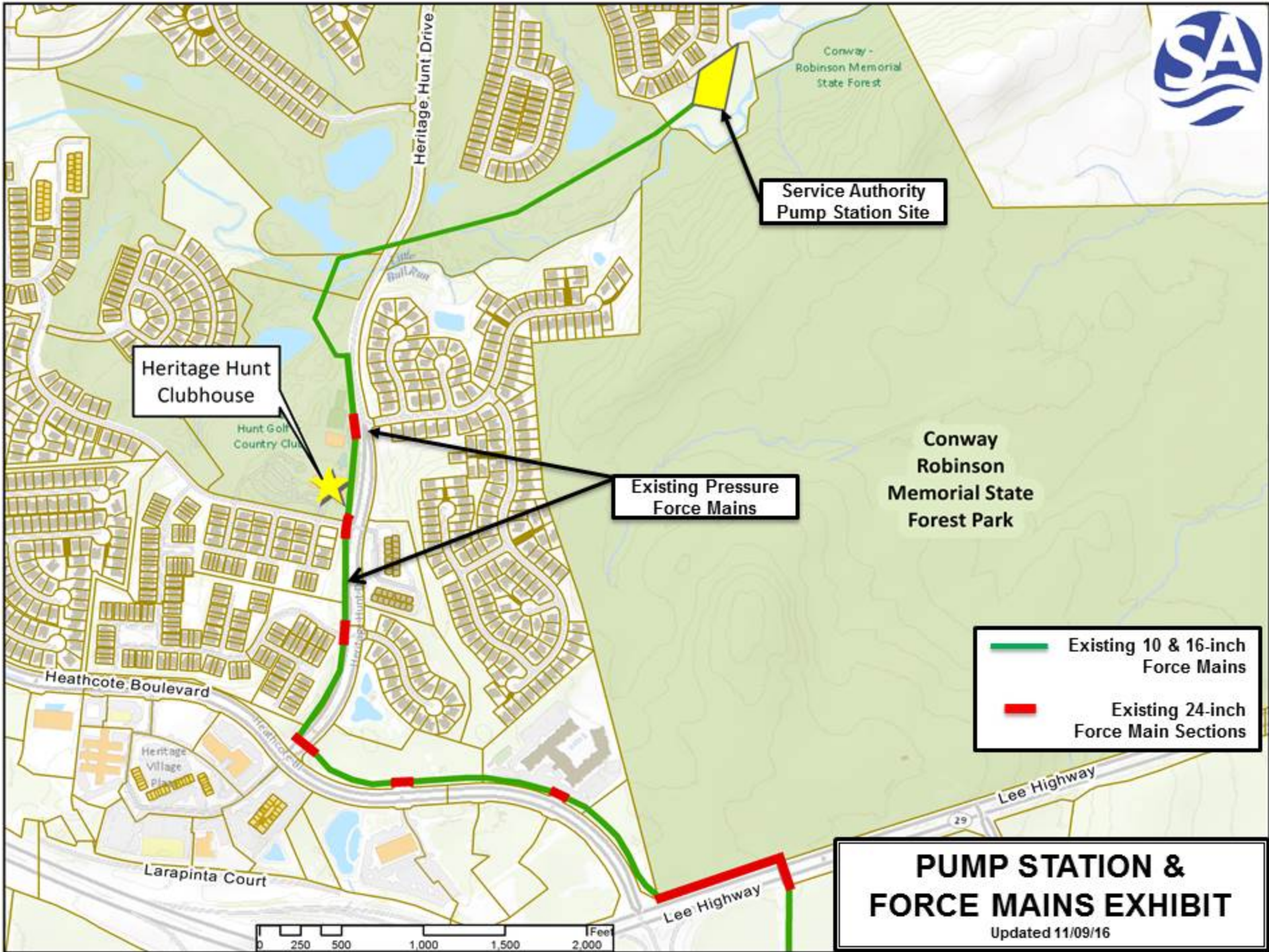
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OVERALL MAP

GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, IGN, IGP, swisstopo, and the GIS User Community





Service Authority  
Pump Station Site

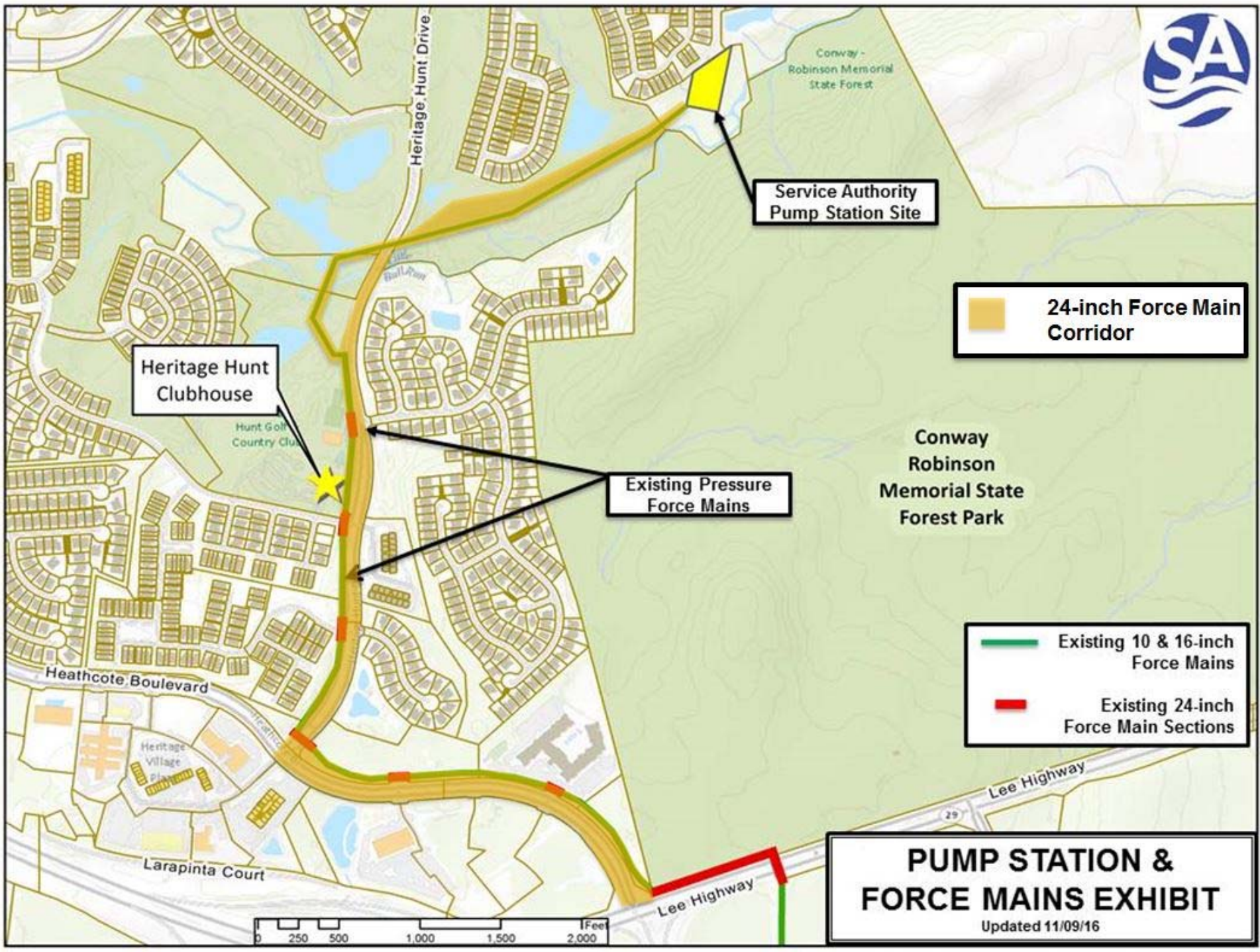
Heritage Hunt  
Clubhouse

Existing Pressure  
Force Mains

Conway  
Robinson  
Memorial State  
Forest Park

- Existing 10 & 16-inch  
Force Mains
- Existing 24-inch  
Force Main Sections

**PUMP STATION &  
FORCE MAINS EXHIBIT**  
Updated 11/09/16



Service Authority  
Pump Station Site

24-inch Force Main  
Corridor

Heritage Hunt  
Clubhouse

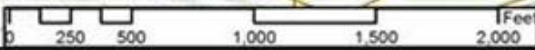
Existing Pressure  
Force Mains

Conway  
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Memorial State  
Forest Park

Existing 10 & 16-inch  
Force Mains

Existing 24-inch  
Force Main Sections

**PUMP STATION &  
FORCE MAINS EXHIBIT**  
Updated 11/09/16



# Key Issues - Force Mains

- The Service Authority's commitment to restore damaged property, caused by construction activities, to original or better condition is firm and unchanged.
- The SA plans to minimize the daily work zone areas to reduce travel times and disruption to the Community.
- Minimizing the time the Golf Course may be impacted.

# Example: Project Restoration



# Example: Project Restoration



# Example: Project Restoration



# Example: Project Restoration



# Anticipated Project Duration

- ◆ Design and Permitting Timeframe:
  - January 2015 – April 2018
- ◆ Future Steps - Easement Negotiations With The HOA.
  - On-going
- ◆ Public Facility Review Process
  - Approved on February 1, 2017
- ◆ Anticipated Sewage Pump Station and Force Main Construction Duration:
  - 24 Months

# Resolution Approach

- ◆ Assess sources of noise
  - ◆ Blower fans on OCU (set to operate from 10 am – 3 pm daily).
  - ◆ Channel grinder motors (operate 24/7).
  - ◆ Emergency generator (set to exercise 1 hr. per week on Tuesdays).
  - ◆ Wet well cleaning via Vactor Truck (every 6 months for 4-6 hours).
- ◆ Assess source of odors
  - ◆ Installed monitors to measure hydrogen sulfide (H<sub>2</sub>S) levels at 5 locations, including in the backyard of a nearby customer.

# Measures Implemented To Date

## ◆ Noise

- ◆ Reduced generator exercise frequency to monthly.
- ◆ Rebuilt sound enclosure on OCU.
- ◆ Installed sound mitigation wall around OCU and channel grinder motors.

## ◆ Odor

- ◆ Increased odor inhibiting chemical feed upstream.
- ◆ Resealed all exterior lids and hatches.
- ◆ Installed seals on manholes near the station.
- ◆ Installed duct to push exhaust air from OCU away from homes.

# Results to Date

## ◆ Noise

- ◆ Noise levels were reduced with sound mitigation fencing, but customers still reported dissatisfaction
- ◆ Will evaluate effectiveness of sound mitigation wall which was installed last week

## ◆ Odor

- ◆ Minimal to non-detect levels of H<sub>2</sub>S

# Next Steps

- ◆ The primary focus continues to be to address the noise concerns, which then should give us more options/flexibility to address the odor concerns.
  - ◆ Evaluate effectiveness of recently installed sound mitigation wall
  - ◆ Will continue to investigate moving channel grinder motors inside the building; initial investigation indicated that there are safety issues that may make this infeasible
  - ◆ Investigate custom enclosure for OCU
  - ◆ Investigate custom enclosure for channel grinder motors – reference checks on this option were not encouraging
  - ◆ Bolster the process for feedback from adjoining customers – Marlo to solicit feedback bi-weekly

# Contacts

Kathy Bentz

Community Relations and Outreach Manager

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Email: [heritagehunt@pwcsa.org](mailto:heritagehunt@pwcsa.org)

Project Website:

<https://www.pwcsa.org/heritage-hunt-project>

# Q & A

Any Questions?