



Stormwater Update

September 12, 2023

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Public Works Director



Legacy Flooding

Legacy Flooding locations are places where flooding has historically occurred because the developments were built prior to stormwater regulations. Flood Mitigation such as pumping has been required to protect or restore the public roadways and infrastructure from flooding.

- Emerald Woods
- Fletcher's Mill/Pine Hills
- Hayes Glen
- Heatherwood
- Hills of Santa Fe
- Red Lobster
- Robin Lane
- SE 35th Street
- Sunningdale



Flooded entrance to Hills of Santa Fe

BOCC Invests in Flood Mitigation – Post T.S. Elsa

- In August 2021, the BOCC authorized \$1,062,495 for flood mitigation.
 - Constructed over 4,600 feet of permanent piping, which replaced temporary piping and reduced the pumping response time and saved annual labor cost.
 - Constructed four permanent pump stations.
 - 5 trailer mounted pumps with automated floats.
- “Tested” twice in 2022
 - August, 10.8 -12.5 inches of rain
 - September, 4-6 inches of rain



Buried permanent piping vs. Temporary hoses, which had to be reinstalled for every event.

Stormwater Pumping Stations

Recent improvements have been made to:

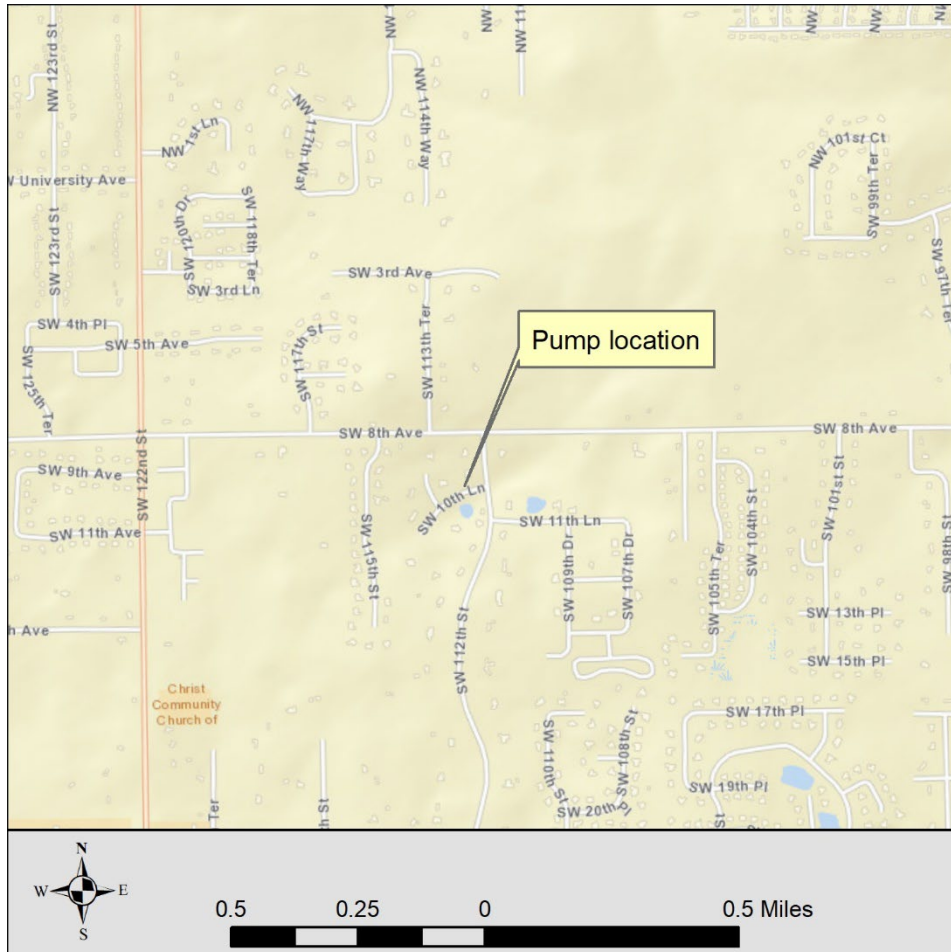
- **Hayes Glen:** Single pump with float switch
- **Heatherwood:** Fencing and landscaping
- **Hills of Santa Fe:** Two pumps with float switches
- **Robin Lane:** Two pumps with float switches
- **Pine Hills/Fletcher Mill:** Dual pump discharge piping



Robin Lane: Two 8-inch discharge pumps.

Pumping operations at the legacy locations can occur with minimal time and effort, allowing our focus to be on other emergency response functions or operations.

Hayes Glen



Single 8-inch pump with float switches

Improved Stormwater Pumping Stations

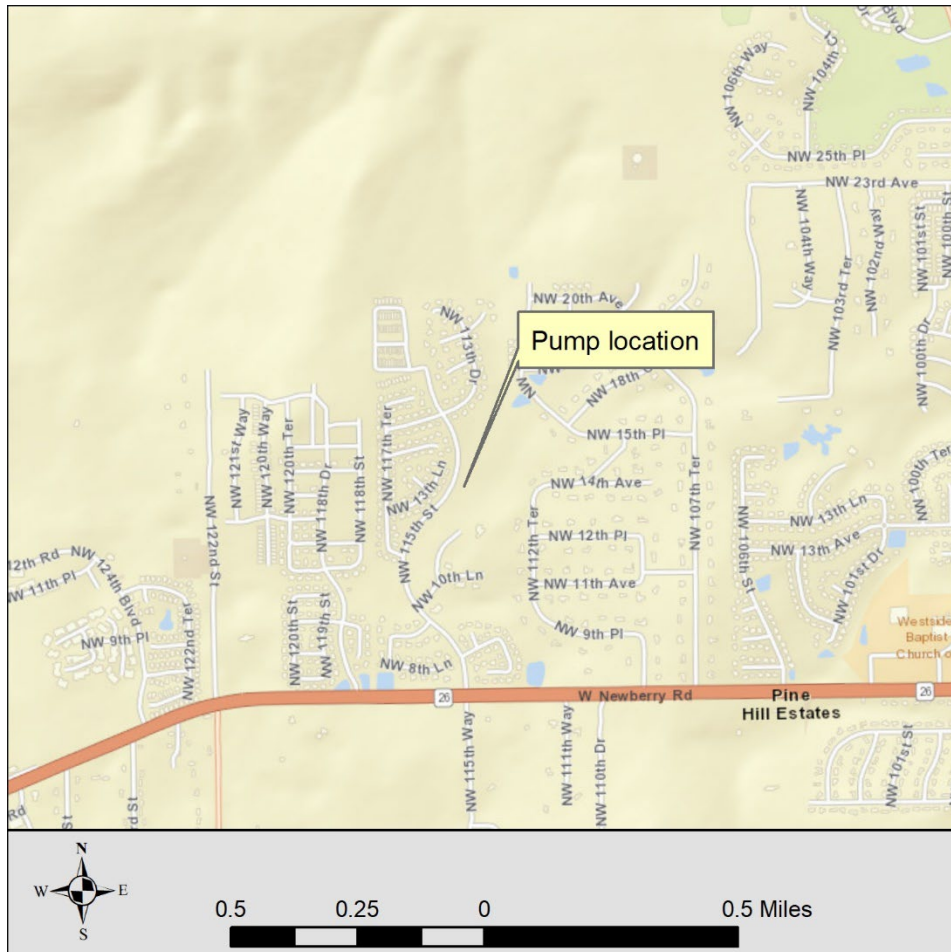
Heatherwood



Single 8-inch pump with hard pipe,
fencing and landscaping to reduce noise.

Improved Stormwater Pumping Stations

Pine Hills / Fletcher Mill



Pad and piping to accommodate single or double 8-inch discharge pumps.

Improved Stormwater Pumping Stations

Emerald Woods



Permanent discharge line
compatible with all pumps



Ellis Park Stormwater System Evaluation

- Due to regional flooding issues, major stormwater systems in some of the legacy areas were evaluated.
- Evaluated the Ellis Park Subdivision Stormwater System and provided recommendations to the Homeowners Association (HOA) in October 2022.
- The HOA contracted with an engineer to develop plans and specifications for the maintenance work to restore the system to permitted conditions.
- The HOA has selected a contractor and is establishing an assessment to fund the work.
- The HOA project will restore significant capacity and function to the basins.

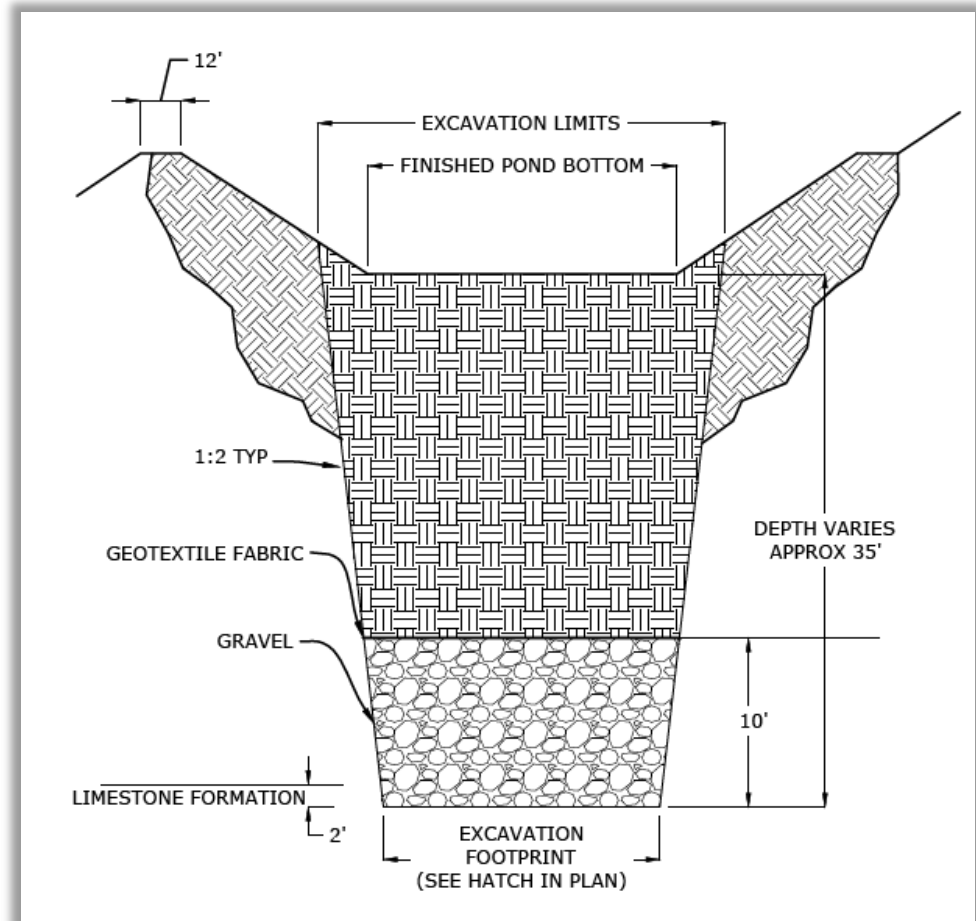


DRA 2: Clogged outfall above

The HOA has also included routine maintenance of the outfall structures into their landscaping services.

FY-24 Stormwater Budget Proposals

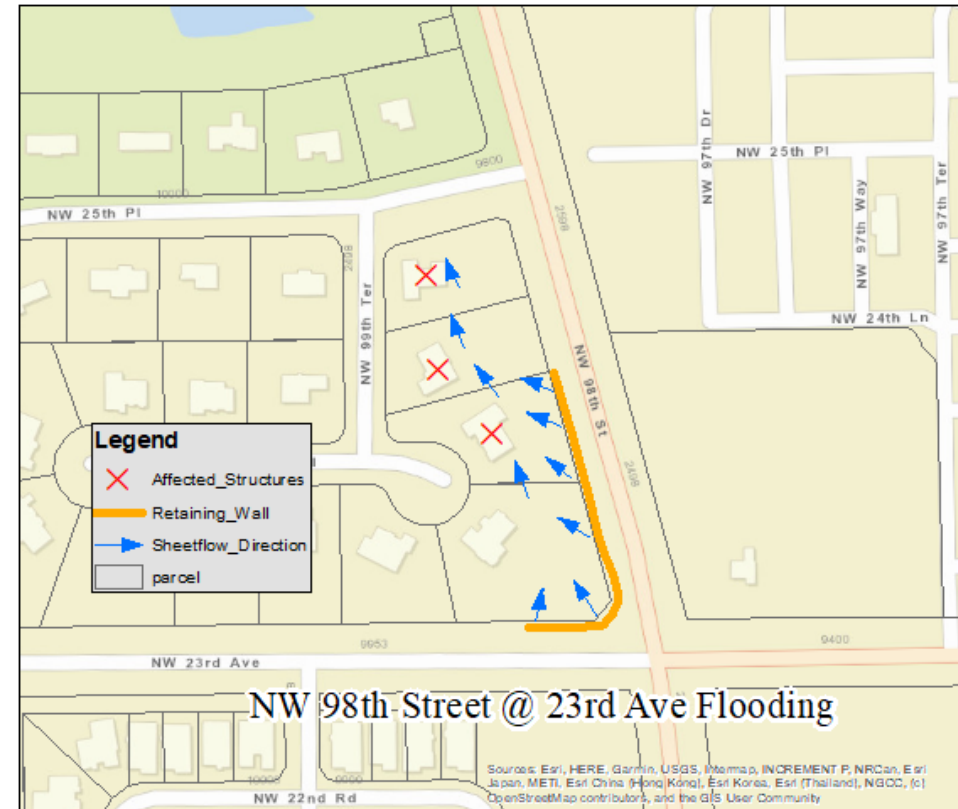
- Purchase of 4 new portable pumps and associated supplies to be used primarily for Sunningdale, Emerald Woods, SE 35th Street @ 17th Avenue, and Pine Hills/Fletcher Mill
 - \$478,433
- Design, permitting, and construction of wicks for the Ellis Park drainage easements.
 - \$125,000



Wick cross-section

NW 98th Street @ NW 23rd Avenue Flooding

- Three homes flooded in Hills of Santa Fe along NW 98th Street.
- Due to sheet-flow leaving the right-of-way after storm drain and pipe overwhelmed.
- Constructed 750 linear feet of flood control wall.

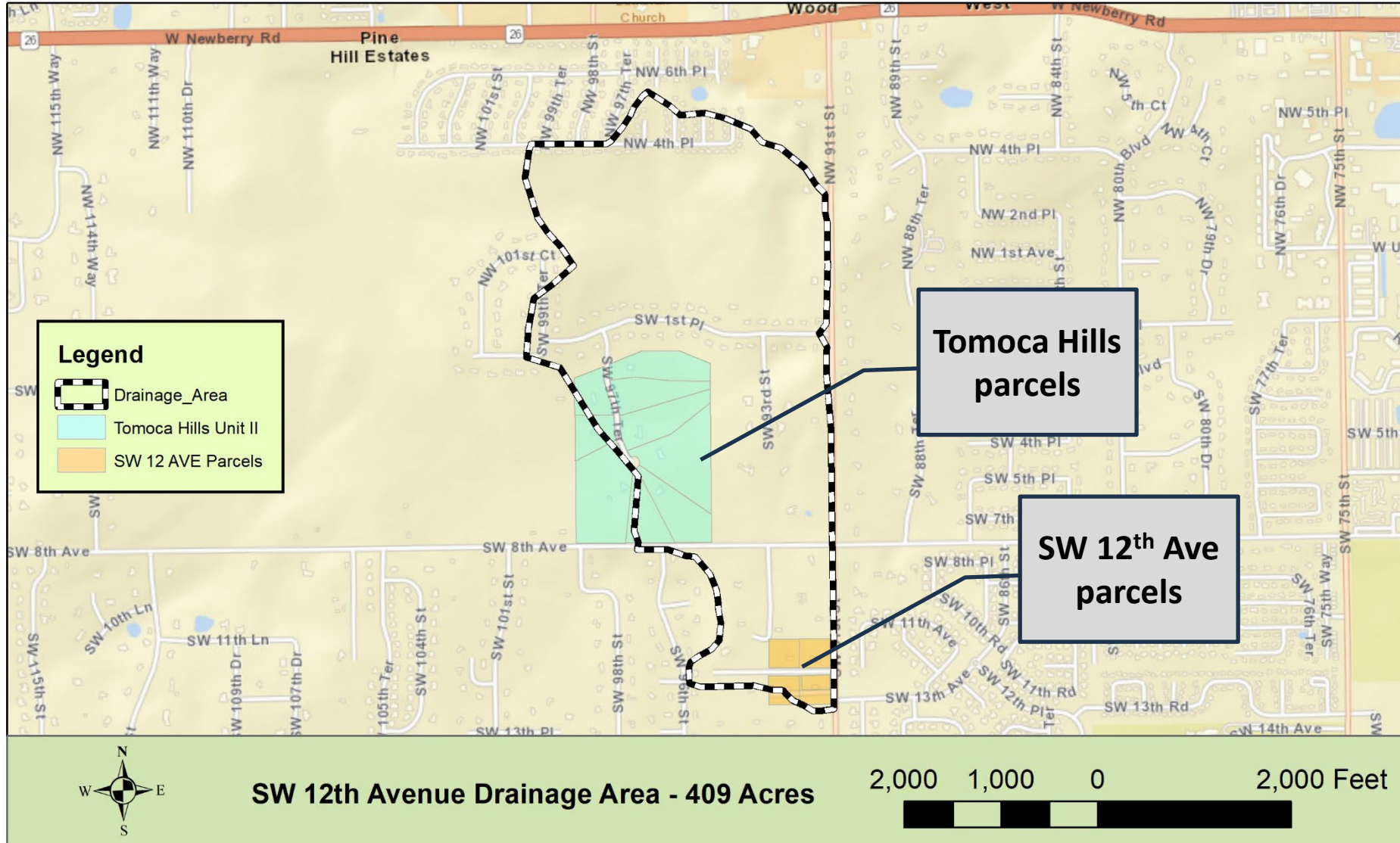


Sand-Bag Equipment

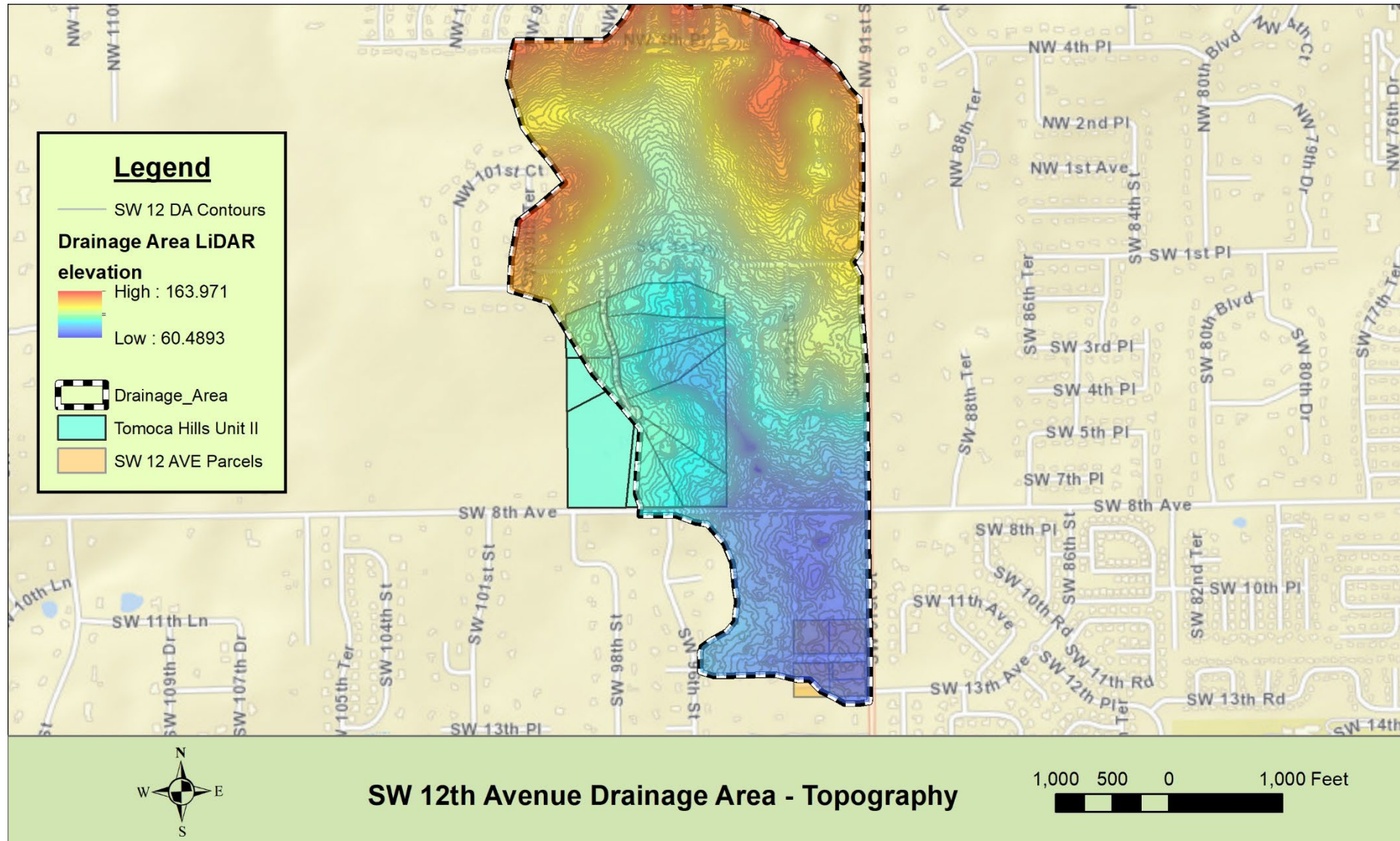
- Increases production Rate
- Reduced manpower required



SW 12th Avenue Flooding Overview

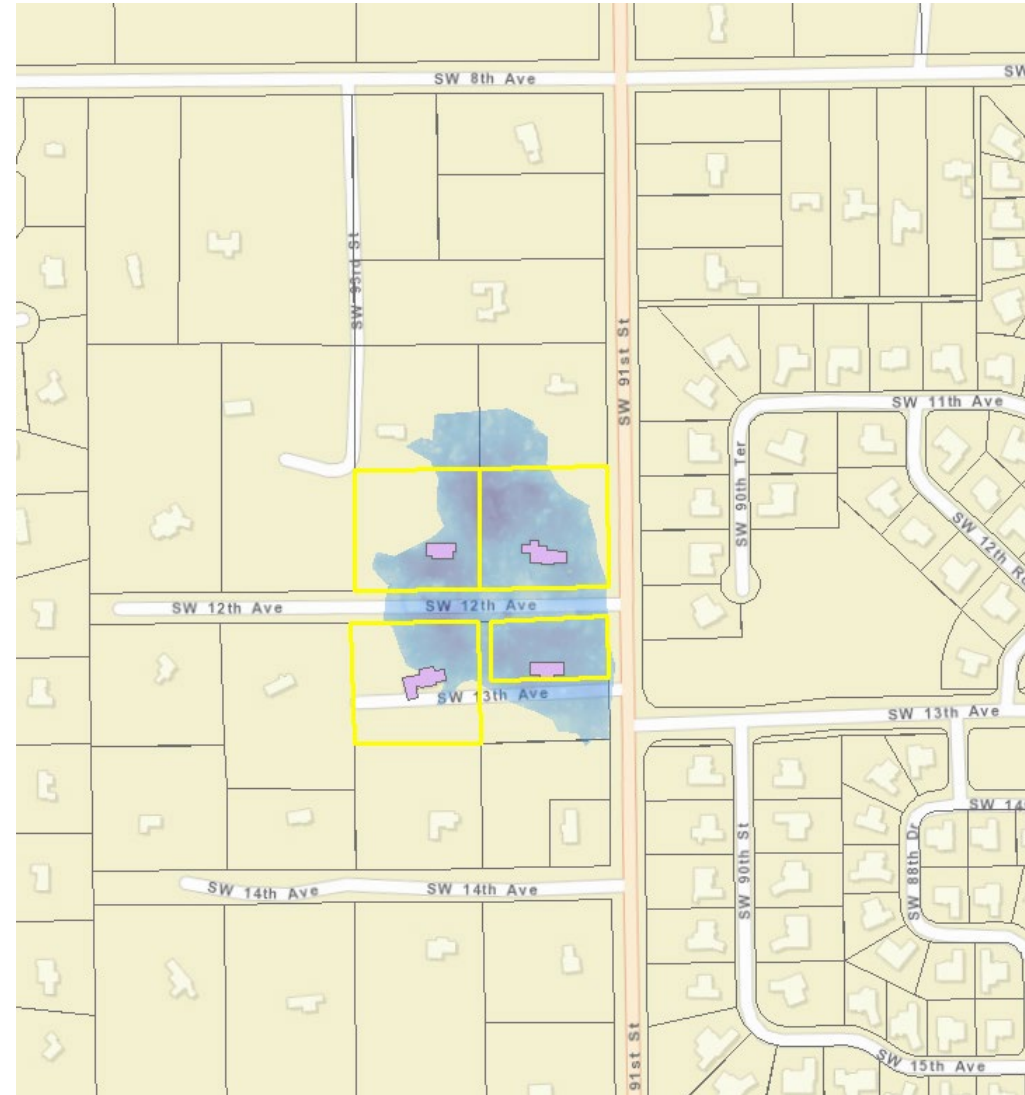


SW 12th Avenue Flooding Overview



SW 12th Avenue Flooding Overview

- Flooding impacts 4 homes on SW 12th Avenue west of SW 91st Street.
- Floodplain received water from 400+ acre watershed to the north.
- Homes flooded in 2004, 2017 (Irma), and 2021 (Elsa).



SW 12th Avenue: Ongoing Flood Mitigation Efforts

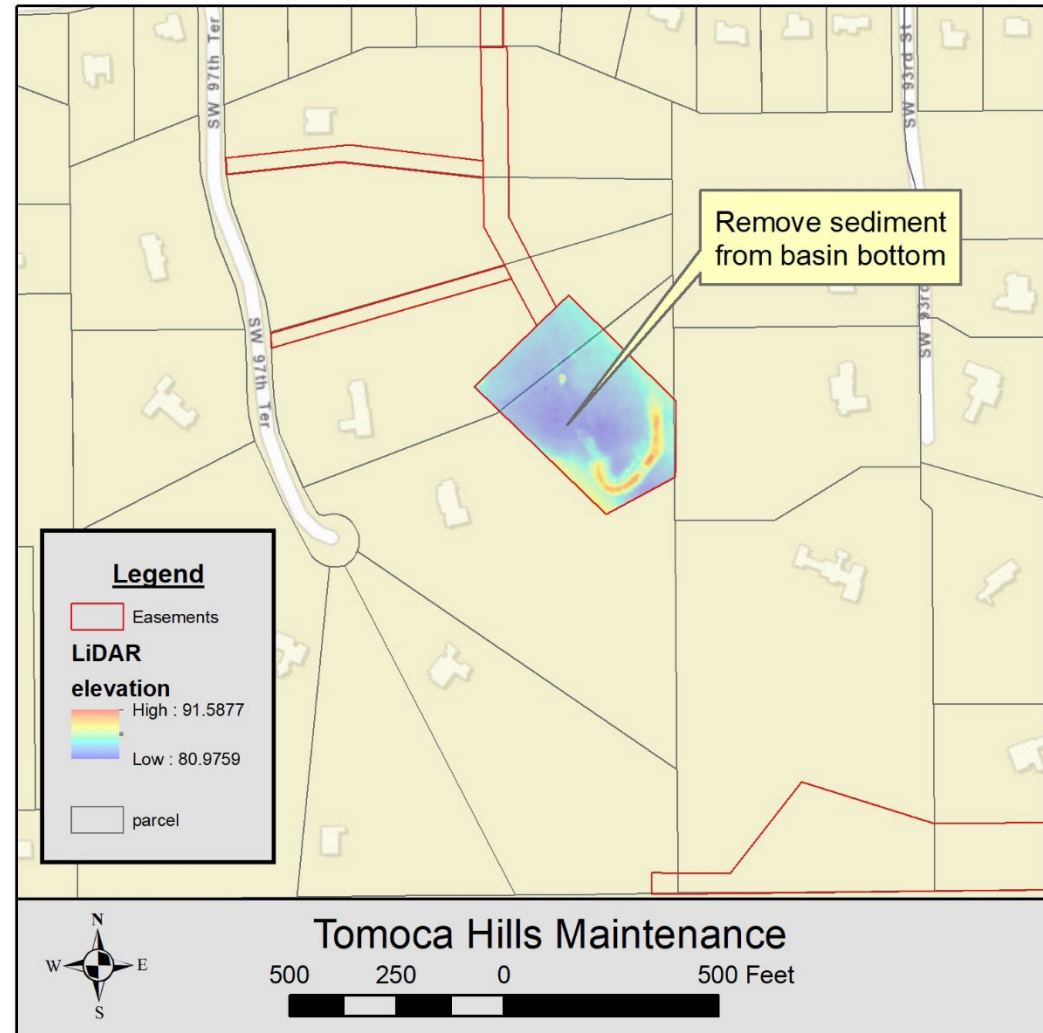
3. Maintenance of the Tomoca Hills Drainage easement



SW 12th Avenue: Ongoing Flood Mitigation Efforts

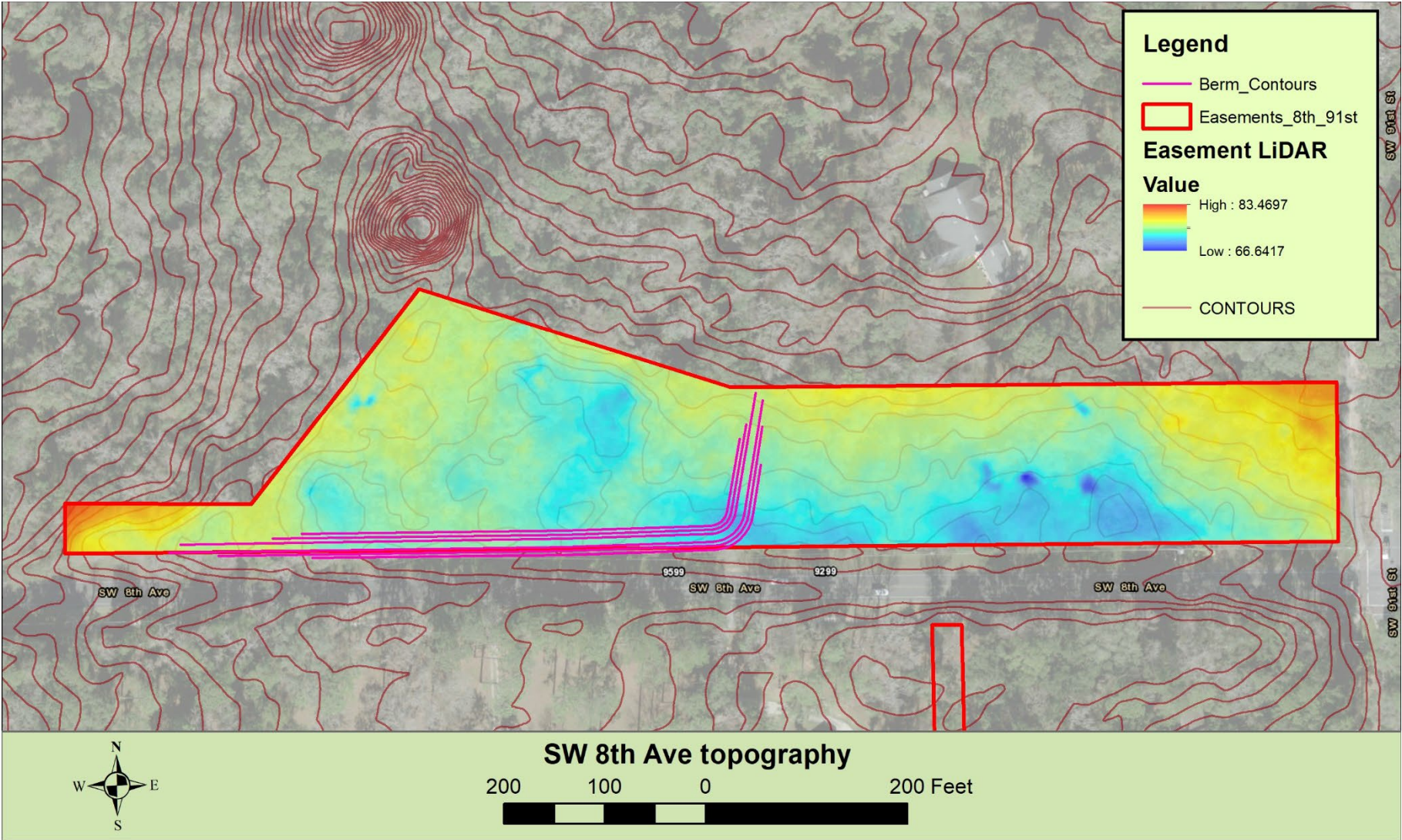
3. Tomoca Hills easement maintenance

- Restore basin by removing sediment
- Additional geotechnical services needed to determine sediment depth
- Excavation on hold due to potential litigation
- Will continue with routine mowing
- Fulfill commitment to repair fencing and improve access point



SW 12th Avenue: Ongoing Flood Mitigation Efforts

4. Proposed SW 8th Avenue Berm



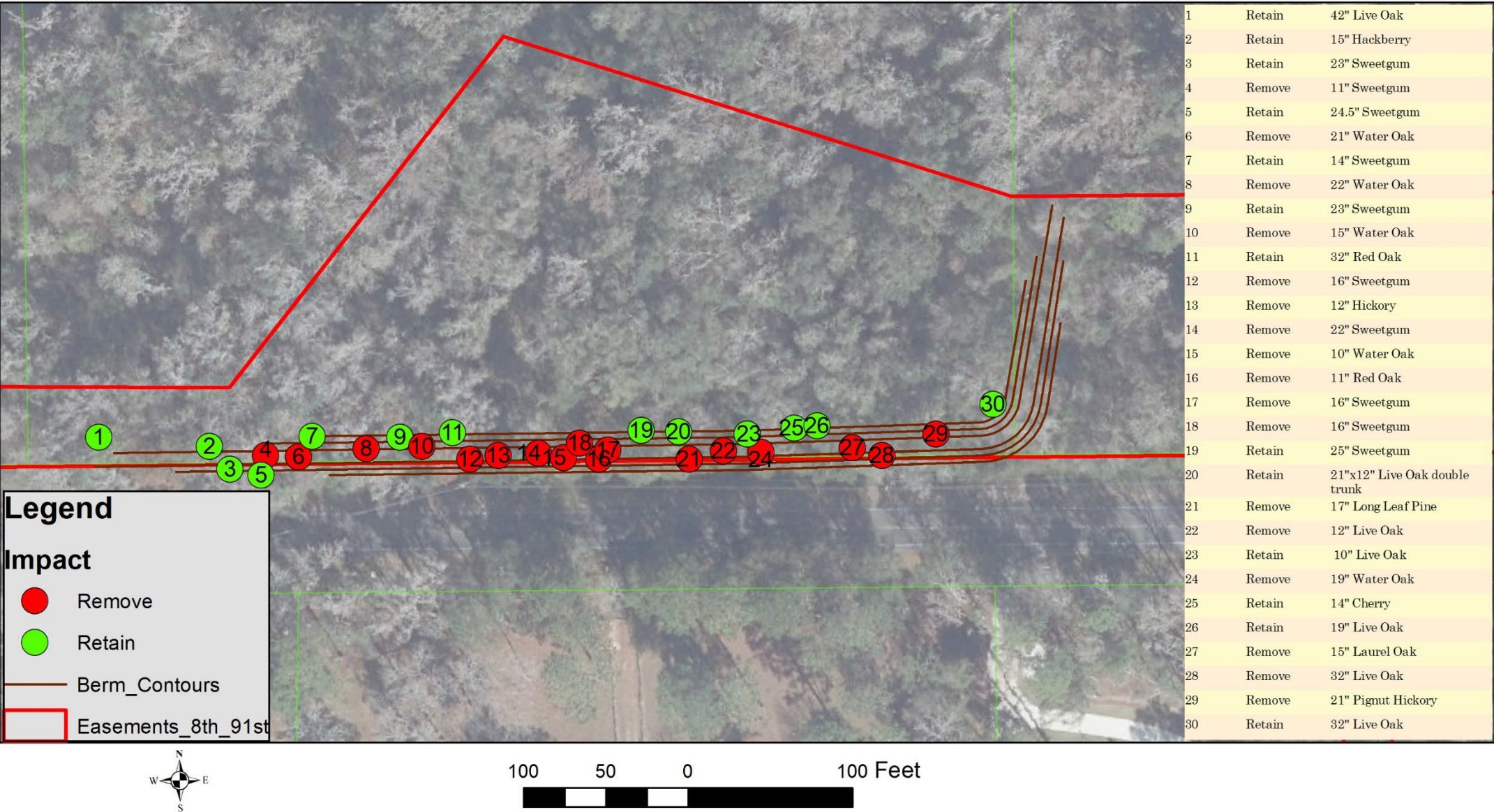
SW 12th Avenue: Ongoing Flood Mitigation Efforts

4. Proposed SW 8th Avenue Berm

- Proposed berm located in existing County drainage easement
- Provide 1.25 acre-feet (407,000 gallons) of storage, equal to approximately 1 football field- 1 foot deep. Results in < 6" flood reduction @ SW 12th Ave
- Involves removing approximately 17 trees within the footprint of the berm
- Mitigation for removal of regulated trees will be provided



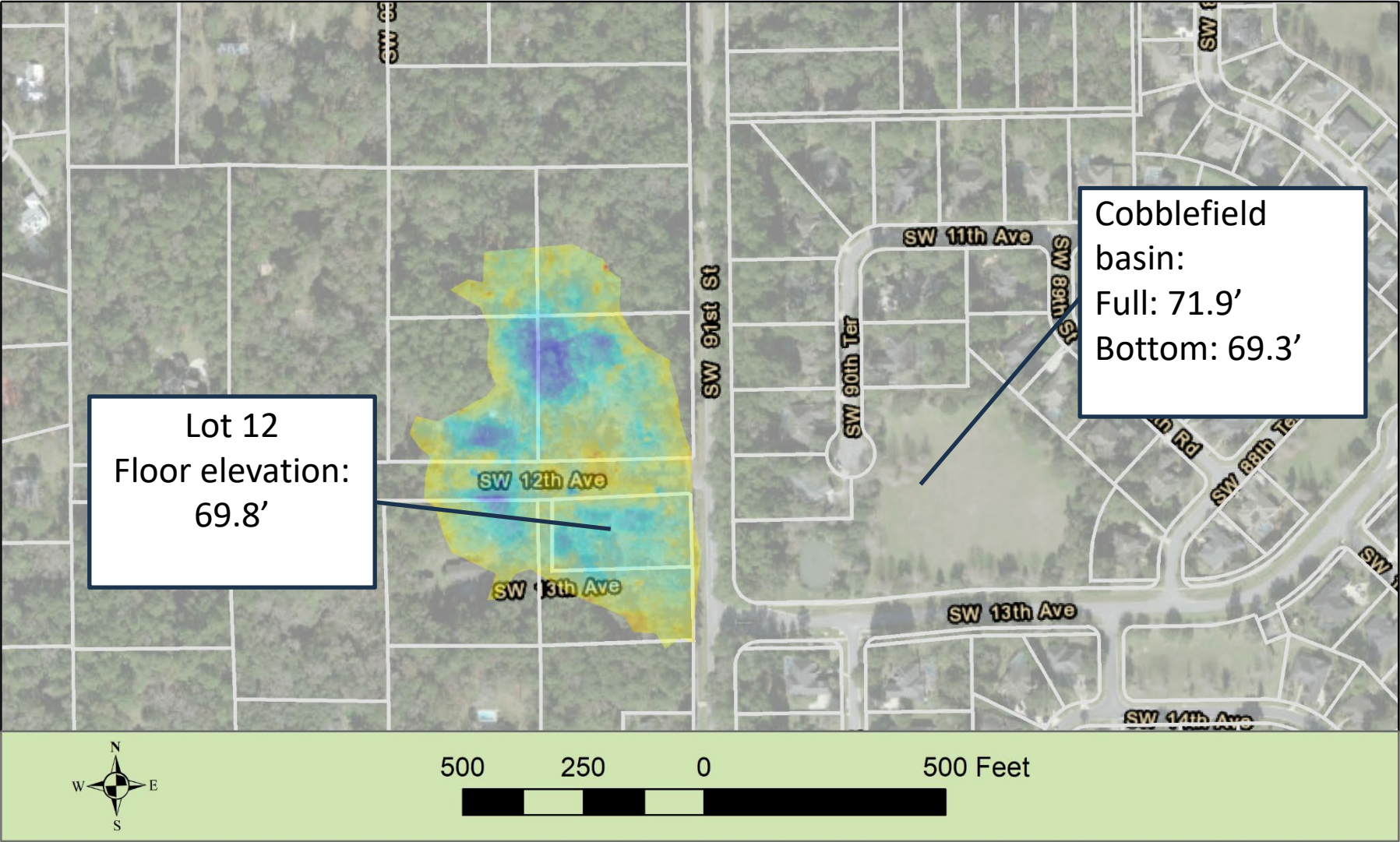
SW 12th Avenue: Ongoing Flood Mitigation Efforts



Removal of
17 trees
required.

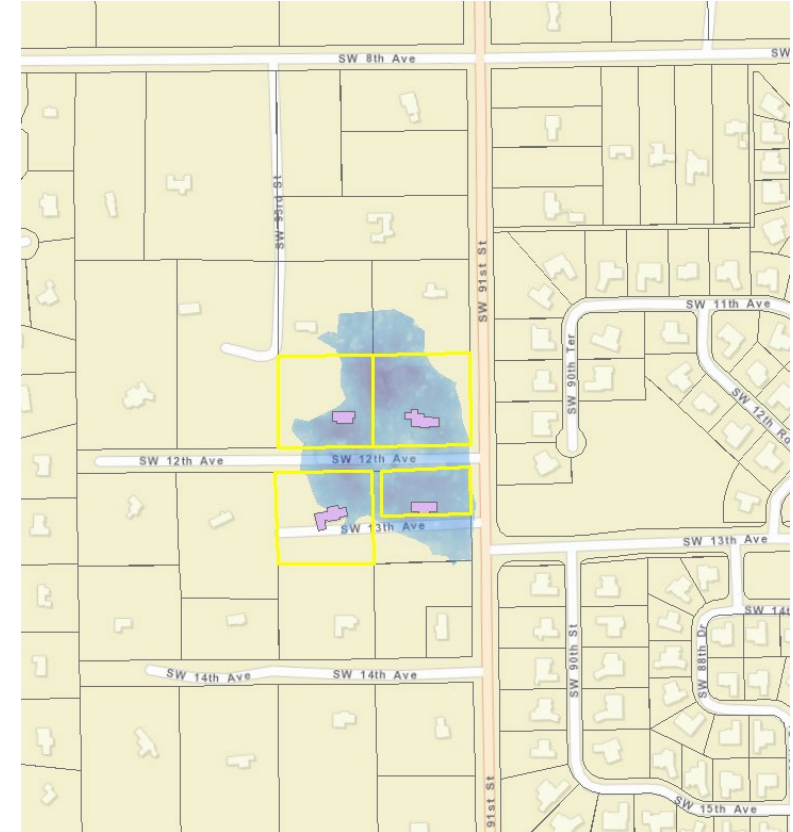


SW 12th Avenue: Mitigation discussion items



SW 12th Avenue: Grant Application

- A Resilient Grant application is being submitted to the Florida Department of Environmental Protection for acquisition of the affected properties.
- Of the four properties:
 - One is willing seller (Leonard Kraus);
 - One is willing seller (Donna Blanchard);
 - One property (Michael and Donna Blanchard) is not for sale;
 - One property (MVP Group) did not respond, and the property is in the market for sale.



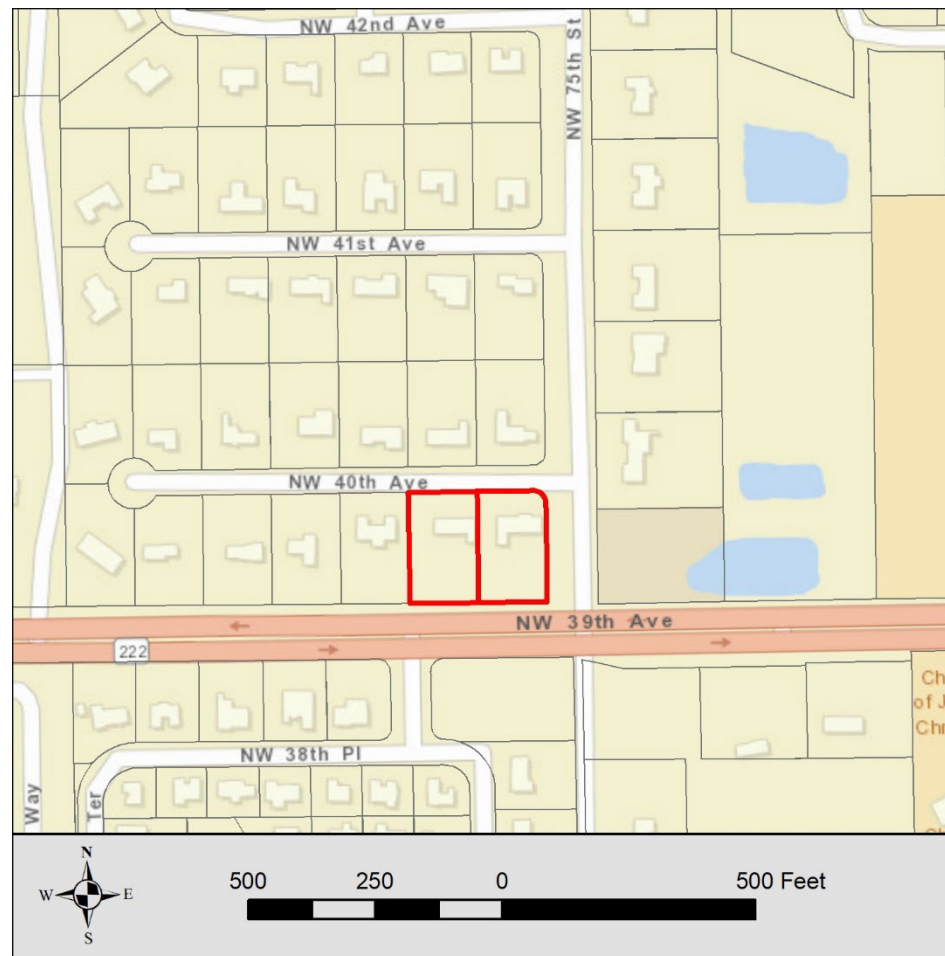
Awarded Resilient Grants

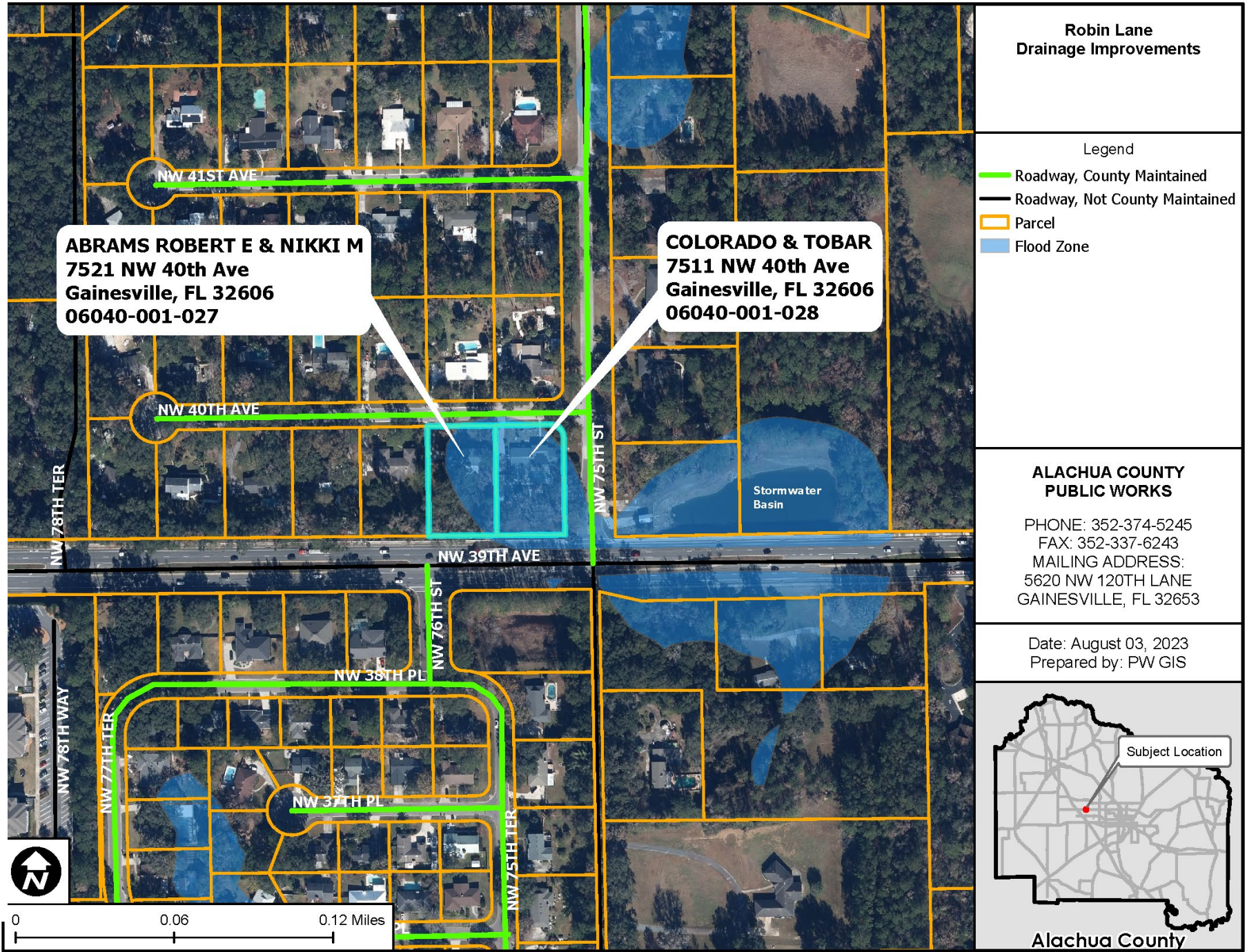
- **Robin Lane: Purchase/demolish of 2 homes**
 - Funding: \$599,817.00 with 50% match required
 - States FY2022-23 Grant, Deadline to complete project 3/31/2025
 - Only one willing seller
- **Hills of Santa Fe: Purchase/demolish of 2 homes**
 - Funding: \$507,615.07 with 50% match required
 - States FY2021-22 Grant, Deadline to complete project 6/30/2026
 - One willing seller, one unsure
- **Pine Hills: Purchase/demolish of 2 homes**
 - Funding: \$672,815.32 with 50% match required
 - States FY2021-22 Grant, Deadline to complete project 6/30/2026
 - Only one willing seller



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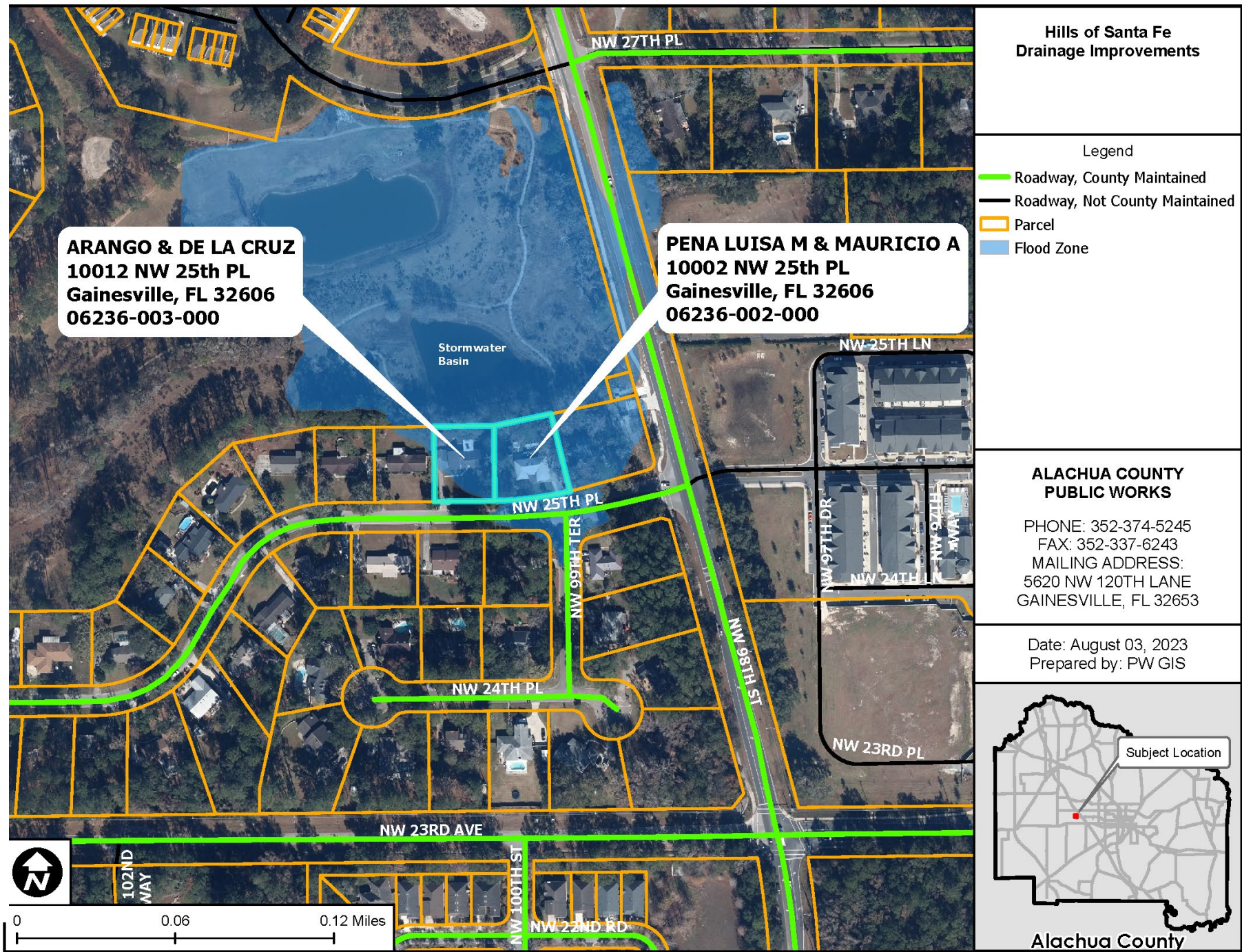




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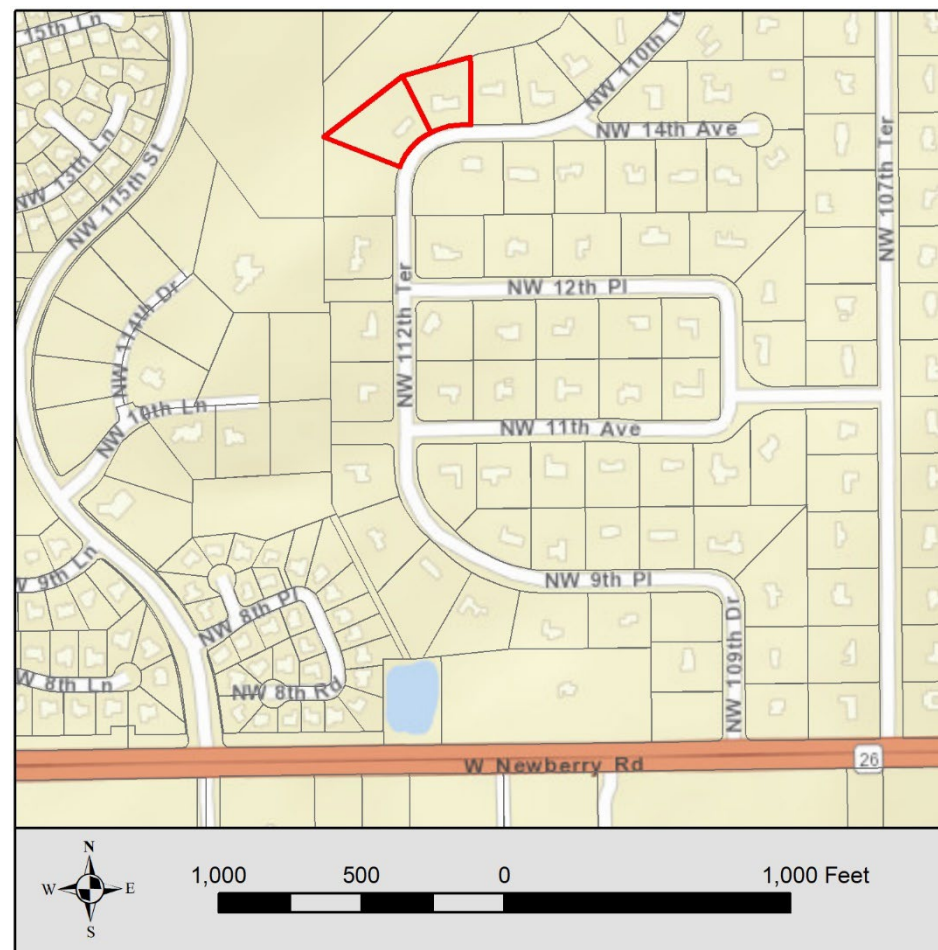
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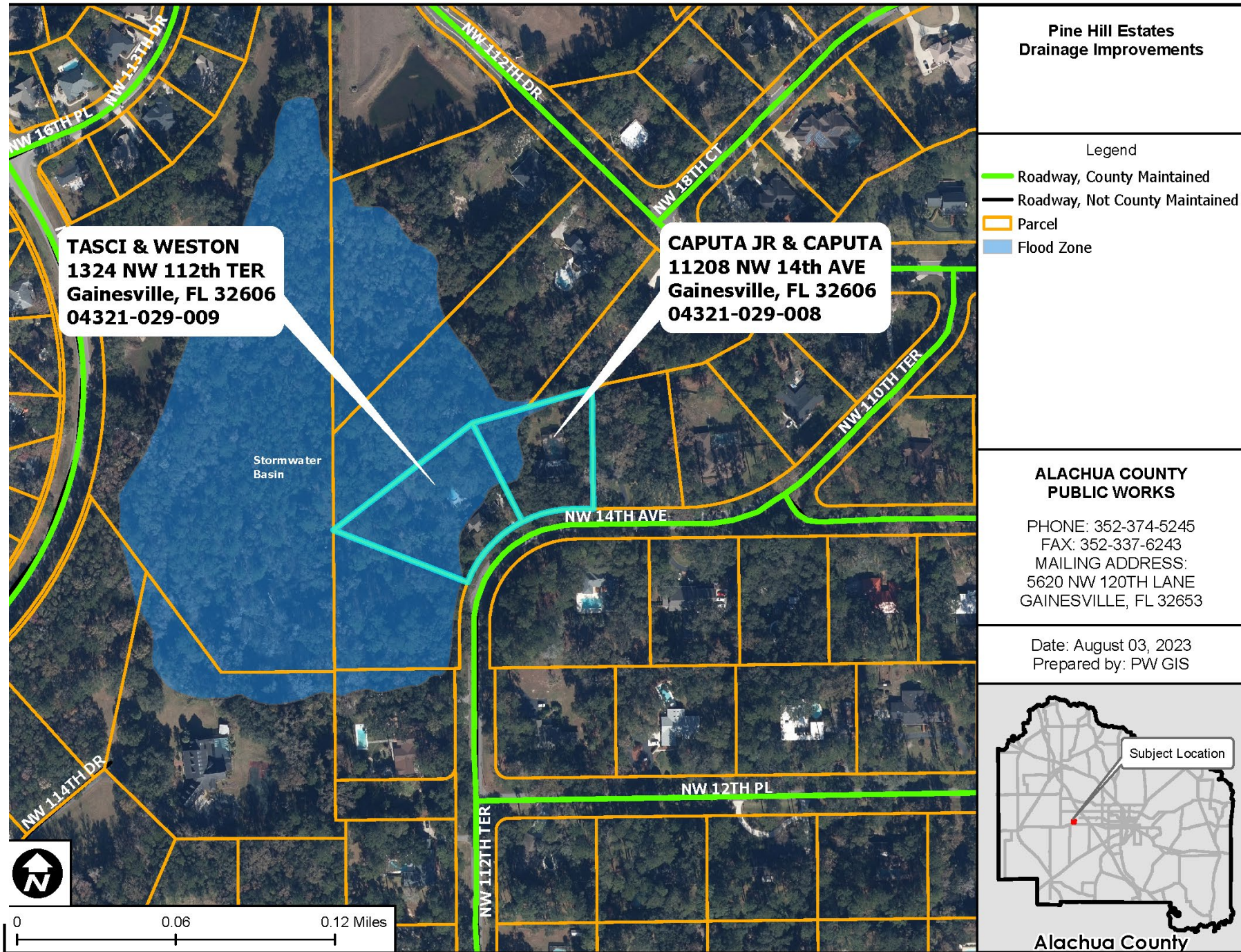




Awarded Resilient Grants

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Purchase/demolish of 2 homes
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50% match required
 - **Only one willing seller**
- **Deadline to complete project 6/30/2026**





Future Grant Applications for Resilient Grants

- **Resilient Grants (50% Federal/50% Local Match):**
 - Emerald Woods (Mark Dake) \$349,070 Local Match
 - Hills of Santa Fe (Pam O'Steen) \$315,110 Local Match
 - Hills of Santa Fe (Luisa Pena) \$287,750 Local Match
 - Pine Hills (Joanna Caputa) \$543,610 Local Match
 - SW 12th Avenue (Donna Blanchard) \$315,950 Local Match
 - SW 12th Avenue (Leonard Kraus) \$432,250 Local Match



Future Grant Applications for Hazard Mitigation Grant Program

- **Hurricane Ian Hazard Mitigation Grant Program (HMGP) (75% Federal/25% Local Match):**
 - Emerald Woods (Mark Dake) \$154,180 Local Match
- **Hurricane Nicole HMGP (75% Federal/25% Local Match):**
 - Hills of Santa Fe (Pam O'Steen) \$159,305 Local Match
 - SW 12th Avenue (Donna Blanchard) \$159,725 Local Match
- **HMGP applications must be ranked and approved by the Local Mitigation Strategy Working Group**



Recommendation

- **Execute Resilient Grant award agreements**
- **Authorize staff to obtain appraisals and draft contracts for purchase of homes in Robin Lane, Hills of Santa Fe, and Pine Hills.**
- **Leave the Tomoca Hills easement restoration and SW 8th Avenue berm construction on hold pending the results of grant application for acquisition of SW 12th Ave. properties.**



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