

Stormwater Management



In Golden Gate Estates

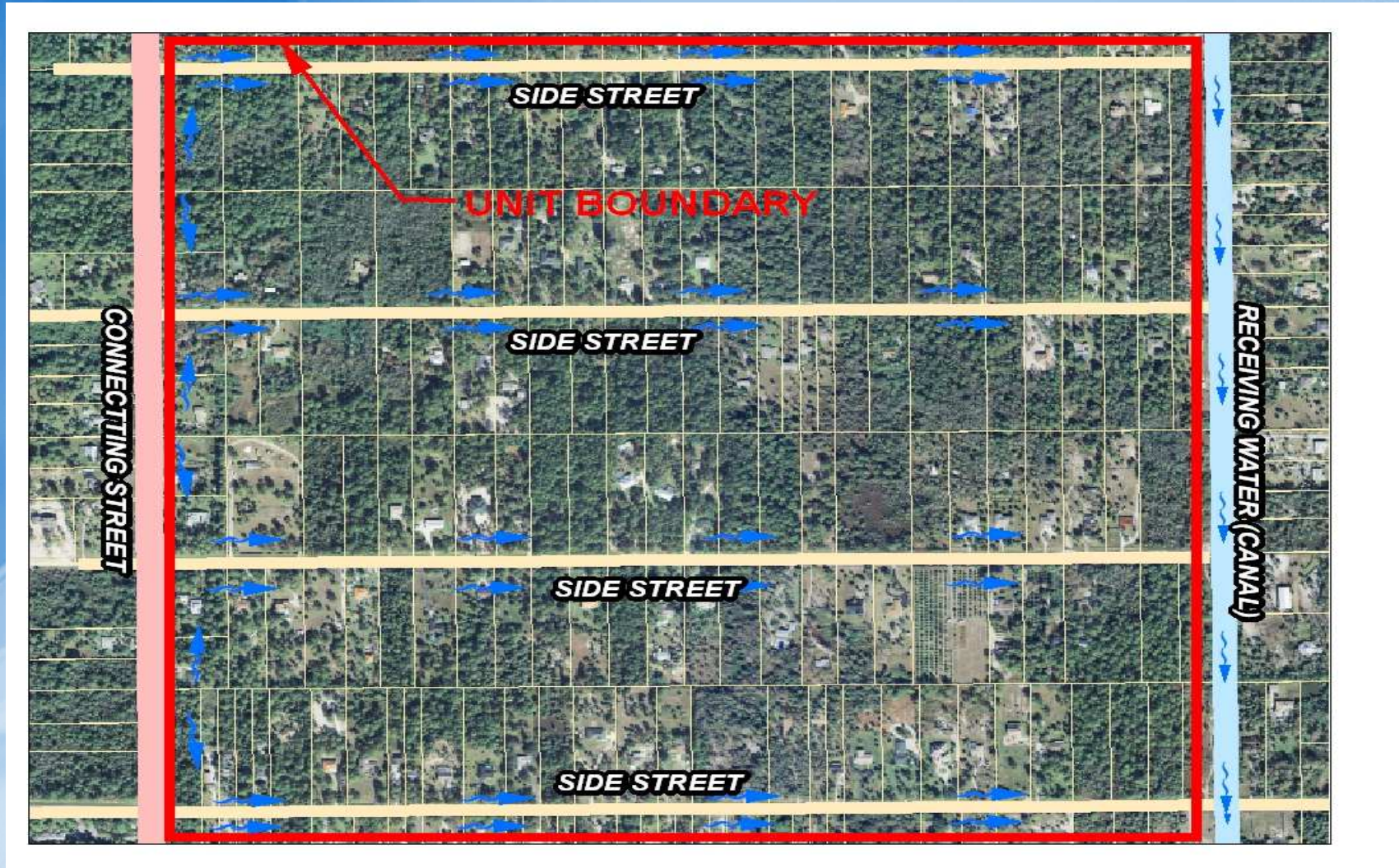
Collier County, FL
Stormwater Section
July 8, 2016

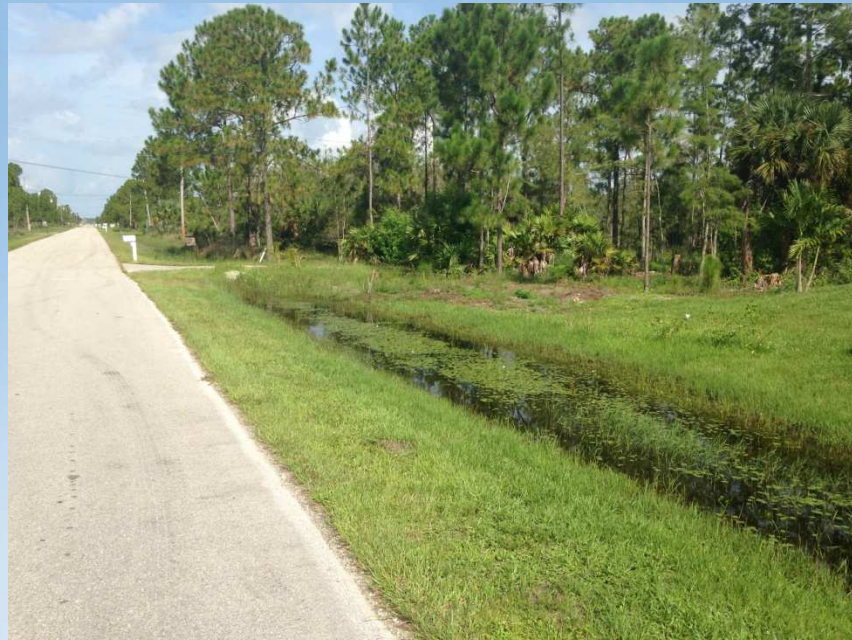
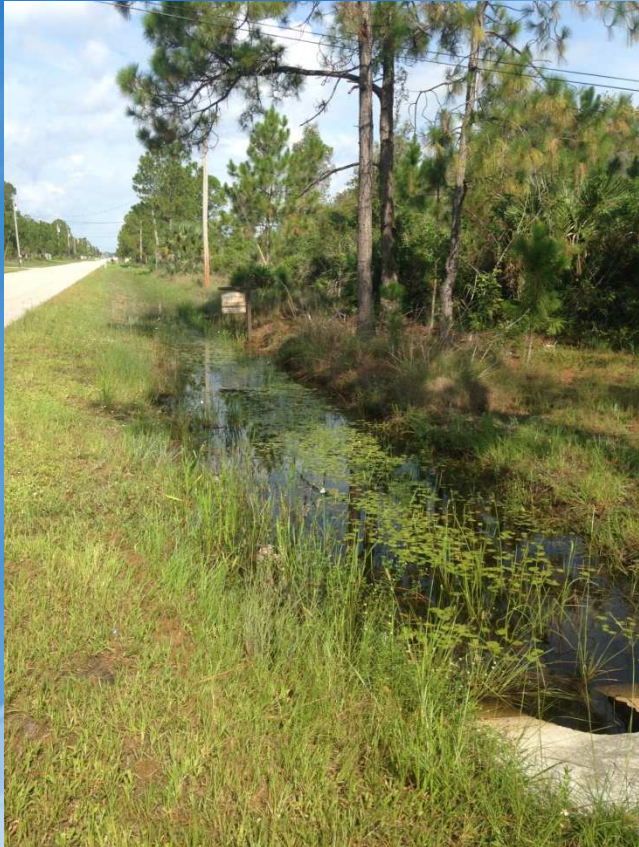


NGGE Problem Statement

- ❑ Construction of the Golden Gate Estates canal network and residential roads **fractured the connectivity of wetland systems** in the north Golden Gate Estates area.
- ❑ Roadside swales and ditches now divert stormwater runoff and overland **surface water flow directly into the canal system.**
- ❑ The result is a loss of wetland hydrology and an **increased volume of discharge to Naples Bay.**
- ❑ The effect includes **less recharge to the surficial aquifer system** which is the primary source of drinking water for Collier County and the City of Naples.

Typical Unit in Golden Gate Estates





Recently Completed Efforts

Belle Meade Area Stormwater Management Master Plan	2006
Horsepen Strand Conservation Area Feasibility Study (Phase 1)	2008
Collier County Watershed Management Plan	2011
NGGE Flowway Restoration Study (Phase 2)	2013
Culvert Installation	2014

What's Next For NGGE ?



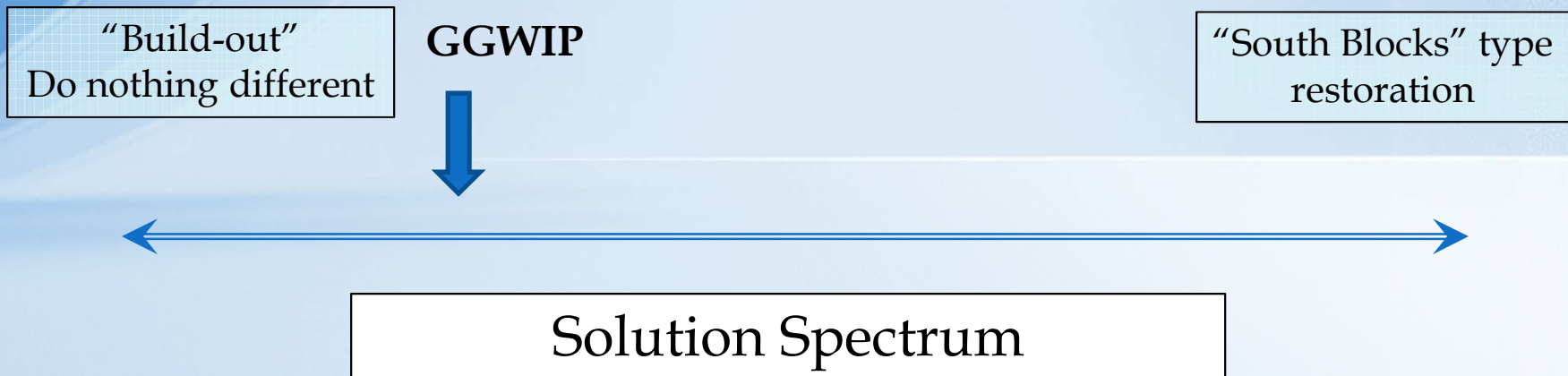
Conceptual Planning Goals

1. Identify **potential hydrologic adjustments** to the existing system utilizing the historic flowways located within the 34-square mile area.
2. Improve surface water conveyance **utilizing existing low-lying areas**.
3. **Enhance connectivity** of low-lying areas.
4. Optimize **utilization of remnant sloughs and wetland areas** such as Winchester Head, Horsepen Strand, and Winchester Strand, for better surface water management.

Conceptual Planning Goals

(cont.)

5. **Redirect surface water flows** to low lying areas reducing the burden placed on the canal system.
6. **Reduce flows to Naples Bay.**
7. **Enhance aquifer recharge** for public water supplies.

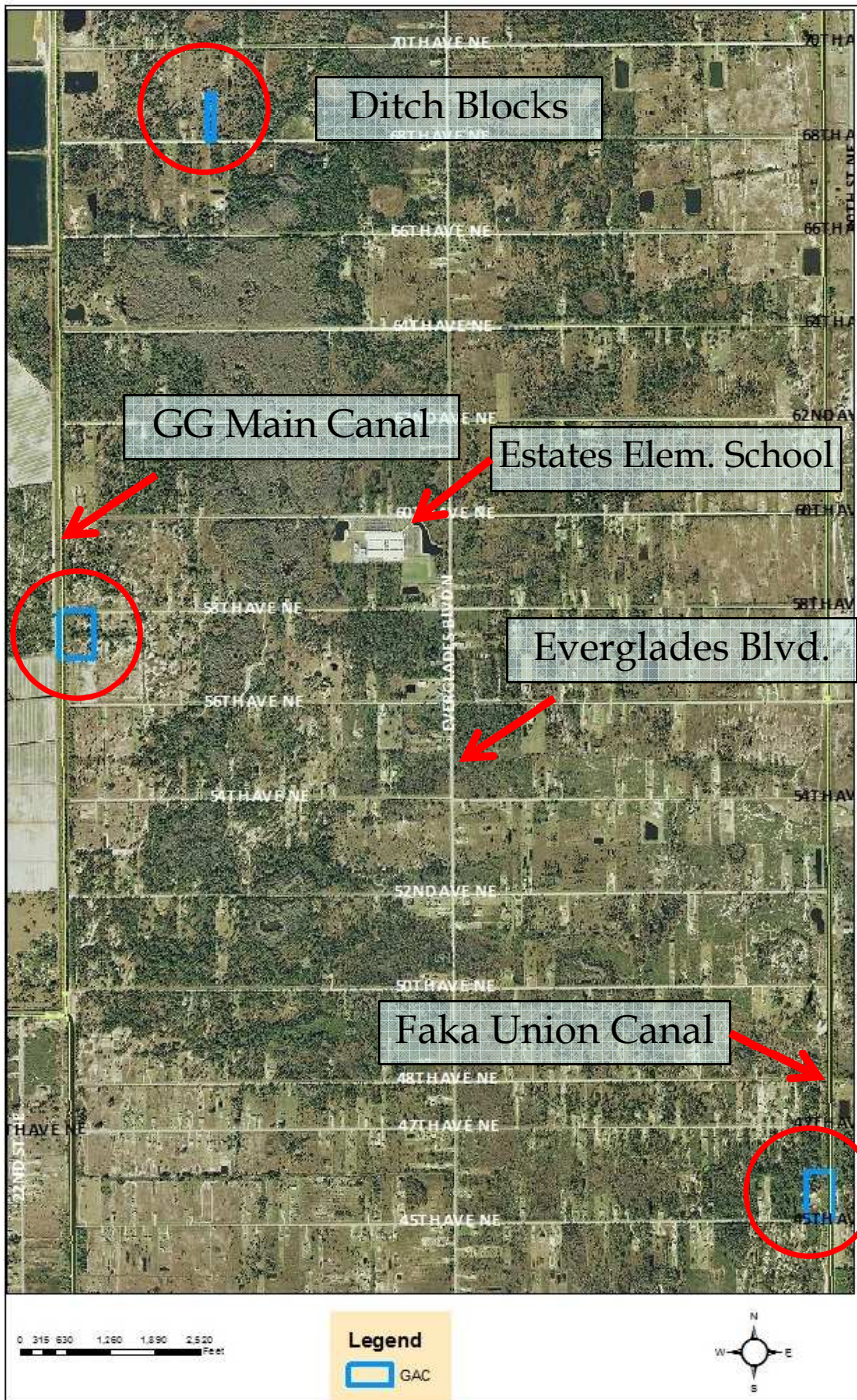


Possible Solutions

1. Redirect flows using **ditch/swale blocks and additional culverts** to provide connectivity within the wetland system re-establishing historical flow patterns.
2. Increasing small sections of **canal areas (scaloping)** to gain additional capacity.
3. Designate an area as a **mitigation area** and create incentive programs to obtain properties and to generate funds to implement the project

NGGE Properties of Interest

- Gulf Atlantic Corp Lots Now Owned by CC
- Strategic Locations in Wetlands or Adjacent to Canals
- Divert Roadside Flows
- Excavate/Enlarge Small Sections of Canal
- Recreation Component



Some Engineering Considerations

1. Evaluate the presence of **roadside berms** that restrict sheet flow.
2. Determine the maximum groundwater elevation that is allowed for **proper function of septic system** in the immediate vicinity.
3. Consider the **affects of increased sheetflow** on downstream properties.
4. **Evaluate flow rates and storage capacities** within the system and size culverts accordingly.

Project Benefits

- ❖ Improve wetland hydrology in the proposed flowway.
- ❖ Provide additional water quality treatment
- ❖ Increase groundwater recharge, well field and water supply sustainability

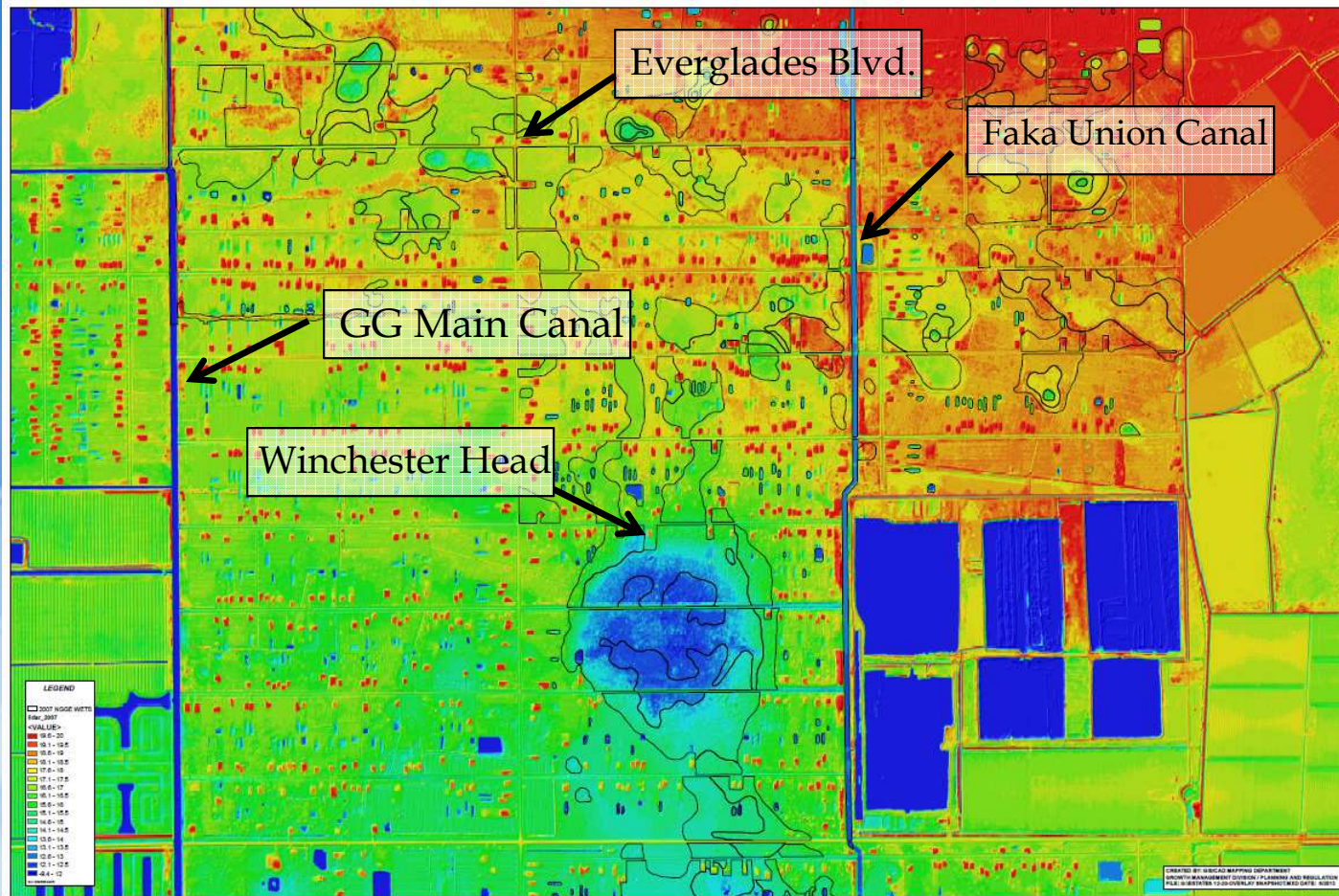


Project Concerns

- ❖ Elevated groundwater level may affect septic systems and or increase flood risk for residential properties near the vicinity.
- ❖ May require purchase of private property within the primary flowway



Let's Get The Water(shed) Right!



Questions/Discussion

- www.colliergov.net/stormwater

