Collier County

Watershed Management Plan

May 4, 2011

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DHI

Regulatory Review and Recommendations

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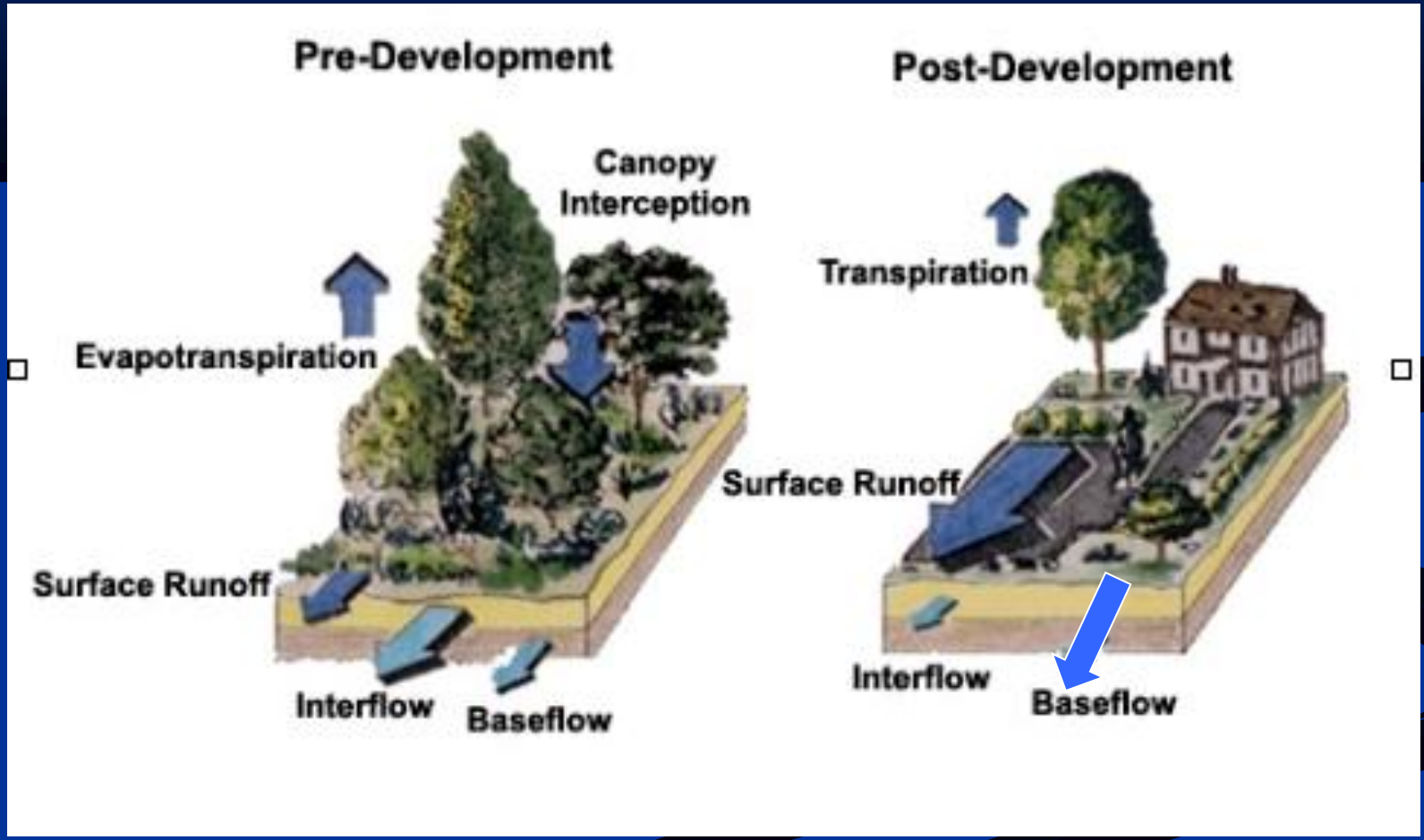
Current Stormwater Management Approach



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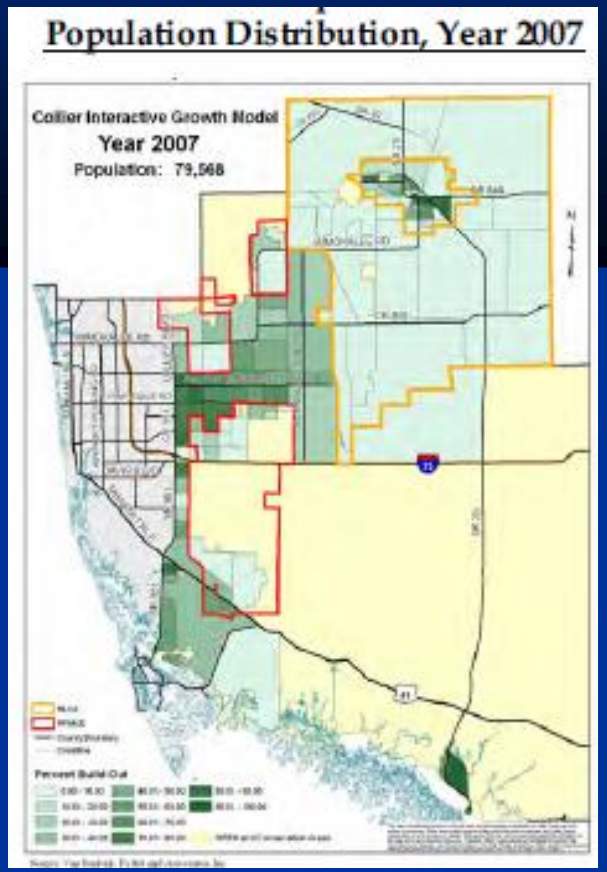
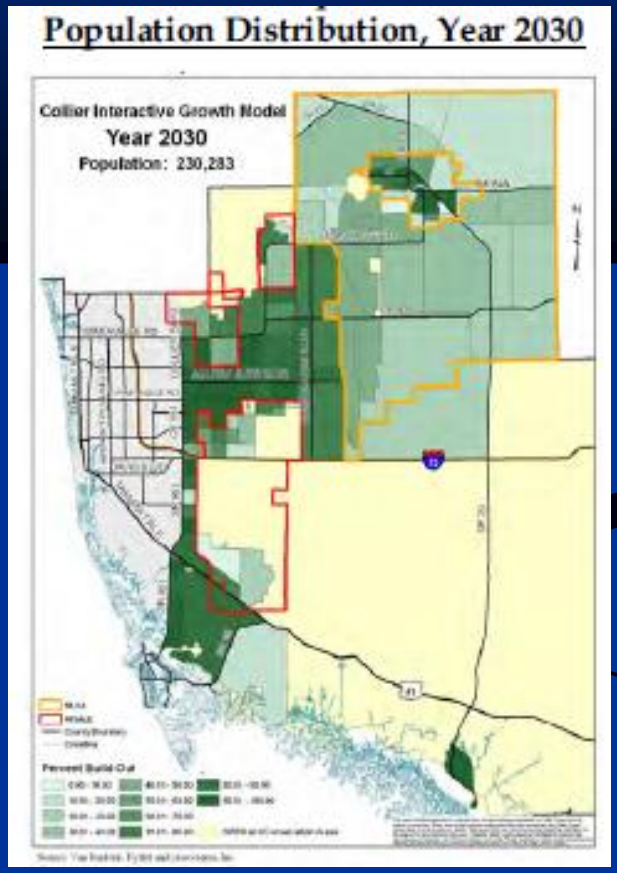
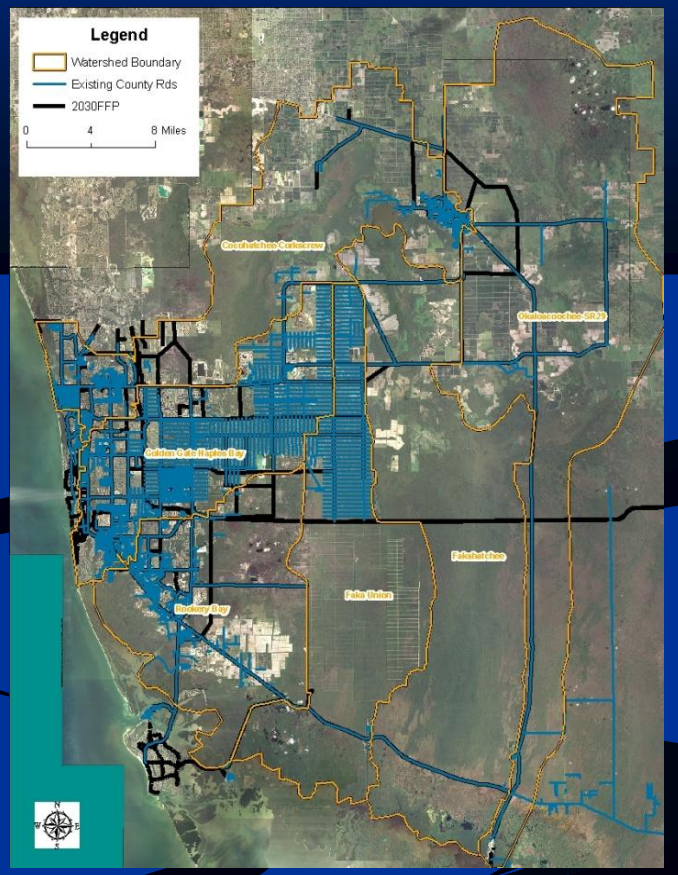
County Growth Projections







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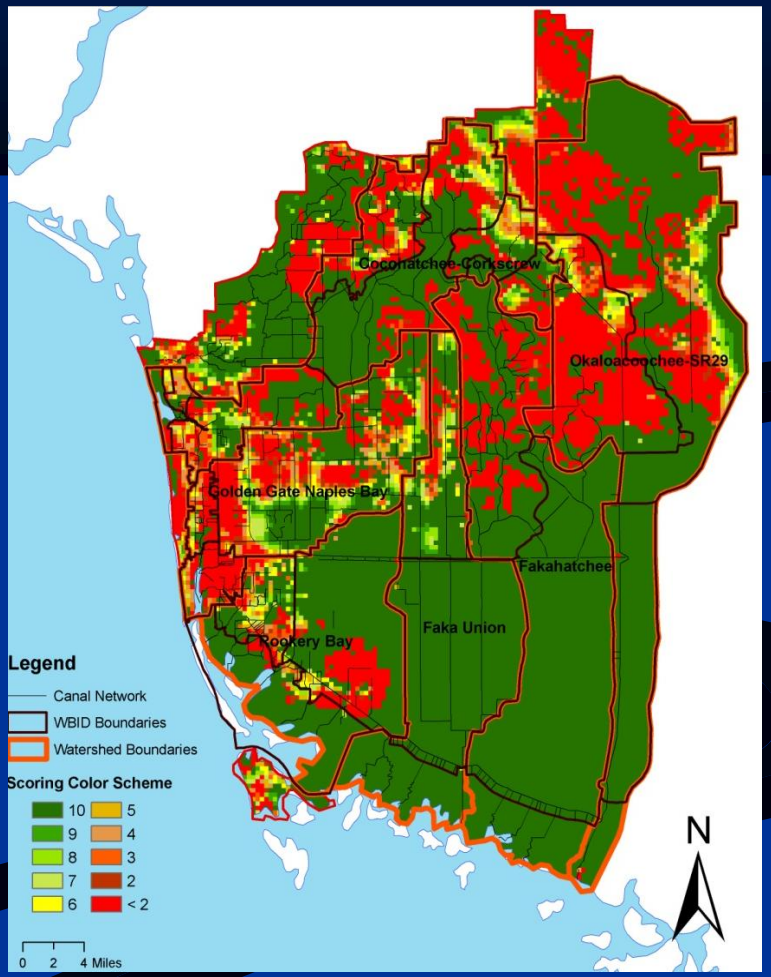
Water Quality and Pollution Load Issues

- Several impaired water bodies
- Numerous areas with no runoff pollution control
- GMP Conservation and Coastal Element requires no increase in pollution load from pre-development

Total Nitrogen Load



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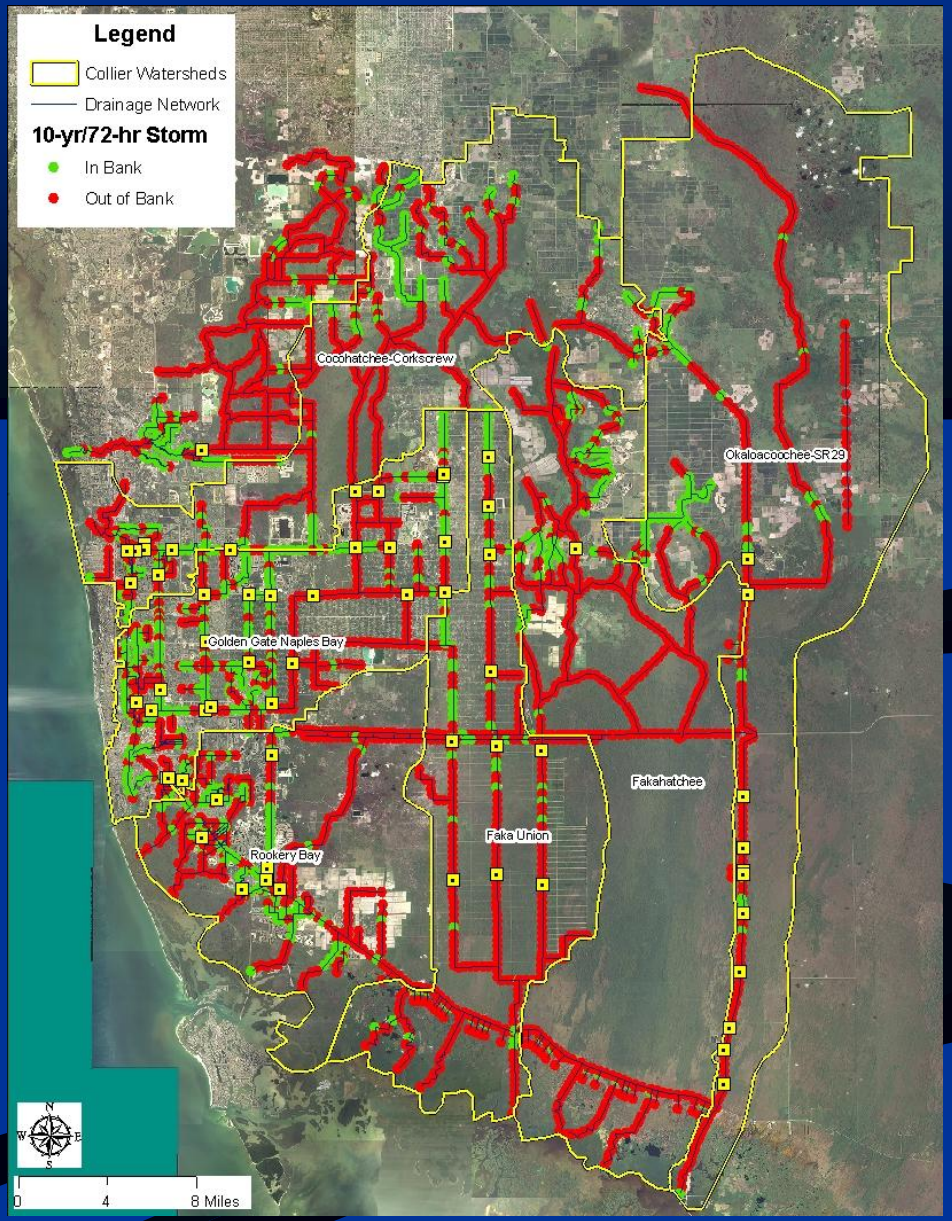
Current Canal Capacity

- Model results show limited conveyance capacity in numerous canal segments



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Objective

- Help implement a Sustainable Stormwater Management Program
- The programs should aim to:
  - Promote more effective site planning to minimize anthropogenic impacts,
  - Promote preservation of the natural system
  - Help reduce development costs
  - Help reduce cost of future drainage system improvements

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Water Quality Regulations Promote Low Impact Development (LID)

- LID promotes management of stormwater by:
  - Encouraging management of stormwater at the site
  - Minimize the extent of directly connected impervious areas.
  - Minimize site disturbance
  - Maintain or restore a site's natural hydrology
  - Maximize the site's assimilative capacity

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Low Impact Development (LID)

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Water Quality Regulatory Issues

- Main Issue: How to provide water quality credits for development
- Not feasible under current State regulations. Feasible under proposed new stormwater rules.

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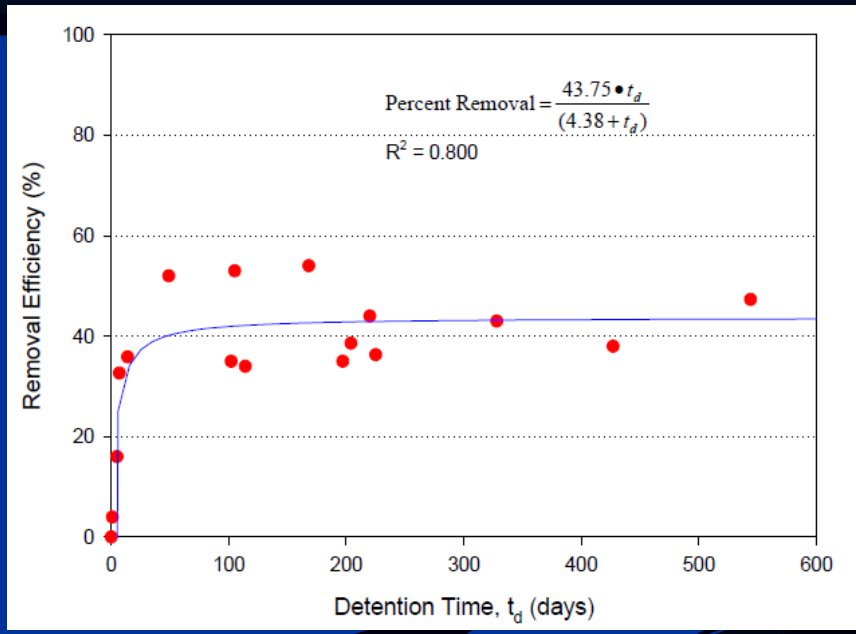
Water Quality Treatment Requirement Growth Management Plan

All new development and redevelopment projects shall meet 150% of the water quality volumetric requirements of Section 5.2.1a of the Basis of Review for ERP applications (Ordinance 2008-10, 3.07.02 Interim Watershed Regulations)



Removal Efficiency of TN

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Recommendation

- Modify Land Development Code and Ordinance 2008-10 to require treatment by LID of 50% of ERP requirement (provide retention of pollutant load associated with the additional treated runoff volume)

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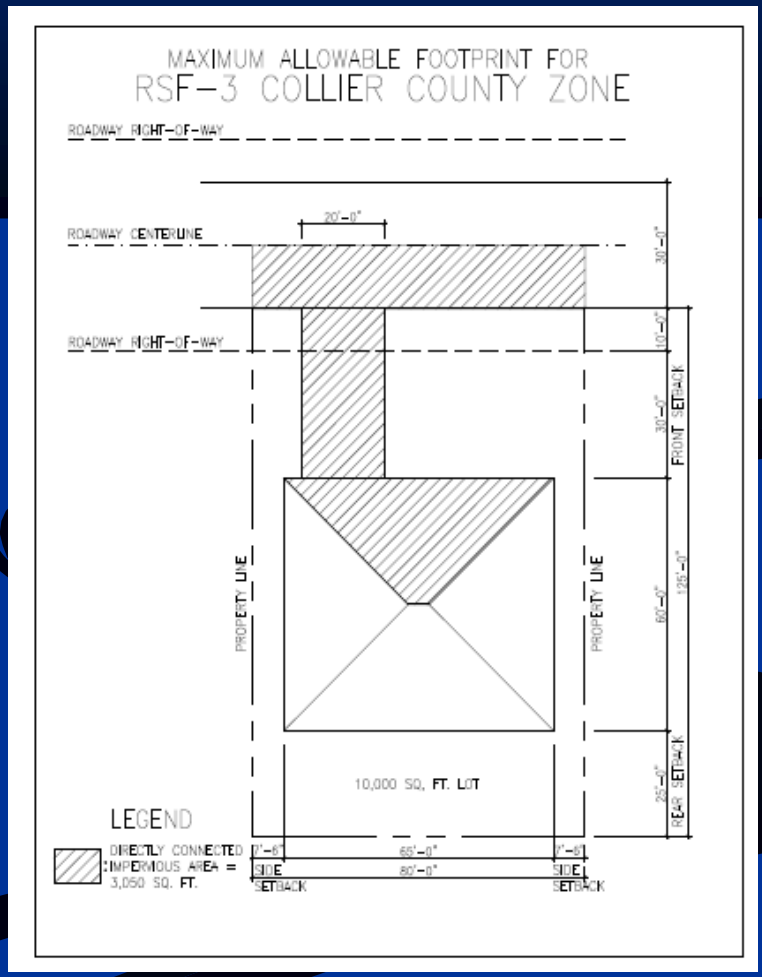
Directly Connected Impervious Area (DCIA) Current Conditions

Current Code Design Standards:

- Impervious area in RSF-3 – RSF-6 is about 45%
- DCIA in RSF-3 to RSF-6 areas is about the same as impervious area



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Development Incentives by Changes to Land Development Code

4.02.01 Dimensional standards for principle uses 1. Allow 18-ft width on local roads having an ADT of 400 trips (36 single family homes) when using cluster development standards
4.04.00 Transportation System Standards 1. Allow design of swales on local roads having an ADT of 400 trips
6.05.01 Stormwater management system requirements 1. Allow in--ground percolation type retention systems to achieve water quality retention if designed per LID manual requirements

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Development Incentives by Changes to Land Development Code

4.05.02 Parking design standards

1. Aisle width reduced by 2’ except for parallel parking
2. Allow grassed swale dividers along opposing parking spaces. Parking space depth reduced from 18’ to 16.5’ if wheel stop is located 0.5’ from edge of swale

4.06.03 Landscaping requirements for vehicular use areas and rights-of-way

1. Allow use of depressed landscape islands to be used for water retention
2. Allow rows of parking spaces to contain 20 spaces, instead of 10, between islands if drainage is directed to grassed swale dividers
3. Allow swale divider area to count as part of the off-parking interior vegetated areas
4. Allow parking stalls to be up to 100 ft away from a tree. Allow one tree for every 500 ft2 on interior landscaped area

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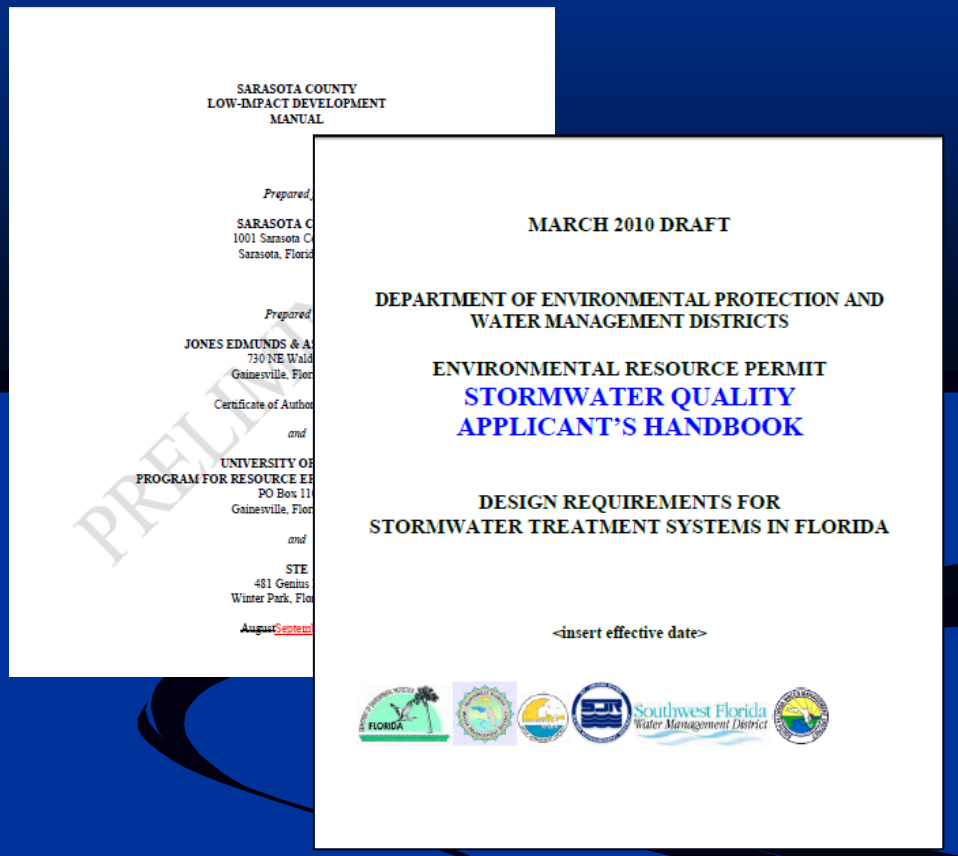
LID Design Standards

- Adopt standards in the Draft Proposed Stormwater Rule.
- Adopt by reference Sarasota County LID Manual



http://dep.state.fl.us/water/wetlands/erp/rules/stormwater/index.htm

http://www.scgov.net/EnvironmentalServices/Water/SurfaceWater/LowImpactDevelopment.asp

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Incentives by Modifications to Stormwater Utility

- Ordinance 2008-80 creates the Stormwater Capital Improvement Fund – 0.15 mills of ad valorem tax revenues
- Change the focus of the County's Stormwater Utility to a fee structure based on discharged runoff volume
- Should help developers market areas where the assessment is lower

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Retrofit Program

- Dedicate funds exclusively to retrofit projects
- Identify locations where retrofit is possible, i.e. parking lots in government buildings and schools

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Retrofit of Public Facilities

Potential Retrofits

- Utilize islands as infiltration basins
- Install pervious pavement in low traffic areas
- Install rain gardens to capture roof runoff

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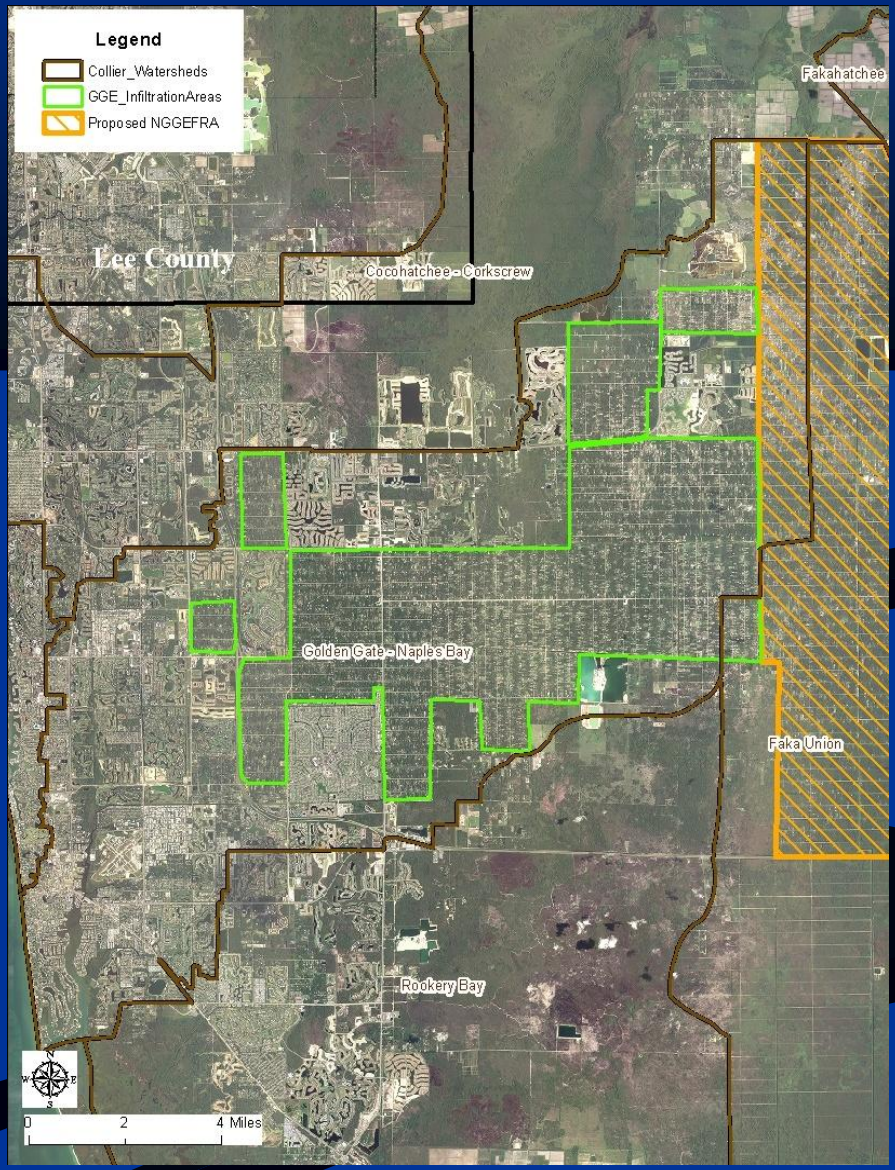
Retrofit Local Treatment Systems

- Golden Gate Estates Stormwater Management
  - Road side swales and canals comprise current stormwater management
  - More than 400 residential streets in GGE that dead end at a canal



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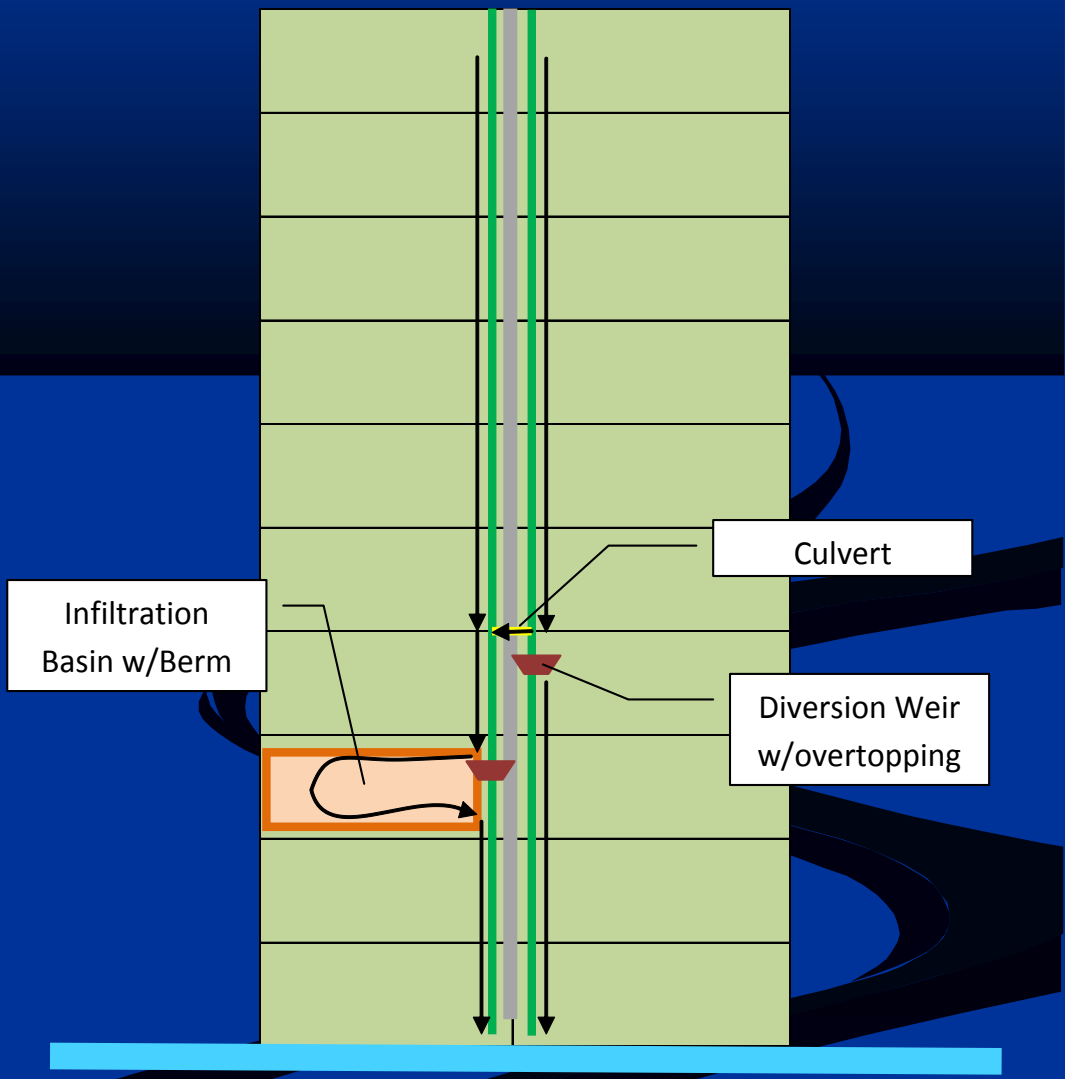
Retrofit Local Treatment Systems

- Golden Gate Estates Retrofits
  - Develop a program to purchase 5-acre lots on as many streets as possible
  - Develop infiltration basins
  - Typical Drainage Area is approximately 70 acres
  - Treats approximately 60% of total runoff
  - Maintenance required



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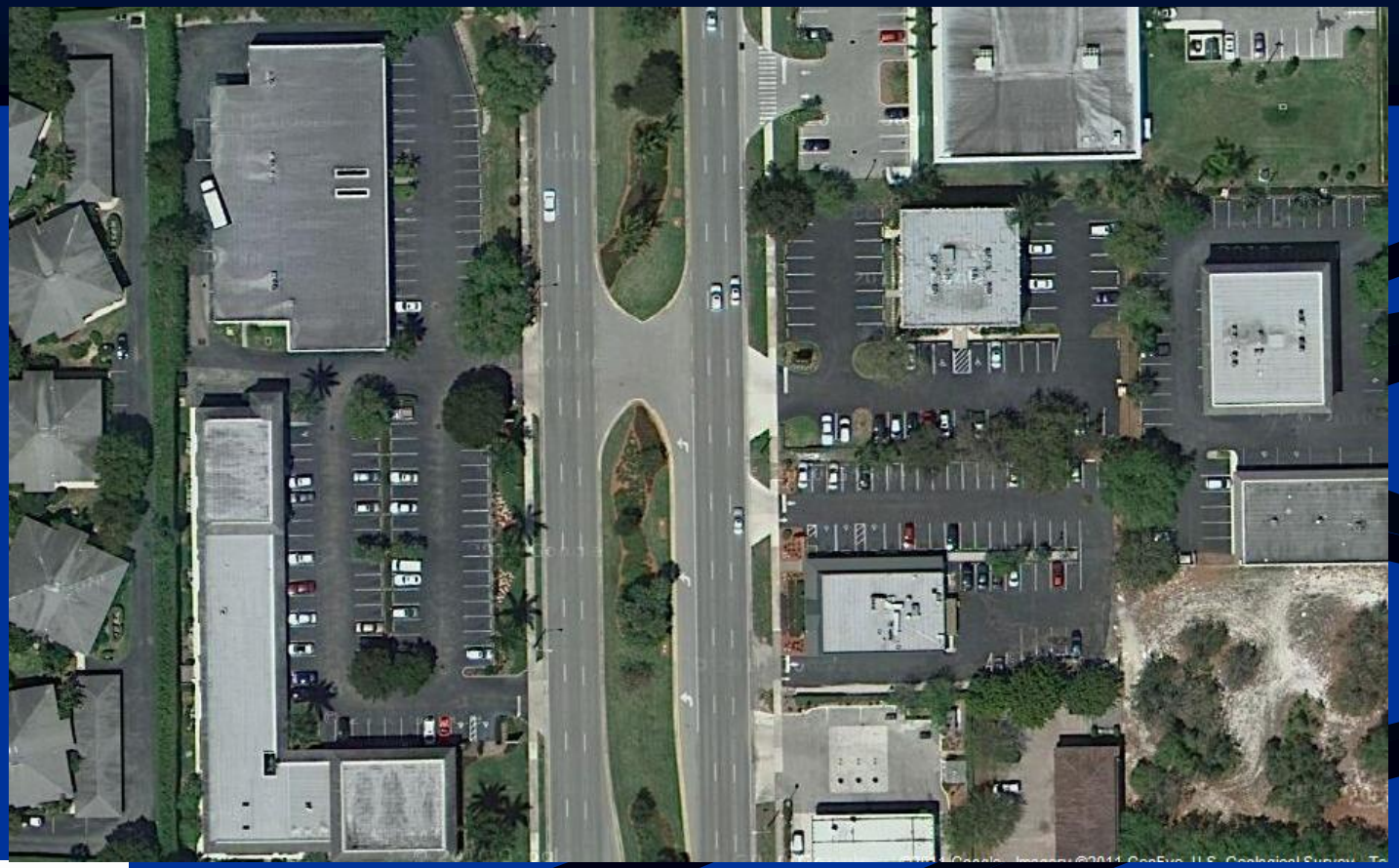
Retrofit of Private Property

- Incentives through stormwater utility
- Promote LID redesign through MSTUs



3300 Block of Tamiami Trail N

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Flood Risk and Level of Service

- GMP Drainage Sub-Element Policy 1.2:
  - "County drainage system capital facility planning shall be designed to implement procedures and projects in a manner to ensure adequate stormwater management facility capacity available at the time a development permit is issued"

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Flood Risk

- Issue: Current regulations focus on control of peak discharge
- Recommendation 1:
  - Require volume control for the 25-year/24-hour design event (allow control of peak, volume and timing of stormwater discharges)

Percent of Site Needed to Control Additional Volume	
DCIA for Developed Area*	**% of Built Area**
50	**14.07**
40	**12.1**
30	**9.87**
25	**8.89**
20	**7.9**
15	**6.66**

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Flood Risk

- Issue: Peak control at a site does not guarantee no downstream impacts
- Recommendation 2:
  - No increases in 100-year/72 hour flood elevations upstream or downstream

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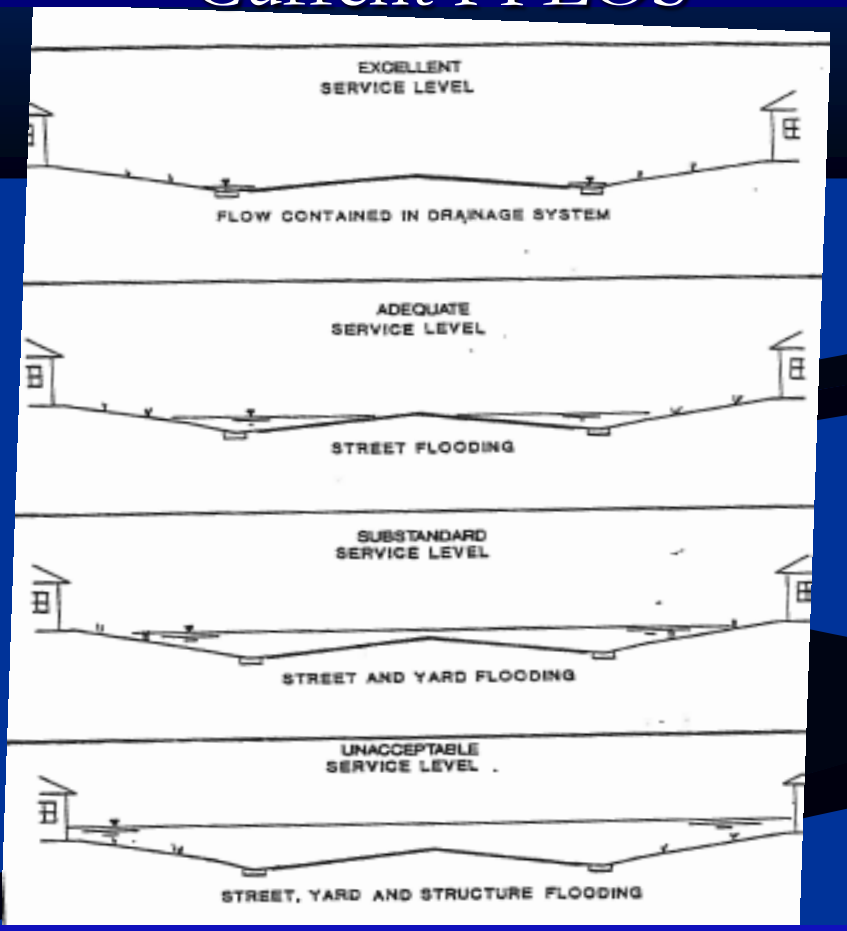
Flood Protection Levels of Service (FPLOS)

- Issue: Current flood protection levels of service (FPLOS) define conditions from Levels A–D
- Most County roads meet only Level D

Current FPLOS



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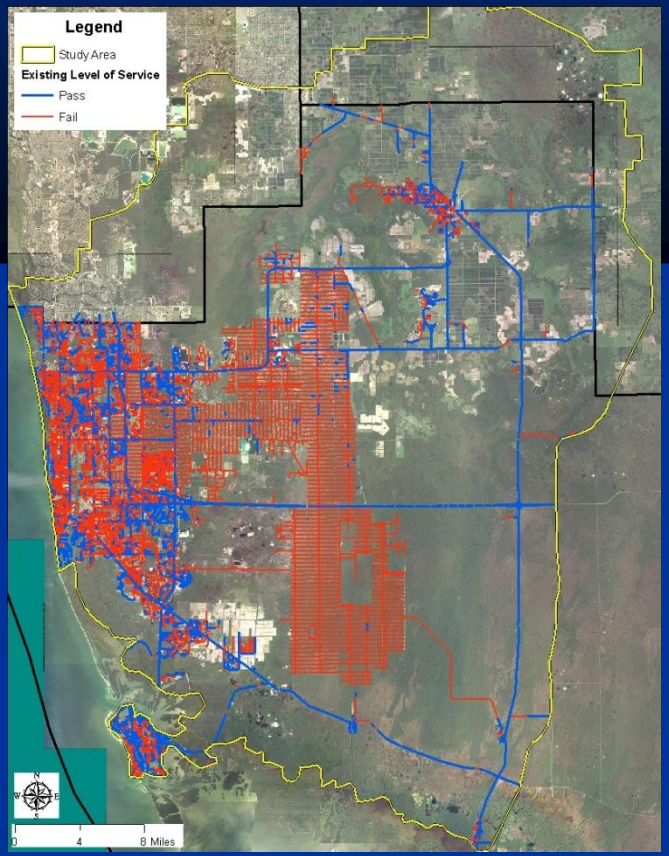
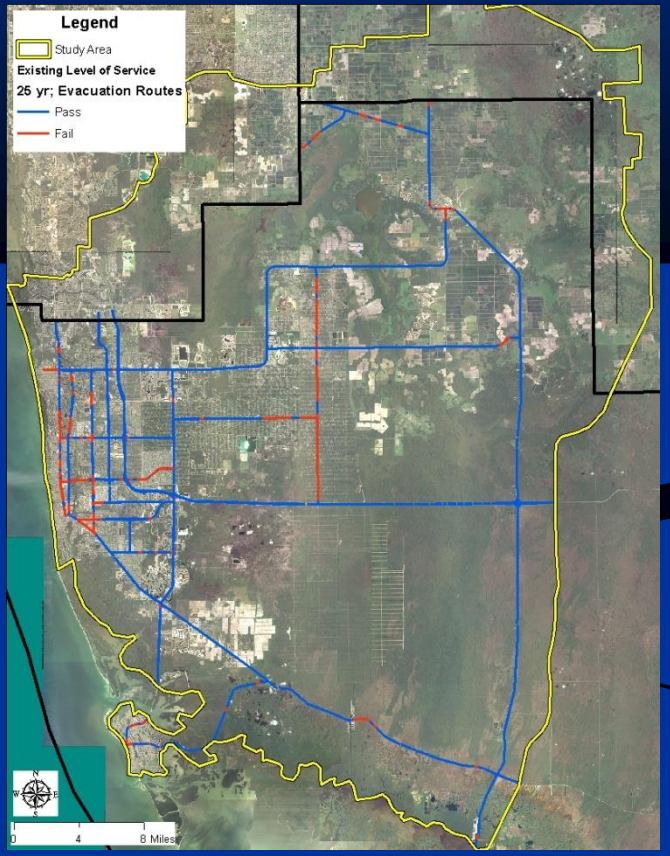
Existing FPLOS

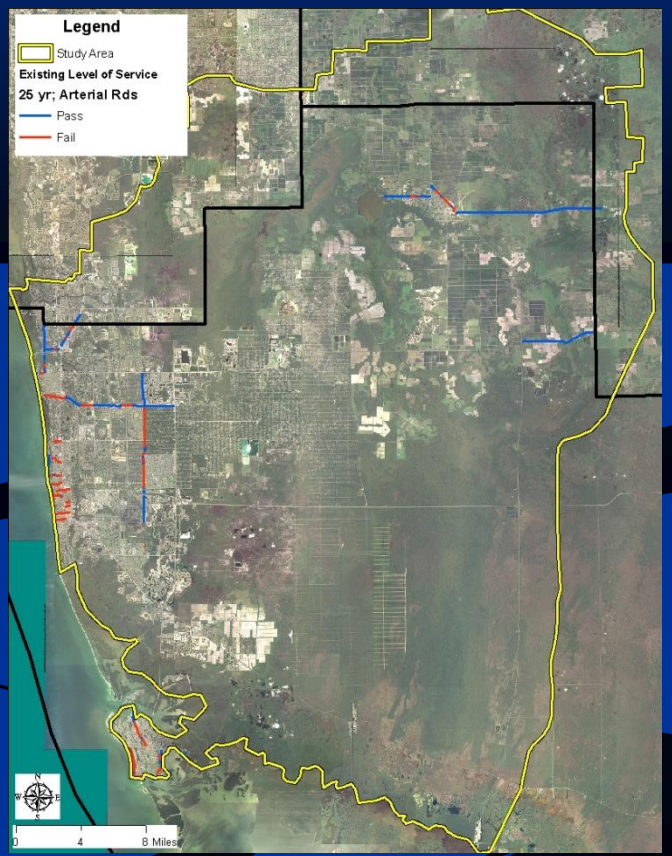
All Roads



Evacuation Routes



Arterial Roads



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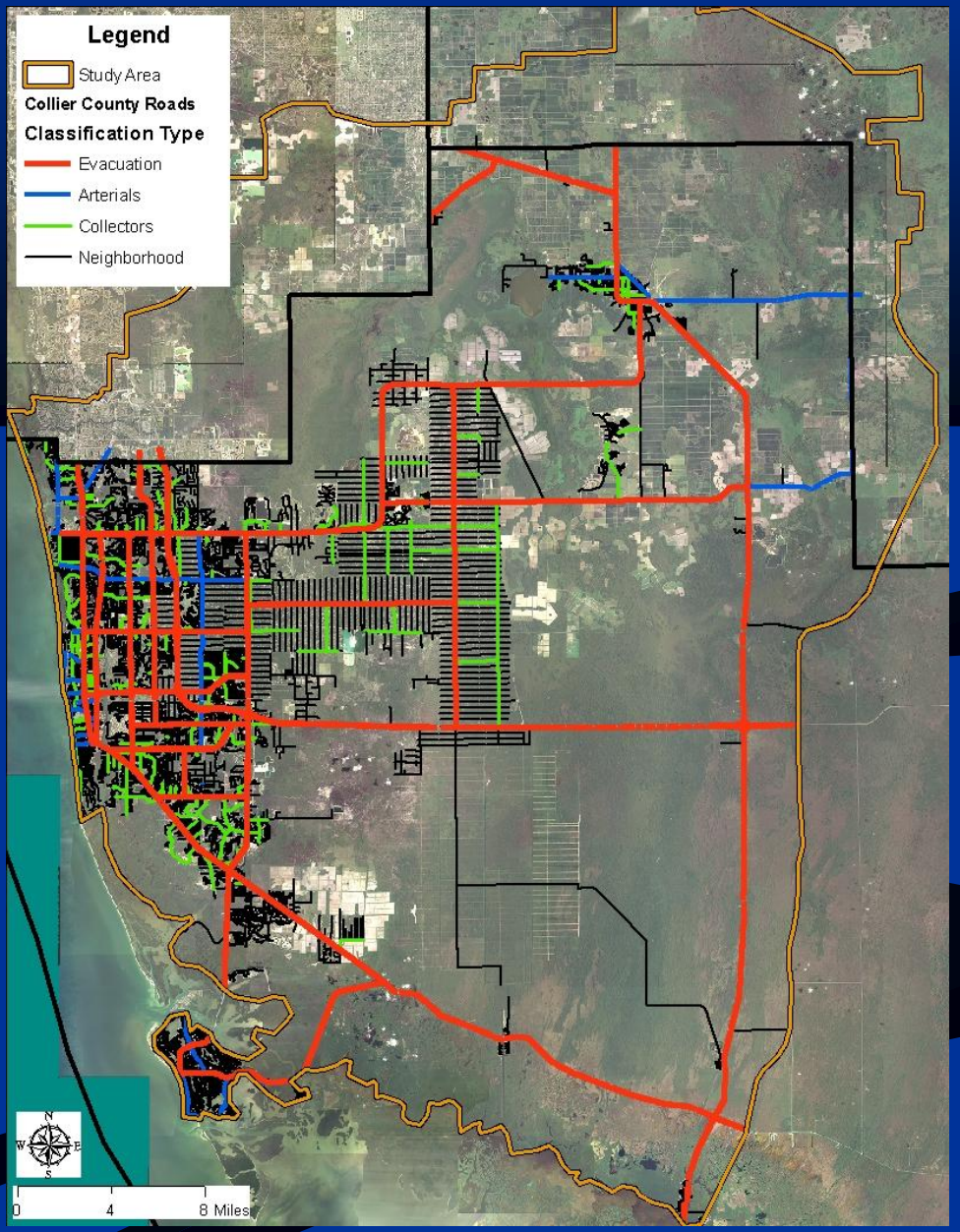
Proposed FPLOS

Proposed FPLOS

	Storm Return Period (years)		
Roadways	**10**	**25**	**100**
A. Evacuation Routes	None	None	None
B. Arterials	None	None	6 inches
C. Collectors	None	6 inches	9 inches
D. Neighborhood	6 inches	9 inches	12 inches
Open Space			
Flooding of open space is acceptable if it does not compromise public health and safety			



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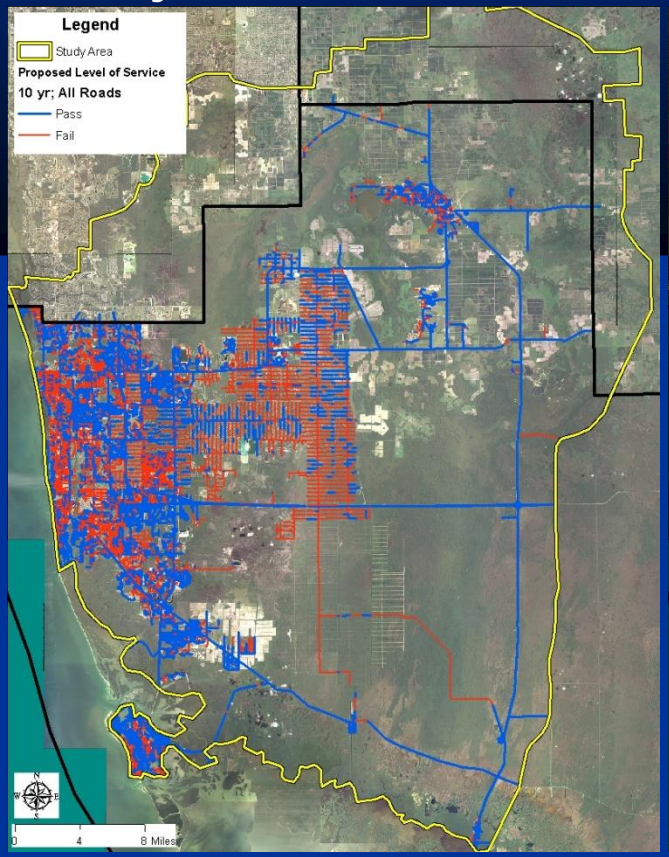
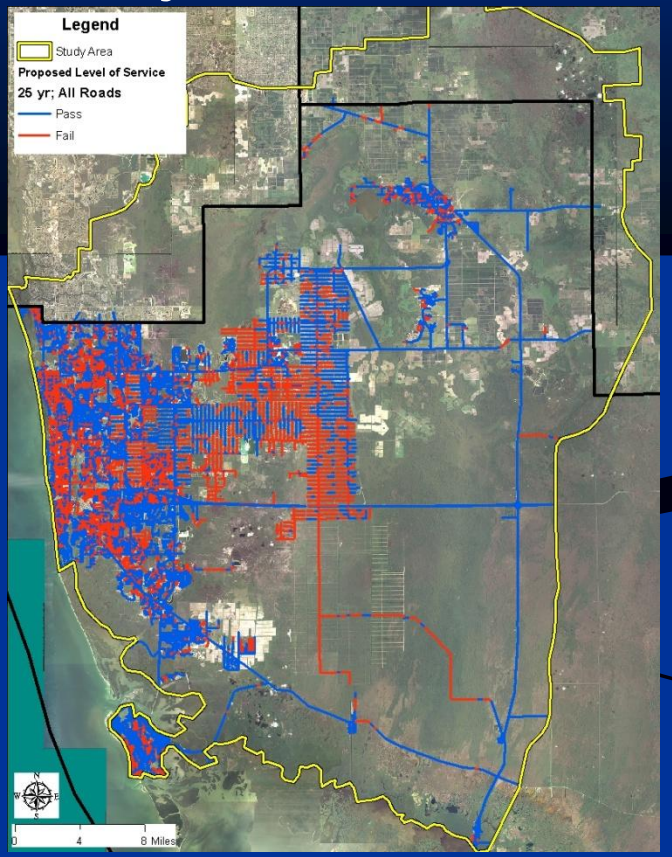
Proposed FPLOS

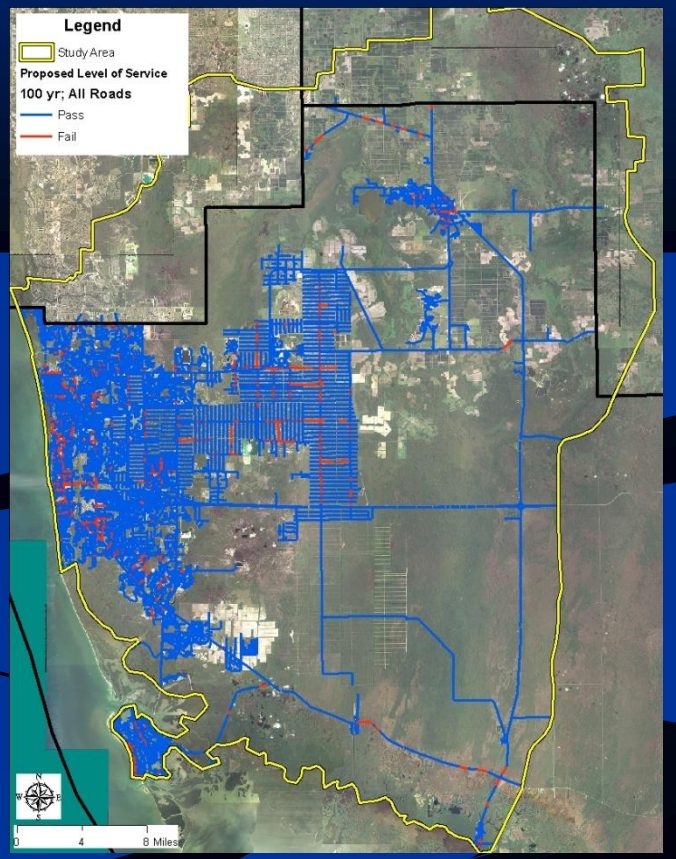
10-yr; 72-hr Storm



25-yr; 72-hr Storm



100-yr; 72-hr Storm



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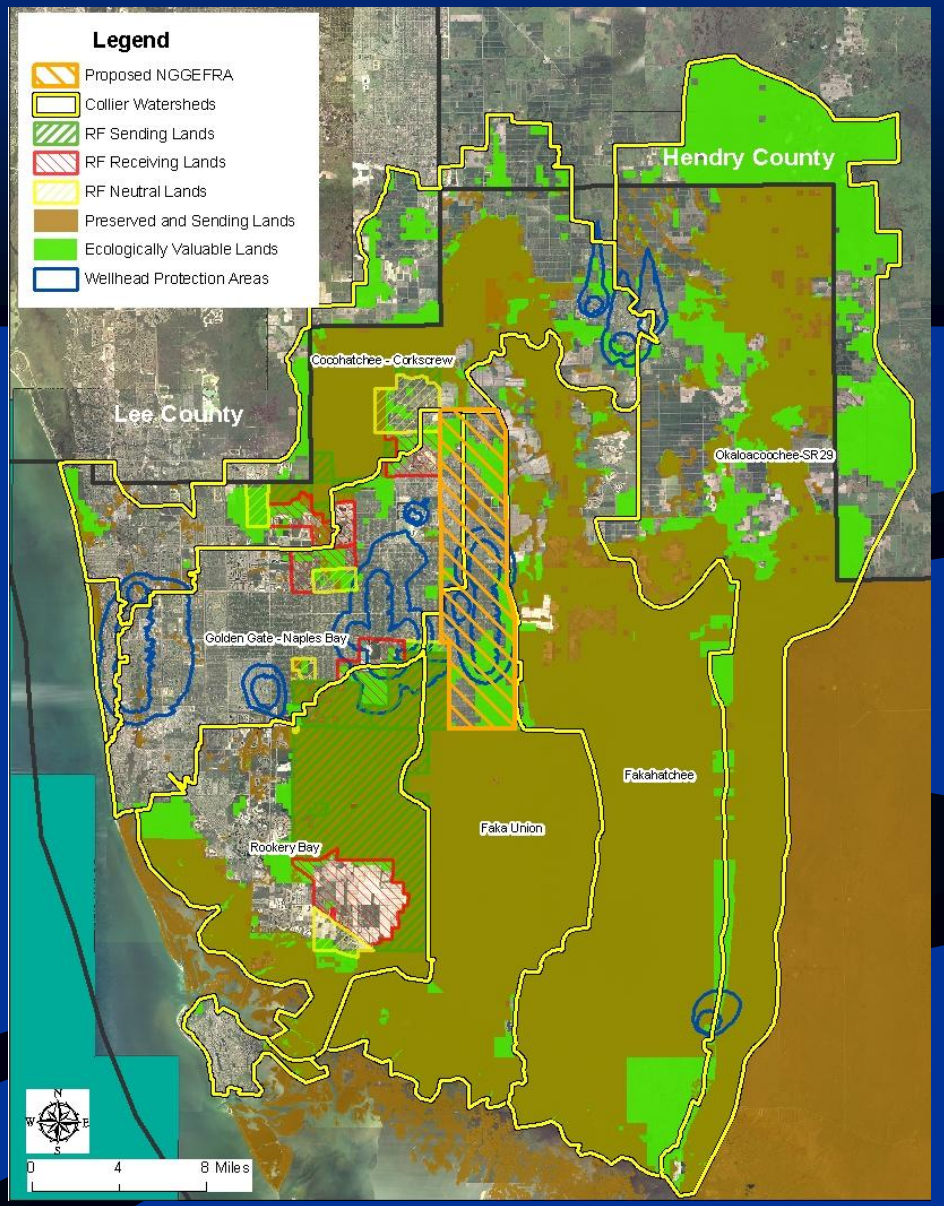
Recommended TDR Program for Golden Gate Estates

- Recommended Area includes valuable Ecological lands
- Wellhead protection area



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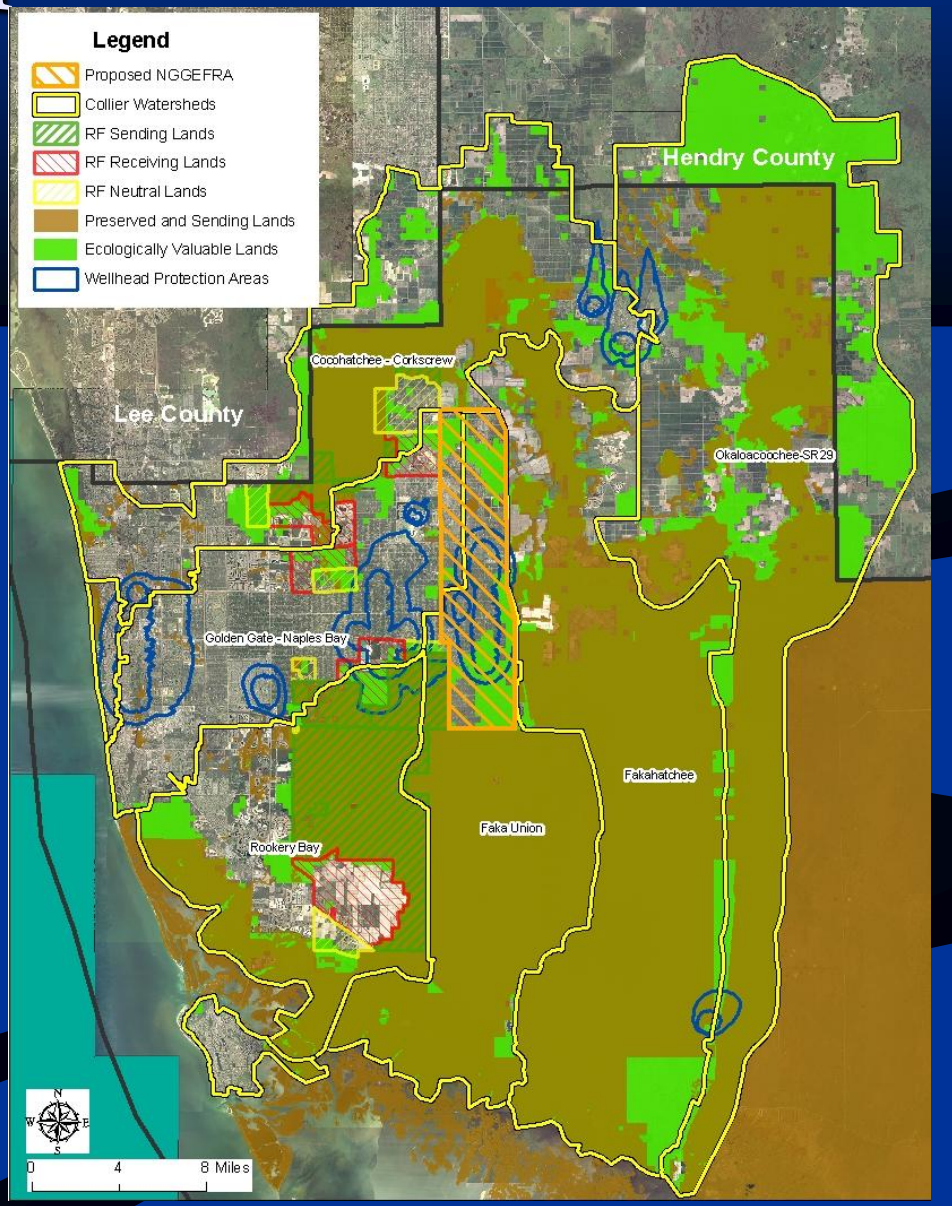
TDR Program for GGE Key Components

- Distinct from existing TDR programs that have been ineffective
- Goal is to provide sufficient market attraction
- Utilize existing receiving lands



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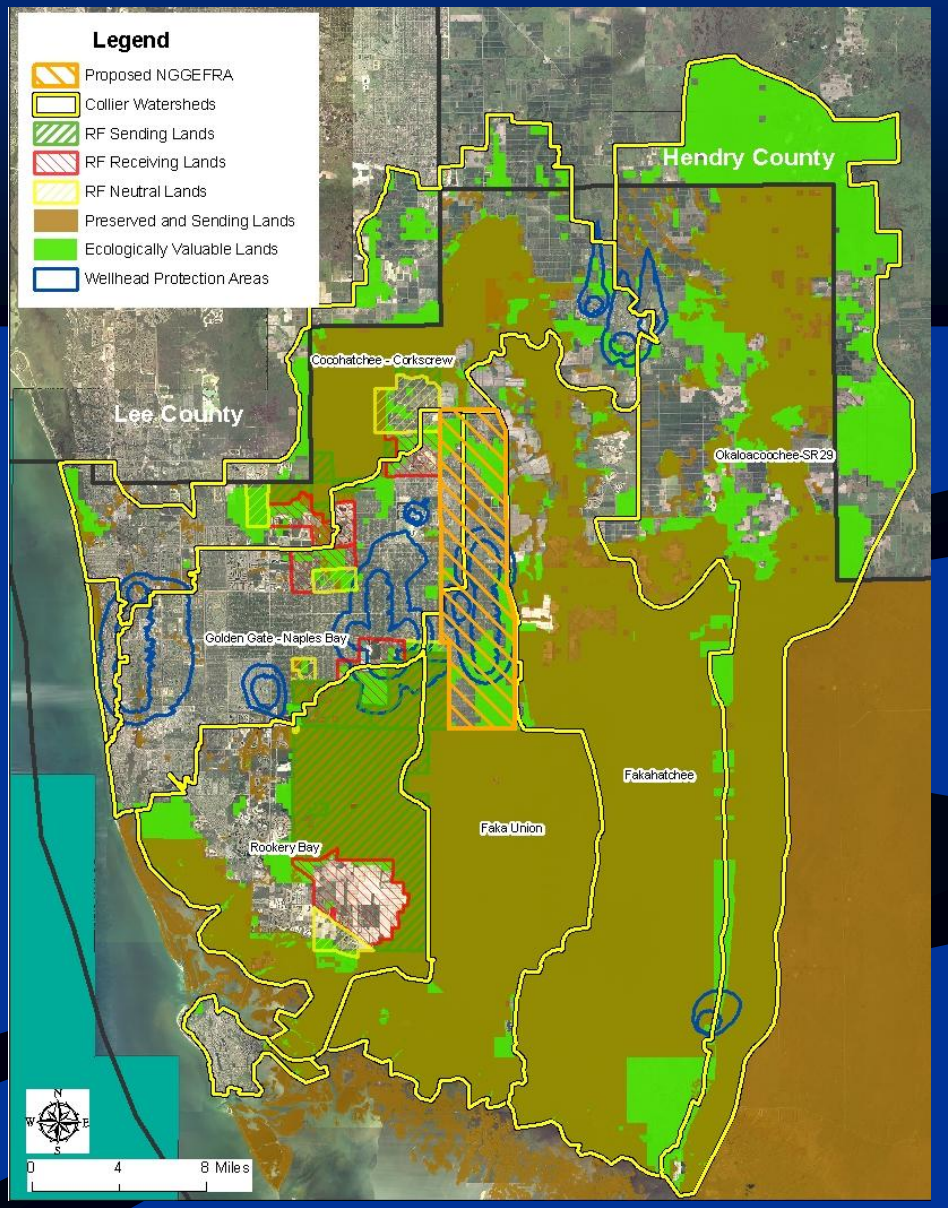
TDR Program for GGE Benefits

- Allow transfer for urban infill
- Program is voluntary – with incentives
- Use incentives to encourage aggregation of parcels
- Used for mitigation within the NGGE



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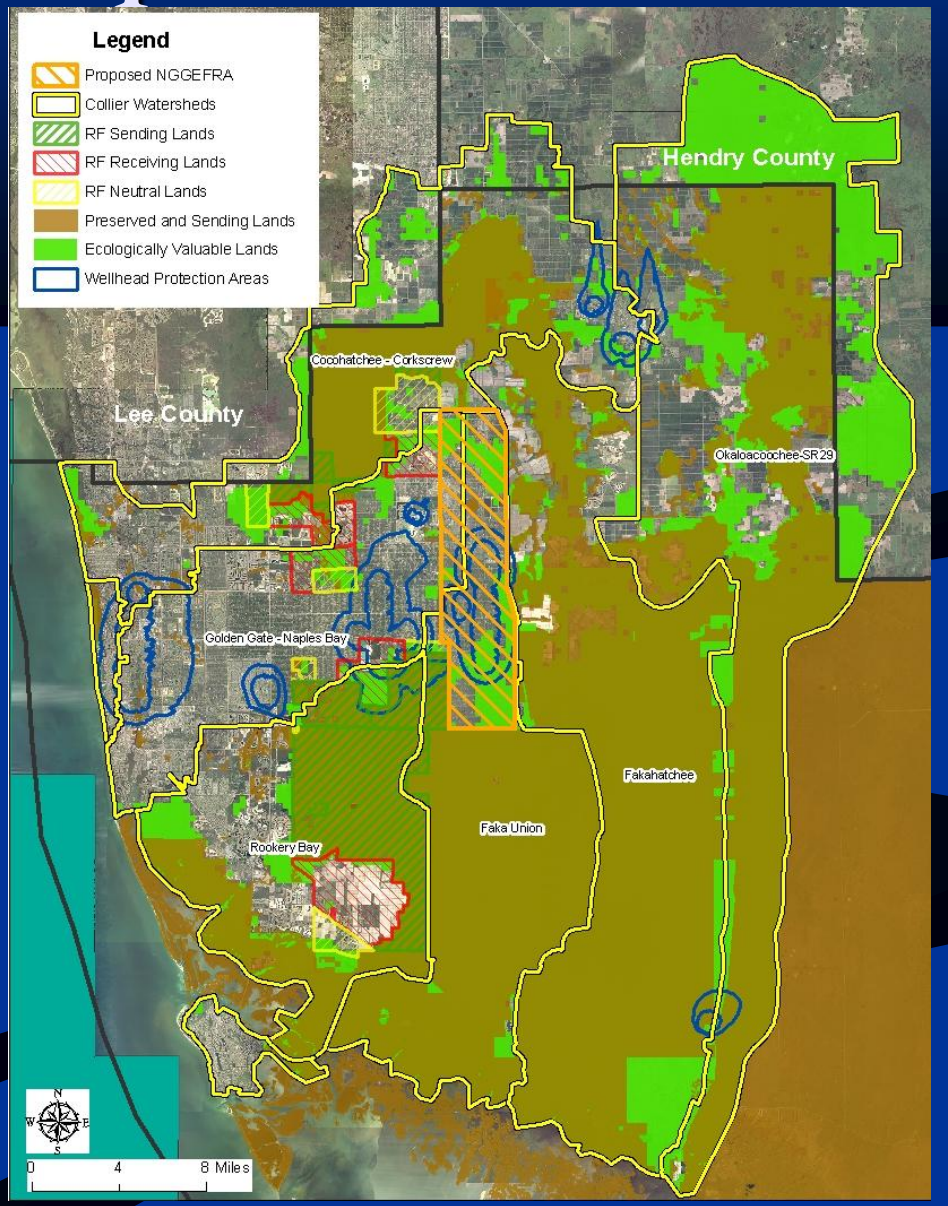
TDR Program for GGE Next Steps

- Establish 9 person Oversight Committee to develop specifics of the program
- Quantify the number of nonconforming and conforming parcels



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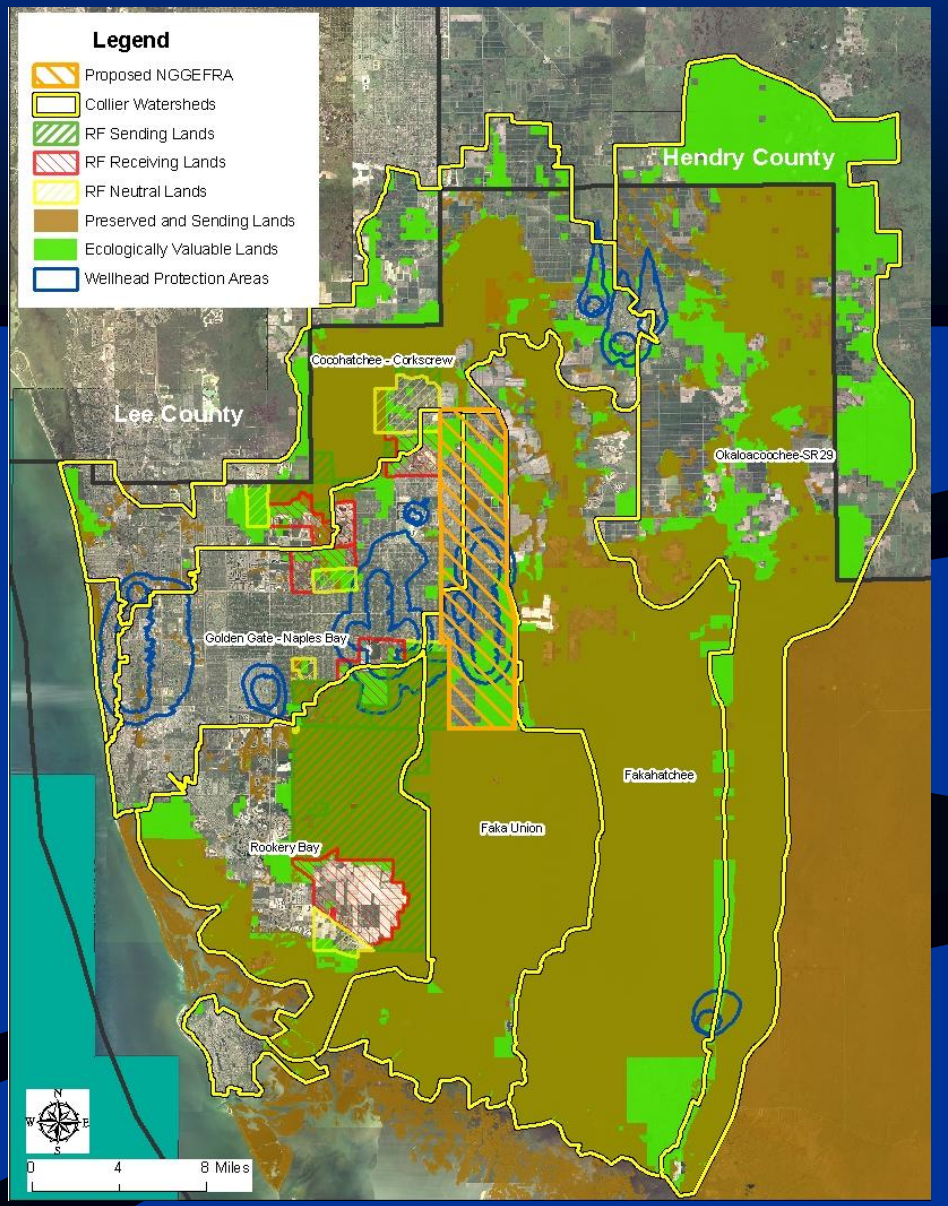
TDR Program for GGE
Key Issues to be Resolved

- Extent of the Protection Area
- Economics and Relationship to Existing TDR Program
- Receiving Lands
- Funding



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Regulatory Revisions Conceptual Timeline

Task	Days to Complete
Policy Discussion Regarding Proposed Watershed Plan and related GMP and LDC amendments (before EAC, CCPC, and BCC)	90
Creation of TDR Oversight Committee and Committee Work Period*	250
Preparation of final draft GMP amendments for public hearings before EAC, CCPC, BCC (Transmittal Hearings) and Transmittal Hearings	150
DCA Review and issuance of Objection Recommendation and Comment (ORC) Report (issued 60 days after completion determination)	70
County review of ORC and Adjustments to address Objections (and Recommendations and Comments) (Note: Rule requires the adoption to occur within 60 days after receipt of ORC, but typically this is not accomplished within 60 days (given process requiring hearings before the EAC, CCPC and BCC) and DCA has been tolerant providing the County is working to address issues. Assuming Objections are not too substantial, the County will simultaneously begin preparing LDC amendments.	120
DCA issues Notice of Intent (NOI) to find Plan Amendments in Compliance (or not) - within 45 days of receipt of a complete adopted plan amendment	50
LDC Amendment Final Preparation and hearings (again, EAC, CCPC,BCC)	100
Total Estimated Time for Completion (Including TDR Oversight Committee Review Period)	**830**
Total Estimated Time for Completion (Excluding TDR Oversight Committee Review Period)	**580**

Oversight Committee as proposed is limited in Scope (to TDR Program) thus other proposed amendments may not be subject the Committee Review Period (250 days as projected).

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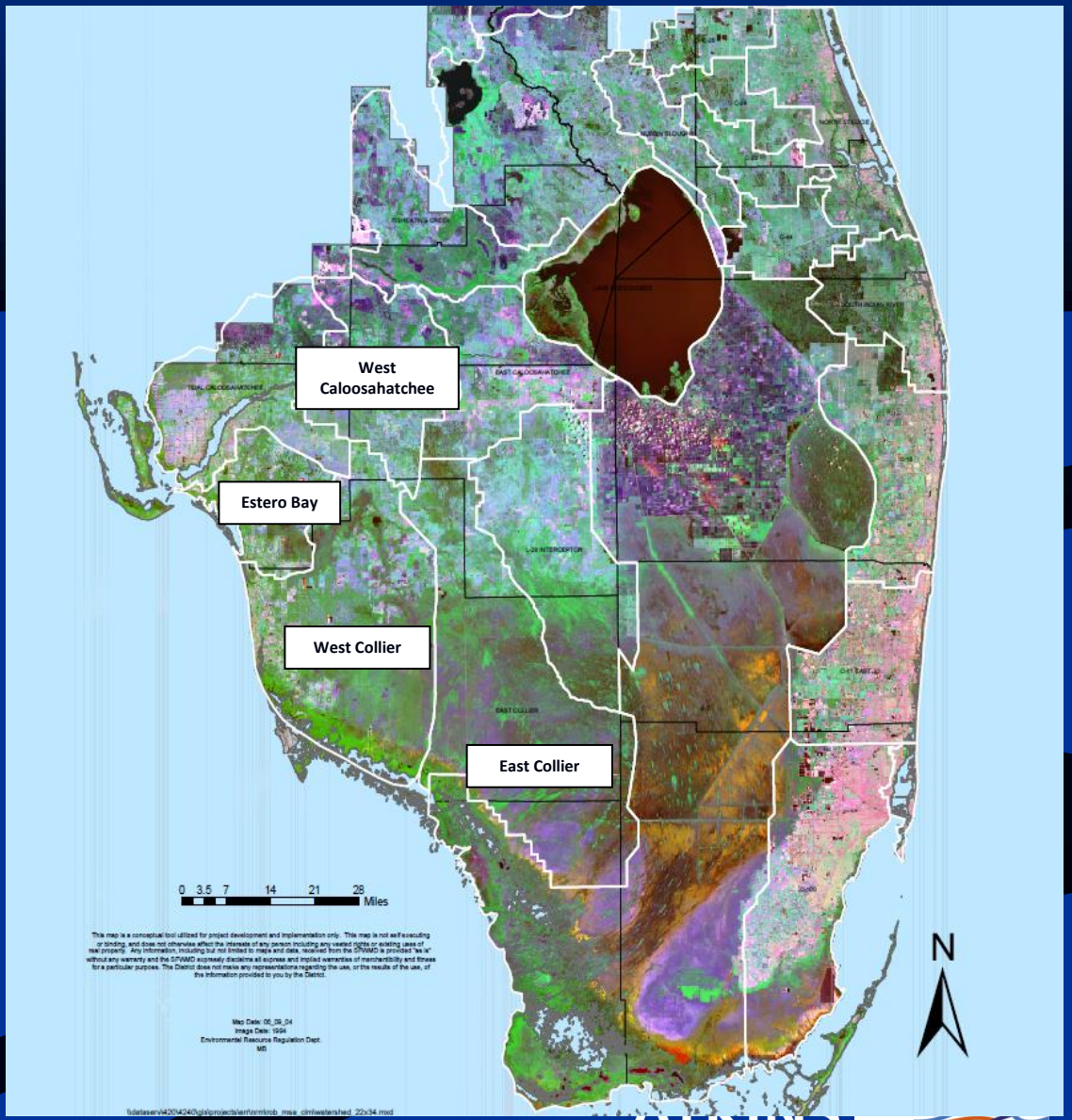
Mitigation Issues

- No regulatory mechanism to require mitigation within a functional watershed
- Economics determine where mitigation occurs



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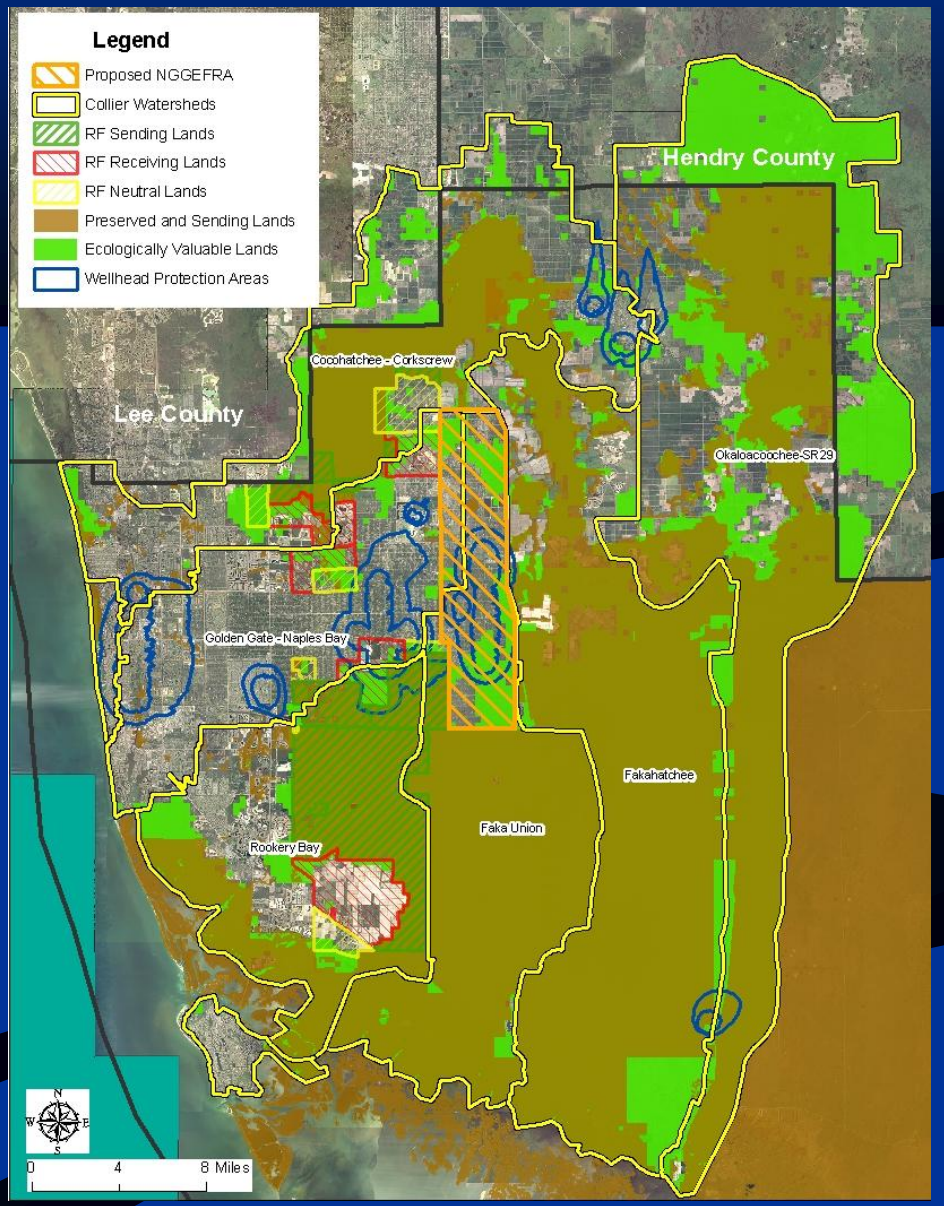
Recommendations to Establish Mitigation Area in NGGE

- Regional Offsite Mitigation Area located within proposed NGGE TDR area
- Phase I:
  - Permitted by FDEP for single family mitigation
  - Acquisition funded through TDR, grants, sale of credits, or direct County funding



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Recommendations to Establish Mitigation Area in NGGE

- Phase 2:
  - Permitted by SFWMD for public works projects
  - Funded by internal sale of credits (Collier County to Collier County)

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Factors that Favor Mitigation Within the NGGE

- Reduction in mitigation costs
- Serves wetland restoration and stormwater attenuation goals
- A regulatory precedent exists (Lee County)
- Pending statewide rules affect water quality criteria and allow credit-trading

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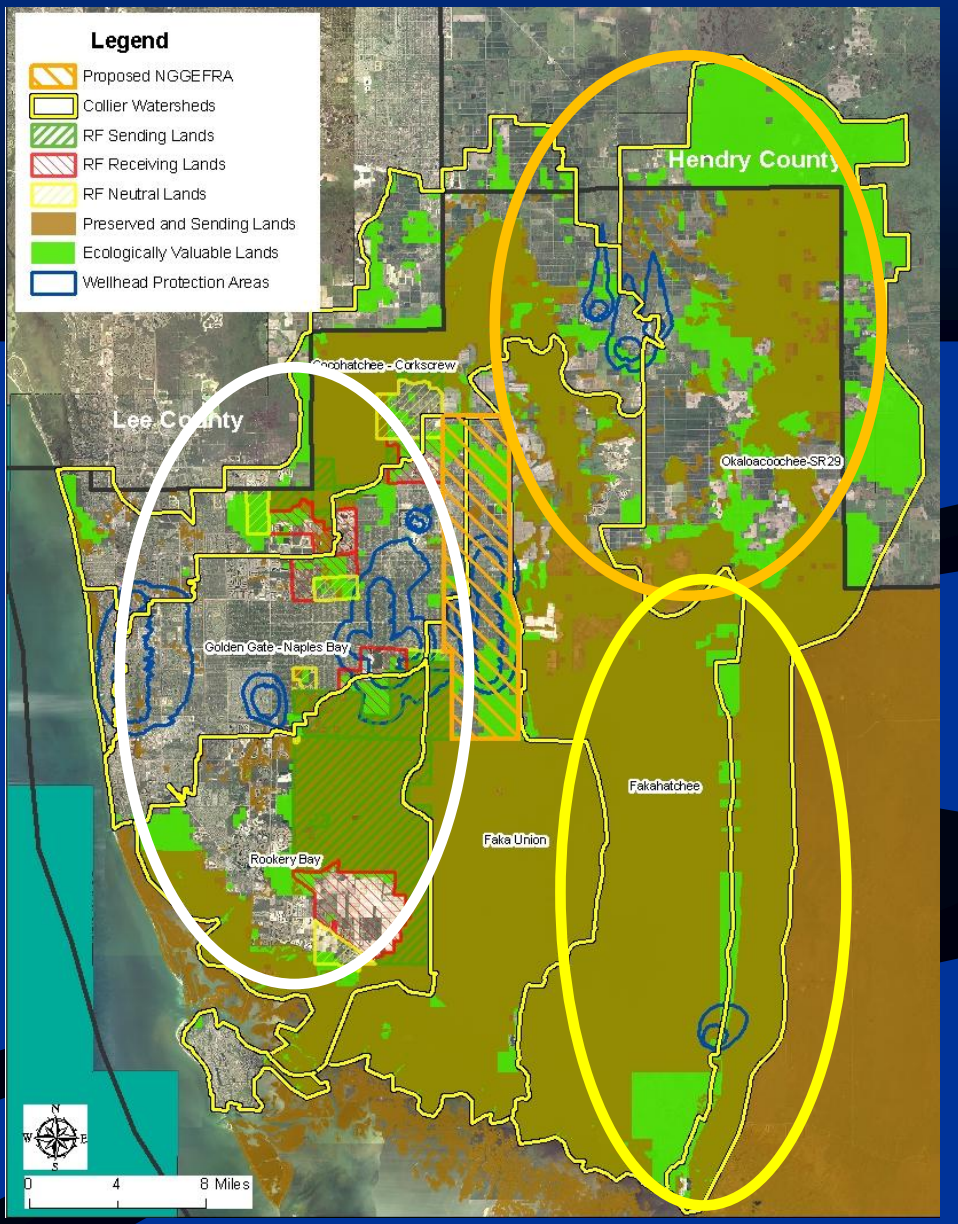
Recommended Additional Protection Areas

- Areas of localized restoration efforts
- Recyclable Water Containment agricultural areas
- Areas recommended for State acquisition



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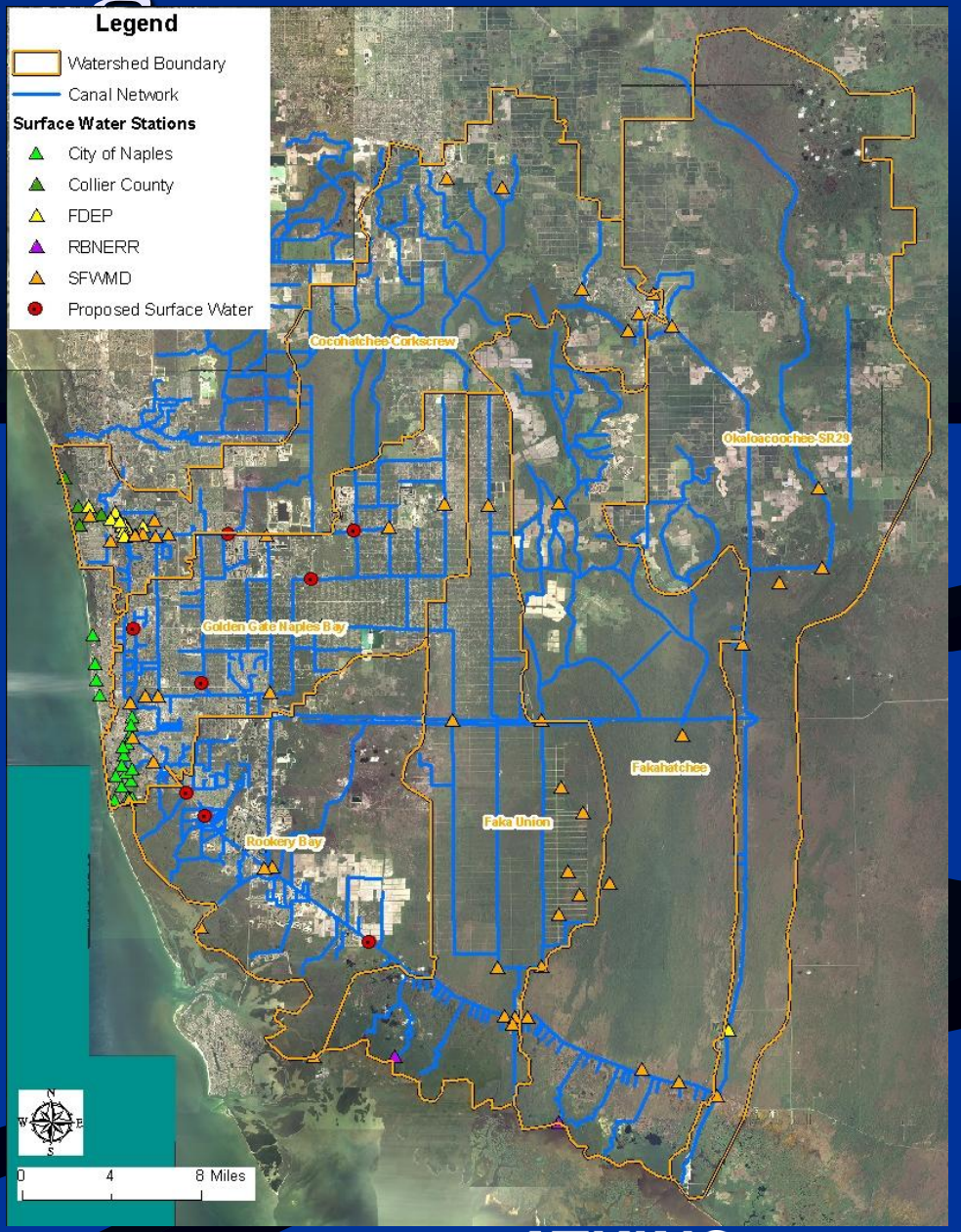
Monitoring Plan

- Surface Water Monitoring
  - Identify sources of pollutant load
  - Eight (8) additional permanent monitoring stations
  - Wet weather monitoring program



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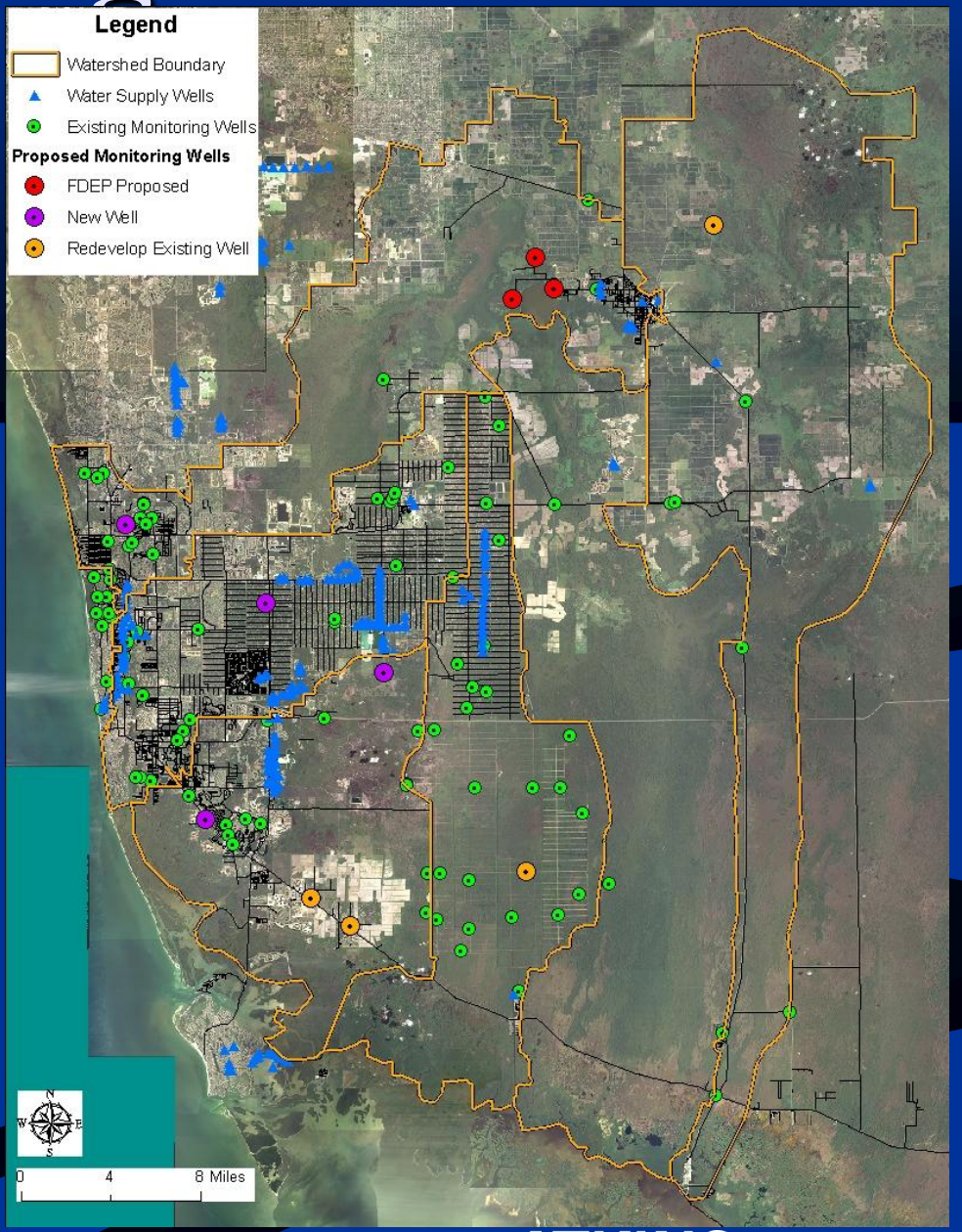
Monitoring Plan

- Groundwater Monitoring
  - Confirm extent of estimated pollutant concentrations
  - Coordinate with SFWMD for more regular sampling of wells in Picayune Strand and Okaloacoochee Slough



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Monitoring Plan Estimated Cost

Monitoring Component	Assumptions	Estimated Annual Cost
Surface Water Monitoring	• 8 new permanent stations at existing structures • Quarterly sampling • Analyzed for nutrients and metals	$32,000
Storm Event Monitoring (4 month wet season)	• 6 temporary monitoring stations • 10 samples per site • Automated samplers are rented • Analyzed for nutrients and metals	$150,000 (Equipment Rental = $55,000)
Groundwater Monitoring	• Monitoring wells in Surficial and Lower Tamiami • FDEP constructs 3 new monitoring wells • County constructs 4 new monitoring wells • County redevelops 4 existing wells • Quarterly sampling • Analyzed for nutrients and metals	$55,000 (Install = $15,000)

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Wrap Up

- If you didn't sign in, please do so
  - Include your E-mail address and Phone Number
- Comments via E-Mail

  machatcher@colliergov.net
- Formal position papers
  - Please mail to Mac Hatcher

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