Overview and Impact of Florida Senate Bill 64 on the State's Water Disposal Options

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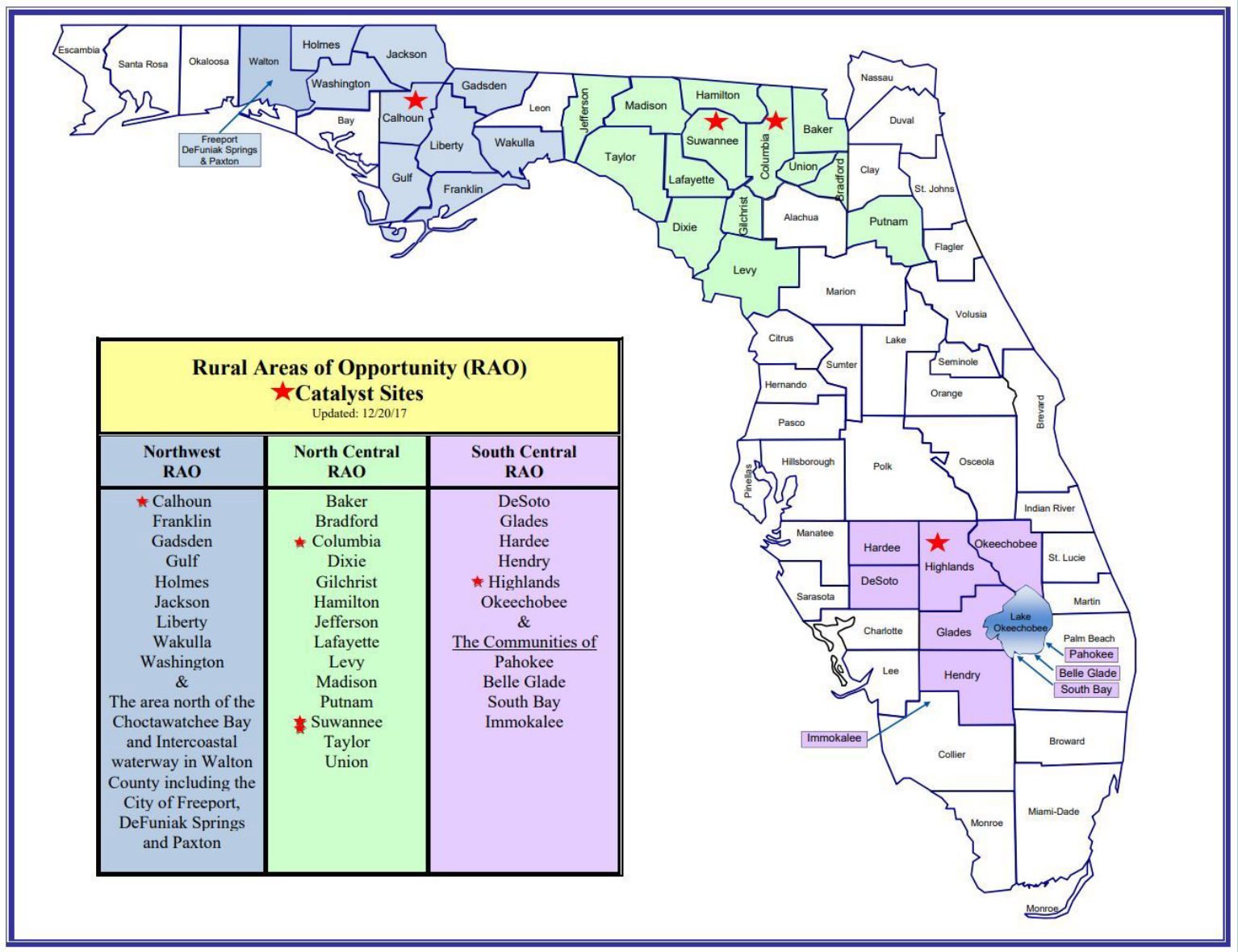
Summary of Senate Bill 64

- Became part of Florida Statutes 403.064 and 403.892
- Intent is to decrease the volumes of domestic wastewater released to surface water; promote alternative water supplies and potable reuse
- Establishes timelines for utilities to meet

Required Dates to Meet

- November 1, 2021 - Submit plan to FDEP for elimination of nonbeneficial surface water discharges
- DEP approves or denies plan 9 months after submittal
- January 1, 2028 – Surface water discharge to cease if first 2 bullets not met
- January 1, 2032 - Utility must fully implement plan
- December 31, 2023 – MOA between FDEP and water management districts for coordinated review of indirect potable reuse projects
- Exceptions for fiscally challenged counties, low volume operations

Rural Areas of Opportunity



Rural Areas of Opportunity (RAO)
★Catalyst Sites
Updated: 12/20/17

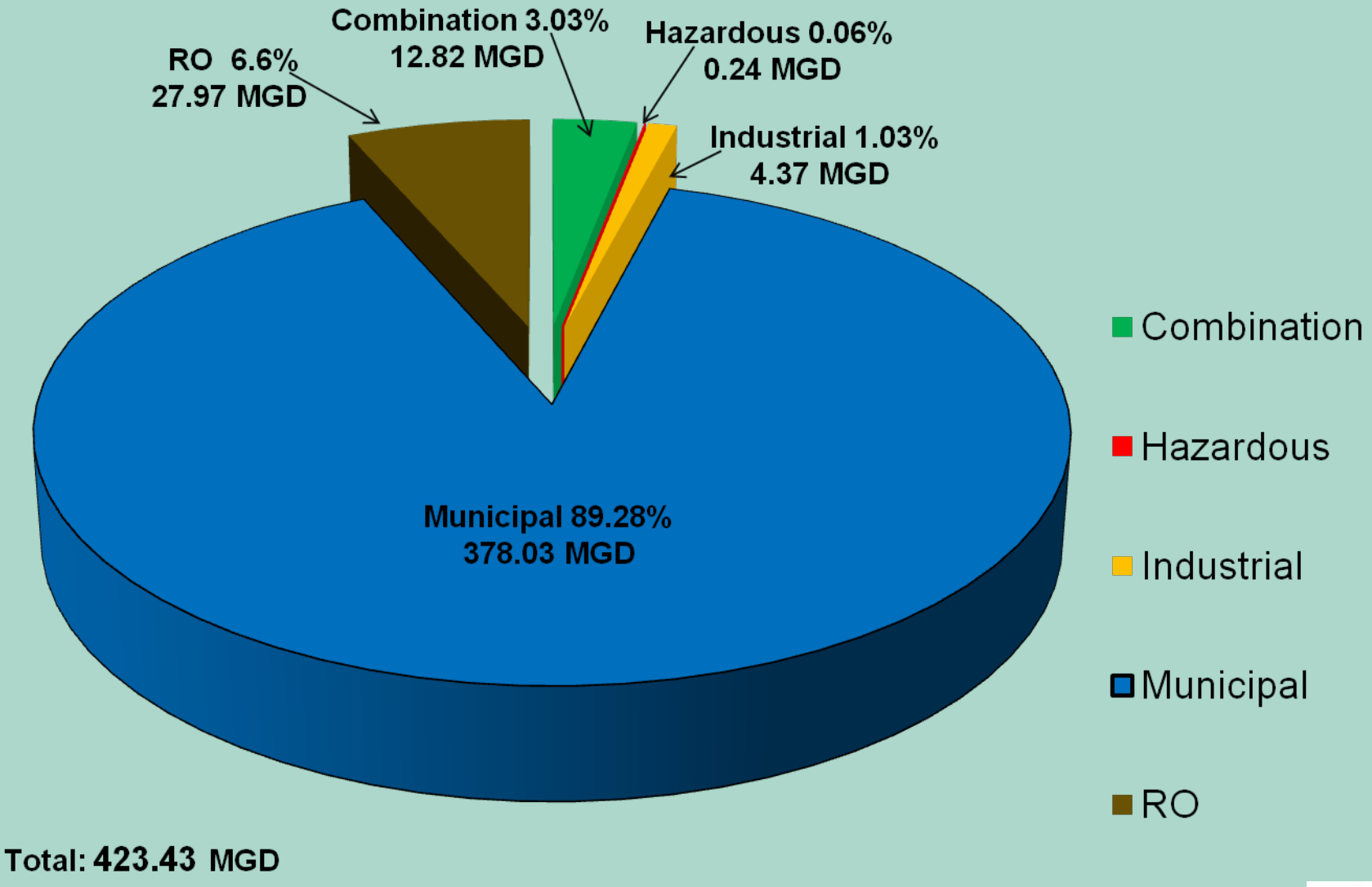
Northwest RAO	North Central RAO	South Central RAO
★ Calhoun Franklin Gadsden Gulf Holmes Jackson Liberty Wakulla Washington & The area north of the Choctawatchee Bay and Intercoastal waterway in Walton County including the City of Freeport, DeFuniak Springs and Paxton	Baker Bradford ★ Columbia Dixie Gilchrist Hamilton Jefferson Lafayette Levy Madison Putnam ★ Suwannee Taylor Union	DeSoto Glades Hardee Hendry ★ Highlands Okeechobee & The Communities of Pahokee Belle Glade South Bay Immokalee

Alternatives to Surface Discharge

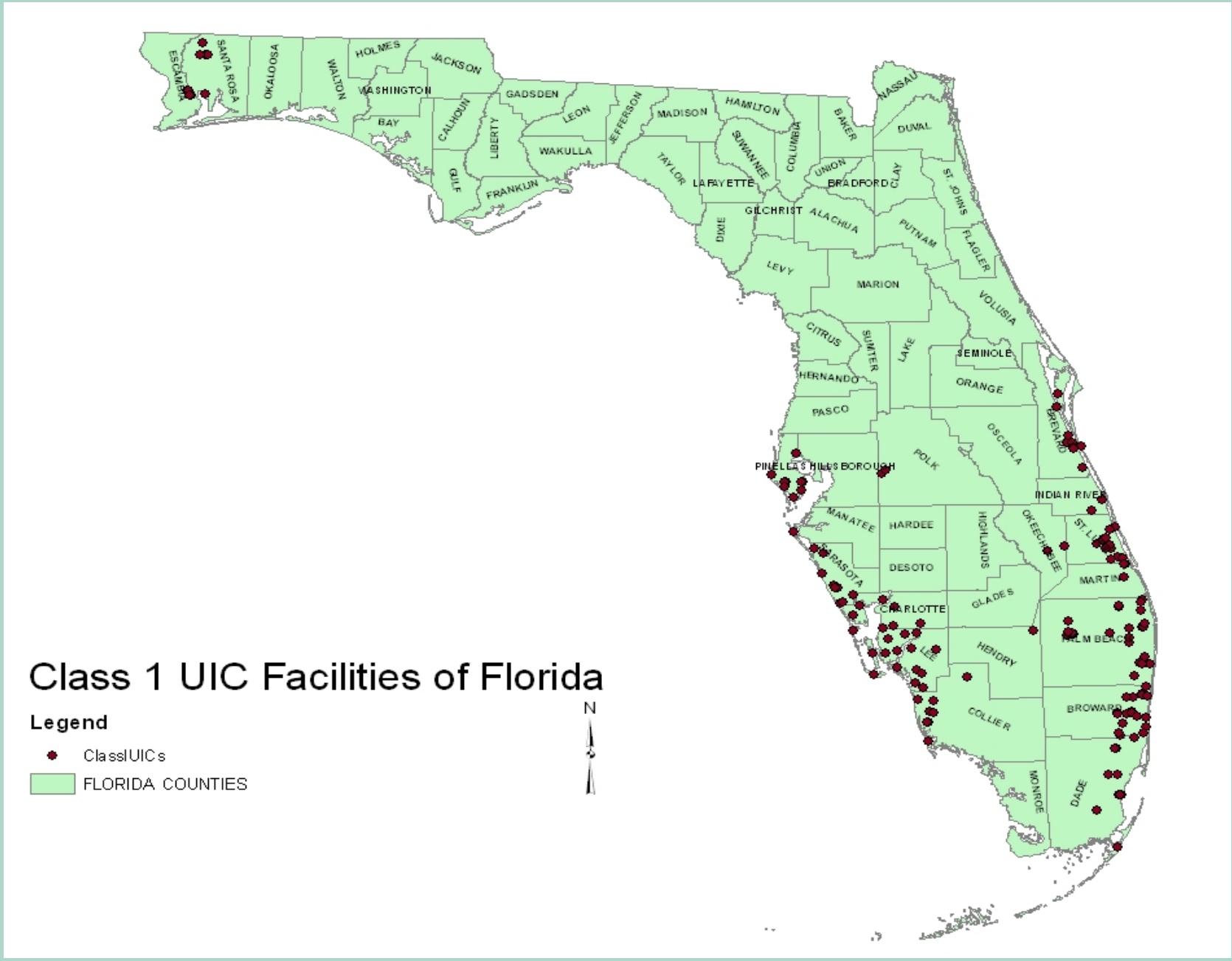
- Reduce flow to wastewater treatment plant (WWTP)
  - Repair / upgrade sewer transport piping (I & I)
  - Reduce stormwater input to WWTP
  - Water conservation efforts

- Alternate discharge sites
  - Reclaimed water for green spaces, industrial uses, etc.
  - Recharge / ASR in USDWs
  - Deep well injection

Annual Average Daily Flow to Class I Injection Wells - 2008



Total: **423.43** MGD


Class 1 UIC Facilities of Florida
Legend
ClassIUICs
FLORIDA COUNTIES
N
ESCAMBIA
SANTA ROSA
OKALOOSA
WALTON
HOLMES
WASHINGTON
JACKSON
BAY
CALHOUN
GADSDEN
LIBERTY
LEON
WAKULLA
JEFFERSON
MADISON
TAYLOR
GULF
FRANKLIN
LAFAYETTE
HAMILTON
SUWANNEE
COLUMBIA
BAKER
NASSAU
DUVAL
UNION
BRADFORD
CLAY
ST. JOHNS
GILCHRIST
ALACHUA
PUTNAM
FLAGLER
DIXIE
LEVY
MARION
VOLUSIA
CITRUS
SUMTER
LAKE
SEMINOLE
HERNANDO
ORANGE
PASCO
OSCEOLA
BREVARD
PINELLAS
HILLSBOROUGH
POLK
INDIAN RIVER
MANATEE
HARDEE
HIGHLANDS
OKEECHOBEE
SARASOTA
DESOTO
MARTIN
GLADES
CHARLOTTE
PALM BEACH
LEE
HENDRY
COLLIER
BROWARD
MONROE
DADE

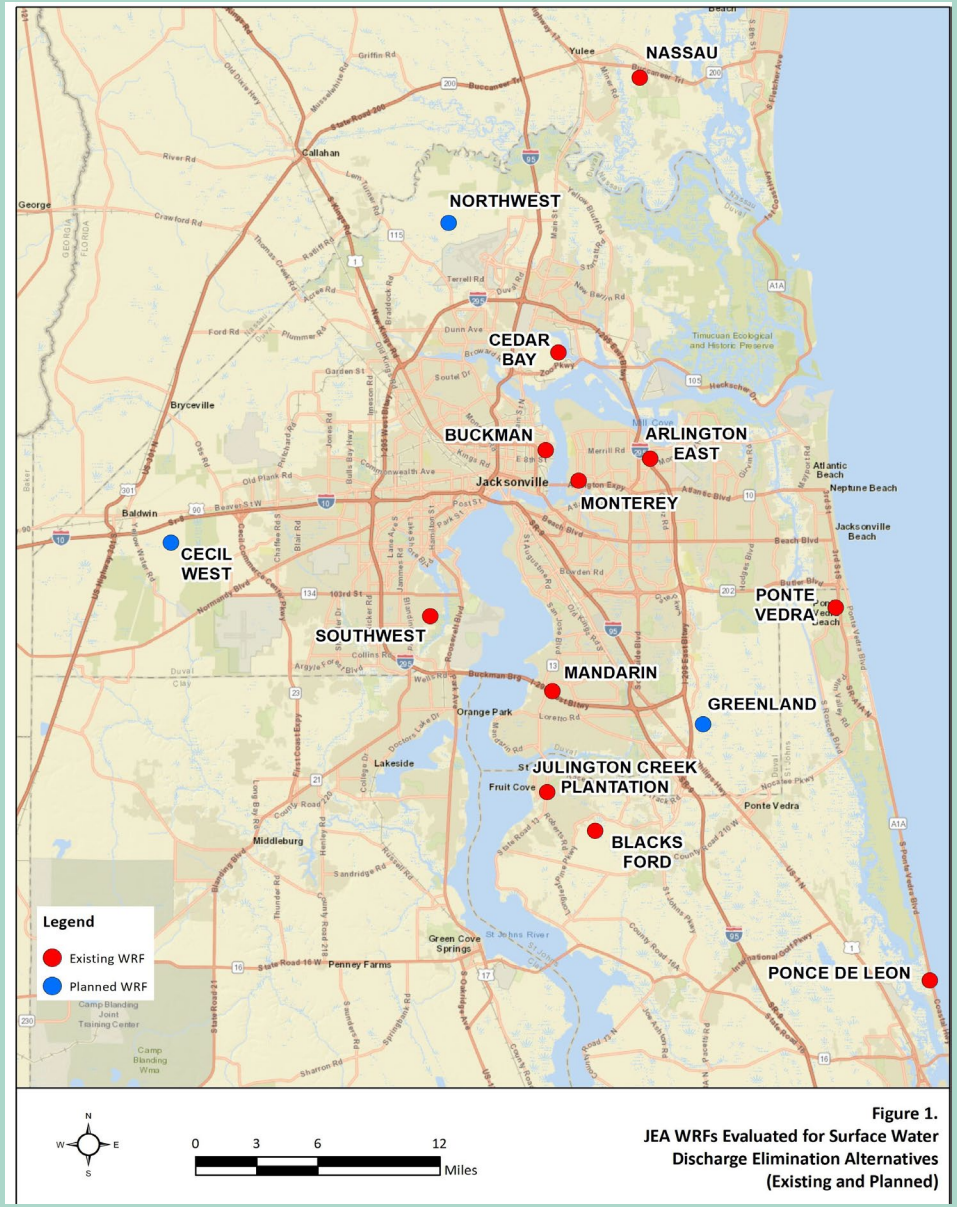
Funding

- Taxes
- Loans and Grants
  - FDEP
  - Water Management Districts
  - Federal

Jacksonville Electric Authority (JEA)

- JEA has 7 water reclamation facilities (WRFs) planning to inject or reuse water currently discharged to surface water
- Will direct 52 million gallons per day (mgd) to deep injection wells and 18.4 mgd to indirect potable reuse

JEA, Existing and Planned WRFs



Source: CDM Smith

JEA, Elimination of Surface Water Discharge

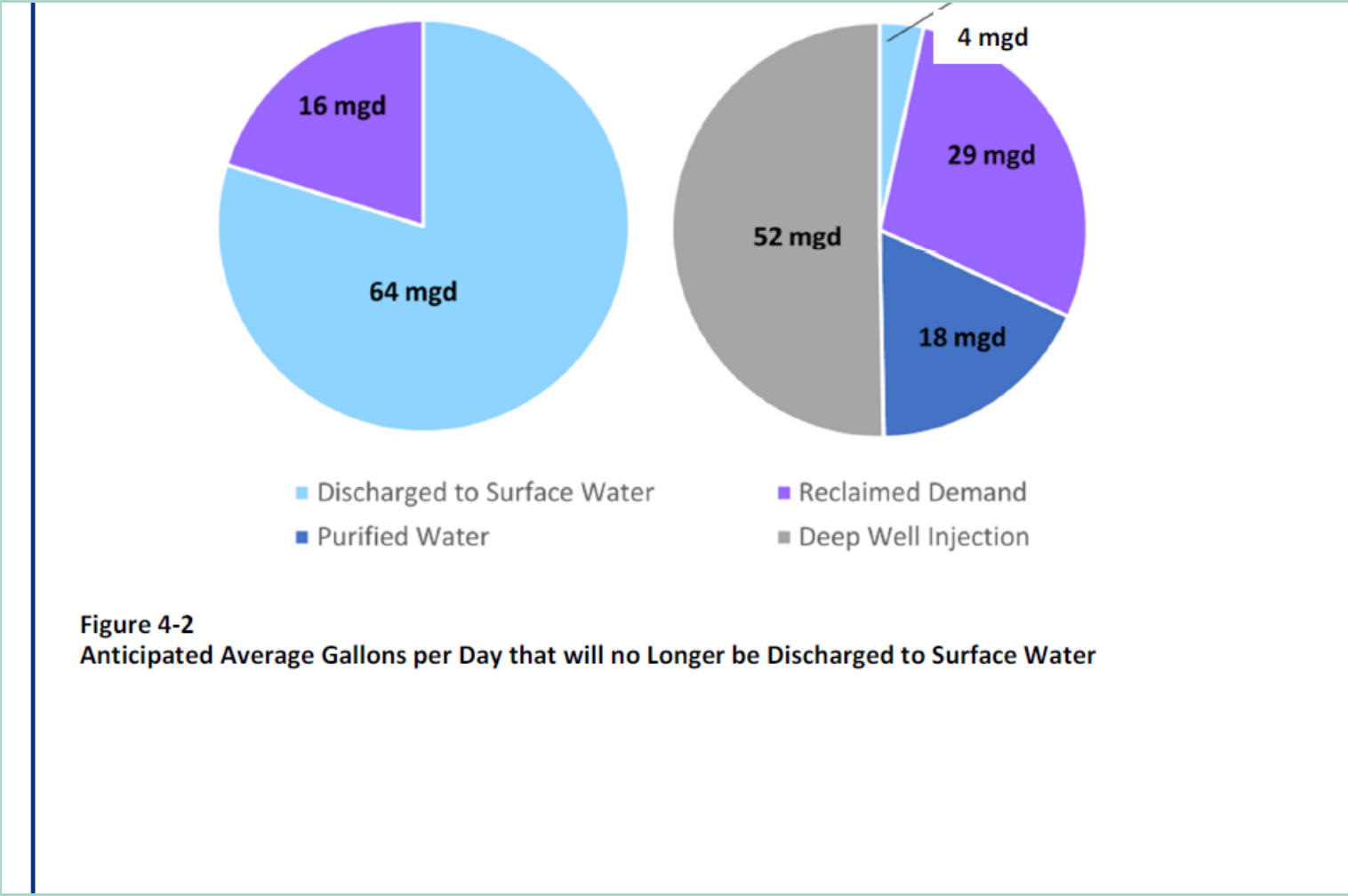
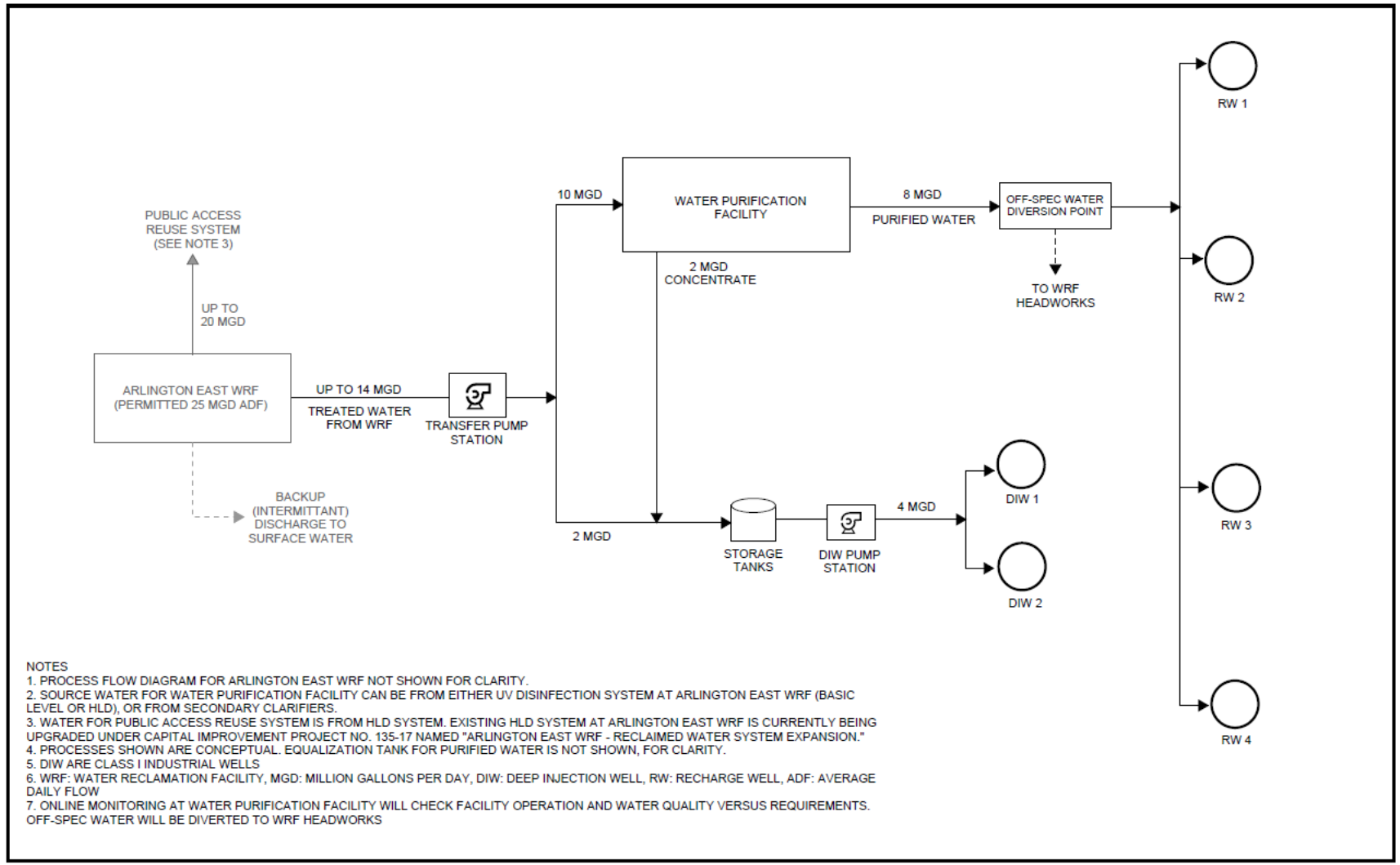


Figure 4-2
Anticipated Average Gallons per Day that will no Longer be Discharged to Surface Water

Source: CDM Smith, JEA

JEA Arlington East WRF Proposed Process Flow Diagram

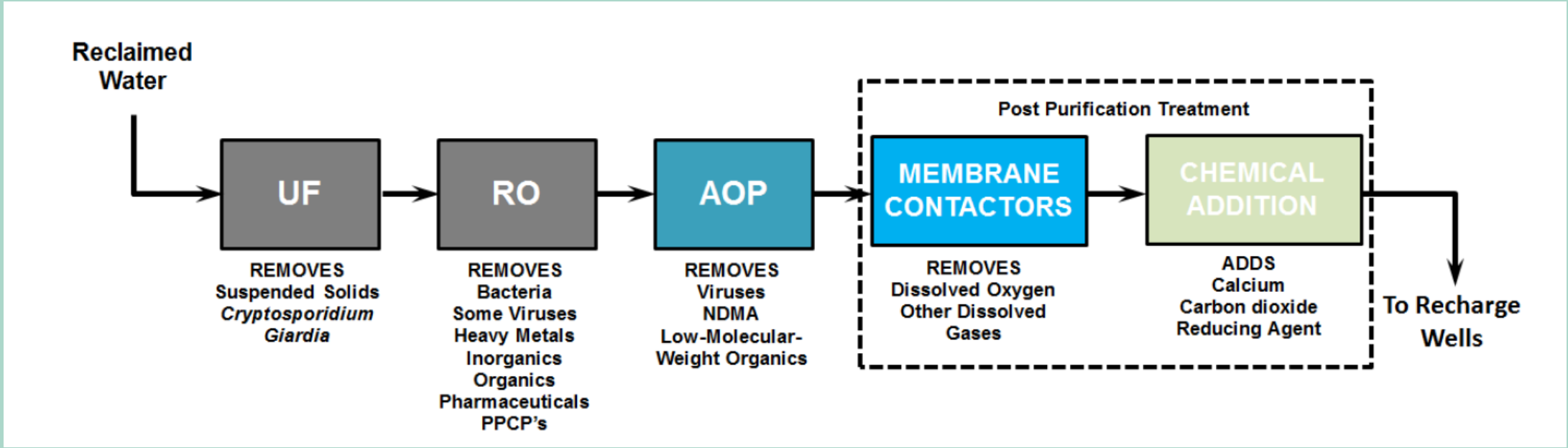


NOTES
1. PROCESS FLOW DIAGRAM FOR ARLINGTON EAST WRF NOT SHOWN FOR CLARITY.
2. SOURCE WATER FOR WATER PURIFICATION FACILITY CAN BE FROM EITHER UV DISINFECTION SYSTEM AT ARLINGTON EAST WRF (BASIC LEVEL OR HLD), OR FROM SECONDARY CLARIFIERS.
3. WATER FOR PUBLIC ACCESS REUSE SYSTEM IS FROM HLD SYSTEM. EXISTING HLD SYSTEM AT ARLINGTON EAST WRF IS CURRENTLY BEING UPGRADED UNDER CAPITAL IMPROVEMENT PROJECT NO. 135-17 NAMED "ARLINGTON EAST WRF - RECLAIMED WATER SYSTEM EXPANSION."
4. PROCESSES SHOWN ARE CONCEPTUAL. EQUALIZATION TANK FOR PURIFIED WATER IS NOT SHOWN, FOR CLARITY.
5. DIW ARE CLASS I INDUSTRIAL WELLS
6. WRF: WATER RECLAMATION FACILITY, MGD: MILLION GALLONS PER DAY, DIW: DEEP INJECTION WELL, RW: RECHARGE WELL, ADF: AVERAGE DAILY FLOW
7. ONLINE MONITORING AT WATER PURIFICATION FACILITY WILL CHECK FACILITY OPERATION AND WATER QUALITY VERSUS REQUIREMENTS. OFF-SPEC WATER WILL BE DIVERTED TO WRF HEADWORKS

FIGURE 6-1 ARLINGTON EAST WRF PROPOSED PROCESS FLOW DIAGRAM

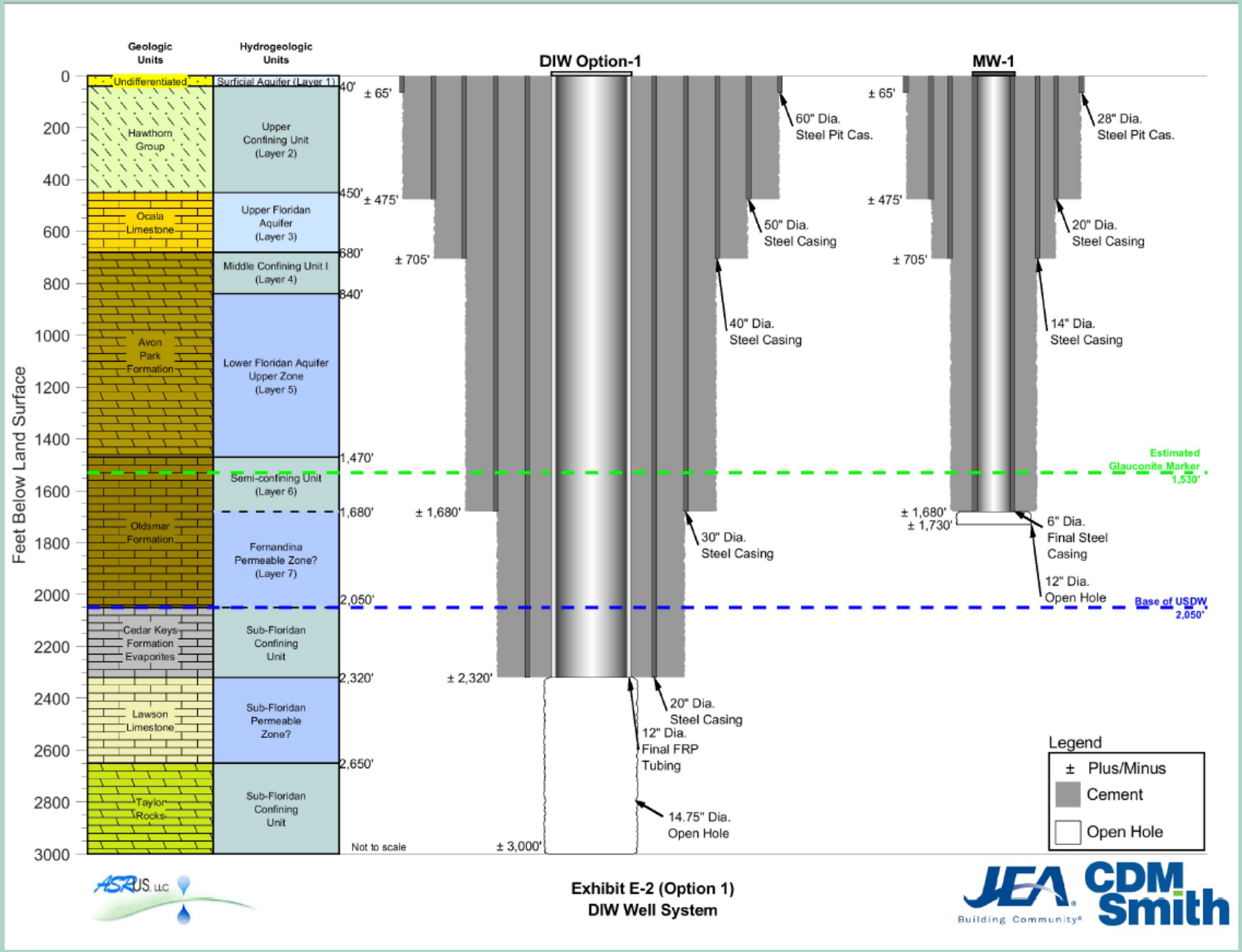
Source: CDM Smith

Water Purification Process

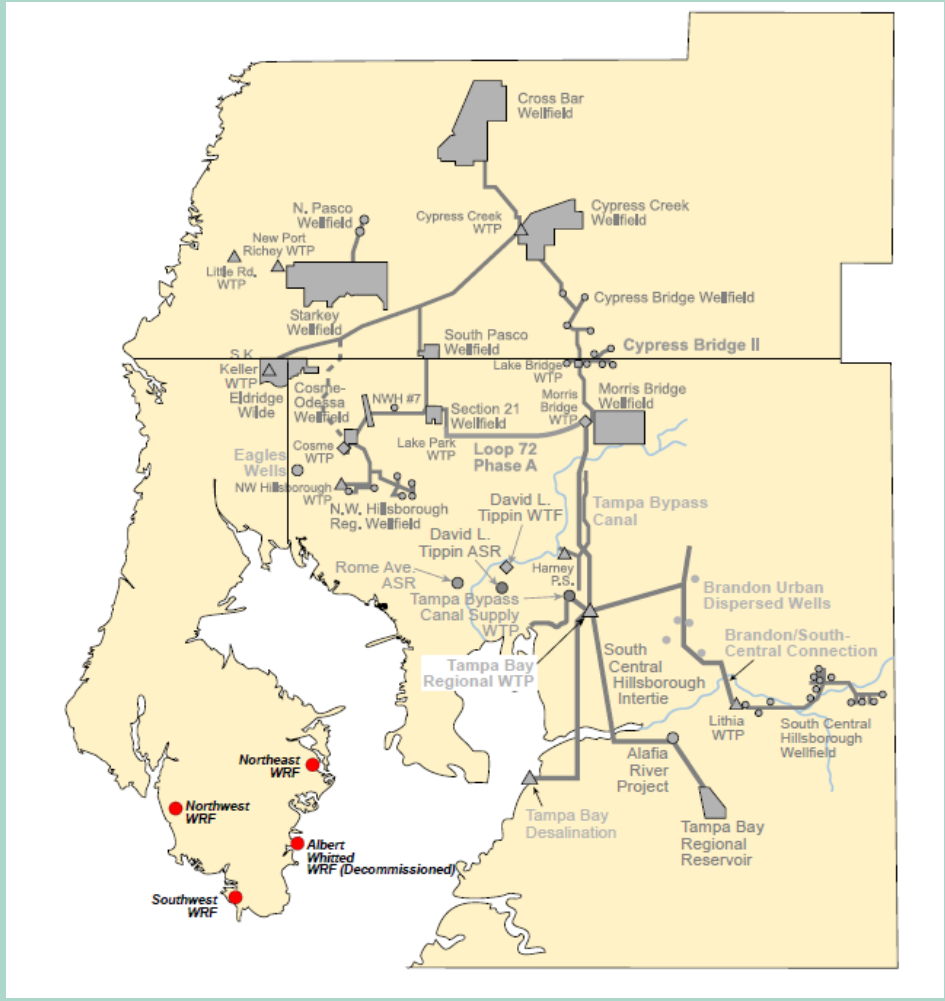


Source: Tetra Tech

Planned Well Completion, JEA

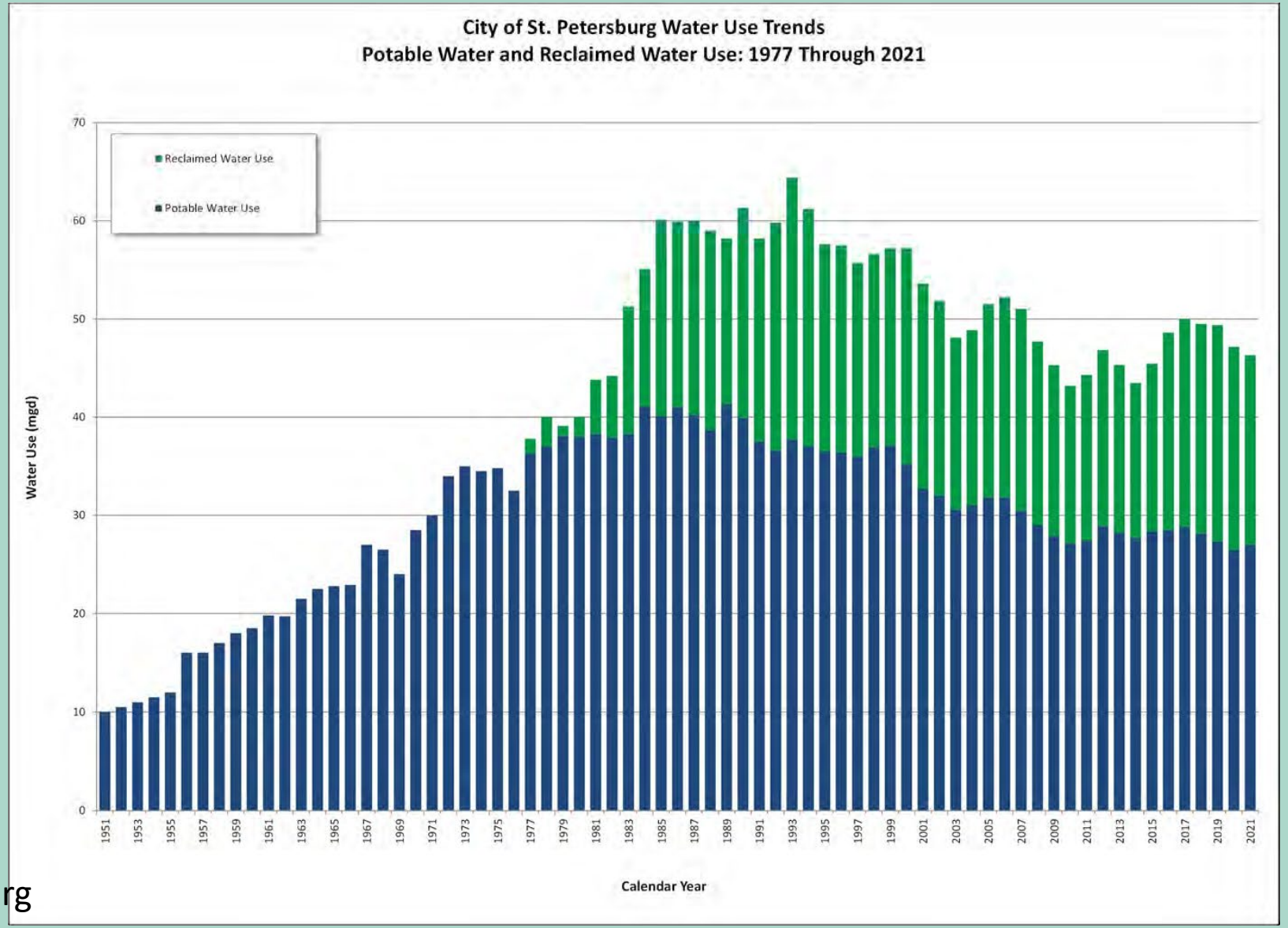


St. Petersburg WRFs and Injection Wells



Source: Tampa Bay Water and CH2M

St. Petersburg, Use and Reuse of Water



Source: St. Petersburg

St. Petersburg WRF Treatment and Reuse

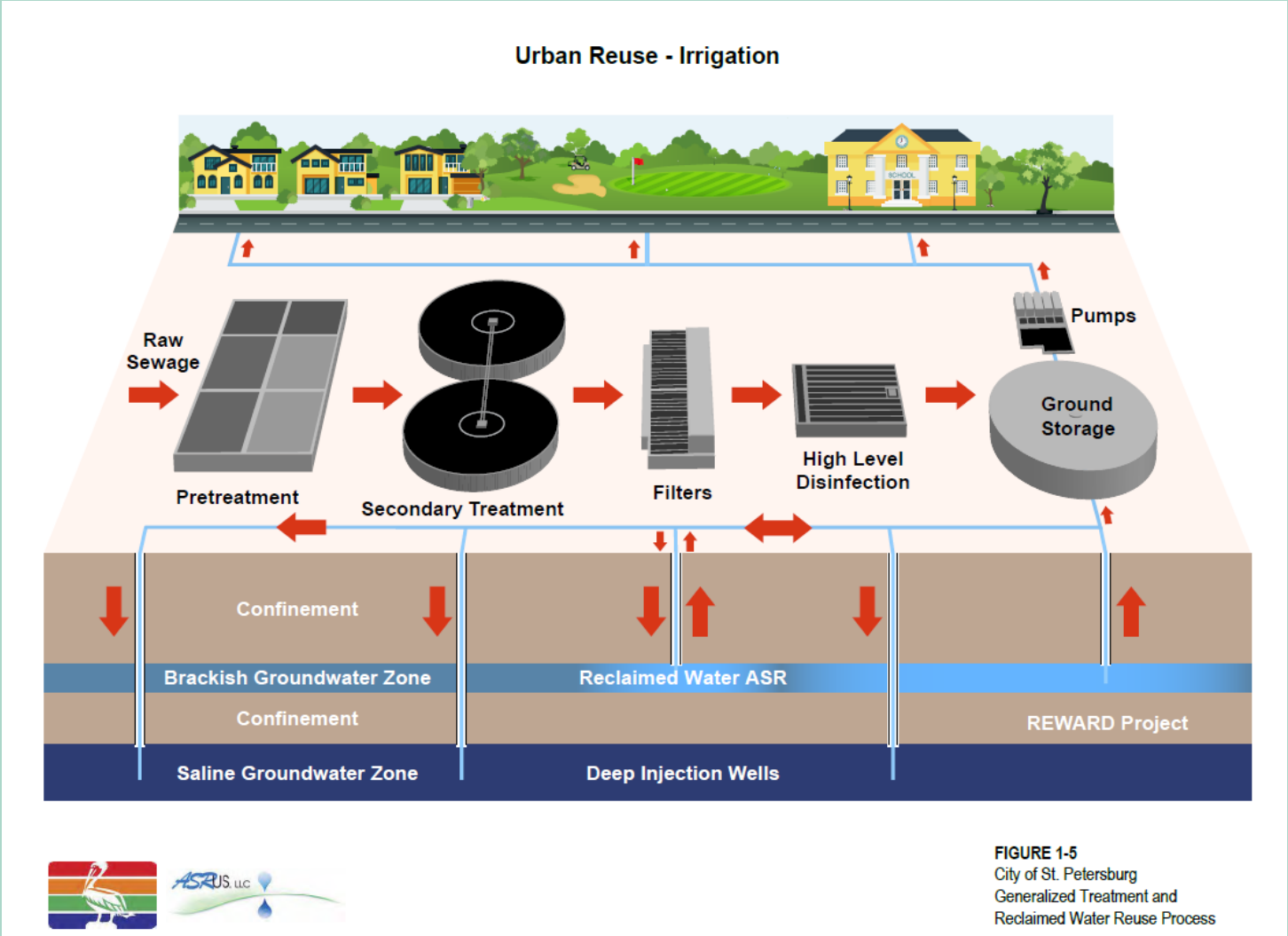
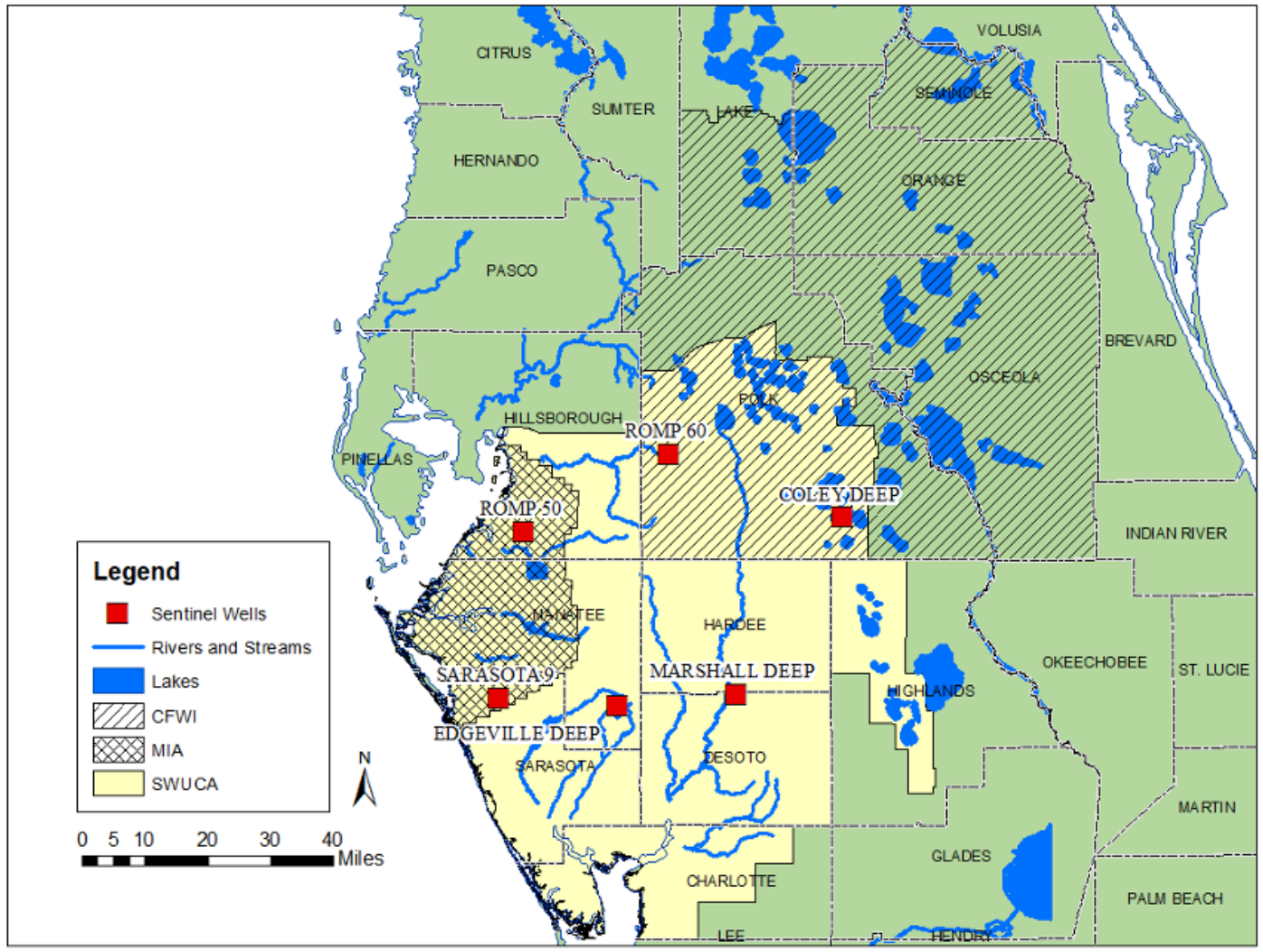


FIGURE 1-5
City of St. Petersburg
Generalized Treatment and
Reclaimed Water Reuse Process

South Hillsborough Aquifer Recharge Program (SHARP)

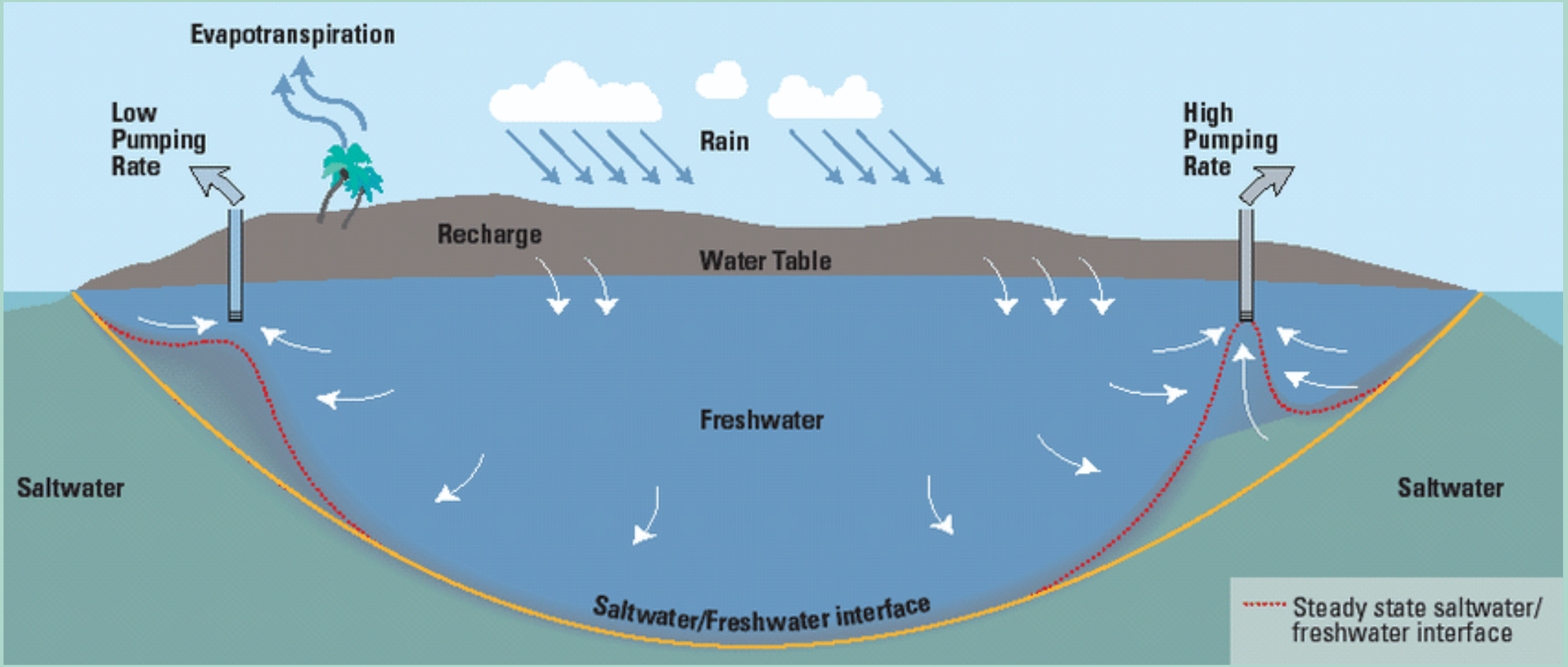
- Hillsborough County, Saltwater Barrier System
- Six recharge wells located in the Most Impacted Area (MIA) of the Southern Water Use Caution Area (SWUCA) in the Southwest Florida Water Management District (SWFWMD)

SWFWMD Impacted Areas

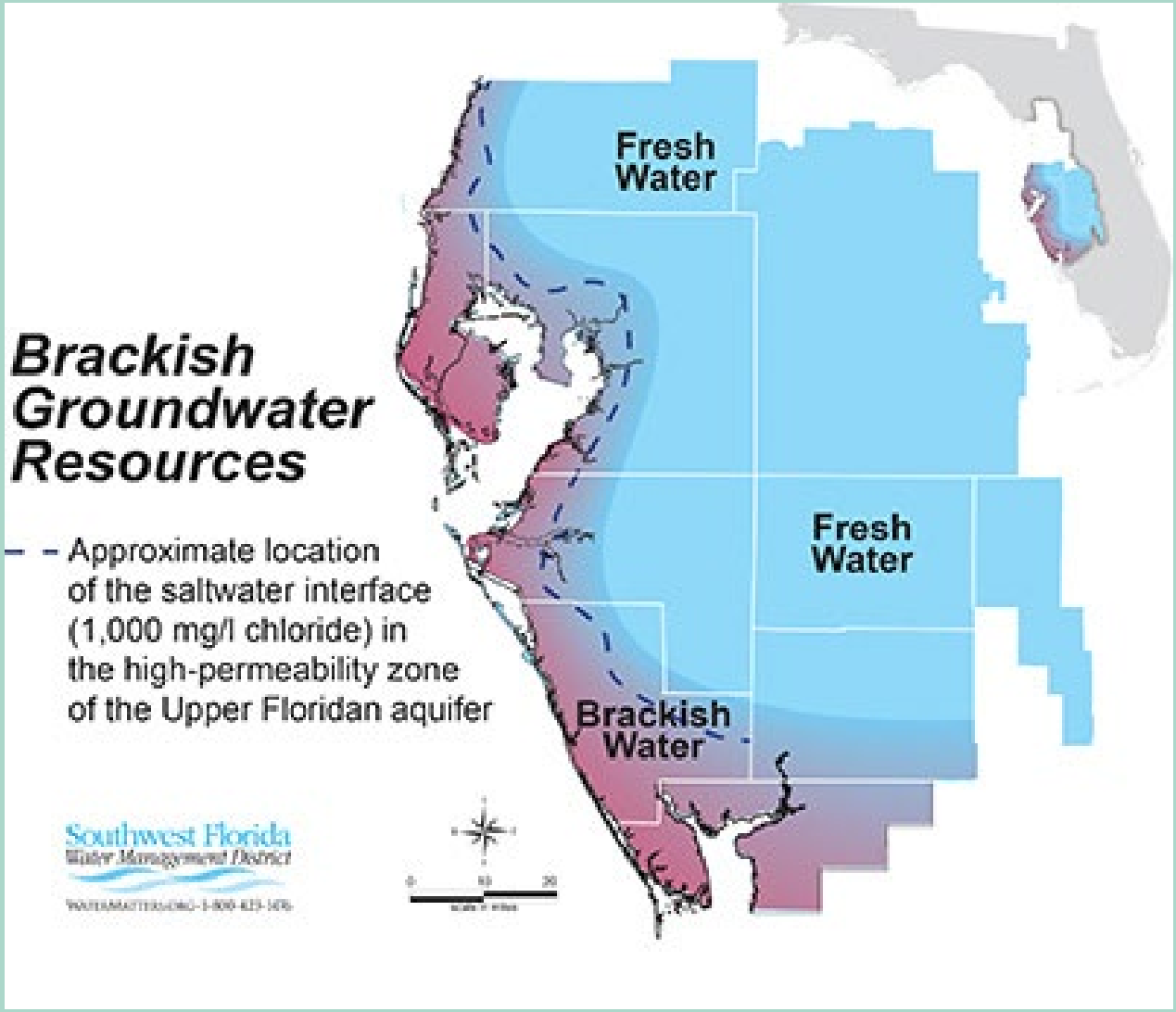


Source: SWFWMD

Peninsular Florida, General Setting

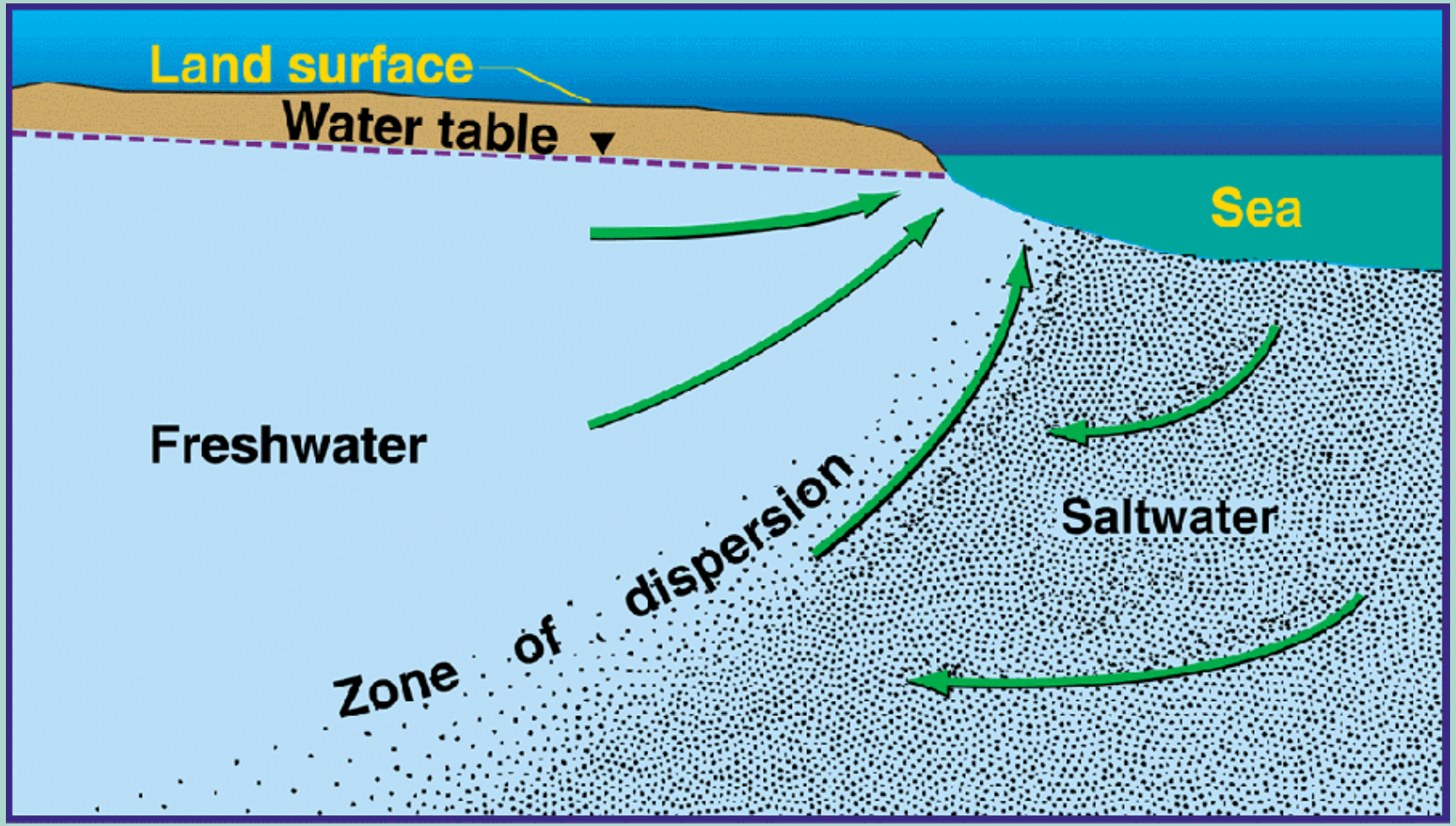


SW Florida Saltwater Intrusion

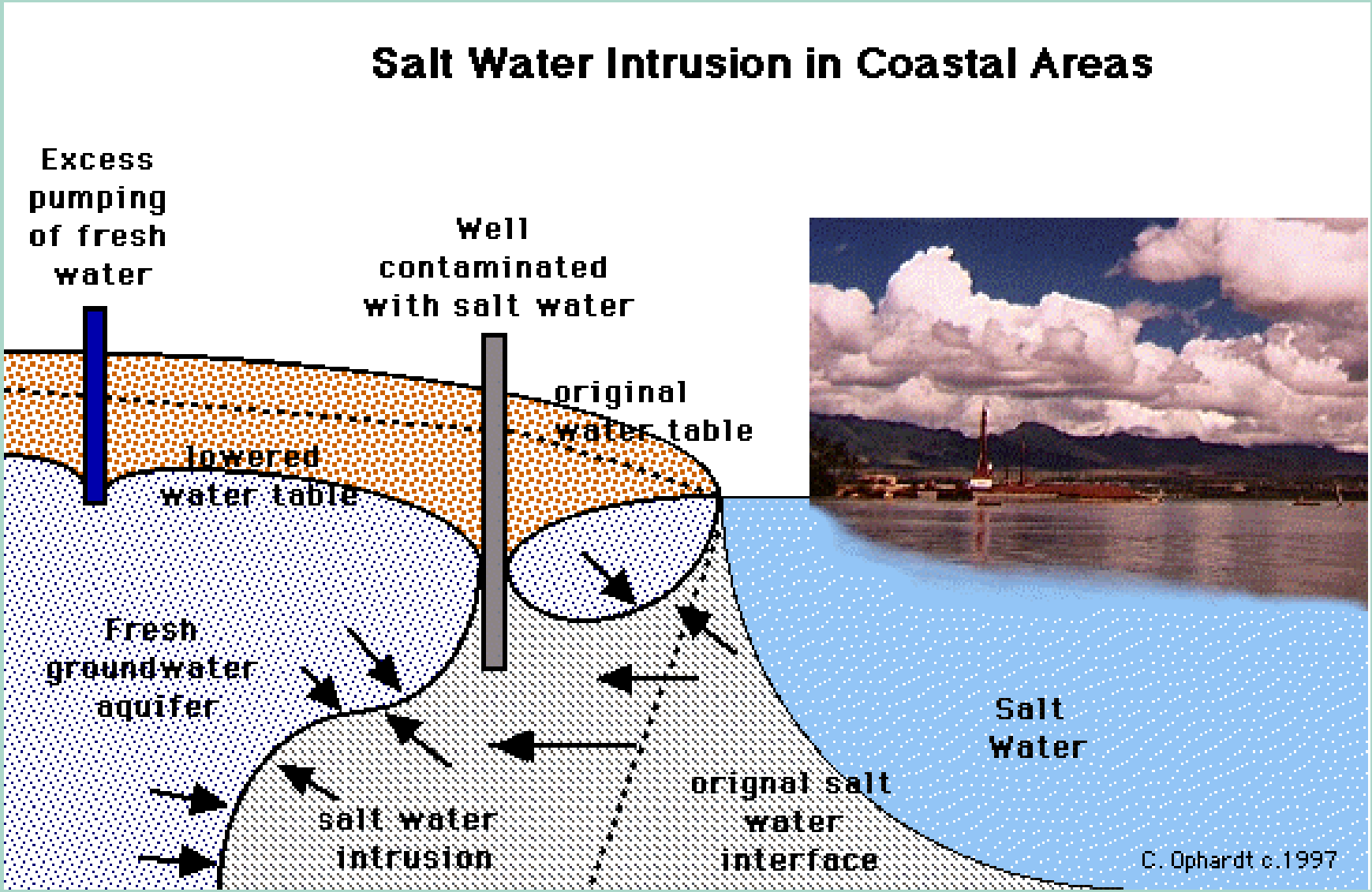


Source: SWFWMD

Coastal Fresh / Salt Water Interface

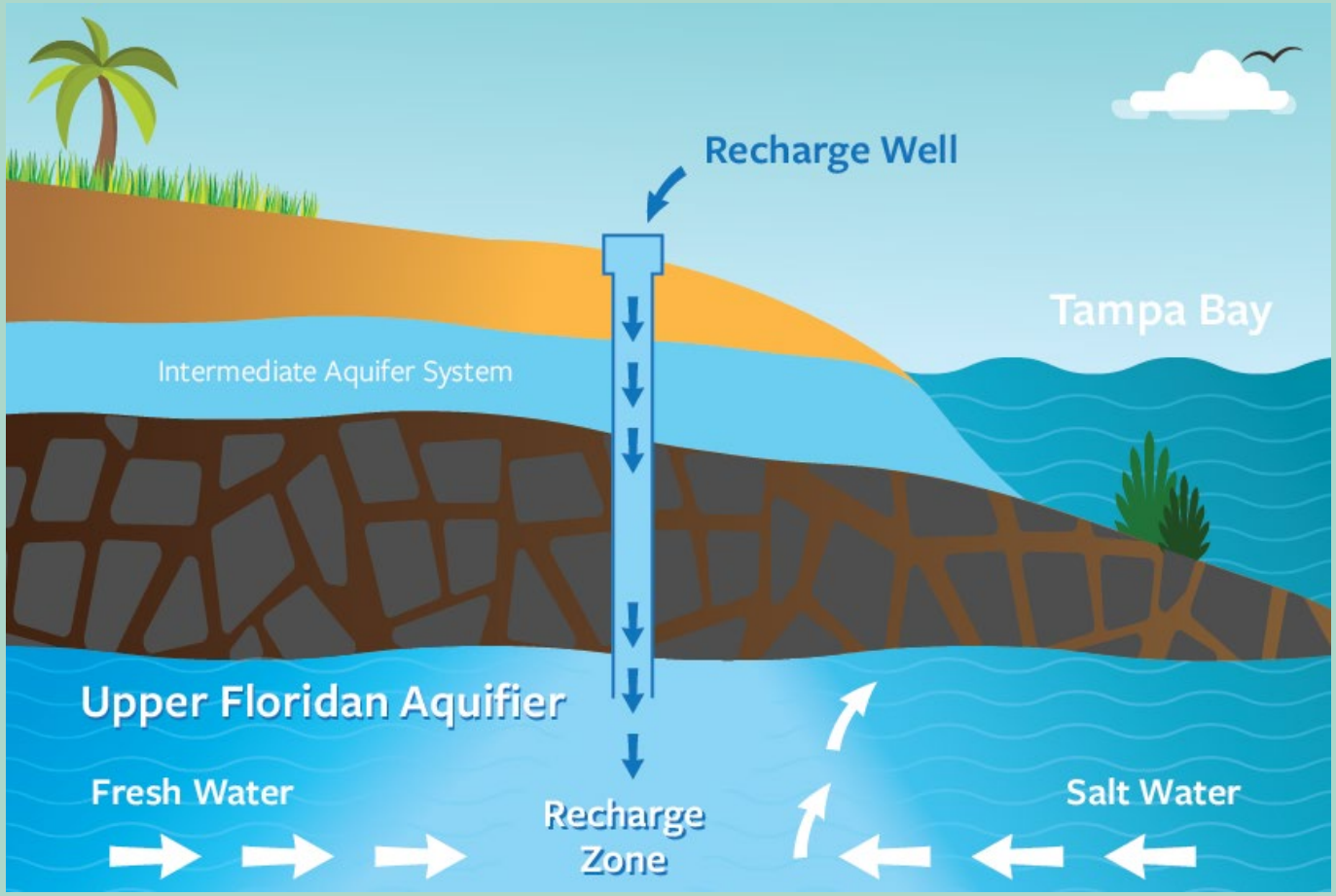


Source: U.S. Geological Survey



Source: elmhurst.edu

Hillsborough County
General Groundwater Setting



Source: Hillsboroughcounty.org

Water Levels in the SWUCA

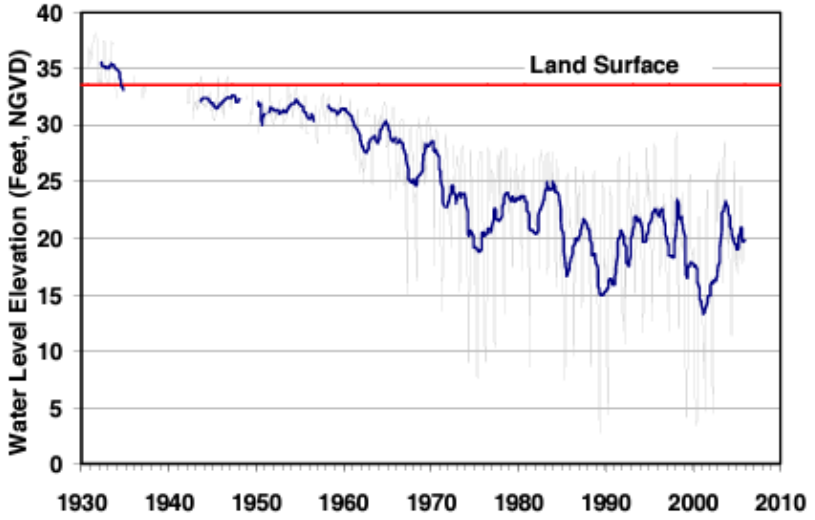


Figure 2-6. Monthly and 12-month moving average water levels in the Upper Floridan aquifer water levels in the Sarasota 9 Deep well located east of the city of Sarasota.

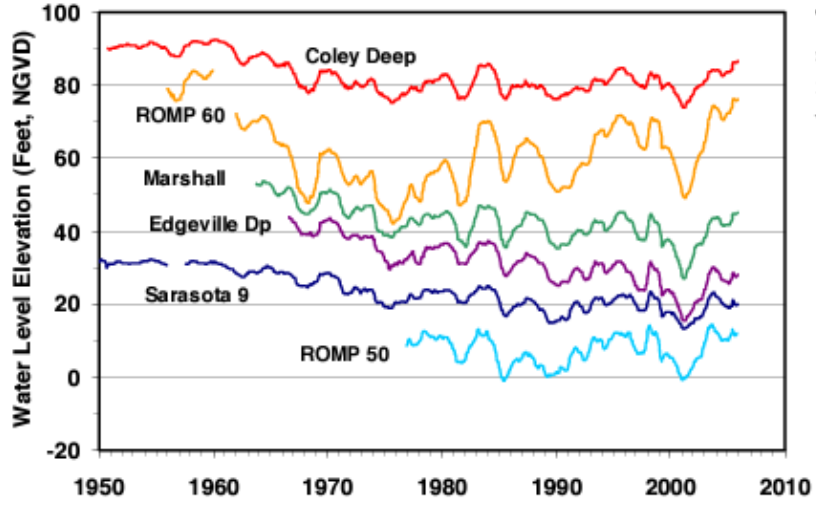
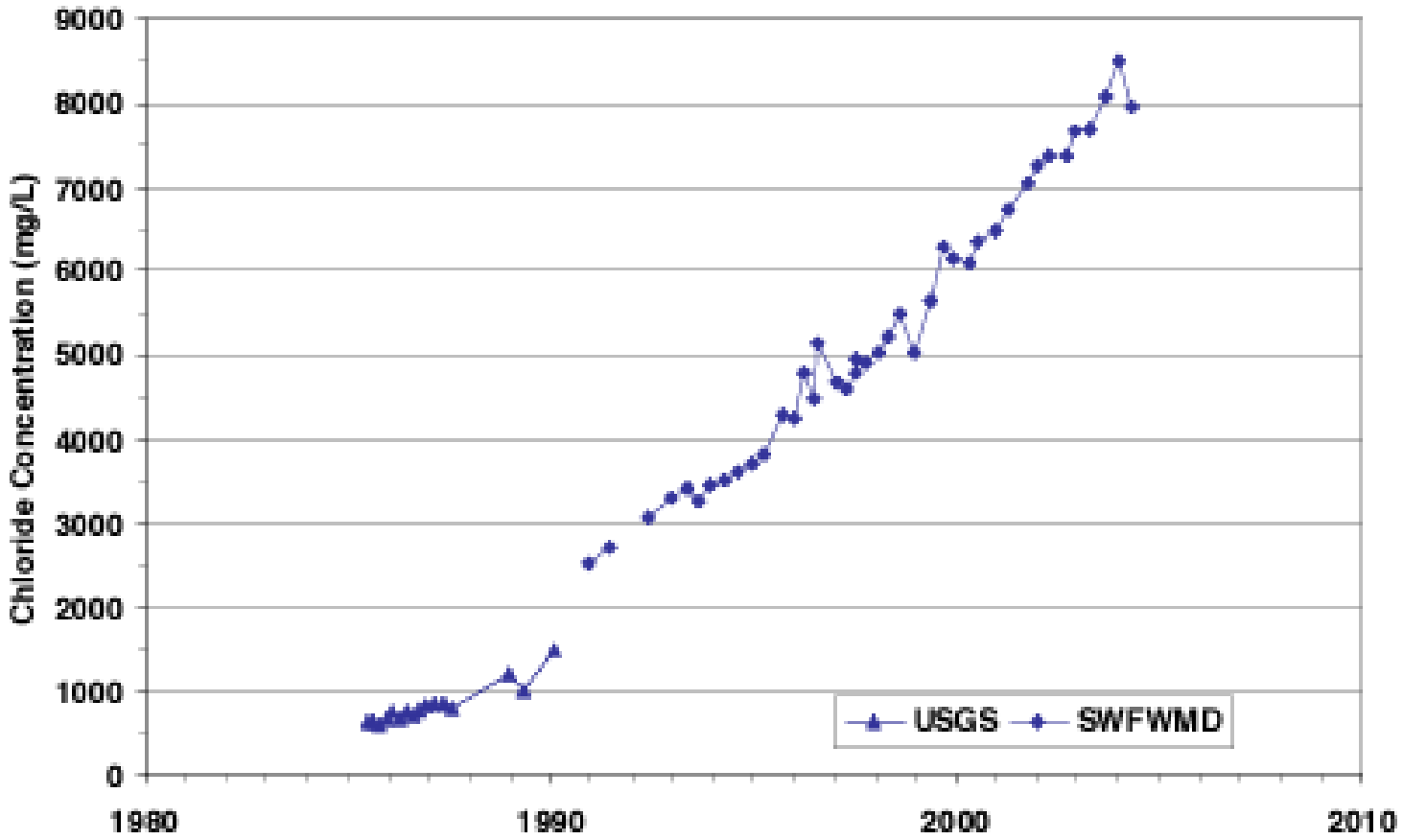


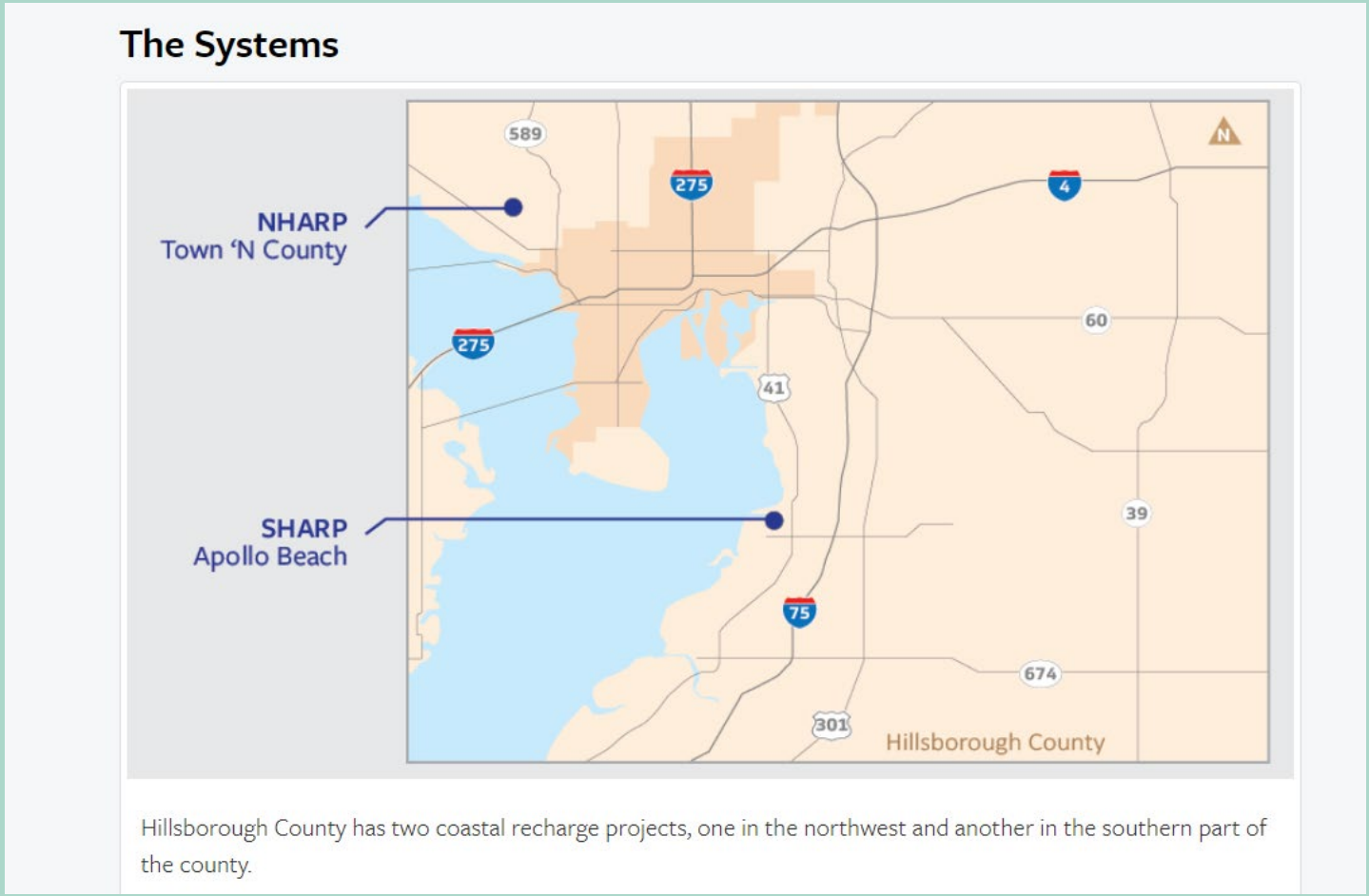
Figure 2-7. Twelve-month moving average water levels from long-term monitor wells in the SWUCA.

Chloride Concentration in Affected Monitor Well Floridan Aquifer, SWUCA



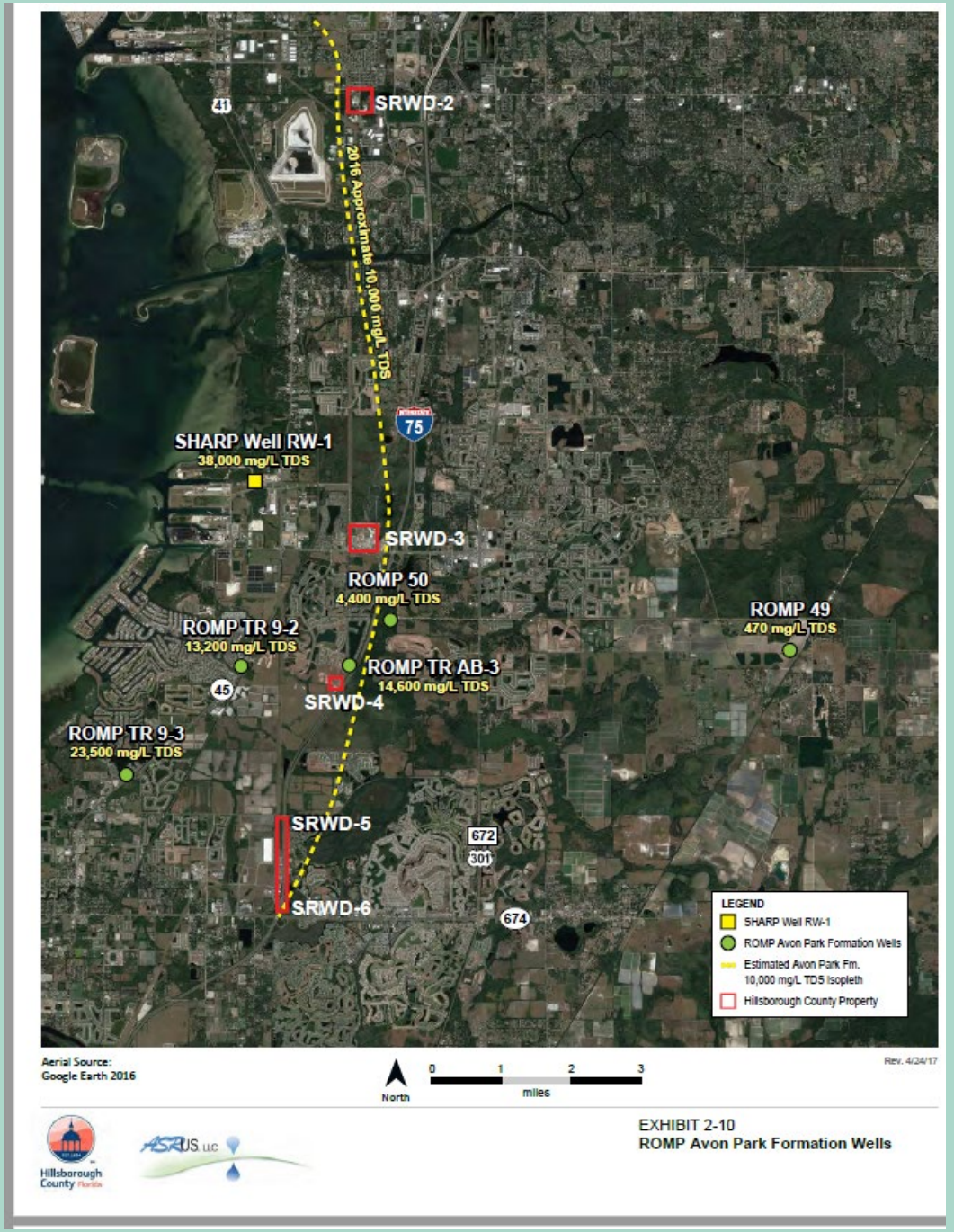
Chloride concentration versus time in the ROMP TR 9-3 observation well, which monitors water quality changes in the highly productive Avon Park Formation of the Floridan aquifer system (well location shown in Figure 9).

Locations of Hillsborough County Recharge Projects



Source: Hillsborough County, Highlighted CIP Projects, Aquifer Recharge Projects

SHARP Recharge Well Locations

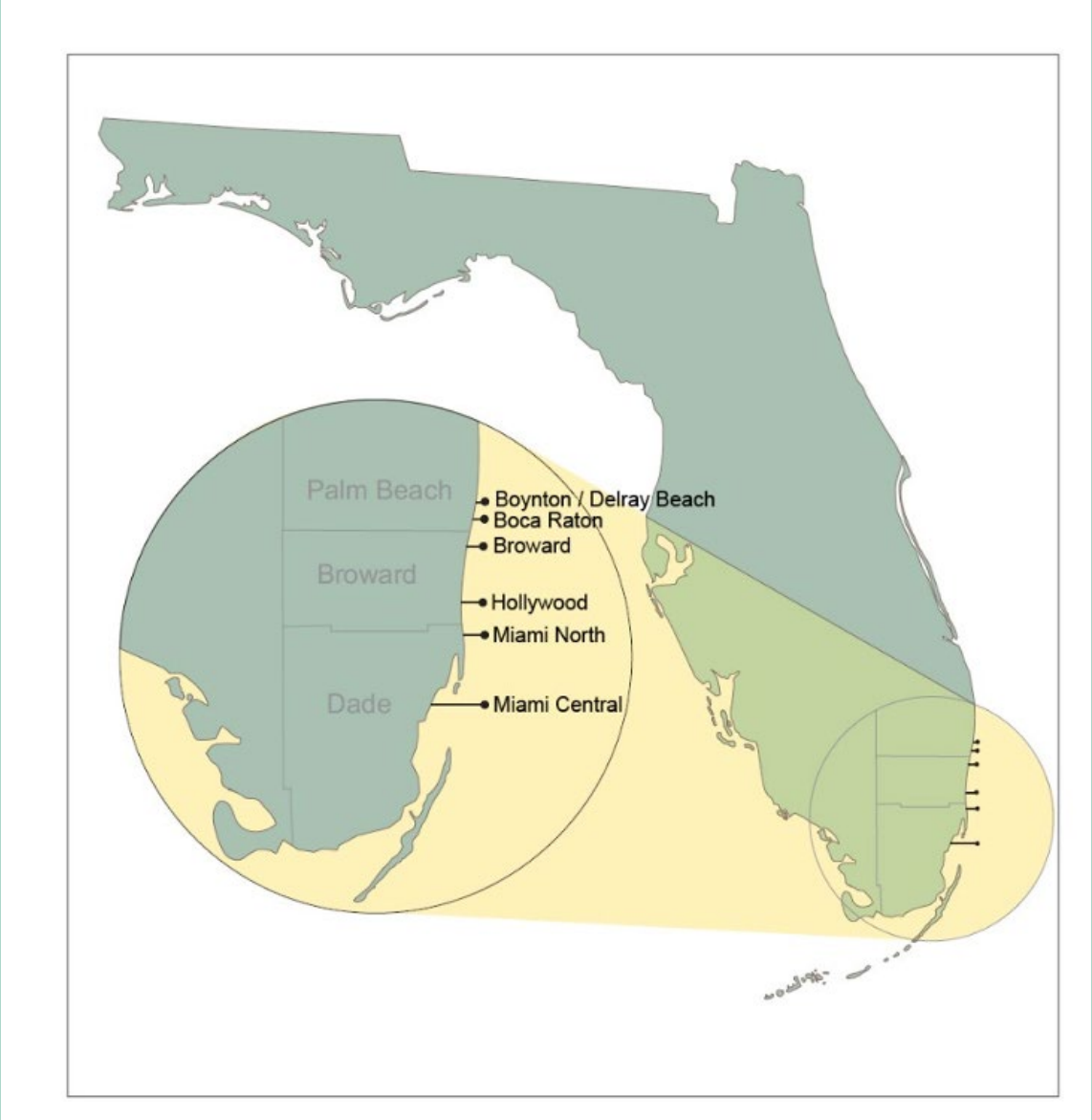


Source: Hillsborough County Recharge Well Application 2017

The Florida Ocean Outfall Statute

- Adopted in 2008
- Eliminates most domestic wastewater discharge to marine waters in SE Florida
- Requires 60% of the annual average discharges to be reused (irrigation, aquifer recharge, etc.)
- The remainder must be disposed of; **deep injection wells**

Remaining Ocean Outfall Locations



Number of Class I Injection Wells
Source: USEPA 2021 State Inventory

- Total Florida Class I wells – 294 (all non-hazardous)
- Other States – TX 163, WY 93, KS 63, CA 54, MI 43, LA 34
- Total Nationally – 743 Non-hazardous, 136 hazardous
- Florida has 40% of non-hazardous wells, 33% of all wells
- Florida's % of all Class I wells expected to increase

Injection Well Drilling Costs

- Variables
  - Drilling Contractor – difficulty getting
  - Well Location
  - Site Conditions
  - Material Costs (may change quickly)
  - Number of Qualified Contractors
  - Well Depth, Number and Depths of Casings
  - Well Testing
  - Regulations (State, Local)

Class I Injection Well, Manatee County

Contact

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