

# Cypress Lake Alternative Water Supply Project

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# Cypress Lake AWS Project

- In 2006, the Central Florida Coordination Area (CFCA) was established by the WMDs (SFWMD, SWFWMD & SJRWMD) to facilitate coordination of water supply planning and resource regulation
  - Included in CFCA: Osceola County (Toho, City of St. Cloud, RCID), Polk County, Orange County, Seminole County, southern Lake County
- WMDs concluded that growth in public water supply over the next 20 years from traditional sources (UFA) was not sustainable and would result in environmental harm
- Interim Rules were created until a long term regulatory framework could be established
- Key Rule Provisions under CFCA:
  - New Sustainable Supplemental Water Sources (SWS) would be required to meet demands beyond projected 2013 demands
  - Permit durations would be limited to year 2013 unless a commitment was made to use SWS to meet additional demands

# Cypress Lake AWS Project

- Concurrently, Toho Water Authority recognized the need to find and secure a long term sustainable alternative water supply
  - Lower Floridan Aquifer
  - Physical search to identified a suitable location for a LFA wellfield
  - Cypress Lake area in Central Osceola County identified – undeveloped agricultural land
  - Toho's Consultant performed GW modeling utilizing the ECF (SJRWMD)
  - Preliminary assessment identified a potential 15 MGD of GW from the LFA

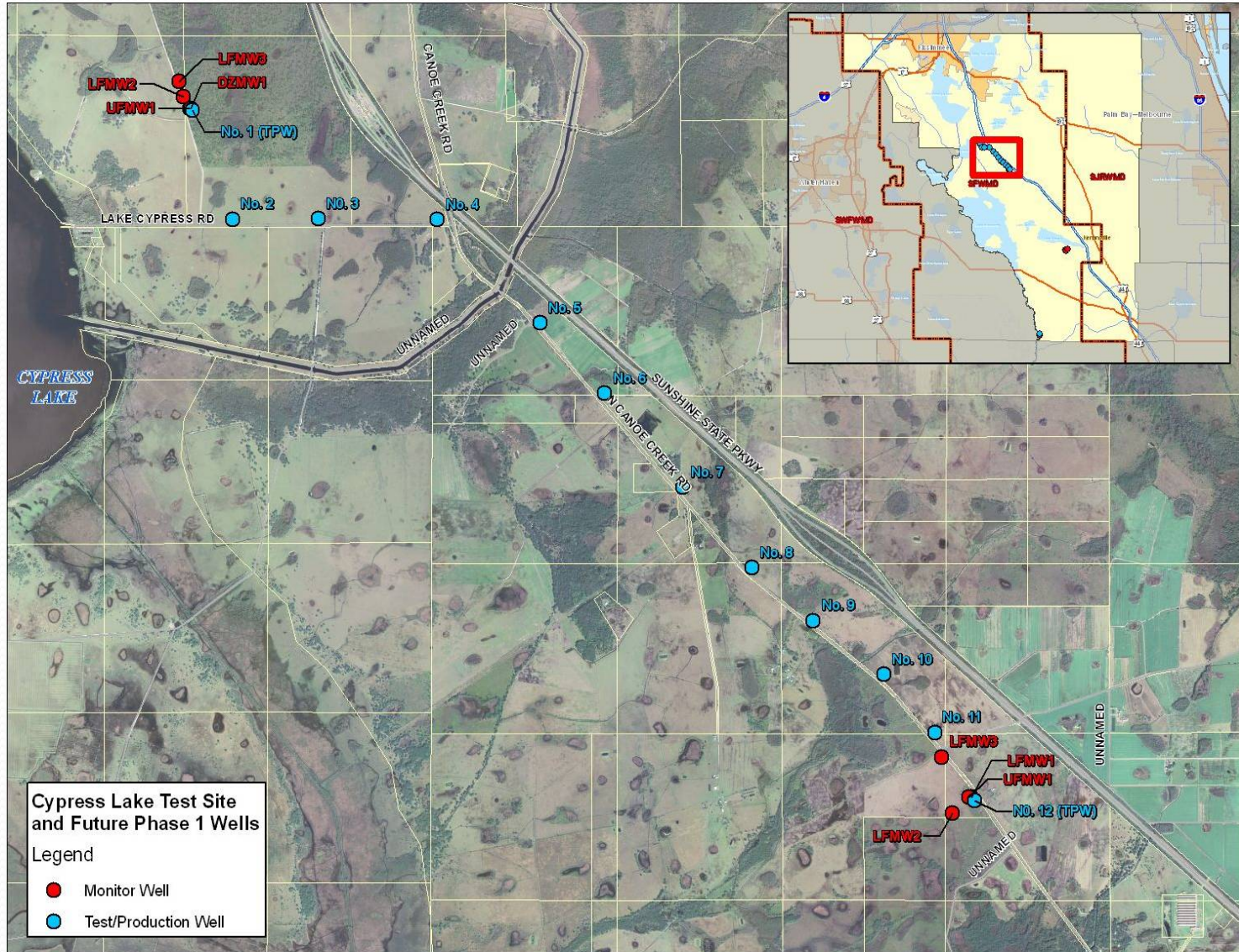
# Cypress Lake AWS Project

- In June 2007, SFWMD issued 20-year WUPs to Toho and other Central Florida water providers (STOPR Group)
  - Allocations were based on 2013 population projections
  - Special conditions included:
    - Development of Alternative Water Supplies to meet demands beyond the 2013 demand projections to ensure supply sustainability
    - Cypress Lake Brackish Groundwater Wellfield was identified in the Toho and St. Cloud WUPs as a potential 15 MGD AWS project

# Cypress Lake AWS Project

- Based on the earlier research conducted by Toho, and the WUP special conditions, Toho initiated a Lower Floridan Aquifer Exploratory Drilling Program in the Cypress Lake area in July 2007
  - Limited information was available with respect to water quality and quantity
  - Detailed LF aquifer testing was needed to support project feasibility and to provide sufficient data for modeling, water use permitting, and future design
  - Toho initiated the construction of 2 test production wells and associated monitoring wells
  - The 2 test production wells were constructed approximately 7 miles apart to bracket the proposed wellfield to account for variations in water quality and yield
  - The wells were completed in Oct 2008 and Nov 2010
  - The testing program provided assurance of sufficient yield and water quality (brackish source)
  - Detailed data from the drilling projects was utilized to build a GW model in support of a WUP application and confirm impacts from withdrawals would be minimal

# Cypress Lake AWS Project



# Cypress Lake AWS Project

- Based on Exploratory Drilling Program Data and Modeling effort, long term resource sustainability appeared to be achievable:
  - Found a pumpage rate that resulted in minimal to no impact to UFA and SA
  - The sustainable pumpage rate was identified as 37.5 MGD – 2.5 times initial assessment
- A WUP application was submitted to the SFWMD by Toho Water Authority.

# Cypress Lake AWS Project

- In 2011 the Water Cooperative of Central Florida was created
  - Multi-jurisdictional entity dedicated to cooperatively and cost effectively developing regional sustainable water supply projects
  - Toho, City of St. Cloud, Orange County & Polk County
- With 37.5 MGD of brackish water identified, Cypress Lake became a Water Cooperative project
  - RCID, located in Osceola & Orange Co., would participate
- WUP application amended to include the Cooperative and RCID
- A 30-year 37.5 MGD WUP was issued to the Water Cooperative and RCID on Oct. 3, 2011



# Cypress Lake AWS Project

- The 37.5 MGD of brackish water will provide approximately 30+ MGD of potable water for distribution to the Water Cooperative members and the Reedy Creek Improvement District. Allocations were memorialized in an Interlocal Agreement
  - Toho Water Authority 12 MGD
  - Orange County 9 MGD
  - Polk County 3 MGD
  - City of St. Cloud 5 MGD
  - Reedy Creek Improvement District 1 MGD
- PROVIDING A REGIONAL BENEFIT!

# Cypress Lake AWS Project

- The Interlocal Agreement also included a summary scope of work budget for the Preliminary Design of the Cypress Lake project
- Two Preliminary Design Projects initiated:
  - Transmission/Water Wheeling Study
  - Cypress Lake WTP, Wellfield, & Raw Water Mains

# Cypress Lake AWS Project

- Potable Water Transmission Optimization & Water Wheeling Study
  - Goal: optimize existing interconnections and propose improvements to efficiently and cost-effectively transfer and transmit potable water among the participating entities via a “water wheeling” concept.
  - Consultants: Reiss Engineering, Liquid Solutions Group
  - Regional model created by Reiss facilitates a hydraulic analysis both with and without Cypress Lake water supply
  - Study will be complete by late summer 2014
- The Cypress Lake Transmission Project won Central Florida Engineers Week 2014 ***Outstanding Engineering Project of the Year!***

# Cypress Lake AWS Project

- Cypress Lake Water Treatment Plant, Wellfield and Raw Water Mains
  - Consultants: TetraTech, Liquid Solutions Group, MWH
    - Treatment Process Evaluation
    - By-product Management Evaluation
    - WTP & Well siting, and RWM routing
    - Energy Conservation & Generation/Recovery study, etc.
  - Preliminary Design complete end of 2014

# Cypress Lake AWS Project

- When will final design and construction be initiated?
  - Recommended System Improvements to facilitate water wheeling to be included in CIPs
  - Water Providers closely monitoring increases in demands to ensure project moves forward appropriately
  - Cooperative nature of project will allow the Cypress Lake WTP design and construction to be initiated based on a regional need for capacity rather than individual needs
  - Results of CFWI GW availability study will also be considered in project timing



# Cypress Lake AWS Project

## Questions?