

2017 Lower West Coast Water Supply Plan Update

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Water Supply Bureau

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Today's Agenda

- > Progress Since the June 2016 Stakeholder Meeting
- > LWC Agricultural Industry Overview
- > Agricultural Demand Estimates and Projections
- > LWC Water Resource Protection Measures
- > Everglades Restoration Projects Update
- > 2017 LWC Water Supply Plan Update Issues Discussion
- > Next Steps







Progress Since the June 2016 Stakeholder Meeting

Bob Verrastro, P.G.

Plan Manager



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

2017 LWC Water Supply Plan Update Schedule



Major Ongoing Efforts

- > Finalize agricultural demand estimates
- > Groundwater modeling (FAS and SAS/IAS)
- > Annual utility water supply reporting
- >LWC water resource protection measures
- > Everglades restoration projects
- > Draft 2017 LWC Water Supply Plan Update report preparation



Floridan Aquifer Model

> Preliminary calibration complete

- Better performance than the previous model
- Met with utilities to discuss water quality trends at some of the larger wellfields
- > Model simulations by June 2017
 - Baseline and 2040 scenarios
 - Will meet with PWS utilities to share results
 - Modeling workshop by late summer
- Model results will be incorporated into the Plan Update



Surficial/Intermediate Aquifer Model

- Will not be incorporated into this Plan Update
- Conceptual and steady-state models complete
- Report is undergoing peer review
- > Transient data sets that are completed:
 - Recharge
 - Evapotranspiration
 - Pumping wells
 - General head boundary
 - Rivers
 - Wetlands

> Transient model runs are underway

Peer review panel will comment on the results



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2016 Utility Annual Reports

Florida Statutes require public water supply utilities to provide an annual report by November 15 on the status of current and proposed water supply projects

Current status reports submitted November 2016

> Data are used to:

- Fulfill requests from FDEP and Legislature regarding water supply development projects planned by utilities
- Track proposed water treatment capacity expansions
- List and describe projects in the Plan Update





Overview of the Agricultural Industry in the Lower West Coast

Jamie Williams Director of Florida Farms, Lipman Produce

Bob Newsome

Agribusiness Manager, Barron Collier





Agricultural Water Demand Estimates and Projections

Nathan Kennedy, Ph.D. Lead Economist



Water Demand Categories

- > Public Water Supply
- > Domestic Self-Supply
- > Industrial/Commercial/Institutional Self-Supply
- > Recreational/Landscape Self-Supply
- > Power Generation Self-Supply
- > Agricultural Self-Supply



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Agricultural Self-Supply Crop Categories





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Complexities in Projecting Agricultural Demands

- > Highest population growth rates in the U.S.
- > Robust economic growth
- > New development patterns
- > Citrus industry in flux







Florida Citrus Acreage 1970-2015



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Glades and Hendry Counties Sugarcane Acreage 1975-2014



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Complexities in Projecting Agricultural Demands

- > Highest population growth rates in the U.S.
- > Robust economic growth
- New development patterns
- > Citrus industry in flux
- > National and global market dynamics
- > Grower strategies and plans are proprietary



Sources of Agricultural Acreage Data









ERS....













Statutory Basis for Projections

- Section 570.93, F.S., approved in 2013
- Requires FDACS to develop statewide agricultural demand projections
 - Acreages past, current, and 20-year projection by crop
 - Demands for average and 1-in-10 year drought by crop
 - Metered data factored into estimates of past and current demands
 - Consult with stakeholders

> FDACS publishes the annual FSAID report

- First FSAID report in 2014
- 2016 FSAID report contains data from 2015-2040





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Statutory Basis for Projections

- > Section 373.709, F.S., approved in 2013
- > Agricultural demand projections in regional water supply plans must be based on best available data
 - Must consider data of future demands provided by FDACS
 - Any deviation from FDACS data must be described
 - FDACS data are presented with adjusted data



Key Components for Demand Projections

Irrigated Acreages

- FSAID irrigated lands geodatabase
- SFWMD land use map and acreage projections

Water Demand Models

- FSAID water use model
- Agricultural Field Scale Irrigation Requirements Simulation (AFSIRS) model

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2015 LWC Irrigated Areas



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FSAID Irrigated Acreage in the LWC



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Water Demand Model Comparison

AFSIRS	FSAID
Built with data from UF field experiments	Built with available reported water used from all water management districts
Uses a wide range of location-specific environmental variables	A limited set of environmental variables are used directly in the model
Does not consider changing irrigation intensities in response to crop profitability	Irrigation intensities vary in response to crop profitability



FSAID and **AFSIRS** Water Demands in LWC



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FSAID and AFSIRS Additional Projected Demands



Use of AFSIRS in 2017 LWC Plan Update

- > AFSIRS irrigation rates are closer to those used with water use permits in the region
- > AFSIRS estimates are consistent with previous planning efforts in the LWC
- > Unique aspects of agricultural production in the LWC likely are under-represented with the FSAID model
- > AFSIRS is used to calculate recreational and landscape irrigation demands



LWC Agricultural Water Demands

AFSIRS gross water demands (mgd) estimated using FSAID acreages

Сгор Туре	2015	2040
Citrus	195.91	195.06
Sugarcane	209.13	213.20
Fresh Market Vegetables	126.35	170.77
Pasture/Hay	45.93	55.68
Sod	15.47	15.80
Fruits (Non-Citrus)	0.52	0.62
Greenhouse/Nursery	9.58	10.39
Other Crops	3.55	3.55
Field Crops	3.92	8.84
Potatoes	2.56	1.97
Total	612.92	675.88

LWC Livestock Water Demands

>FSAID Estimates (2015)

- 107,000 head of cattle
- 10% of state herd population
- Water demands estimated at 1.21 mgd
- No change projected in livestock population or water demands



Summary of LWC Water Demands



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Projection Comparisons: 2012 Plan to 2017 Plan Average Demands (mgd)

Water Use Category	2012 LWC Plan 2030 Projection	2017 LWC Plan 2040 Projection
Public Water Supply	232.1	199.7
Domestic Self-Supply	24.0	33.2
Agricultural Self-Supply*	695.9 - 740.9	675.8
Industrial/Commercial/Institutional Self-Supply	35.3	29.1
Recreational/Landscape Self-Supply	188.5	254.3
Power Generation Self-Supply	42.1	15.4
Total for LWC Planning Area	1,217.9 – 1,262.9	1,207.5

* Range in water demand projection is due to 29,000 acres of transitional land.



Questions?





2017 Lower West Coast Plan Update Issues



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2017 LWC Plan Update Potential Water Supply Issues

- Limited opportunity to increase surficial and intermediate aquifer use
- Surface water availability (storage) is limited
 - Lake Okeechobee Regulation Schedule (LORS 2008)
 - LOSA Restricted Allocation Rule
- Fresh water discharges are affecting the health of coastal resources
- Fresh water sources alone are not adequate to meet water needs







Next Steps

Bob Verrastro, P.G. Plan Manager



Next Steps

Meetings with stakeholders

WRAC & GB Presentation

Stakeholder Meeting #2

LWC Plan Update Kick-off Public Meeting

West Coast Floridan Modeling Workshop

- Ongoing
- ➢ June 2016
- > June 2016
- > March 2017
- > June/July
- August Post Draft Plan Documents
- Aug/Sept Stakeholder Meeting #3
- September Draft Plan to Governing Board & WRAC
- October Optional Stakeholder Meeting #4
- Nov 2017 Final Plan to Governing Board for approval

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2017 Draft LWC Water Supply Plan Update Documents

Planning





Appendices

Support



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Draft Planning Document Outline

Executive Summary

Chapter 1: Introduction

 Plan goal and objectives, overview of planning area and update process and water supply planning through 2040

Chapter 2: Demand Estimates and Projections

Population and demands by water use category

Chapter 3: Conservation

Demand management and estimated savings

Chapter 4: Water Resource Protections

 Minimum flows and minimum water levels, water reservations, permitting, and water shortage rules



Draft Planning Document Outline (cont.)

- Chapter 5: Evaluation of Water Source Options
 - Surface water, groundwater, reclaimed water, storage, conservation, and seawater
- Chapter 6: Water Resource Analyses Current and Future Conditions
 - Water resources, water supply issues, evaluation and analysis, and FAS modeling
- Chapter 7: Water Resource Development Projects
 - Projects such as CERP, monitoring, dispersed water management, and modeling
- Chapter 8: Water Supply Development Projects
 - PWS projects to meet demands through 2040
 - Utility summaries
- Chapter 9: Future Direction
 - Water sources, coordination, and climate change

Need Water Supply Plan Information?



Plan information can be found at <u>www.sfwmd.gov</u>

 Our Work → Water Supply Planning → Lower West Coast Plan

> Workshop announcements sent by email



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Questions?

