

**SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD)
STAKEHOLDER MEETING #2
2017 LOWER WEST COAST WATER SUPPLY PLAN UPDATE**

March 23, 2017 9:30 a.m.
Bonita Springs Government Center
9101 Bonita Beach Road
Bonita Springs, FL

MEETING SUMMARY

Item 1. Introduction/Opening Remarks – Mark Elsner, Chief, Water Supply Bureau, SFWMD

Mr. Elsner opened the workshop and welcomed participants, then walked through the meeting's agenda. He explained that this meeting was meant to be sooner, but the Lower West Coast (LWC) Floridan aquifer system (FAS) model has been delayed due to the redirection of modeling staff. However, FAS modeling is expected to be complete in time for use in the 2017 LWC Water Supply Plan Update.

Item 2. Progress Since the June Stakeholder Meeting – Bob Verrastro, Lead Hydrogeologist, Water Supply Planning Section, SFWMD

Mr. Verrastro gave an overview of the first Lower West Coast (LWC) Water Supply Plan Update stakeholder meeting, which was held in June 2016. He announced that there will be another stakeholder meeting later this summer and that the plan is scheduled to be approved by the SFWMD Governing Board by the end of this year. He gave an update on the FAS model, remarking that the model has been calibrated and baseline simulations should be complete by June 2017. Mr. Verrastro plans to meet with public water supply (PWS) utilities that withdraw from the FAS first to review the groundwater model results, and then there will be a public workshop for all stakeholders to review the FAS model results. The surficial aquifer system/intermediate aquifer system (SAS/IAS) model will not be included in the 2017 LWC Plan Update; however, the SAS/IAS model should be done by early 2018. Mr. Verrastro stated that the data submitted by utilities in November 2016 as part their annual report on the status of current and proposed water supply projects, and entered in the SFWMD's Water Supply Utility Project (WaSUP) database, will be used to draft the water supply projects for the plan.

Questions/comments included:

- ***What is included in the surficial model?*** It will include integrated Modflow and a wetland package.
- ***Cape Coral geology is complex and the utility company will be creating a model to illustrate its complexity, is the SFWMD interested in receiving information from this model and incorporating into your SAS/IAS model?*** Yes, we would like to see the results and possibly incorporate the data into our model.
- ***Is the FAS model transient?*** Yes.

Item 3. Overview of the Agricultural Industry in the LWC – Jamie Williams, Director of Florida Farms, Lipman Produce; and Bob Newsome, Agribusiness Manager, Barron Collier, and President of Gulf Citrus Growers Association

Mr. Williams and Mr. Newsome gave an overview of the agriculture business in the LWC planning area. There are more than 71,000 acres of fresh produce grown in the LWC planning area, and the annual economic revenue is around a billion dollars. Since the North American Free Trade Agreement

(NAFTA) was passed, there seems to be more risk in the agriculture business, leading to more greenhouse growing (protective agriculture) and large-scale agriculture. Organic farming is on the rise, however, it is extremely expensive to grow and production is low. Organic farming works best in arid climates, so it is not the best option for Florida. To be a successful farmer today, you need to be efficient with water consumption. Citrus has declined from 300 million to 68 million boxes per year due to greening and other issues. The cost to grow citrus has doubled as well. Citrus is coming back, through the use of new planting material and grafting healthy trees, even though the Asian citrus psyllid (the pest responsible for citrus greening in Florida) is still present. Some citrus growers are increasing the density of new plantings, and are only planning for a 15-year life expectancy of the trees. Farming is trending towards more organic growing techniques (e.g., less sulfates, softer fertilizers), though not fully organic farming. Drip irrigation has helped conserve water and is more economical. Over-irrigation also ruins crops, so water conservation is essential to crop health. Costs associated with crop production (including water production and use) are kept as low as possible due to competition. Improved irrigation nozzles have resulted in no additional water demands despite increased densities in new plantings.

Questions/comments included:

- ***Has the concept of agricultural conservation lands been discussed in this region?*** Land ownership and other issues complicate this issue. In some areas, leasing arrangements have been used.
- ***The Rural Protection Act has got some funding and the Farm Bill had some conservation project funding. Lipman uses 90 percent drip irrigation; what is the primary irrigation type used in the LWC?*** Around 75 percent of irrigation in the LWC planning area is via drip irrigation. According to an audience member, it could be near 80 to 85 percent. Drip irrigation is the primary method of irrigation used in the LWC planning area.
- ***Is tail water containment water used for agriculture in this area?*** Retention systems are used for irrigation in some areas of the LWC planning area. Retention has its own set of challenges besides nutrients such as fungi and bacteria, which can lead to food safety issues.
- ***Massive population growth and water competition are happening around the U.S. (e.g., California). It has led to some places importing water, I hope we do not get into these issues.*** No response to comment.

Item 4. Agricultural Demand Estimates and Projections – Nathan Kennedy, Lead Economist, Water Supply Planning Section, SFWMD

Dr. Kennedy discussed the challenges of determining agricultural demand estimates due to the many factors involved. The SFWMD historically has used a variety of sources to develop agricultural acreage estimates and projections. In 2013, legislation [Section 570.93, F.S.] was passed requiring the Florida Department of Agriculture and Consumer Services (FDACS) to develop statewide agricultural projections by crop for an average year and 1-in-10 drought year. FDACS presents the projections in the Florida Statewide Agricultural Irrigation Demand (FSAID) report, which was first published in 2014. Section 373.709, F.S., (passed in 2013) states agricultural demand projections in regional water supply plans must be based on best available data, and must consider the data of future demands provided by FDACS. If data other than FDACS' projections are used, both sets of data must be presented.

Dr. Kennedy explained there are two key components for determining demand projections, irrigated acres, and water demand models. The SFWMD found that the irrigated acres and projections from the FSAID report were reasonable and the best available data for the LWC Plan Update. The FSAID report indicates little change in citrus and sugarcane acreages through 2040; however, vegetable acres are projected to increase substantially.

In previous plans and updates, the SFWMD used the Agricultural Field Scale Irrigation Requirements Simulation (AFSIRS) model to predict irrigation demands. Dr. Kennedy provided some general comparisons between the AFSIRS and FSAID models. AFSIRS is built on field experimental data, while the FSAID model is based on reported water use data. AFSIRS uses a wide range of location-specific environmental data, while FSAID considers some but not all of the environmental variables (e.g., soil). Farmer behavior is captured to some degree in FSAID, where it is not in AFSIRS. The SFWMD decided to use AFSIRS for this plan update for several reasons. First, the irrigation rates produced by AFSIRS are similar to permitted rates. Second, AFSIRS estimates are similar to those used in previous plans. There are unique aspects to agricultural production in the LWC planning area that may not be sufficiently captured by FSAID, which is a statewide model. Using FSAID acreages with the AFSIRS model, agricultural water demands are projected to increase approximately 53 million gallons per day (mgd) between 2015 (613 mgd) and 2040 (676 mgd). Agriculture is the largest water use category in the LWC region from 2015 through 2040. Over the 20-year horizon, the other water use categories grow at a higher rate.

Questions/comments included:

- ***Field crops versus other crops, what are they?*** Field crops primarily include corn and corn silage.
- ***Citrus acreage projection currently is about 200,000-220,000 acres. There are a lot of acres to be replanted; if you are leaving projections constant, you may want to consider more water demand if the trees get replanted.*** Given the uncertainties in the citrus industry, it is a real challenge to produce demand projections. To address the uncertainty in the future of citrus, the 2012 LWC Plan Update used a range for citrus acreage. The SFWMD encourages stakeholder input.
- ***Are you comfortable with the two methods that were used for projecting demands?*** The SFWMD has completed a thorough review of the analyses included in both methods. One of the challenges we face is the nature of the reported water use data available. We will have the opportunity to re-evaluate our projections when the next plan update is developed.
- ***As citrus is planted even at a denser rate, is the demand properly evaluated?*** The SFWMD projects that the most efficient irrigation method will be used in new/replanted citrus groves. New planting densities are not expected to result in higher application rates.
- ***How are you accounting for less predictable rainfall rates?*** The SFWMD considers climatic variability by using a 1-in-10 drought year scenario in all water supply plan updates. The SFWMD also uses updated meteorological data in surface and groundwater models, and updated data will be considered in future models.

Item 5. LWC Minimum Flows and Minimum Water Levels and Water Reservations Update – Toni Edwards, Senior Scientist, Coastal Ecosystems Section, SFWMD

Ms. Edwards gave an overview of three tools the SFWMD uses to protect water resources throughout the District, in addition to consumptive use criteria: Minimum Flows and Minimum Water Levels (MFLs), Water Reservations, and Restricted Allocated Areas (RAAs). All three have been adopted by rule in the Florida Administrative Code. Two MFLs have been adopted (in 2001) in the LWC planning area: the MFL for the LWC aquifers (Lower Tamiami, Sandstone, and Mid-Hawthorn), which has a prevention strategy; and the MFL for the Caloosahatchee River, which has a recovery strategy.

Ms. Edwards then discussed the three water reservations in the LWC planning area: Picayune Strand, Fakahatchee Estuary, and C-43 West Basin Storage Reservoir. The Picayune Strand and Fakahatchee Estuary reservations were adopted simultaneously in 2009 for the protection of fish and wildlife, and in support of the Comprehensive Everglades Restoration Plan (CERP) Picayune Strand Restoration

Project. The C-43 West Basin Storage Reservoir water reservation was adopted in 2014 for the protection of fish and wildlife, and it serves as the recovery strategy for the Caloosahatchee River.

RAAs then were summarized. There are portions of two RAAs in the LWC planning area: the Lake Okeechobee Service Area (LOSA) portion of the Lake Okeechobee RAA, which limits water allocations to base condition water uses that occurred from April 1, 2001 to January 1, 2008; and a portion of the Lower East Coast Everglades Waterbodies RAA, which limits water allocations to base condition water uses permitted as of April 1, 2006.

Item 6. Comprehensive Everglades Restoration Projects Update – Megan Jacoby, Principal Federal Policy Analyst, Office of Federal Policy & Coordination, SFWMD

Ms. Jacoby presented an overview and update of the Restoration Strategies Program and Comprehensive Everglades Restoration Plan (CERP) projects. Restoration Strategies Program projects include the C-139 flow equalization basin (FEB), Stormwater Treatment Area (STA) 5/6 Earthwork, A-1 FEB, STA-1W Expansion, and L-8 FEB. The South Florida Ecosystems Restoration Projects within the LWC planning area include the C-43 West Basin Storage Reservoir, Picayune Strand, and Southern Corkscrew Regional Ecosystem Watershed (CREW). The C-43 Reservoir is expected to be completed by 2022. This project will improve water quality and reduce harmful discharges to the Caloosahatchee River. The Picayune Strand project will be completed in 2020. Southern CREW will improve hydrology and ecology without adverse impacts to surrounding areas and will be completed in October 2017. Other projects within the District were then summarized.

Item 7. LWC Water Supply Plan Issues – Mark Elsner, Chief, Water Supply Bureau, SFWMD

Mr. Elsner presented potential water supply issues for the 2017 LWC Plan Update. These are very similar to the water supply issues in the 2012 LWC Plan Update, including limited water supply availability from the SAS, IAS, and surface water as well as freshwater discharges to the Caloosahatchee River. He then asked the audience if they feel there are any other issues that should be included in this plan update.

Questions/comments included:

- **A significant drop in water tables has been noticed since 2000. How can this be mitigated in the SAS? Have you received our (Audubon's) data?** We will look into the data you provided, and if appropriate, we will use it in conjunction with own data for the SAS/IAS model. We may or may not be able to incorporate the results into this plan update.

Item 8. Next Steps – Bob Verrastro, Lead Hydrogeologist, Water Supply Planning Section, SFWMD

Mr. Verrastro briefly outlined the upcoming steps for the 2017 LWC Plan Update. The FAS model results are expected by mid-summer, along with a modeling workshop. The 2017 LWC Plan Update draft will be posted on the SFWMD website by late summer and another stakeholders meeting will be held thereafter. The LWC Plan Update is expected to be approved by the Governing Board by late 2017.

Item 9. Adjourn

The meeting adjourned at 12:30 p.m.