

**SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD)
STAKEHOLDER KICK-OFF MEETING
2017 LOWER WEST COAST WATER SUPPLY PLAN UPDATE**

June 30, 2016 9:30 a.m.
Bonita Springs Government Center

MEETING SUMMARY

Item 1. Introduction/Opening Remarks – Dean Powell, Chief, Water Supply Bureau, SFWMD

Mr. Powell opened the workshop and welcomed participants. He noted that the first Lower West Coast (LWC) Water Supply Plan was completed in 1994 when the LWC was suffering water shortage issues, and remarked on how much the region has improved through the work of utilities, cities, and other stakeholders, including several of the audience members in attendance today.

Item 2. Overview of the Plan Update and a Summary of the 2012 Lower West Coast Water Supply Plan Update – Mark Elsner, Administrator, Water Supply Development Section, SFWMD

Mr. Elsner gave an overview of the water supply planning process and 2012 LWC Water Supply Plan Update. He summarized the estimated and projected demands, issues, and water source options by use type from the 2012 LWC Plan Update. The issues included limited freshwater, surface water, and water storage options. The 2017 LWC Plan Update schedule is to present the final plan to the Governing Board for approval in late 2017. The planning horizon for this LWC Plan Update is 2015-2040.

Item 3. Progress Since the 2012 LWC Plan – Bob Verrastro, Lead Hydrogeologist, Water Supply Planning Section, SFWMD

Mr. Verrastro discussed what the SFWMD, its partners and stakeholders in the region have accomplished since the 2012 LWC Plan Update. Water conservation efforts have continued, the per capita use rate is lower, utilities have continued to diversify supply sources for the Public Water Supply use category, and the area has maintained a substantial use of reclaimed water. Mr. Verrastro provided updates on several watershed initiatives, including the Southern Corkscrew Regional Ecosystem Watershed Restoration, the Charlotte Harbor Flatwoods Initiative, Lehigh Headwaters, the Lake Hicpochee Hydrologic Enhancement, the C-43 Water Quality Treatment & Testing Project, and the Caloosahatchee River MFL Recovery Strategy. The SFWMD updated the region's saltwater interface maps and interpretations of the hydrogeological units in 2015; these will be incorporated into the surficial aquifer system (SAS) and intermediate aquifer system (IAS) numerical model. Mr. Verrastro discussed the results of the Aquifer Storage and Recovery (ASR) Regional Study and use of ASR wells around Lake Okeechobee to store water in the Floridan aquifer system (FAS), noting that less than

half (140) of the original number of wells (333) considered is actually feasible and they will be constructed in multi-well clusters.

Questions/comments included:

- ***Do you have a breakdown of the cost for the AWS projects totaling 10.5 MGD?*** Yes, Stacey Adams at the SFWMD has a list of the projects and what funding we provided as well as others who contributed funding.
- ***If the number of ASR wells decreases from 333 to 140, where will the wells be located?*** Approximately 80 wells will be around Lake Okeechobee, 20 to 30 will be along the Caloosahatchee River, and approximately 20 will be in the Lower East Coast (LEC) region. Please note that the ASR wells around Lake Okeechobee likely will be able to reduce the water level by only 6 inches (assuming they are working at full capacity year-round).
- ***Do you need to use fracking procedures to create and use ASR wells?*** No. The ASR wells will not be as deep or have the same pressure within them as wells drilled for fracking.
- ***What is the time limit to begin constructing the ASR wells?*** The ASR wells likely will not be drilled or operational for at least a decade. The schedule for these would be developed by the CERP staff, likely as part of the CERP Loxahatchee River Restoration, Lake Okeechobee Watershed, and Western Basins projects that are undergoing plan formulation.
- ***How are you going to account for water availability when you begin water storage projects? How much water will be available?*** Each project is looked at individually as the project is approved and moves forward.
- ***Is water in the ASR wells treated? Can the water leak into other aquifers?*** Water entering the ASR wells is filtered and disinfected before being pumped into the FAS. Treatment does not remove nutrients. Water pumped into the FAS cannot move to other aquifers (e.g., the IAS or SAS) because the FAS is a confined aquifer that has several hundred feet of impermeable clay above it, and the well is constructed to prevent water from leaking into the shallower aquifers.
- ***Is the updated MFL recovery strategy being incorporated into this plan?*** MFLs and reservations will be reviewed and revised as necessary as part of this plan update, and are planned to be discussed at the next public workshop.

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

Dr. Kennedy began this section with the background and principles – including Section 373 of Florida Statutes, the use of medium University of Florida Bureau of Economic and Business Research (BEBR) numbers, and best available data – that are used in water demand estimates and projections. He outlined the steps of creating population and demand projections before addressing specific water use categories and their sources of water demand. Cynthia Gefvert discussed agricultural projections, including the annual Florida Department of Agriculture and Consumer Services (FDACS) Florida Statewide Agricultural Irrigation Demand (FSAID), which

will be published in July. The SFWMD will coordinate with FDACS and agriculture stakeholders to review current estimates and future projections of acreage and water demand.

Questions/comments included:

- ***Will the new agriculture demands from FSAID be compared to previous demands using AFSIRS?*** We will be showing the agricultural demand projections from the last plan update as well as the 2016 FSAID projections and the projections that will be included in the 2017 Plan Update.
- ***For Recreation/Landscape, what percent of water will be reuse water?*** In 2015, approximately 39 percent (71 MGD) of the total demand (180 MGD) was met from reuse and 109 MGD from other sources. This is projected to stay more or less constant through 2040.
- ***How do you estimate water use from backyard irrigation wells?*** This is not addressed in the water supply plans, but the private well information will be included in the SAS/IAS groundwater model.
- ***How do you account for natural system (e.g., wetlands) water demand in the six water use categories?*** We manage water for the natural system as a constraint. For example, there are permitting rules that must be followed for a wetland's water level decline. As permit applications are reviewed, protection of the natural system such as wetlands and MFL waterbodies are considered in the process. These constraints are being built into the SAS/IAS model.
- ***Do you have population projections separated out by county?*** Yes. Nathan Kennedy can provide this.
- ***Are the future mining demands based on population?*** The increase in projected water use for mining is based on the percent of population growth.
- ***Natural systems receive water from rainfall; is that being factored in to the projections?*** Rainfall is considered in the water demands and will be included in the SAS/IAS modeling for potential impacts on natural systems.
- ***Where would oil drilling fit into the six water use categories?*** It would be part of the ICI category, but this use is very minor in the area.

Item 5. Floridan Aquifer System Modeling – Pete Kwiatkowski, Administrator, Resource Evaluation Section, SFWMD

Mr. Kwiatkowski gave an overview of the FAS model that is being updated for the LWC region. This transient model originally was developed and peer reviewed in 2008, and it will simulate water quality (total dissolved solids) as well as water levels. Based on the peer-review results of the SFWMD's East Coast Floridan Model, additional changes were made and data were added. The model currently is undergoing an updated calibration. The objectives of the model are to evaluate the Floridan aquifer using the 2014 (existing) demands as well as the projected 2040 water demands. The calibration is estimated to be complete in September, and the 2014

and 2040 runs complete in October, with a workshop to discuss modeling results scheduled for November. The model documentation is expected to be finished in February 2017.

Questions/comments included:

- ***Will the model be available to the public?*** Yes.
- ***What assumptions are you making regarding climate change over the modeling period?*** Because the FAS in the area is brackish, the effects of sea level rise on this resource from a water quality perspective are minimal; treatment already must be conducted using reverse osmosis technology to make it drinkable or usable.
- ***Are you using low rainfall years to estimate worst case scenario effects from water shortage?*** The FAS in the LWC region typically is not stressed during water shortages, so its impacts are minor during these short-term events. With the ≥ 20 -year simulation, we can look at how the FAS responds to extreme events.
- ***Is there any discussion of an inter-District agreement of some kind to protect the FAS recharge source that is north of the SFWMD boundary?*** The Central Florida Water Initiative (CFWI) is an interagency team conducting water supply planning in the region, and resource protection criteria are in place. The same planning staff members involved with CFWI are involved with this LWC Plan Update, which makes it easier to consider uses outside the LWC planning region.
- ***Where did the saltwater in the FAS come from? Is the FAS affected by saltwater intrusion? Why is water quality (chlorides) projected to decrease during the modeling period?*** Saltwater within the FAS likely came from sea level rise over geologic time. Increased withdrawals from the upper FAS can cause lower-quality water to be drawn into water-bearing zones from deeper strata within the aquifer, which contain very saline water.
- ***Are you considering the supply of “new” water to the SAS after water is drawn up from the FAS and used then discharged to the SAS?*** The SAS/IAS model will take into account the return flow from the FAS.
- ***Where is the reuse data for Lee County?*** We will be sending out questionnaires to each utility in the near future, requesting data on their wastewater and reclaimed water systems. In addition, we will have a presentation on reuse within the LWC region at the next stakeholder meeting.

Item 6. 2017 LWC Plan Goal, Objectives, and Issues: Discussion – Bob Verrastro

This section of the meeting was open to questions and comments from the audience.

Questions/comments included:

- ***Will climate change and sea level rise be addressed in the 2017 LWC Plan Update?*** Analysis of the change in the position of the saltwater interface between the 2009 and 2014 data for the coastal aquifers in the region will be addressed in the plan update.

- ***Do you use the annual utility reports as a starting point for projects to address in the plan?*** Yes, we screen the utility reports to see if they have projects that fall under the water supply plan.
- ***How do you track regional effects of water use on wetlands and other natural resources?*** Permit monitoring data provide a record of water use effects in wetlands. The next plan update will capture the effects because the SAS/IAS model will be finished and ready for application then. In many parts of the planning area, use of the SAS and IAS has been maximized for many years. This is why many utilities in the region added FAS wells and will have to continue relying on multiple sources as demand increases
- ***Reuse water has high levels of nutrients as it enters irrigation systems; is there a long-term solution for treating the water to reduce nutrient loads? Agriculture does not store or reuse water – has that been looked into?*** Yes, there are tailwater recovery and other best management practices in place.
- ***Is the SFWMD considering recycled water containment as proposed by E. Hanlan at IFAS?*** Tailwater recovery will be discussed in the plan. The District has provided cost-share funding to a few of these projects in the past.
- ***After the Herbert Hoover Dike is repaired, will there be additional storage in Lake Okeechobee and will that increase water availability and allocations?*** The USACE indicated this will be looked at beginning in about 2020 or later.
- ***Has the District looked at localized rainwater retention/harvesting from a water quality standpoint as well as a water quantity standpoint?*** This is a tool in the toolbox, but it is not considered a long-term supply.
- ***As the population grows, impermeable surfaces increase; is deep injection of stormwater being considered by the SFWMD/FDOT instead of ponding as a way to store extra stormwater?*** FDOT is looking at better options for capturing stormwater than the traditional ponds. We do not address this specifically in our water supply plans.
- ***Is the new Senate Bill 536 and the Water Bill being addressed in the plan?*** Yes, we are looking into and working with the state to address the new requirements and recommendations. District staff participated in development of the SB536 Report and those recommendations will be considered.

Item 7. Project Highlight: Picayune Strand – Janet Starnes, Principal Project Manager, Lower West Coast Unit, SFWMD

Ms. Starnes presented an overview of the success and accomplishments of the Picayune Strand restoration project. The project includes filling in four major north-south canals and some smaller connecting east-west canals to restore the original wetland habitat. There are three pump stations with associated spreader basins aiding in water flow and dispersion to mimic the historic natural wetland habitat. One of the canals is completely filled and the system is responding better than anticipated. The restoration project also includes the creation of a manatee refugium, an oxbow with three deep pits to allow warm groundwater to seep into a refugium for manatees to survive colder winters.

Questions/comments included:

- ***Will the manatees stay in the refugium and also come back each year?*** Manatees are creatures of habit so they should come back once they discover the refugium.
- ***What happens when water comes up to US 41?*** Additional culverts are being built along a stretch of US 41 to address water pile up. A groundwater seepage model is being created to determine the design.
- ***Will the east-west canals be plugged?*** Yes, but they were delayed until the manatee refugium could be completed.
- ***Are nutrients (nitrogen and phosphorus) a concern that is being monitored?*** We are monitoring water quality in and out of the pump stations as required by our permit, and we are also monitoring the water quality farther downstream for our own benefit to watch for any issues, but the water entering the area is fairly clean and so far we have not had any issues with nutrient loading.

Item 8. Next Steps – Bob Verrastro

Mr. Verrastro briefly outlined the upcoming steps for the 2017 LWC Plan Update. FAS model results are expected to be complete in late 2016. The next public workshop will be held in November or December 2016, and topics will include: the FAS model, an evaluation of water resources, Lower West Coast MFLs, Everglades restoration, and agriculture demands.

Item 9. Adjourn

The meeting adjourned at 12:30 PM.