

MEETING MINUTES

Joint Broward Water Resources Task Force and Technical Team

Friday, October 7, 2011, 11:00 A.M.

Broward County Government Center West
2nd Floor Hearing Room
1 North University Drive
Plantation, Florida 33324

Summary:

The meeting began at 11:11 A.M. Acting Chair Commissioner Kristin Jacobs called the meeting to order. The Acting Chair indicated that there would be a number of presentations so she would take the roll call, provide a few introductions and then dispense with statement of meeting objectives. Roll call was taken for the Task Force and Technical Team (see attendance below). The Acting Chair indicated that Glenn Waldman was the new representative to the Task Force for the South Florida Water Management District, but indicated that he was not present due to a conflict with a legal case he was involved in and that Dean Powell was representing Mr. Waldman. The Acting Chair then introduced Anthony Vomero, representing the Department of Health and noted the value of his participation given the many health issues associated with water. She then asked for approval of the minutes of July 8th, 2011. Deputy Mayor Rosen motioned for approval and it was seconded by Commissioner McCluskey. The minutes were approved unanimously. The next item was a vote for the Water Resources Task Force Chair and Vice-Chair. Acting Chair Jacobs mentioned that, as the group knew Shannon Estenoz had moved on to a new position and then asked for nominations for a new Chair. Deputy Mayor Rosen made a motion nominating Commissioner Jacobs as the new Chair and Mayor Aaronson seconded the motion. The Acting Chair asked if there were any other nominations. Being none, the Acting Chair asked for a vote. Commissioner Jacobs was selected as Chair of the Water Resources Task Force by unanimous vote. Chair Jacobs then asked for a nomination for a Vice Chair. Mayor Aronson motioned to nominate Deputy Mayor Don Rosen. The nomination was seconded by Commissioner McCluskey. The Chair asked for a vote. Deputy Mayor Rosen was selected as the Vice Chair by unanimous vote.

Deputy Mayor Rosen asked for the floor to discuss a Cyber-Security Summit being hosted by the City of Sunrise on October 20. The Deputy Mayor discussed some of the details of the summit. There was some further discussion about cyber security. The Chair then pointed out the Customer Survey forms that were available and asked the members to please fill them out. The Chair then asked for the Technical Team Report. Randy Brown indicated that the Tech Team had reviewed a lot of data and reports largely related to the C-51 project and that they would be having a vote for Chair and Vice Chair at their meeting following this Task Force meeting.

Chair Jacobs then introduced the technical presentations for the day and introduced Albert Carbon to make the first presentation on the C-51 Reservoir Update. Mr. Carbon indicated that he would present a summary of the current status of the C-51 project and mentioned that Dean Powell of SFWMD leads a working group that meets regularly. Mr. Carbon indicated that today's presentation would include a compilation of the last six months of presentations

that the working group had reviewed. He provided a review of the project and what it is intended to do. He shared a map of the area and the salient features of the project mentioning that the proposed reservoir is expected to hold approximately 75,000 acre-feet of water and be approximately 44 feet deep. He then discussed the potential benefits with regards to eliminating harmful discharges to Lake Worth Lagoon, providing storage needed to meet the District's Everglades water quality obligations, and providing sustainable public water supplies for Palm Beach and Broward counties. Mr. Carbon then discussed the specifics of a non-binding memorandum of understanding and the current signatories and reviewed the current project schedule, indicating that Phase II is ending and they are moving onto Phase III which includes examination of financing.

Next discussed were utility demand questionnaires that had been distributed to further develop utility demand scenarios for modeling. Two scenarios (options) were developed – Option 1 was based on the demands submitted by respondents to the questionnaires, and Option 2 was based on demands estimated from “high” BEBR population projections for utilities in Palm Beach and Broward counties through 2060. He presented a graphic of each Option and discussed Broward and Palm Beach County's CUP and Unmet Needs projected out to 2060 and as presented in tables. Mr. Carbon then discussed the assumptions used for the Option 2, “High Pumpage Scenario”. Mr. Carbon then began to discuss modeling and mentioned that a lot of effort had gone into modeling with respect to the size of the reservoir and various routing schemes. He indicated that the group had also looked at a smaller reservoir project, the Lake Point reservoir, which could provide additional water benefits. Mr. Carbon then discussed the conceptual approach of delivering water first from the reservoir and secondly from the regional system and the results of various modeling scenarios, including without reservoir, with the C-51 Reservoir, and a combined run involving both the C-51 Reservoir and Lake Point Reservoir. Results were presented in graphic and tabular form. A summary of the key modeling results included: how much water needs to be delivered to maintain the canals in the Lake Worth Drainage District and Broward County; how often the reservoir would be filled and emptied; how much water is needed from the C-51 runoff; gains and losses in conveying water to LWDD and Broward County; hydraulic constraints for conveyance; and, the benefits of incorporating the Lake Point reservoir. Mr. Carbon discussed routing in in Broward County, indicating that the further west they can make the initial water deliveries, the easier it is to move the water south and east, with broader wellfield benefits. Mr. Carbon concluded his presentation with a status report indicating that the project remains feasible and that we are nearing the point where funding requests will need to be made. Governance remains an area for discussion. A preliminary design and cost estimate report is to be drafted by November and a site tour is scheduled for the Task Force on November 4. Mr. Carbon mentioned that the Palm Beach County Commission had tabled further discussion of the C-51 as they didn't want to commit to a motion that included the word construction, but they did vote to have staff continue working on the project.

The Chair thanked Mr. Carbon for the presentation and then indicated that before questions, she would like to acknowledge the presence of Representative Franklin Sands who has become well-educated in Broward's water issues and how she truly appreciated his involvement. Representative Sands asked if we were finished with the modeling regarding the size of the reservoir. Mr. Carbon indicated yes, at this point in time, but that it could be further refined. Representative Sands asked a follow-up on the source of the water for the project and Mr. Carbon responded. Mr. Rosen asked for some clarification on the water availability under each Option and Mr. Carbon indicated that Option 2 included the Option 1

pumpage. There was some discussion of the vote of the Palm Beach Commission and it was acknowledged that one Commissioner was not present for the vote. The Chair discussed some of the state's water quality issues and wanted to know if water quality considerations were being addressed in the studies. Mr. Carbon deferred to Dr. Jurado who shared some of water quality issues associated with the Lake Worth Drainage and indicated that comparatively speaking the C-51 water would be considered of superior quality. Dr. Jurado indicated that the challenge will ultimately be how to route the water relatively quickly through the system so that it would not pick up nutrient impairments prior to entering Broward County. Dr. Jurado also mentioned that it is not just a matter of determining whether the delivered water is of appropriate quality, but whether we would have to address any impairments in Broward County itself that could require load reductions that would complicate any recharge project. She indicated that it would be prudent to conduct water quality modeling based on the existing concentrations in the source water (C-51 Reservoir) and in the Lake Worth Drainage District. The Chair asked for any questions. There was a question about the considerations of climate change impacts on a project such as the C-51. Dr. Jurado indicated that a regional reservoir is a desirable project to help us address the potential impacts of climate change on our water resources. Deputy Mayor Rosen asked about the possibility of a piping system to bypass the Lake Worth Drainage District and bring it directly to the Broward canal system. Dr. Jurado indicated she couldn't comment on the costs of such a project. The Chair then indicated it was time to move to the next presentation and that they would move the third presentation on the water conservation incentives program to the end.

Chair Jacobs then introduced Beth Kacvinsky of the South Florida Water Management District to provide an update on the L-8 reservoir test project. Ms. Kacvinsky began her presentation with an introduction of the L-8 Reservoir Project mentioning that it is a component of the larger Loxahatchee River Watershed Restoration Project. She indicated that the 46,000 acre-foot reservoir is expected to capture and store excess surface water generated from the L-8 basin which is currently discharged to Lake Worth Lagoon and use it for environmental enhancement of the Loxahatchee River and Slough and Grassy Waters Preserve. She provided a brief history of the reservoir and discussed how, in quarrying operations, the recycled water came in contact with ancient connate seawater resulting in elevated chloride levels within the reservoir which exceeded State Class I/Class III water quality standards. This has prevented the reservoir from being used for environmental restoration. Currently, discharges from the reservoir must be diluted to reduce chloride levels when discharged outside of the mixing zone. The District's efforts to reduce chloride levels over the past several years have shown promising results. Ms. Kacvinsky then provided a chronology of the L-8 Reservoir Pilot Test indicating that the collaborative effort resulted in the delivery of water to the northwest fork of the Loxahatchee River to meet the MFL during the 2011 dry season and had provided a broader understanding of the operational complexities involved in routing L-8 Reservoir water to the river, an opportunity to "exercise" the L-8 reservoir, and data on water conveyance/seepage losses to help determine pump sizing requirements needed to make the L-8 Reservoir fully operational. She shared a graphic of the routing, control structures, and water quality monitoring stations. Ms. Kacvinsky then discussed the results with respect to water quantity and water quality along with flow monitoring results. She indicated that during the test period they were able to deliver almost 11,000 acre feet of water to Grassy Waters Preserve and that the established MFL was met. She presented a tentative schedule for completion of the L-8 reservoir project with a projected date of being fully operational in FY2015. Ms. Kacvinsky then discussed

some specifics of a second Pilot Test proposed for the 2012 dry season. The Chair opened the floor for questions. Representative Sands asked about the funding for the project. Mr. Powell indicated that the monies were in the District's reserves. Deputy Mayor Rosen asked about what chloride levels might be anticipated once the reservoir was exercised further. Ms. Kacvinsky indicated that she believed the water would be able to meet the appropriate water quality standards. There was some further discussion about the project and other projects which would be funded with the District's reserve funds.

The Chair then introduced Dr. Jurado who opened her presentation by indicating that the next two presentations would provide the Task Force with some of the recent activities within the region and related to climate issues. Dr. Jurado indicated that her presentation had been shared with the Water Advisory Board previously and that she wanted to provide an update to the Task Force on the Southeast Florida Regional Climate Change Compact. Dr. Jurado provided background on the Compact and the regional approach being taken, given the similarities of potential impacts on the four counties. Dr. Jurado recounted drought and rainfall conditions over the last decade, specifically mentioning the recent October 2010 to June 2011 lack of rainfall. She talked about the projected impacts of climate change on water resources including saltwater intrusion, reduced storm frequency and increased storm-related rainfall and shared images from a December 2009 storm event in southeast Broward County and from recent high tide events. These images have also been shared with the other southeast Florida counties. Dr. Jurado then recounted that in January 2010, the four County Commissions (inclusive of Broward, Palm Beach, Miami-Dade, and Monroe Counties) adopted the Climate Compact committed to a process to develop a regional climate action plan reflective of shared mitigation and adaptation goals. She shared that the Compact commitments are to provide regional coordination in energy and climate policy, create a regional climate team, and develop a regional climate change action plan that establishes regional baseline information and identifies regional mitigation and adaptation strategies. Another commitment is to convene annual climate summits. Dr. Jurado indicated that the technical staff has been meeting monthly and that they have benefitted immensely from federal participation in the project. She then touched briefly on the regional greenhouse gas emissions inventory to be used as a baseline for planning efforts. In addressing areas of vulnerability from sea level rise, it was recognized that each county had previously developed individual maps based on different analyses and projections. Working together, the Vulnerability Work Group developed a common methodology using a common data set and a regional digital elevation model. The Compact counties have agreed on assessment intervals of 1, 2, and 3 feet and on prioritizing infrastructure for analysis. They have also agreed on common sea level rise projections for planning purposes through 2060. From a policy standpoint, the Compact partners committed this year to a joint advocacy to advance the term "adaptation action areas" which has been inserted in state law and which recognizes the ability of local governments to study, define and designate these areas in their comprehensive plans. This allows the local governments to use this as a mechanism to focus funding in infrastructural improvements to these areas which are uniquely vulnerable and would be significantly impacted by rising sea level. Four local congressional representatives sent a letter to the House Appropriations Committee requesting that the adaptation action area language be included in the 2012 Energy and Water Appropriations bill and the Army Corps of Engineers Operations & Maintenance account.

Dr. Jurado then shared that three regional compact work groups had been convened to focus on areas where a regional approach enhances efficiency and effectiveness and develop

recommendations for those areas. She briefly discussed the common themes that were developed and then talked in greater detail about water resources and drainage. Considerations include increased tidal and stormwater flooding and associated threats to infrastructure and source waters; saltwater intrusion and the loss of eastern wellfields and constraints on reuse; variable rainfall and the increased need for surface water storage; and increased groundwater levels and the reduced ability to retain stormwater and reduced soil storage capacity. Dr. Jurado indicated that within the Built Environment Workgroup a number of recommendations had been developed specific to water resource management and climate adaptation planning, including conducting comprehensive risk assessments of wellfields and infrastructure, and developing integrated water management plans with input from all water managers (water, wastewater, drainage). Additional recommendations are to provide drainage and flood control by identifying and pursuing infrastructure improvements in adaptation action areas, and support for Everglades restoration. Dr. Jurado summarized her presentation by concluding that water supply planning will require major investments during the next 10 to 15 years; climate change is predicted to impact existing water sources as well as future water supplies; effective water resource management will require an integrated approach; regional collaborations are expected to gain prominence as part of planning efforts and projects; and, current initiatives will produce planning tools to guide critical water management decisions and investments. Next steps will include finalization of the priority recommendations for presentation at the 3rd Annual Climate Leadership Summit in December and then finalization and a request for approval of the regional action plan by the respective County Commissions in February 2012. Dr. Jurado then offered to take questions. There was a question about consideration of population migration in the analysis. Dr. Jurado indicated that, while recognized, this had not been taken into account. Mayor Aronson asked about whether the summits are videotaped. Dr. Jurado said each summit had been available for viewing through the web. There was a discussion of the lack of a sub-regional governance body to address the infrastructure improvements/modifications that will need to be made related to the impacts from climate change. The Chair indicated that it might be more appropriate that the League of Cities and County Commission direct the Task Force to look into this. There was further discussion. Deputy Mayor Rosen indicated that we all need to work together as a sub-region and several members echoed this approach. The Chair reiterated that there needs to be some authorization for the Task Force to look into these issues and asked if someone wanted to make a motion to take this back to the League of Cities. Deputy Mayor Rosen agreed to bring this issue to the Leagues. The Chair then asked the Task Force if they could ask Dr. Jurado's staff to prepare a resolution framing the issues and stating some of the tasks that the Climate Change Task Force would undertake. Deputy Mayor Rosen made the motion to do so which was seconded by Councilmember Starkey and unanimously approved by the Task Force members. Representative Sands mentioned that there is a unique opportunity to start looking at funding recognizing what we expect the impacts of climate change to be on infrastructure.

The Chair then introduced Mike Zygnerski to provide a presentation on Broward's Integrated Water Resources and Climate Adaptation Planning. Mr. Zygnerski provided an outline of his presentation and began with anticipated climate change impacts on water supply including more frequent and prolonged droughts, increased demand for water, and saltwater intrusion. He then discussed potential impacts on drainage and flood control including increased storm intensity, elevated groundwater levels, and operational constraints. Mr. Zygnerski then discussed the variable density models currently being developed. The objectives of the project are to develop a county-wide three-dimensional saltwater intrusion model using

historical data to calibrate aquifer flow and transport parameters, quantify the relative importance of various hydrologic mechanisms, and perform predictive scenarios. He shared a graphic of the three study areas of the model and acknowledged the partners in the effort. Mr. Zygnerski presented the modeling results of the North County Pilot Study which provided a sensitivity analysis of saltwater migration to well field withdrawals and sea level rise estimates and different management strategies. He concluded that it is possible to simulate the complex process of saltwater intrusion; that multiple natural and anthropogenic stresses can be quantified individually and in combination; and, that future management and adaptive measures can be simulated to determine effectiveness. Mr. Zygnerski discussed the progress of the central and south County variable density modeling work and provided a timeline for these models indicating that both are scheduled for completion in 2014. Mr. Zygnerski then discussed drainage and flood control and the climate/stormwater inundation models. He began this part of the presentation by sharing some photos of tidal flooding and recent storm events and discussed the current modeling work indicating that their use would be to assess the potential effects of climate and sea-level change on current water management and drainage systems. These models will provide for a better understanding of the influences of variable climatologic conditions and sea level rise on surface water management practices and help to develop adaptation strategies needed to compensate for adverse effects. He discussed the objectives of the modeling and the specific focal study areas for the pilot study which include areas in Fort Lauderdale and Davie. Mr. Zygnerski also mentioned that a proposal had been prepared to NOAA for a more detailed study in collaboration with FAU. Mr. Zygnerski discussed the regional significance of this proposed study which includes an analysis of inland and coastal areas subject to tidal and stormwater inundation in greater detail and which can be transferred to other areas. He mentioned that the focal areas include diverse land uses and systems upstream and downstream of control structures and includes an assessment of systems with limited intermediate structures and operational flexibility. He pointed out that the project includes an assessment of sea level rise impacts and water impacts on critical public infrastructure and that the scope of the project allows for transferability of project results to like areas within or outside of Broward County. Mr. Zygnerski mentioned the letters of support that have been received and shared a timeline for the study if awarded. In summary, Mr. Zygnerski indicated that integrated water supply and climate adaptation planning is needed to determine the influence of future climate conditions on future water supply demands, water resource availability, existing infrastructure, and planned water supply projects. The Chair opened the floor for questions. Representative Sands asked whether SFWMD is already doing any of this work as part of their ongoing work. Mr. Powell said that the District is focusing on the coastal areas. Mr. Zygnerski indicated that the District examines these issues on a more regional level and the County then specifically examines the County in greater detail. He indicated that the County works closely with the District to coordinate assumptions used in modeling. There was some discussion on collaborations and leveraging costs. Dr. Jurado mentioned that the uses of the model would be numerous. The Chair asked Mr. Powell about the District's salinity structures and if the District was examining the vulnerability of those structures. Mr. Powell indicated they were and related how he lived near one of the structures and has thought about the modifications that would need to be made to that structure and how it would affect the character of the neighborhood. The Chair asked if Mr. Powell would share the information about the District's review of salinity structures at a future meeting. Mr. Powell agreed to do so.

The final presentation on the Water Conservation Incentives Program was tabled for a future meeting. There was brief discussion of the C-51 site tour logistics. The Chair wished everyone happy holidays and the meeting adjourned at 1:23 p.m.

ATTENDANCE

Task Force:

Kristin Jacobs, Chair, Broward County Board of County Commissioners
Lisa Aronson, Mayor, City of Coconut Creek
Charlotte Rodstrom, Commissioner, City of Fort Lauderdale
Donald Rosen, Deputy Mayor, City of Sunrise
Jack McCluskey, Commissioner, City of Pembroke Pines
Susan Starkey, Councilmember, Town of Davie
Richard Blattner, Commissioner, City of Hollywood
Peter Bober, Mayor, City of Hollywood
Anne Castro, Commissioner, City of Dania Beach (arrived late)
Douglas Bell, CBWCD Board of Commissioners
Thomas Good, SBDD Board of Commissioners
Dean Powell for Glen Waldman, SFWMD Governing Board

Technical Team:

Randy Brown, Director, City of Pompano Beach Utilities
Jack Strain, Director of Utilities, City of Tamarac
Todd Hiteshow for Julie Leonard, Assistant Director, City of Fort Lauderdale Utility Services
Tim Welch, Director, City of Sunrise Utilities
Joe McLaughlin, Director of Utilities, City of Pembroke Pines
Susan Smith, Director of Utilities, City of Oakland Park
John Crouse for Alan Garcia, Director, Broward County Water & Wastewater Services
Dr. Jennifer Jurado, Director, Broward County Nat. Res. Planning & Mgmt. Division
Kevin Hart, Director, South Broward Drainage District
Dylan Larson, Miller Legg
Anthony Vomero, Broward County Health Department

Other Attendees:

Albert Perez, PBEC
Steve Holmes, Audubon/Vyridian
Keith London, City of Hallandale Beach
Albert Carbon, City of Fort Lauderdale
Gary Hines, Broward School Board
Maria Loucraft, City of Pompano Beach
Chris Peters, CH2M Hill
Rafael Frias, Black & Veatch
Pam Kerel, Black & Veatch
Mark Abbott, AECOM
Stew Magenheimer, CDM
Glenn Humphrey, MWH
Jose Lopez, MWH
Ben Chen, Chen and Associates

Douglas?

Rosemarie Fallon, Broward County PRD

John Abbott, Keith and Schnars

Fran Henderson, Broward County Water and Wastewater Services

Carole Morris, SFWMD

Michael Owens, Broward County Attorney

Mike Zygnerski, Broward County NRPMD

Rudy Rudolph, Broward County NRPMD