

MINUTES
TECHNICAL ADVISORY COMMITTEE
TO THE WATER ADVISORY BOARD

October 16, 2020

MEMBERS PRESENT

Albert Carbon, Kevin Hart, Talal Abi-Karam, Harold Aiken, Mike Bailey, Doug Bell, Patrick Davis, Sara Forelle, Rafael Frias, Susan Bodmann for Alan Garcia, Jinsheng Huo, Jennifer Jurado, Pete Kwiatkowski, Jose Lopez, Suzanne Mechler, Lisa Milenkovic, Renuka Mohammed, Pat O'Quinn, Stephanie Pearson, Larry Teich, Steve Urich, Tim Welch

OTHERS PRESENT

Carol Ballard, Rose Bechard-Butman, Martin Cala, Lynette Cardoch, Kevin Carter, Monique Davis, Steven Eagle, Mark Ellard, Norma Ellison, Christina Evans, Nancy Gassman, Susan Juncosa, Katie Lelis, Carolina Maran, Jack McCluskey, Wilson Mendoza, Guillermo Regalado, Kassandra Myers, Marta Reszka, Max Wemyss, Janeen Weitgreffe, Bingjie Zhao, Hongying Zhao,

CALL TO ORDER

A meeting of the Technical Advisory Committee to the Water Advisory Board was held on October 16, 2020; commencing at 9:40 am. The meeting was conducted virtually in Webex. A quorum was present. Kim Mayo, Broward County Environmental Planning Division, acting as Web Host assisted in quiding the technical direction of the meeting.

APPROVAL OF MINUTES

The minutes of the August 21st meeting were motioned and approved.

PRESENTATIONS

C-51 Update

Ernie Cox, Palm Beach Aggregates

Ernie Cox provided a brief update on the C-51 Reservoir. He mentioned he will be distributing a letter to the participants next week. He explained there are 2 loans; one for \$30 million from the state legislature that has been signed, and the other is the private loan for the balance of construction financing. He has been working on the final details with the lenders on the private loan.

He informed that the target groundbreaking date is late November, with serious construction starting in December. He explained the construction timeline which is 2 years including operational testing. The primary time issues are the building of the levee and associated complicated connections. Substantial completion is anticipated for late September 2020, with the balance of 2022 for making sure everything is working operationally as expected, notifying everyone, and moving to closing and final turnover in

2022. The Chair suggested now is the time to provide quarterly updates to the WAB. He thanked Mr. Cox for his presentation.

Flood Protection Level of Service (FPLOS)

Dr. Hongying Zhao, FPLOS Program Manager, South Florida Water Management District

Dr. Zhao began by acknowledging Broward County Environmental Planning and Water Management Staff, South Broward Drainage District staff, and the Future Conditions 100-Year Flood Elevation Map Project.

She provided some background information and explained the purpose of the Flood Protection Level of Service Program (FPLOS):

- Assess flood protection level throughout 16 counties in Florida
- Identify at risk-structures and their needed improvements
- Provide a formal process for initiating retrofit and adaptation efforts
- Incorporate resilient design standards
- Coordinate with local government entities, drainage districts and other agencies

Referring to her hand-out's various slides, Dr. Zhao described in detail each of the 5 FPLOS studies in Broward County:

- C8 and C9 Watersheds Study - Phase 1
- 9 watersheds in Broward County – Phase 1
- Low-lying Tidal Structure Assessment
- Coastal Structures Resiliency Feasibility Study
- Broward County Atlas Updating

The District has developed 6 metrics to quantify the level of flood protection provided with watersheds for current and future conditions involving canals, tidal structures, and land.

In summary, this study established a completed level of service for comparing existing and future conditions and this model will be an essential tool for the Phase 2 Study. It will be applied to assess the impacts of limitations of connectivity to improve flood protection level of service. The watershed study focuses on the primary system evaluating effects of changes in sea level rise and land use. The low-lying tidal structure assess study evaluated 27 District structures and 9 USACE structures with 7 in Broward County. It will propose a conceptual design with an approach to be applied to other structures. The coastal structures resiliency feasibility study identifies specific measures, design criteria, and operational changes. Extensive research has been conducted with the intent to find out how these issues are addressed in other states and other countries with similar concerns.

Last to be discussed was the Eastern Broward County Atlas Updating, comprised of 3 parts. Part 1 involves Watersheds, Part 2 involves Structures, and Part 3 includes Appendices. Upon completion, this new atlas will supersede the old version that was developed in 1987.

The Chair thanked Dr. Zhao for her presentation. A technical question and answer ensued.

Future Conditions 100-Year Flood Map

*Introduction - Dr. Jennifer Jurado, Chief Resiliency Officer and Director, Broward County EPCRD
Mark Ellard, P.E., CFM, Senior Principal, Water Resources, GeoSyntec Consultants*

Jennifer Jurado acknowledged the intense work involved in the sizable advancements and adjustments to the model's scenarios that have occurred since what was shared at the beginning of the year. She acknowledged not only Mark Ellard, but Lenny Vialpando, Environmental Planning staff, Environmental Permitting staff, and Water & Wastewater staff. She emphasized the importance of achieving the ability to translate Mr. Ellard's work to types of planning tools at a scale and resolution that can be utilized to support planning and infrastructure design. She explained there are really 2 critical outcomes from his work; the future conditions flood map itself and also the model results themselves that that will be used to support integrated resilience planning on a countywide basis through other projects.

Mr. Ellard informed that they are almost at the end of the project to generate a final future conditions 100-year flood elevation map. He reiterated that the whole idea of the project is to map flood risk to be used as a springboard for moving forward with further infrastructure studies for regulatory purposes and for future more responsive planning.

He outlined the project goals involved in mapping future flood risk and enhancing infrastructure resilience. He outlined the major tasks of data collection and review, stakeholder outreach and coordination, updating the current conditions model, development of the future conditions model and execution, CRS evaluation and recommendations, the new future 100-yr community flood map development, up to flood map adoption.

Referring to his hand-out, Mr. Ellard explained the future conditions results of various final design storm simulations, how it reflects seasonal representation model updates, and groundwater model scenarios, and depicted the results in detail using color-coded legends.

He reiterated the challenge of the future flood map is to take complex integrated hydrological model results and produce an effective regulatory flood risk map that can be easily interpreted by stakeholders.

Referring to his hand-out of various maps filtering out different flood results, Mr. Ellard discussed in detail the flood results mapping considerations of depth thresholds, preliminary contouring issues, and topographical differences. He also explained the flood area-based mapping approach, area boundary development considerations, addressing statistical consistencies, etc. He compared flood area elevation results of the future conditions 100-year flood elevation map with the 1997 community map, the 2014 adopted FEMA floodplains map, and the 2019 proposed FEMA floodplains map.

In summary, he outlined the current progress and next steps:

- Finalized model results and a report was completed in August 2020
- Finalized mapping product was completed in October 2020
- Informational workshop for countywide agencies and municipalities scheduled for October 29th
- Informational workshop for industry and the business community scheduled for November 5th
- Stakeholder review of flood elevations due by early November
- Map adoption process begins
- He shared the link to the interactive map that allows web viewers to see in detail how this map is structured in detail for their particular chosen communities.
- Stakeholder comments are requested by the first week in November and are to be submitted to Dr. Jurado

The Chair thanked Mr. Ellard for his update. A technical question and answer session followed. Dr. Jurado expressed how she internally feels very comfortable with the tool he shared.

Recent High Tide Events and Municipal Adaptation Improvements (City of Fort Lauderdale)

Dr. Nancy Gassman, Fort Lauderdale Assistant Public Works Director

Dr. Nancy Gassman began by explaining there is a seasonality that creates king tides in the fall and how the threshold of 1.3 ft. NAVD plays into what is happening within the City of Fort Lauderdale. She mentioned how the city educates the public by distributing postcards, letters from the mayor, a dedicated website, variable message boards, traffic advisories, etc. when a king tide event is anticipated, especially when a full or new moon is approaching that could cause flooding in low lying areas.

Dr. Gassman referred to numerous maps and charts in her hand-out depicting various statistical information referencing the particular tropical depression rainfall date of September 21, 2020 in the City of Fort Lauderdale. She explained the several reasons why the tide comes in higher than what is expected. Referring to the tide profile for September 1-22, 2020, the last time the tide came in as predicted was September 3rd. She referred to a 2-day graphical tropical weather outlook illustrating how tropical rain, wind, and storm events can exacerbate the tides. Dr. Gassman mentioned how we are starting to see tidal events that exceed the threshold much more and that start earlier in the year. She referred to charts illustrating the number of tides and annual total high tides exceeding the Fort Lauderdale tidal flooding by the Virginia Key Tide Gauge.

Dr. Gassman informed that this year the City of Fort Lauderdale's City Commission announced its top priority for 2020 is focused on resiliency. She provided statistics on amounts of money spent on stormwater improvements, infrastructure and stormwater master plans, tidal valves installed, and new seawalls installed or under construction. She went over various significant future investment plans for certain areas.

Dr. Gassman then discussed how the city is addressing tidal flooding issues caused by seawall overtopping. The city commission adopted a seawall ordinance that sets minimum and maximum elevations, addresses cities seawalls that are in disrepair, and cites owners allowing tidal flows to leave their property. During the September 22nd event, many private seawalls breached for the first time causing flooding in public right-of-way locations that really don't flood often. She also discussed how low tides are also higher impeding roadways from discharging additional water.

In conclusion, Dr. Gassman reminded the audience that this current king tide will last for several days and how neighbors are encouraged to please call the city's customer service line rather than their commissioner. The customer service line will direct a workorder in as soon as possible. She provided the city website, the customer service phone number, and a chart of upcoming king tide event dates. She also reported the current tide height at 2.4 ft. height this date at 9 am.

A technical question and answer session ensued. Discussion took place on how climate change is changing ocean circulation and the slowing of the Florida current. This was a topic when the SE Florida Regional Compact developed their recent unified sea level rise projections. The Chair suggested a presentation be provided by NOAA on some significant anomalies that are emerging due to the slowing of the Florida current, and the resulting long-term impacts. Dr. Gassman remarked on the city's capital improvements over the next 5 yrs.

