

TECHNICAL ADVISORY COMMITTEE
TO THE WATER ADVISORY BOARD
February 21, 2020

MEMBERS PRESENT

Albert Carbon (Chair), Talal Abi-Karam, Harold Aiken, Mike Bailey, Doug Bell, Randy Brown, Patrick Davis, Heather Cunniff for Sara Forelle, Rafael Frias, Kevin Carter for Alan Garcia, Barry Heimlich, Leny Huaman, Samantha Danchuk for Jennifer Jurado, Pete Kwiatkowski, Jose Lopez, Marta Reczka for Renuka Mohammed, Pat Quinn, Don Polio for Steve Urich, Tim Welch

OTHERS PRESENT

Samantha Baker, Alec Bogdanoff, Samantha Danchuk, Norma Ellison, Francis Domond, Chuck Drake, Susan Juncosa, Lorraine Mayers, Jack McCluskey, William Merley, Wilhelmina Montero, Rudy Rudolph, Mark Smith

(A sign-in sheet reflecting those present is filed with the supplemental papers of the meeting, as well as copies of the presentation.)

CALL TO ORDER

A meeting of the Technical Advisory Committee to the Water Advisory Board was held on February 21, 2020; commencing at 9:34 m in the Hearing Room of the Broward County Governmental Center West in Plantation, FL. A quorum was present.

The Chair announced that Barry Heimlich is resigning from his position on the committee, this is his last day in attendance. Mr. Heimlich reminisced on his years of participation on the committee, expressing his gratitude for having the opportunity to serve on it. He expressed his respect for the group's enhancement of each others' knowledge and the achievements of its coordinated efforts. He stressed his concern that the members continue to account for sea level rise in their future plans, emphasizing that it is not just a coastal problem. Other members commented him on his contributions. He remarked that he was planning on attending the next board meeting.

APPROVAL OF MINUTES

The minutes of the December 20th meeting were motioned and approved.

PRESENTATIONS

A Brief Meteorological and Oceanographic Review of December 23, 2019 Fort Lauderdale Event
Dr. Alec Bogdanoff, Principal and Co-Founder, Brizaga, Inc.

Referring to his hand-out, Alec Bogdanoff provided a synopsis of the Fort Lauderdale-Hollywood International Airport's closing due to the flooding event that occurred on December 23, 2019.

Photos in his hand-out illustrated the still flooded parking lots, etc. 6 hrs after the storm. He shared both the National Weather Service's radar photo of the country and a local radar photo. His charts depicted Fort Lauderdale's average daily precipitation in months and inches; 1-hour precipitation records of totals annually, seasonally, and monthly; and 1-day precipitation records of totals annually, seasonally, and monthly. He also shared a graph depicting the IDF curve (intensity, duration, frequency) for that day, December 23rd.

Dr. Bogdanoff recapped the precipitation event. In just 3 hours between 12:53 and 3:53 am, 5.99 inches of rain fell. This resulted in 3 separate top-10 one-hour total records established for the month of December and 2 for the winter season. He expressed his concern that we are starting to see higher intensity events not necessarily when expected. They are happening all year round depending on oceanographic conditions, initiating a phase where we have to worry all year round. From a drainage perspective, he expressed his concern regarding a really wet event happening during a high tide west of salinity structures resulting in taking days or longer for the water to ultimately dispel. He encouraged the need to advocate for continuing updates and restudies for the flood control system.

A question and answer session ensued. Discussion centered around the compact preparing an economic assessment of all 4 counties for a business case scenario, gravity systems not being feasible, a possible mean sea level change happening, insurance issues, etc.

Dr. Bogdanoff summarized the record-breaking rainfall event's conclusions, as follows:

- The most extreme one-day rainfall event for the December and the winter season (December, January, February)
- Between a 25-yr and 50-yr event, for both the 1-hr and 3-hr rainfall amounts
- The most rain ever recorded at this location in a 1-hr period for the month of December and the winter season. The event included 2 top-10 1-hr totals for the winter season and 3 top-10 1-hr totals for the month of December
- The second highest 1-hr period rainfall event on record for the Fort Lauderdale (FLL) station

Dr. Bogdanoff concluded with his recommendation that we should start deciding where to place higher value, better sensors around the community and make that information available in order to better understand these events.

Discussion continued that the Army Corps of Engineers needs to conduct an official feasibility study for sea level rise through the congressional process to ultimately obtain funds to fix the system. It was federally built so the federal government is responsible for its financial upkeep and improvement costs. It was emphasized to make sure the Federal Government does not neglect their part.

The Chair thanked Dr. Bogdanoff for his review.

Regional Sea Level Rise Projection Overview

Dr. Samantha Danchuk, Ph.D., P.E., Assistant Director, Broward County Environmental Planning

Samantha Danchuk informed that the Southeast Florida Regional Compact released its 3rd iteration of unified sea level rise projections for Broward, Palm Beach, Miami-Dade, and Monroe counties. The previous projections have been adopted, and will go thru the agenda process, and then outreach to

the cities to use for their respective planning and design needs. The workgroup will reconvene and follow what the latest release of the science is to try to update the projection as needed. The workgroup consists of scientists from the local community, members of NOAA, ACOE, and other county agencies, about 20-25 experts contributing their individual experiences to produce a recommendation for a projection to introduce to the compact for review. Outreach also went to the IPCC authors. She announced that the next IPCC update for modeling the 6th assessment will probably be released in 2022-23 timeframe.

Referring to her hand-out, Dr. Danchuk explained how the Key West Tide Gauge has been documenting the increase of sea level rise for over 100 years. Two graphs illustrated rising sea levels through inches by decades, and recent acceleration through mean sea level changes in inches by decades. She pointed out how the significant increase recently is prompting king tide flooding. She explained there are very complex factors driving sea level rise, they are captured in global climate models, but there is a lot that hasn't been measured or documented. She added that the projections will change, and so the workgroup will reconvene to update them. Also, models have improved which is why there is a range of projections, and so there is no one precise number.

Dr. Danchuk discussed the unified sea level rise projections that are based on regional projection modeling that is based on IPCC 2013 work.

- Projections start from mean sea level in Year 2000
- NOAA regional projections are not global
- NOAA Extreme is an additional curve displayed to provide an indication of the upper limit to prompt discussion on reducing emissions
- Observed data is from 1992 to 2017, averaged over 5-year intervals
- The 20-year planning horizon is to 2040
- The 50-year infrastructure lifespan is to 2070
- All data can be accessed from ACOE, sea level rise calculators, NOAA curves, etc.

Referring to her hand-out, she explained in detail the actual data projections in NAVD (NOAA Extreme, NOAA High, NOAA Intermediate High, and IPCC Median) and their respective scenarios. She also discussed historic data vs. projection with observed data, NOAA Intermediate High and IPCC Median; and unified sea level rise projection comparison from 2015 vs. 2019. She remarked that a lot will change over the next few decades with a lot of variation expected. Hopefully it will continue to stay within the boundaries of the projections themselves.

In conclusion, Dr. Danchuk informed that the data is accessible from the ACOE's sea level rise calculator. This updated information will be used for the priority planning map within Broward County with the 2 ft. by 2060 planning ratio. She shared there is a guidance document ("Unified Sea Level Rise Projections") that includes the projections and methodology used, guidance for application, and a state of science update appendix. The guidance document is to be updated every 5 years and when finished will be posted online at the SoutheastFloridaClimateCompact.org website. She added that the projection itself was released in December, the guidance document was finished yesterday, and is anticipated to be uploaded to the website within the next week or so. An agenda is moving forward for the March 10th commission meeting which the guidance document attached as an exhibit.

A question and answer session ensued. The 100-year community flood map is relatively complete. The Resilience Plan is going thru the procurement process now for a 2-year study to inform what infrastructure needs to be included to reduce flooding focusing on drainage problem areas.

Broward Youth Summit

Rudy Rudolph, Water Planning Manager, Broward County Environmental Planning

Mr. Rudolph provided background information on the idea of a youth summit included in the Broward School Board's 5-yr agreement. Last year's event, the 1st, took place at the Global Event Center January 26th downtown Fort Lauderdale. This year's 2nd event took place January 10th at the Museum of Discovery & Science in downtown Fort Lauderdale. The theme was Sea Level Rise.

Planning began much earlier. Welcoming remarks were conducted by 9 different professionals in 3 sessions for 15 minutes each.

The event's purpose was for middle and high school students to convene together to discuss, plan and learn about climate-related issues in Broward County. The event's purpose focused on 9 areas:

- Engineering
- Law/Debate
- Politics/Civic
- Government/Planning/Traffic/Utilities
- Economics/Finance/Insurance/Real Estate
- Arts/Entertainment
- Communications/Media
- Social /Human Services
- Technology/Science (Bio/Ecology)

Mr. Rudolph provided statistics of this very successful event.

- Eighteen exhibitors participated.
- The media coverage included CBS, WLRN, NBC, etc.
- Twenty-five schools attended including 8 high schools, 16 middle schools, 1 center school.
- Attendance amounted to 696 students

In conclusion, Mr. Rudolph thanked everyone who participated and acknowledged the various sponsors. He reminded the audience of the upcoming Water Matters Day event scheduled for March 14th. The Chair thanked Mr. Rudolph for his report.

Conservation Pays Update

Samantha Baker, Project Coordinator, Broward County Environmental Planning

Referring to her hand-out, Ms. Baker provided an update on the Conservation Pays program, including:

- Rebate numbers to date
- Partner Highlight
- Plumbing retrofits and water savings
- FY2020 rebate campaigns
- Annual campaign including outreach and promotional tools, cartoons, and animations

The Chair thanked Ms. Baker for her update.

NEXT SCHEDULED JOINT WAB/TAC MEETING: March 13, 2020

NEXT SCHEDULED TAC MEETING: April 24, 2020

ADJOURNMENT

There being no further business to discuss, the meeting adjourned at 11:17 am.