



**TOWN OF HOLDEN BEACH
INLET AND BEACH PROTECTION BOARD
SPECIAL MEETING
WEDNESDAY, FEBRUARY 13, 2019 10 A.M.**

The Inlet and Beach Protection Board (IBPB) of the Town of Holden Beach, North Carolina met for a special meeting at 10 a.m. on Wednesday, February 13, 2019 in the Town Hall Public Assembly.

CALL TO ORDER

The meeting was called to order at 10:00 a.m. Chair Vicki Myers, Vice Chair Mike Pearson, Members Dean Thomas and Richard Rice were present. Member Ronda Dixon was unable to attend.

AGENDA APPROVAL

Motion to approve the agenda by Member Thomas, second by Member Rice; approved unanimously.

APPROVAL OF MINUTES

Motion by Member Thomas to approve the minutes of the January 24th meeting. Chair Myers stated that page two should say she talked to Building Inspector Evans and he thinks the CRC did a good job figuring out the “maps” not “language”. *Member Thomas made a motion to approve with changes, second by Vice Chair Pearson; approved by unanimous vote.*

STATUS OF BEACH AND INLETS

Assistant Town Manager Ferguson said there was a federal declaration for Michael for NC on January 31, 2019. The kickoff meeting was held at the county Monday with staff attending. She continued that the BOC will have an update before them considering discussions with the county regarding the deeper/wider project and some of the responses to the questions the Town had. She stated the county is currently working to draft an interlocal agreement for review by the Town. She said there is also information in the memo to the BOC regarding piggybacking on the AIWW crossing project and contracting independently for the bend widener, but being able to accomplish that project does not look promising. Finally she told the board the Merritt is here performing work until February 25th as a test. Chair Myers asked about the status of the modeling project with ATM. Mr. Fran Way with ATM said running the models is complicated. He said they are still a couple weeks out, but it is coming along. Mr. Way said FEMA keeps asking for updates for hurricanes and that is taking precedent. Assistant Town Manager Ferguson agreed that ATM has been hit with many requests to help with the FEMA process.

PRESENTATION AND POSSIBLE ACTION UNCW

Dr. Joni Backstrom referenced meeting Member Thomas and Commissioner Freer at the North Carolina Beach Inlet and Waterway (NCBIWA) conference where Dr. Backstrom gave a presentation about

Hurricane Matthew and high resolution profiles to assess the impacts of hurricanes. This presentation stems from conversations he had with them. Dr. Backstrom introduced his colleague Dr. Sheri Shiflett and then gave his background. He is a coastal geologist from Finland who got his Masters from UNCW studying under Dr. Cleary. He described spending two years in Florida working with Coastal Planning and Engineering. He said he looked for sand for beach nourishment for coastal communities. Dr. Backstrom said he obtained his PhD in Ireland looking at the impact of storms on beaches and how beaches and waves impact the coast. He was also a marine consultant for six years. He stated he has been with UNCW for three years, with this being his fourth year. His interest is in coastal studies. Dr. Sheri Shiflett gave her background as focusing on barrier island ecology and plant ecology. She said she got her Masters and PhD from Virginia Commonwealth University. She has experience looking at the dynamics of barrier island shrub covers over decades. She stated she studied undeveloped islands and now, living in NC, she is looking at developed islands and comparing them. She said she worked briefly for the DEQ in Virginia on Section 402 permitting and then moved to California. She looked at how trees and urban environments provide ecosystems. She then worked with the Corps for two and a half years with 404 wetlands permitting. She stated she has experience with coastal ecology and ecosystem sustainability.

Dr. Backstrom said that Member Thomas and Commissioner Freer came to talk to him at UNCW and UNCW looks to encourage graduate assistant work and partnerships. He presented slides on coastal initiative ideas in collaboration with Holden Beach (slides attached). The first idea was using Argus video cameras to monitor the inlet and a Met station. This would involve coastal monitoring using time lapse photography over time to see where waves are breaking and where sand bars might be. It could also show changes in vegetation. He said the Met station would involve local weather knowledge. He continued that it allows ownership of your town and really understanding a meteorological perspective locally. Town Manager Hewett asked for an estimate of how far the camera range was in one of the sample pictures. Dr. Backstrom said it was around two miles. Member Thomas said he had envisioned it as watching the inlets. He said if this could be done somewhat cheaply, it would allow viewing the channel over time. Dr. Backstrom said if you have beach nourishment you could look at changes over time, inlets and changes over time with projects. He also mentioned construction activities like terminal groins. Member Thomas said we are already doing it as monitoring on a regular basis. Mr. Way said you could watch shoals over time detach from Oak Island and make their way over. Chair Myers asked how they are powered. Dr. Backstrom said he thinks regular power. He said he doesn't have costs at the moment but lots of people use these. He doesn't have a lot of experience with them. Mr. Way asked about wind speeds during hurricane events. He said they would have to be pretty nice to withstand winds. Chair Myers said she has a camera on the back of her house that she can see the beach and she watched during storms. She said the cameras did fine during the storm. She also said she has a weather station on the dunes. She said from a meteorological perspective the way storms roll through we have a different wave pattern than areas that are close by. Dr. Backstrom said lots of coastal scientists are using these. Town Manager Hewett asked in looking at the second picture again, in evaluating the normal migration of sand bars, etc., if there is a sample number of days that allows some inferences to be made with the same shot over a period of time. Dr. Backstrom said it depends on the climate. He said if it is a stormy season or nor'easters you would see more movement of bars, in the benign summer season it wouldn't migrate as quickly.

Idea two was to establish a baseline of dune vegetation types and coverage which would say how much of the dune changed over time and now that restoration is happening how is it changing over time. Satellite imagery on a slide showcased Hog Island, Virginia and showed how much shrub cover and grass cover there was. The stated purpose was to figure out optimal vegetation types. Dr. Shiflett talked about climate change and how to restore ecosystem function between the natural and the built system. She discussed ideas about bi-stability and restoring systems to get to a stable state after disruptive events. She said you can build in mechanisms on your island to resist overwash and provide ecosystem that is an overwash reinforcing domain. She continued that she explored different sites from Virginia to NC to find what more and less stable systems look like. She stated if you can build up profile, you are increasing resistant capacity. She continued it was to explore the combinations to build the dune back up and how to build resiliency over time. Town Manager Hewett said there seems to be areas where you would want the dunes high. Dr. Backstrom referenced Masonboro Island and Wrightsville Beach. He said Wrightsville Beach is nourished with a high dune system. He continued that on Masonboro Island the elevation is six feet in many locations therefore storm surge and the water had moved over the back side. He stated you probably don't want overwash to occur in a developed area. Town Manager Hewett said he asked that question from a biological standpoint. He said our vegetation approach has been focused on grasses and there have been discussions on proper mix and should it evolve. He said he sees at some point in time you might want to have a maritime forest and he is not sure when that occurs or how to go about doing it. Dr. Shiflett said as you build up the primary dune you are creating the ability to build up the back area. She asked if there was documentation of what was planted where. Mr. Way said there is a ratio and Steve Mercer with Coastal Transplants usually handles the mix of ratio. Member Thomas said that a good place to start might be a drone survey that establishes a baseline snapshot of what the present state is and get it higher resolution. Mr. Way said for the Central Reach permit monitoring you could kill the Seabeach Amaranth monitoring with this process as well as invasive species. Dr. Shiflett asked about Beach Vitex and Town Manager Hewett said it is spotty, locations are few and far between, and identified.

Option three involved historical evolution of Lockwood Folly (LWF) and Shallotte inlets based on aerial and/or satellite imagery. Dr. Backstrom referenced Dr. Cleary's work with a historical view of inlets and erosion and how channel alignment affects shoreline erosion or accretion. He said the channels are constantly moving back and forth. He stated when the flow shows an ebb channel we get accretion. He continued the atlas from 1998-2018 may need to be updated to see how channel movement is changing based on Cleary's work back in the day. Member Thomas said there would be benefit before the potential deepening or widening or if Oak Island possibly puts in a terminal groin in the future. Mr. Way said Dr. Cleary did work with Holden Beach and it may be over promising to say based on channel alignment it is accretional or erosional, it is either less erosional or more erosional. Dr. Backstrom said the information would be beneficial if someone puts in a terminal groin. Town Manager Hewett asked if Dr. Backstrom is familiar with the Division of Coastal Management erosion rates and possible extension to inlet hazard areas. He said we have skin in the game for how either end up being defined. He stated he has to assume there was some type of satellite imagery that was used for that. He continued depending on how it ends up, a second opinion may be beneficial. Town Manager Hewett said we have been able to avoid a one size fits all scenario historically and when it comes out we want to make sure that is still the case. Dr. Backstrom said they are relatively close by and can assist ATM and work in collaboration with research. Member Thomas asked if what he is hearing is to extend this report to inlet hazard areas for both inlets and discuss patterns of erosion or accretion. Town Manager Hewett said

that is what he is feeling. Dr. Backstrom said they use 50 cm resolution satellite imagery working closely with the Corps, if there is a way to complement or focus on this.

Option four involves historical meteorological and oceanographic data based on nearby buoys. Dr. Backstrom explained that buoys provide wave heights, wind speed, wind direction, salinity, and temperature. He showed an example of a graph looking at wind speed over a one year period and Hurricane Florence data. He stated this involves understanding frequencies of high magnitude events over time. He continued a lot of these are connected so it involves looking at it as a holistic approach. Dr. Backstrom says ATM might have a lot of this but UNCW may be able to look at data analysis over time looking at both buoys. It would provide numerical modeling, bathymetry, and allows ownership as a town of what is going on out here. He said he shared these links with Member Thomas. Town Manager Hewett asked if the green dot in the presentation was the Frying Pan Buoy and Dr. Backstrom answered no. Town Manager Hewett asked if the two buoys are optimally positioned to what is going on with Holden Beach versus buying our own buoy and implications for such. Dr. Backstrom said it would be quite expensive to get this type of buoy, the fact that some are local are fantastic. He said it would be better if Sunset Beach's was geographically closer. Town Manager Hewett asked if it transmits in real time and if the Sunset Beach one is a Corps' buoy. Dr. Backstrom said they do transmit in real time and the Sunset Beach one is not owned by the Corps. Town Manager Hewett asked if he knew how Sunset Beach was selected. Dr. Backstrom said he would have to reach out to find out if its placement might have to do with the state line or ecological monitoring. He said the data might provide wind speed; what you could expect with storms. Member Thomas said it would provide a good historical perspective for the Town.

Dr. Backstrom said he thinks that is all the slides they have. Member Thomas asked about grant money and Dr. Backstrom said there was a community collaboration for \$15,000 with a March 15th deadline. He said they replied to a statement of interest with the Corps the day before. Dr. Shiflett said the grant involved long term restoration planning and UNCW listed the Town of Holden Beach as a potential partner. If they ask her for a full proposal, she would certainly be reaching back out to the Town. Dr. Backstrom said if there is any way where the town doesn't have to spend the money it would be good. Member Thomas asked about the beach tour occurring in the future for the UNCW representatives.

COMPREHENSIVE LONG-TERM PLAN

Mr. Way with ATM introduced Cathy Foerster from ATM as the planner and facilitator for the long-term plan. She said she loves to write strategies, policies, and plans and has been doing so for many years. She has a background working in Florida based community planning, pre-recession until about 2008, when she transitioned into water resources for the Department of Environmental Protection. She also worked on coastal management aspects for local governments. She said the team would be Fran Way, Cathy Foerster, and Marc Gold who is an engineer in their office. She stated this is the first hard core session to plan goals. She said this is very much a collaborative process and the board is the primary stakeholders as well as the community. She said it can't be a plan without the IBPB input. She stated there was a ten year planning horizon, beyond ten years it gets loose. She said within the ten years we want to set up five year and ten year strategies. She said the first five years are similar to a local governments' capital improvement plan. She wants to be able to take a fresh look at it each year so that it is adaptive and user friendly. She doesn't want it to be a plan to sit on the shelf. She said the 2009 plan will be a resource, but not the framework. She continued that at the March meeting she will

provide an outline that will hopefully serve as the table of contents. She stated this time it will focus on the inlets as well as the oceanfront. Town Manager Hewett said we collected initial comments from this board. She said she is looking at that information, as well as other plans she has written, to provide a framework. Town Manager Hewett asked if she could provide skeleton suggestions of what she is looking at to the board for feedback. She said that one week prior she would give homework assignments. The deadline was discussed as being March 21st for the March 28th meeting. Chair Myers referenced the different sections of our beach and how they are managed differently. Ms. Foerster said there would be an overall map showing geography and each one will be looked at individually, including opportunities, constraints, and what should be looked at short-term and long-term. The west end (western three miles) was discussed by Mr. Way as being mostly accretional with some erosion being seen recently in the past. It will not be discussed as labeled in the plan, but as a really healthy unmanaged area. Town Manager Hewett asked from an administrative process standpoint, if Ms. Foerster could get the information to Assistant Town Manager Ferguson on March 18th.

The timeline for the plan was discussed. The kickoff was stated to be February, with Ms. Foerster explaining that data collection would begin this week. She stated she expected a comprehensive draft in early May, which will give two months between May and July to finalize. The final plan should be ready in July, with adoption by the BOC to follow. She asked if there were other questions.

Mr. Way gave background information through slides of the east end in the 80's and 90's and the erosion that was occurring (slides included). He stated the town was in bad shape then. Mr. Way said the regional net transport is east to west. He stated Holden Beach is sand starved offshore, but we know there is some. He stated North Myrtle Beach has a similar offshore geology. Mr. Way said the Town has been doing a great job in the last 20 years to stay ahead of the background erosion. He discussed the east end, Central Reach, and the unmanaged area to the west. He said the last ten years the beach has been doing pretty well, despite the hurricane activity. Chair Myers asked if he thought that had anything to do with the orientation of the inlet. Mr. Way said he thinks the bend widener did it. He said he does think that lobbying to keep the orientation this way is important but he thinks the Central Reach and the bend widener played more of a part. He showed aerials of 2016 and 1993. He said he gets reports of dune scarping but there is a wide dune system. Ongoing beach management activities were discussed, as well as, dredging of the inlet. Borrow area alternatives were discussed. Mr. Way discussed Mary's Inlet and Bacon Inlet where there were breaches historically. Town Manager Hewett said those are the exact same locations where the lift stations are: near Greensboro Street and the 800 block. He said we have topo surveys at those specific beach points and they may be important to include in the plan. Mr. Way talked about the GRR extents and how the town kind of mimicked that with what was done with the Central Reach area, but stated the Corps was going to use a lot more sand in their study proposal. He referenced seismic geotechnical studies offshore, as well as, BOEM territory past three nautical miles. He referenced a BOC PowerPoint presentation in 2009 which showed offshore areas that were promising. He talked about work completed to look at sites. Dr. Backstrom talked about being involved in running those surveys in 1999. He said they dove to collect vibracores. Mr. Way said there was a 2010 pre-application scoping meeting regarding offshore sand. He continued that truck hauling is not possible for one million cubic yards of material. Mr. Way talked about the Murden project in 2016. He stated that about 30,000 cubic yards of material was placed in 15 feet of water, and piled about two feet high. He said if the Corps is going to use the Murden this is a better option but the best bet is on the shoreline. Dr. Backstrom inquired if it is a biological important area for hard bottom. Mr. Way said the Corps did do that as part of their study and gave some of the background on the GRR. Mr. Way gave background on potential upland borrow sites. He said upland isn't a top priority but it is

important to have. He covered the 2009 truck haul project for Holden Beach. He stated that cost is a huge issue for long-term planning. He discussed dredging costs being highly variable. Mr. Way then included a statement from the NC BIMP study and economic analysis that the benefits always vastly outweigh the costs. He discussed funding through federal, state, and county interactions. He said ten years ago the county was not interested in beach management at all and now they are involved. Ms. Foerster mentioned the National Oceanic and Atmospheric Administration (NOAA) and National Fish and Wildlife. Mr. Way said we need to think wider, outside the box, and try to maximize resources. Member Thomas said he sees UNCW being able to carry the message to other areas. Chair Myers said she is interested in looking longer than ten years out from a resiliency standpoint. Member Thomas mentioned areas where there were breaches. Chair Myers referenced the Corps' "Engineering with Nature" strategies. Ms. Foerster asked if there is any contemplation to do a separate resiliency study so that it is done parallel. She said it would get more to the sea level rise aspect than with the long-term plan. She referenced one of the things ATM is working on with another community. Mr. Way said FEMA only looks at current conditions. Dr. Backstrom mentioned living shorelines to help stabilize sediment. He referenced small pilot initiatives. Ms. Foerster said for whatever reason the political climate is great for federal and state money for these items. Chair Myers said we need to recognize it now because it takes so long to see a result of what we do. Ms. Foerster stated it will help to have some things that are identified in the plan. Dr. Backstrom said he and Dr. Shiflett had to leave to get back to campus to teach a class. Chair Myers asked what needs to happen from here. Ms. Foerster said by March 18th she will have the IBPB's first assignment to Assistant Town Manager Ferguson. Town Manager Hewett asked if she would like a better setup for the facilitation for the next meeting. The staff agreed to talk offline with ATM about setup.

DISCUSSION REGARDING BUDGET ITEMS FOR FY 19-20

Vice Chair Pearson talked about beach mats at public accesses and how they cannot be placed at all accesses. He said they do help with the trenching and stabilizing the sand. He stated they are visitor friendly and resident friendly. He continued there are costs involved with them and they have to be maintained. They also have to be taken up before a storm. He stated that falls on the Town. The Town does get phone calls about maintenance. He said he found nothing that would tell him not to use them. He continued that he did a beach ride with Assistant Town Manager Ferguson and Zoning Officer Rhonda Wooten. He found that when you get out and do a beach ride you get a different perspective. He said as he rode down the beach he was looking for paths across the dune, as well as, trying to determine if private access walkways are CAMA compliant. He said he thinks that area might need more study. He talked about the Mobi-Mat that the west end POA put out. He said you have private accesses that have five houses that use it. He stated you have to have people to take care of the mat in that situation and wonders what happens when it is private and the call comes that it needs to be cleaned. He also considers what happens when they have to be taken up. He stated there are issues there. He said overall on the private accesses, he thinks if people want mats, it has to go through inspections and CAMA.

Chair Myers said there was a wish list of items that included: replacing keep off the dune signs, as well as, additional monitoring on the west end and the Shallotte Inlet. She asked if it needed to be brought up again. Town Manager Hewett said it would not hurt to bring it up again to note that we are monitoring and the additional transects. She mentioned plants and how she had reached out to Steve Mercer. Member Thomas referenced the UNCW spreadsheet for collaborative costs; he said for dune vegetation the long-term number should be the same as the short-term number. Town Manager

Hewett said he would like to consult with Mr. Way offline about the items presented by UNCW. He said we would see how it could be used and ground truth it. Chair Myers said she thinks the weather station might be relative to visitors. Member Thomas said he had that at the bottom of the list. The weather station was discussed from a tourism perspective. Member Thomas said he would like to see how the items enhance the work ATM already does. Chair Myers asked how they would like to proceed with this item. She covered the list as: bubble budgeting for plants and fertilization, mats, keep off the dunes signs, inlet modeling and UNCW collaboration. She had a question about sand sourcing. Member Thomas said it is obviously something we will be talking about as part of our master plan. Chair Myers said you have to have your sand source. Town Manager Hewett said we are going to be talking to the Commissioners about that before the end of the fiscal year and an appropriation is going to have to be made. Chair Myers said then the sand source item didn't need to be addressed in this budget discussion.

Vice Chair Pearson made a motion for the list of items above to be recommended in the budget process, second by Member Rice; the motion passed unanimously.

INLET AND BEACH BOARD ANNOUNCEMENTS

Chair Myers referenced the Coastal Resource Commission Meeting, February 27th and 28th. She said staff is attending, but she can't attend. Member Thomas asked for details. Town Manager Hewett discussed how the scheduling of the meeting occurs. Town Manager Hewett said the Inlet Hazard Areas are on that agenda. Chair Myers said the Dune Repair Workshop is scheduled for March 9th in Surf City. Town Manager Hewett said if any of the IBPB members can make it, they may be able to gather information about the importance of maintaining our engineered beach status. Chair Myers said to let Assistant Town Manager Ferguson know if you plan to attend. Chair Myers plans to attend. She continued that the Brunswick Shoreline Consortium Meeting is scheduled for March 27th. She said the next meeting of the IBPB will be held March 28th. She stated that the Coastal Government meeting will be at the end of April. Chair Myers stated that is really not for IBPB, it is more staff. Town Manager Hewett said staff and elected officials. He said North Carolina Beach Inlet and Waterway Association (NCBIWA) is the organization and the agenda is not focused because the purpose is to entertain issues that might be seen on the legislative side or introduced. He said there are usually a couple of state legislators. He stated there is usually a forum for federal and state legislative components. Chair Myers continued that NCBIWA will meet November 12th and 13th at the Holiday Inn in Wrightsville Beach. Town Manager Hewett mentioned the ASBPA conference in October in Myrtle Beach. Chair Myers asked about Assistant Town Manager Ferguson going to Washington, D.C. to the Coastal Summit in March.

CONSENSUS OF SHORT REPORT TO BOARD OF COMMISSIONERS

Chair Myers reviewed items discussed in the meeting. She stated that staff provided an overview of conditions and issues relative to the beach strand and inlets. Mr. Way talked about storm damage and where he is on modeling for the LWF Inlet. The FEMA declaration for Michael occurred. Plans for going forward were discussed. The deeper-wider project is still pending. The BOC will receive an update in their packet. Other items included:

- Possible collaboration with UNCW- Dr. Backstrom and Dr. Shiflett discussed ideas and possible collaboration with the Town and ATM.

- Long-term plan was kicked off and the facilitator, Ms. Foerster from ATM was introduced. A schedule and a high level list of contents were provided. Member Thomas added that Mr. Way backed it up with plan history and major elements of beach management activities that have been added in the last ten years or so.
- Budget items for FY 19-20 will include: mats, plantings, additional monitoring, signs, and collaboration with UNCW. Town Manager Hewett asked for clarification on monitoring on the west end. He said when he referenced it, he was speaking to both ends. With the potential for other harvesting activities he was speaking to both inlets.
- Meetings- Members of the board attended the January 30th Brunswick County Shoreline Protection meeting and will keep up with CRC meetings. Members are also attending a dune repair workshop March 9th in Surf City.

Motion to accept report with changes Member Rice, second Member Thomas, approved by unanimous vote.

PUBLIC COMMENTS

Commissioner Butler said he loves the idea of the additional collaboration. He is a data person but likes to see the results of the data and what it means to us. Thanked the board for the additional monitoring on both ends of the island.

ADJOURNMENT

Motion by Vice Chair Pearson to adjourn at 12:16 p.m., second by Member Rice; approved by all.