



## Meeting Notes from the Beachfront Jurisdictional Line Stakeholder Workgroup December 5, 2018

The Beachfront Jurisdictional Line Stakeholder Workgroup met on Wednesday, December 5, 2018, in S.C. DHEC OCRM's 2<sup>nd</sup> Floor Conference Room, Charleston, SC.

### **WELCOME, REVIEW WORKGROUP CHARGE**

At 10:00 a.m. S.C. DHEC OCRM Chief Elizabeth von Kolnitz welcomed the Workgroup members and reviewed the agenda items. Ms. von Kolnitz stated that a goal for this meeting was to reach consensus on as many aspects of the "primary dune" definition as possible, but further explained that the definition can be revisited, if needed, as the Workgroup proceeds through the remaining meetings. Additionally, she introduced the topic of "extraordinary erosion".

The following members were in attendance:

Tim Kana  
Bill Eiser  
Emily Cedzo  
Ryan Fabbri  
Jean Ellis  
Rocky Browder  
Josh Eagle  
Nick Kremydas  
Jane Darby  
April Donnelly  
Blanche Brown  
Michael Katuna

Additional members of the public in attendance were Sandy Stone, Island Realty and Linda Tucker, SCBA (South Carolina Beach Advocates). Lawra Boyce and Kristy Ellenberg were the Workgroup Facilitators (Facilitators).

### **'PRIMARY DUNE' DRAFT RECOMMENDATIONS – GROUP DISCUSSION**

As requested by the Workgroup during the November 14, 2018 meeting, DHEC OCRM drafted a recommendation for the primary dune definition based on previous Workgroup meeting discussions. Ms. von Kolnitz presented the draft recommendation to the Workgroup for feedback. Specific edits and discussion offered by the Workgroup included:

- Add "within the standard zone" after "beachfront jurisdictional baseline" in the first sentence of the draft definition.
- Dune length was discussed, with the following comments and edits.
  - Edit length requirement to be '500 linear feet' instead of '500 shore-parallel feet'.

- The Workgroup acknowledged the constituent input offered in the Outside Comments: Part 2 document which indicated 250' of continuous alongshore dune with exceptions for beach access points as a possible primary dune indicator.
  - Jessica Boynton, DHEC OCRM Shoreline Specialist, reminded the Workgroup that, depending on the parcel width, a length of 250 feet would span approximately 3 properties.
  - In response to concerns regarding the clarification of acceptable breaks in the primary dune, Ms. von Kolnitz suggested a qualifying paragraph for 'nearly continuous' which would address public access points, emergency vehicle access, etc.
- The inclusion of 'stable, native vegetation' was discussed.
  - Not all renourishment projects include vegetation planting; allowing the beach to equilibrate and waiting until spring to plant are often recommended practices after a renourishment project.
  - By including vegetation criteria, does it mean that a dune cannot exist without vegetation? Only dunes with vegetation can be considered for the baseline?
  - Naturally forming dunes along South Carolina's coast develop vegetation after a period of time. During previous meetings, Workgroup consensus was reached that if there was no vegetation present then longevity would be difficult to determine. Including vegetation language is appropriate.
  - After a storm, what is the time-frame required for stable, native vegetation to become established? Consensus was reached on a 24-month time-frame. Additionally, 18 months was discussed as an appropriate time-frame for vegetation regrowth.
  - Will property owners have concerns regarding a vegetation qualifier?
- Dune height and elevation criteria was discussed in more detail following staff presentations; however, a couple of points were made here prior to that discussion.
  - Edit the term "Line" in 'Mean Higher-High Line' to 'Plane' or 'Elevation'.
  - Ms. von Kolnitz asked the Workgroup to consider implementation issues that may arise from having multiple height and/or elevation criteria.
- "Scarped dune" language was discussed.
  - Natural processes may scarp and rebuild a dune, but scarping should be permissible if the dune is doing its job.
  - What if scarped dune does not recover and proves erosional? How does this scenario get captured?
  - What is the difference between a scarped dune and an erosional dune when evaluating the oceanfront side of a dune? Interpretation offered by a workgroup member: Eroded means the dune is almost completely gone, a scarped dune may be cut in half.
  - Suggested language "may experience minor scarping or erosion"
- The "typically not eroded or overtopped by ....." qualifiers were discussed.
  - Ms. von Kolnitz noted that King tides are predictable, and asked for ideas to clarify the meaning of "naturally occurring".
  - The dune should withstand a normal King tide.
  - Suggested language: "typically not eroded or overtopped by *astronomical tides unaffected by storm surge*".
- The 3-year time-frame requirement for an emergency berm was discussed.
  - Stabilization of a berm is site-specific and may take more or less than 3 years.

- If the vegetation qualifier is removed from the top section of the definition, then a time-frame is needed to qualify an emergency berm as a primary dune.
- A consensus was not reached on whether a 2- or 3-year time-frame should be included.

During the draft recommendation discussion, these general statements were made:

- The Legislature previously expressed concern about the difference between the statutory and regulatory language regarding the primary dune. It is important to be able to communicate to the Legislature that this Workgroup recognizes and considered these differences. It makes sense that the regulation expands upon the statute.
- Evaluating and determining primary dune definition criteria is made more difficult by the fact that the Workgroup does not know how or where the baseline is set in areas where there are no primary dunes.

### **INFORMATIVE SESSION**

A presentation entitled *Primary Dune: Height and Elevation* was given by Matt Slagel, DHEC OCRM Beachfront Project Manager. This slide presentation included site examples showing a comparison of 2006 and 2017 aerial imagery, as well as a comparison of 2006 and 2016/2017 LiDAR data. Mr. Slagel noted that as technology improves over time, the accuracy of spatial resolution also improves (i.e. the 2006 LiDAR data may have an accuracy of 10 centimeters whereas the 2016/2017 LiDAR data has an accuracy of a few centimeters). This presentation also included site examples of beachfront contours.

- Following this presentation, the Workgroup discussed aspects of beachfront dynamics.
  - The mean high tide line is not static and typically moves between 10 and 30 feet daily. Elevation is constant.
  - Because active beach is on a relatively flat slope, minor changes in that area can greatly shift the mean higher high-water line daily. Once onto dry sand beach, changes are less intense over short periods of time.

### **'PRIMARY DUNE' DRAFT RECOMMENDATIONS – FACILITATED DISCUSSION**

Workgroup discussions on specific criteria related to the primary dune definition included:

- In locations where a dune feature which would meet the primary dune definition does not exist, could a contour line be used instead?
  - Possible creation of a new category with an if/then scenario for dune height (i.e. if no such dune exists within 200' or 300' of the mean higher-high water, then a specific contour line should be the baseline position).
    - Additional contour location criteria:
      - Has to be landward of stable vegetation.
      - Has to be a minimum distance landward of mean higher-high water.
    - The Workgroup has previously discussed the protective element provided by the primary dune. How does the Workgroup ensure that such an if/then scenario would account for this protective purpose?
  - Example scenario: Assess if the dune has a height of 3' from the seaward toe to the dune crest. If not, pick an elevation and find the first contour that meets the

elevation requirement and is at least 200' or 300' landward of mean higher-high water.

- Ms. von Kolnitz noted that implementation issues may arise if/when DHEC OCRM is put in a position of choosing whether a dune or an elevation is more appropriate.
- Include language to clarify that height measurements are taken at the dune's seaward toe and crest.
- The State should limit the landward movement of the baseline to 200' or 300' landward of mean higher-high water so that rapidly accreting dune ridges are not penalized and have a chance to develop.
- Does DHEC OCRM have the ability to use the ideal dune methodology for standard zone beaches where a 3' dune is not present?
  - Department response – the ideal dune method is used in locations where hardened erosion control structures exist. Staff did contemplate using that calculation for areas that did not have dunes; however, more beach profile data would be needed in those areas, including supplementary BERM collections and reference profiles for comparison.
- Differing opinions on effectiveness of a 3' height requirement
  - A 3' dune does not provide enough protection in that it is about the equivalent of dense shrubbery or a stand of trees without any elevation change. This Workgroup should consider the safety of development right up to a 3' dune.
  - How would increasing height requirement to 6' impact the if/then scenario for dune height or contour approach?
    - A higher dune requirement may not be readily met and contours would be used more often.
    - Ms. Boynton noted that dune heights of 3' and 4' are present, but that not many 6' dunes are located adjacent to the Atlantic Ocean in South Carolina.
  - Alternative viewpoints that 3' is sufficiently protective.

The Facilitators reviewed the process goals identified by the Workgroup during the first meeting. The potential implementation challenges of the current draft recommendation identified by the Workgroup are:

- I. The only issue staff were encountering that is being addressed now is the addition of “nearly continuous” into the definition. Does “nearly continuous” clarify enough?
- II. Concern for areas that do not meet the primary dune definition.
- III. Concern about implementing an if/or system that might require adjacent areas of a beach and/or different parts of the state to be processed differently.

## **INTRODUCTION OF 'EXTRAORDINARY' EROSION**

Ms. von Kolnitz introduced the topic of “extraordinary erosion” from Act 173: Beachfront Management Reform Act.

- An inquiry was made about the feasibility of using and comparing pre- and post-storm data collected by the local communities to inform the definition of extraordinary erosion. Ms. von Kolnitz responded that not all communities can afford to perform that level of monitoring.

## INFORMATIVE SESSION

Ms. Boynton gave a presentation of erosion background and data to include shoreline change rate calculations. Ms. Boynton explained that DHEC OCRM uses wet/dry shorelines dating from the 1800s to the present, as well as the AMBUR tool to calculate rates of change. Post-storm imagery/shorelines were not included in the most recently performed calculations. Additionally, the volume change calculations from LiDAR was done by the US Geological Survey following Hurricane Matthew and took 2 years to complete.

- A suggested idea from the Workgroup for defining extraordinary erosion, is to derive a long-term shoreline change rate for comparison to a recent erosion event to determine if that event is “extraordinary”. The concern with this approach is that long-term erosion rates may not capture shoreline variability, in that a shoreline could have an erosion rate of zero, but be highly dynamic (rapid periods of accretion and erosion).

Dr. Tim Kana gave a presentation of data and techniques to measure erosion. The presentation information included, but was not limited to:

- The relationship between beach conditions and post-storm damages (i.e. impacts of Hugo).
- If an erosion trend is present, then an extraordinary event will be worse.
- Tidal surge levels as a factor of extraordinary erosion.
- Beach Classifications utilized by Coastal Science and Engineering -
  - Type 1A: Single High Dune – stable shoreline; highest volumetric erosion but low structural damage; ample sand for rebuilding.
  - Type 1B: Single High Dune less than 80 feet wide – highest volumetric erosion; washover formation; low structural damage; ample sand for rebuilding.
  - Type 2: Low Dune – eroding shoreline; low volumetric erosion; washover formation; high structural damage; inadequate sand for dune rebuilding.
  - Type 3: Multiple Low Dunes – accreting shorelines; moderate volumetric erosion; washover formation; structural damage as a function of building elevation and quality; excess sand for dune rebuilding.
- Defining extraordinary erosion by beach profile utilized by Coastal Science and Engineering
  - Not extraordinary
    - Initial condition
    - Berm scarping (seasonal beach cycle)
    - Dune scarping (little impact to crest/vegetation)
  - Usually extraordinary
    - Dune recession (scarping at least to crest of dune with loss of vegetation, sand preserved in active littoral zone)
  - Extraordinary
    - Dune breaching (washover volume losses as sand moved landward, likely long-term recession of stable dune position)
- Coastal Science and Engineering measures volumetrics to calculate erosion rates because it takes a lot of noise out of the data.

Discussion during and resulting from Dr. Kana’s presentation included, but was not limited to:

- An issue with measuring volumetrics to calculate erosion rates is that a volumetric change may not be noticeable if the sand is removed from the dune system, but stays in the littoral zone. Ideally, all the sand would remain in the littoral zone but that is not always the case.
- At a minimum, measurements to the low water mark should be taken.

## **CONTINUED WORKGROUP DISCUSSION OF 'EXTRAORDINARY' EROSION**

Following the Informative Session presentations, the topics and ideas discussed by the workgroup were:

- Regarding data collection -
  - Is the best course of action to postpone the 7- to 10-year baseline review until 18 months after a named storm if one occurs during the review period?
  - Data can be collected within 18 months of a storm, it just cannot be used.
- The BERM profile data collections at 2,000 ft. spacing intervals is not sufficient to characterize the beach/dune system and erosion levels for the entirety of the coast. SCDHEC OCRM may want to consider reducing the spacing of BERM transects to 500 ft. or 1,000 ft. Also, SCDHEC OCRM should take advantage of local and consultant data from extraordinary events and nourishment monitoring.
- Renourishment is changing background erosion rates.
- The statutory "erosion zone" language can be read so that 'extraordinary' erosion can be determined on an island by island, or beach by beach basis.
- Does "erosion zone" need to be clarified?
- Ms. von Kolnitz asked the Workgroup to consider what data needs to be collected and when that data needs to be collected by staff for 'extraordinary' erosion.

### **NEXT STEPS:**

Requested additional information and next steps:

- a) As a result of the discussion on dune height vs. elevation and contours, DHEC OCRM will provide additional information on what a 200' or 300' buffer distance from mean higher-high water may look like in different locations (i.e. in an area with a large dune field but no dune that meets the 3' requirement, where would a line 200' [or 300'] from the MHHW or vegetation line be in the dune field?).
- b) DHEC OCRM to provide background information on how other states address extraordinary erosion.

### **"Marina" -**

1. Potential for increasing the setback distance.

The Meeting was adjourned at 2:00 p.m. by Ms. von Kolnitz.