

Public Beach Recommendations

Cape Charles Wetlands – Dune Board

September 15, 2016

Background (Staff report 6/1/16)

- Over the past several years the Town has taken various steps as part of an overall beach sand management practices strategy. These include gathering data on dune height and using the public works department to perform regular cleaning and maintenance of the beach.
- Since March 2015 the Town beach has been the deposit site for approximately 80,000 cubic yards of dredge material as part of the US Army Corps of Engineers' federal harbor dredging project. The final phase in the current dredging cycle was carried out and an additional 30,000 cubic yards of dredge material was deposited at the north end of the beach.
 - USACE will install both fencing and sprigging as sand management practices following the deposition of dredge material (sand).
- The town asked the Board to review past and currently employed beach sand management practices and to make appropriate recommendations to Town Council:
 - Provide an opportunity for residents' input into the scale of the sand wind erosion problem,
 - Identify potential practices to mitigate future wind erosion events, and
 - Consider/identify possible synergies with the USACE sand deposition, fencing and sprigging.

Our “Homework”

(Key references attached)

- Review of applicable guidance and science
 - Cape Charles Dune Ordinance (1994)
 - Cape Charles Comprehensive Plan (2009)
 - Town files for past dune/sand management monitoring and reports to FEMA
 - Virginia Dune Guidelines (1993)
 - Shoreline Evolution Chesapeake Bay Shoreline Northampton County, Virginia (VIMS 2004)
http://web.vims.edu/physical/research/shoreline/docs/dune_evolution/Northampton/NHShoreEvolutionReport.pdf NOTE: Cape Charles is “Reach II”
 - The Dune Book – North Carolina Sea Grant
http://www.seagrants.umaine.edu/files/chg/RogersNashdune_booklet.pdf
- Review of beach, dune, sand management plans of other coastal towns (approximately 23 plans, plus > 35 additional documents)
 - Ocean vs. sheltered/enclosed waters
 - Norfolk, Virginia Beach

Additional Activities

- Public input
 - Information Meeting – June 15, 2016
 - Questionnaire
- City of Norfolk Rep Visit – July 26, 2016 (with Board)
 - Pre-sand deposition
- Board working sessions – June 1, July 20, August 31
- Board beach walk - 10 Sept. 2016
 - Post-sand deposition

(Town logo)

Wetlands and Coastal Dune Board—Public Comment—Sand Management

June 15, 2016

Please take this opportunity to express your thoughts, interests, and/or concerns regarding the management of the sand and dunes along the public beach in our town of Cape Charles, VA. We look forward to reviewing your comments and thank you for your interest in our community!

Name: _____ (you can choose to remain anonymous)

Address: _____

How long have you lived in/visited Cape Charles? _____

- 1) How is the beach important to you?
- 2) Has the blowing sand and/or dunes affected your property or business? If so, how?
- 3) What questions or concerns do you have regarding the sand dunes, given the dynamic nature of sand movement by high winds and storm surge?
- 4) Do you have any historical observations about the beach, sand, and/or dunes that you believe are important to future planning?
- 5) Other comments, suggestions:

Multiple Town Goals and Priorities

(some competing priorities)

- Make the best of the USACE beach nourishment opportunity
- Town beach is known for sunset views – especially at north end
- Beach is vital town asset (both resident recreation and tourism-based economy)
- Sand management - Maximize sand retention on beach, prevent sand migration landward to Bay Ave.
- Dune management - Stabilize dunes for wave attenuation and protection of public property by low, wide dune profile going forward
- Implement actions to avoid jeopardizing FEMA funding when needed after storms

Noteworthy Points from Review

(Public questionnaires scanned & attached)

- Highlights of public questionnaires (7 returned)
 - Importance of view; dunes block view; need to keep sand off streets, sidewalks, and property; sand has caused property damage and blocked beach and fishing pier access; diminished view; preferred height of dunes (some suggested NTE 3' above boardwalk); disbelief of dunes preventing danger from storms; also some recognized value of dunes and to keep people off them
- City of Norfolk, Manager of Environmental Services (30+ years beach and dune mgmt.)
 - Bay front shore; similar beach/sand/dune management issues, including dunes blocking view by adjacent traditional houses
 - Difference – public boardwalk and street is next to dunes, then houses
 - Provided specific guidance points for managing the sand, beach, and dunes
 - **The essential value of dunes is to attenuate waves and mitigate damage.**
 - **In case of Cape Charles – protect public property of boardwalk and street**

About Dune Height

- The Board has given serious consideration to citizens requests for establishing a set dune height, e. g, 3' above boardwalk which is 8.5' above sea level, to be maintained
- After reviewing the many gathered plans, guidelines, and studies, as well as speaking with both scientific (Scott Hardaway at VIMS) and practitioner experts (Lee Perkins, City of Norfolk), this board is unable to justify the lowering of existing dunes to a specific height
 - Leave existing dunes, extend them seaward AND PLANT with American Beach Grass (ABG) to trap sand on beach and prevent the dunes from becoming taller

City of Norfolk – Approach and Results



Immediate Recommendations – page 1

(Prior to USACE installation of fencing)

1. Town - Clear/move sand to make one access point for people and equipment next to the pier. Close the other one in the middle of the dune by filling in with sand. Leave the large flat area in front for gathering/picnic tables on the boardwalk side.
2. Town - Move any excess sand at the south end to fill shallow hole by Madison and any remaining to the north end)but don't move sedge grass to other parts of the beach!)
3. Town - Spray/kill the sedge grass before it can spread and before it goes dormant – use Round up with dye. See photos of sedge on the next page; don't spray other plants. Joe Fehrer has the dye and will accompany Public Works Superintendent, John Lockwood.
4. Town - Move volleyball courts away from the base of the dunes south to higher areas with more sand (closer to pier)
5. Suggest to USACE to not block beach access walkways. Instead use the fence to define dune “wings” next to the walkway access points along the entire beach to prevent sand from blowing into the walkways. Town planner, Larry DiRe, to indicate on Sheet 6 of 14, dated 04 Feb 2016. Larry DiRe and Joe Fehrer to meet with Project Engineer as appropriate to clarify and/or indicate the location. Town to pile sand in the wings if needed before the grass is planted.

Immediate Recommendations – page 2

(Prior to USACE installation of fencing)

6. Suggest to USACE - install new sand fences seaward away from the existing dune line, NOT at the toe of the existing dune as indicated on Sheet 10 of 14 dated 04 Feb 2016. Approx. 20' seaward of dune line when adequate space exists
7. Town - Purchase now /order ABG to be planted later – need to order in advance so grass can be grown! (about \$70 for 1000 scrapes/plants; Norfolk source: Peter McClintock, Emerald Forest in Norfolk for ABG and other plants <http://www.emeraldforestnursery.com/>). Larry DiRe and John Lockwood to calculate number of plants needed.
8. Town – Identify volunteers to plant ABG in Jan.-Feb. Possibilities – schools, New Roots, others to be identified
9. Town - Close access at Neptune statue (fill in) and define single access for pedestrians and/or equipment at the foot of Washington Ave. near where the stones protect the outfall
10. Town – Stop grooming/any mechanical activity in the upper beach near dunes ASAP

Recommendations to implement fall 2016, prior to winter (Post-USACE project completion)

11. Town – Angle access walkways away from the north winds, then fence, add sand to fill in, and plant with ABG
12. Town – Install multiple rows of sand fencing at the south end (east-west) and north end to mitigate sand blowing during the winter in layout to be discussed with Board
13. Town – Public Works Superintendent to develop a winter sand maintenance plan, with Board review, to keep sand out of street, clear sidewalks, and install winter fencing

Draft Proposed Recommendations

Recommendations for Jan.-Mar. 2017

page 1

14. Town – Plant ABG where thick grass growth is needed to create lower /wider dunes in the broad parts of the beach where people don't sit (photos available)
15. Town – According to the plan (#13), stay on top of keeping boardwalk, street/curbs, and all sidewalks clear of sand for pedestrian safety, e.g., Bay Ave. sidewalk in front of 1 Madison Ave. Deposit sand back on the north end of the beach.
 - This is not the responsibility of property owners!
16. Board/Town – Review City of Norfolk slides 46-48 at <http://www.norfolk.gov/DocumentCenter/View/20818> for details on plant cost (and other slides for related issues, benefits, access)

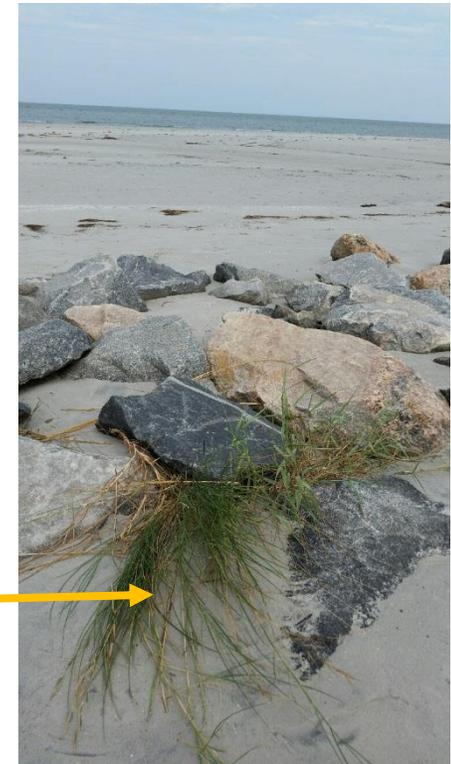
Recommendations for Jan.-Mar. 2017

page 2

17. Town – To catch sand and build up beach in low area between Monroe and Madison Aves. (which is prone to over wash, e.g., storm on 9/3), plant a 4' strip of *Spartina patens* seaward about 35' dune.

- This grass will tolerate salt water which ABG will not.
- This will give ABG space and time to extend seaward and build lower, wider dune.

One small patch of *Spartina patens* is on beach in that area now. Photo 9/10/16



Recommendations for Spring and Summer 2017

18. Town - Fertilize ABG with 10-10-10. Need to check how often.
19. Town - For any newly forming dunes at the north end on boardwalk side, leave at least 5' buffer between toe of dune and the boardwalk
20. Town - Refine/replant street side of dunes (in 5' minimum path next to boardwalk). Town planner, Board to develop a vegetation plan for the length of the boardwalk. Example plant considerations:
 - Panicum amarum 'Dewey Blue' Switchgrass or beach grass is good on the street/back side of the dune (doesn't like salt and wind as much as ABG)
 - Remove trumpet vine to simplify maintenance, plant other suitable plants
 - Review Norfolk guide, visit 27th St. demo site for ideas about plants (next slide)
<http://www.norfolk.gov/DocumentCenter/View/3830> .

Additional Recommendations – page 1

21. Town and board - Develop good practice guidance about using mechanical equipment on the beach for equipment operators and train, e.g., avoid emerging vegetation on beach
22. Plan and budget for ongoing maintenance - routine, preventative and proactive before storms, e.g.,
 - Keep boardwalk, streets/curbs, and sidewalks clear of sand (not the responsibility of property owners)
 - Annual planting of ABG as needed
 - After the tourist season, let beach naturalize over the winter (don't remove seaweed)
 - Budget for regular sand nourishment (from USACE spoil area)
23. Town to develop new signage to protect dunes from foot traffic and mechanical equipment

Additional Recommendations – page 2

24. Review the Cape Charles Wetlands and Dune ordinances for desired scope going forward
 - Should the scope of the charter for the Cape Charles Wetlands and Dune Board be updated?
25. Town should develop a beach/sand/dune management plan
 - Include recommendations for ongoing beach nourishment
 - Review gathered references and plans from other areas (provided by Board)
 - Board is willing to develop a suggested outline
26. Ask USACE for their dune survey data, also share with VIMS
27. Ask VIMS for a cost estimate to routinely monitor (and recommend frequently) the beach and dunes using their established GPS stations
28. Plan for/budget to construct dune-appropriate (open pile) walkways across the dunes