

QUESTIONS REGARDING

FRIENDS OF SQUIBNOCKET SEPTEMBER 16 PRESENTATION

Submitted to Friends of Squibnocket by Marina Lent on October 5, 2014

Question 1(A): Dune Migration. The average migration in the area of the dune is noted at 2.3 feet/year. It is also noted that major maintenance, including the rebuilding/relocating of the dune, should occur about every 10 years. **Will the dune migrate each year, or will the migration take place every 10 years as part of the periodic maintenance? Or, will it be a combination with some annual migration (less than 2.3 ft.) plus the periodic rebuilding/relocating?**

Answer: The dune will be subject to erosion each year and will require annual basic maintenance. The front slope will naturally respond and adjust to erosion caused by wave run-up, wind and rain. Possible re-vegetation of this front slope would be the only maintenance activity. If overwash occurs and the road is covered with dune materials, that material will be removed and placed on the crest or back slope of the dune. Re-vegetation of the back slope would occur between November and April of that year. Any replenishment of the migrating dune will be done on the crest or back slope and only every 10 years, unless we have a major weather event. As the shoreline retreats over the course of any 10-year period, the front of the dune will be reduced in volume and after 10 years an equivalent amount will need to be added to the rear of the dune, less any material that has accumulated naturally due to overwash. Given that the rate of erosion is 115' over 50 years, this is equivalent to moving the center point of the top of the dune (dune crest) by 23' every 10 years. Part of the move will be natural due to storms and the remainder will be by a planned maintenance activity involving heavy equipment and the planting of additional dune grass.

Question 1(B): The dune when first built will require filling up to 5,000 feet of wetlands. **How certain is the approval process for this intrusion into the wetlands?**

Answer: The primary need for wetland filling is to locate and construct the road as far inland as possible. As such, the road would be proposed as a "limited project" defined in the state Wetlands Protection Act 310 CMR 10.53(3)(e). In brief, this regulation allows for "the construction and maintenance of a new roadway...where reasonable alternative means of access from a public way to an upland area of the same owner is unavailable". The area of fill must be minimized, but it is not restricted to 5,000 square feet. A greater amount may be permitted but "the applicant shall provide replication of the wetland...to the extent practicable". The permit application requesting permission to fill a section of the wetlands will be considered by the Chilmark Conservation Commission, which will make the initial determination. Conservation Commissions are independent entities appointed by each Town to administer the Massachusetts Wetlands Protection Act and each Commission has its own unique and individual approach through the local bylaw and regulations.

Question 1(C): As the dune migrates inland it will intrude further into the wetlands. **Are additional approvals required for this intrusion, particularly if it is a result of the periodic rebuilding/relocating process? If so, how certain is this approval process?**

Answer: The recommended approach is to develop a long-term management plan for the barrier beach, including the current parking lot area. This plan should be submitted along with the permit for the project itself and both should be considered in tandem. A maintenance plan would form the basis for a renewable maintenance permit, which would allow maintenance activities, including intrusion into the wetlands, to occur through procedures as opposed to separate applications. Under this approach, the Conservation Commission would approve a set of notification and plan submission procedures to allow emergency and non-emergency

maintenance without requiring explicit Conservation Commission approval for each maintenance event. Permits for this procedural approach can be renewed each year, which further simplifies the process. The Duxbury Beach Reservation Plan is a good guide for this approach.

Question 2: Dune Side Slopes. The side slopes of the dune are noted as a relatively steep 3:1. The Duxbury dune appears to have much gentler side slopes. **Can the Squibnocket dune have gentler side slopes? Or is the 3:1 slope the result of the need for a certain volume in the dune, a limited desired height, and the restriction in the width of the base due to the wetlands?**

Answer: One of the primary motivating factors for the gentler side slopes for the Duxbury Beach Reservation is Piping Plover habitat where the slope needs to be 10:1. If we had a broader footprint, we would have considered a gentler side slope but we needed the height and dune crest width to give us the wave run-up characteristics we were looking for. As the area recovers from the problems created by the revetments by broadening the area between the edge of the shoreline and the pond, we would expect the dune slope to naturally erode to a configuration that is 5:1 or 6:1 but 3:1 is in the range of acceptable 'best practices' for dune slope to initially be constructed with this specific objective.

Question 3(A): Dune Roadway. The inland side of the 12-foot roadway is adjacent to the 3:1 slope. **Will there be a guide rail along the roadway?**

Answer: A guide rail is not presently planned but could be added if required by the Building Inspector and the Planning Board. We would consider a guide rail similar to the ones installed at the Duxbury Beach Reservation. (Note: the DBR guide rails were installed to keep off-road vehicles off the dunes.)

Question 3(B): If the dune is always migrating (rather than moving only when rebuilt every ten years), will the roadway have to be rebuilt continually?

Answer: We project that the road will need to be rebuilt every 10 years. That is a total of four rebuilds over the period, after which Squibnocket Farm will have a fresh road to start its 50th year on this solution. During any 10-year period, based on the effects of storms and overwash, we would expect that maintenance would need to be performed annually to repair any damage that may occur within the 10-year window. These repair events would generally restore the road in its existing location. The exception would be for a significant storm which altered the dune, necessitating a move of the location of the road.

Question 3(C): The stability of the roadway, used by cars and trucks, adjacent to the edge of the slope is of concern. **Has the stability of the roadway been checked?**

Answer: We do not think this should be a concern. Civil engineers who have had experience in road building designed this roadway. The design allows for the use of best practices in the construction of the road itself. A 2:1 side slope is considered as a minimum standard so we believe that a 3:1 sloping on either side of a roadway is more conservative and more stable. The best way to think about this is that the road will be built following best construction practices for gravel roads. After the road is built, the dune will be built in front of it and graded down to the edge of the 12' wide roadway. Plantings will provide additional stability as well.

Question 4: Ability To Provide Turnaround And Beach Access. There is a need to have a turnaround for vehicles that are not going into the parking lot or across the dune. (Using the parking lot for this turnaround is not desirable.) There is also a need for a place for a movable toilet with access from the road. Further, there must be walking access from the parking area to the beach. This access should be handicapped accessible, with no gradients over 10%. **Can the plans be modified to show these needed facilities?**

Answer 1: Turnaround. Yes, a turnaround off Squibnocket Road could be provided and we will incorporate it into the plan. It will be a 'K' style turnaround, suitable for a transit bus. (However, it should be noted that the circle turnaround in the original plan from the Town was ruled-out early in the process due to site constraints: turning radius was too small and location was too close to the shoreline and it would have required a new revetment.) Use of a relocated parking lot along Squibnocket Road is more preferable to handling drop-offs and turnaround requirements.

Answer 2: Movable toilet. There is space for this at the backside of the constructed dune.

Answer 3: Access to the beach. We will have easy access to the beach from the parking area. A 10% gradient can be accomplished from the parking area to the backside of the dune. Access for pedestrians and vehicles over the dune and down to the beach has been addressed by the Commonwealth's Division of Conservation and Recreation (DCR). (In a policy developed for Salisbury State Beach, at-grade walkways can be constructed with a slope of 30%.)

Question from FOS to Committee: You refer to a requirement to provide access with gradients that do not exceed 10%. Is this a Town policy or regulation? Is it a state regulation? We are not aware of a policy or regulation like this that applies to beaches. Can you please provide references to the policy or regulation.

Question #5: Many people are concerned about the filling in of the east end of Squibnocket Pond. It is understood that getting permission to dredge a pond is difficult. However, Segekentacket was recently dredged. **Has consideration been given to dredging the eastern end of Squibnocket Pond to obtain material for the dune, assuming such material is suitable?**

Answer: Dredging the eastern section of the pond was considered and ruled-out early in the process for environmental and permitting reasons. We believe that silt and muck sediments would not be compatible for a dune and that the turbidity caused by the dredging would have an adverse impact on fisheries and wildlife. However, if this is important to the committee, the issue could be revisited.