Minutes of the meeting of the Town of Chebeague Island Planning Board, November 18, 2010 at 7:00 at the Hall

Present: Sam Birkett, Ernie Burgess, Louise Doughty, Mabel Doughty, Jane Frizzell, Beth Howe (Chair) and Tad Runge.

Ron Tozier, CEO.

1. Minutes of prior meetings
Mabel moved, seconded by Tad to accept the minutes of the meetings of and October
Approved unanimously.

2. Hamilton Beach Bluff Stabilization
Beth explained the process – Barney will present the plan and the Planning Board members and
CEO will have a chance to ask questions. Then the public hearing will be opened and everyone
can speak and ask questions. When the hearing is closed the Board will review whether the
criteria in the ordinance have been met. The Shoreland Zoning criteria were also handed out to
everyone.

Barney Bakes presented the project:
It involves seven properties. It has been reviewed and approved by State DEP and the Army
Corps of Engineers.

There is significant erosion of the bank – about 40 feet since 1895. Some houses are quite close
to the top of the bank. DEP allows stabilization of a bank if there are houses within 100 feet of
the top of an unstable bank. Climate change may have the effect of increasing the erosion.

The bank is made of glacial till. It is fairly steep which makes it move back faster as the bottom
is under cut by storms such as the Patriot’s Day storm.

Barney surveyed the bank and developed a section for every 25 feet to show the steepness and
height. He considered two solutions to keep the top of the bank where it is now. One would
have been to use rip-rap, but this is not favored by DEP. The other was to place toe-stones at the
bottom of the bank and then use composite “mattresses” filled with stones, either stacked or laid
flat on the bank up to the 100 year flood level, to armor it. This would have geo-textile fabric
underneath and above the mattresses, with holes cut for planting salt-tolerant bushes. The
mattresses would also be sprinkled with top-soil and seeded. This will produce a strong bank
that will be more attractive than the bare bank and fallen trees that exist now.

There is also an issue about groundwater seeping through the bank, and freezing in the winter.
This breaks up the bank. This water will be collected in French drains that will direct it down to
the tow stones and disperse it here.

DEP asked that the geo-textile fabric and mattresses let through some sand and fines to continue
to nourish the beach. This is reflected in the proposal.
The project will go as far as the Tonks property. At Artist Point and the Hubbels, the bank becomes ledge. There will be a gap between the end of the stabilized area and the ledge.

The Planning Board has had a workshop on the project and a site walk. He does not have a contractor yet, but in response to questions from the Planning Board at the Workshop he talked with Lionel Plante about the possibility of moving the equipment and materials directly to the beach to save wear and tear on island roads. Plante said the beach is good for barging, so Barney has provided a table of the material and vehicles. The barging will be done at high tide. Stumps will be taken back to the mainland. Brush will be burned on the beach or chipped. Topsoil that will be reused will be stored at Wayne Dyer’s pit.

The public access at Soule Road will be armored and the steps will be replaced. The project will also repair any road damage done during the project.

Ron Tozier asked what the specifications would be for the mattresses -- he needs good enough information to insure that the project is done properly. Barney said that the manufacturer of the mattresses will specify the stone needed and the textile -- there will be specifications.

Ron also asked whether the supplies will or might come by barge. Barney said they will. When he hires a contractor the specifics of the staging plan will be worked out in more detail. They still have to decide whether the mattresses will be filled on the mainland or on the island.

Ron asked whether there will be a fence at the top of the bank. Barney said that he is recommending some kind of hedge or fence at the top to the property owners.

Ron asked how involved Barney will be once the project is approved. Barney said he will be the engineer of record and will be involved in monthly meetings on the site. Ron can also attend these.

Beth asked for questions from the Planning Board:
Tad asked whether it is possible to grow vegetation on the mattresses when they are stacked vertically. Barney said they will be nacked for some years at the beginning but that vegetation can develop stable root systems through the rocks and grow. The mattresses will be stacked 5 to 6 deep in only a few places. Otherwise there will usually be only 2-3 feet of stacking. It is possible to have tubes through the mattresses for plants to grow in. This is not commonly done in Maine but there is one nursery that does it.

Tad asked whether fines will go through the geo-textile. Barney said they would.

Tad asked whether there could be replacement of the trees that will be taken down because they are so close to the top of the bank – not just little whips but at least 1.5 inch trees. Barney said that new trees could be planted further back from the edge of the bank. Ron said that the Shoreland Zoning requires that each tree taken out must be replaced by one that is a native species.
Sam asked, given Barney’s experience with projects of this size, how long does he expect the armoring to work? Is there some kind of warrantee that if it doesn’t last, the installer will come to clean it up? Barney said he has never done a project as large as seven properties. It is possible for the contractor to be bonded for the construction. Beth said that Sam is more concerned about over the long run. Barney said you have to rely on the contractor and the design. This project will not stop the erosion, it will just slow it down. It will stand for at least 10 years. Also one of the advantages of using the modular mattresses is that if one section falls apart, it can be repaired.

Mable asked how many French drains would there be? Barney said it depends on how many sources of water they find in the bank when it is grubbed. At the moment they have identified at least five areas that will need drainage.

Mabel asked what the effect of the work traffic would be on the beach. Barney said that the focal point of the work will be at the Soule Road access where the beach is stony. They will be using tracked vehicles that will spread the weight somewhat. The tide will wash away the tracks.

Mabel asked where the barge will land. Barney said there is an area that is fairly free of stones.

Sam asked whether all the property owners listed in the application are on board? Barney said that the information he has indicates that no one has said no. There was some discussion about Manny Morgan, but another one of the property owners said she was going ahead with it.

Jane asked that she thought the area that had gotten rip-rap after the Patriots’ Day storm seems to wear at the edges. How will the project hold up at the two ends? Barney said that at the Hunter end, the bank is fairly low, and at the Tonks end there is already some existing reinforcement that can be tied into. The armoring will match the hardness and the slope of what is there. If they had to end in the middle, doing it at the Town ROW which is already armored would work.

Beth asked whether any of the properties in the project have their septic systems between the house and the bank. There was some discussion with applicants in the room which suggested that breaking into a septic system during construction would not be an issue. Beth asked just to have the information of where they are.

Beth asked about the silt fence shown on the plan on the beach. Barney said she had misunderstood the drawing. There will not be silt fence on the beach. The best erosion control method is simply to grub the bank gradually, uncovering only a section that can be worked on in a spell of good weather.

Ron asked why DEP didn’t suggest using traffic mats on the beach. How much compression is there likely to be. Barney said he thinks it is a very hard beach and that using tracked vehicles will spread the load. Ron said he would call DEP to see if this is an issue for them. Barney said it would also be possible to use a stone blanket – lay fabric on the beach, cover with stones.

Louise asked how long will the work last? Barney said that in calm weather the bank is not touched by the water at all. The bank will be reinforced up to 12 feet, with fabric and planting
above that. This is the area that would be hit in storms. He thinks that this will improve the resistance of the bank more than 100-fold.

Beth opened the public portion of the hearing:
Donna Damon asked what would happen to Soule Road. She heard Barney say that it would be fixed if it was damaged. The stairs will have to be moved. What happens if they get broken in the process. Will the Town have to replace them? Barney said that he will take pictures of the land and the stairs prior to construction and will put them back in as good or better shape at the end. One of the property owners said that there will have to be new stairs at the end, both because the old stairs are old, but also because the slope of the bank is likely to be different when the project is complete.

Donna also asked how much the shoreline will be affected. There are two boundary markers for the road – boulders with pins in them that should not be disturbed. They are not part of the bank but are on the beach. Barney said he thought they had already been marked on the plans. He can make sure that they are in the same place at the end of the project.

Ursula King gave her background as a wetlands and natural resources expert in Wellesley Massachusetts. She asked whether there was a planting plan in the application and whether the plantings would be in the mattresses or above them. Barney said that there is a planting schedule in the application. Bushes would be planted above the mattresses and the mattresses themselves would be seeded with topsoil and seed.

Ursula asked whether he had taken any core samples of the bank to see if the bank is suitable for plants to grow in. Barney said they had not done cores for plants but they had sampled the soil for stability. They will use salt-tolerant species and are consulting with B.J. Abrahamson.

Ursula asked whether they would use B.J. for the plantings or a licenses landscaper. Barney said that the contractor he hopes to have work on the project is also a landscaper.

Ursula asked whether the toe stones would be anchored. Barney said no.

Ursula asked if there is a planting plan. Barney said that in the short term they will use erosion control mix. In the long term they will put in bushes every 4 feet on center, and the schedule gives the size of the plants.

Ursula asked if there is a plan for the amount of soil that will be used on the mattresses. Barney said no.

Ursula asked whether there is a timing plan for the construction. Barney said not yet. Ursula asked whether the Planning Board would approve it. Barney said no, it would be up to Ron Tozier.

Ursula asked what will happen to the groundwater coming through the bank? Barney said that DEP does not want projects like this to create point sources of water. He had considered a toe drain, but that area will get inundated at high tide. The pipe in the French drains will end below
where the toe stones are. Ursula said she was concerned about whether the toe stones might be eroded from behind and below. If this happened the project would fail. Barney said that the water will dissipate above the toe stones.

Ursula asked whether the vertical stacks of mattresses will be down together. Barney said they would. Ursula asked whether they would be planted. It would take 10 to 15 years for natural vegetation to develop on them. Barney said he would need to discuss this with the contractor and the property owners. Ursula asked how long it will take to do this. Barney said it is hard to know.

Ursula asked whether DEP had required cores of the beach to determine its hardness. Barney said no. Ursula asked what mitigation they would do if the beach is damaged. Barney said that that would not be an issue. If there in any indication that the beach is being damaged, they will stop the work and assess what to do.

Ursula asked about the transitions from armored to unarmored areas – what kind of erosion control will there be for the ends? There does not seem to be a detailed design plan for the transitions. Barney said that the transitions will be worked out individually, using the methodology specified in his memo after the workshop meeting.

Donna asked what would happen to haul-offs on the beach if the work is done next summer. Barney said they want to do the work in the winter so as to not disturb the beach in the summer. Winter is a good time to do this project – there is no concrete work. They do have to be careful about the plastic of the mattresses getting brittle in the cold. Sam said that snow could be a problem. Barney said they are right on the water, so it may not be an issue. Ursula said there would be no planting till spring or fall. Barney agreed.

Ron said that it sounds as though trucks will be used to move materials on the beach. They do not have tracks and would create point load concentration. Barney said that most of the work would be done by tracked vehicles. Sam Hunter said that there are many layers of rocks in the beach. It has a lot of sand now, and that somewhat masks the rocks. The sand comes and goes.

Ernie said that the project on Cousins Island uses rip-rap. Why not use that here? Barney said the mattresses will be easier to use on the island – they may be filled on the mainland and brought out. Also they have a more pervious surface. Also DEP does not like rip-rap. They liked this project because it uses lots of plants so the stone armoring will be less obvious. Ernie asked whether the slope of the bank had an effect on the choice of the mattresses. Marty Trower said that she understood that one of the advantages to the mattresses is that they are somewhat flexible in wave action.

Tad said it sounded as if there will not be much use of the Town roads. Barney said not much, only if things have to be stored elsewhere on the island or if the weather is such that barges can’t reach the beach.

Mabel asked if the water will come out of the bottom of the French drain with considerable force. Barney said it will be dispersed at the bottom. Ursula said there are many methods of
dispersal, any of which could be used. Beth said that the drainage from the Soule Road ditch would have to be dealt with as part of the French drain system.

Ursula asked whether the project has an emergency equipment evacuation preparedness plan to get the equipment off the beach in a storm. Barney said it does not.

Beth closed the public hearing and said it was time for people who were taking the ferry to leave and many did. Both Ron Tozier and Barney Baker stayed.

Beth explained to those remaining that the Board would work through the criteria given in the ordinance for approving the project to see if they were met, and that she had provided the Board with draft findings of fact. There could also be conditions placed on any approval and they will be noted and added at the end.

a) Will maintain safe and healthful conditions.

The gradual erosion of the bluff at Hamilton Beach (38-46 feet since 1895) creates a safety hazard. One house is now 14 feet from the bank, and large trees are washed out in storms, taking large chunks of the bluff with them. Stabilizing the bank would reduce this hazard to life and property.

Based on the application, the site walk, and the public hearing, the standards of this section have been met.

She asked for discussion. There was none. Jane moved that the finding of fact be accepted, seconded by Louise. Passed unanimously.

b) Will not result in water pollution, erosion, or sedimentation to surface waters.

This is a large scale project to stabilize a bluff at the top of a beach on Casco Bay. The purpose of the project is to reduce the bank’s erosion significantly by armoring it with stone-filled mattresses, planting it with vegetation, and controlling groundwater seepage from behind the bank. DEP considers natural erosion of the bank to be one of the primary sources of sand for the beach. They have required that the mattresses stabilizing the bank are designed to allow some sand and fines to continue to erode. This is not pollution or undesirable sedimentation.

During construction, erosion will be controlled. The bank will be stripped of vegetation in stages to reduce the amount of exposed soil at any given time. The work will be done from the ocean side to reduce the stress at the top of the bank of using large equipment and of handling the heavy stone mattresses. There will be silt fence on the beach 10 feet from the toe of the bank.

Based on the application, the site walk, and the public hearing, the standards of this section have been met.
Barney said there is no need for silt fence on the beach, so that wording was removed.

Tad said that maybe the wording should reflect the discussion that had just occurred about where and how the water would be dispersed so as to reduce the likelihood of erosion of the toe stones. Beth said it should include the idea of reducing erosion of the bank by channeling the water. Several people were still not clear about how the drainage would work, so Barney explained the drawing again. There will be French drains from the top to the bottom in areas where there is freshwater drainage from inside the bank; and the mattresses at the bottom behind the toe stones will act as another set of drains along the length of the beach. Ron said the he wants a detailed treatment of exactly how the dispersal of the water will work. Will it need to have a perforated T or some other method of dispersal at the bottom. Ron said he would not know exactly what would work without seeing how much water was coming down and how the mattresses were working. Beth said that that is too detailed to include as a condition of approval. Mabel said that we need more information on this to protect the property owners. Beth proposed some language to cover this issue:

Erosion of the bank as a result of freshwater seepage, as well as from point sources like the Soule Road drainage ditch, will be reduced by being directed into French drains which would carry the water down the bank and disperse it into the mattresses behind the toe stones.

There was discussion about whether the water being released behind the toe stones would undermine them as Ursula suggested, or whether the geo-textile would prevent this from happening. Beth said that is something this basic was in dispute, maybe the Town should hire its own engineer to evaluate the plan. Scott Seaver had argued at the beginning that this was not necessary because DEP had conducted a thorough review. Barney said that the erosion control expert from DEP, as well as the State Geologist had looked at the drainage plan and approved. He thinks that people are too much worried about the amount of water that might need to be dispersed. The plan is designed to handle the water flows that are expected. He does not want to be required to do a stormwater management plan, which would add considerable additional cost. The pipes in the plan design are large enough.

Beth read the additional wording again and no further wording was added.

Ernie said there was another pollution issue that has not been addressed. If the equipment is stored on a temporary island on the beach, if there is a large storm with high tides, the equipment could be washed away and petroleum would be dispersed in the water. He said that Ursula’s idea of an equipment evacuation plan would be a good idea.

There was discussion of how it could work. Beth suggested taking the equipment off by barge. Ernie said that might be possible, but if the storm came up quickly it might not be. Someone suggested taking all the equipment down the beach to Willow Street and then up onto the shore. But several other people said that the beach at that end is very soft. Beth said that taking the equipment all the way down the beach would probably violate the need to protect the bird habitat on the beach. Ernie said the equipment could be just driven up the bank at Soule Road. Beth said it would not be possible to create a road if the emergency was imminent. But Barney said that this kind of equipment could climb the existing bank, even without creating a road.
Beth and Louise proposed language:
During construction the vehicles and equipment will be stored on a temporary island on the beach. They could be a source of petroleum pollution in a major storm. The contractor and engineer will develop an equipment emergency evacuation plan prior to the beginning of construction.

Louise moved the amended language, seconded by Mabel:

This is a large scale project to stabilize a bluff at the top of a beach on Casco Bay. The purpose of the project is to reduce the bank’s erosion significantly by armoring it with stone-filled mattresses, planting it with vegetation, and controlling groundwater seepage from behind the bank. DEP considers natural erosion of the bank to be one of the primary sources of sand for the beach. They have required that the mattresses stabilizing the bank are designed to allow some sand and fines to continue to erode. This is not pollution or undesirable sedimentation.

Erosion of the bank as a result of freshwater seepage, as well as from point sources like the Soule Road drainage ditch, will be reduced by being directed into French drains which will carry the water down the bank and disperse it into the mattresses behind the toe stones.

During construction, erosion will be controlled. The bank will be stripped of vegetation in stages to reduce the amount of exposed soil at any given time. The work will be done from the ocean side to reduce the stress at the top of the bank of using large equipment and of handling the heavy stone mattresses.

During construction the vehicles and equipment will be stored on a temporary island on the beach. They could be a source of petroleum pollution in a major storm. The contractor and engineer will develop an equipment emergency evacuation plan prior to the beginning of construction.

*Based on the application, the site walk, and the public hearing, the standards of this section have been met.*

Beth called for the vote. It was unanimously in favor of the findings of fact.

c) **Will adequately provide for the disposal of all wastewater.**

The project does not involve building any new buildings or septic systems, so it will not generate wastewater.

*Not Applicable*

Beth said we should have a condition that information be provided on the locations of the septic systems on the applicants' properties. This was agreed to
Tad moved, seconded by Ernie to approve this finding of fact. Passed unanimously.

d) Will not have an adverse impact on spawning grounds, fish, aquatic life, bird or other wildlife habitat.

This was one of the issues examined by the DEP permitting process and their findings were:

“There is Tidal Waterfowl and Wading Bird Habitat in the coastal wetland along the coastal frontage of this project. Tidal Waterfowl and Wading Bird Habitat is a Significant Wildlife Habitat as defined in the Natural Resources Protection Act. The Maine Department of Inland Fisheries and Wildlife stated that because the project is located on the bluff, and not within the habitat, it would not have any direct impact on Tidal Waterfowl and Wading Bird Habitat. The Department finds that the activity will not unreasonably harm any significant wildlife habitat . . .

Based on the application, the site walk, and the public hearing, the standards of this section have been met.

Beth showed everyone the Beginning with Habitat map of U.S. Fish and Wildlife’s 91 Priority Species to be protected. All the waters around Chebeague are in the top 25 percent of valuable habitat. But Maine Inland Fisheries and Wildlife had reviewed the plan and found that since it is focused on the bank and not the beach, then were willing to accept it.

Sam moved, seconded by Mabel that these findings of fact be accepted. Adopted unanimously.

e) Will conserve shoreland vegetation.

The problem that the project addresses is the lack of sufficient vegetation on the bank to prevent its erosion. The project will remove the existing vegetation and replace it with toe stones, and stone-filled mattresses. These will then be planted with salt-tolerant bushes and the mattresses will be covered with dirt and seeded to produce new vegetation that will help to stabilize the bank.

Based on the application, the site walk, and the public hearing, the standards of this section have been met.

Tad said he wanted to have a condition of approval that all the formations with the mattresses – stacked and lying on the bank, be planted with vegetation. Louise moved, seconded by Mabel that this finding of fact be accepted. Approved unanimously.

f) Will conserve shore cover and visual as well as actual points of access to inland and coastal waters.
The project is designed to cover the armored bank with vegetation so that the view from the water will not be one of the stone-filled mattresses.

In terms of physical access to the beach, the existing Town access at the end of Soule Road will remain and will have additional stabilization as a result of the project.

*Based on the application, the site walk, and the public hearing, the standards of this section have been met.*

Tad moved, seconded by Louise that these findings of fact be accepted. Approved unanimously.

**g) Will protect archaeological and historic resources as designated in the Comprehensive Plan.**

The Town of Chebeague Island in the process of developing its first comprehensive plan, so the Town has no specific policy on historical and archaeological resources or their locations yet.

On the Maine Historic Preservation Commission 2008 map of Areas Sensitive for Prehistoric Archaeology on Chebeague Island, Hamilton Beach and its bluff are shown as sensitive areas because of the presence of Indian shell middens. As part of the DEP permit approval process the Maine Historic Preservation Commission and the Penobscot Indian Nation reviewed the project and found that it does not affect archaeological resources. Arthur Spiess of MHPC said that this is a case by case review of specific project areas. In this case, the bank has eroded 38-46 feet since 1895, apparently taking the shell middens with it. MHPC examined photographs of the bank submitted by the applicants and found no evidence of remaining shell middens.

*Based on the application, the site walk, and the public hearing, the standards of this section have been met.*

Beth said she had gone to look at the bank closely for shells several days ago and had found no evidence of shells other than some clam shells in one area at the top of the bank. These looked like recently discarded shells.

Jane moved, seconded by Mabel that these findings of fact be accepted. Approved unanimously.

**h) Will not adversely affect existing commercial fishing or maritime activities in a Commercial Fisheries/Maritime Activities Overlay District.**

The properties owned by the applicants are not in an CFMA district.

*Not applicable.*

Jane moved, seconded by Tad to approve this finding of fact. Approved unanimously.
i) **Will avoid problems associated with flood plain development and use.**

The beach is in the V2 floodplain which reaches 12 feet up the bank. The purpose of the project is to reduce storm damage to the bluff. No buildings, which might be considered “development,” are being built as part of the project.

*Based on the application, the site walk, and the public hearing, the standards of this section have been met.*

Louise asked what the V2 floodplain means. Beth said it means that the flood is increased by high velocity winds.

Jane moved, seconded by Tad that this finding of fact be accepted. Accepted unanimously.

j) **Is in conformance with the provisions of this Article.**

The project has followed the review process spelled out in this article, and has met the stated criteria.

*Based on the application, the site walk, and the public hearing, the standards of this section have been met.*

Ernie moved, seconded by Jane that this finding of fact be accepted. Accepted unanimously.

k) **Is not in a floodplain adjacent to tidal waters (RP/FP Overlay District), and that an approved Letter of Map Amendment has been issued by the National Flood Insurance Program.**

The properties owned by the applicants are not in a Resource Protection/Floodplain Protection Overlay District.

*Not Applicable*

Louise moved, seconded by Mabel that this finding of fact be accepted. Approved unanimously.

The Board moved on to Conditions of Approval:

1. The engineer will provide the specifications he develops for the contractor to the Town CEO as well.

2. The Town CEO is authorized to contact the engineer directly if he has questions about the nature of the work being done.

3. Trees at the top of the bank that have been removed must be replaced, but further back from the bank, when the work is done.
Ron said that this is required by the Shoreland Zoning ordinance.

4. Before construction begins, a plan for plantings on all the types or configurations of mattresses must be submitted to and accepted by the CEO.

5. Before construction begins a plan showing the septic systems on the applicants’ properties must be submitted to and accepted by the CEO.

6. The stairs from the end of Soule Road to the beach, and the two boundary-marker stones for the road must be replaced in their current positions at the end of the project.

7. If it is deemed necessary by the CEO, beach protection will be provided.

8. The contractor and engineer will develop an equipment emergency evacuation plan, to be approved by the CEO prior to the beginning of construction.

Tad moved, seconded by Jane that these conditions of approval be accepted. Adopted unanimously

Sam made a motion that if any of the applicants decide not to go ahead with the plan, that a revised plan that would deal with the transitions from armored to unarmored bluff be submitted to the Planning Board as a new Project.

Jack Turner objected strongly, saying that this would be very unfair to the applicants who have worked for three years to get the project designed and approved. He said that at the first site walk three years ago, Bob Whitman, a professor from MIT said that in stabilization projects on river banks, the lateral river current tends to work around behind the armored areas, washing out the unarmored areas more than they would have washed out without the armoring. But that in this case the force of the waves come head-on into the bank, and the seepage from within the bank does as well, so that unarmored areas would continue to erode away more than armored ones next to them, but the rate of erosion would not be increased by the other areas being armored.

Sam said she still thought that that a proposal for some but not all the applicants should be considered as a new project. Barney said he thinks a compromise would be that if anyone decides not to be involved, then he would bring back to the Planning Board a plan showing how the transitions from armored to unarmored would be handled. Beth asked whether he would have to go back to DEP. He said that modifications to the project would have to be reviewed by DEP on a fast-track basis. Ursula said that normally Planning Boards follow the state reviews in cases like this. Barney suggested that the condition be tied to additional state and federal review of the permits.

Beth proposed language:

9. If the state and/or federal permits for this project are modified, the revised plan must be reviewed by the Planning Board.
Louise moved, seconded by Mabel to accept this condition of approval. Adopted unanimously.

Tad moved, seconded by Louise that the shoreland zoning permit for the Hamilton Beach Owner’s Group proposal to stabilize the bluff at Hamilton Beach be approved with the attached conditions. Approved unanimously.

Respectfully submitted,

Beth Howe