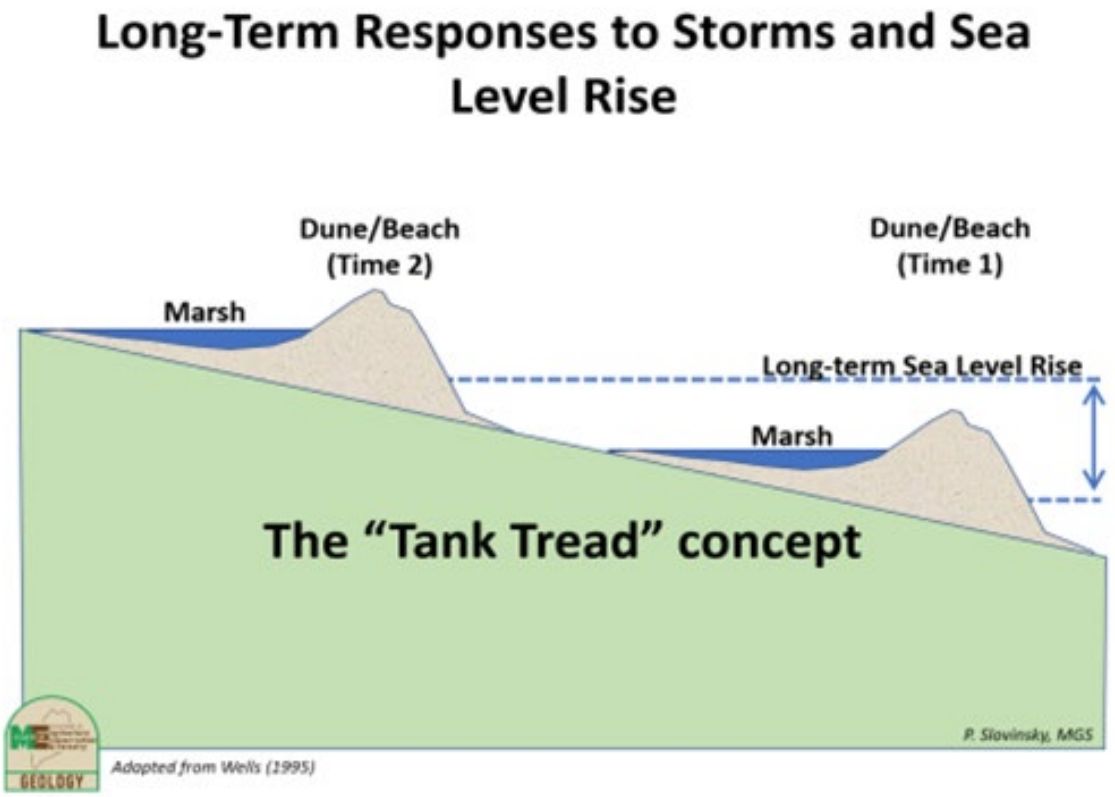
Submitted by Peter Slovinsky, Marine Geologist Maine Geological Survey Department of Agriculture, Conservation and Forestry 93 State House Station Augusta, ME 04333 (207) 287-7173

- As a coastal community, what can we do now to shore up our coastlines and help protect them in the future (not just at Willard) in the short and long term?

In the big picture, Maine's sandy coastlines have been moving landward in response to storms and sea level rise for millennia by "rolling over" themselves in kind of a tank-tread pattern. That's why sometimes you can see peat deposits, tree stumps, and oyster shells in the surf zone at a beach – that's where the marsh was at one time. The image below, taken from our Coastal Property Owner's Guide, shows how this has happened. When the beach and dune system is unimpeded, it can continue to go through this process and has done this for about the last 5,000 years.



It's just in the past 100 to 150 years or so that our development patterns have inhibited the natural functionality of this system and inhibited its natural movement landward. We're at the point where our past development decisions are now being impacted by rising seas and large coastal storm events. If you think about it, there really are only a few responses that we as humans have to sea level rise and storms in dynamic areas – I use a silly acronym called DAAPR. These techniques can be used interchangeably in a response (doesn't have to be just one or another, but a combination) and include:

(D) Do Nothing: for example, based on where you might be located, you may choose to do nothing because the vulnerability of your home to a certain risk factor may be very low
(A) Avoid: communities should proactively not place additional infrastructure into areas of high flood or erosion hazards
(A) Accommodate and Adapt: existing infrastructure can be adapted, such as raising up structures on posts; accommodation includes using increased setbacks and vegetative buffers to help provide buffers to storm surges
(P) Protect: use nature based solutions, such as dune creation or restoration, beach nourishment, or maintaining existing seawalls or making them more resilient and less damaging to adjacent habitats.
(R) Relocate and Remove: relocate landward, if possible. Based on risk and vulnerability, potentially consider removing at-risk infrastructure that will remain at a high level of risk based on location (e.g., stays in a V-zone, or has been damaged several times)

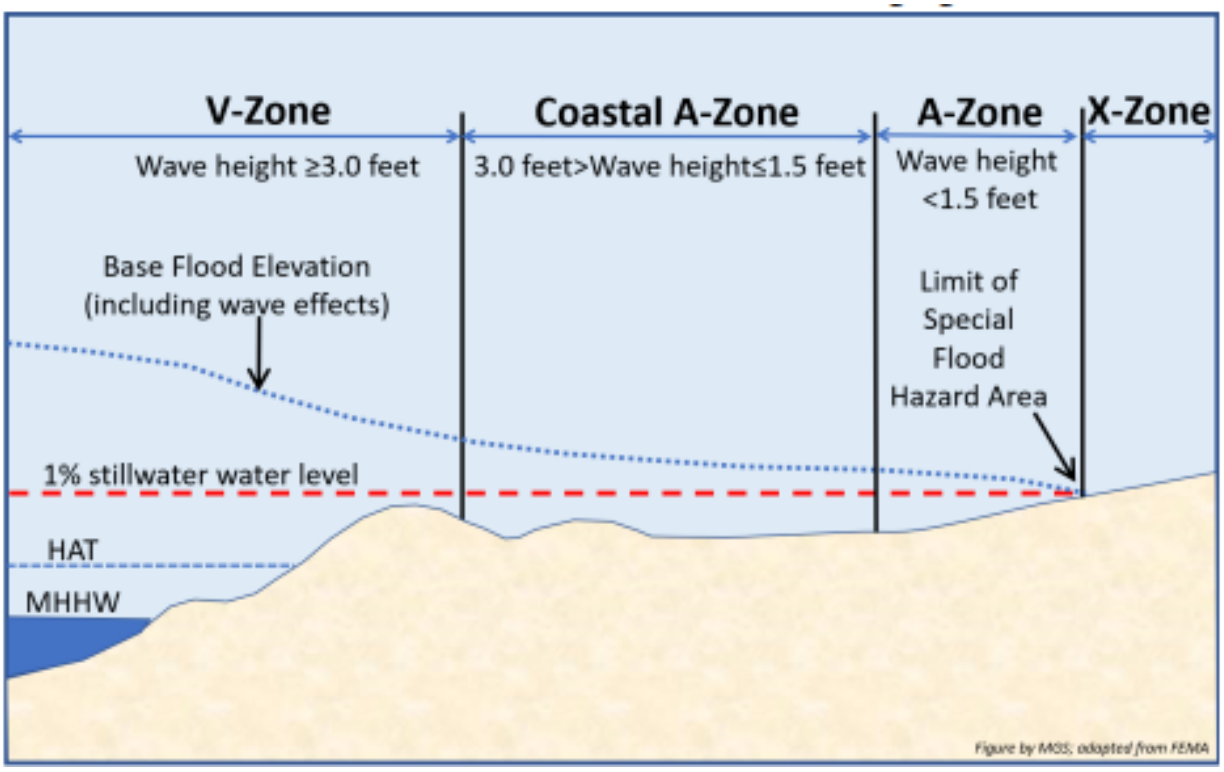
These responses are key to consider in visioning the future for South Portland's coastline. The City needs to think about what it wants its shorelines to look like in 20, 30 or 50 years. What does the community value? Beach access? Tax base of oceanfront homes? Maintaining a viable working waterfront? For example, maybe protecting and adapting existing marinas and working waterfront is easier to implement (than adapting homes) and should be a top priority. These are the questions the community needs to ask itself.

- What knowledge could you pass on to the average resident about the future of our coastline and beach?

In terms of knowledge, the above comments apply.

I also feel that understanding vulnerability and risk (and the level of risk one is willing to accept) is important. We have some good generalized information about understanding vulnerability, risk, and more in our Coastal Property Owner's Guide.
In terms of understanding vulnerability, **residents should first of all familiarize themselves with both flood and erosion hazards to existing storms and the potential future**. The best source for existing flood risk is the Pending FEMA Flood Insurance Rate Map (FIRM) information. A relatively easy to use viewer is provided by the Maine Floodplain Management Program. Go under the Layers tab, upper right corner (looks like stacked paper), and turn off Q3 data (this is poorly registered) and make sure the "National Flood Hazard Layer – Pending" is turned on. These maps will go effective at the end of June in Cumberland County. Understand if you are in a VE-zone (this is a dynamic zone with waves larger than 3 feet), or an AE-zone (a static zone with waves less than 1.5 feet), and the Base Flood Elevation, or BFE, which is the number associated with the VE or AE zone with an elevation. For example, an AE (EL 10) means, in a 1% storm event, water is expected to reach up to 10 feet NAVD88 with waves less than 1.5 feet in that zone. Note that NAVD88 is a surveyor datum, and is approximately (in South Portland) about 5.1 feet higher than the tide predictions, which are provided in Mean Lower Low Water (MLLW). So an AE of 10 feet is approximately 15.1 feet MLLW. Understand that FEMA

mapping only shows existing flood risk, and *does not account for future sea level rise*. I have spent some time "groundtruthing" the maps in parts of York and Cumberland Counties after the Jan 10 and 13th events – they did a pretty good job of showing what actually got wet in the 13th event. An example of FEMA zones are presented below.



Understand the tools that are out there for flood forecasting. NOAA has a great tool out there called the Coastal Inundation Dashboard. One can click on a tide gauge (e.g., Portland) and look at real-time observed water levels and surge in relation to NOAA forecast guidance, tide predictions, and minor, moderate, and major flood levels. There is also a tab for inundation history, and high tide flood outlook which shows when in the future (what dates) and what percentage chance there is of flooding, just based on tide predictions. I keep my eye on this tool all the time, and followed this intently during the Jan 10 and 13 storms.

Thirdly, **understand where coastal sand dunes are mapped within the City**. Coastal sand dune extents, based on best available information, are presented in a mapper from the Maine Geological Survey. The extent of sand dunes in South Portland is constrained to Willard Beach. Coastal Sand dunes are protected natural resources under the Natural Resources Protection Act Chapter 355 (link to doc or online text) and new development, redevelopment, and a variety of other activities are restricted or heavily regulated in the dune system. Note that new seawalls are prohibited in the coastal sand dune system. This stems from the January and February 1978 storm events, which precipitated the passage of the Coastal Sand Dune Rules and a prohibition on construction of new seawalls. Maine's experience was that seawalls are detrimental to the beach and sand dune system, caused damage to adjoining properties,

and many times, failed. Understand if you are in a front dune (D1), or a back dune (D2) and if you are in an Erosion Hazard Area (EHA). Being in an EHA means you're in an area in which dynamic flooding and erosion is expected, and it places requirements on elevation of structures. MGS also has mapped coastal bluffs and their associated stability, though this data is over 20 years old now.

Fourthly, familiarize yourself with Hurricane Inundation Mapping that is available. These maps show inundation during Cat 1-4 hurricane events, but don't account for waves, precipitation, or unexpected tide levels. These are extremely handy when thinking about evacuation routes and thinking about areas that might go underwater that might not be directly adjacent to the coast but may inhibit safe travel, emergency access, etc.

Finally, understand what future potential flooding might look like. The Maine Climate Council has adopted committing to manage for 1.5 feet of SLR by 2050 and 4 feet by the year 2100. To support this, MGS released its Sea Level Rise Viewer, which uses the Highest Astronomical Tide (HAT, the highest predicted tide in a 40-year period) as a starting point, and then superimposes a variety of sea level rise (or these could be considered storm surge) scenarios on top of the HAT. This viewer is a **"static" bathtub model** which simply takes the HAT elevation, determines what is below that based on topography, and then simply adds water levels to that to show what might be underwater during the HAT after sea level rise. So it would be a good projection of what might get wet under a "king tide" in the future, after sea level rise. Understand, however, that the tool does not account for waves like the FEMA DFIRMs. There is also Maine Silver Jackets (a US Army Corps of Engineers program focused on understanding and mitigating flood hazards) modeling data that was created which shows different storm events after sea level rise, but I'm not sure where that data exists. In addition, in conjunction with the Maine Silver Jackets Program, potential inundation under different sea level rise and storm scenarios were modeled and the results compiled into a Map Viewer by NOAA and made available to the City of South Portland and the City of Portland. I'm not sure how the City of South Portland is using this data, but in Portland, it is being used to inform the Recode Portland effort. Note that modeling is being undertaken by Maine DOT to look at how sea level rise scenarios, coupled with storms of different recurrence intervals (e.g., 10%, 1% events, including waves) that will hopefully be completed in 2025 that could be used to help inform community resilience.

- What are the issues with hard scape solutions? (i.e. seawalls, breakwaters, etc.)

Firstly, as mentioned earlier, new seawalls are **prohibited in the coastal sand dune system.** There is a reason for this. After the 1978 storm events, there was significant damage to infrastructure *adjacent to seawalls*, and dunes were dramatically eroded throughout southern and mid-coast Maine. Seawalls were also extensively damaged during those storms as well, and the Legislature passed the Coastal Sand Dune Rules not long after the storm in order to protect existing dunes and infrastructure that was going to be developed within the coastal sand dune system.

I will point out that the January 10 and then 13th storm events were record setting – especially the second event when a very high tide matched up with a large storm surge, strong southeast winds, and destructive waves. There were dozens of damaged and collapsed seawalls throughout southern Maine, including rip-rap walls and wooden bulkheads. Residents should know that existing seawalls in the dune system can be rebuilt in kind with a simple permit, while redesigns would require more extensive permitting. Damaged walls can be shored up using *temporary materials* through NRPA 480-W emergency actions. Over a certain amount of time, temporary materials need to be removed and a permit sought for a more permanent fix to damaged walls. DEP has released a Storm Guidance memo for communities on some of these issues, attached, which provides some good information. Refer to DEP for more information.

It is important to note that seawalls protect property behind them, but do not protect the beach or dune. Over the years, numerous studies show that seawalls can negatively impact the beach, dune, and adjacent properties that might not have seawalls from both a flooding and erosion standpoint. Seawalls are deleterious to beaches, dunes, and adjacent properties in several ways. Think of the dune and beach system as a checking and banking account for sand, which transfers sand back and forth throughout the year and in response to coastal storms and long-term sea level rise. During summer months, dunes and the upper beach (berm) trap sand and grow seaward, creating a wider dry beach and a more convex shape. During the winter months, storms erode the upper berm and dune, creating scarps and lowering the beach into a more concave shape. The sand is pulled offshore into sandbars in areas of less wave action, and then start to return to the beach, rebuilding the beach and dune, during the spring and summer months. This process is summarized in this slide and also below in an excerpt from the Maine Property Owner's Guide, p. 10.

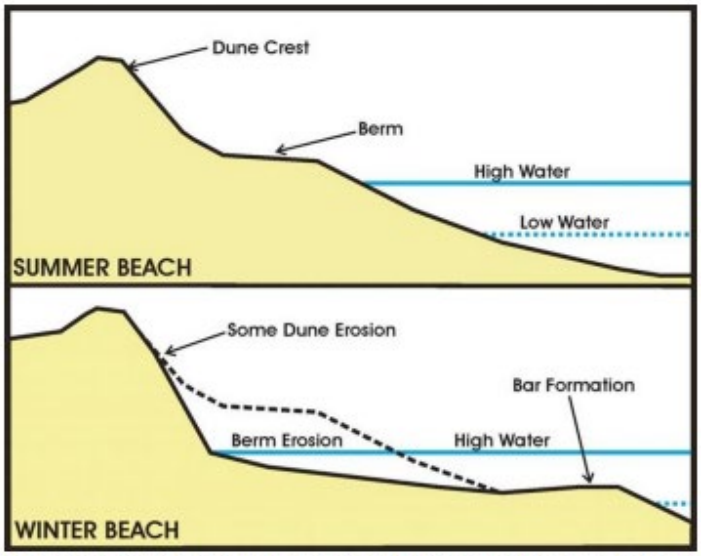


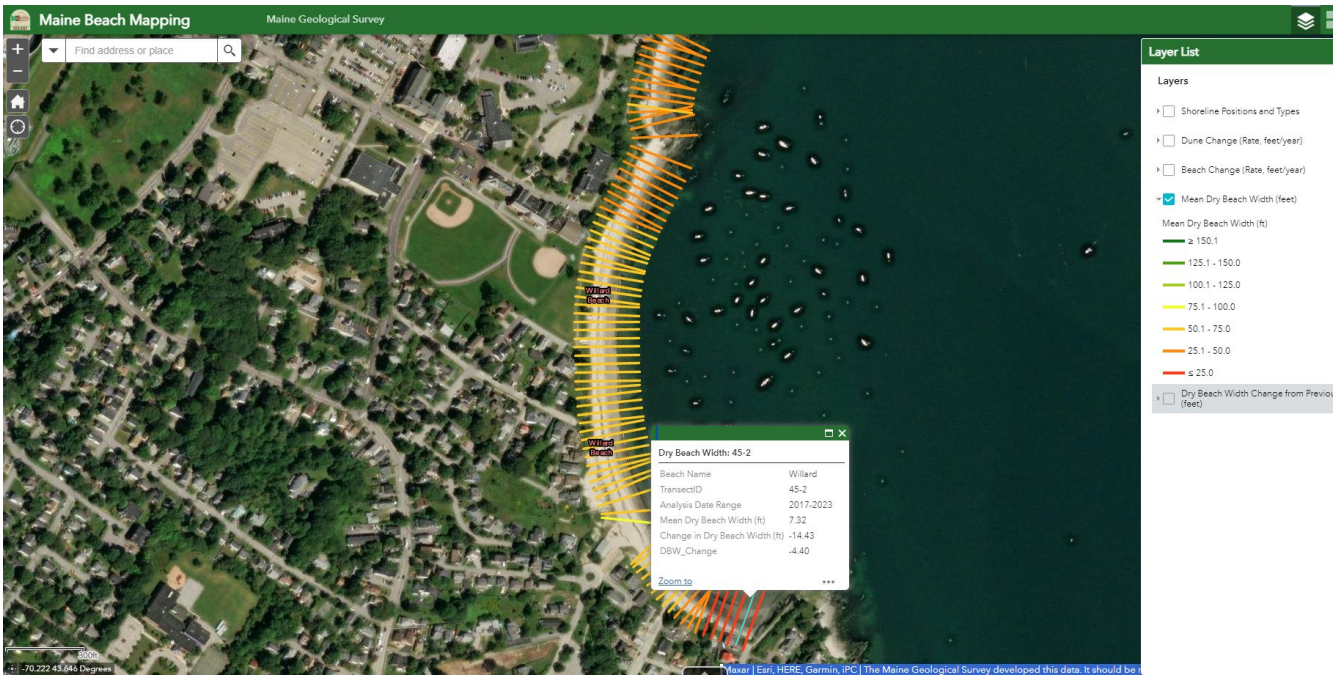
Figure A2. Schematic showing seasonal changes that many beaches undergo between summer (top) and winter (bottom).

Figure A3. Comparison of summer (top) and winter (bottom) beach profile shapes from Kinney Shores, Saco. Images from Maine Beach Profiling Program volunteers, 2008.

Seawalls effectively cut off the transfer of sediment from behind a wall (in the dune) to the beach, and vice-versa, negatively impacting this important banking (storage system) for the entire dune and beach system. Seawalls reflect wave energy when a wave breaks against it. The reflected wave energy you see that goes up and over a wall during a storm is also directed down, into the beach, causing sand to scour away from the base of the wall, lowering the beach. Sometimes this results in wall failure at the toe. Due to the lowering of the beach level in front of walls, the water is deeper, which allows for larger waves to approach and interact with walls. This also negatively impacts public access to the beach, because as the

beach lowers, tides reach up higher, making large sections of the beach inaccessible at certain times of the tide. For example, the beach along Camp Ellis, Drakes Island in wells, and Goochs Beach in Kennebunk is inaccessible to the public up to 3 hours on either side of the high tide (so, half the tidal cycle) because the water is up against the walls. The southeastern corner of Willard suffers from this also, but not for the extensive amount of time as the other beaches noted.

As a result, seawalls typically have a negative impact on the dry beach width – that section of protective beach that is below the dune or wall and above the mean high water line and provides recreational space and also important storm buffering. Along walls, the dry beach width is typically narrower than along natural beaches and dunes. This increases the ability of waves to attack the shoreline because the beach is deeper and also narrower. Statistics we've developed for data along all of Maine's monitored sandy beach and dune coastline found that along natural beaches/dunes in Maine, the average dry beach width is about 85 feet, while the average dry beach width adjacent to seawalls is around 50 feet. At Willard Beach, these statistics are about 50 feet for the natural beach and dune, and 20 feet or less along seawalls. These results are highlighted in Table 14b (p. 114) and p. 15b (p. 116) in the State of Maine's Beaches in 2022 report. The image below shows the mean dry beach width (from 2017-2023) along Willard Beach from our Maine Beach Mapping Program data. Note that there is little to no dry beach during much of the tide cycle in the southeastern corner of the beach, where the walls are. The mean dry beach is less than 10 feet here, while it is 50 feet or more for much of the rest of the shoreline.



Seawalls can also have direct negative consequences for neighboring properties that might not have a seawall. This is due to "end effect", which occurs when tidal currents, and more importantly storm waves, interact with the ends of walls where they meet natural dune

areas. Wave energy is directed into these areas at the edges of the walls, eroding the natural dune much more than if there was no wall there. In addition, walls can increase the flood hazard to neighboring properties due to this end effect, which focuses wave energy onto adjacent properties. An excellent example of this is at the terminus of seawalls along private properties where they transition into natural dune at Drakes Island Beach in Wells. The image below was taken after the first storm (Jan 10) at Laudholm Beach in Wells, looking aback at the seawalls along Drakes Island.

Seawalls also limit the ability of the beach to maintain itself over time in response to sea level rise and storms. Beaches and dunes have been migrating inland in response to these for millennia, and walls inhibit this natural landward migration (as I described in the start of this document).

Finally, walls, both rip-rap and bulkheads, are also prone to failure over time, and are very expensive to rebuild. We witnessed dozens of wall failures along the York and Cumberland County coastlines during the January 10 and 13 events, and also in the December 23, 2022 event.

So in summary, although a wall might protect property behind it, it is usually at the expense of the adjacent beach and dune, which are lost over time.

Breakwaters, usually located offshore in deeper water, need to be strategically located in order to maximize their efficacy while minimizing impacts to the adjacent beach system. Depending

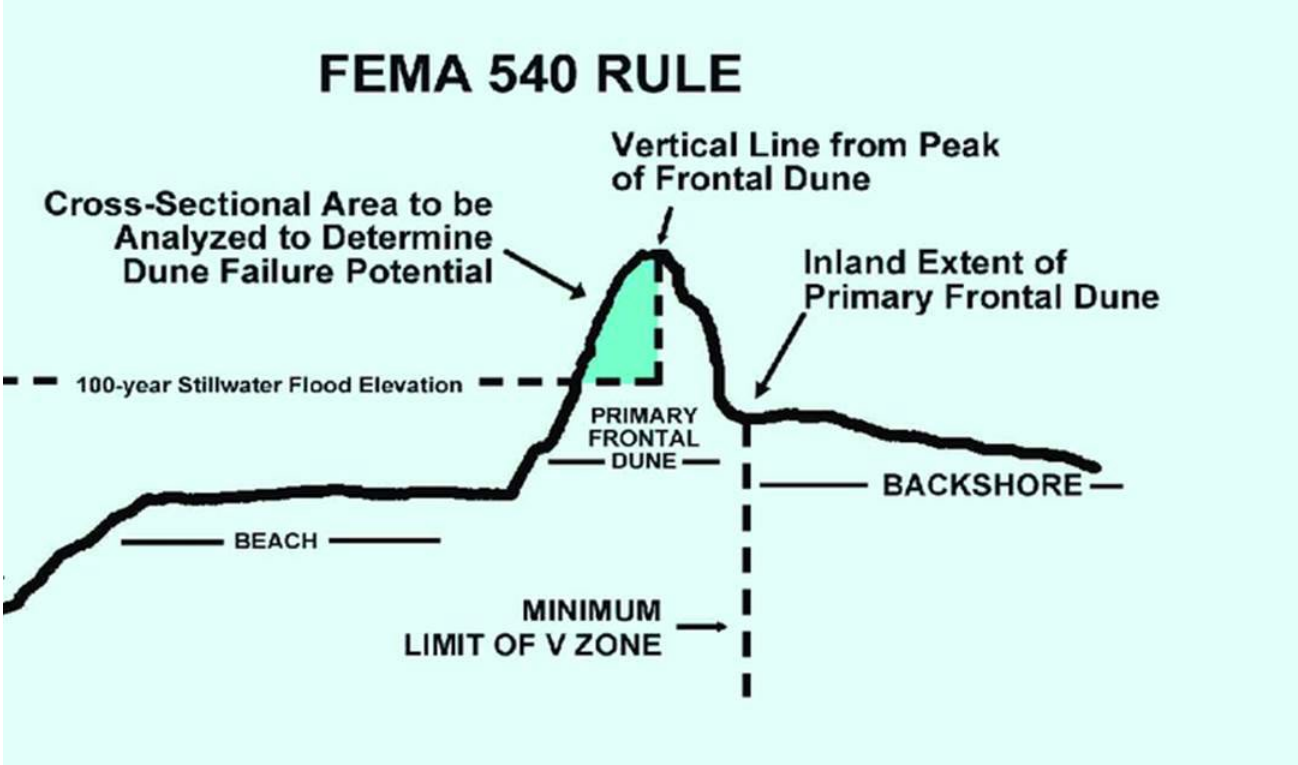
on their locations, permitting can be very complex (this is a DEP and USACE issue, and will also likely involve comment from other federal and state agencies on potential impacts to habitat, etc.), and they can be extremely expensive to build. Depending on depth of where they are located, since most traditional breakwaters are pyramid-shaped structures (narrow tip, large base), they can get massive in size. Depending on the substrate, they can be difficult to site due to their weight. They also need to be constructed to an adequate height to break up wave energy (typically designed for a 10-year storm event). They also can have negative impacts on tidal currents and sand migration if placed near the beach system. There are other materials available that can potentially be used, like WADS or reef balls, which allow the transfer of currents and sediment, while still breaking up waves. These are typically smaller and placed closer to the beach; they have not been implemented in Maine as far as I am aware. Because they are placed closer to the beach, they may require in depth review and may not be permitted if within the sand dune system, which extends to mean low water. Modeling of how a breakwater needs to be located and sized typically is needed to maximize efficacy.

- What are the possibilities with nature based solutions like dune rebuilding, beach replenishment or dredging, or other nature based solutions? What are some of your recommendations for Willard Beach and do you think dune rebuilding is possible given the violent storms that we are having that keep washing out restored dunes? Especially given that we had 3 storms this year that each eroded sections of the dunes.

These two questions make sense to answer together. Historically, Willard Beach has done quite well due to **proactive dune management by the community.** Even after past very large storms (like Patriots' Day Storm of 2007, Willard Beach experienced erosion on the order of 20 and up to 30 feet, the beach and dunes recovered well within a few seasons, and this was certainly helped along by good management. We've been monitoring the beach and dune at Willard Beach as part of our Maine Beach Mapping Program annually, which keeps track of shoreline change of the dune (since 2008) and the beach (since 2017), and both have done quite well over the monitoring period, showing a good ability to recover from events. The natural dune and beach system is quite resilient, but with a helping hand, should be able to bounce back quicker. Similar to past events, to an extent, we do expect that sand will come back up onto the beach, but it might take a few years as opposed to just one season (it took 2 years or so after the Patriots Day Storm).

One of the issues facing the dunes at Willard Beach was the blowout of the sewer line and subsequent need to try to restore them several times. The dunes were doing pretty well and catching sand as part of the pilot project using Christmas trees, but the dune had to be flattened and rebuilt. After the most recent dune rebuild, I don't know what elevation or size the dunes were rebuilt to, but I suspect the ridges remained relatively low. In the Coastal Sand Dune Rules, we recommend that dune restoration projects should aim to achieve an elevation along the dune crest *that is at least 1 foot above the FEMA Base Flood Elevation*. According to the FEMA DFIRM, the 100-year BFE for this stretch of the beach and dunes is 11 feet NAVD88. Thus, a dune with a crest that achieved **at least** an elevation of 12 feet NAVD88 would be recommended. Even better than a single dune is to establish a dune that has multiple

crests, this has a larger volume and is more effective at breaking up wave energy from storm events. FEMA actually has some guidance in terms of the cross-sectional area of a dune for it to be considered a Primary Frontal Dune – that is, to be effective against base flood storm surges and associated wave action, the *cross-sectional area, as measured perpendicular to the shoreline and above the 100-year stillwater flood elevation and seaward of the dune crest, is equal to, or greater than, 540 square feet.* An example of this is provided below.



Dune restoration can be undertaken with a Permit by Rule Chapter 305, Section 16A. Because of storm impacts, Maine just passed an emergency provision that allows for a 90-day Permit-by Rule for enhanced dune restoration techniques, such as those that use coir rolls, cobble cores, or similar, per LD478. Note that cobble cores are only permitted at cobble-dominated beach systems. Other enhanced techniques, such as the use of metal anchors or PLA fabrics, would require an individual permit. Refer to DEP for more.

Beach nourishment is something that certainly could be considered and could be coupled with dune restoration for the highest level of efficacy. Needed is a sediment source (there was talk about possibly dredging Spring Point area) that would be adequate to build out a beach berm with an adequate width (typically around 75-100 feet) and elevation (typically a foot above the king tide level, so around 13 feet MLLW, or around 8 feet NAVD88). Also needed would be a dredge capable of not only dredging, but pumping sediment to the beach area for dewatering and reworking by heavy equipment. York County has purchased a dredge, but I don't know how available it is, or how this process works for getting it. There would likely need to be bathymetric surveys, sediment testing, and permitting needed for large-scale

nourishment. Beach nourishment that uses less than 10,000 cubic yards of material can be done through a Permit by Rule (same as above). Refer to DEP for more information.

As the Willard Beach community found out, beach access paths serve as runways for floodwater during storm events. The community could consider relocation or reconfiguration of paths, additional vegetative plantings (we've found that bayberry and native rose bushes sometimes do better than dune grass to slow down overwash), and increasing the topography of access paths as part of dune restoration efforts and using either dune walkovers or seasonal access mats to help with access. Refer to the MGS Beach and Dune Best Management Practices for more information.

- If there are any other topics you can think of that are relevant that you have been giving other communities that would be good for our council and resident to know, please feel free to include it. The more information they are armed with, the better.

The Southern Maine Planning and Development Commission developed a wonderful Model Ordinance Language for Maine Municipalities, which focuses on enhancing resilience to storms and sea level rise.

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

MELANIE LOYZIM
COMMISSIONER

PERMITTING GUIDANCE FOR STORM RECOVERY ACTIVITIES

Updated January 19, 2024

NOTE: All landowners experiencing storm damage should document the damage to their properties with photographs. Measurements should be taken documenting the location of structures and protected natural resources. Repairs and restoration efforts should be documented in the same way once completed.

MAINTENANCE/REPAIR OF STRUCTURES & CROSSINGS

Maintenance and repair of structures and existing crossings in, on, over or adjacent to protected natural resources will typically fall under one of three exemptions in the Natural Resources Protection Act (NRPA), found here https://www.mainelegislature.org/legis/statutes/38/title38sec480-Q.html, provided that the activity meets the statutory standards applicable to that exemption.

2. Maintenance and repair (applicable to everyone)

2. Maintenance and repair. Maintenance and repair of a structure, other than a crossing, in, on, over or adjacent to a protected natural resource if:

A. Erosion control measures are taken to prevent sedimentation of the water; [PL 1995, c. 27, §1 (RPR).]

B. [PL 2011, c. 205, §1 (RP).]

C. There is no additional intrusion into the protected natural resource; and [PL 1995, c. 27, §1 (RPR).]

D. The dimensions of the repaired structure do not exceed the dimensions of the structure as it existed 24 months prior to the repair, or if the structure has been officially included in or is considered by the Maine Historical Preservation Commission eligible for listing in the National Register of Historic Places, the dimensions of the repaired structure do not exceed the dimensions of the historic structure. [PL 1995, c. 27, §1 (RPR).]

This subsection does not apply to: the repair of more than 50% of a structure located in a coastal sand dune system; or the repair of more than 50% of any other structure, unless the municipality in which the proposed activity is located requires a permit for the activity through an ordinance adopted pursuant to the mandatory shoreland zoning laws and the application for a permit is approved by the municipality;

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1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

website: www.maine.gov/dep

2-D. Existing stream crossings (applicable to everyone)

2-D. Existing crossings. A permit is not required for the repair and maintenance of an existing crossing or for the replacement of an existing crossing, including ancillary crossing installation activities such as excavation and filling, in any protected natural resource area, as long as:

A. Erosion control measures are taken to prevent sedimentation of the water; [PL 2011, c. 205, §3 (NEW).]

B. The crossing does not block passage for fish in the protected natural resource area; and [PL 2011, c. 205, §3 (NEW).]

C. For replacement crossings of a river, stream or brook:
(1) The replacement crossing is designed, installed and maintained to match the natural stream grade to avoid drops or perching; and

(2) As site conditions allow, crossing structures that are not open bottomed are embedded in the stream bottom a minimum of one foot or at least 25% of the culvert or other structure's diameter, whichever is greater, except that a crossing structure does not have to be embedded more than 2 feet. [PL 2011, c. 205, §3 (NEW).]

For purposes of this subsection, "repair and maintenance" includes but is not limited to the riprapping of side slopes or culvert ends; removing debris and blockages within the crossing structure and at its inlet and outlet; and installing or replacing culvert ends if less than 50% of the crossing structure is being replaced;

9. Public works (applicable to municipalities)

9. Public works. A permit is not required for emergency repair or normal maintenance and repair of existing public works which affect any protected natural resource. An activity which is exempt under this subsection shall employ erosion control measures to prevent sedimentation of any surface water, shall not block fish passage in any water course and shall not result in any additional intrusion of the public works into the protected natural resource. This exemption does not apply to any activity on an outstanding river segment as listed in section 480-P;

REPLACEMENT/RECONSTRUCTION OF STRUCTURES

Permitting requirements for replacement or reconstruction of damaged structures in, on, over or adjacent to protected natural resources varies depending on the specific circumstances.

Replacement in-kind of a floating dock is exempt from NRPA permitting:

2-B. Floating docks. Replacement of a floating dock with another floating dock if the dimensions of the replacement dock do not exceed those of the dock being replaced and the configuration of the replacement dock is the same as the dock being replaced. In any action brought by the department against a person claiming an exemption under this subsection, the burden is on that person to demonstrate that the replacement dock satisfies the requirements of this subsection;

For other types of structures:

- If the structure you need to replace is located in, on, or over a coastal sand dune system, please see this document: https://www.maine.gov/dep/land/nrpa/dunes/faq-sand-dune-storm-repai.pdf. The most up-to-date maps of coastal sand dune systems may be found on the Maine Geological Survey website here: https://www.maine.gov/dacf/mgs/pubs/digital/dunes.htm.

- If the structure is located in, on, or over a protected natural resource *other than a coastal sand dune system*, replacement of a structure may be permitted under a permit-by-rule (PBR), Section 4, if applicable standards are met. These standards include, but are not limited to, that the dimensions of the replacement structure may not exceed the dimensions, including height, of the previously existing structure, and may not extend any further into the water body or wetland (with some exceptions). See the Department's PBR webpage here for more information: https://www.maine.gov/dep/land/permits/pbr/index.html.

    - NOTE: Permit-by-rule requires a 14-day waiting period for Department review, but may be approved sooner than 14 days.

    - **NOTE: As of today, elevating a structure higher over the water would require the submission of an individual NRPA permit application. However, the DEP has introduced a bill to the Legislature, LD 2030, that would allow for the elevation of piers higher over the water without a DEP permit. The DEP is working quickly with the Legislature to amend this bill to ensure that communities will be able to rebuild all working waterfront infrastructure (not just piers) higher over the water without DEP review. The Department is recommending that this legislation should be passed on an emergency basis so that it will go into effect immediately.**

- If the structure is located adjacent to certain protected natural resources, it may be permitted under a PBR, Section 2, if applicable standards are met. These standards include, but are not limited to, that the replacement structure is not closer to the protected natural resource and conforms with the local Shoreland Zoning ordinance. See the Department's PBR webpage here for more information: https://www.maine.gov/dep/land/permits/pbr/index.html.

    - NOTE: If the structure is not water-dependent (e.g., if it is a house or other structure that does not depend on the water to function), the local Shoreland Zoning ordinance will require that the replacement structure be set back at least 75-feet from the high-water line, or set back to the greatest practicable extent (if 75 feet is not practicable on the property).

- Other replacement/reconstruction projects (located in, on, over, or adjacent to protected natural resources) that do not fit into these categories will likely require the submission of an individual NRPA permit application: https://www.maine.gov/dep/land/nrpa/.

OTHER STORM RECOVERY & CLEAN-UP ACTIVITIES

Other storm recovery and clean-up activities may qualify for PBR, such as removal of debris deposited by a storm into a protected natural resource (non-mineral materials such as wood, brush or flotsam). See the full list of PBR-eligible activities here: https://www.maine.gov/dep/land/permits/pbr/index.html.

Coastal shoreline stabilization projects (e.g., riprap) do not qualify for PBR. However, if your property is under immediate threat due to an unstable shoreline, please discuss your options with a Licensing staff member at the Department. (See the contact information below).

PREPARING FOR THE NEXT STORM

Coastal property owners may be looking ahead to the next storm. Here are some important requirements to keep in mind.

RAISING STRUCTURES

To better withstand flooding, a structure adjacent to a protected natural resource may be elevated under a PBR, Section 2, if applicable standards are met. See the Department's PBR webpage here for more information: https://www.maine.gov/dep/land/permits/pbr/index.html. There will be local height restrictions for dwellings under the Shoreland Zoning ordinance. Please check with your municipal code enforcement officer regarding height restrictions.

A structure in a coastal sand dune system may be elevated on post or piling foundation without a NRPA permit, as long as the structure remains in the existing footprint and the post or piling foundation allows for the free flow of sand and water under the structure.

Currently, raising a structure such as a pier or wharf located in/over the water requires the submission of an individual NRPA permit application: https://www.maine.gov/dep/land/nrpa/.

- **NOTE: The DEP has introduced a bill to the Legislature, LD 2030, that would allow for the elevation of piers higher over the water without a DEP permit. The DEP is working quickly with the Legislature to amend this bill to ensure that communities will be able to rebuild all working waterfront infrastructure (not just piers) higher over the water without DEP review. The Department is recommending that this legislation should be passed on an emergency basis so that it will go into effect immediately.**

PROTECTING STRUCTURES

Sand dune restoration and construction may provide some protection to properties located in coastal sand dune systems. These projects are generally eligible under PBR, Section 16-A: https://www.maine.gov/dep/land/permits/pbr/index.html. The Maine Geological Survey provides detailed best management practices for sand dunes here: https://digitalmaine.com/cgi/viewcontent.cgi?article=1629&context=mgs_publications.

Please note that no new seawalls (including riprap walls) may be built in coastal sand dune systems. For properties that have existing seawalls or riprap revetments, Section 480-W of the NRPA allows for emergency actions to threatened seawalls located in coastal sand dune systems. https://www.mainelegislature.org/legis/statutes/38/title38sec480-W.html

§480-W. Emergency actions to protect threatened property

1. Protective materials.

[PL 2005, c. 548, §2 (RP).]

2. Strengthening of structure.

[PL 2005, c. 548, §2 (RP).]

3. Emergency action exemption. Notwithstanding section 480-C, if the local code enforcement officer, a state-licensed professional engineer or a state-licensed geologist determines that the integrity of a seawall, bulkhead, retaining wall or similar structure in a coastal sand dune system is destroyed or threatened, the owner of property protected by the seawall, bulkhead, retaining wall or similar structure may perform or cause to be performed the following activities without obtaining a permit under this article:

A. Place riprap, sandbags or other heavy nonhazardous material to shore up the threatened structure and leave the material in place until a project designed to repair or replace the structure is permitted by the department. After such emergency action is taken and within 5 working days after the imminent threat, the property owner must provide written notice to the department of the date the emergency action was taken and a description of the emergency action taken. Within 6 months following placement of any material pursuant to this paragraph, the property owner must submit to the department an application to repair or replace the structure. The material placed pursuant to this paragraph must be removed within 18 months from the date a permit is issued by the department; or [PL 2005, c. 548, §2 (NEW).]

B. Make permanent repairs, to the extent necessary to alleviate the threat, to strengthen the seawall, bulkhead, retaining wall or other structure, to widen the footings or to secure the structure to the sand with tie-back anchors. A state-licensed geologist, state-licensed professional engineer or other qualified professional must make the determination that the actions taken by the property owner in accordance with this section are only those actions necessary to alleviate the imminent threat and do not include increasing the height or length of the structure. [PL 2019, c. 285, §16 (AMD).]

If a local code enforcement officer, state-licensed professional engineer or state-licensed geologist fails to determine within 6 hours of initial contact by the property owner whether the integrity of a structure is destroyed or threatened, the property owner may proceed as if the local code enforcement officer, state-licensed professional engineer or state-licensed geologist had determined that the integrity of the structure was destroyed or threatened.

[PL 2019, c. 285, §16 (AMD).]

4. Replacement after emergency action under permit by rule. Notwithstanding any other provision of this chapter, the department shall approve a permit by rule to repair or replace a seawall, bulkhead, retaining wall or similar structure that has been destroyed or threatened with a structure that is identical in all dimensions and location as long as a property owner files a completed permit-by-rule notification for the repair or replacement of the structure and the following standards are met:

A. During project construction, disturbance of dune vegetation must be avoided and native vegetation must be retained on the lot to the maximum extent possible. Any areas of dune vegetation that are disturbed must be restored as quickly as possible. Dune vegetation includes, but is not limited to, American beach grass, rugosa rose, bayberry, beach pea, beach heather and pitch pine. [PL 2005, c. 548, §2 (NEW).]

B. Sand may not be moved seaward of the frontal dune between April 1st and September 1st unless the owner has obtained written approval from the Department of Inland Fisheries and Wildlife. [PL 2005, c. 548, §2 (NEW).]

C. The replacement of a seawall may not increase the height, length or thickness of the seawall beyond that which legally existed within the 24 months prior to the submission of the permit-by-rule notification. The replaced seawall may not be significantly different in construction from the one that previously existed. [PL 2005, c. 548, §2 (NEW).]

[PL 2005, c. 548, §2 (NEW).]

SECTION HISTORY
PL 1995, c. 230, §1 (NEW). PL 2005, c. 548, §2 (AMD). PL 2019, c. 285, §16 (AMD).

For properties under immediate threat in a coastal sand dune system that do not have an existing seawall, temporary sandbags could be installed in a position no further seaward than the previously existing shoreline. If those sandbags are constructed with a biodegradable material, they could then provide the foundation for a restored sand dune in accordance PBR standards. If the material is not biodegradable, then the sandbags would need to be removed within 7 months. (Riprap should not be installed on properties that do not have existing seawalls or riprap. If riprap is the only option to shore up the property in an emergency situation, landowners must take notice that all riprap and other material placed, must be completely removed from the sand dune system within 7 months of the date installed.)

Coastal shoreline stabilization projects (e.g., riprap projects) outside of coastal sand dune systems require the submission of an individual NRPA permit application: https://www.maine.gov/dep/land/nrpa/.

CONTACTING THE DEPARTMENT

If you have any questions or would like to request a site visit, please call your regional DEP office and/or send an email to the Land On Call inbox. Please include in the email your name, address, a return phone number or email address, your questions, and, if possible, photos of the site. (Please make sure any attachments are less than 20 MB combined). Staff will respond as quickly as possible.

Contact information:

By email: https://www.maine.gov/dep/contact/permit.html

By phone (please call the nearest regional office):

- Augusta (Central Maine Regional Office): 207-287-7688; 800-452-1942
- Bangor (Eastern Maine Regional Office): 207-941-4570; 888-769-1137
- Portland (Southern Maine Regional Office): 207-822-6300; 888-769-1036
- Presque Isle (Northern Maine Regional Office): 207-764-0477; 888-769-1053