

PART 1

Overview of
**Proposed *Coastal
Protection Act*
Regulations**


NOVA SCOTIA

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Part 1: Overview of Proposed Coastal Protection Act Regulations

Department of Environment and Climate Change

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Introduction

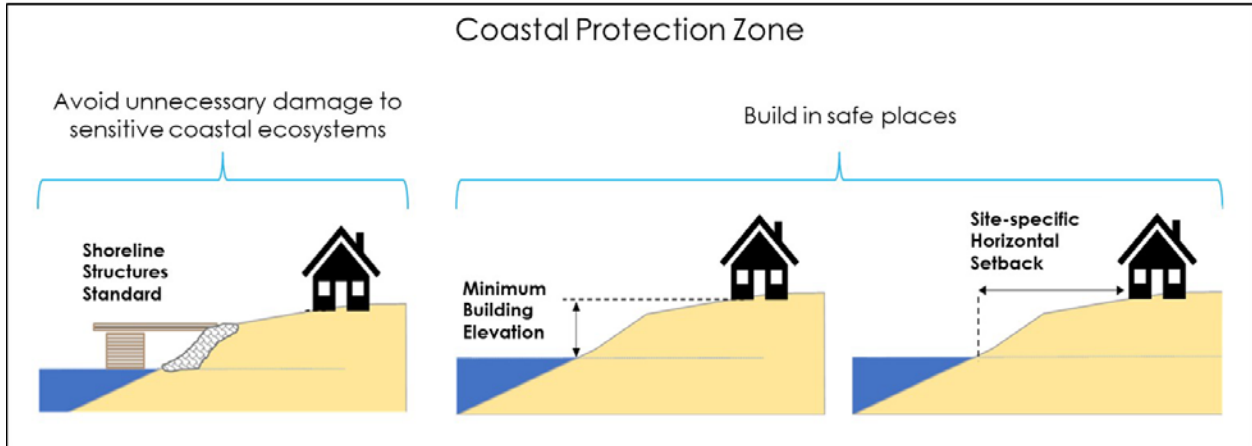
Living on waterfront property is a dream for many people. Now, more than ever, we need to plan for the effects of climate change and carefully consider the environment and the safety of our families, property, and business before we decide whether a coastal lot is suitable for development. The Government of Canada recently projected that sea level rise could exceed a meter by the end of this century along areas of Nova Scotia's coast. On top of this we need to consider the possibility of storm surges that can temporarily increase water levels even more. Much of our coastline is also at increasing risk from coastal erosion. Finally, development in coastal areas can also cause harm to valuable ecosystems, such as beaches and salt marshes that provide fish and wildlife habitat and help absorb greenhouse gases and flood waters. While these problems are expected to worsen in the coming decades, some communities in Nova Scotia are already experiencing these effects of climate change.

To address these issues, the Nova Scotia government committed to introducing legislation to provide legal protection for our coast. Public consultation in 2018 helped shape the *Coastal Protection Act*, which passed in 2019. This legislation provides a framework for coastal protection and limiting development in at-risk areas, but the act does not take effect until

regulations are developed that define how it will work. Legislation provides the authority and regulations contain the detail. It is not uncommon for regulatory changes to be required on occasion and it is easier to change regulations than legislation, which requires an act of the legislature.

Since the *Coastal Protection Act* was passed, the Department of Environment and Climate Change has been developing regulations on how it will work. Regulations will affect what can be built and where in two ways:

- on submerged Crown land along or below the high-water mark, the regulations will help ensure structures such as wharfs, boat slips, infilling and shoreline armouring are designed, constructed, and/or situated where disruption of valuable coastal ecosystems is minimized.
- On private and public lands, the regulations will ensure construction that requires a building permit is located where it is less at risk from sea level rise, coastal flooding and erosion (this includes homes, cottages, commercial or industrial buildings).



It is time to share the proposed regulations for public comment.

This discussion document provides a general overview of the act and how the proposed regulations will work. At the end, you will find a few questions to help provide your thoughts. We are interested to hear about concerns, questions, or ideas you may have.

Anyone looking for more detailed information on aspects of the proposed regulations, such as municipalities or those in professions that may be affected by the *Coastal Protection Act*, please see PART 2: *A Guide to Proposed Coastal Protection Act Regulations* and respond to the questions at the end of that document.

Coastal Protection Act

Nova Scotia's 13,000 km of coastline includes huge regional differences in tides, valuable coastal ecosystems, estuaries, and islands. Low-lying flood-prone areas and ecologically valuable coastal wetlands lie between eroding bluffs and hills. Even coastal features that are safe from these risks can be near areas unsuitable for development. This makes our coastline complex, meaning no single rule can apply.

The *Coastal Protection Act* is a framework for protecting our coast, recognizing its diversity. The Act will help ensure development and construction does not occur where it can unnecessarily disrupt coastal ecosystems or put structures at risk from coastal flooding and erosion. The Act will come into effect after regulations are approved by Executive Council (Cabinet).

The Act does not apply to all buildings and structures. Public infrastructure and commercial or industrial operations that need direct access to the water are exempted, as are activities that are licensed or permitted under the *Fisheries and Coastal Resources Act*, *Marine Renewable Energy Act*, *Wilderness Areas Protection Act*, and *Special Places Protection Act*. Construction in designated marshlands will need to meet the requirements of both the *Coastal Protection Act* and the *Agricultural Marshland Conservation Act*. The act does not apply to federal Crown land.

The *Coastal Protection Act* and its regulations will not be the only laws protecting the coastal environment. Multiple regulations and policies at the federal, provincial, and municipal level are in place to protect marine water quality, habitat, wetlands, and watercourses. The new regulations will focus on areas where gaps exist, rather than duplicate provisions already in place.

Proposed Regulations

The following sections describe the measures government proposes to include in the regulations.

The Coastal Protection Zone

The regulations will create a Coastal Protection Zone. New rules about where structures and buildings may be built will apply inside the zone. The zone will be a narrow band surrounding the province's coast, including land and water-covered areas on either side of the high-water mark.

The Coastal Protection Zone will reach inland a set distance from the high-water mark. Government is proposing that this distance be between 80 to 100 meters, although it is not finalized. This distance is not the same as a setback and does not necessarily mean that construction can't take place. It means that certain regulations apply to what and where you can build, modify or expand a structure, such as a house or building.

Nova Scotia faces serious coastal erosion problems. Some areas of our coast are almost immune to coastal erosion, while others experience more than a meter a year. Along with annual erosion and sea level rise, we need to think about the future when creating regulations. To be consistent with typical flood mapping initiatives, we are proposing to look 80 years ahead to the end of the century. This period is our planning horizon.

As part of developing the regulations, an erosion assessment tool developed for use by designated professionals was tested at 27 sites around the province. The results indicate a range of possible erosion scenarios, from almost no erosion to over 100 meters over the 80 year planning horizon, depending on the conditions at the site. Building inside the upland boundary of the Coastal Protection Zone triggers the requirement for an erosion assessment. The Coastal Protection Zone therefore needs to be wide enough to accommodate safe setbacks for a wide range of circumstances. The zone is also the area where the minimum building elevation will apply. It is important to provide a band of protection where development is high enough above the water levels expected during the 80-year planning horizon.

On the seaward side of the high-water mark, the regulations will not specify an exact boundary. Rather, our focus is on areas where the provincial *Crown Lands Act* and the *Beaches Act* apply.

The Coastal Protection Zone will include the areas around and on coastal islands, and parts of rivers connected to coastal waters and estuaries, including the Bras d'Or Lake. Regulations will identify how the Coastal Protection Zone boundary is applied along these rivers and in other areas, such as barrier beaches that separate beaches from ponds and lakes immediately next to the coast.

Coastal Protection Act Regulations for Building Locations

The regulations will set new rules that apply to municipal building permits for construction within the Coastal Protection Zone. These rules will help ensure that construction of new buildings or homes, or expansion of existing ones, is happening where it is safer from sea level rise, weather events and coastal erosion. The regulations will include two types of setbacks:

- **Minimum Building Elevations:**
The regulations will create province-wide vertical setbacks, to be known as minimum building elevations, within the Coastal Protection Zone. Some municipalities already have this type of vertical setback to protect against flooding. The exact height of the setbacks has not been finalized, but we recognize they must provide reasonable protection against sea level rise over the 80-year planning horizon. The minimum building elevation will also include an additional margin for storm surge. The province will produce digital maps to make it easier to determine whether a proposed construction location is above the minimum building elevation for each area of the coast. Municipalities must ensure that construction of a new home or building or an expansion of an existing structure will occur above the minimum building elevation before approving a building permit.

- **Site-specific Horizontal Setback:**
This is a horizontal setback from the high-water mark. It applies when a property owner intends to build a new structure or expand an existing one within the Coastal Protection Zone. The setback will be determined by a designated professional hired by the landowner. The designated professional will certify the setback in a report for landowners. This report will be required when applying for a municipal building permit (or development permit or development agreement) for construction in the Coastal Protection Zone. Designated professionals will use a standardized risk assessment tool provided by the province to calculate the setback and generate a report. The recommended setback represents the minimum allowed horizontal distance between the proposed structure and the high-water mark. The horizontal setback determined by the designated professional will not extend further inland than the boundary of the Coastal Protection Zone. The regulations may exempt the requirement for a horizontal setback in some areas.

Designated professionals will need to be a member in good standing of a professional body identified in the regulations. The definition of who can be a designated professional under the regulations is being explored with professional associations recognized as self-regulating professional bodies under provincial law.

Repair and maintenance of existing structures will generally be unaffected by both the vertical and horizontal setbacks unless construction increases the size of the structure's existing footprint or increases its internal volume.

Regulations for Wharves, Boat Ramps, and Other Structures

In the area that starts at the high-water mark and extends into the water, the regulations will focus on protecting coastal ecosystems and their ecological functions. Coastal ecosystems provide fish and wildlife habitat, filter excess nutrients from run-off before they reach the ocean, absorb flood waters, protect inland areas against wave action and store carbon in this era when reducing CO2 concentrations is particularly important.

Wharves, boat ramps and structures that stabilize the shoreline (such as breakwaters, seawalls, revetments, riprap and armour stone) can disrupt sensitive coastal ecosystems. Regulations will restrict works and construction that may interfere with the dynamic nature of the coast or disrupt these sensitive coastal ecosystems.

New requirements will be established for permits to build or modify structures along or below the high-water mark that is on Crown land or on land designated under the *Beaches Act*. The regulations will:

- ensure new wharfs, boat ramps and similar structures are built using cribwork that minimizes disruption of normal sediment transport and habitat connectivity;
- prohibit the use of pressurized lumber where it contacts the water; and
- restrict in-filling and stabilization work on Crown land below the high-water mark, such as shoreline armouring, unless it is needed to protect existing structures from coastal erosion or when necessary for wharf footings.

Exemptions will apply to permitted projects and activities undertaken to conserve or improve ecosystem function, such as fish ladders and saltmarsh restoration.

Putting the *Coastal Protection Act* into Effect

Administration

The *Coastal Protection Act* regulations are being designed to work through existing permitting and compliance processes at provincial and municipal levels of government.

For structures and works along or below the high-water mark on provincial Crown land or land designated under the *Beaches Act*, such as wharves, infilling or shoreline armouring, landowners will continue to apply for permits through the Department of Lands and Forestry under the *Crown Lands Act* and/or the *Beaches Act*. Landowners are responsible for ensuring their applications comply with the *Coastal Protection Act* and its regulations. Applications not in compliance will not receive a permit. Conservation officers will continue to enforce the acts as they do now. Where necessary, Conservation Officers will investigate whether construction activity is properly permitted and consistent with the permit, and take enforcement action when warranted.

Some changes to existing municipal processes will be needed to incorporate the new requirements for construction within the Coastal Protection Zone, but the regulations are being developed to keep these to a minimum.

The main changes are that municipalities will have to determine whether:

- a proposed construction location is within the Coastal Protection Zone and, if so, if it is above the minimum building elevation and upland of the setback as per the designated professional's report; and,
- the designated professional is a member in good standing of their professional organization.

Municipalities will be responsible for ensuring compliance with the terms of the building or development permit, as they are now.

The *Coastal Protection Act* requirements for the most part will be related to the location of the proposed construction. A municipality will need to determine the location of the proposed construction from a plot plan provided by the landowner, or from a location certificate from a professional land surveyor. These documents are often already required by municipalities a part of their permit processes.

No new powers or authorities for government inspection or enforcement staff are expected because the act works through existing legislation. If a landowner violates the Coastal Protection Act, they will have also violated other legislation and be subject to enforcement under those acts.

Mapping Tools

Recognizing that the zone boundaries and minimum building elevations are complex and maybe difficult to visualize, we are exploring opportunities for developing digital map resources to help interpret the regulations and provide guidance.

Training/Building Awareness

Part of the planning for implementing the *Coastal Protection Act* regulations includes training. Groups with a specific role in implementing the regulations include Designated professionals and municipal officials who issue permits that need to comply with the act. Designated professionals will need to understand their role and responsibilities and how to properly complete the erosion risk assessment. Municipal officials will require support to help them determine whether a building permit or development permit is subject to and compliant with the act.

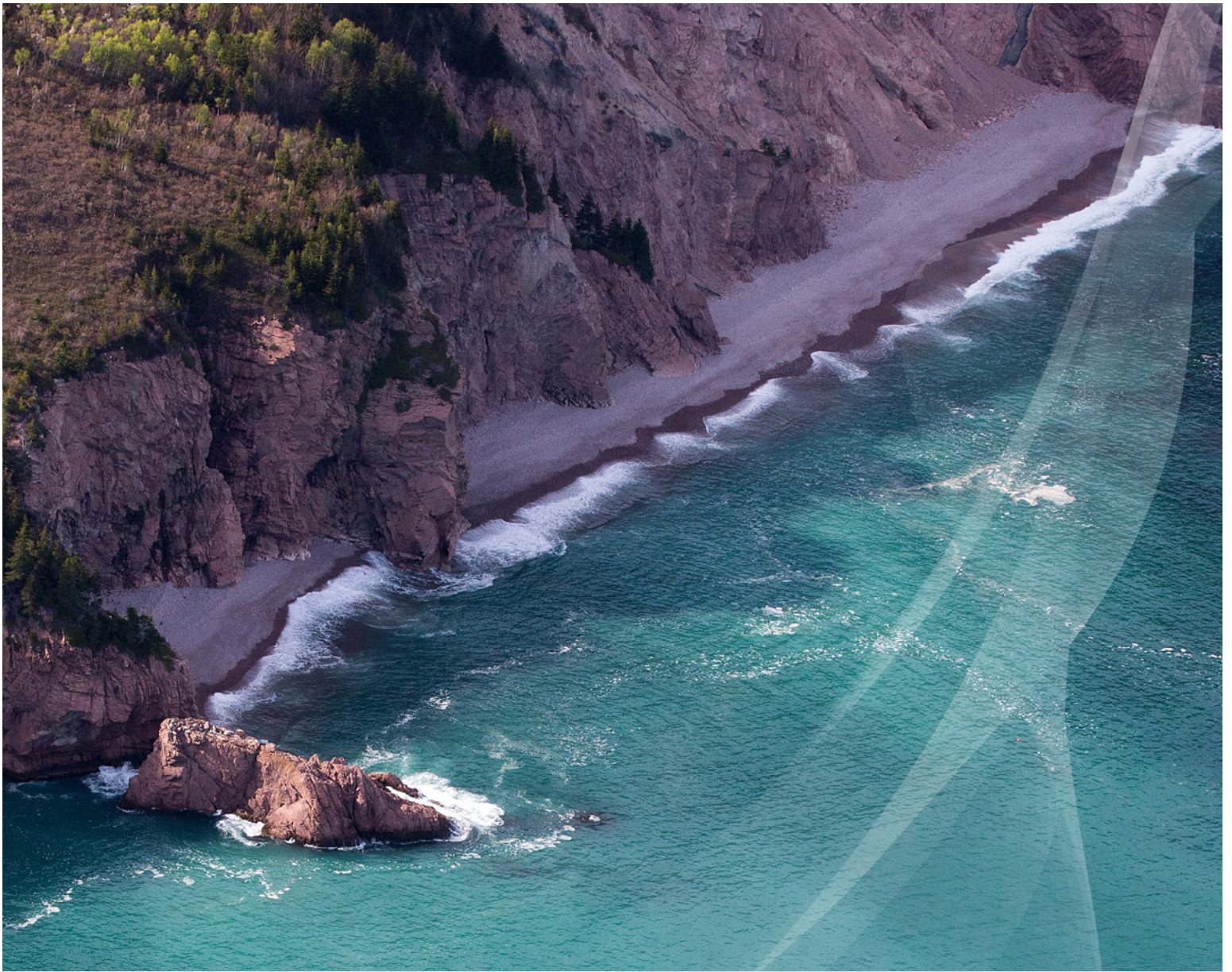
All Nova Scotians, whether they live on the coast or further inland, have an interest in making sure coastal development is not at risk from flooding and erosion and does not damage valuable ecosystems. Those most directly impacted will be those planning to build on, or buy or sell, coastal property, and those in occupations and professions involved in those transactions. In addition to building public understanding and awareness, we will work with occupations and professions who require a detailed understanding of how the act and regulations work, such as those involved in planning or executing property transactions; planning for construction near the coast, and undertaking valuation, land use planning or subdivision activities.

We will work through professional associations, relevant provincial and municipal government offices, and other organizations to ensure those who need to be aware of the *Coastal Protection Act* and regulations understand the new requirements as early as possible.

We'd Like to Hear From You!

To help get the public discussion started, we have developed some questions to consider. Please feel free to answer the questions or provide any thoughts you want to share on the proposed regulations.

1. In your opinion, will the proposed regulations provide appropriate additional protection for coastal ecosystems? Why or why not?
2. Will the proposed regulations be effective in preventing development in areas at risk from sea level rise and coastal erosion? Why or why not?
3. The Coastal Protection Zone will be a band around the entire coast where the regulations apply. This is not a setback, but it is the area where minimum building elevations will apply and where landowners will need to hire a designated professional to check for erosion risks before they can get a building permit. Do you agree the Coastal Protection Zone should extend somewhere in the range of 80 to 100 metres inland from the high-water mark? Why or why not?
4. Are there any parts of the proposed regulations that you think are too restrictive? If so, which ones and why?
5. Are there any parts of the proposed regulations that are not restrictive enough? If so, which ones and why?
6. What can government do to ensure people have the information they need about the *Coastal Protection Act* and Regulations when planning construction on the coast?
7. Do you have any further thoughts you would like to share to help us write the final regulations?



PART 2

A Detailed Guide to
**Proposed *Coastal*
Protection Act
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Introduction

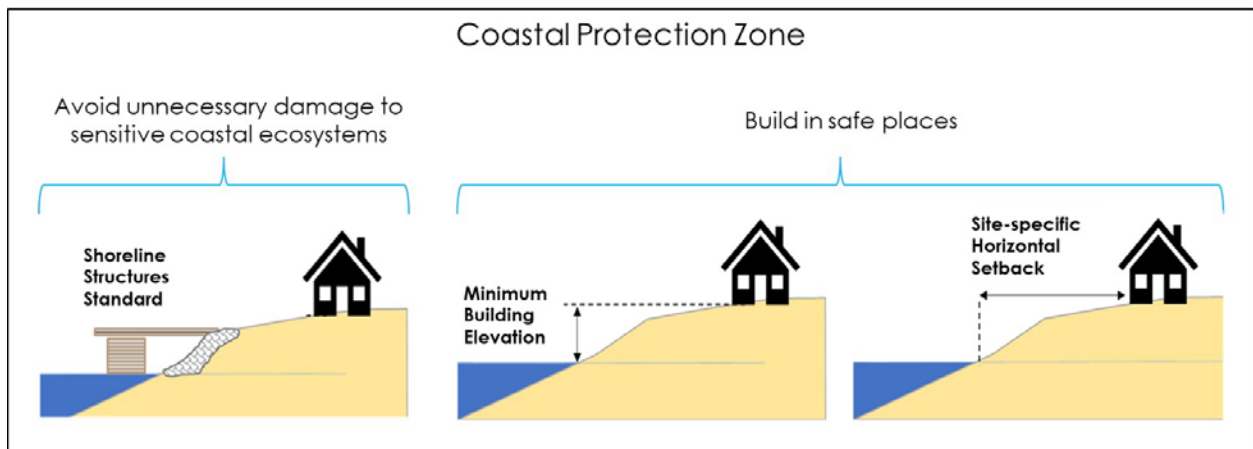
This document is designed to help those who need a more detailed look at the proposed *Coastal Protection Act* regulations. This could include municipal officials, members of professions designated to perform erosion assessments under the Act, and those involved in construction or property purchase, sale or subdivision of coastal lands. We also encourage anyone who may be interested in or impacted by the Act to read this document and share their thoughts with us. We have included a few questions at the end to help people respond to this consultation .

The following sections outline government's proposed approach and are intended for discussion purposes only. All content is subject to change.

Coastal Protection Zone

Regulations will identify the area included in the Coastal Protection Zone, where the Act and regulations will apply. The Coastal Protection Zone will be a narrow band surrounding the province's coast, including land and water-covered areas on either side of the ordinary high-water mark. This zone will include islands, major tidal rivers where they near the ocean, and other estuaries that are directly connected to coastal waters.

The Coastal Protection Zone includes both public and private lands and may overlap with lands designated under other Acts, such as the *Agricultural Marshlands Conservation Act* and the *Special Places Protection Act*. In these areas, the *Coastal Protection Act* provides exemptions to avoid interference with the intent of existing legislation. The Coastal Protection Zone does not include federal Crown lands.



How the Regulations will Apply in the Coastal Protection Zone

The Coastal Protection Zone boundaries will be identified using the high-water mark (which may be set out in regulations as the ordinary high-water mark, or similar reference line approximating water levels at high tide). The area that starts at the high-water mark and extends inland, in most cases, will be called the “upland” area of the zone. The width of the upland area has not yet been finalized, but government is proposing it be in the range of 80 to 100 meters.

Within this area, municipalities will need to ensure building permits and construction are compliant with two new setbacks: the minimum building elevation for different regions of the coast; and a horizontal building setback determined for the specific property by a Designated Professional, as defined under the regulations.

For the area that starts at the high-water mark and extends seaward, the Coastal Protection Zone boundary will not be specified. Within this zone, regulations will apply to wharfs, jetties, seawalls, groynes, in-filing, shoreline armouring and similar structures, and will be administered using existing permitting processes administered by the Department of Lands and Forestry for areas where the *Crown Lands Act* and *Beaches Act* apply.

Coastal Protection Zone Upland Boundary

The upland boundary will be a line that follows the coastline at a set distance upland from the closest point on the high-water mark.

Two types of naturally occurring shorelines need to be considered when setting the Coastal Protection Zone boundary to the coast - barrier beach areas and estuaries (tidal rivers that meet the sea and, in this case, include the Bras d’Or Lake). Our proposed approach for the boundary in these areas is outlined here.

Coastal Protection Zone boundaries in Areas with Barrier Beaches

Barrier beaches are typically thin beaches that separate ocean waters from pond or lakes. While barrier beaches often shelter the inland water, they are prone to shifting and are often breached by ocean waters, either gradually or suddenly due to a storm. When breached, the pond or lake becomes connected to the ocean. As a result, the freshwater of the pond turns salty, and the shoreline that was previously protected is now at risk from coastal erosion and sea level rise.

Where part of a pond or lake behind a barrier beach is within the Coastal Protection Zone, the upland boundary will extend further inland to include the land adjacent to it. In these areas, regulations will specify that the upland boundary will be:

- a set distance to the nearest point on the Ordinary high-water mark on the ocean side of the beach (proposed to be within the range of 80 to 100 meters); and
- no closer than a set distance from the ordinary high-water mark of the pond or lake behind a barrier beach (proposed to be within the range of range 80 to 100 meters).

It may be possible to build within this part of the Coastal Protection Zone, if the vertical and horizontal setback requirements are met, except on the barrier beach itself. Barrier beaches are generally too dynamic to safely allow development.

Coastal Protection Zone in Estuaries

Estuaries are areas where rivers meet the sea and freshwater mixes with salt water. The Act includes estuaries as part of the coast. Houses and buildings along the banks of an estuary often face the same risks as properties facing open ocean, including sea level rise, storm surge and erosion. At the same time, many rivers in Nova Scotia extend tens of kilometers inland and well away from what many people would consider to be the coast. While there are several criteria (for example, salinity or tidal influence) that could be used to approximate where an estuary turns into an inland watercourse, none are practical ways of determining exactly where the Coastal Protection Zone should end along a river. Instead, government is proposing that the regulations rely on one of two methods to determine the boundary. Both methods can be consistently determined and displayed with digital mapping tools.

1. Size criteria that combine the width and/or inland extent of a river. The inland extent of the Coastal Protection Zone would be where the banks of an estuary narrow to a specified width, or the river has reached a specified distance inland. These criteria can be determined and displayed on a digital map layer and work for large and small rivers. The province is currently exploring various combinations of river widths and upstream distances to determine a best-fit approach that can be consistently applied across the province.

We expect it will be possible to provide map coordinates to identify precisely where the Coastal Protection Zone ends on major estuaries. This will not be practical for smaller rivers because of their number. In these cases, municipalities may choose to rely on provincial visual mapping aids to determine where the zone ends. Disputes over the precise location of the zone boundaries could be resolved by a professional land surveyor based on the definitions in the regulations.

2. Ending the inland reach of the zone on a river where it meets an area where an existing municipal land-use bylaw applies that includes vertical setbacks that address sea level rise and flooding for the planning horizon of 80 years, and any other restrictions required to be consistent with the Statement of Provincial Interest on Flooding.

Boundary Along Water Control Structures

In areas where the shoreline is formed by human-built structures designed to restrict or prevent the upstream or inland flow of water, such as a dam, roll-over dam, or aboiteau, the seaward side of the structure will be taken as the ordinary high-water mark for setting the upland boundary. The body of water on the upstream side of the structure would not be included in the Coastal Protection Zone because water levels and flow on this side of the water control structure are generally under human control. A possible exception to this rule is the canal lock at St. Peters that connects the ocean to the Bras d'Or Lake, as there are other connections to ocean waters. A causeway would be considered a water control structure if it includes a means to restrict or prevent the inland flow of ocean waters. A bridge that is not designed to restrict the flow of water would not be considered a water control structure.

Coastal Protection Zone in **Map or Graphic Form**

Provincially produced maps to display the approximate boundaries of the zone and related information are for general guidance only. If information on a map differs from the written regulations, the written regulations are correct.

Coastal Protection Regulations and Municipal Building Permits

The proposed regulations will add new requirements for building permits, development permits and development agreements within the zone. It is the responsibility of municipalities to ensure that permits comply with the *Coastal Protection Act*. This will include whether the Act applies to the proposed construction and ensures the site is compliant with the minimum building elevation and horizontal setback certified in the Designated Professional's report.

Structures Covered by the Act

Requirements for building permits within the zone apply to houses, cottages and commercial or industrial buildings, with some exceptions. This will include public infrastructure and commercial or industrial structures that need to be located at the shoreline. Other proposed exemptions being considered include:

- trailers or mobile homes that are designed for frequent transport;
- boathouses, detached garages, or outbuildings that are intended for storage or similar uses and do not have water service, plumbing, living quarters or similar amenities, and
- decks, gazebos or similar structures, regardless of whether it requires a permit.

Approval of a Building Permit in the Coastal Protection Zone

Unless an exemption applies, municipalities are required to do the following before a building permit is approved or issued for construction within the Coastal Protection Zone:

- receive the designated professional's report stating the minimum horizontal setback distance from the high-water mark,
- receive a plot plan or a professional land surveyor's location certificate that identifies:
 - minimum building elevation (includes the structure and its footings)
 - minimum horizontal setback distance, as defined by the designated professional

Permits will not be issued for construction of living spaces in structures built below the high-water mark (such as on wharves or similar structures).

Modification and Repair of Existing Structures

Applications for municipal building permits that increase the footprint of a building or increase its internal living space will need to meet the new requirements. A municipality will not be allowed to issue a building permit that includes creation or conversion of existing space to residential in a structure that is located below the minimum building elevation.

Modifications that do not increase the footprint of its foundation or internal living space are exempted, as is work limited to improving a structure's strength or resistance to damage from flooding (such as increasing the height of the foundation walls to raise the existing living space to reduce the risk of flood damage).

Relocation of Existing Structures

If a landowner proposes to move an existing permanent structure inside the zone, it is considered construction and the Act still applies. If the structure was already located inside the zone, the structure may be moved to a location where the elevation is the same or greater height from the high-water mark. In this case, a municipality may exempt the landowner from supplying a designated professional's report.

Modified Requirements for Developed Downtown Waterfronts

Many waterfront areas along the coast are important economic and public centers for municipalities and communities. To preserve the economic potential and character of an existing developed waterfront that provides public amenities and mixed-use commercial/residential space, it is proposed that some regulations be modified for specific types of structures within these areas.

We are currently exploring definitions for these areas to avoid putting any more structures at risk from flooding due to sea level rise. A possible definition could be, "developed downtown waterfront areas as dominated by mixed-use structures with a public amenity or multi-unit residential component where there are no gaps of greater than 75 meters between existing mixed-use structures, or where the area was zoned for commercial, mixed use or equivalent prior to the Act coming into effect".

Municipal building permits for construction of commercial or mixed-use, or food-service or similar public amenities in the zone could be exempted from a site-specific horizontal setback and the requirement for a designated professional's report. Some elements of the minimum building elevation rules would still apply to reduce the risk from sea level rise and coastal flooding, including that no residential part of:

- a new structure can be below the minimum building elevation, or
- an existing structure being modified can be below the minimum building elevation.

The proposed modified provisions for developed downtown waterfront areas would not apply to construction or a new or expanded single or semi-detached residence. For these, all provisions of the Act and regulations would apply and the entire structure must be located above the minimum building elevation, a designated professional's report must be completed and the horizontal building setback certified by the designated professional will apply.

Permit and Agreement Administration

Existing building permits that have not expired before the date the Act comes into effect will be exempted for the duration of the remainder of the permit. Any extensions or amendments to a building permit initiated after that time are subject to the Act.

The period for which the permit is valid, including any extensions, must not exceed two years from the date on which the original building permit was issued, or two years from the date the Act came into effect.

Municipalities will not be able to issue a development permit or enter into a development agreement that has the effect of exempting a landowner or developer from the Act.

Subdivision of Lots

If a designated professional certifies a horizontal setback for an area that covers several PIDs, or an area was subdivided after the initial report was completed, the report may be accepted by the municipality for the areas included.

When a landowner applies to subdivide lots that include areas inside the zone, a municipality must inform them about the Act and regulations and how it may impact their development plans.

Acceptance of Reports by a Municipality

The following provisions are proposed around the acceptance and administration by municipalities of reports by designated professionals:

- a municipality can accept a designated professional's report that is signed by a qualified designated professional;
- a municipality may accept a designated professional's report that was issued to a landowner other than the current landowner;
- if a landowner or building proponent provides more than one report by from different designated professionals for the same proposed building location, the municipality may accept the one chosen by the landowner provided it meets all requirements;
- municipalities must refuse a designated professional's report if, in the opinion of the municipality:
 - a) the designated professional is not qualified to provide the report;
 - b) the information and/or specified setback in the report is incomplete or inconsistent with the relevant conditions on the site (for example, the height or slope of a bluff appears to be misstated),

- c) the methodology prescribed in the regulations for determining and certifying the site-specific horizontal setback was not followed; or,
- d) Conditions at the proposed building location have changed since the date the field work for the erosion risk assessment was conducted.

A municipality will be required to retain a copy of a designated professional's report for 10 years from the date the report was signed. A municipality will make any or all reports available to the provincial department administering the Act, upon request.

Ensuring Compliance

Once a building permit is issued, a municipality is responsible for ensuring the construction is compliant with the permit, including the new *Coastal Protection Act* and regulations, in the normal manner. This may include building inspectors verifying that a new structure, or one being expanded, is located where the plot plan or location certificate indicates.

Determining Building Setbacks

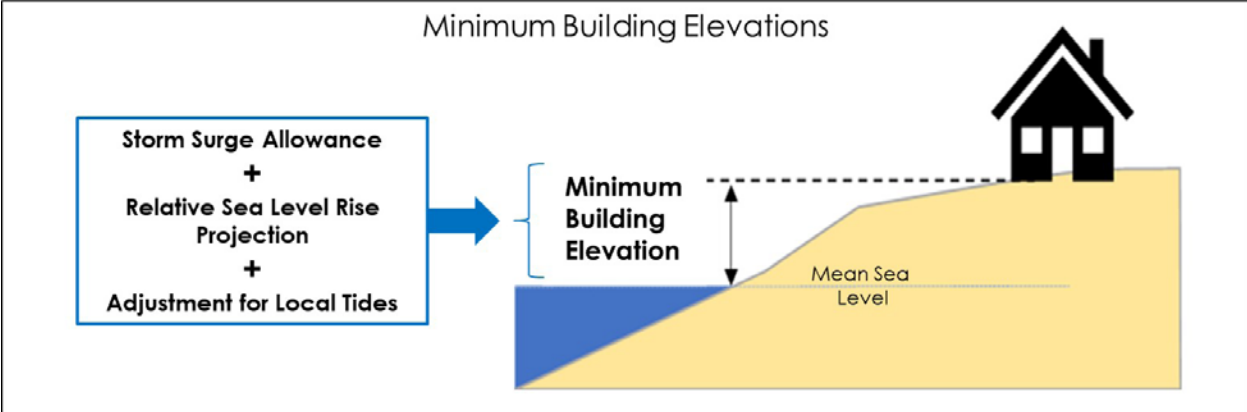
The regulations include two types of setbacks within most areas of the zone to reduce risks for future development. Vertical setbacks, called minimum building elevations, will help reduce risks from coastal flooding and will be determined by the province for different regions of the coast. Site-specific horizontal setbacks are designed to avoid erosion risks and will be determined for a specific property when a landowner wants to build within the zone.

Minimum Building Elevation

Some Nova Scotian municipalities are already preparing for climate change by including vertical building setbacks in their land-use bylaws. The *Coastal Protection Act* will create a province-wide set of vertical building setbacks known as minimum building elevations to cover all areas of the coast.

Regulations will set out minimum building elevations for all areas of the coast as a vertical height above mean sea level in meters to the nearest 20 centimetres. The mean sea level will likely be identified as an established geodetic datum, possibly Canadian Geodetic Vertical Datum 2013 (CGVD2013). Where a municipality uses a different vertical datum in their planning documents, the municipality is responsible for converting elevations to the datum set out in the regulations.

Because the minimum building elevations will be measured from mean sea level, they will be adjusted for local tides, which vary around the coast, especially in the Bay of Fundy and Minas Basin areas. Regulations will divide the coast into sections (using map coordinates, with visual maps for general guidance) and will assign a minimum building elevation for each section. The minimum building elevation for islands will be taken from the minimum building elevation on the nearest section of the coast on the mainland.



We are currently developing a schedule of minimum building elevations that will incorporate the latest relative sea level rise projections released by Natural Resources Canada in early 2021 and a more generalized additional margin of safety for storm surge.

How will municipalities and landowners know if a proposed building location is above the required minimum building elevation? We are developing map resources to help interpret the regulations. These may include contour lines for the minimum building elevations for each coastal section, illustrating what parts of properties are above and below the minimum building elevation for that part of the coast. Mapping resources are intended only to provide general guidance. If there is a difference in the location of the segment boundaries on a map and the coordinates or minimum building elevation set out in regulations, the written form in the regulations will be taken as correct. In some cases, a landowner or municipality may wish to rely on professional land survey (at the landowner's cost) to resolve any uncertainty. If there is a difference in an elevation determined from a map and an elevation determined by a licensed land surveyor, the elevation determined by the surveyor shall be taken as correct.

Determining the Horizontal Building Setback

The Act and regulations will use a system of site-specific horizontal building setbacks to ensure new construction is located where it is safer from coastal erosion throughout an 80-year planning horizon. The risk of erosion can vary significantly, even between neighbouring properties. This makes it impractical to set “blanket” setback distances for large areas of the coast. The proposed regulations will require the designated professional to use a specific analytical tool to determine the horizontal building setback for a given property. The setback determined by the designated professional represents the minimum allowed horizontal distance between the proposed structure and the high-water mark. Although the assessment tool might produce a setback that extends farther upland than the boundary of the zone, the upland boundary of the zone will be the maximum horizontal setback possible under the regulations.

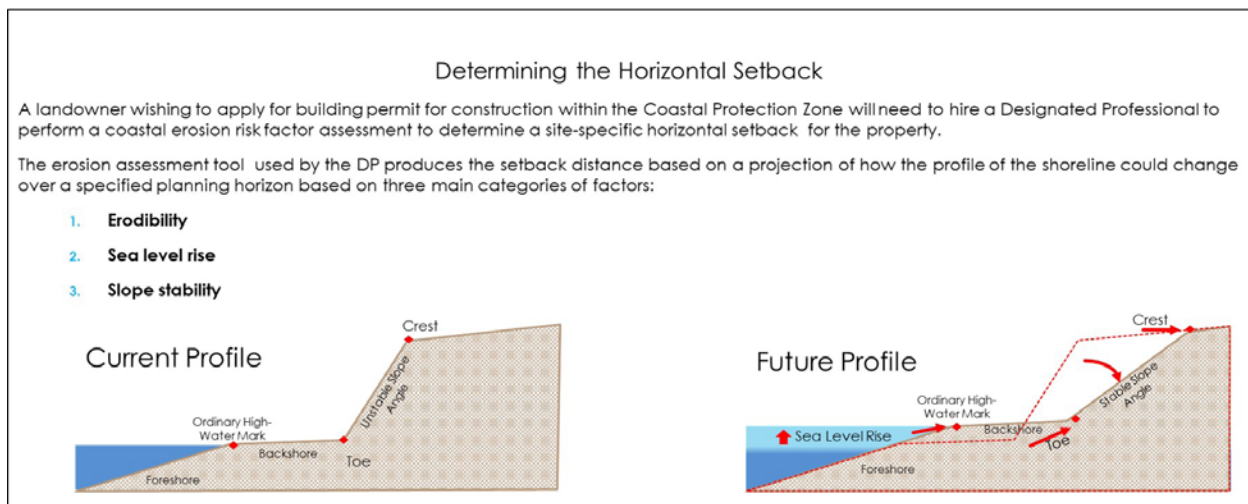
The method a designated professional will use to determine the horizontal building setback for a specific property is being developed to ensure that it is affordable to landowners. It also needs to be readily usable for a range of professionals designated under the Act. The final design of the tool will ensure designated professionals can produce consistent results based on various combinations of erosion risk factors that appear anywhere on Nova Scotia's coast.

We will make resources available online to assist designated professionals in determining horizontal setbacks, including:

- an assessment tool that will calculate the horizontal setback, in spreadsheet format;
- instructions and training resources to guide designated professionals during site assessments, and
- a template for the report.

A designated professional will visit the proposed building lot, measure distances, angles and slopes to capture the shoreline profile; record information about materials within any beach areas; test the hardness of bluffs or rock faces, and record any other information required for the assessment tool. The designated professional will refer to maps to determine the amount of open water in front of a property, which the tool uses to estimate how wave energy impacts the shoreline. The designated professional will also take photographs of the site to include in the report.

Designated Professionals will enter measurements and observations collected at the site and from public maps into the spreadsheet. Formulas built into the spreadsheet will project how far inland the shoreline could shift over the planning horizon, which is proposed to be 80 years. These projections incorporate risks related to sea level rise, the erodibility of the material and the amount of wave energy it could be exposed to, and the height and slope of bluffs and or rock faces along the shoreline. The distance the tool calculates is the horizontal building setback for the property that the designated professional then certifies in their Report.



Designated Professionals

A landowner seeking a building permit to construct a new structure or expand an existing structure in the zone will need to hire a designated professional to assess the coastal erosion risks at the proposed site and determine the site-specific horizontal building setback that will apply to the property. The result will be provided in a report, which landowners must provide to municipalities when applying for a building permit for construction within the zone.

The erosion assessment tool proposed by the province is designed to be a general risk assessment tool that can be used by a variety of professions. We are currently exploring the possibility for designation with specific self-regulating professional bodies that are governed by legislation. The professional bodies qualified to be designated professionals will be set out in the regulations.

Role and Qualifications of the Designated Professional

The designated professionals' role will be to:

- provide independent professional judgement free from bias in completing the report.
- perform an erosion risk assessment at the property, using the specified method and analytical tool;
- determine horizontal setback distance;
- provide the designated professional's report certifying the horizontal setback to the landowner, and
- maintain records, as required by regulations.

A designated professional must be:

- a member in good standing with their professional organization,
- acting within their abilities and experience, skills and/or training to carry out the assessment and complete the report as per the regulations.

The designated professional's responsibility under the Act is specific: to certify that they are qualified, the property has been assessed in accordance with the erosion risk assessment methodology, and that the resulting horizontal building setback has been established in accordance with the regulations. A designated professional's report is meant to reduce risk and is not a guarantee of safety of the building location against coastal erosion.

Designated professionals will be required to self-declare as being qualified and a member in good standing of their professional body. Laws governing their respective professional bodies and scope of practice will apply.

A designated professional (or their employer) will maintain professional liability insurance that is valid at the time of the assessment as well as continues if the insured becomes bankrupt or insolvent, is declared incompetent or dies during the period of insurance. The coverage must continue for two years after the date the person ceases as a designated professional.

A designated professional will be required to produce proof of their qualification and insurance if a municipality or the province requests it.

Responsibilities Regarding Site Assessment

Designated Professionals will sometimes be hired to assess large lots that may exhibit considerable variation in geological and topographical conditions within the property boundaries. Variations in erosion risk factors can significantly change the horizontal setback. The designated professional will be required to check for significant variations in conditions, such as:

- exposure to wave energy;
- geological composition of the foreshore, backshore, bluff, bank, or rock face;
- angle, elevation or width of the foreshore, backshore, buff, bank, or rock face in the area being assessed.

Where these varied conditions are present within the area being assessed, designated professionals must do one of the following:

1. conduct multiple assessments using the prescribed method to determine the appropriate horizontal setback for each area, including diagram in the report that clearly indicates where the setback applies.
2. limit the report to an area smaller than the lot being assessed and provide a diagram attached to the report clearly indicating the area where the site-specific horizontal setback applies.
3. determine what is likely to be the most erosion prone area, perform the assessment with the prescribed tool and certify the setback for the entire property.

Information to be Included in the Report

The designated professional's report may apply to a single lot, a portion of a lot, or multiple lots. It may apply to a portion of a lot if the owner requests it or if the designated professional has determined that conditions are not sufficiently consistent throughout to allow for a single assessment, such as a large lot that includes more than one type of shoreline. If a designated professional's report applies only to a portion of a property associated with a PID, the report must include a diagram indicating the area for which the setback applies.

A report may apply to multiple lots with multiple PIDs if:

1. the lots share common boundaries;
2. the designated professional has determined that erosion risk assessment factors are consistent throughout the area within which the setback applies and do not include material variations in exposure to wave energy; geological composition of the foreshore, backshore, bluff, bank or rock face being assessed; or variations in slope angle or elevation in the area being assessed; and,
3. the common setback applicable to all lots reflects the greatest horizontal setback distance (and therefore the highest erosion risk level) for the properties to which the report applies.

Form and Certification of the Report

The province is currently developing a template for the report that will be accessible online. It will clearly articulate the information presented and certified. By signing the report, the designated professional will be certifying:

1. the horizontal setback, in meters from the high-water mark, that applies to the area covered in the report.
2. they are qualified under the regulations.
3. the assessment was completed in the prescribed manner.

The report will be valid for 10 years from the date it is signed by the designated professional.

It is important for all parties – landowner, municipalities, realtors, developers, and designated professionals – to recognize the horizontal setback is a generalized risk management tool. It is not a guarantee that a structure will be safe from coastal erosion.

Additional Assessment to Override a Report

The *Costal Protection Act's* horizontal setbacks are based on surface observations and measurements of the shoreline profile and geologic material to provide a consistent, risk-managed horizontal setback based on the precautionary principle. We are exploring whether evidence-based adjustments to the setback produced by the erosion assessment tool should be permitted. Any allowable revisions to a designated professional report would be limited to improvements to the accuracy of the inputs for the assessment tool, and not on varying the assumptions, decision rules or calculations that are incorporated into the tool's calculations.

For example, a landowner may wish to hire a professional, such as a geotechnical engineer or geologist, to undertake additional investigation to determine if harder geological material is present beneath a thin layer of loose sediment visible at the surface in order to update that particular input parameter to the erosion assessment tool. This could also apply to more precise measurement of the distances, slopes and angles that are also required as inputs. Consideration is being given to what processes and conditions would need to exist to ensure additional studies that over-ride the original erosion assessment result would not undermine the intention of the regulations or place undue burden on municipal officials.

Protecting Coastal Ecosystems

Coastal ecosystems provide fish and wildlife habitat, filter excess nutrients from run-off before they reach the ocean, absorb flood waters, protect inland areas against wave action and store carbon in this era when reducing CO2 concentrations is particularly important. The proposed approach is designed to balance environmental protection with the need to protect existing legally located structures from erosion risk.

Wharves, boat ramps and structures that stabilize the shoreline (such as breakwaters, seawalls, revetments, rip-rap and armour stone) can disrupt sensitive coastal ecosystems and their ability to adapt to natural processes. Regulations will restrict or limit works and construction that may interfere with the dynamic nature of the coast or disrupt sensitive coastal ecosystems. To do this, requirements will be outlined that apply to permits to build or modify structures or earth works on Crown land below the high-water mark or on designated beaches. The new requirements will be incorporated into existing permitting processes currently administered by the Nova Scotia Department of Lands and Forestry, and additional policies and conditions required by that department will also continue to apply. Landowners will not need to apply for any additional permits.

Regulations will ensure that wharves, boat ramps and other structures are designed, constructed and located to allow natural shoreline movement and protect sensitive coastal ecosystems. Shoreline armouring, which by its nature disrupts movement of the shoreline and in some cases may accelerate erosion, will only be allowed on Crown land seaward of the high-water mark when needed to protect an existing structure from risk. Hard structures that are intended to trap sand to create a beach for recreation. The Act and regulations will help ensure people are less likely to build in areas that will require shoreline armouring over the planning horizon.

For boat ramps, wharves and other similar structures, the regulations will:

- allow for maintenance of existing structures, as long as the work does not use pressurized lumber or other toxic materials;
- permit construction of new structures or expansion of existing structures as long as new section(s) are built using open cribwork to minimize disruption of normal sediment transport and habitat connectivity, and no toxic materials including pressurized lumber are used or come into contact with the water.

For in-filling and shoreline stabilization (including shoreline armouring), the regulations will:

- prohibit in-filling on Crown land or on beaches designated under the *Beaches Act* on the seaward side of the high-water mark, except when used to anchor a footing of a wharf, boat ramp or similar structure;
- prohibit installation of shoreline stabilization on Crown land below the high-water mark, including new or expanded shoreline armouring, unless it is needed to protect an existing home, cottage, business, or similar structure that is at risk from coastal erosion and was located within the Coastal Protection Zone prior to the date the Act came into effect;
- allow for maintenance of existing, legal shoreline stabilization structures, and
- prohibit installation of groynes or breakwaters that disrupt along-shore sediment transport, unless they are required to protect the entrance of a publicly-accessible harbour, dock, or marina, or are needed to protect public infrastructure.

These restrictions do not apply to permitted projects or activities undertaken to conserve or improve ecosystem function.

In some areas, the zone will overlap with dyke lands designated under the *Agricultural Marshlands Conservation Act*. The regulations will place no new restrictions on work to maintain, repair or modify any element of the dyke system in areas undertaken by, or on behalf of, either a marsh body or the province. Also exempted are works within the Coastal Protection Zone required to anchor a designated dyke system to higher ground that may extend outside of the area designated under the *Agricultural Marshlands Conservation Act*. Any proposed activity or construction in the designated marshlands will need to meet the requirements of both the *Coastal Protection Act* and the *Agricultural Marshland Conservation Act*.

Compliance

The proposed approach is for no new application processes on Crown land along the high-water mark or in an area designated as a protected beach. Landowners and contractors working in these areas will apply for permits as they do now. Permits will not be issued if the proposed structure does not comply with the Act. Conservation officers, who are responsible for enforcing the *Crown Lands Act* and the *Beaches Act*, will determine whether work undertaken is consistent with the issued permits and investigate where necessary.

We want to hear from You!

The *Coastal Protection Act* Regulations will be a new and substantial step forward in mitigating risks to our coastal environment and construction in these areas. As we continue to develop these regulations, please share your thoughts so we can ensure the regulations are as effective and practical as possible.

These questions are designed to help you in providing feedback in any form that is convenient for you.

1. The regulations will create a Coastal Protection Zone that will extend inland from the high-water mark by a set distance. Government is proposing this distance be in the range of 80 to 100 meters. This is not a setback but will be the area within which a minimum building elevation would apply and where a landowner would need to hire a designated professional to assess erosion risk. Thinking about sea level rise, coastal flooding and the range of coastal erosion risks facing areas of Nova Scotia's coast, do you think this distance is appropriate to provide the margin of safety we need in future decades? Is it too wide? Too narrow?
2. Are the proposed role and responsibilities of designated professionals appropriate and clear? What changes would you like to see in the role or responsibilities of delegated professionals?
3. Do the types of structures to which the regulations apply seem reasonable? Do the proposed exemptions make sense?
4. Do the proposed regulations for building and maintenance of shoreline structures, such as shoreline armouring, make sense to you? Will they help protect our sensitive coastal ecosystems? Are they too restrictive, and if so, why?
5. What are the most important things government can do to make sure introduction of these regulations is as smooth as possible?
6. Do you have any further thoughts you would like to share to help us as we finalize the regulations?