



PEI Flood Guide

A Resource for Local Land Use Planning




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Planning for Flood Risk in PEI

Purpose of the Guide

This Guide provides necessary information to decision-makers about flood risk in Prince Edward Island. It describes coastal and inland flood risks, provides guidance for creating flood policy and reviewing development applications, and introduces tools that can be used to help set land use policies. The Guide can also help inform planning decisions at the individual property level. While effort has been made to provide detailed information, this Guide is not a substitute for professional advice related to planning and development in flood risk areas.

Planning Authority in PEI

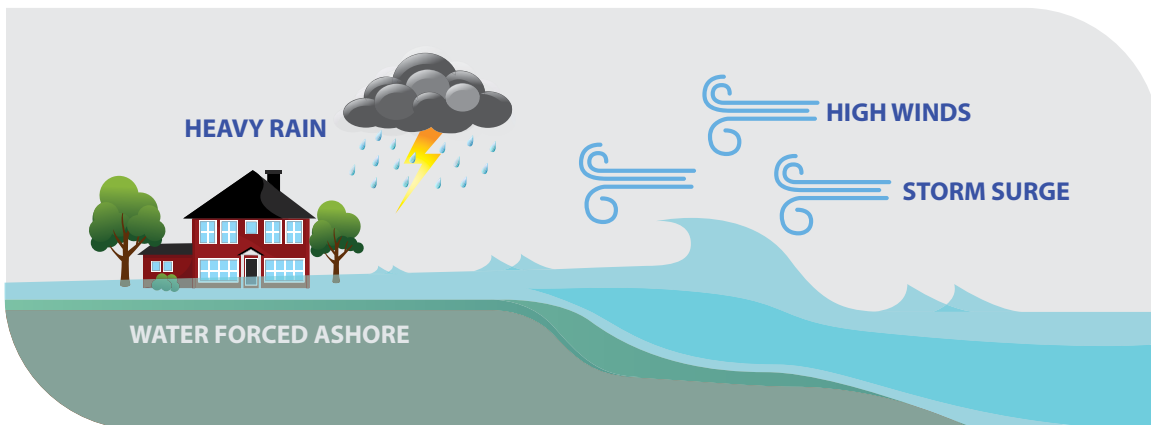
Provincial, municipal, and First Nation governments have the authority to set and implement rules for land use. Through the [Planning Act](#) and its regulations, the Province has set out statements of provincial interest, procedures, and standards for development that apply to provincial and municipal planning authorities. Municipalities that have an approved official plan and land use bylaw have the authority to manage land use within their boundaries. Outside these municipalities and First Nation communities, the Province is the planning authority.

Statements of provincial interest are found in Section 2.1 of the *Planning Act*. They are intended to guide the development and implementation of land use planning policies and to guide land use decision-making by outlining matters of public interest that affect the welfare and well-being of the general public or that reflect the needs of the province as a whole.

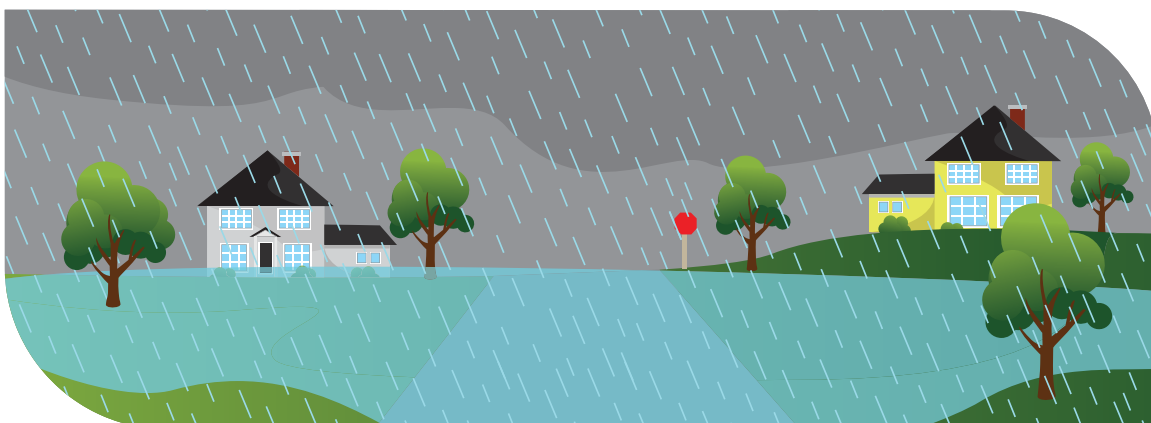
Coastlines and inland floodplains only become flood hazards when people build too close to them. The best way to protect people and communities is to direct development to areas not subject to current or future flood risk.

PEI experiences two types of flooding.


Coastal Flooding – occurs when land along the coast is temporarily submerged by seawater resulting from sea-level rise and extreme weather events that cause high waves and storm surges.




Inland (Pluvial) Flooding – occurs when intense rainfall can't be absorbed by the ground fast enough. Hard surfaces such as buildings, parking lots, roads, as well as frozen ground all contribute to inland flooding. This type of flooding often leads to flooded basements, damaged roads, overwhelmed sewer pipes, and swamped low-lying areas.




What increases the flood and coastal hazard risks?




Sea Level Rise: Global sea level is rising due to melting glaciers and polar ice caps, the natural expansion of warming ocean waters and the sinking of land following the last ice age. By 2100, PEI should be prepared for 1 meter (3.3 feet) of sea level rise above 2006 levels*



Extreme Weather: As the climate changes in PEI, extreme storm events are becoming more frequent and intense. As a result, all types of flooding are expected to worsen, and the extent of projected flood areas and floodwater depth are increasing.



Erosion: As PEI's coastline erodes, the province's shoreline changes, exposing new areas to the potential for flooding and putting people, buildings, and infrastructure at risk. Inland and coastal flooding can also increase the amount of erosion.



Development Pressure: Continued development – be it cottages and homes, or industrial and commercial uses – also impacts flood risk. Risk of flooding increases as natural slopes are changed, more ground is covered by pavement or buildings, and vegetation is altered or removed.

* Relative sea level rise varies by location. To view the most recent sea level rise projections for PEI visit: <https://climatedata.ca/explore/variable/slr/>

What are the Impacts from Flooding?

Damage to Property & Infrastructure: Flooding can have devastating impacts on the coastline, buildings, infrastructure, and people. The costs to individuals and governments to repair or rebuild are significant and will continue to increase over time.

Saltwater Intrusion: Drinking wells in PEI depend on groundwater, which can become contaminated when salty ocean water infiltrates. As more coastal properties are developed, saltwater intrusion is expected to become a more frequent and severe problem.

Human Health: The health and safety of people is put at risk every time a new development is approved in a known flood hazard area. People who experience flooding are in danger, either directly or when coastal lots are cut off from emergency services. There may also be long-term financial and health implications.

Erosion: Coastal erosion is the gradual wearing away and loss of land along the coastline due to natural processes such as wave action, rainfall, and freeze-thaw. Erosion rates vary across the Island and depend on local geology, drainage, vegetation, and land use. Large storm events can lead to catastrophic changes to the coast. In 2022, in some areas of PEI, Post-Tropical Storm Fiona resulted in up to 12 meters (39.4 feet) of land loss in only one day.



How Can Land Use Planning Reduce the Risks?

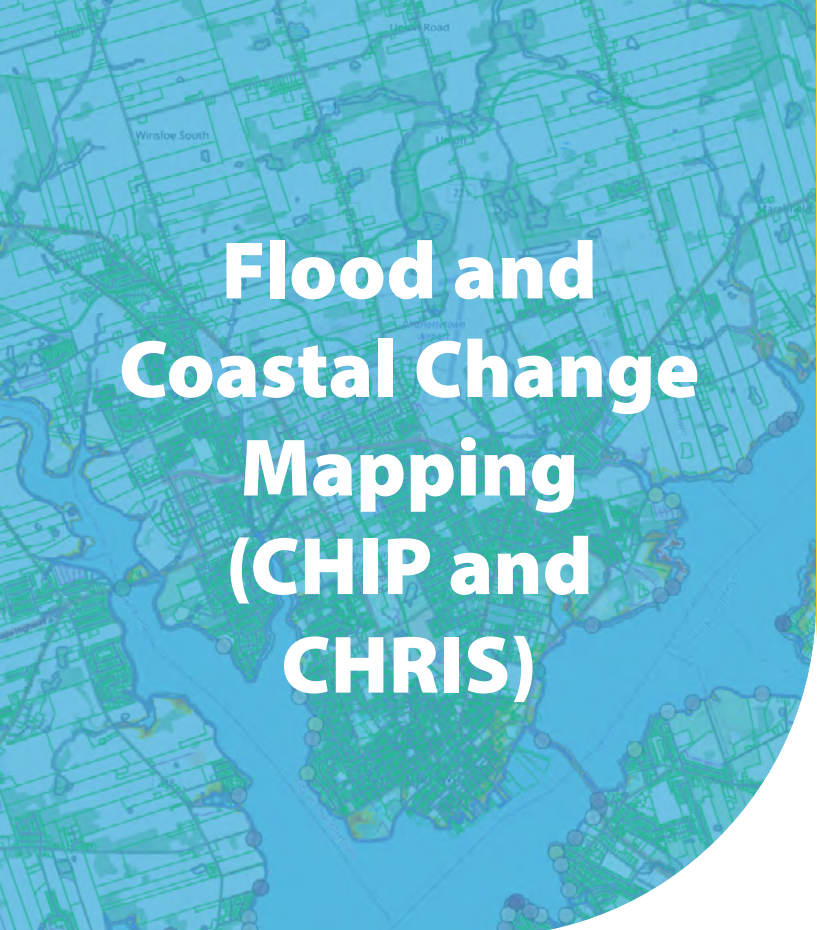
Climate change, sea level rise, erosion, and continued coastal development will increase flood and risk of coastal hazards in PEI. These factors should be considered when making land use rules and decisions about infrastructure and development. Land use planning is meant to protect the public interest in the long-term. Creating land use rules based on trusted data and best practices reduces the future risk for new development and helps decision-makers determine the best adaptation options for dealing with existing development within flood hazard areas.

When Should Flood Risk Be Considered?

Every decision that is made about a new development in any community or coastal area in PEI should consider flood risk. Knowing the areas in a community that are most at risk is the responsibility of decision-making authorities – be they local councils, a development officer, provincial staff, or a provincial minister. Ignoring flood risk puts the current and future property owners, neighbouring landowners, first responders, the public, and the planning authority itself at potential risk for decades to come.



The Province is exploring the development of Shoreline Management Plans to provide localized coastal development and adaptation frameworks for decision-making. These plans aim to reflect the unique natural conditions of each coastal section as well as the long-term social, environmental, and economic objectives of existing coastal communities and anticipated growth areas.



Flood and Coastal Change Mapping (CHIP and CHRIS)



Watershed and Property-level Flood and Hazard Reports

Tools and Resources to Help Determine Flood Risk

There are several resources in PEI to help people understand flood risk for individual properties and communities which are presented in this section.



Training for individuals, decision-makers, and professionals



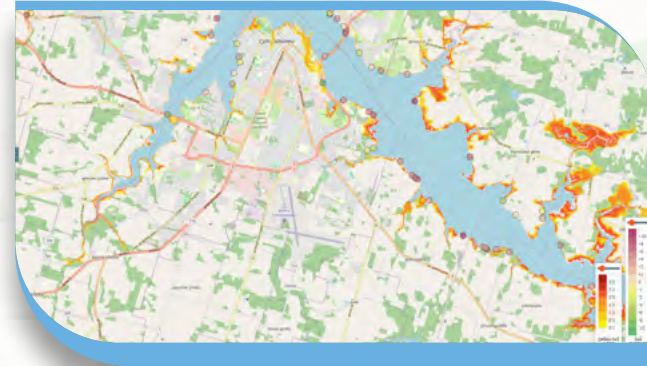
CLIMAtlantic and other Resources

Coastal Flood Maps



What are coastal flood maps?

These are maps based on expected sea-level rise and climate projections. The elevation (or height) of land above sea level helps determine the local risk of coastal flooding. Areas of land along the shore that will be affected by coastal flooding are referred to as the coastal floodplain. PEI's coastal flood maps identify four different flood hazard zones:



HIGH FLOOD HAZARD ZONE - the current coastal floodplain.

MODERATE-HIGH FLOOD HAZARD ZONE - the coastal floodplain by 2050.

MODERATE-LOW HAZARD ZONE - the coastal floodplain by 2100.

MINIMAL FLOOD HAZARD ZONE - the area beyond the projected 2100 coastal floodplain.



Who are coastal flood maps for?

Anyone can reference coastal flood maps to learn about risks and make informed decisions, including:

- Planning Authorities • Developers • Coastal Residents • Property Owners (current and prospective)
- Real Estate Agents



Where can I find coastal flood maps

[CHIP](#) (*Coastal Hazards Information Platform*) and [CHRIS](#) (*Climate Hazard and Risk Information System*) – are two interactive web platforms that can be used to access PEI's flood maps. Launched in 2024, CHRIS provides users with localized data including flood areas and depths.



How do I use the tool?

CHRIS is a web-based mapping tool that allows users to select flood risk scenarios (high to low risk) at the property level. These detailed maps are available province-wide. Further details on how to use CHRIS, including a how-to video and user guide, are available on the [CHRIS webpage](#).



How can coastal flood maps be used to make informed planning decisions?

Information on coastal flood projections can be used to assess the coastal flood risk to any property in PEI, including roads and laneways. Planning authorities can use flood projection information to help make decisions about land use and infrastructure.

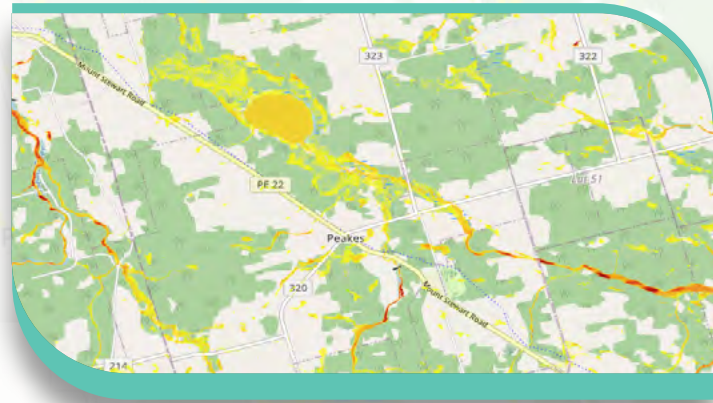
- Most development (roads, infrastructure, or buildings) has an 80-year life expectancy.
- When determining an appropriate use of the coastal area, any land in the moderate-high risk (2100) should be considered at risk for new development.
- The Flood Depth maps identify how severe flooding can impact properties for each flood risk scenario.
- Before building new infrastructure or upgrading existing, consult coastal flood risk maps to ensure that infrastructure is built away from hazard areas or adapted to protect it from flood impacts.
- If you must build within the floodplain, consider building infrastructure or habitable spaces above the projected flood elevations for 2100 (moderate-high risk scenario).

Inland Flood Maps



What are inland flood maps?

Inland flood maps show areas expected to be impacted by flooding from intense rainfall and the associated flood depth. Scenarios with different rainfall intensities can be selected, including a future climate scenario which shows rainfall expected to occur by the end of this century assuming “business-as-usual” emissions.



Who are inland flood maps for?

Anyone interested in learning more about the potential flood risk to properties, including roads and undeveloped lands, such as:

- Planning Authorities • Developers • Island Residents • Property Owners (current and prospective)
- Real Estate Agents



Where can I find inland flood maps?

[CHRIS](#) (Climate Hazard and Risk Information System) – this interactive mapping portal identifies areas subject to inland flooding and the potential flood depths.



How do I use the tool?

[CHRIS](#) is a web-based mapping portal which provides broader island-wide mapping for all of PEI. Further details on how to use CHRIS, including a how-to video and user guide, are available on the [CHRIS webpage](#).



How can the inland flood maps be used to make informed planning decisions?

By its very nature, development introduces hard surfaces onto the landscape, which slows water from being absorbed into the ground. To determine the chances for inland flooding, consider the amount of hard surface on the ground, and the capacity of nature and existing infrastructure to deal with potential flooding. Considering the risk of inland flooding to areas in a community or on a property can lead to better decisions on future development and infrastructure.

- Most development (roads, infrastructure, or buildings) has an 80-year life expectancy.
- Before subdividing land, building infrastructure, or permitting development, consult the inland flood maps for the property in question to determine risk. Land within the Future Climate (100 year) risk areas should not be further developed according to sound planning principles.
- If there is no other choice but to develop within the floodplain, consider building infrastructure or habitable spaces above the projected Future Climate (100-year) flood elevations.

Coastal Change Maps



What are coastal change maps?

Coastal erosion is the gradual wearing away and loss of land along the coastline due to natural processes such as wave action, rainfall and freeze-thaw. In some places on the Island, particularly in protected estuaries, there is coastal accretion where sediment and sand build-up on the shoreline. The coastal change maps show how the coast has changed over different periods.

The Province monitors coastal change to identify how much of the coastline has eroded over time. Using the historical rates of erosion (1968–2020), properties that have experienced more erosion in the past are likely to have a higher risk of eroding in the future:

High Risk: Areas with an erosion rate of more than 90 cm/year (35 in/year)

Moderate Risk: Areas with an erosion rate of 30–90 cm/year (12–35 in/year)

Low Risk: Areas with an erosion rate of less than 30 cm/year (12 in/year)



Who are the coastal change maps for?

Anyone interested in learning more about the potential flood risk to properties, including roads and undeveloped lands such as:

- Planning Authorities
- Property Owners
- Prospective property owners



Where do I access coastal change maps?

[CHRIS](#) (Climate Hazard and Risk Information System) – this interactive mapping portal shows how much the coast has changed over different time periods.



How do I use the tool?

[CHRIS](#) is a web-based mapping portal which provides broader island-wide mapping for all of PEI. Further details on how to use CHRIS, including a how-to video and user guide, are available on the [CHRIS webpage](#).



How can coastal change maps be used to make informed planning decisions?

Knowing if a particular property or an area of coastline is at a higher risk of erosion helps planning authorities make decisions as to where to place infrastructure or whether to permit certain developments. Property owners (or prospective property owners) can also see where the risk is highest and can use that information to identify a safer place to develop. It is important to recognize that erosion can happen very quickly, as with Post-Tropical Storm Fiona where several metres of land were lost in one event, or where it hasn't been experienced before.

- Most development (roads, infrastructure, or buildings) has an 80-year life expectancy.
- Before subdividing land, building infrastructure, or permitting development, consult the coastal change maps for the property in question to determine risk, including more data from recent events.
- Erosion history can be used to establish additional setbacks in development rules, such as 60 times the annual rate of erosion, although future erosion may be greater than historic rates.

Coastal Hazard Assessments (CHAs) and Watershed Flood Projection Reports



What are CHAs and flood projection reports?

Coastal Hazard Assessments (CHAs) identify site-specific hazards for individual properties. Compiled by the Province, a CHA includes information on the property's historical erosion rate, its current vulnerability to coastal flooding, and the possible influence of climate change on future levels of risk.

Watershed flood projection reports provide detailed information on the projected flood water levels for all 286 coastal watersheds in PEI.



Who are CHAs and flood projection reports for?

- CHAs are for anyone looking for site-specific information.
- Watershed flood projection reports are used to understand current and future coastal flood projections at the watershed level.



Where do I access CHAs and flood projection reports

CHAs can be requested through the [Coastal Hazard Assessment](#) site and are for individual properties.

Watershed flood projection reports can be downloaded from the Province's [website](#) after identifying the specific watershed by zooming into the area on [CHIP](#).



How do I use the tool?

For details on how to use and interpret the CHA and flood projection reports, see the "More Tools and Resources" section at the end of this Guide.



How can CHAs and flood projection reports be used to make informed planning decisions?

Planning authorities can use watershed flood projection reports, as well as CHAs for specific sites, to identify flood and coastal hazard areas within their jurisdiction and to make informed decisions on zoning, subdivision, and development applications. Some planning authorities require a CHA for all subdivision and development applications for coastal properties. However, even where not required, a CHA is recommended for any development of a property located in the coastal area.

- Most development (roads, infrastructure, or buildings) has an 80-year life expectancy.
- Before subdividing land, building infrastructure, or permitting development, consult the CHA for the property in question to determine risk.
- For setting land use policies, planning authorities can use the watershed flood projection reports to identify areas with flood hazard risks.



What is ClimateSense?

ClimateSense is a PEI-based organization that provides training opportunities related to Island-specific adaptation actions. [ClimateSense](#) offers training and professional development programming geared towards PEI residents, including reduced pricing on different courses. One free introductory level course, *Protecting PEI Homes from Flooding and Erosion*, helps participants have informed discussions with PEI tenants and property owners about how to identify flooding and erosion risks and how to access user-friendly assessment tools, how-to videos, websites, and fact sheets to help them take action to protect themselves.



Who are ClimateSense courses for?

- homeowners/tenants • engineers • architects • land use planners • healthcare providers
- emergency management officials • conservationists/naturalists • watershed groups • builders
- property developers • academics



Where do I access it?

The full list of ClimateSense courses can be found [here](#).



How do I use ClimateSense?

The Protecting PEI Homes from Flooding and Erosion course can be taken online at the learner's convenience. It takes about 5 hours to complete. The course includes Canadian-based course content, as well as PEI-focused case studies and local resources designed to help participants understand and address flooding and erosion in their work and daily lives. Participants can register [here](#).



How can the information be used to make informed planning decisions?

The tools learned in the courses can be the basis for new policies on flood hazard management in official plans or help establish rules for developing around flood hazard areas. Additionally, by developing more advanced adaptation skills, more decision-makers can integrate climate-smart considerations into their existing work.



What is CLIMAtlantic?

[CLIMAtlantic](#) is a non-profit organization that helps provide access to data that supports adaptation to climate change in Atlantic Canada. In 2023, CLIMAtlantic launched the [Coastal Adaptation Toolkit](#), developed to help Atlantic rural coastal communities and property owners plan for the effects of climate change and for coastal issues related to erosion and/or short- and long-term flooding.



CLIMAtlantic



Who is the CLIMAtlantic Coastal Adaptation Toolkit for?

The adaptation tools are designed for both decision-makers and property owners. The downloadable Toolkit provides guidance on selecting adaptation options. Two online decision-making tools have also been developed:

1. The Online Decision-Making Tool for [community staff and decision-makers](#) needing to establish and implement policy and rules around coastal development.
2. A simplified version of the decision-making tool specifically designed for [property owners](#).



Where do I find the CLIMAtlantic tools?

The tools can be found on CLIMAtlantic's website and in the links noted above.



How do I use the online tool?

The online tools use a series of questions related to flooding or erosion issues to identify the most suitable options to manage those issues at a specific site in a community. The questions walk users through options for adaptation responses which include land use planning tools as well as coastal protection and engineered responses.



How can the information be used to make informed planning decisions?

- [Part 1](#) is a guide to selecting adaptation options
- [Part 2](#) explains how to use the information to make land use decisions
- [Part 3](#) focuses on coastal interventions and engineering options

It is recommended that planning authorities review these documents prior to setting policy and standards for coastal development in their official plans and land use or development bylaws.

Reducing Flood Risk in our Communities

Because flood risk is a reality in many communities on the Island, it is important to be clear with the public in general, and property owners in particular, about the potential flood risk and the options to reduce it.

Increasing Public Awareness



Public Signage

A good practice is to post flood risk signage in highly visible public spaces such as wharves, beaches, or coastal roads.



Disclosing Flood Risk

Because detailed flood hazard mapping is available for the entire province, municipalities should ensure that flood risk is shared publicly, depicted on zoning maps (as its own zone or as an overlay zone), and included in public communication materials. While difficult to enforce by a municipality, flood risk should be disclosed to anyone who is looking to purchase (or even rent) property.



Working with Watershed Groups

Municipalities can partner with local watershed groups to gather local information, learn about activities, and share information with the public relating to flood risk. The Prince Edward Island Watershed Alliance (PEIWA) is non-profit cooperative association of watershed management groups from across the Island.

Planning for Flood Hazards

Despite the risk, coastal areas continue to be sought after for residential, tourism, and recreation activities. As a result, people, property, and investments continue to be exposed to flood hazards. Planning authorities can help reduce flood risk through proactive land use planning and management to protect the public interest. Over the long-term, good planning decisions can protect personal and public investments and reduce the impacts of coastal development.



Identifying Flood Hazards - Use CHRIS to identify flood risk (inland and coastal) in your municipality. When setting policies on flood risk, it is a best practice to use the projected coastal and inland flood projections to the year 2100.

Once local flood risks are understood, decision-makers need to determine the best way to protect not just a landowner's personal interest or private property but also the public interest.



Developing Policy - Knowing where potential flood hazards exist allows the planning authority to make policies that will reduce the risk to the public based on how often and severe the hazards might be and how much of the area could be affected. Policies:

The planning authority must consider what is in the public interest when:

- creating regulations or official plans, bylaws and development standards;
- designing and making decisions about infrastructure (e.g., roads, underground pipes);
- approving new subdivisions; and
- making decisions about property-based development (e.g., new buildings).

- identify existing infrastructure that needs to be upgraded in or near hazard areas;
- determine where new infrastructure should go;
- require new infrastructure to be designed to reduce flood risk (e.g., stormwater retention ponds);
- establish new development rules (e.g., minimum setbacks from hazard areas, minimum lot sizes for areas subject to erosion); and
- determine how the risk to private property will be managed (i.e., informing property owner of risk or regulating how land can be developed).



Setting Regulations and Requirements - The rules for new development should be clearly defined to help property owners assess the flood risk on their property, the limits that exist, and the development costs. A full breakdown of provincial requirements for development in flood hazard areas can be found in the following section.

Adaptation Options

Understanding flood risk helps determine which adaptation options and long-term uses are most suitable for a specific location.

While the property owner often decides what to do with their property, the planning authority establishes development standards that reduce risk and protect the public interest.

Doing nothing to address flood risk in planning and development policy is not good practice, as land use decisions must consider how suitable a site is for a use over time. With flood risk information being publicly available, decision-makers can no longer claim they did not know there was a flood risk if they continue to permit development in hazard areas. The “buyer beware” approach relying primarily on standardized “know your risk” notices to developers or to property owners may no longer be enough to meet the duty of care for decision-makers.

There are 4 types of adaptation options that can be considered, each one being appropriate to unique circumstances.



The Province of Prince Edward Island currently prohibits new development in the buffer zone and any associated coastal armoring activities. Certain exemptions may apply, so please contact the [Province](#) to learn more about what restrictions could affect your property.

Processing Applications in Flood Hazard Areas

Planning authorities are encouraged to educate themselves and use available resources when making decisions on policies and standards to apply to applications to subdivide and develop on flood-prone land.

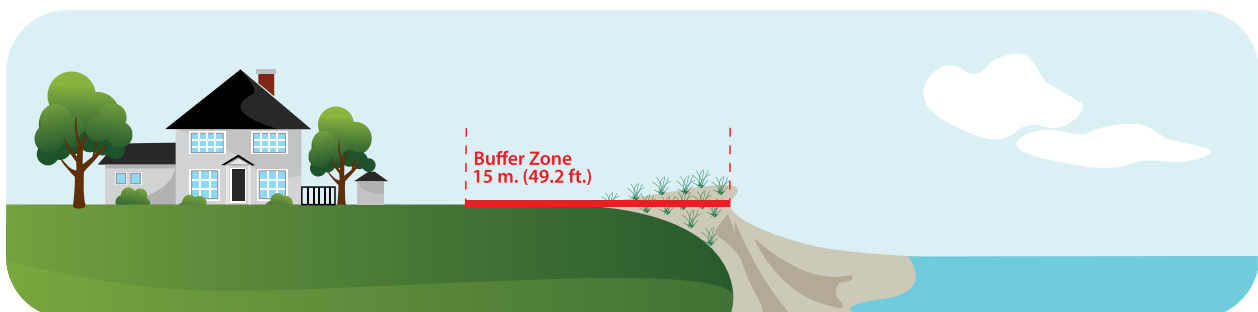
Buffer Zones are intended to protect sensitive environmental features from development. Setbacks, particularly coastal setbacks, protect development from hazards.

Watercourse and Wetland Buffer (WWB)

The WWB Zone is a 15-metre (49.2 feet) strip of protected land along any stream, creek, pond, river, bay, wetland, or coastal water body. Property owners need an activity permit to conduct most types of work in a watercourse, wetland, or the buffer zone on their property. Unauthorized changes made to these areas may result in fines and cause short- and long-term damage to the environment, water quality, infrastructure, and coastal features.

Applicants must contact the Province for any required approvals prior to any activity within the required 15m buffer zone. Some municipal bylaws include even more restrictions on activities in the watercourse and wetland buffer and decision-makers should refer to bylaw wording in addition to the regulations.

Setbacks and other requirements are typically noted as a condition to a permit and no development can occur before a permit is issued by the planning authority, unless exempted under the rules.



The Environmental Protection Act prohibits the alteration, removal, or destruction or placement of buildings, or building a road on a sand dune.

Items to consider in land use applications

Subdivision

- Environmental setbacks and restrictions (including watercourse & wetland buffers)
- Flood hazards (on-site and accesses)
- Coastline changes (erosion)
- Lot sizes (on-site systems, setbacks, buffers, other)
- Other standard planning and infrastructure considerations

Development

- Environmental setbacks and restrictions (including watercourse & wetland buffers)
- Flood hazards (onsite and accesses) and drainage
- Coastline changes (erosion)
- Placement of structures and on-site systems
- Other standard planning and infrastructure considerations

Subdividing Lands

Existing Rules and Processes

An application for subdivision is required when:

- 1) Any parcel of land is being divided to create one or more new parcels;
- 2) Two or more parcels are being joined into one (consolidation); or
- 3) The boundary of two or more parcels is being adjusted.

Before approving a subdivision, a planning authority should consider:

- road access
- drinking water quality
- sewage disposal
- stormwater management
- other environmental conditions that affect the property (e.g. nearby wetlands)

Not all applications to subdivide coastal property are approved. In addition to considering flood risk and whether there are sensitive environmental features at risk, the subdivision review process considers the planning authority's subdivision rules.

Watercourse and Wetland Buffers

Local rules set out how wetland and watercourse buffers are dealt with at the subdivision stage. Typically, the rules require the proposed lot(s) to be large enough to:

- 1) meet minimum lot sizes exclusive of the wetland, watercourse, and buffers; and
- 2) accommodate all building setbacks exclusive of any wetland, watercourse, and buffers.

Site Suitability

Before a subdivision can be approved, a site suitability assessment (SSA) must be undertaken to determine the soil's ability to dispose of septic waste on-site. This in turn dictates the minimum required size of lot and the placement of the sewage disposal systems and buildings based on the provincial minimum lot size standards and the provincial sewage disposal systems standards. Generally, the minimum lot size is dependent on soil conditions (i.e., the ability to dispose of septic waste on site) and the proposed land use, as well as the ability to place the on-site systems in a way that can meet all setbacks.

Coastal Subdivision Buffers

In areas where the Province is the planning authority, the subdivision of a coastal property must allow for a coastal subdivision buffer that is:

- the greater of 18.3 metres (60 feet) or 60 times the annual rate of erosion² inward from the top of the bank adjacent to a beach or the landward boundary of a beach with no bank; OR
- 18.3 metres (60 feet) from the inland boundary of the dune if the property is adjacent to a sand dune.

Where possible, access to the beach or watercourse is provided in the subdivision for use by residents in the subdivision. The coastal subdivision buffers required under provincial subdivision rules may be set up in two different ways:



- 1) A coastal subdivision buffer **incorporated into the residential lots** of the subdivision, where each lot has enough depth for development, excluding the buffer area.



- 2) A coastal subdivision buffer **subdivided as a separate property** that is held in common ownership by the owners of the lots of the subdivision.

For municipal planning authorities, minimum lot sizes apply, along with any additional local subdivision rules. Municipal planning authorities may use a slightly different approach to establishing coastal buffers during the subdivision of coastal properties.

Good Practices to Reduce Flood Risk in Subdivision Design

A coastal subdivision buffer established as a separate property helps to protect habitat for species at risk along coastlines while providing subdivision residents with a shared access to the coastal buffer property and the beach. In those cases, the ownership of the buffer parcel must be addressed.

The risk of flooding for accesses (roads, rights-of-way, and driveways), critical infrastructure, and long-term emergency management should also be considered during the subdivision process. Coastal properties are often accessed by private or unmaintained provincial roads where permitted. Because the Province or municipality does not maintain such roads, accessibility for emergency services is not always possible. It has not yet been determined whether continuing to permit development on such roads exposes municipalities to liabilities. Such issues should be considered during the policy development and subdivision design stages.

²The annual rate of erosion will be determined at the time that an application is processed.

Subdivision Checklist

The recommended general steps for subdivisions in coastal areas are:

- If property is in the coastal area, applicant obtains a Coastal Hazard Assessment from the Province.
 - *Watercourse and wetland buffers are identified at this time, with help from the Province if appropriate.*
- Applicant contacts the planning authority (Province or municipality) to determine the subdivision requirements in the area. If in a municipal planning authority, applicant should confirm the desired use is permitted in the land use zone.
 - *This step involves other planning assessment (e.g., roads and access).*
- Applicant completes a subdivision application form (available from the planning authority).
- Applicant prepares a site plan for the proposed subdivision, as required by the planning authority.
- Applicant submits the application form, site plan, and required fees to the planning authority for processing and assessment.
 - *This step involves more detailed planning assessment, such as road design, stormwater management, buffers, and depending on local rules, parkland dedication. Emergency management considerations (i.e., flood-risk) should be reviewed at this stage.*
- Once advised by the planning authority, applicant hires a licensed site assessor to complete a site suitability assessment of the property.*
- Upon request from the planning authority, applicant makes any necessary changes (e.g., increase lot size, install culvert, etc.) to the proposed subdivision.
- Upon request from the planning authority, applicant obtains a water test for the property.
- Applicant submits the completed site suitability assessment to the planning authority.
- Upon request from the planning authority, applicant makes any additional necessary changes (e.g., increase lot size) based on the site suitability assessment.
- Once advised, applicant obtains a survey of the proposed subdivision and submits it to the planning authority.

This checklist is a general guide only and the exact process may differ from planning authority to authority.

Please note: some planning authorities have a multi-step approval process that includes additional conditions for preliminary approval once all components of the subdivision proposal have been submitted. Conditions are set at the preliminary approval stage and may include a subdivision agreement. Final approval is only considered once all conditions have been met.

* The site suitability assessment is one factor determining lot size and shape, providing key information required for the assessment of the application. Regardless of whether it is undertaken before or after an application is submitted, it will be required prior to a decision on the application. For subdivisions of six or more lots, the site suitability assessment must be completed by a consulting engineer who specializes in on-site sewage disposal systems.

Development Permits

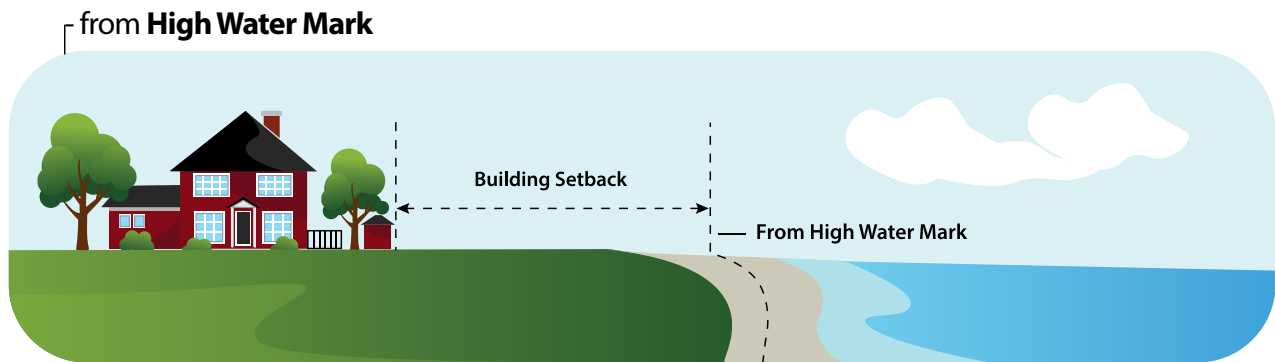
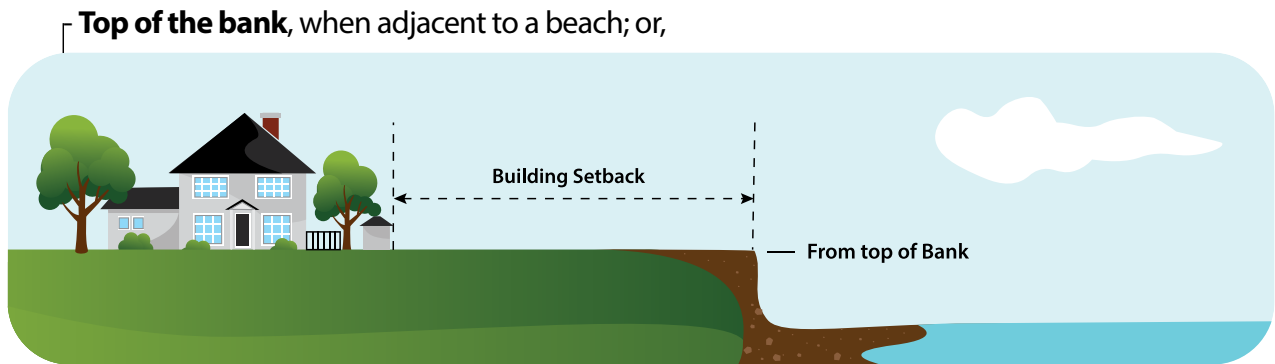
Planning authorities also consider flood and coastal hazards at the property development stage, whether it involves additions, rebuilding, or new buildings. As with subdivisions, site planning, buffers, setbacks, and appropriate adaptation measures are important considerations.

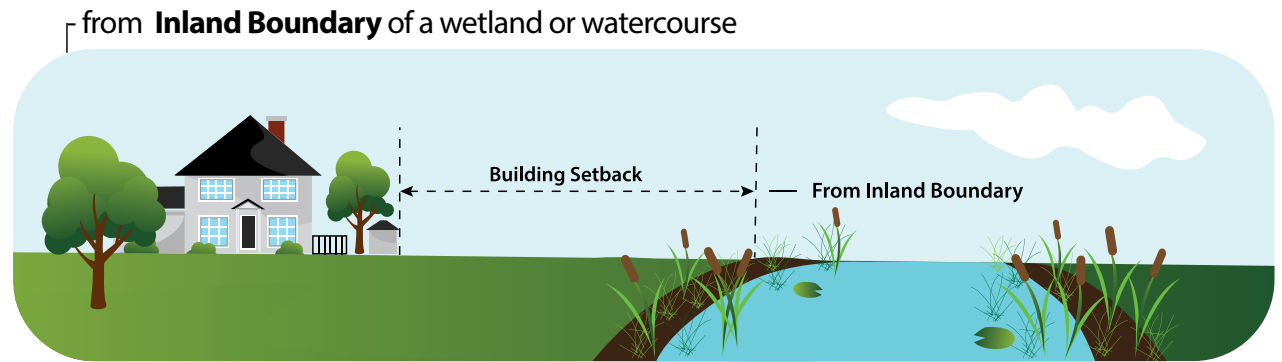
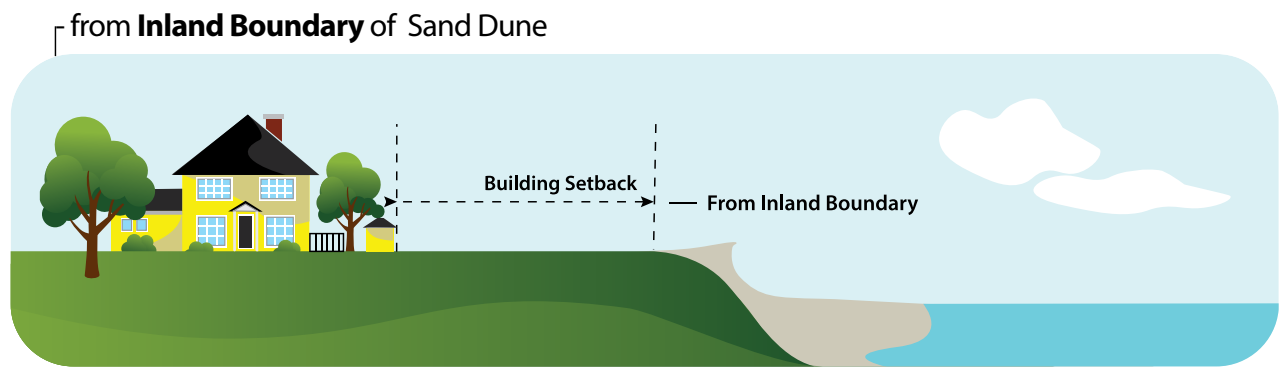
Existing Rules and Processes

Building Setbacks

A building setback is the minimum required distance between a proposed building and a specific boundary (e.g., property boundaries, the road, the coast, a wetland). The minimum depth of setbacks depends on where the property is located. In addition to setbacks measured between a proposed building and the property boundaries, a building setback from the coastline, or from the edge of a watercourse and wetland buffer, may apply.

When a property is under provincial planning authority, the minimum setbacks for any building or structure are measured as follows:





When a property is in an area under municipal land use rules, the planning authority determines local requirements for building setbacks.

An on-site inspection from provincial or municipal staff may be required to verify that required setbacks have been met. Some planning authorities may require surveys to ensure that foundations are properly located (i.e., a footing permit) and graded or to verify the coastal boundary. Building setbacks do not just apply to the main building on a property. Structures such as sheds and decks may also need to meet these setbacks.

Site Suitability

Drinking water wells - Unless a property is going to be connected to municipal or central shared services, property owners may want to test the groundwater for quality. Some properties that were subdivided decades ago may have suffered from coastal erosion and/or may be smaller than the current provincial minimum standard lot sizes, and development on these properties may be restricted.

Sewage Disposal Systems - Site suitability assessments are required for development permits and when installing or replacing on-site sewage disposal system, as they determine the specifications for the sewage disposal system.

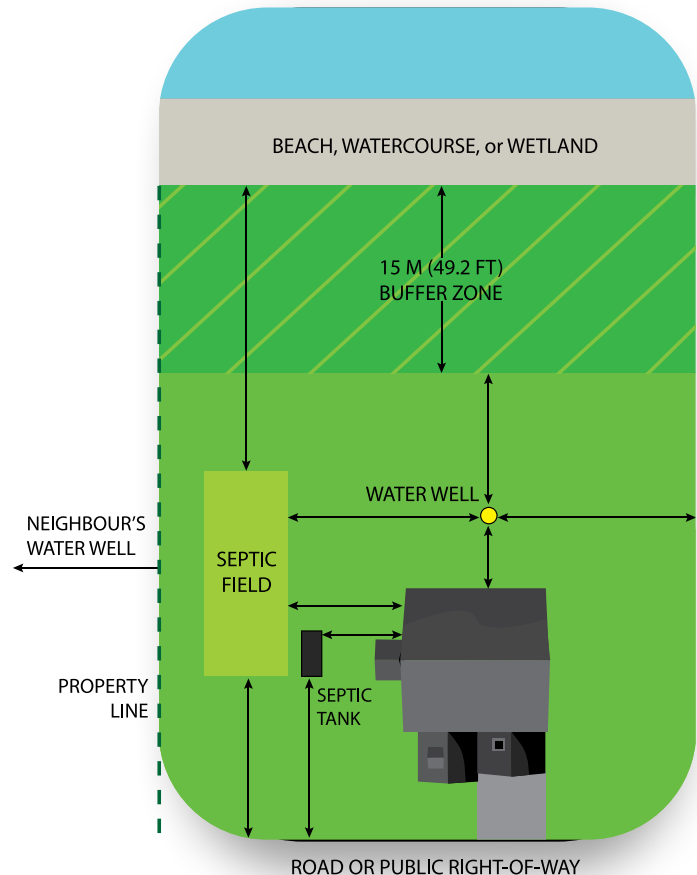
Wells, septic tanks, and on-site septic disposal fields have minimum setback requirements from the coast, from a watercourse or wetland, from property lines, from buildings, and from each other. Minimum setback distances from on-site systems are summarized below.

Minimum Distance Between	Property Lines	Top of Coastal Bank	Existing or Abandoned Wells	Buildings or Structures
WATER WELL	1.5 metres (5 feet)	15 metres (49.2 feet)	6 metres (20 feet)	3 metres (10 feet)

Minimum Distance Between	Septic Tank	Septic Disposal Field	Sewer Line
WATER WELL	15.2 metres (50 feet)	15.2 metres (50 feet)	3.0 metres (10 feet)
WATER LINE	3.0 metres (10 feet)	3.0 metres (10 feet)	0.45 metres (1.5 feet)
PROPERTY BOUNDARY	3.0 metres (10 feet)	3.0 metres (10 feet)	—
ROAD or PUBLIC RIGHT-OF-WAY	3.0 metres (10 feet)	3.0 metres (10 feet)	3.0 metres (10 feet)
BUILDING, with FOUNDATION	4.6 metres (15 feet)	6.1 metres (20 feet)	—
BUILDING, with NO FOUNDATION	—	4.6 metres (15 feet)	—
COASTLINE	22.9 metres (75 feet)*	22.9 metres (75 feet)*	—
NATURAL BOUNDARY of a BODY of WATER	15.2 metres (50 feet)	15.2 metres (50 feet)	—

* Or, 60 times the annual rate of erosion, whichever is greater; except for lots existing prior to 1993 where there is a 15.2-metre (50 feet) setback from the bank or 2X the erosion rate for the area.

Undersized lots - Regardless of how long a house, cottage, or other building has been in its current location, the rules and regulations regarding development still apply. If an existing development does not meet the current regulations, restrictions may be applied. For example, if a property is smaller than current lot size regulations or setback regulations, and if an owner or developer would like to make any additions to it (including adding a deck or a shed), these changes may not be permitted or may need to be located on the inland side of the building (e.g., not in the Wetland and Watercourse Buffer Zone). As with any new construction, a development permit is typically required, depending on the use and the property location.



Good Practices to Reduce Flood Risk in Development Approvals

Review flood and coastal hazards - The location and elevation of a property is a key factor at the development stage. Where there is a flood hazard (current or projected) for a specific property as identified through a CHA, development rules should address whether and where buildings, structures, and on-site systems can be placed. Applicable regulations and bylaw requirements would need to be assessed on a site-by-site basis.

Integrate flood hazard information into stormwater management - Site plans can be used to limit exposure to flood hazards, including through storm water management plans and drainage plans, which may be required by the planning authority. These tools help to ensure that flooding on a property and between properties is limited or contained on-site to limit damage.

Consider the elevated risks to on-site services - (e.g., wells and septic systems) on coastal properties require special consideration because they can be susceptible to coastal risks. They are also subject to some grandfathered exemptions under old regulations.

Specific information available from the coastal and flood hazard resources can and should guide the decision-making. Decision-makers should ask themselves:

Is there a watercourse or wetland on or adjacent to the property?

- ✓ Does the development or subdivision account for the watercourse or wetland and any required buffers?
- ✓ Is there sufficient space to meet all setbacks outside of these protected areas?
- ✓ Can a well and septic system be safely sited as per provincial requirements?

Is there a coastal erosion hazard present on the property?

- ✓ Is there sufficient space to meet all setbacks exclusive of the areas that may or will erode over time?
- ✓ Can drainage patterns be adjusted to minimize stormwater gullies and soil slumping?
- ✓ Can a well and septic system be safely sited in accordance with provincial requirements, if applicable?
- ✓ Will/can access to the property be protected over time?

Is there a coastal and/or inland flood risk present on the property?

- ✓ Is there room on the property outside of the floodplain to place buildings and on-site well and septic systems?
- ✓ Can the grade of the property be raised outside of the watercourse or wetland and any required buffers without creating a stormwater problem for adjoining properties?
- ✓ Can the building design be adjusted to protect against flooding?

Development Applications Checklist

The general steps for getting approval for a residential development (seasonal or full-time) in coastal areas are:

- Applicant acquires information on flood risk for the property.
 - *If the property is in the coastal area, applicant obtains a Coastal Hazard Assessment from the Province.*
 - *If the property is inland, CHRIS can be used to identify inland flood risks.*
 - *Watercourse and wetland buffers are identified at this time, with help from the Province if appropriate.*

- Applicant contacts the planning authority (Province or municipality) to determine the development requirements in the area.
 - *This step involves other planning assessment, such as requirements for road access.*
 - *If there are coastal hazards and/or watercourse and wetland buffers required, the requirements are highlighted.*

- If in a municipal planning authority, the applicant will need to verify that a residential use is permitted under local zoning regulations. If it does not, a separate public process will need to be undertaken (variance, rezoning, etc.) that is not covered in this checklist.

- If it hasn't already been done, applicant hires a licensed site assessor to complete a site suitability assessment (SSA) of the property.*

- Applicant completes a development permit application form (available from the planning authority).

- Applicant prepares a site plan for the proposed development, as required by the local planning authority.

- Applicant submits the application form, site plan, and all required fees, and the SSA, to the planning authority for processing and assessment.
 - *This step involves more detailed planning and other assessments, such as entranceway permits, stormwater management and drainage, setbacks, and buffers. Emergency management considerations (i.e., flood-risk) should also be reviewed at this stage.*

- Upon request from the planning authority, applicant makes any necessary changes to the proposed development concept.

- If a development permit is approved, the applicant applies for a building permit

* The site suitability assessment determines the specifications of the system, which in turn influences where buildings can go.

This checklist is a general guide only and the exact process may differ from planning authority to authority.

Interpreting Flood Projection Reports

Flood Scenarios

Flood scenarios are developed based on the likelihood of a flood event happening over certain time periods. Storms that are expected to happen more frequently (annual events) will not extend as far and will be less deep compared to extreme weather events that are less likely to occur but result in deeper floods that extend further. Flood projections use time scales (1-in-10 year, or 1-in-100 year) and elevation data above mean sea level (MSL) to establish these future scenarios. Importantly, the projections reflect the fact that sea level is rising, and that the likelihood of extreme events is increasing with climate change.

Table 1 is an example from the Oyster Cove Watershed which shows flood scenarios for 2020, 2050, and 2100. Each row indicates a different probability of a flood event happening (known as Annual Exceedance Probability (AEP)). A storm with a return period = 1, has a 100% probability of happening once a year, whereas a storm with a return period = 10 has a 10% chance of happening annually, and a return period = 100 has a 1% chance of happening in any given year.

Table 1 shows that coastal flooding is expected to reach all areas in the Oyster Cove watershed located 1.13 metre above MSL every year from 2020 on. In contrast, a storm with a return period = 100 only has a 1% chance of happening each year; such an event would result in a flood that is 2.01 metres above MSL. Flood elevations are predicted to be higher for 2050 and 2100 because these projections account for sea level rise and other coastal flooding factors. In the Oyster Cove example, the extreme scenario includes a return period = 1,000 which has a 0.1 % chance of happening annually. Note that 0.65 metres additional sea level rise is predicted for 2100 only. In this extreme scenario, there is only a 0.1 % probability of flooding for land located 3.95 metres above mean sea level by 2100.

Table 1: Flood Elevation projections for Oyster Cove Watershed 2020, 2050 and 2100

Designated Flood Elevations (CGVD2-13, m)		2020	2050	2100
AEP	100% (Return Period = 1)	1.13	1.37	1.97
	10% (Return Period = 10)	1.56	1.80	2.41
	1.0% (Return Period = 100) - the coastal floodplain	2.01	2.25	2.86
	0.0% (Return Period = 1,000)	2.45	2.69	3.30
	Extreme Scenerio (0.1% AEP + 0.65m additional sea level rise)			3.95

The coastal floodplain is the area of land adjacent to the shoreline that is subject to coastal flooding with a 1% chance (Return Period = 100) of happening annually.

The 2100 coastal floodplain is used by many planning authorities to identify and establish flood hazard areas for long term planning purposes.

Coastal Hazard Assessments (CHA)

The CHA report provides information specific to a site, including the risk level for erosion and information on the risk level for coastal flooding and an indication of the amount of the property located within a flood hazard area. Additional mapping, available through CHIP and CHRIS, can show factors, such as whether access to a property might be impacted during a flood event.

Please note that the historical rate of erosion is currently not available for coastlines adjacent to saltmarshes. Saltmarshes can provide a natural barrier between coastal properties and the impacts of storm surge flooding. Without interference from coastal development, saltmarshes are expected to expand (inland) as sea level continues to rise.

Coastal Erosion Hazard Assessment	
Average Coastal Erosion Rate (cm/year):	28
Maximum Coastal Erosion Rate (cm/year):	44
Coastal Erosion Hazard Classification:	Low
Comments: This assessment is based on historical coastal change (1968-2010) and is likely to be an underrepresentation of the future erosion rate (as the climate changes, the erosion rate is likely to increase) When the average historical rate of coastal change is between 0-30cm/yr it is considered low risk; between 30-90cm/yr it is considered moderate risk; and greater than 90cm/yr is high risk.	

Figures 1, 2 Coastal Hazard Assessment: Erosion Hazard and Flood Hazard information for PID 212464, with additional information provided in the CHA.

A worst-case-scenario designated flood elevation, indicating an additional 0.65m of sea level rise, is also provided on the CHA map of the property. All land above this elevation is considered outside the coastal flood hazard zone.

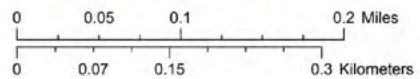
Coastal Flood Hazard Assessment	
	Approximate area of the property within the hazard area
High flood Hazard:	<5
Moderate-High Flood Hazard:	<5
Moderate-Low Flood Hazard:	<5
Minimal Flood Hazard:	98
Comments: This property falls almost entirely within the Minimal Flood Hazard Zone. Portions of the adjacent road fall within the Moderate-High Flood Hazard Zone and may compromise access or egress during a flood event. If available, local knowledge of previous occurrences of flooding will also help to inform the property owner regarding current and future flood risk.	

PID 212464 & 579995



January 26, 2024.

Scale: 1:9,028



- | | | |
|--|---|--|
| — Mod. Erosion Risk (30-90cm/yr) | SALT OR BRACKISH MARSH | --- Extreme Flood Scenario |
| — Low Erosion Risk (0-30cm/yr) | SAND DUNE | — Highway |
| — Accretion | Property | — Secondary |
| LAND LOCKED POND | High Flood Hazard (2020) | — Street |
| NO OPEN WATER OR MARSH COMPONENT | Moderate-High Flood Hazard (2050) | — Unpaved |
| OPEN WATER OR MARSH COMPONENT | Moderate-Low Hazard (2100) | |

This map is not intended for legal description or to calculate exact land dimensions.

Statistics Canada

Figure 3 Flood Risk Map showing potential flood risk for the access to Chelton Beach (PID 212464)

Legislative Resources

Several pieces of provincial legislation and related regulations have implications for planning. Some provincial standards apply throughout the province, regardless of planning authority, while other standards are specific to the area where the property is located. Some province-wide standards are administered directly by provincial departments, while others are integrated into municipal official plans and bylaws and are administered by the municipal planning authority. The list of acts and regulations can be found [here](#).

Environmental Protection Act

The *Environmental Protection Act* is largely focused on the impacts of activities on the natural environment. The Act is implemented through [15 different sets of regulations](#), including the Watercourse and Wetlands Protection Regulations. Regulations linked to water protection for land use are now located under both the *Environmental Protection Act* and the *Water Act*.

Watercourse and Wetlands Protection Regulations

The Watercourse and Wetlands Protection Regulations apply throughout the province. One of the main requirements of these regulations is maintaining buffers along watercourses and around wetlands. The Watercourse and Wetland Buffer Zone is the 15-metre minimum strip of protected land that has been established along any stream, creek, pond, river, bay, wetland or coastal water body, whether it contains water or not. Almost all activity within a Buffer Zone is prohibited. A Buffer Zone Activity Permit is required when undertaking activity within the minimum buffer area. Mandatory buffer set out in these regulations limit or control the types of adaptation work that can be undertaken in coastal areas.

Water Act

The *Water Act* supports the management, protection, and enhancement of the water resources within the jurisdiction of the province. Water Withdrawal Regulations direct an irrigation strategy, which is primarily aimed at agricultural usage. Many of the regulations linked to water protection are now primarily located under the *Water Act*, including the Sewage Disposal Systems Regulations, Water Supply System and Wastewater Treatment System Regulations, Water Withdrawal Regulations and Well Construction Regulations

Planning Act

The *Planning Act* identifies statements of provincial interest and enables the creation of land use regulations. Several regulations are enabled under the *Planning Act*. Some of these regulations apply throughout the province, as they establish provincial baseline standards. Section 8.0 of the *Planning Act* covers planning matters that can be regulated and enables the establishment of standards for subdivision and development. The Province-Wide Minimum Development Standards Regulations, in particular, apply to all provincial and municipal planning authorities in the province, as do any regulatory standards for special planning areas. Other regulations, such as the Subdivision and Development Regulations, only apply in areas where the Province is the planning authority. Municipal planning authorities have responsibility to establish and administer standards for subdivision and development, adhering to provincial regulations where required, and for establishing official plans and land use bylaws, in keeping with the statements of provincial interest.

Subdivision and Development Regulations

Under the *Planning Act*, subdivision and development is managed either by municipalities with their own official plans and land use bylaws, or by the Province who acts as a planning authority in areas not administered under an official plan and land use bylaw. Building setbacks, including from watercourses, wetlands and dunes for the provincial planning authority are addressed in the Subdivision and Development Regulations. The Subdivision and Development Regulations also contain standards for special planning areas established under section 8.1 of the *Planning Act*.

Province-Wide Minimum Development Standards Regulations

The Province-Wide Minimum Development Standards Regulations apply throughout the province. They set out minimum lot size standards for servicing and road access. However, they do not include buffer requirements for coastal subdivisions or building setbacks from watercourses, wetlands and dunes, areas subject to erosion, or other environmental or hazard-related standards.

Municipal planning authorities should, as a best practice, establish these requirements in their own official plan policies and bylaws.

Summary Table of Acts and Regulations that Applies to Planning Authorities

Standard	Provincial Planning Authority	Municipal Planning Authority
Roads and Access	<ul style="list-style-type: none"> • <i>Roads Act</i> • <i>Highway Access Regulations</i> • <i>Subdivision and Development Regulations</i> 	<ul style="list-style-type: none"> • <i>Roads Act</i> • <i>Highway Access Regulations</i> • <i>Municipal Bylaw</i>
Septic Systems	<ul style="list-style-type: none"> • <i>Sewage Disposal Systems Regulations</i> • <i>Subdivision and Development Regulations</i> 	<ul style="list-style-type: none"> • <i>Sewage Disposal Systems Regulations</i> • <i>Municipal Bylaw</i>
Wells and Water Quality	<ul style="list-style-type: none"> • <i>Water Withdrawal Regulations</i> • <i>Well Construction Regulations</i> 	
Building Setbacks	<ul style="list-style-type: none"> • <i>Subdivision and Development Regulations</i> 	<ul style="list-style-type: none"> • <i>Municipal Bylaw</i>
Coastal buffers for subdivisions	<ul style="list-style-type: none"> • <i>Subdivision and Development Regulations</i> 	<ul style="list-style-type: none"> • <i>Municipal Bylaw</i>
Watercourse and Wetland Buffer (15 m)	<ul style="list-style-type: none"> • <i>Watercourse and Wetland Protection Regulations</i> 	<ul style="list-style-type: none"> • <i>Watercourse and Wetland Protection Regulations</i> • <i>Municipal Bylaw</i>
Minimum Lot Size & Subdivision Requirements	<ul style="list-style-type: none"> • <i>Subdivision and Development Regulations</i> 	<ul style="list-style-type: none"> • <i>Province-Wide Minimum Development Standards Regulations</i> • <i>Municipal Bylaw</i>



*Building our resilience to climate change –
part of PEI's Climate Adaptation Plan*