# REGIONAL EMERGENCY MANAGEMENT FLOOD RESPONSE CONTINGENCY PLAN

January 2024

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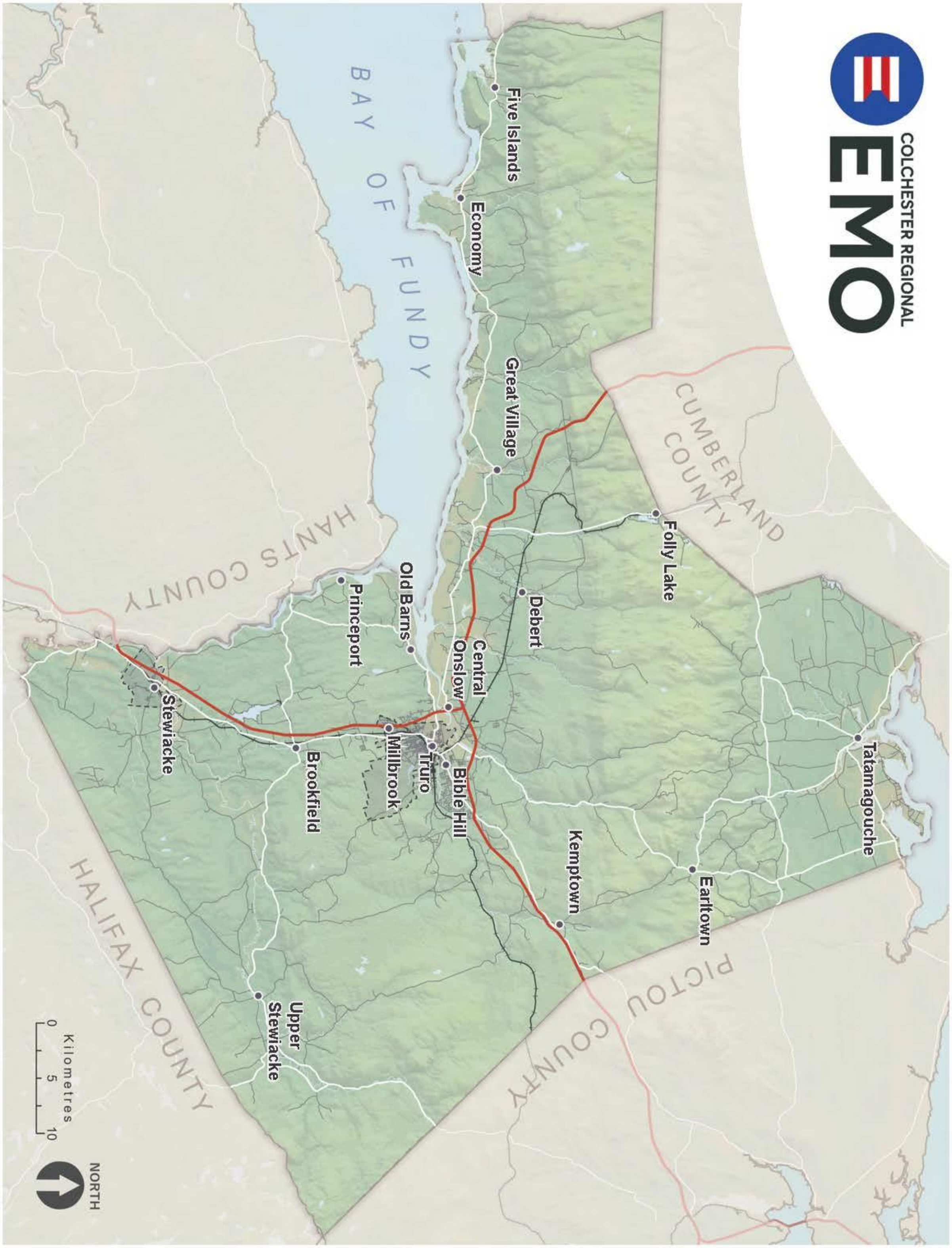
COLCHESTER REGIONAL
EMO
BAY OF FUNDY
CUMBERLAND COUNTY
HANTS COUNTY
HALIFAX COUNTY
PICTOU COUNTY
Five Islands
Economy
Great Village
Folly Lake
Debert
Old Barns
Princeport
Central Onslow
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Earltown
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# 1.0 INTRODUCTION

## 1.1 Background

According to Public Safety Canada, floods are the costliest natural disasters in Canada in terms of property damage. They can occur in any region from the countryside to the urban centres at any time of the year. Flooding in urban centres is potentially extremely costly and dangerous as most population density settles along side waterways and coastlines due to the convenience of commerce and transportation.

Most flooding occurs when the flow of water in a river or stream exceeds its channel. Floods also occur along the shoreline of lakes and oceans when water rises after high runoff, storm surge or the hammering of waves. Climate change researchers are warning that over the next century, flooding and coastal sea rise impacts will rise significantly.

Traditionally, the region has experienced some significant flooding over the past half century. Flooding in the early 1970's impacted the western portion of Robie Street causing substantial damages to homes and businesses. Heavy rainfalls in 2003 and 2012 caused extensive property damages in the Truro and Middle Stewiacke areas. In 2014, Great Village saw some of the worst flooding alongside the Great Village River isolating the lower village along Highway 2.

The development of this Flood Response Contingency Plan is only one part of the overall efforts when preparing for the eventual next flooding incident. Along with the plan, training, exercises, and the lessons learned from past events, will allow the region to be more adaptability and resilient. This plan shall not be viewed as a final resolution, but rather a base to build our planning efforts.

## 1.2 Authorities

The authority for an evacuation is afforded by the Nova Scotia Municipal Government Act and the Emergency Management Act.

The legal authority for local authorities to order an evacuation rest within the Nova Scotia Emergency Management Act (1990) Section 14(f) – Protection of property and health or safety.

<u>Protection of property and health or safety – Section 14</u>
Upon a state of local emergency being declared in respect to a municipality or an area thereof, the mayor may, during the state of local emergency, in respect of such municipality or an area thereof, do everything necessary for the protection of property and the health and safety of persons therein may:

a) Cause an emergency management plan or any part thereof to be implemented;
b) Acquire or utilize or cause the acquisition or utilization of personal property by confiscation or any means considered necessary;
c) Authorize or require a qualified person to render aid of such type as that person may be qualified to provide;
d) Control or prohibit travel to or on a road, street or highway;

e) Provide for the maintenance and restoration of essential facilities, the distribution of essential supplies and the maintenance and coordination of emergency medical, social and other essential services;
f) Cause or order the evacuation of persons and the removal of livestock and personal property threatened by an emergency and make arrangements for the adequate care and protection thereof;
g) Authorize the entry by a person into any building or upon land without warrant;
h) Cause or order the demolition or removal of any thing where the demolition or removal is necessary or advisable for the purpose of reaching the scene of an emergency, or attempting to forestall its occurrence or of combating its progress;
i) Order the assistance of persons needed to carry out provisions mentioned in this Section;
j) Regulate the distribution and availability of essential goods, services and resources;
k) Authorize and make emergency payments;
l) Assess damage to any works, property or undertaking and the costs to repair, replace or restore the same;
m) Assess damage to the environment and the costs and methods to eliminate or alleviate the damage.

## 1.3 Purpose

Flood response planning is an approach to minimize loss of life, injury and trauma and to reduce property damage as a result of a flood. There is no sure way to anticipate every contingency during a flood event, but a flood response contingency plan will help develop responses for a wide range of occurrences. A flood response plan will enable a quicker, more effective, and more efficient response, and lead to a speedier recovery.

This Plan should be activated as soon as it becomes evident that, due to an emergency of such significance as to warrant its activation, evacuation and relocation of people is necessary.

## 1.4 Objective and Scope

The primary goal of this Plan is to provide a planning framework that identifies the role of individual residents, business owners, emergency responders and the Municipalities of Colchester County. Together these individuals, groups and agencies represent the first line of defence in responding to a flood event within the Colchester County region.

This objective is supported by primary goals of enhancing public and emergency responder education, emergency preparedness and emergency response guidelines. Together these are intended to prevent or reduce loss of life or severe injury and/or damage to property and infrastructure during a major flooding event within the Colchester County region.

If the need to evacuate and relocate residents of the affected area(s) is evident, the conditions of the Regional Emergency Evacuation Plan (REEP) shall be put into effect. In such events, the Municipality shall discuss the need to declare a State of Local Emergency (SOLE), **Annex D**, if a mandatory evacuation is needed. If there is a fire or the possibility of fire, the local Fire Chief or designate has the authority to declare the mandatory evacuation at the current time there is no advantage to declaring a SOLE.

# 2.0 THEORY OF OPERATION

## 2.1 Presumptions

The Regional Emergency Management Flood Response Contingency Plan must make some presumptions to be true for the plan's enactment.

- NS Department of Agriculture will provide dyke condition statements as they become available.
- Colchester REMO and the Emergency Coordination Centre staff will have the primary responsibility for mitigation, prevention, preparedness, response, and recovery in flood emergency/disaster situations.
- It is highly probable that with events such as climate change and weather anomalies, Colchester County could experience flash flooding or a significant flooding event to some degree in the future.
- The Colchester region and partner agencies will follow the response activities set out in the Colchester REMO Regional Emergency Management Plan (REMP) and the Regional Emergency Evacuation Plan (REEP).
- Residents of the Colchester County region will take active measures to protect personal property.

## 2.2 Plan Limitations

- The Municipalities of Colchester County do not currently have a formal document for the protection of private property during flooding. While efforts will be made to aid residents in the protection of their property during a flood emergency, the protection of critical municipal infrastructure must be the priority to ensure continuity of municipal services to the community.
- There may be factors that will negatively affect the Municipalities of Colchester County's ability to respond to flood emergencies. Response may be delayed if roads become impassable, normal channels of communications may be disrupted and utilities may be unavailable for extended periods of time.
- Response to flooding varies depending on the cause of flooding. In the event of a heavy rain fall or severe summer storm, the response and recovery may take place concurrently as there is little or no time to prepare.

## 2.3 Plan Activation

This plan may be activated in whole or in part, as required, by the Colchester REMO Emergency Coordination Centre staff, with or without the formal declaration of a state of local emergency.

Upon activation, all participating agencies should respond in accordance with the procedures described within this plan and in accordance with their agency operating procedures.

## 2.4 Types of Flooding

### 2.4.1 Fluvial (River) Flooding

Fluvial or river flooding is caused when high or prolonged precipitation, or snow and ice melt within the watershed flows into the river, causing it to overtop its banks. High or prolonged precipitation can be defined using Environment Canada's Rainfall Warning Criteria, wherein warnings are issued when 25 mm of rain or more is expected in one hour, when 50 mm or more is expected within 24 hour or 75 mm or more within 48 hours during the summer, or when 25 mm or more is expected within 24 hours during the winter.

While forecasting flooding from snow and ice melt may be easier to predict, flash flooding from rapid downpours are more of a challenge to forecast.

### 2.4.2 Pluvial (Ponding) Flooding

Pluvial flooding is heavy and prolonged rainfall that occurs away from a waterbody. This is common in flatter areas away from waterbodies as heavy rain ponds on saturated land, poorly drained soils, and in urban areas where it becomes a strain on the storm drain systems. Urban flooding is made worse by development, as it lessens the availability of land and vegetation to absorb the water. When the catchment infrastructure is overwhelmed, the water has less places to go, so it may often collect in basements.

### 2.4.3 Storm Surge/Coastal Flooding

Nestled along one of our coastlines is the Minas Basin and the Cobequid Bay of the Bay of the Fundy which is world famous for its incredible high and low tides. Along this coastline, rivers empty from the uplands and flow into the basin where the tidal currents move and relocate the sediments at their convergence. Portions of the Bay of Fundy coastline are at higher risk to erosion from the exposed sedimentary bedrock sand and gravel faces. Erosion can claim from 0.25m to more than 1m each year.  Areas with slower or stable erosion rates are linked to the kilometres of dykes that have been constructed throughout the centuries and are fronted by salt marshes.

The other coast resides along the Northumberland Strait where the tides are not as extreme as the Bay of Fundy. The major of the coast is considered quite stable, however, areas in Bayhead and along the Sand and Brule Points are more susceptible to erosion when higher tides are driven by strong winds.

Populous areas along our coasts and especially at the convergence of the Salmon River and the Cobequid Bay are vulnerable when a high tide coincides with strong winds and low pressure of a storm, a storm surge can occur. A storm surge is an increase in the ocean water level above what is expected from the normal tidal level that can be predicted from astronomical observations.

### 2.4.4 Spring/Winter Thaws with Rainfall

During the early spring or occasional during the winter, the predominant form of precipitation changes from solid (snow and ice) to liquid (rain). The impact of a rainfall during these times will vary depending on several factors including:

- How much rain falls?
- How much melting occurs before a rain event?
- The water content of the existing snow on the ground.
- The ground conditions (frozen or unfrozen).

The worst-case scenario is above-zero temperatures combined with rain on frozen ground, or rain on snow with above-average water content. These conditions provide the greatest threat for flooding. This type of event most recently occurred in January/February of 2022, when 50+ mm of rain fell on heavy snowpack and dislodged ice packs from jammed rivers.

### 2.4.5 Water Main Break

In extreme circumstances, water main breaks could result in large volumes of water being released and result in flooding. During such situations the streets may become inundated, sewer systems may surcharge, and basements may fill with water, creating issues very similar to floods caused by natural phenomenon.

### 2.4.6 Dam Break or Breach

When a dam fails and water is released from a reservoir, the flood wave travelling downstream can cause significant property damage and possible loss of life.

Dam failures can be divided into two general classifications:

a) Failures caused by overtopping during extreme rainfall / snowmelt events, or failure of an upstream dam.
b) Structural failures due to foundation problems (i.e. deterioration of concrete, erosion of earth, etc.), geological conditions, or earthquakes.

Overtopping the crest of the dam (i.e. dam breach), whether alone or in combination with a dam failure, can occur when an extreme hydrologic event or failure of an upstream dam causes large water inflows to exceed the capacity of the reservoir and its spillway. Overtopping may also be caused by an accumulation of debris or ice that restricts flow through the dam's spillway.

The Town of Truro has the regions' only significant dam structure which is located on the Lepper Brook in the Town's watershed area in southern portion of Victoria Park. Lepper Brook is fed by a concrete spillway that aids in the control of water levels in the reservoir. Concern of this very rare type of flooding is due to the volume of water that resides in this locale and the population density and transportation infrastructure that is in proximity in the lower portions of the Lepper Brook.

The Town's Engineering Department maintains an Emergency Preparedness Plan (EPP) for the Lepper Brook dam that is intended as a component of the Town of Truro's commitment to provide effective stewardship of the dam and to be prepared, that in the event of an emergency, loss of life, economic and environmental damage is lessened at the dam and downstream areas.

## 2.5 Adverse Affects Caused by Flooding

Flooding is generally accompanied by poor weather conditions. Significant flood events can be complex, and they can occur at any time day or night and last for an uncertain period. Responders may have to work in dangerous conditions, there may be considerable numbers of people displaced from their homes and there may be considerable business, infrastructure, and utility interruption. All the above are factors, which will have an influence on how to prepare a response in a flood emergency.
Our region is very aware that significant flooding affects a wide area that can have substantial economic and public health impacts on affected communities and infrastructure.

A flooding event could result in, but is not limited to, the following:

- Threat to life and property;
- Destruction of public property;
- Utility failure (power, water/wastewater);
- Communications disruption (telephone, internet, radio, television, etc.);
- Structural damage;
- Erosion;
- Damage to the watershed ecosystems;
- Traffic disruptions (road, bridge or rail closures, stranded motorists);
- Difficulty in attaining and delivering emergency services (Police, Fire, EHS, Public Works);
- Food and water shortages;
- Evacuation of people and animals;
- Crop damage; and
- Threat to public health (dangerous goods accidents, contaminated water – both potable and non-potable water sources).

## 2.6 Factorings Affecting Emergency Response to a Flood Event

- Flooding can occur at any time during the year due to a variety of natural phenomenon (i.e. weather) and/or human induced circumstances (i.e. debris jamming, improper dam operation, etc.), but is most likely to occur during inclement weather conditions that will affect response times and procedures.
- The amount and extent of damage caused by any flood depends on several variables, including how much area is flooded, the depth of flooding, the velocity of flow, the rate of rise, sediment and debris carried, the duration of flooding and the effectiveness of mitigation strategies.
- The potential for damage and/or loss of life due to flooding is magnified because, generally, the public may not recognize the safety hazards associated with flooding.
- Flooding does not necessarily occur in isolation of other emergency situations and may occur simultaneously with another unrelated type of emergency, whether it is a natural or human-induced emergency.

- Flooding can also result in secondary emergency events, including landslides, contamination of drinking water supplies, sewage back-up in homes and businesses, overloading of the sewage treatment plants resulting in the release of untreated sewage and a significant impact on the environment, etc.

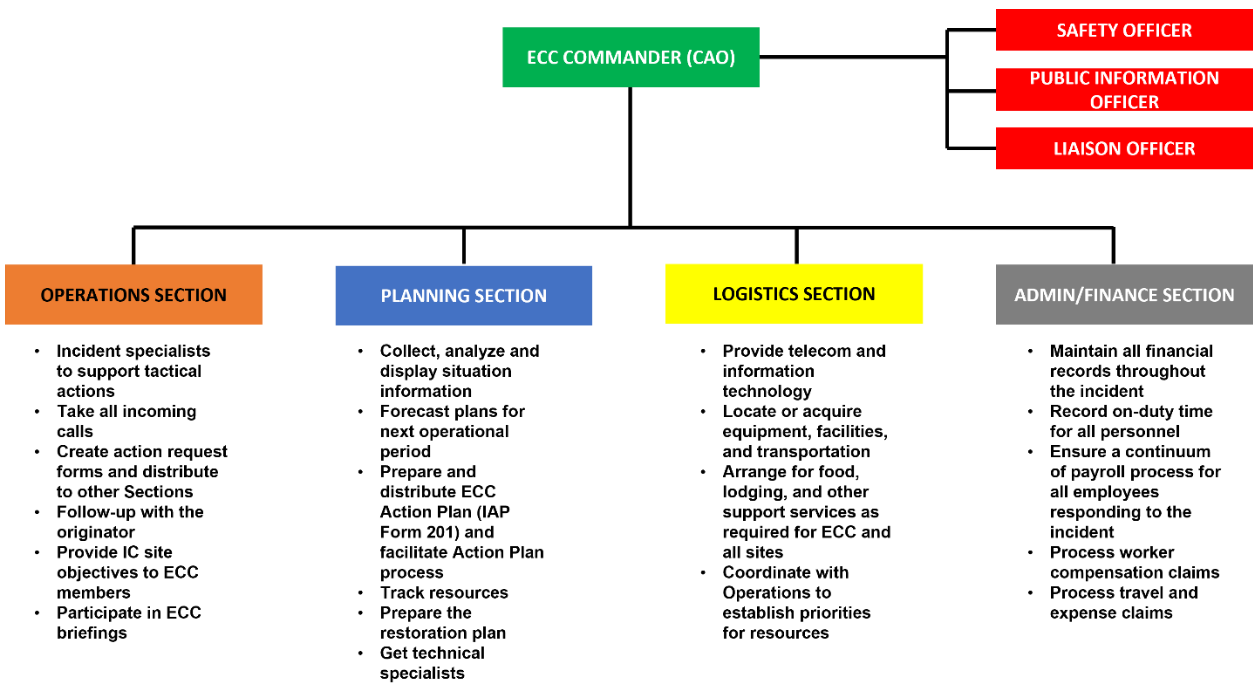
## 2.7 Flood Emergency Management Priorities

In a flood situation, Colchester REMO and its partner agencies will focus their efforts on achieving the following objectives:

- Preservation of life and safety of emergency responders, residents, and visitors.
- Support for stranded and evacuated persons.
- Protection of the water supply system, sewage treatment and other critical infrastructure of the Municipalities of Colchester County.
- Protection of the environment, watercourses, and potable water supplies.
- Reducing the economic and social suffering and losses to the residents where possible.
- Returning communities to normal through a coordinated recovery process that includes re-entry of displaced persons.
- Reducing the impact to private property where possible and appropriate.

## 2.8 Flood Organizational Structure

To support a regional flood incident within our region, the Colchester REMO Emergency Coordination Centre (ECC) is structured under the Incident Command System.




## 2.9 Municipal Public Warnings

As there are no audible warning systems within the Municipalities of Colchester County, the public should be alerted to flooding conditions through local media (radio, television, newspaper) and municipal social media platforms (Facebook, Twitter). Warnings should also be posted on all Municipal websites and distributed through the national emergency mass notification software, Alert Ready. In extreme circumstances, public warning may also be done through vehicle public address systems and/or door-to-door contact by municipal services and/or volunteers.

## 2.10 Recovery

The ability to recover from the physical damage, injury, economic impairment, and human suffering resulting from a disaster is a critical element of any emergency program. It is essential to recognize that successful recovery planning and activities depend on the rapid start-up of a recovery plan and must begin during the emergency response phase.

Through the implementation of a municipal disaster recovery strategy, Colchester's Municipalities will work with their departments, partner agencies, and volunteer resources to restore critical infrastructure (both public and private), systematically clean up affected areas, and return the community to a state of normalcy.

The prioritization of restoration and clean up efforts will be determined by the Colchester REMO ECC Management Team based on several influencing factors, with the primary focus being on the protection of public safety.

# 3.0 RESPONSIBILITIES

## 3.1 Federal

The Government of Canada's Operation Centre (GOC) coordinates the federal government's response to events of national interest, such as floods, that may affect the safety and security of Canadians or critical infrastructure. Should a provincial or territorial government request assistance to deal with a flood, then the GOC would coordinate the Government of Canada response.

The Government of Canada has disaster assistance programs available to respond to the financial needs of provinces and territories in the wake of major natural disasters including the Disaster Financial Assistance Arrangements.

Municipal Emergency Management Staff receive regular weather reports, advisories, and warnings from Environment Canada and Climate Change weather services and the briefings are circulated to municipal staff and local emergency stakeholders. These services are prepared by weather meteorologists located in the province.

## 3.2 Provincial

Several Nova Scotia government departments and agencies are engaged in flood related activities, including:

### 3.2.1 Department of Agriculture

The NSDA Land Protection Section is responsible for the management and maintenance of 240 kilometers of tidal dykes (including 260 aboiteau structures) along the Bay of Fundy for the purpose of protecting 17,400 hectares of agricultural land (marshbodies) from sea water incursions.

### 3.2.2 Department of Municipal Affairs and Housing

Municipal Affairs administers Statements of Provincial Interest (SPI) under the Municipal Government Act. The current SPI on Flood Risk Areas was put in place in 1999, and focused heavily on areas mapped under the Canada-Nova Scotia Flood Damage Reduction Program from the mid 1980's. This planning tool requires that any municipality with a comprehensive municipal planning strategy must be "reasonably consistent" with the intent of the SPI. The goal of the SPI is to "protect public safety and property and to reduce the requirement for flood control works and flood damage restoration in the floodplains."

Under the Canada Community-Building Fund (previously known as Federal Gas Tax Program) all municipalities have submitted a Municipal Climate Change Action Plan (MCCAP). Each plan outlines priorities for climate change (adaptation and mitigation) and describes the range of actions the municipality will undertake to address climate impacts. In many communities flooding has been identified as a significant concern and is a top priority for acting on climate change adaptation.

The eligible project categories under the Canada Community-Building Fund have been expanded to include Disaster Mitigation. Projects that reduce or eliminate long-term impacts and risks associated with natural disasters are now eligible for funding.

### 3.2.3 Emergency Management Office

EMO NS takes an “all-hazards” approach to emergency management that recognizes that prevention/mitigation, preparedness, response, and recovery can be used to address the impact of disasters.

EMO regional staff (Emergency Management Planning Officers - EMPO’s) work with municipal emergency management coordinators to ensure there are emergency management plans in place for each municipality in Nova Scotia. Municipal planning and local knowledge are represented in the development of emergency management plans.

The MCCAP process requires municipal emergency management coordinators to work with EMPOs in the development of their respective climate change action plans.

### 3.2.4 Department of Public Works

Public Works is responsible for delivering quality public infrastructure for Nova Scotia and deal with approximately 23,000 km of roads, 4,100 bridges, 7 ferries, and 2,400 buildings. All its infrastructure is designed, constructed, and operated in accordance with nationally and internationally recognized standards.

Public Works consults with communities on infrastructure developments. Often this infrastructure is developed or renewed in partnership with the Federal or municipal governments.

### 3.2.5 Department of Natural Resources and Renewables

The Department of Natural Resources operates a long-term program to map the vulnerability of the province’s coast to flooding and erosion.

The department is very active throughout Nova Scotia’s watersheds, and forestry activities including road construction, and harvesting can have a large influence on flooding. Through Forest Sustainability Regulations, silviculture programs are in place to establish and tend forest stands within water shed areas, and the Department administers and enforces Wildlife Habitat and Water Course Protection Regulations.

### 3.2.6 Department of Environment

Environment is the lead provincial department partnering with Environment Canada on maintaining and monitoring 28 real-time hydrometric monitoring stations. This information is critical for monitoring rising water in real-time during extreme weather events where flooding is high-risk.

The department’s Water for Life: Water Resource Management Strategy sets climate change impact studies as a priority action for the department. Flood risk studies will be a key component of studying climate change impacts to the province.

The Climate Change Unit provides information and guidance on climatic factors relevant to flooding, such as historic data and future projections of sea levels, storms and rainfall amounts and intensity. The unit has funded and coordinated several community climate change assessments through the Atlantic Climate Adaptation Solutions program, which include aspects of coastal and inland flood mapping and risk in six pilot areas (13 municipalities) in Nova Scotia.

Environment regulates 114 activities in the province by developing, implementing, and monitoring standards and conditions of approval. Many of these have some relevance to flood management.

## 3.3 Municipal and Regional

### 3.3.1 Prevention and Mitigation

The Municipalities of Colchester County are developing and implementing mitigation strategies to lessen the occurrences of severe flooding. Through the creation of Land Use Bylaws and Planning Strategies, urban development is regulated in areas that are designated as flood prone. The Town of Truro has developed and implied stormwater management practices that include catchment ponds and residential rain barrels. The Municipality of Colchester has a Flood Advisory Committee that that was created in the mid 1990’s. This committee provides technical and financial assistance to property owners who suffer damage to property due to flooding.

Regionally, cooperation between the municipalities and Millbrook First Nation have led to the formation of the Joint Flood Advisory Committee in 2012, that has representatives from the Municipality of Colchester, Town of Truro, and Millbrook First Nation. This committee looks at larger projects on the brooks and rivers that affect all three units. This collaboration had the 2016 Flood Risk Study prepared that utilized current LiDAR mapping. It has also funded the purchase of three Real-Time Hydrometric Sensors that were placed in the North River, Salmon River, and McClures Brook (**Annex E**).

The three municipalities also share in a regional collaboration regarding Emergency Management. This approach allows for emergency planning and the creation of emergency management planning documents and public education resources designed specifically for our residents and region.

### 3.3.2 Response and Recovery

When flooding occurs, the initial responsibility for the welfare of residents is at the Municipal level. As with any emergency, the priority is responder and public safety. The second priority is the protection and maintenance of public critical infrastructure to maintain basic services (hydro, water/wastewater, telecommunication systems, etc.).

When severe flood conditions are present within Colchester County, Colchester REMO should:

- Activate the Colchester REMO Flood Response Contingency Plan.
- Activate the Colchester REMO Regional Emergency Management Plan.
- Convene the Emergency Coordination Centre Management Team.
- Appoint an Emergency Coordinator Centre Commander.
- If warranted, recommend the declaration of a Municipal emergency.
- Direct and control all flood response operations in Colchester County.
- Coordinate the acquisition of emergency response equipment, personnel and other resources required at the incident site.
- Coordinate assistance to residents displaced by flooding.
- Address concerns related to homes in Colchester County that are on private wells or have private surface water intakes.
- Disseminate vital emergency information to staff, the media and citizens using appropriate channels.
- Provide information to the public concerning water supply safety, alternative sources of water, and protective actions to be taken.
- Request assistance from agencies not under Municipal control, as required (i.e. volunteer agencies, Red Cross etc.).
- Request Provincial assistance to perform specific flood combat / control tasks as may be required.
- Coordinate community disaster financial assistance (Nova Scotia Disaster Relief Assistance Program) as deemed necessary.
- Facilitate arrangements for the inspection of evacuated premises and provide for their orderly re-occupation as appropriate.
- Assist the Provincial authorities with damage estimation and assessment after the flood.
- Provide residents and businesses with information on safe handling of items damaged by water/sewage.
- Explore mitigation and prevention strategies to reduce the impact of future flood events.

### 3.3.3 Regional Emergency Management Coordinator (REMC)

Coordinate flood specific education materials for distribution to the public within identified water flood damage areas to include:

- The Flood Response Contingency Plan.
- Established evacuation routes (minimum of two) from each identified flood damage centre, including locations of a primary and secondary Evacuation Centre / Emergency Shelter.
- Emergency preparedness and response education information for the public including pre-event, during an event, and post event.
- Ensuring up to date contact information for emergency facilities, personnel, and additional resources.

### 3.3.4 Site Operations (Incident Commander)

The Incident Commander (IC) assumes responsibility for the overall coordination of all operations at the emergency site and is the point of contact between the ECC Management Team and site operations.

The Incident Commander is responsible for:

- Identifying the flood risk areas.
- Prioritizing response activities.
- Evaluating and identifying equipment and resources needed.

### 3.3.5 Fire Services

- Conduct floodwater rescue, as required.
- Rescue/evacuate any persons in danger with minimum delay and provide medical first response (MFR) service as necessary.
- Assist Police Services with evacuations in the affected areas as required.
- Fire suppression, mitigate released chemicals and other hazards.

### 3.3.6 Colchester RCMP/Truro Police Service

- Evacuate the affected areas as required.
- Perform traffic and crowd control operations.
- Disperse people not directly connected with the operations who, by their presence, are in danger, or whose presence hinders in any way the efficient functioning of the flood combat/control operation.
- Secure the affected areas (based on need and availability of staff).
- Provide community security to prevent against looting and other unruly activities.
- Identify and establish detour routes due to high water and maintain proper traffic flow patterns as deemed appropriate.

### 3.3.7 Infrastructure Services - Water/Wastewater

- Implement actions to protect water and sewer systems and identify threats to drinking water.
- Work with ECC Information Officer to advise the public of protective actions that may be required in the event of damage or concerns related to the sewer systems and/or drinking water sources.
- Request the disconnection or discontinuance of any service that may constitute a public hazard.
- In the event a flood emergency results in the release of untreated or partially treated sewage into lakes and rivers, implement internal procedures and notify the Ministry of the Environment, and the Department of Fisheries and Oceans Canada.

### 3.3.8 Nova Scotia Department of Public Works/Municipal Engineering Departments

- Free obstructions to storm and wastewater drainage.
- Repair breaches in flood defences.
- Visually monitor creeks and streams.
- Coordinate activities of utility companies.

### 3.3.9 Transportation

- Organize transportation as required for residents and emergency responders.
- Coordinate private companies and local Centres of Education transportation resources to address the transportation needs.

### 3.3.10 Social Services

- Aid residents displaced by flooding as required.
- Coordinate emergency facilities (i.e. emergency shelter operations, evacuation centres).

### 3.3.11 Utilities

- Perform disconnect operations where this is considered necessary and in the interest of public safety.
- Secure services and equipment to ensure continuity of supply.
- Coordinate the priority restoration of affected services as dictated by emergency needs of municipal services and other essential users.
- Assist with clean up and restoration of services.
- Assess ability to resume normal operations.

# 4.0 PUBLIC EDUCATION & AWARENESS OF FLOODING PREPARENESS

Since public awareness of flood preparedness and response will contribute to an effective evacuation process, ongoing public awareness and education shall be an essential component of this plan. To this end, this document, as part of the Regional Emergency Management Plan, shall be posted on the municipal websites.

## 4.1 Evacuation Warnings

To be effective, Evacuation Warnings/Announcements should have the following characteristics:

<u>Authority</u>—Warnings are more credible and more likely to promote appropriate public actions if they are issued by a recognized authority.

<u>Consistency</u>—To avoid confusion and uncertainty, it is important that consistency be maintained when multiple warnings are issued to the public.

<u>Accuracy</u>—Accuracy and currency of information contained in the warning also affect understanding and belief. Errors can cause people to doubt subsequent warnings.

<u>Clarity</u>—An unclear warning can cause people to misunderstand or ignore it. Warnings should be in simple language, without the use of jargon.

<u>Level of Certainty</u>—Certainty determines the level of belief in a warning and affects decision making by those to whom the warning is given.

Level of Detail—Insufficient information creates confusion, uncertainty, and anxiety, and public imagination will tend to fill the information void. This can promote rumours, uninformed misconceptions, or fears.

Clear Guidance— Messages containing clear guidance about protective actions people should take and the time available for doing so are more effective than those which provide no specific instructions.

Repetition of Warnings—Where time permits, warnings should be repeated preferably using more than one delivery method. This provides confirmation of the warning message, helps increase persuasiveness and overcomes the problem of people not responding after hearing a warning only once.

Impact Areas—Warning information that clearly states the areas actually or likely to be affected by the event is most effective.

Methods of Information Broadcasting—Warnings are more effective if a range of methods is used rather than a single method, thereby reaching as many people as possible in the shortest time. Methods need to be chosen to fit the time-frame available and should recognize that some modes are appropriate in reaching many people but with only relatively simple or generalized information (i.e. media) whereas others can provide more specific information to targeted individuals (i.e. telephone, two-way radio, door-knocking or use of community leaders or wardens). Use of mass notification software like “Alert Ready” can enhance the effectiveness of electronic media warnings by alerting listeners for an urgent safety message to follow.

Information Broadcasting for Special Needs Groups—Consideration must be given to the specific problems of special needs groups. Distribution to, and receipt of information by, many of these groups will pose different challenges, for example, language. Neighbours can also help by checking on special-needs people in their proximity.

# 5.0 PLAN EVALUATION, REVIEW & MAINTENACE

## 5.1 Plan Evaluation and Responsibilities

The Colchester Regional Emergency Management Coordinator (REMC) is responsible for coordinating the exercising of the Regional Emergency Management Flood Response Contingency Plan. This Plan will be evaluated and compiled biennially.

## 5.2 Plan Maintenance and Responsibilities

The Colchester Regional Emergency Management Flood Response Contingency Plan will be maintained by the Regional Emergency Management Planning Committee (REMPC) and the Regional Emergency Management Coordinator (REMC).

The Plan will be reviewed biennially and, where necessary, revised by a meeting(s) of the Regional Emergency Management Planning Committee (REMPC) and the Regional Emergency Management

Advisory Committee (REMAC). The Regional Emergency Management Flood Response Contingency shall be revised subject to the approval of Municipal Councils.

## 6.0 PLAN DISTRIBUTION

Distributed electronically:

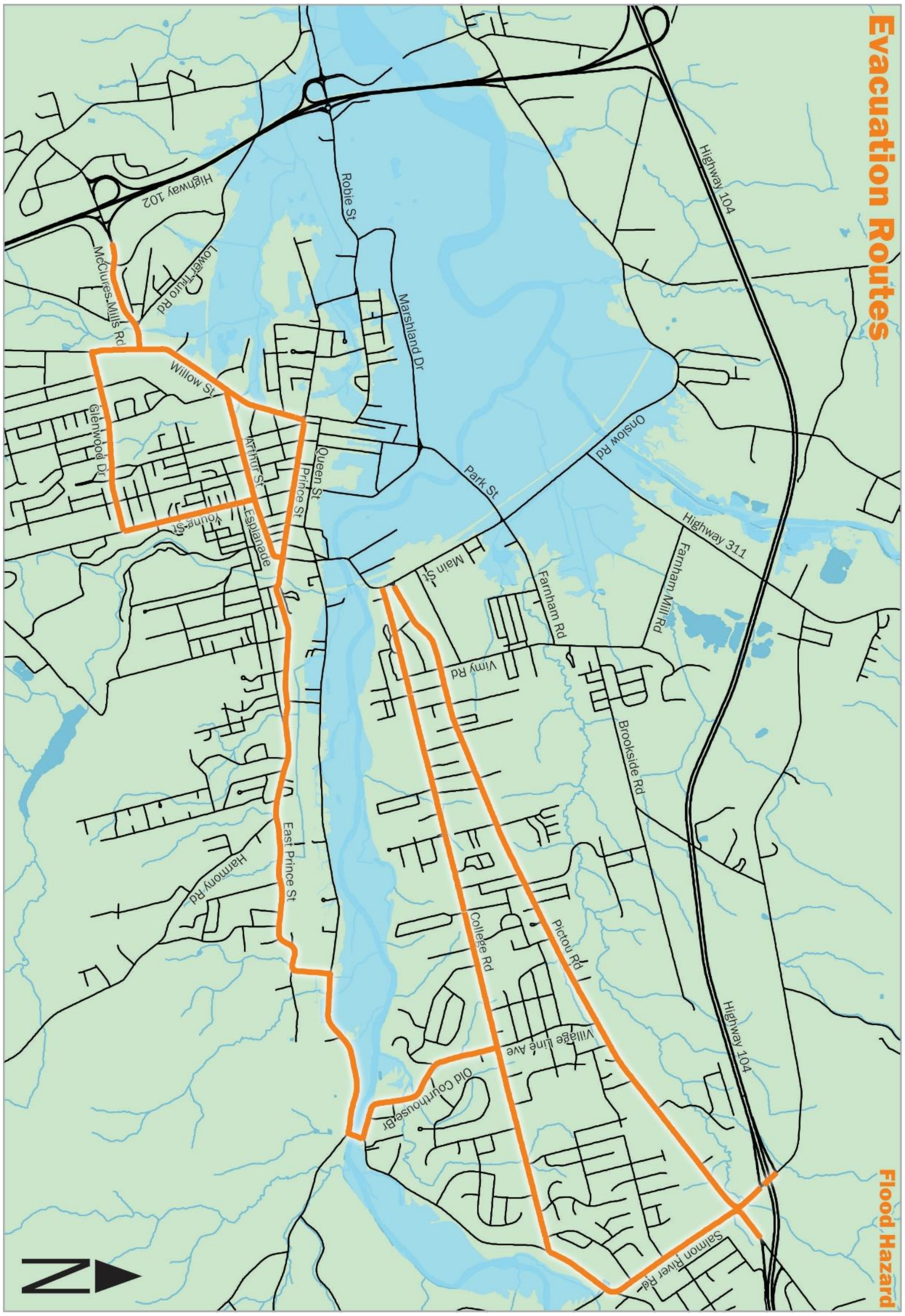
**Municipal Units**
- Municipality of Colchester
- Town of Truro
- Town of Stewiacke
- Village of Bible Hill
- Village of Tatamagouche

**Fire and Emergency Services**
- Colchester County Fire Services and Special Hazards Response Unit (SHRU)
- Truro Fire Service
- Stewiacke Fire Department
- Truro Police Service
- Colchester RCMP
- Colchester Ground Search and Rescue

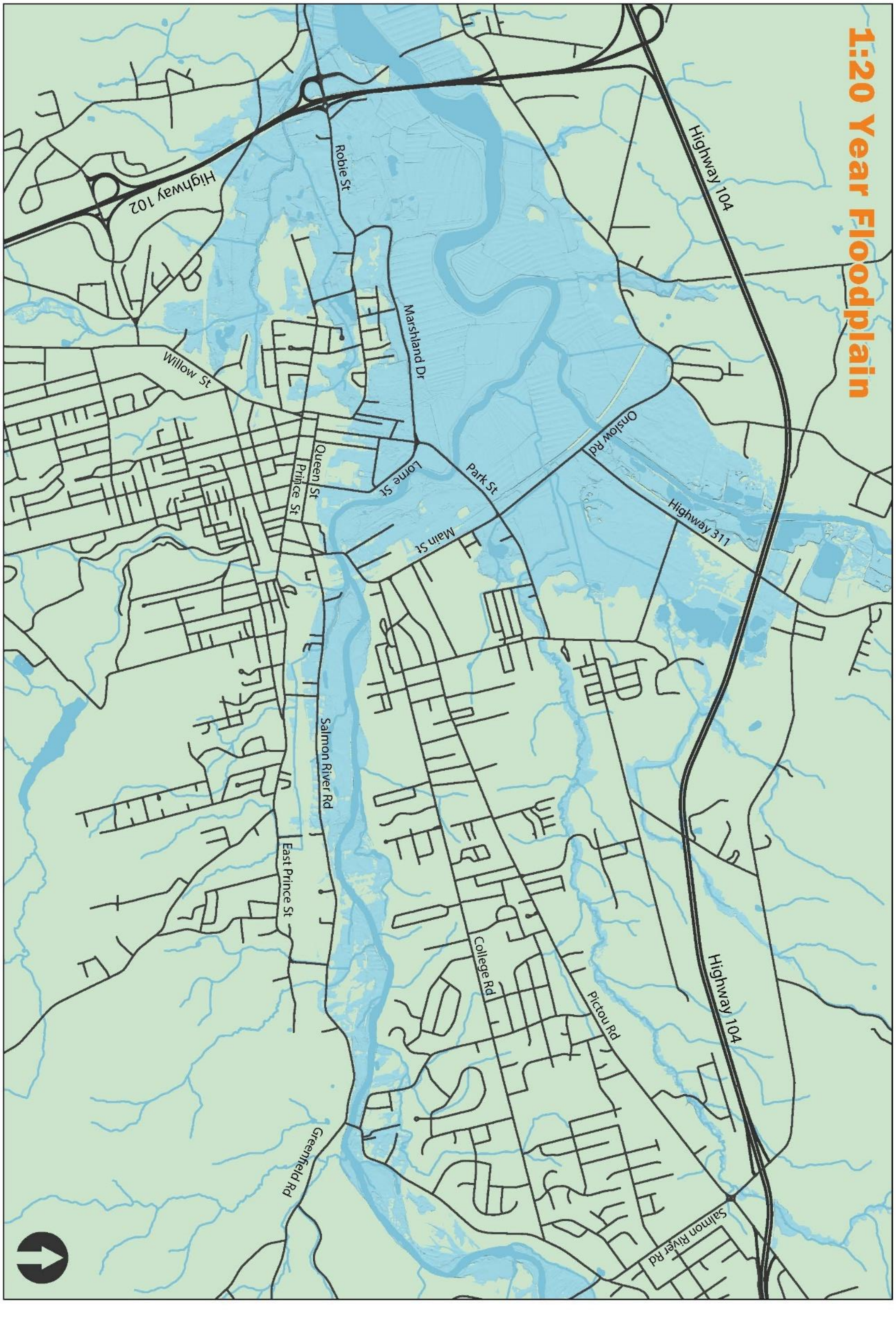
**Colchester Regional Emergency Management Planning Committee members**
**Colchester Regional Emergency Management Advisory Committee members**

# ANNEXES

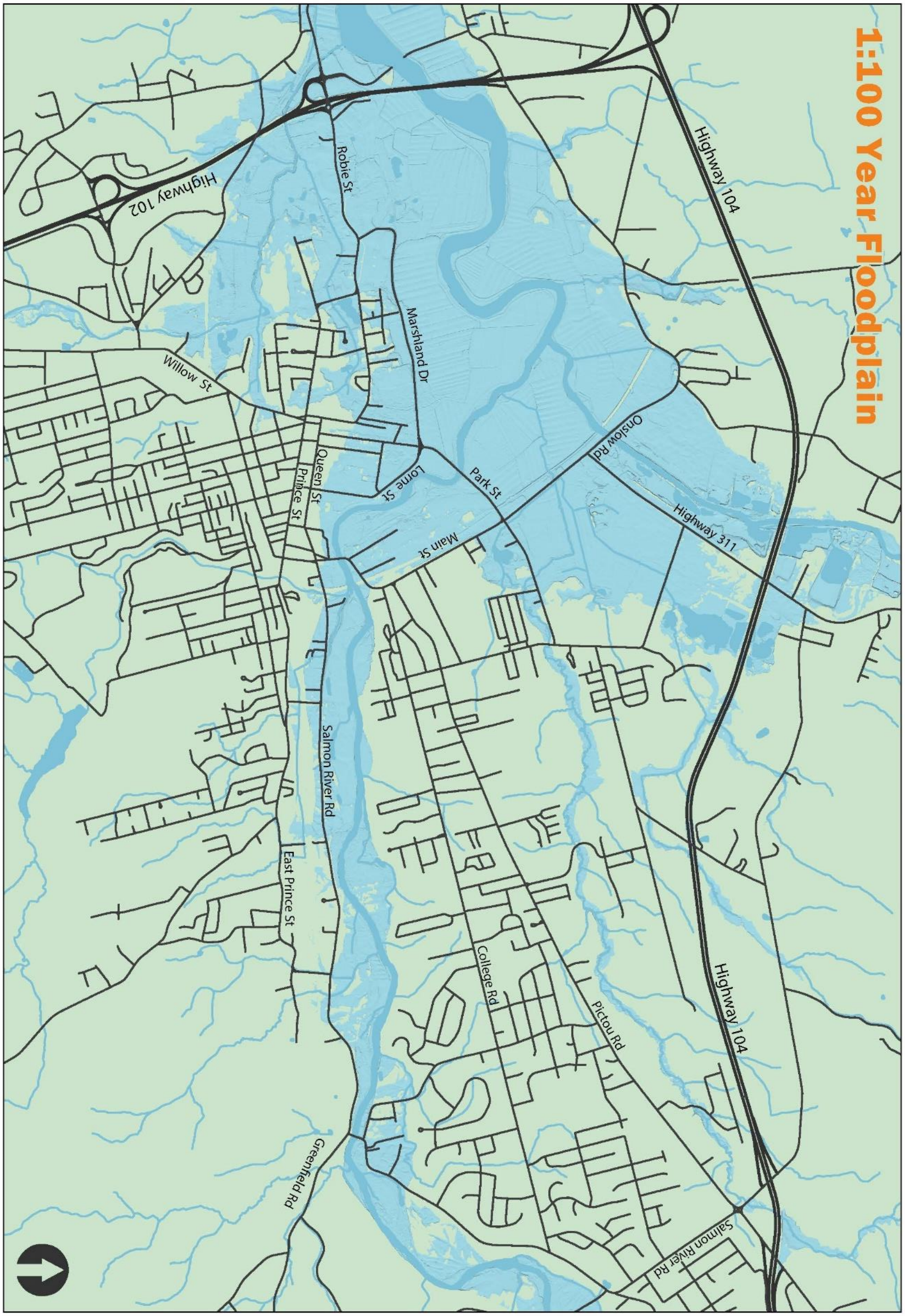
## Annex A – Potential Evacuation Routes – Central Colchester Flood Risk Areas



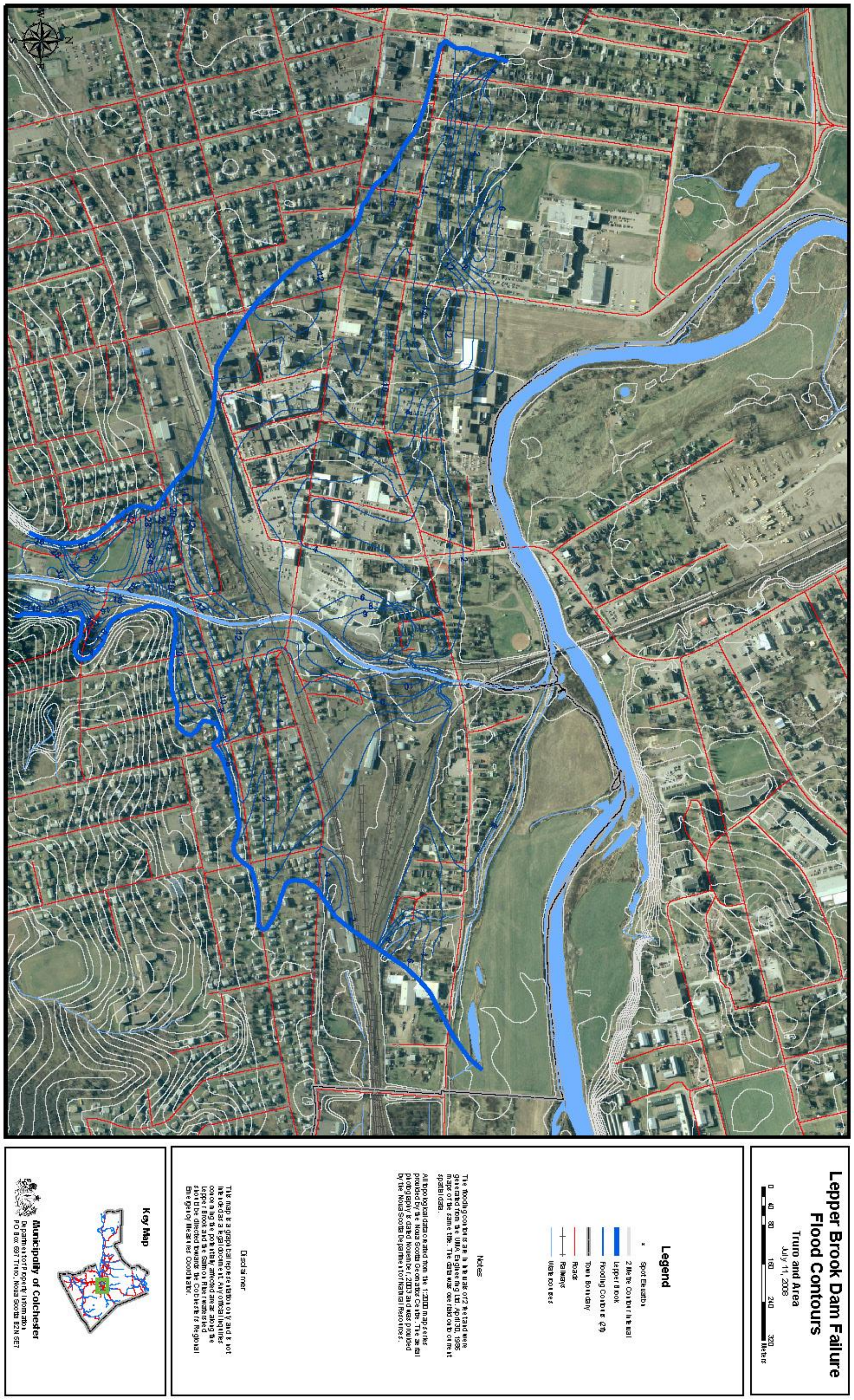
## Annex B – 1:20 Year Floodplain (2016)



## Annex C – 1:100 Year Floodplain (2016)

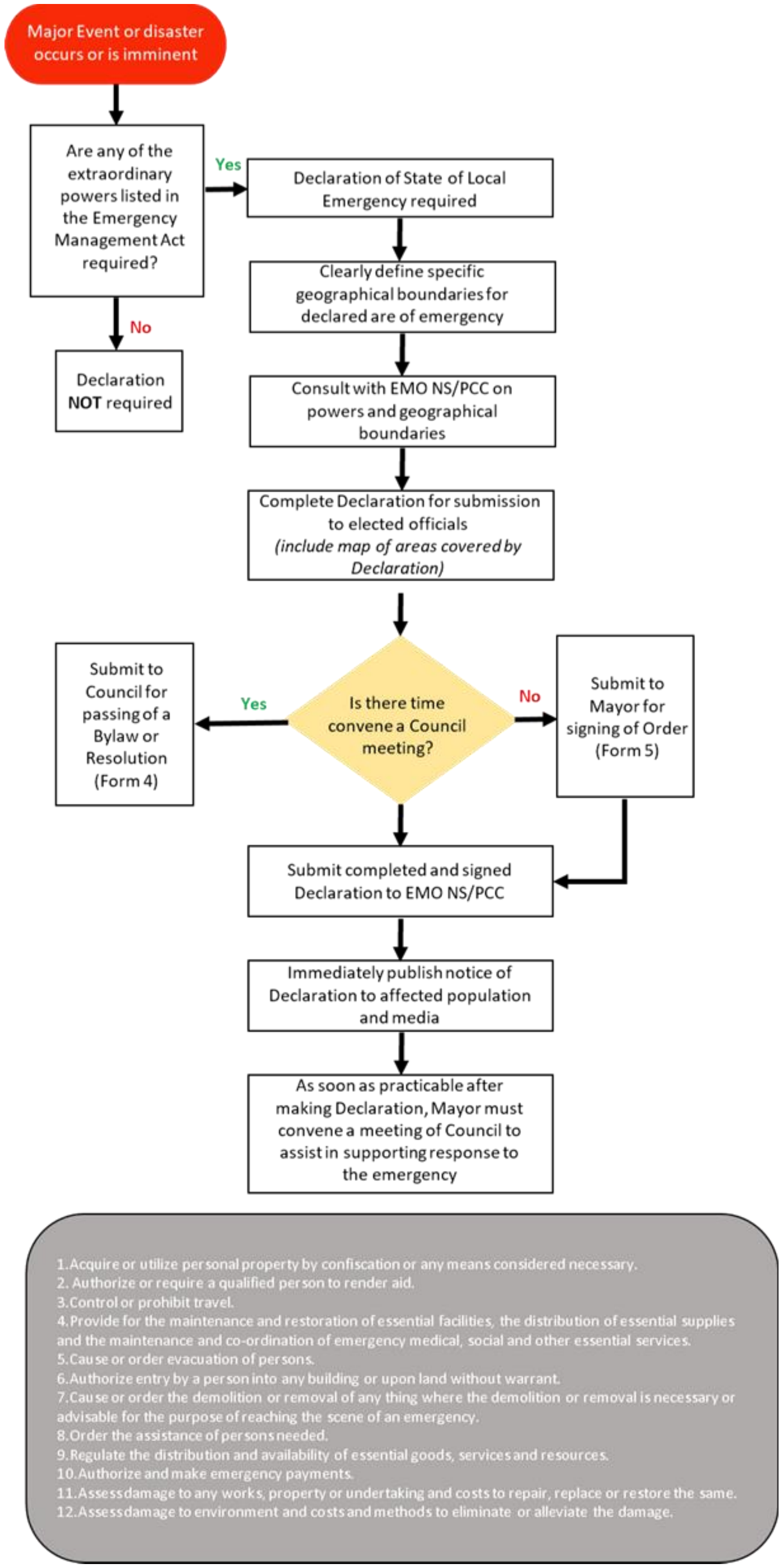


## Annex D – Truro Watershed Dam Breach Projected Flooding Contours



## Annex E – Declaring a State of Local Emergency (SOLE)

*(Reference: [Nova Scotia Emergency Management Act]())*



## Annex F – State of Local Emergency Forms (SOLE)

**FORM 4**

DECLARATION A STATE OF LOCAL EMERGENCY

Municipality: ___________________________________________

**Section 12(2) of the *Emergency Management Act*, S.N.S 1990, c.8**

**WHEREAS** the area herein described is or may soon be encountering an emergency that requires prompt action to protect property or health, safety or welfare of persons therein:

**Emergency Area:**
The area generally described as

_____________________________________________________________________________________

Province of Nova Scotia (hereafter referred to as the "Designated Area(s)") Yes ( ) No ( )

**Nature of the Emergency**

_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

**AND WHEREAS** the undersigned is satisfied that an emergency as defined in Section 2(b) of Chapter 8 of the Statutes of Nova Scotia, 1990, the *Emergency Management Act*, exists or may exist in the Designated Area(s) noted above;

**THE UNDERSIGNED HEREBY DECLARES** pursuant to Section 12(2) of the *Emergency Management Act*, a State of Local Emergency in the Municipality noted above as of and from ______o'clock in the forenoon ( ) or afternoon ( ) of the day of __________, 20____ .

**THIS DECLARATION OF STATE OF LOCAL EMERGENCY** shall exist until o'clock in the forenoon ( ) or afternoon ( ) of the day of________ , 20___ , or for a maximum of 7 days from the date and time specified above unless the Declaration is renewed or terminated as provided in Section 20 of the *Emergency Management Act*.

DATED at______________, in the Municipality of ____________________, Province of Nova Scotia, this day of ______________, 20____ .

Council, Municipality_________________________________
Name ____________________________________________
Positions ___________________________________________
[Authorized by Resolution No. ___________
dated the Day of ________, 20_____]

**FORM 5**

DECLARATION A STATE OF LOCAL EMERGENCY

Municipality: ___________________________________________

**Section 12(2) of the *Emergency Management Act*, S.N.S 1990, c.8**

**WHEREAS** the area herein described is or may soon be encountering an emergency that requires prompt action to protect property or health, safety or welfare of persons therein:

**Emergency Area:**
The area generally described as

_____________________________________________________________________________________

Province of Nova Scotia (hereafter referred to as the "Designated Area(s)") Yes ( ) No ( )

**Nature of the Emergency**

_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

**AND WHEREAS** the undersigned is satisfied that an emergency as defined in Section 2(b) of Chapter 8 of the Statutes of Nova Scotia, 1990, the *Emergency Management Act*, exists or may exist in the Designated Area(s) noted above;

**AND WHEREAS** the Council of the Municipality is unable to act;

**AND WHEREAS** the undersigned has (check appropriate box)

a) Consulted with a majority of members of the Municipal Emergency Management Committee Yes ( ) No ( )

b) Found it impractical to consult with the majority of the Municipal Emergency Management Committee Yes ( ) No ( )

**THE UNDERSIGNED HEREBY DECLARES** pursuant to Section 12(2) of the *Emergency Management Act*, a State of Local Emergency in the Municipality noted above as of and from ______o'clock in the forenoon ( ) or afternoon ( ) of the day of __________, 20____ .

**THIS DECLARATION OF STATE OF LOCAL EMERGENCY** shall exist until o'clock in the forenoon ( ) or afternoon ( ) of the day of________ , 20___ , or for a maximum of 7 days from the date and time specified above unless the Declaration is renewed or terminated as provided in Section 20 of the *Emergency Management Act*.

DATED at______________, in the Municipality of ____________________, Province of Nova Scotia, this day of ______________, 20____ .

Mayor Signature_____________________________________
Municipality_________________________________________

H

**FORM 6**

# RENEWAL OF A STATE OF LOCAL EMERGENCY

Municipality: ___________________________________________

**Section 20 (2) of the *Emergency Management Act*, S.N.S 1990, c.8**

**WHEREAS** the area herein described is or may soon be encountering an emergency that requires prompt action to protect property or health, safety or welfare of persons therein:

**Emergency Area:**
The area generally described as
_____________________________________________________________________________________

Province of Nova Scotia (hereafter referred to as the "Designated Area(s)") Yes (  ) No (  )

**Nature of the Emergency**
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

**AND WHEREAS** the declaration of a state of Local Emergency was signed on the ______day of ________, 20___;

**AND WHEREAS** the undersigned is satisfied that an emergency as defined in Section 2(b) of Chapter 8 of the statutes of Nova Scotia, 1990, the *Emergency Management Act*, exists or may exist in the Designated Area(s) noted above;

**THE UNDERSIGNED HEREBY DECLARES** pursuant to Section 20(2) of the *Emergency Management Act*, a State of Local Emergency in the Municipality noted above is renewed as of and from ______o'clock in the forenoon (  ) or afternoon (  ) of the day of __________, 20____ .

**THE RENEWAL OF A DECLARATION OF STATE OF LOCAL EMERGENCY** shall exist until o'clock in the forenoon (  ) or afternoon (  ) of the day of________ , 20___ , or for a maximum of 7 days from the date and time specified above unless the Declaration is renewed or terminated as provided in Section 20 of the *Emergency Management Act*.

DATED at______________, in the Municipality of ____________________, Province of Nova Scotia, this day of ______________, 20____ .

Council, Municipality_________________________________
Name ____________________________________________
Positions ___________________________________________
[Authorized by Resolution No. ___________
dated the Day of ________, 20_____]

In the event the Council is unable to act:

Mayor ____________________________

**FORM 7**

# TEMINATION OF A STATE OF LOCAL EMERGENCY

Municipality: ___________________________________________

**Section 18(2) of the *Emergency Management Act*, S.N.S 1990, c.8**

**WHEREAS** by Declaration of a State of Local Emergency date the ________ day of ____________ , 20____, as renewed on the _______day of ______________, 20______, a State of Local Emergency was declared for the following area:

**Emergency Area:**
The area generally described as

_____________________________________________________________________________________

Province of Nova Scotia (hereafter referred to as the "Designated Area(s)") Yes (  ) No (  )

**Nature of the Emergency**

_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

**AND WHEREAS** the undersigned is of the opinion that the emergency no longer exists in the Designated Area(s).

**THE UNDERSIGNED** pursuant to Section 18(2) of Chapter 8 of the Statutes of Nova Scotia, 1990, the *Emergency Management Act*, hereby terminates the State of Local Emergency effective as of and from ______o'clock in the forenoon (  ) or afternoon (  ) of the day of __________, 20____.

DATED at______________, in the Municipality of ____________________, Province of Nova Scotia, this day of ______________, 20____ .

Council of Municipality_________________________________
Name ____________________________________________
Positions ____________________________________________
[Authorized by Resolution No. ___________
dated the Day of ________, 20_____]

## Annex G - Real-Time Hydrometric Sensors

Salmon River (Murray Siding) - https://wateroffice.ec.gc.ca/report/real_time_e.html?stn=01DH002

North River (North River) - https://wateroffice.ec.gc.ca/report/real_time_e.html?stn=01DH004

McClures Brook (Cobequid Trail) - https://wateroffice.ec.gc.ca/report/real_time_e.html?stn=01DH006

St. Andrews River (Stewiacke) - https://wateroffice.ec.gc.ca/report/real_time_e.html?stn=01DG043

Great Village River (Scrabble Hill) -https://wateroffice.ec.gc.ca/report/real_time_e.html?stn=01DJ005

## Annex H - Criteria for Public Weather Alerts

| | |
|---|---|
| **Rainfall Warning (Short Duration)** | When 25mm or more of rain is expected within one hour. |
| **Rainfall Warning (Long Duration Summer)** | When 50mm or more of rain is expected within 24 hours.<br>OR<br>When 75mm or more of rain is expected within 48 hours. |
| **Rainfall Warning (Long Duration Winter)** | When 25 mm or more of rain is expected within 24 hours. |
| **Storm Surge Warning** | Issued for abnormally high-water levels and high waves (storm surge or storm tide) caused by storms, which have the potential to cause coastal flooding. This usually occurs when astronomical tides are at their maximum. |

Reference: *Environment and Climate Change Canada*

## Annex I – Frequently Asked Questions About Floods

**When can floods occur?**
Floods can occur in any region of Canada, at any time of the year, but most flooding occurs when the volume of water in a river of stream exceeds the capacity of the channel. Flooding also takes place along lake and coastal shorelines, when higher than normal water levels inundate low-lying areas.

**Are you Flood Ready?**
The first step towards reducing the potential harm of overland flooding is increasing your knowledge. See how much you know about overland flooding by trying the following quiz – Are you Flood Ready?

**What is the meaning of a "100 year" flood?**
The 100-year flood or x-year flood refers to the probability of those events occurring. That is, for a 100-year flood, there is a 1% chance in any given year of having a flood of that magnitude. For a 20-year flood, there is a 5% chance of having a flood of that magnitude occurring.

It should be stressed that the 20-year and 100-year events are independent events, from the perspective of probability. That means that if one of those events occurs, it has no effect on future events occurring. In other words, if a 100-year flood event occurs, that does NOT mean that people are "safe" for 99 years. The risk of having the flood in any given year is the same, regardless of if it occurred recently.

**What should I do in preparation for a flood?**
Make an itemized list of personal property well in advance of a flood occurring. Photograph the interior and exterior of your home. Store the list, photos, and documents in a safe place. Memorize the safest and fastest route to high ground. Assemble a disaster supplies kit containing: first aid kit, canned food and can opener, bottled water, extra clothing, rubber boots and gloves, weather radio, battery operated radio, emergency cooking equipment, flashlight, and extra batteries.

If you live in a frequently flooded area, keep plastic sheets, and lumber on hand to protect property. Install check valves in building sewer traps to prevent flood water from backing up into the drains of your home.

Know the elevation of your property in relation to nearby streams and other waterways, and plan what you will do and where you will go in a flood emergency.

**What should I do when a flood threatens?**
If forced to leave your property and time permits, move essential items to safe ground, fill tanks to keep them from floating away and grease immovable machinery.

Store a supply of drinking water in clean bathtubs and in large containers.

Get out of areas subject to flooding. This includes dips, low spots, floodplains, etc.

**What should I do during a flood?**
Avoid areas subject to sudden flooding.

Even 15 cm (6 inches) of fast-moving floodwater can knock you off your feet, and a depth of 60 cm (two feet) will float your car! Never try to walk, swim or drive through such swift water.

Do not attempt to drive over a flooded road. STOP! Turn around and go another way.

Keep children from playing in floodwaters or near culverts and storm drains.

**What should I do after a flood?**
Boil drinking water before using. If fresh food has been in contact with floodwaters, throw it out.

Seek necessary medical care by calling **911** or at the nearest hospital. Food, clothing, shelter and first aid can be offered or coordinated through emergency flood response facilities.

Use flashlights, not lanterns or torches, to examine buildings. Flammables may be inside.

Do not handle live electrical equipment in wet areas. Electrical equipment should be checked by an electrician and dried before being returned to service.

**Is flood damage covered by your homeowner's insurance?**
Flood damage is excluded in nearly all homeowner's and renters' insurance policies but, if desired, can be purchased as a separate policy – check with your insurer as to whether flooding is covered under your current policy.

**What about flood safety?**
More than half of all flooding related fatalities are a result of driving into hazardous water covered roadways. If you encounter a flooded roadway follow this simple advice: Turn Around, Don't Drown!

## Annex J – Glossary

| | |
|---|---|
| **100-Year Flood** | A flood event that statistically has a 1 out of 100 (or one percent) probability of being equalled or exceeded on a specific watercourse or water body in any given year. |
| **Flood/Flooding** | A temporary condition caused by the accumulation of runoff from any source, which exceeds the capacity of a natural or man-made drainage system and results in inundation of normally dry land areas. |
| **Floodplain** | The area, usually lowlands adjoining a watercourse, which has been, or maybe, covered by flood water. |
| **Peak Flow** | The maximum rate of flow through a watercourse for a given storm. |
| **Runoff** | The portion of precipitation on land that ultimately reaches streams, especially water from rain or melted snow that flows over ground surface. |
| **Storm Drainage System** | A drainage system for collecting runoff of stormwater on highways and removing it to appropriate outlets. The system includes inlets, catch basins, storm sewers, drains, reservoirs, pump stations, and detention basins. |
| **Storm Surge** | High water levels that result from very low pressure, strong winds blowing toward land, and high tides (if present). Depending on the conditions and geographical setting, water levels may be "set up" by as much as several metres and have potential to cause severe flooding for low-lying coastal regions. |
| **Storm Water** | Precipitation from rain or snow that accumulates in a natural or man-made watercourse or conveyance system. |
| **Watercourse** | A stream, river, or channel in which a flow of water occurs, either continuously or intermittently, with some degree of regularity. |
| **Watershed** | An area from which water drains into a lake, stream, or other body of water. A watershed is also often referred to as a basin, with the basin boundary defined by a high ridge or divide, and with a lake or river located at a lower point. |

## Annex K – Important Numbers

NSP Power Outage
**1-877-428-6004**

Bell Aliant Outage
**611 or 1-800-663-2600**

Eastlink Outage
**1-888-345-1111**

Drinking Water Safety
**1-877-252-8476**

Emergency Management Office (NS)
**1-866-424-5620**

Department of Environment
Truro Office **902-893-5880**

Forest Fires/Poaching/Wildlife Emergencies
**1-800-565-2224**

Public Works (Provincial)
**1-844-696-7737**

Environmental Emergencies (oil spills and gas leaks)
**1-800-565-1633**

Food Safety
**1-877-252-3663**

Maritime Northeast Pipeline Emergency
**1-888-444-6677**

Department of Natural Resources
Bible Hill Office **902-893-5620**

| **EMO (NS) Region 2 EMPO** | | |
|---|---|---|
| Region 2 (Cumberland, Colchester, East Hants, Pictou, Antigonish, Guysborough) | **Dominic Fewer** | 902-897-8152 dominic.fewer@novascotia.ca |

Town of Truro Office
**902-895-4484**
After Hours
**902-895-5351**

Town of Stewiacke Office
**902-639-2231**
After Hours
**902-897-7823**

Municipality of Colchester
**902-897-3150**
After Hours
**902-897-3160**

**911** - This is for emergencies only. If someone's health, safety, and/or property are threatened, and help is needed right away.

**811** - For health information and advice when you have a health concern or question.

**511** - For information about Provincial roads in Nova Scotia.

**211** - For community and social services.