Kings County
Regional Emergency Management Planning Committee (REMPC)

Thursday, March 21, 2019
7:00 p.m.
Municipality of the County of Kings
Orchards Room

Agenda

1. **Call to Order**

2. **Introductions**

3. **Approval of Agenda**

4. **Approval of Minutes:**
    a. Kings County REMPC Meeting, December 12, 2019

5. **New Business:**
    a. Kings REMO Regional Emergency Evacuation Plan – Update
    b. Kings REMO Flood Preparedness & Response Plan – Draft
    c. Heat Advisory & Response System (HARS)
    d. Vulnerable Persons Registry (VPR)
    e. Community Outreach
    f. Kings REMO Press Releases
        (1) 2019-04-01 Wildfire Season Awareness Mar 15 – Oct 15
        (2) 2019-05-01 Emergency Preparedness Week May 5 – May 11
        (3) 2019-06-01 Hurricane Season Awareness Jun 1 – Nov 30
    g. Kings REMO Training
        (1) Incident Command System (ICS) Training 2019
        (2) 2019-01-25 Winter Storm-Power Outage After Action Report
        (3) 2019-04-26 Flood-Evacuation – Scenario (Draft)
        (4) Training Forecast

6. Roundtable Discussion

7. Adjournment

Next Meeting: Thursday, June 20, 2019

Kings County
Regional Emergency Management Planning Committee Meeting (REMPC)
Minutes
Wednesday, December 12, 2018

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ATTENDING

- Dan Stovel, Chair – REMPC
- David Cunningham, Valley Communications
- Bob Caissie, Acadia University
- Debbie Mahoney, Dept Community Services
- Andrew Mitton, EMO NS
- Charlene Brown, Kentville – EMO Liaison
- Angela Cruickshank, Village of Canning
- Lewis Benedict, Port Williams Village
- Wayne Blenkhorn, Port Williams Village
- Cory Isenor, Dept of Lands and Forestry
- Alphonse Penny, Amateur Radio Club
- Jeff Skaling, Canning Fire Dept, Chief Officers Working Group
- James Redmond, Village of New Minas
- Tanya Morrison, Kings Transit Authority
- Andrew Buckle, Kings RCMP

ABSENT WITH REGRETS

- Gerald Toney, Annapolis Valley First Nations
- Robin Clark, AVRCE
- George Hardy, Brigadoon Village
- Scott Walsh, DTIR
- Greg Wolfe, EHS – Manager Wester Region
- Amanda Francis, Glooscap First Nations EMO
- Julia Cecchetto, Chief – Kentville Police
- Watson Armstrong, Kings County Firefighters Association
- Scott Quinn, County of Kings – EMO Liaison
- David Smith, NS Agriculture
- Christopher Dunkley, NS Health Authority
- Laura McNamara, Canadian Red Cross
- Chantal Pineo, Berwick – EMO Liaison
- Blair MacMurtery, Wolfville – EMO Liaison
- Ashley Perry, Valley SAR
- Shawn Carey, Village of Aylesford
- William Farrell, Village of Cornwallis Square
- Robert Sealby, Village of Greenwood
- Mike McCleave, Village of Kingston
- Lisa Amon, Recording Secretary

Agenda Item	**Discussion and Decisions**
1. Call to Order	Chair, Dan Stovel – REMC, called the meeting to order at 7:00pm
2. Introductions	A roundtable of introductions was conducted
3. Approval of Agenda	**MOTION: IT WAS REGULARLY MOVED AND SECONDED THAT THE DECEMBER 12, 2018 REMPC MEETING AGENDA BE APPROVED AS CIRCULATED** **CARRIED**
4. Approval of Minutes **a. September 19, 2018**	**MOTION: IT WAS REGULARLY MOVED AND SECONDED THAT THE MINUTES OF THE SEPTEMBER 19, 2018 REMPC MEETING BE APPROVED AS CIRCULATED** **CARRIED**
5. New Business	
a. Committee Membership Review	REMC put forward the contact list for the Regional EM Planning Committee as part of an annual review to ensure that the correct contacts are identified for the committee. **ACTION: REMC to send an updated REMPC contact list (dated December 12, 2018) to committee members.**

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Agenda Item | **Discussion and Decisions**

b. Kings REMO Regional EM Plan (REMP) - Update

REMC reported that as of December 11th, the Kings REMO Regional EM Plan (REMP) has been approved by all municipal units within Kings County.

ACTION:

- **The REMP will be electronically distributed to all organizations identified on the Distribution List (Section 10.0) of the REMP**
- **REMC to coordinate REMP familiarization training with CAOs for municipal staff**

c. Kings REMO Regional Evacuation Plan (REEP) - Draft

The Draft Kings REMO Regional Evacuation Plan (REEP) was presented to the Committee for discussion and review.

MOTION: IT WAS REGULARLY MOVED AND SECONDED THAT THE REMPC FORWARD THE KINGS REMO REGIONAL EVACUATION PLAN, DATED DECEMBER 2018, TO THE JANUARY 21st MEETING OF THE REGIONAL EMERGENCY MANAGEMENT ADVISORY COMMITTEE FOR APPROVAL BY MUNICIPAL COUNCILS AS PER THE FOLLOWING SCHEDULE:

2019-02-05	**WOLFVILLE COMMITTEE OF THE WHOLE**
2019-02-11	**KENTVILLE COUNCIL ADVISORY COMMITTEE**
2019-02-19	**MOK COMMITTEE OF THE WHOLE**
2019-02-19	**WOLFVILLE COUNCIL**
2019-02-25	**KENTVILLE COUNCIL**
2019-02-26	**BERWICK COMMITTEE OF THE WHOLE**
2019-03-05	**MOK COUNCIL**
2019-03-12	**BERWICK COUNCIL**

CARRIED

d. Hazard Specific Plans - Prioritization

Taking into consideration the Hazard Risk Vulnerability Assessment (HRVA) conducted by the REMPC in June 2018, the REMC the issue of ‘Hazard Specific Plans’ in support of the Kings REMO Regional Emergency Management Plan was discussed by the committee.

MOTION: IT WAS REGULARLY MOVED AND SECONDED THAT THE REMPC APPROVE AND FORWARD THE PRIORITIZATION OF HAZARD SPECIFIC PLANS FOR KINGS COUNTY, IN SUPPORT OF THE KINGS REMO REGIONAL EMERGENCY MANAGEMENT PLAN, TO THE JANUARY 21, 2019 MEETING OF THE REGIONAL EMERGENCY MANAGEMENT ADVISORY COMMITTEE FOR APPROVAL:

1. **FLOOD**
2. **HURRICANE**
3. **WINTER STORM/BLIZZARD**
4. **WILDLAND FIRES**

Agenda Item | **Discussion and Decisions**

5. **POWER OUTAGES**
6. **EXTREME HEAT**
7. **HAZARDOUS MATERIALS INCIDENT**
8. **MASS CASUALTY**
9. **INFRASTRUCTURE FAILURE**
10. **PANDEMIC**

CARRIED

e. Kings County Comfort Centres/Emergency Shelters - Update

REMC is moving forward with having the Kings REMO Comfort Centre-Emergency Shelter Memorandum of Understanding (MOU) signed by each facility designated as a Kings County Comfort Centre/Emergency Shelter.

ACTION:

- **Kings County Awareness and Education regarding location of all Comfort Centres/Emergency Shelters**

f. Community Outreach

REMC views Community Outreach as an integral part of Emergency Preparedness throughout Kings County. Since the September 19th meeting, the REMC has provided presentations on Emergency Preparedness to the following Communities/Organizations:

- 2018-09-22 North Alton
- 2018-10-01 Kingston & District Lions Club
- 2018-10-04 Valley SAR
- 2018-10-10 Aylesford & District Lions Club
- 2018-10-17 Millville Community Centre
- 2018-10-18 East Dalhousie Community Hall
- 2018-10-24 Canadian Federation of University Women (CFUW)
- 2018-11-01 Kingsport Community Centre
- 2018-11-05 Black Rock Community Centre
- 2018-11-22 Mud Creek Rotary
- 2018-11-26 Greenwood Hospital Auxiliary
- 2018-11-29 Grafton Community Association

ACTION: REMPC membership requested to spread the word about Emergency Preparedness

g. Kings REMO Training

(1) Incident Command System (ICS) Training

The following ICS Training was conducted by Kings REMO with the support of EMO NS:

- 2018-11-02/03 ICS-200 (Waterville Firehall)
- 2018-11-06/07/08 ICS-300 (Municipality of Kings)

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Agenda Item

Discussion and Decisions

There is an ICS-200 course being conducted in Schubenacadie January 10-11, 2019

(2) 2018-10-26 Wildland Fire-Evacuation Exercise After Action Report

The October 26th Wildland Fire-Evacuation Preparedness discussion-based exercise After Action Report (AAR) was presented to the REMPC for discussion.

MOTION: IT WAS REGULARLY MOVED AND SECONDED THAT THE REMPC APPROVE AND FORWARD THE OCTOBER 26th WILDLAND FIRE-EVACUATION PREPAREDNESS EXERCISE AFTER ACTION REPORT TO THE JANUARY 21st REGIONAL EMERGENCY MANAGEMENT ADVISORY COMMITTEE MEETING

CARRIED

(3) 2019-01-25 Winter Storm-Power Outages Exercise Scenario

REMC outlined that in keeping with the quarterly training program for the Kings REMO Emergency Coordination Centre staff, the next regularly scheduled exercise will be a Winter Blizzard-Power Outages scenario exercise on Friday, January 25, 2019

ACTION: REMC to provide a 'Situation Manual' to all participants by January 18, 2019

(4) Training Forecast

Forecast for future Kings REMO Training includes:

- Jan 2019 Winter Blizzard / Power Outage
- Apr 2019 Flood
- Fall 2019 ECC Operational Exercise
    - An action-based exercise where personnel rehearse reactions to an incident scenario, drawing on their understanding of plans and procedures, roles and responsibilities
- Spring 2020 Regional Disaster Exercise
    - Community involvement

11. Roundtable Discussion

Wayne Blenkhorn, Village of Port Williams

- Inquired about when and where was the last major flooding in Kings County – it was in Kentville with the Cornwallis River flooding the area of Meadowview in 2003

Alphonse Penny, Annapolis Valley Amateur Radio Club

- There will be an Amateur Radio course coming up in 2019, location yet to be determined. An Emergency Coordinator's course will be part of the training
- Winlink, also known as the Winlink 2000 Network, is a worldwide radio email service that uses Amateur-band radio pathways where

Agenda Item	**Discussion and Decisions**
	the Internet is not present and is capable of operating completely without the Internet--automatically--using smart-network radio relays. Winlink provides its users email with attachments, position reporting, weather and information bulletins, and is well-known for its role in emergency and disaster relief communications
	James Redmond, Village of New Minas/Chief NMVFD • Highway 101 Exit 11A will open on December 17th at 11:00am
12. Adjournment	**MOTION: IT WAS REGULARLY MOVED AND SECONDED THAT THE DECEMBER 12th MEETING OF THE REGIONAL EMERGENCY MANAGEMENT PLANNING COMMITTEE BE ADJOURNED AT 8:03 PM** **CARRIED**

Approved at the March 21, 2019 Regional Emergency Management Planning Committee Meeting

As recorded by Dan Stovel, Kings REMO REMC

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Kings County, NS
Flood Preparedness & Response Plan
(FPRP)

March 2019

Kings County, Regional Emergency Management Organization

REMO

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Table of Contents – Flood Preparedness and Response Plan (FPRP)

FOREWORD **1**

1.0 INTRODUCTION **2**

1.1 Background 2

1.2 Authorities 3

1.3 References 4

1.4 Purpose 4

1.5 Aim and Scope 4

2.0 CONCEPT OF OPERATIONS (CONOPS) **5**

2.1 Planning Assumptions 5

2.2 Plan Limitations 5

2.3 Plan Activation 5

2.3 Flood Information 6

2.3.1 Types of Floods 6

2.3.1.1 Fluvial Flooding 6

2.3.1.2 Pluvial Flooding 6

2.3.1.3 Spring Rainfall 6

2.3.1.4 Storm Surge/Coastal Flooding 7

2.3.1.5 Dam Break or Breach 7

2.3.1.6 Water Main Break 8

2.4 Potential Adverse Affects Caused by Flooding 8

2.5 Factors Affecting Emergency Response to a Flood Event 8

2.6 Flood Emergency Management Priorities 9

2.7 Flood Organizational Structure 10

2.8 Municipal Public Warning Strategy 11

2.9 Recovery 11

3.0 RESPONSIBILITIES **12**

3.1 Federal 12

3.2 Provincial 12

3.2.1 Nova Scotia Department of Agriculture (NSDA) 12

3.2.2 Department of Municipal Affairs (DMA) 12

DRAFT

3.2.3 Nova Scotia Emergency Management Office (NS EMO)(DMA) 13

3.2.4 Nova Scotia Department of Transportation and Infrastructure Renewal (NS TIR).... 13

3.2.5 Nova Scotia Department of Lands and Forestry (NS DLF) 13

3.2.6 Nova Scotia Environment (NSE) 13

3.3 Regional – Kings REMO 14

3.3.1 Prevention and Mitigation.. 14

3.3.2 Response / Recovery Responsibilities 14

3.3.3 Regional Emergency Management Coordinator (REMC) 15

3.3.4 Site Operations (Incident Commander) 15

3.3.5 Fire Services 16

3.3.6 Kings RCMP/Kentville Police 16

3.3.7 Infrastructure Services – Water / Wastewater 16

3.3.8 NS TIR & Engineering Departments 16

3.3.9 Infrastructure Services – Transit 16

3.3.10 Community Development – Social Services 17

3.3.11 Utilities (NS Power, Berwick Electric, Gas etc)... 17

4.0 PUBLIC EDUCATION & AWARENESS OF FLOODING PREPAREDNESS.. 18

4.1 Evacuation Warnings 18

5.0 PLAN TESTING, REVIEW & MAINTENANCE 20

5.1 Plan Testing Schedule & Responsibility 20

5.2 Plan Review & Maintenance 20

6.0 DISTRIBUTION LIST 21

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Annexes **22**

- Annex A – Declaring a State of Local Emergency (SOLE) A-1
- Annex B – Potential Evacuation Routes – Flood Risk Areas B-1
- Annex C – Flood Event – Kings REMO Actions C-1
- Annex D – Flood Event Checklist D-1
- Annex E – Criteria for Public Weather Alerts E-1
- Annex F – Lessons Learned – Flood Disasters F-1
- Annex G – Floods – Frequently Asked Questions (FAQ) G-1
- Annex H – Floods - References H-1
  - Federal H-1
  - Provincial H-1
  - Regional H-1
- Annex I – Sandbagging – General Information I-1
- Annex J – Abbreviations & Acronyms J-1
- Annex K – Glossary K-1

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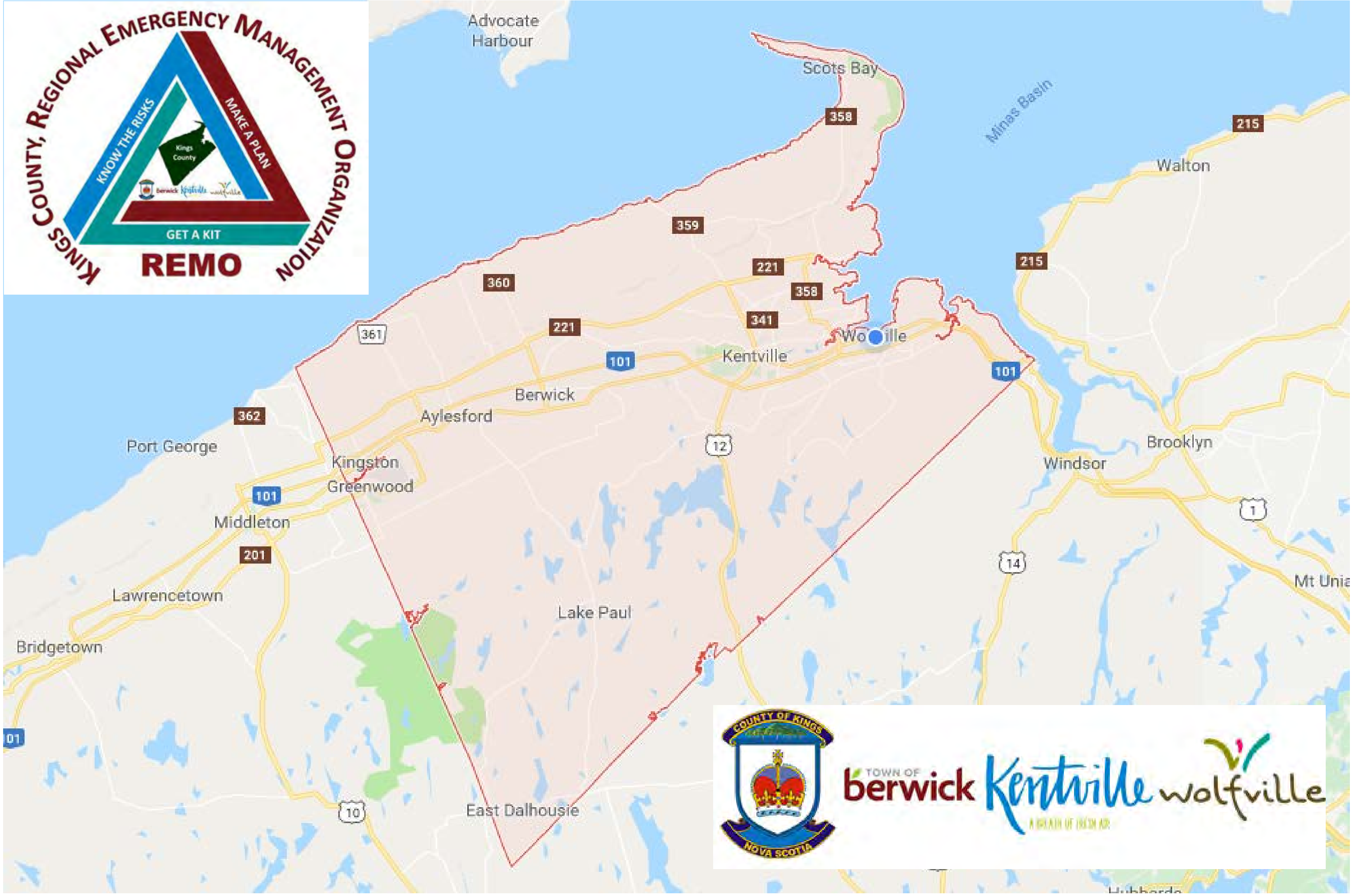
Kings County, Regional Emergency Management Organization
KNOW THE RISKS
MAKE A PLAN
GET A KIT
REMO
Kings County
Advocate Harbour
Scots Bay
Minas Basin
Walton
Wolfville
Kentville
Berwick
Aylesford
Port George
Kingston
Greenwood
Middleton
Lawrencetown
Bridgetown
Lake Paul
East Dalhousie
Windsor
Brooklyn
Mt Unia
358
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County of Kings
Nova Scotia
Town of berwick
Kentville
A breath of fresh air
wolfville

FOREWORD

The development of a Kings County Regional Flood Preparedness and Response Plan (FPRP) is paramount to public safety in the case of man-made disasters and natural disaster threats. The Kings County Regional Flood Preparedness and Response Plan was prepared in consultation with County and Municipal stakeholders responsible for everyday management throughout Kings County. It serves as Kings County's Emergency Flood Plan to coordinate an integrated approach to Flood response.

As a Supporting Plan to the Kings REMO Regional Emergency Management Plan, the Kings County Regional Flood Preparedness and Response Plan is augmented by the Emergency Coordination Centre (ECC) Operational Guidelines and Evacuation Guidelines in order to provide the level of detail required for a comprehensive emergency response to a flood event.

Kings REMO strives for strong leadership within the emergency management community and is dedicated to continuous improvements and enhancements to this plan, training and exercising throughout the Kings County region. Therefore, this plan is a living document that will be amended as necessary through a planning process that is managed by the Regional Emergency Management Coordinator (REMC) in consultation with emergency management partners throughout the County.

Mayor Municipality of the County of Kings	Mayor Town of Berwick
Mayor Town of Kentville	Mayor Town of Wolfville

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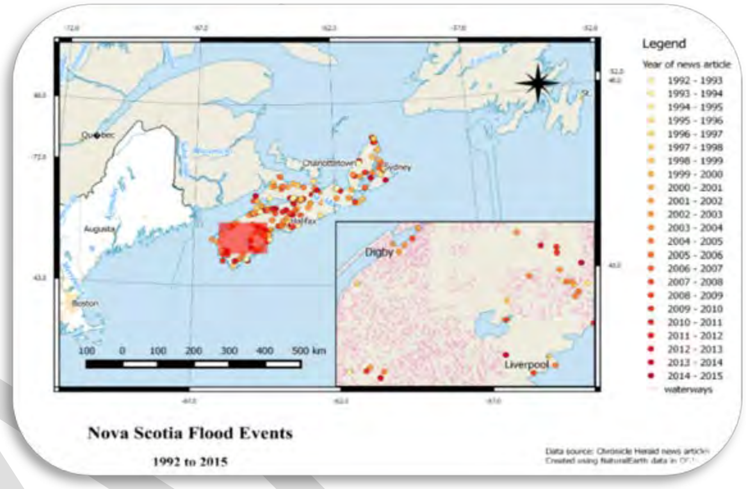
1.0 INTRODUCTION

1.1 Background

Floods are primarily caused by naturally occurring changes in the height of rivers, lakes and oceans. According to Public Safety Canada, floods are the most common natural hazard in the country and among the costliest. Historic floods have occurred across Canada, with many of the worst happening on major river systems that pass through populated areas. Scientists predict that flooding linked to the impacts of climate change will increase as the 21st century progresses, particularly in coastal areas of the country.

Nova Scotia's first flood on record hit Halifax in 1759, the result of a storm on the Bay of Fundy. Many of the province's subsequent floods have owed to a combination of snowmelt, heavy rain and ice jams. In January 1956, for example, a long period of thaw due to warm temperatures inundated waterways and created ice jams. Flooding occurred provincewide, destroying more than 100 bridges.


Legend
Year of news article
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waterways
Québec
Augusta
Boston
Charlottetown
Sydney
Halifax
Digby
Liverpool
100 0 100 200 300 400 500 km
Nova Scotia Flood Events
1992 to 2015
Data source: Chronicle Herald news articles
Created using NaturalEarth data in

Nova Scotia has also been hit by flooding related to hurricanes and tropical storms. Among the most severe were Hurricane Beth in August 1971 and the "Groundhog Day Storm" in February 1976. Flood damage primarily occurred in coastal areas of the province at a combined cost of more than $12 million.

This Regional Flood Preparedness and Response Plan is only one part of preparedness efforts that include training, exercises and the debriefing of actual events. As Kings County evolves, so will the Flood Plan, which will be regularly reviewed and adapted. Due to the nature of major emergencies, there may be a need to adapt the plan during a flood. Therefore, the following plan should not be seen as a final, rigid solution, but rather the foundation for continuous planning efforts

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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 rests within the Nova Scotia Emergency Management Act (1990) Section 14(f) – Protection of property and health or safety

Protection of property and health or safety – Section 14

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 from an area 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 the 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

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1.3 References

- Public Health Agency of Canada – Emergency Lodging Service, 2007
- Nova Scotia Emergency Management Act
- Kings REMO Regional Emergency Management Plan, 2018-09
- Kings REMO Regional Emergency Evacuation Plan, 2018-12
- Kings REMO Evacuation Operational Guidelines, 2018-05-01
- Kings REMO Emergency Coordination Centre Operational Guidelines, 2018-05-01

1.4 Purpose

Flood
Preparedness

Flood preparedness and response planning is a strategy to minimize loss of life, injury and trauma and to reduce property damage as a result of a flood. No one can anticipate every contingency during a flood event, but a flood preparedness and response plan will help develop appropriate responses for a wide range of occurrences. A flood preparedness and response plan will enable a quicker, more effective and more efficient response, and lead to a speedier recovery.

The Plan will be activated as soon as it becomes apparent that, due to an emergency of such magnitude as to warrant its implementation, evacuation and relocation of people is necessary.

1.5 Aim and Scope

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

This goal is supported by overarching objective of enhancing public and emergency responder education, emergency preparedness and emergency response policies and procedures. 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 Kings County.

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

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2.0 CONCEPT OF OPERATIONS (CONOPS)

2.1 Planning Assumptions

The plan assumes the following:

- NS Department of Agriculture will provide dyke condition statements as they become available.
- Kings REMO and the Emergency Coordination Centre Management Team (ECCMT) 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, Kings County could experience flash flooding or a major flooding event to some degree in the future.
- Kings County and partner agencies will follow the response activities set out in the Kings REMO Regional Emergency Management Plan (REMP), the Regional Emergency Evacuation Plan (REEP) and Municipal Operating Procedures.
- Residents of Kings County will take active measures to protect personal property.

2.2 Plan Limitations

- The Municipalities of Kings County do not currently have a formal policy for the protection of private property during flooding. While efforts will be made to assist residents in the protection of their property during a flood emergency, the protection of critical municipal infrastructure must be the first priority to ensure continuity of municipal services to the community.
- There may be factors that will adversely affect Kings 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 / severe summer storm the response and recovery may take place simultaneously 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 Kings REMO Emergency Coordination Centre Management Team (ECCMT), with or without the formal declaration of a state of local emergency.

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

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2.3 Flood Information

2.3.1 Types of Floods

The causes of flooding within Kings County could include one of the following, or a combination thereof:

2.3.1.1 Fluvial Flooding

Fluvial flooding is caused when high or intense precipitation, or snow and ice melt within the watershed flows into the river, causing it to overtop its banks. High or intense 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 flooding from snow and ice melt can be easy to predict, flash flooding from sudden downpours can be more of a challenge to forecast.

2.3.1.2 Pluvial Flooding

Heavy and intense rainfall that occurs away from a waterbody. This is common in flatter areas away from waterbodies as heavy rain ponds on saturated land, and in urban areas where there is insufficient drainage as land is used for parking lots and buildings. Urban flooding is made worse when water and sewer systems are overwhelmed, and water has nowhere to go and ends up in basements.

2.3.1.3 Spring Rainfall

In the spring, the predominant form of precipitation changes from solid (snow and ice) to liquid (rain). The impact of spring rainfall will vary depending on a number of factors including:

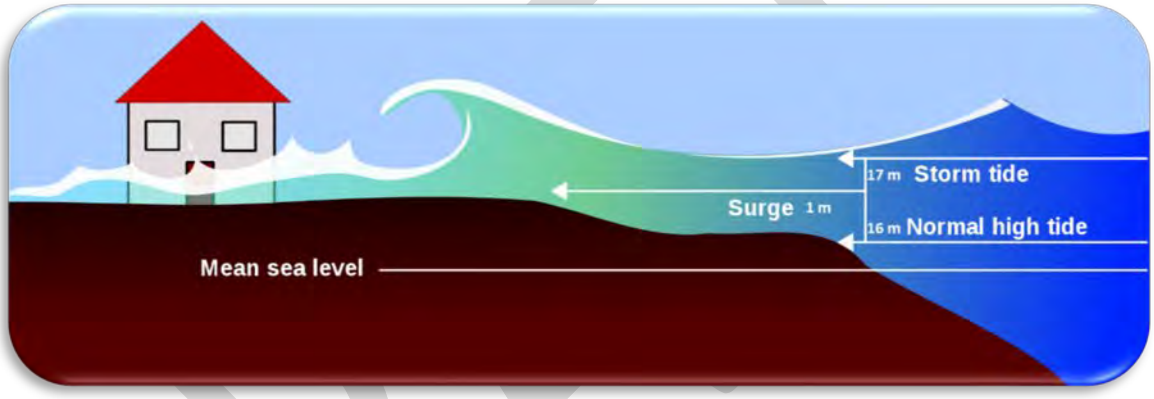
- How much rain falls
- How much melting occurred before a rain event
- The water content of the existing snow on the ground
- The ground conditions (frozen or unfrozen)

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.

2.3.1.4 Storm Surge/Coastal Flooding

The strong tides of the Bay of Fundy affect the Cornwallis River up to 5 km west of the town of Kentville, making the towns of Kentville and Wolfville, and the villages of Port Williams and New Minas vulnerable to coastal flooding and storm surge.

Tidal range in the Minas Basin of the Bay of Fundy, Nova Scotia is between 13 and 16 m, the highest in the world. Following a semi-diurnal pattern, there are two high tides and two low tides every 24 hours and 50 minutes in the Bay of Fundy. 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. The strong tidal currents of the Minas Basin cause erosion of the fine glacial till sediments of the coastline at a rapid rate, making the coastal communities in this region ever more vulnerable to storm and flood events.



2.3.1.5 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 broad 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.

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2.3.1.6 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 similar to floods caused by natural phenomenon.

2.4 Potential 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 of time. 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 of the above are factors, which will have an influence on how to prepare a response in a flood emergency.

Significant flooding affecting a wide area 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, gas);
- Communications disruption (telephone, internet, radio, television, newspaper production, delivery, 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).

2.5 Factors 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

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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.

2.6 Flood Emergency Management Priorities

In a flood situation, Kings REMO and its partner agencies will focus its 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 Kings County.
- Protection of the environment, watercourses and potable water supplies.
- Reducing the economic and social suffering and losses to the residents of Kings County 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.

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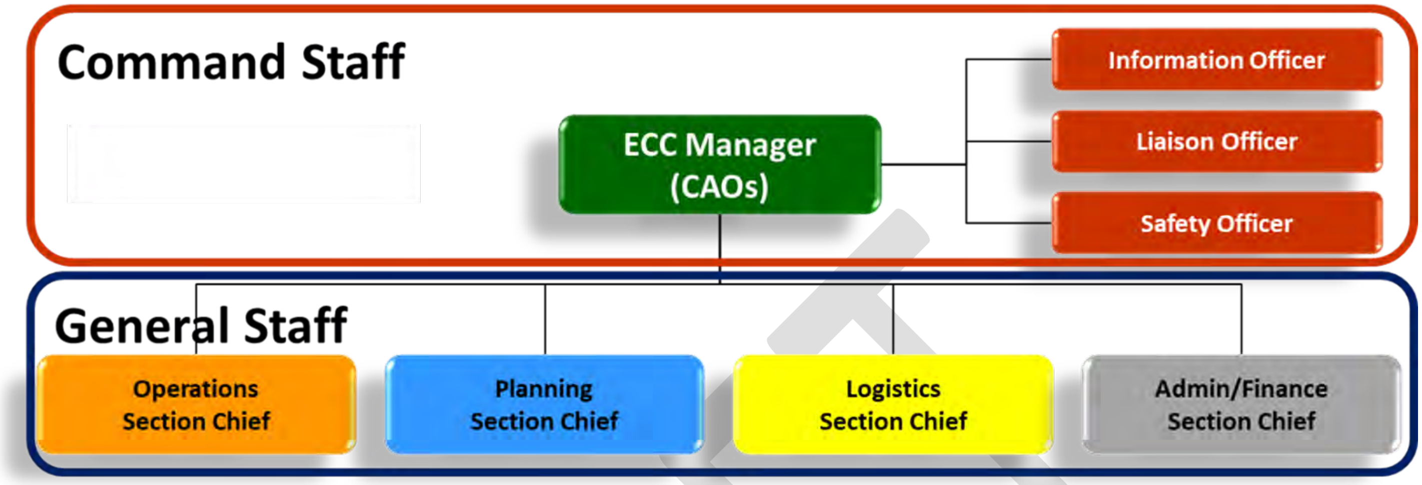
2.7 Flood Organizational Structure

To support a regional flood incident within Kings County the Kings REMO Emergency Coordination Centre is structured under the Incident Command System:


Command Staff
ECC Manager (CAOs)
Information Officer
Liaison Officer
Safety Officer
General Staff
Operations Section Chief
Planning Section Chief
Logistics Section Chief
Admin/Finance Section Chief

- Incident specialists to support tactical actions
- Take all incoming calls
- Create Action Request forms and distribute to other Sections
- Follow-up with originator
- Provide IC site objectives to ECC members
- Participate in ECC briefings

- Collect, analyze, and display situation information
- Forecast plans for next operational period
- Prepare and distribute ECC Action Plan (IAP Form 201) and facilitate Action Planning process
- Track resources
- Prepare the restoration plan
- Get technical specialists

- Provide telecomm and information technology
- Locate or acquire equipment, supplies, personnel, facilities, and transportation
- Arrange for food, lodging, and other support services as required for ECC and all sites
- Coordinate with Operations to establish priorities for resources

- Maintain all financial records throughout the incident
- Record on-duty time for all personnel
- Ensure a continuum of the payroll process for all employees responding to the incident
- Process worker compensation claims
- Process travel and expense claims

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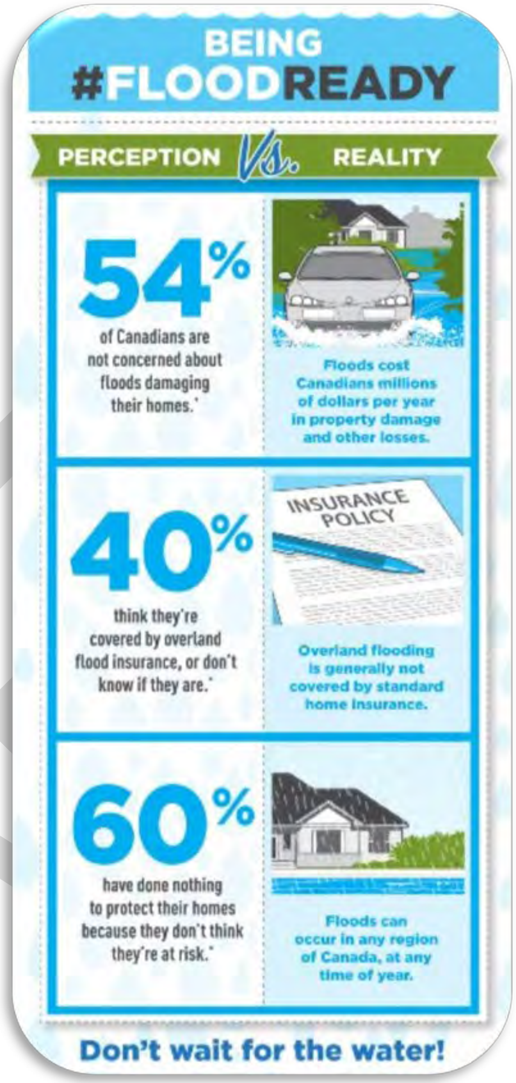
2.8 Municipal Public Warning Strategy

As there are limited audible warning systems within the Municipalities of Kings County, the public will be alerted to flooding conditions through local media (radio, television, newspaper) and social media (Facebook, Twitter). Warnings will also be posted on all Municipal websites and distributed through the Kings REMO Emergency Email Notification System. 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.

2.9 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, Kings County 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.


BEING
#FLOODREADY
PERCEPTION Vs. REALITY
54%
of Canadians are not concerned about floods damaging their homes.*
Floods cost Canadians millions of dollars per year in property damage and other losses.
40%
think they're covered by overland flood insurance, or don't know if they are.*
INSURANCE POLICY
Overland flooding is generally not covered by standard home insurance.
60%
have done nothing to protect their homes because they don't think they're at risk.*
Floods can occur in any region of Canada, at any time of year.
Don't wait for the water!

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

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3.0 RESPONSIBILITIES

3.1 Federal

The Government of Canada's Government Operations Centre (GOC) monitors the flood situation across the country. The 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 staff across departments receive regular weather reports, advisories and warnings from Environment Canada weather services. These services are provided by weather meteorologists located in at Nova Scotia EMO Headquarters in Dartmouth, NS.

3.2 Provincial

A number of Nova Scotia government departments and agencies are engaged in flood related activities, including:

3.2.1 Nova Scotia Department of Agriculture (NSDA)

- 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 (DMA)

- 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 Federal Gas Tax Program all municipalities have submitted a Municipal Climate Change Action Plan. 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 taking action on climate change adaptation.

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- The eligible project categories under the Federal Gas Tax Program 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 Nova Scotia Emergency Management Office (NS EMO)(DMA)

- NS EMO takes an "all-hazards" approach to emergency management that recognizes that mitigation, preparedness, response and recovery can be used to address the impact of disasters.
- NS 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 is 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 Nova Scotia Department of Transportation and Infrastructure Renewal (NS TIR)

- NS TIR 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.
- NS TIR designs, constructs and operates this infrastructure in accordance with nationally and internationally recognized standards.
- NS TIR consults with communities on infrastructure developments. Often this infrastructure is developed or renewed in partnership with the Federal or municipal governments.

3.2.5 Nova Scotia Department of Lands and Forestry (NS DLF)

- Nova Scotia Department of Lands and Forestry operates a long-term program to map the vulnerability of the province's coast to flooding and erosion.
- NS DLF 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 Nova Scotia Environment (NSE)

- NSE 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 a high-risk.
- NSE'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 Climate Change 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.
- NSE 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 Regional – Kings REMO

3.3.1 Prevention and Mitigation

Kings REMO is responsible for developing and implementing mitigation strategies to prevent or lessen the occurrences and/or severity of flooding.

These strategies include:

- ☐ Controlling development in and around flood zones using Zoning by-laws, Official Plans and Site Plan Development.
- ☐ Working to map the flood areas and the impact on critical infrastructure.
- ☐ Developing and circulating public education material concerning flood prevention and clean-up.

3.3.2 Response / Recovery Responsibilities

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

When flood conditions are present within Kings County, Kings REMO will:

- ☐ Activate the Kings REMO Flood Preparedness and Response Plan
- ☐ Activate the Kings REMO Regional Emergency Management Plan.
- ☐ Convene the Emergency Coordination Centre Management Team
- ☐ Appoint an Incident Commander.
- ☐ If necessary, recommend the declaration of a Municipal emergency.
- ☐ Direct and control all flood response operations in Kings 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 Kings County that are on private wells or have private surface water intakes.

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- ☐ 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. Municipal Mutual Assistance Agreements, Red Cross, local industry, 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 residents and business owners within identified water flood damage areas to include:

- ☐ The Flood Preparedness and Response 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 residents and businesses including pre-event, during an event, and post event (including information related to sandbags and building a sandbag dike); and
- ☐ Contact information for the REMC.

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

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3.3.5 Fire Services

☐ Conduct floodwater rescue, as required.
☐ Rescue / evacuate any persons in danger with minimum delay and provide first aid as necessary.
☐ Assist Police Services with evacuations in the affected areas as required.
☐ Control Fires, released chemicals and other hazards.

3.3.6 Kings RCMP/Kentville Police

☐ 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 considered to be 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 NS TIR & Engineering Departments

☐ Deploy sandbags for flood defence
☐ Free obstructions to storm and waste water drainage
☐ Repair breaches in flood defences
☐ Visually monitor creeks and streams
☐ Coordinate activities of utility companies

3.3.9 Infrastructure Services – Transit

☐ Provide transportation for residents and emergency responders as required.

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3.3.10 Community Development – Social Services

☐ Provide assistance to residents displaced by flooding as required.
☐ Coordinate Emergency Shelter operations.

3.3.11 Utilities (NS Power, Berwick Electric, Gas etc.)

☐ 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.

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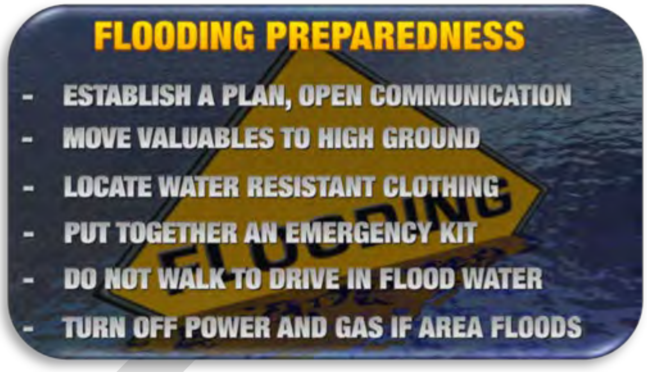
4.0 PUBLIC EDUCATION & AWARENESS OF FLOODING PREPAREDNESS



FLOODING PREPAREDNESS

- ESTABLISH A PLAN, OPEN COMMUNICATION
- MOVE VALUABLES TO HIGH GROUND
- LOCATE WATER RESISTANT CLOTHING
- PUT TOGETHER AN EMERGENCY KIT
- DO NOT WALK TO DRIVE IN FLOOD WATER
- TURN OFF POWER AND GAS IF AREA FLOODS

Since public awareness of flood preparedness and response will contribute to an effective evacuation process, ongoing public awareness and education shall be an integral component of this plan. To this end, this Plan, as part of the Regional Emergency Management Plan, shall be posted on the Municipality of the County of Kings, the Towns of Berwick, Kentville & Wolfville's websites in order that the public may have access to it and printed information shall be provided to residents in historically vulnerable areas. During an emergency evacuation, residents are to be able to access to the local media sources for information and instructions.

As part of Community Outreach, the Kings REMO Regional Emergency Management Coordinator will provide an overview of Emergency Evacuation procedures to members of the community on an ongoing basis.

4.1 Evacuation Warnings

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

☐ **Authority**—Warnings are more credible and more likely to stimulate appropriate public actions if they are issued by a recognised authority.

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

☐ **Accuracy**—Accuracy and currency of information contained in the warning also affect understanding and belief. Errors can cause people to doubt subsequent warnings.

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

☐ **Level of Certainty**—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.

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☐ **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 Dissemination**—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 recognise that some modes are appropriate in reaching many people but with only relatively simple or generalised information (e.g. radio, television) whereas others can provide more specific information to targeted individuals (e.g. telephone, facsimile machine, computer, two-way radio, door-knocking or use of community leaders or wardens). Use of the Standard Emergency Warning Signal (SEWS) "Alert Ready" will enhance the effectiveness of electronic media warnings by alerting listeners for an urgent safety message to follow.

☐ **Information Dissemination for Special Needs Groups**—Consideration must be given to the specific problems of special needs groups. Dissemination 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 close proximity.

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5.0 PLAN TESTING, REVIEW & MAINTENANCE

5.1 Plan Testing Schedule & Responsibility

The Kings County Regional Emergency Management Coordinator (REMC) is responsible for coordinating the annual testing (in whole or in part) of the Regional Flood Preparedness and Response Plan in order to verify its overall effectiveness and provide training to the emergency personnel. The exercise can take the form of a simple tabletop or a more elaborate functional exercise.

5.2 Plan Review & Maintenance

The Kings County FPRP will be maintained by the Regional Emergency Management Planning Committee (REMPC) and the Regional Emergency Management Coordinator (REMC).

The FPRP will be reviewed annually 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 REMP shall be revised subject to the approval of Municipal Councils.

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REVIEWS

MONTH	DAY	YEAR	BY

PLAN REVISIONS

MONTH	DAY	YEAR	CHANGE	APPROVED

6.0 DISTRIBUTION LIST

Distributed electronically:

Municipal Units:

- Municipality of the County of Kings
- Town of Berwick
- Town of Kentville
- Town of Wolfville

- Village of Aylesford
- Village of Canning
- Village of Cornwallis Square
- Village of Greenwood
- Village of Kingston
- Village of New Minas
- Village of Port Williams

Fire Departments

- Kings County Fire Departments

Regional Emergency Management Planning Committee (REMPC)

- NS EMO – Western Zone Planning Officer
- Acadia University
- Annapolis Valley Amateur Radio Club (AVARC)
- Annapolis Valley First Nation
- Annapolis Valley Regional Centre for Education (AVRCE)
- Brigadoon Village
- Community Services – Kings County
- NS Department of Lands and Forestry
- NS Department of Transportation and Infrastructure Renewal (DTIR)
- NS Emergency Health Services
- Fire Services
- Glooscap First Nations EMO
- Kentville Police / Kings County RCMP
- Kings Transit Authority (KTA)
- NS Department of Agriculture
- NS Health Authority
- Canadian Red Cross
- Valley Communications
- Valley Search and Rescue (SAR)

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Annexes

A Declaring a State of Local Emergency (SOLE)

- Form 4 (Council)
- Form 5 (Mayor)

B Potential Evacuation Routes – Flood Risk Areas

C Flood Event – Kings REMO Actions

D Flood Event Checklist

E Criteria for Public Weather Alerts

F Lessons Learned – Flood Disasters

G Floods – Frequently Asked Questions (FAQ)

H Floods – References (Federal / Provincial)

- Federal
- Provincial
- Regional

I Sandbagging – General Information

J Abbreviations & Acronyms

K Glossary

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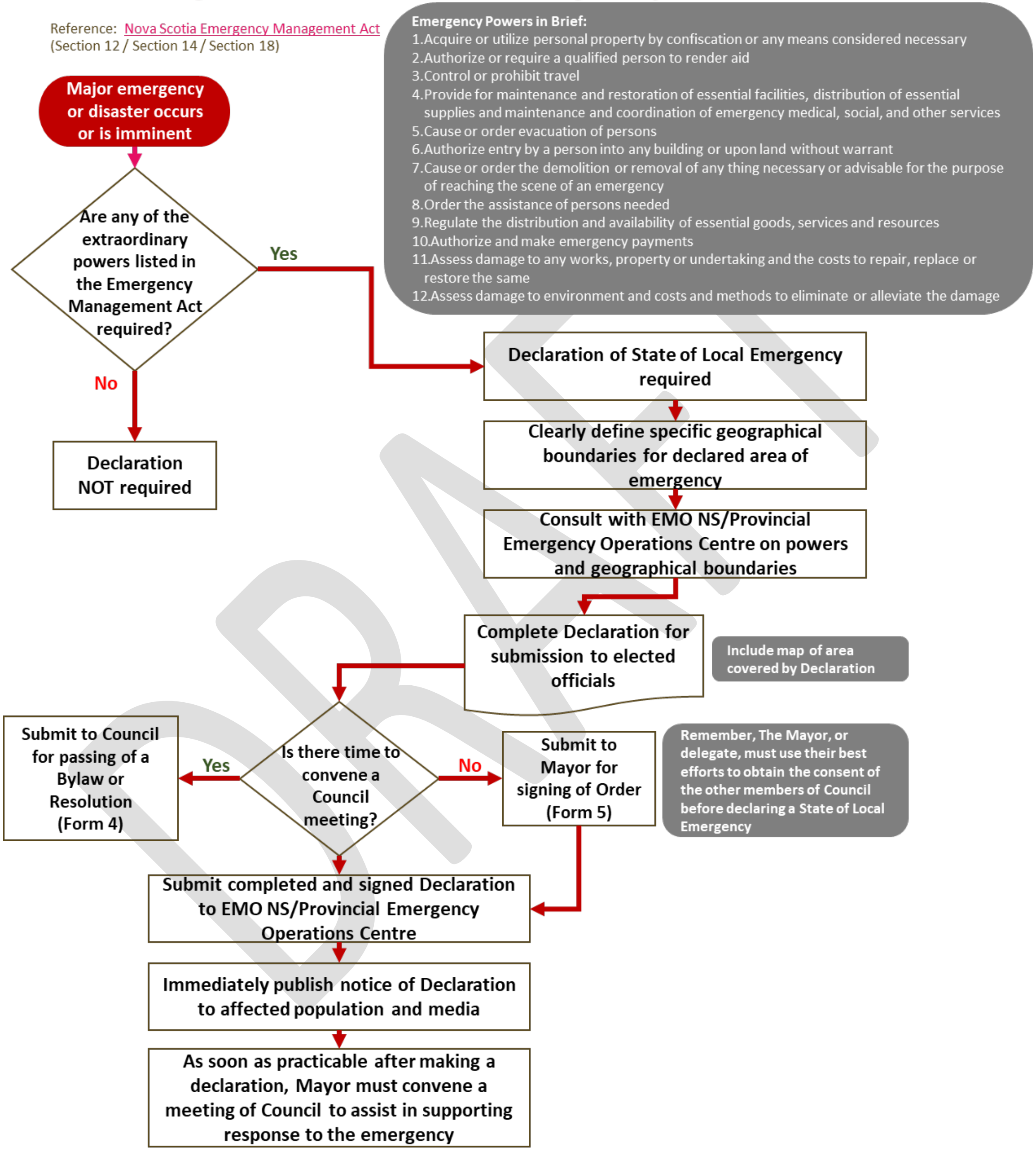
Annex A – Declaring a State of Local Emergency (SOLE)

Declaring a State of Local Emergency

Reference: Nova Scotia Emergency Management Act
(Section 12 / Section 14 / Section 18)


Major emergency or disaster occurs or is imminent
Are any of the extraordinary powers listed in the Emergency Management Act required?
Yes
No
Declaration NOT required
Declaration of State of Local Emergency required
Clearly define specific geographical boundaries for declared area of emergency
Consult with EMO NS/Provincial Emergency Operations Centre on powers and geographical boundaries
Complete Declaration for submission to elected officials
Include map of area covered by Declaration
Is there time to convene a Council meeting?
Yes
Submit to Council for passing of a Bylaw or Resolution (Form 4)
No
Submit to Mayor for signing of Order (Form 5)
Remember, The Mayor, or delegate, must use their best efforts to obtain the consent of the other members of Council before declaring a State of Local Emergency
Submit completed and signed Declaration to EMO NS/Provincial Emergency Operations Centre
Immediately publish notice of Declaration to affected population and media
As soon as practicable after making a declaration, Mayor must convene a meeting of Council to assist in supporting response to the emergency

Emergency Powers in Brief:

1. Acquire or utilize personal property by confiscation or any means considered necessary
2. Authorize or require a qualified person to render aid
3. Control or prohibit travel
4. Provide for maintenance and restoration of essential facilities, distribution of essential supplies and maintenance and coordination of emergency medical, social, and other services
5. Cause or order evacuation of persons
6. Authorize entry by a person into any building or upon land without warrant
7. Cause or order the demolition or removal of any thing necessary or advisable for the purpose of reaching the scene of an emergency
8. Order the assistance of persons needed
9. Regulate the distribution and availability of essential goods, services and resources
10. Authorize and make emergency payments
11. Assess damage to any works, property or undertaking and the costs to repair, replace or restore the same
12. Assess damage to environment and costs and methods to eliminate or alleviate the damage

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FORM 4

DECLARATION OF 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 the health, safety or welfare of persons therein;

Emergency Area:

The area general 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____.

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FORM 5

DECLARATION OF 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 the health, safety or welfare of persons therein;

Emergency Area:

The area general 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 the 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(3) 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's Signature ____________________________________

Municipality of ____________________________________

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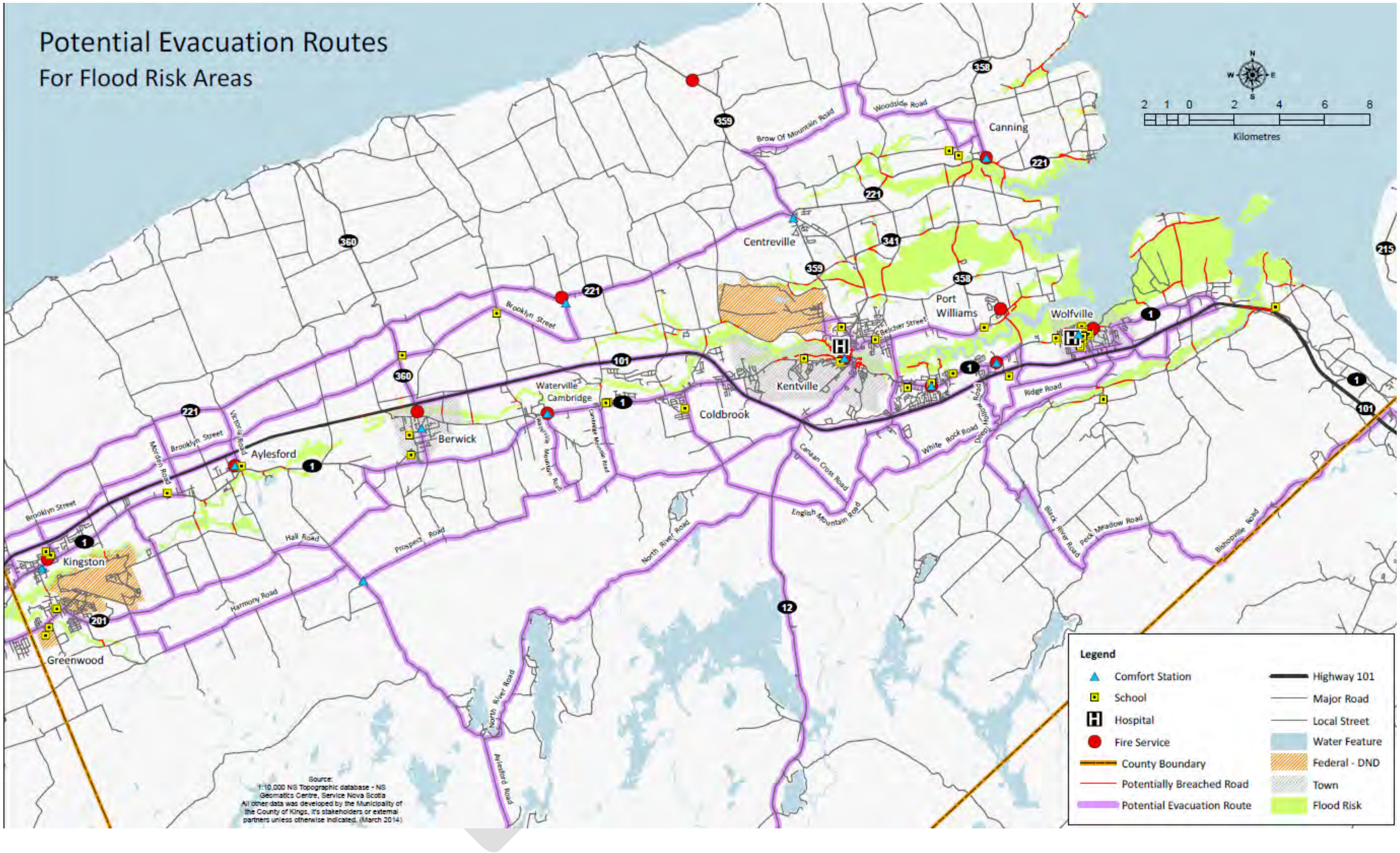
Annex B – Potential Evacuation Routes – Flood Risk Areas


Potential Evacuation Routes
For Flood Risk Areas
N
W
E
S
2 1 0 2 4 6 8
Kilometres
Canning
Centreville
Port Williams
Wolfville
Kentville
Coldbrook
Waterville
Cambridge
Berwick
Aylesford
Kingston
Greenwood
Woodside Road
Brow Of Mountain Road
Brooklyn Street
Belcher Street
Ridge Road
White Rock Road
Deep Hollow Road
Canaan Cross Road
English Mountain Road
Black River Road
Peck Meadow Road
Bishopville Road
North River Road
Aylesford Road
Prospect Road
Hall Road
Harmony Road
Morden Road
Victoria Road
Waterville Mountain Road
Cambridge Mountain Road
358
359
360
221
341
215
101
1
12
201
Legend
Comfort Station
School
Hospital
Fire Service
County Boundary
Potentially Breached Road
Potential Evacuation Route
Highway 101
Major Road
Local Street
Water Feature
Federal - DND
Town
Flood Risk

Source:
1:10,000 NS Topographic database - NS Geomatics Centre, Service Nova Scotia
All other data was developed by the Municipality of the County of Kings, it's stakeholders or external partners unless otherwise indicated. (March 2014)

Annex C – Flood Event – Kings REMO Actions

Reference: Kings REMO Regional Emergency Management Plan (REMP), 2018-09

Flood

A. Possible Major Effects	Probability
1. Casualties / Deaths	Low
2. Disruption of community	High and Localized
3. Disruption of utilities	Low to Moderate
4. Damage to property	High in localized areas
5. Disruption of traffic	High
6. Disruption of communications	Low to Moderate
7. Evacuation	Moderate to High
8. Contamination of normal water supplies	Moderate to High
9. Loss of economic activities	Low to Moderate

B. Potential Actions at the Scene	Agency Responsible
1. Warning of imminence	Provincial flood authority
a. Long term	Meteorological services/Canadian Tide & Current Tables (Environment Canada)
b. Short term	Police
2. Establish an emergency headquarters	Town Council Chambers – ECC
3. Establish adequate communications	Communication Coordinator
4. Establish a control perimeter	Police
5. Establish routes for emergency vehicles	Police
6. Notify hospitals of casualties including number and type	Medical/Police
7. Rescue	Fire/Police/Rescue services
8. Establish a temporary morgue	Medical Coordinator
9. Establish a news release system	Information Officer (Command Staff)
10. Establish emergency welfare services	Welfare/Social Services/Volunteer agencies
11. Establish an inquiry service	Welfare/Social Services
12. Eliminate hazards from damaged utilities	Engineering/Utilities
13. Protection of property and relocate resources where necessary	Police
14. Provide auxiliary power	Engineering
15. Clear debris	Engineering
16. Mobilize necessary manpower & equipment	EMO/Canada Manpower Centres
17. Establish jurisdiction	Government
18. Establish traffic control	Police
19. Establish dyking as required	Engineering
20. Check stocks of sand and sandbags	Engineering
21. Evacuation of personnel, livestock, etc.	Welfare/Social Services/Volunteer agencies/Agriculture
22. Storage of furnishings and equipment	EMO
23. Establish emergency health facilities	Health service

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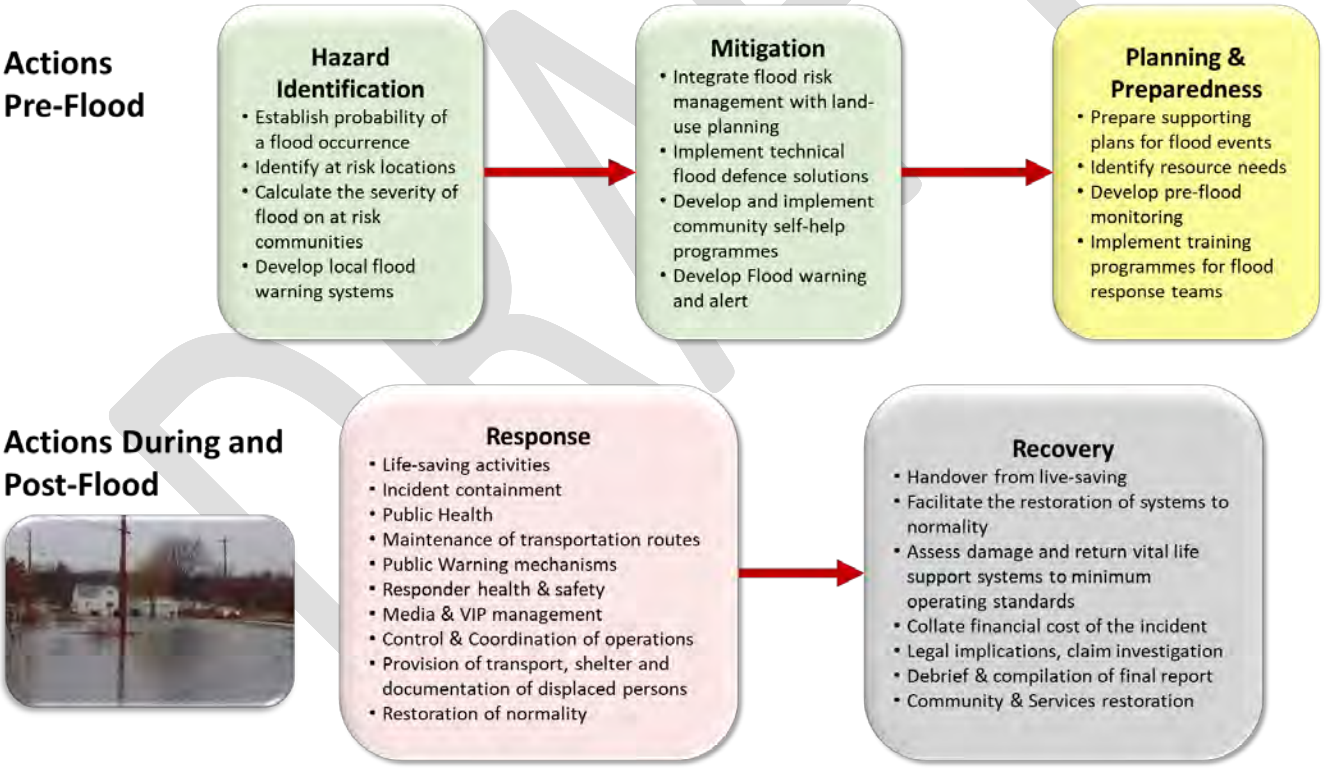
C. Equipment	Sources
1. Rescue equipment	Police/EMO
2. Pumps	Engineering/Fire Department
3. Medical and health supplies	Health Services
4. Transportation/Boats	EMO/Various sources/Transportation Coordinator
5. Communication equipment	Province/Police/EMO/Communication Coordinator
6. Auxiliary generators	Various sources
7. Mobile public-address equipment	Police/EMO/Radio Stations/Fire Department
8. Food and lodging	Welfare/Social Services
9. Dyking equipment	Engineering/Industry
10. Heavy equipment (bulldozers, etc.)	Engineering/Industry
11. Auxiliary lighting equipment	Engineering/Utilities/Fire Department
12. Storage facilities for equipment, furnishings, livestock	Province



Actions Pre-Flood

Hazard Identification
- Establish probability of a flood occurrence
- Identify at risk locations
- Calculate the severity of flood on at risk communities
- Develop local flood warning systems

Mitigation
- Integrate flood risk management with land-use planning
- Implement technical flood defence solutions
- Develop and implement community self-help programmes
- Develop Flood warning and alert

Planning & Preparedness
- Prepare supporting plans for flood events
- Identify resource needs
- Develop pre-flood monitoring
- Implement training programmes for flood response teams

Actions During and Post-Flood

Response
- Life-saving activities
- Incident containment
- Public Health
- Maintenance of transportation routes
- Public Warning mechanisms
- Responder health & safety
- Media & VIP management
- Control & Coordination of operations
- Provision of transport, shelter and documentation of displaced persons
- Restoration of normality

Recovery
- Handover from live-saving
- Facilitate the restoration of systems to normality
- Assess damage and return vital life support systems to minimum operating standards
- Collate financial cost of the incident
- Legal implications, claim investigation
- Debrief & compilation of final report
- Community & Services restoration

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Annex D – Flood Event Checklist

Pre-Incident Phase

- ☐ Arrange for personnel to participate in necessary training and develop exercises relevant to flood events in Kings County

- ☐ Coordinate the County's preparedness activities, seeking understanding of interactions with participating agencies in flooding scenarios

- ☐ Ensure that emergency contact lists are updated

- ☐ Contact supporting emergency response agencies to review and determine whether major developments have arisen that could adversely affect response operations (e.g., personnel shortages, loss of equipment, etc.)

- ☐ Annually review and update the Kings REMO Regional Emergency Management Plan and Supporting Plans

- ☐ Review flood-prone areas

- ☐ Familiarize staff with requirements for requesting a State of Local Emergency (SOLE)

- ☐ Ensure that supplies, such as communications devices and sandbags, are prepared and ready for use. This includes primary and alternate communications and warning systems

- ☐ Identify and review local contractor lists to see who may provide support specific to flood response

- ☐ Review, revise, and, where necessary, establish mutual aid agreements with local agencies and other County agencies and private contractors relevant to multiple agency response to floods

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Response Phase

☐ The Kings REMO ECC Manager will provide overall guidance for the deployment of resources across Kings County

☐ Activate mutual aid agreements

☐ Activate the Kings REMO Emergency Coordination Centre (ECC) and implement appropriate staffing plans. Contact appropriate supporting agencies to assign liaisons to the ECC for coordination of specific response activities

☐ Estimate emergency staffing levels and request personnel support, including specialized staff such as engineers, building inspectors, heavy equipment operators, and/or environmental remediation contractors

☐ Develop and initiate shift rotation plans, including briefing of replacements during shift changes (set the operational period briefing cycle)

☐ Submit request for State of Local Emergency (SOLE), as applicable

☐ Coordinate the evacuation of affected area, if necessary. Assign appropriate agency liaisons to the ECC, as the situation requires

☐ Support Search and Rescue operations by coordinating resource requests outside of the jurisdiction

☐ Request the Canadian Red Cross to activate Emergency Shelters and open shelters, if needed

☐ Formulate Emergency public information messages and media response using "one voice, one message" concept

☐ Record all ECC activities, completion of personnel tasks, incoming and outgoing messages, and the names of those sending and receiving them. These should be documented in ECC logbooks

☐ Begin damage assessments in coordination with Public Works Departments

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☐ Assist with coordinating Public Works activities, such as debris removal from:
  - Storm drains
  - Main arterial routes
  - Public right-of-way
  - Dams
  - Other structures, as needed

☐ Contact local contractors for support, if necessary. Establish contact with private sector partners

☐ Coordinate with law enforcement agency (Kentville Police and/or Kings RCMP) to provide law enforcement to affected areas (road closures, security, etc.)

☐ Collect and chronologically file records and bills generated during the incident in order to ensure timely submittal of documents for reimbursement (Finance/Administration Section)

Recovery Phase

☐ Monitor secondary hazards associated with floods (contamination, damage to bridges/roads, impacts to utility lines/facilities) and maintain on-call personnel to support potential response to these types of hazards

☐ Deactivate/demobilize the ECC. Deactivate mutual aid resources as soon as possible

☐ Activate and implement applicable mitigation plans, community recovery procedures, and continuity of operations/governments plans until normal daily operations can be completely restored

☐ Implement revisions to the Kings REMO Regional Emergency Management Plan (REMP) and Supporting Plans based on lessons learned and best practices adopted during response

☐ Offer recommendations to Municipal Government and Public Works departments for changes in planning, zoning, and building code ordinances

☐ Participate in After Action Reports and critiques

☐ Submit valuable success stories and/or lessons learned to NS EMO and other County partners

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Annex E – Criteria for Public Weather Alerts

Reference: Environment and Climate Change Canada

Rainfall Warning (Short Duration)	When 25mm or more of rain is expected within one hour
Rainfall Warning (Longs Duration) Summer	When 50mm or more of rain is expected within 24 hours Or When 75mm or more of rain is expected within 48 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.

RAINFALL WARNING

STORM
SURGE
WARNING

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Annex F – Lessons Learned – Flood Disasters

Flood Preparations

- Municipal staff need to be well-trained on flood preparedness plans

Personnel

- In a wide-spread regional disaster, competition for resources and contractors will become an issue
- Important to establish relationships with other municipalities to supplement existing capacity, and to know of alternate sources for potential resource requirements
- Staff fatigue, stress, and management of shift lengths can present significant challenges for the initial response
- Roles and responsibilities for positions and personnel need to be clearly defined
- Partnering staff with other departments during an emergency can provide an invaluable response experience, ultimately increasing knowledge and capacity
- There needs to be a clearly defined accountability system for municipal staff to check in and report that they were safe

Notification and Warning

- Damage to communications infrastructure can make it difficult to provide updates to citizens, including notifications to media outlets and information postings to municipal channels: website, Social media
- Door knocking and bullhorn announcements are important tools for communication when electronic options are not available

Rescues

- The requirement may arise to re-direct Operations services staff and contractors with large equipment from protecting infrastructure to conducting rescues
- Amphibious quads, zodiacs, front-end loaders, rock trucks and combines can be essential to rescue operations
- Traffic control is vital to rescue and evacuation operations

Evacuation

- Care facilities need to have an appropriate tracking system for their residents' final destination
- Better communication with residents who do not evacuate is required so they understand the strain that they are putting on fragile municipal infrastructure and that the increased resource requirements to do adequate security patrols takes away from other important response objectives
- A centralized people tracking system can facilitate more timely information about the location of evacuees
- Clear guidelines for all responding agencies assisting with the search and rescue / evacuation operations are required to provide the most efficient coordination of the evacuation and rescue operation
- Residents and contractors may need to be directed away from Fire Halls in order to not impede emergency rescue operations

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Animal Rescue

- Once the threat to human safety has been resolved, bylaw/animal services are able to implement a formal animal rescue operation

Reception Centres for Evacuees

- Given the length of time evacuees may be in Reception Centres, personnel need to create a sense of community to build support networks for evacuees
- Daily visits by municipal Mayors provide much-needed information updates to the evacuees
- Information about evacuees needs to be shared among the Reception Centres, other agencies and any call centre/inquiry lines
- Providing updates to the ECC about emerging issues needs to occur in a timely fashion
- A lack of communication infrastructure can impact both the personnel trying to operate the Reception Centre and the evacuees
- Reception Centres need to have appropriate security
- Information about any special requirements of evacuees needs to be available to the Reception Centres in advance in order to coordinate the appropriate accommodation
- Appropriate support services need to be readily available to evacuees as the transition plan around closing of the Reception Centres is developed including their employment transportation requirements

Infrastructure Protection

- Sewage lift stations need to be more resilient to withstand higher rates of river flow
- Communication infrastructure is more vital than ever in this electronic age. Backup systems are required to support web services, phone and cellular service in order to access technical data and files for the communications between the ECC and, emergency workers in the field, critical facility operations staff, reception centres, residents and the media

Crisis Communications

- A major impediment to public communication during a flood event was the lack of delivery channels either because critical communication infrastructure was lost, or residents did not have access to electronic communications or were not in the immediate area to use local radio stations or local newspapers
- Establishing and maintaining credibility of the source and accuracy of information is critical to managing rumours
- Using opportunities to provide printed information to residents such as during evacuee registration can significantly help to supplement other forms of communication
- In the absence of direct channels of communication to residents, mass media has to be relied upon

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Annex G – Floods – Frequently Asked Questions (FAQ)

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 500-year flood, there is a 0.2% chance of having a flood of that magnitude occurring.

It should be stressed that the 100-year and 500-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.

If your building is in the 100-year floodplain and has a 30-year Mortgage… it has a 26% chance of experiencing a 100-year flood during the life of the loan (vs. 4% chance of a fire).

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 sandbags, 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.

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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 come in contact with floodwaters, throw it out.

Seek necessary medical care at the nearest hospital. Food, clothing, shelter and first aid are available at Red Cross shelters – know the location of Emergency Shelters throughout Kings County.

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 and dried before being returned to service.

Is flood damage covered by your homeowners insurance?
Flood damage is excluded in nearly all homeowners and renters insurance policies but, if desired, can be purchased as a separate policy – check with your insurer as to whether or not flooding is covered under your current policy.

What about flood safety?
More than half of all flood 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!

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Annex H – Floods - References

Floods
What to do?
72
Canada

Federal

- Floods – What to Do?
- Disaster Financial Assistance Arrangements (DFAA)
- Natural Resources Canada - Floods
- FloodSmart Canada

Provincial

- Flood Management in Nova Scotia: A Provincial Government Overview
- Nova Scotia Flood Mitigation Framework – our approach to flood management
- Building Flood Resilience in Nova Scotia

  (Presentation to Atlantic Flood Workshop, June 14, 2018)
- Maritime Coastal Flood Risk Map – Nova Scotia
- Nova Scotia Flood Event Database (1992-2015)
- Nova Scotia Storm Surge Events - Mapping
- Real-Time Coastal Flood Risk Mapping Application
- NS Department of Health & Wellness – Environmental Health (Floods)

Regional

- Maps of Coastal Flood Risk from Sea-Level Rise and Storm Surge
  - Avonport Station Area
  - Grand Pré Area
  - Wolfville Area
  - Canard Area
  - Canning Area
  - Kingsport Area
  - Kentville (East) Area
  - Kentville (West) Area
  - Centreville Area

Wolfville-Windsor

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Annex I – Sandbagging – General Information

- ☐ Construct the sandbag dike on high ground, as close as possible to your home or building. By being closer to your home or building, fewer bags will be needed, and the sandbag dike will be less exposed to the stream.
- ☐ Sandbagging should also focus along existing flood works or any low spots along dikes for maximum protection.
- ☐ Dig a trench one bag in depth and two bags wide as a foundation for the dike structure.
- ☐ To be effective, a dike must be three times as wide at its base as it is high.
- ☐ Sandbags should be turned right side out and filled half full. They need not be tied shut, just laid overlapping each other.
- ☐ The open ends of the sandbags should be facing upstream and/or uphill so that the moving water will not remove the sand from the bags as readily.
- ☐ Alternate direction of sandbags with bottom layer, i.e. bottom layer lengthwise with dike, next layer crosswise.
- ☐ As individual bags are put in place, walk on bags to tamp them into place to ensure maximum strength. Take care to avoid puncturing the bags.
- ☐ The butt ends of the bags should be placed facing the stream, for rows that are perpendicular to the stream.
- ☐ Each successive layer should be set back one-half sandbag width on both sides in each additional layer, so a completed dike has a triangular cross-section.
- ☐ The number of sandbags needed to protect a home or building varies depending on the local topography and the anticipated depth of water.

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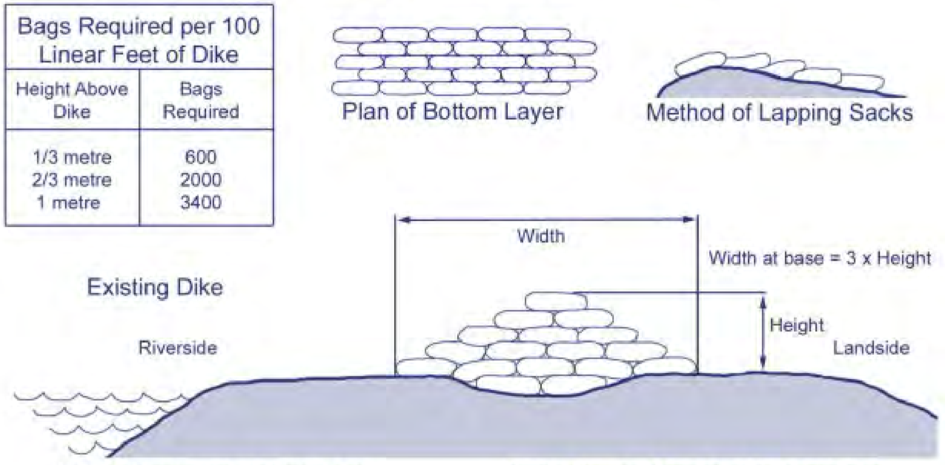
RECOMMENDED METHOD FOR SANDBAG DIKING



Bags Required per 100 Linear Feet of Dike

Height Above Dike	Bags Required
1/3 metre	600
2/3 metre	2000
1 metre	3400

Strip sod before placing bottom layer

Bonding trench, 1 sack deep by 2 sacks wide

1. Alternate direction of sacks with bottom layer, i.e. bottom layer length wise with dike, next layer crosswise.
2. Lap unfilled portion under next sack.
3. Tying or sewing of sacks is not necessary
4. Sacks should be approximately one half full of clay, silt or sand.
5. Tamp thoroughly in place.

Annex J – Abbreviations & Acronyms

AREP	Agency Representative
DFAA	Disaster Financial Assistance Arrangements
ECC	Emergency Coordination Centre
ECCC	Environment and Climate Change Canada
ECCMT	Emergency Coordination Centre Management Team
EMO	Emergency Management Office
FPRP	Flood Prevention and Response Plan
IAP	Incident Action Plan
IC	Incident Commander
ICP	Incident Command Post
ICS	Incident Command System
IMT	Incident Management Team
IO	Information Officer
LO	Liaison Officer
LSC	Logistics Section Chief
MAC	Multiagency Coordination (MAC) Group
OSC	Operations Section Chief
PSC	Planning Section Chief
REMAC	Regional Emergency Management Advisory Committee
REMC	Regional Emergency Management Coordinator
REMP	Regional Emergency Management Plan
REMPC	Regional Emergency Management Planning Committee
SO	Safety Officer
UC	Unified Command

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Annex K – Glossary

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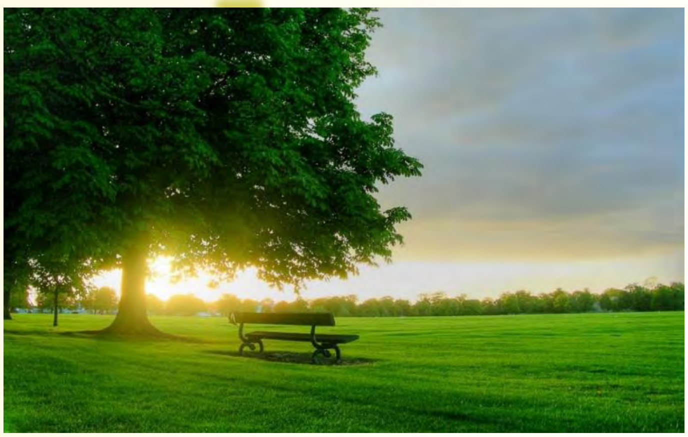
100-Year Flood	A flood event that statistically has a 1 out of 100 (or one percent) probability of being equalled or exceeded on a specific watercourse or water body in any given year.
Flood/Flooding	A temporary condition caused by the accumulation of runoff from any source, which exceeds the capacity of a natural or man-made drainage system and results in inundation of normally dry land areas.
Floodplain	The area, usually low lands adjoining a watercourse, which has been, or may be, 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.
Stormwater	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

KINGS COUNTY, REGIONAL EMERGENCY MANAGEMENT ORGANIZATION
KNOW THE RISKS
MAKE A PLAN
GET A KIT
Kings County
berwick
Kentville
wolfville
REMO

Community Heat Alert and Response System Demonstration Project



Community Stakeholder Workshop

February 15, 2019

Kings County, Nova Scotia

2019

Department of Health and Wellness
Health Services Emergency Management
1894 Barrington Street, Halifax, NS
B3J 2A8

Table of Contents

Foreword 4

Acknowledgement 4

Background 4

Objectives 4

HARS Community Workshop Project 4

- Workshop Summary 4
- Introduction 5

Presentation 5

- Montreal Heat Event 6
- Nova Scotia Climatology 6
- HARS Jurisdictional Review 7

Workshop Discussions 8

- Discussion 1: Heat and Extreme Heat Events 8
- Discussion 2: Extreme Heat Events and Your Organization 10
- Discussion 3: Response in Kings County 11

Workshop Conclusion 12

- Closing Exercise 12

Way Forward 13

Contacts 13

Annex 1: Workshop Agenda 14

Annex 2: List of Participants 15

Annex 3: Presentation 16

Annex 4: Discussion Prompts 23

Annex 5: Discussion Exercise 24

Foreword

This workshop report is based on the Nova Scotia Order in Council 2018-265 and associated Memorandums of Agreement between Health Canada and the Department of Health and Wellness for the Community Heat Alert and Response System Demonstration Project.

Acknowledgement

This workshop was developed in partnership between Nova Scotia Department of Health and Wellness and the Nova Scotia Health Authority. We would like to thank Health Canada and Environment Canada for their support of this Heat Alert and Response (HARS) project.

Background

Nationally, the number of extreme hot days are projected to increase; Nova Scotia is not immune. The Province of Nova Scotia entered into a formal Memorandum of Agreement (MOA) with Health Canada to develop a HARS. The HARS project will include the development of a Provincial Extreme Heat Action Plan and a Community Heat and Response System Demonstration Project. Health Canada and Nova Scotia Health Authority are providing the financial resources to hire a coordinator to advance these projects.

In addition to the preparedness work related to heat emergencies, the HARS initiative provides an opportunity and a venue to discuss public health emergency planning. The intention of the HARS project is not only a means of meeting the requirements of the MOA but to establish a framework for advancing other public health emergency planning initiatives.

Objectives

The Department of Health and Wellness acknowledges the need for a strategy for Nova Scotia to be prepared for and respond to extreme heat events. Effective steps are being taken to ensure that the key stakeholders have the knowledge, means of involvement and opportunity to engage and support the initiative and its implementation.

The workshop had the following specific objectives:

1. To gain an understanding of the impacts of extreme heat events in general and within the Nova Scotia context; and
2. Discuss the process of developing an extreme heat response plan for Kings County.

HARS Community Workshop Project

Workshop Summary

This report provides a summary of the workshop hosted by Kings Region Emergency Management Organization (REMO) with conjunction with Nova Scotia Department of Health and Wellness (DHW) and the Nova Scotia Health Authority (NSHA) on February 15, 2019 (it should be noted that the meeting had to be rescheduled due to inclement weather and not all invited participants were able to attend).

The workshop was held in Kentville, Nova Scotia and was attended by approximately ten participants including the Regional Health Authority, Royal Canadian Mounted Police (RCMP), Red Cross, Emergency Management Office (EMO), and Kings County Fire Department (Annex 2). The stakeholders had the opportunity to network and enhance their knowledge of local climate change.

Stakeholder engagement and consultation is a priority of this project and is integral to the development of a municipal plan. Stakeholder engagement supports information sharing, awareness building and an opportunity for constructive feedback. Active stakeholder involvement will provide a foundation for the successful implementation of the HARS plan.

A presentation and discussion period led to an exchange of ideas and lessons learned regarding communication, engagement, and knowledge-sharing.

Introduction

Dan Stovel, Regional Emergency Management Coordinator (REMC), REMO opened the meeting by highlighting REMO’s role:

- Make continuous improvements and enhancements to the Kings Regional Emergency Management Plan (REMP)
- Assign specific duties and responsibilities and direct the actions of key officials in the event of an emergency
- Amend as necessary the REMP in consultation with emergency management partners throughout the County – heat event awareness is being implemented in the plan
- Respond and reduce the impacts of an emergency by establishing a plan of action

Jim MacDougall, Manager, Planning, Exercises and Training, Health Services Emergency Management, Nova Scotia Department of Health and Wellness, outlined the following:

- Nova Scotia will be working with the municipality of Kings County to develop a community HARS demonstration project
- The HARS planning process is similar to other emergency preparedness events, such as power outages, or cold temperatures
- REMO has a draft of a HARS program, but it is important to identify structural and non-structural mitigation strategies for each organization
- This workshop will increase awareness of heat events, identify the stakeholder groups and begin the discussion about their potential roles and responsibilities during an extreme heat event

Presentation

The following is a summary of Vanessa Nickelo, Health Protection Officer and HARS Coordinator presentation at the workshop. A copy of the presentation is found in Annex 3. The presentation portion was divided in three sections based on the subject matter of each.

Montreal Heat Event

The stakeholders were able to recognize lessons learned and best practices that can be applied across other regions. Vanessa presented the main messages that were learned from the Montreal Heat Event:

- Extreme heat is the leading cause of illness and death from weather-related hazards in Canada
- Canada's temperature is rising more quickly than the global average
- Over the next 30 years, the number of extreme heat days in a year is expected to more than double in some parts of Canada
- Vulnerable populations were identified
- The Montreal heat event, which took place July 1-July 8, 2018, set record temperatures resulting in multiple deaths over the Canada Day weekend
- Montreal has an advanced heat response alert system that that was discussed in detail
- There are many lessons learned from those jurisdictions who have HARS plans in place
- There is great value in existing networks and partnerships
- It is critical to identify the vulnerable population in the community and strategies that will work in the community
- A culture of prevention is the trigger for action

Vanessa concluded by identifying various components of a HARS plan. There is no one size fits all and it is important to be flexible, use best judgement, make the best use of what exists and know when it is best to use different methods. Preventative and response plans need to be designed to fit the community served.

Nova Scotia Climatology

The second section of the presentation brought climate change science to the local level to assist the stakeholders in understanding the impacts and issues facing the province. Vanessa presented the main messages with regards to climatology:

- Temperatures are influenced by the ocean and are cooler along the Atlantic coastline
- Some areas across the province do not feel the coastal influence as much, but inland, there are significant increases in the number of extreme heat days, especially in the Annapolis Valley and along the mainland portion of the province into the North Shore
- Weather projections can show expansion of heat event into areas that currently do not experience many heat events
- Prior to the summer of 2018, Environment and Climate Change Canada (ECCC) heat warnings for Nova Scotia were triggered by Humidex = 40
- Over the past two years ECCC has worked with Health Canada, who have conducted a Heat-Health Analysis for the region to develop new, regionally relevant, 2-day Heat Warning criteria for NS which is as follows:

Day 1 High ≥29°C, Overnight Low ≥16°C,	Day 2 High ≥29°C
or	
Two consecutive days with Humidex ≥36	

The second portion of the presentation concluded with the notice that Environment Canada provides different services through their heat warning program. “EC Alert Me” is a program where users can sign up for to receive notification messages if there is the potential for a heat event in a defined region. As the event progresses, public notifications are given out.

HARS Jurisdictional Review

The goal of the last portion of the presentation was to give the stakeholders a high-level jurisdictional review of HARS planning:

- HARS is designed to protect people, particularly those most vulnerable to extreme heat and its health impacts
- It is primarily a community driven process that draws upon local resources to minimize heat-related morbidity and mortality
- Provinces are preparing for changes in the climate and developing strategies to protect peoples’ health during extreme heat events
- Local and regional efforts to prepare for extreme heat are supported by provincial and federal governments, and by several other stakeholders acting now to increase the resilience and safety of communities
- The majority of Canada has partially implemented HARS programs, including Nova Scotia. Partially implemented may mean only certain regions have HARS, or that the province or territory has laid out criteria as to what makes a heat warning – but are still in the process of developing a prevention and response plan
- Evaluations of existing HARS, though few, demonstrate that HARS systems help protect people from illness and death associated with extreme heat events
- Analyses of past extreme heat events that resulted in mortality suggest that the lack of intervention plans and limited coordination between organizations were likely major contributing factors to negative health outcomes[1].
- By examining HARS at a national level, we can see that the provinces and territories have different criteria for triggering alerts to an extreme heat event.
- There are factors that influence how different areas experience heat such as geographical variables, including latitude, elevation, and proximity to bodies of water
- Most jurisdictions define extreme heat events based on the potential for hot weather conditions to result in an unacceptable level of health effects, including increased mortality
- Environment Canada heat warnings are only issued when very high temperatures or humidity conditions are expected to pose an elevated risk of heat-related illnesses, such as heat stroke or heat exhaustion
- The involvement of stakeholders who have knowledge of the specific needs and vulnerabilities of its populations is required to develop a HARS plan

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[1] Health Canada (2012). *Heat Alert and Response Systems to Protect Health: Best Practices Guidebook.* Health Canada, Ottawa, ON. Prepared by Water, Air and Climate Change Bureau Health Environments and Consumer Safety Branch

- A timely response requires that measures to protect health can be activated when alerting conditions are forecasted and the trigger is reached – before extreme heat arrives

Workshop Discussions

The second part of the workshop was to facilitate discussion amongst stakeholders. A discussion period facilitated by Vanessa Nickelo and Jim MacDougall encouraged participants to share their knowledge and experience on the following topics:

Discussion 1 – Heat and Extreme Heat Events

- Are we currently experiencing challenges related to heat events?
- What are the impacts of each type of event?
- What are the indicators for each type of event?
- Who is most impacted by these events?
- What resource demands can we anticipate?

Discussion 2 – Extreme Heat Events & Your Organization

- What are *your* concerns when it comes to extreme heat events?
- What groups, departments and/or agencies are impacted by extreme heat?
    - The departments themselves
    - The clients of the departments
- Where are there opportunities for further collaboration?
- What are some ways that we can work toward addressing them?

Discussion 3 – Response in Kings County and Next Steps

- How do we currently communicate to the community?
- What mitigating strategies can be used to reduce harm for employees, clients and the public?
- How we respond in Kings County
- Communicating with the community
- Non-structural (i.e., water distribution)
- Structural (i.e., cooling centres)

The goal of the discussions was to give participants the opportunity to discuss heat event impacts, barriers, needs, actions and solutions with fellow stakeholders from other organizations in the municipality. The following sections summarize the discussions.

Discussion 1: Heat and Extreme Heat Events

The first discussion was facilitated by Vanessa using a sticky note wall method. Participants were prompted with a question (Annex 4) and then encouraged to write ideas to answer a question on individual sticky notes. These notes would be collected one at a time allowing facilitator and participant(s) to discuss each idea in a structured manner. The sticky wall method allows for everyone's opinion to be heard (Annex 5).

Question 1 – What are the impacts of each type of event?

Based on a potential heat event scenario, participants were asked what they believe will be the key impacts, risks or vulnerabilities in their organization. The following is a list of impacts identified by participants:

- Staff burnout
- Financial strain
- Blue-green algae
- Health illnesses
- Confidence levels of staff

Question 2 – What are the indicators for each type of event?

Workshop participants identified several indicators for heat events. The group commenced by listing a number of indicators of heat events:

- Water shortages
- Drought
- Power outages
- Dry wells
- Damage to infrastructure
- Complaints to elected officials
- Increased complaints from clients
- Increased staff absenteeism
- Increased grass/bush fires
- Packed beaches
- Increased EHS calls
- Increased warnings re: pets in cars
- Increased hospitalization related to heat
- Hot buildings not being able to be cooled
- Increased irritability
- Businesses closing for long periods due to the heat
- Increased traffic to cooler locations

Question 3 – Who is most impacted by these events?

The participants were able to further the discussion by describing who is most impacted by these events:

- Young children
- Students
- Elderly
- Homeless
- Health care workers
- Farmers
- Tourists

- Low income communities and families
- First responders
- Hospitals
- Public services
- Government agencies
- Food banks
- Retail stores

Question 4 – What resource demands can we anticipate?

A number of barriers and demands in emergency management were identified by the stakeholders:

- Volunteer time
- Bottled water
- Food
- Fuel
- Water
- Power
- Materials and goods
- Increased calls to frontline staff
- Cost to municipalities, staff, utilities such as water

Discussion 2: Extreme Heat Events and Your Organization

Jim MacDougall facilitated the remaining discussion topics in a roundtable, giving each stakeholder the opportunity to participate in the discussion.

Question 1- What are *your* concerns when it comes to extreme heat events?

The participants identified some concerns they have when it comes to extreme events:

- Information presented from Montreal Heat Event had cases that were preventable
- The municipality must determine and agree what to do in an extreme heat event to have a better outcome
- Comfort centre programs and guidance documents
- Community mapping – e.g. senior homes, needs to be more clearly identified

Question 2– What groups, departments and/or agencies are impacted by extreme heat?

    - **The departments themselves**
    - **The clients of the departments**

Stakeholders identified those who are impacted by extreme heat events:

- Long term care centres
- Palliative care

- Impoverished communities
- First responders
- Community health programs
- Elected officials

Question 3- Where are there opportunities for further collaboration?

The participants were able to generate a good conversation relating to where their organizations could collaborate:

- Community outreach programs
- Education

Question 4- What are some ways that we can work toward addressing them?

When asked about ways that each organization can work toward addressing affected groups, the stakeholders identified the following ideas:

- Better communication
- Consultations
- Subscription based communication
- Social media
- Word of mouth
- Education community groups
- Private partnerships

Discussion 3: Response in Kings County

Question 1 – How do we currently communicate to the community?

The stakeholders shared examples of tools and methods for how organizations communicate:

- Kings County has a community outreach program including an emergency notification subscription-based email
- Mass notification and incident communications programs
- Social media
- Brochures and educational material
- Community outreach and trust

Question 2- What mitigating strategies can be used to reduce harm for employees, clients, and the public?

When asked what mitigating strategies could be developed or implemented to reduce harm, several ideas were suggested by the participants. The suggestions related to mitigation strategies are organized into two broad categories of comments*: non-structural* and *structural* mitigating strategies.

Participants identified the following as non-structural examples:

- Commitment of resources
- Policy/procedures/communication
- Community outreach and education
- Vulnerability assessment
- Geographic Information System (GIS) mapping

Participants identified the following as structural examples:

- Fire safety technology, e.g. water mist systems
- Emergency kits
- Comfort centres

The workshop was deemed to be beneficial to those in attendance. Participants were asked to take back the information to their respective organizations in terms of their roles and responsibilities for discussion.

A goal of the day was to introduce stakeholders to the concept about extreme heat emergencies. The 2018 Montreal Extreme Heat Event served as an example of how heat emergencies can have severe consequences in a short period of time.

A discussion about Nova Scotia's heat projection occurred and it was shared that weather may not suddenly happen and it could be more of a slow-moving disaster. There is an opportunity now to develop a preventative plan, in addition to a response plan. Heat season is approaching. It is important as a province and the public to know how each organization responds and where to access resources in the community.

Workshop Conclusion

The community stakeholder workshop report is intended to continue the conversation and collaboration initiated on February 15, 2019. The workshop was an opportunity to exchange ideas to help inform the development of a municipal plan and cultivate potential mitigation strategies.

Closing Exercise

Several broad comments were made from the Closing Exercise. The workshop participants were able to provide valuable insight, including:

- One participant was familiar with the HARS project, but was surprised to learn the overall number of deaths in Canada (per year) due to heat related events
- New awareness regarding the number of heat waves impacting the world and at the provincial level
- One participant is interested to learn about what other counties in the province are doing or will be doing to implement heat awareness

- Concern over consistent messaging/wording of “heat alert” and “heat advisory”
- Going forward, one participant will include heat event awareness in community outreach programs
- There will be discussions with the other members within the organization to discuss unified plans for [heat] information
- The workshop was found to be a good start point for discussion within their organization
- Will bring up the HARS topic to their upper management to determine what their organization can do

The workshop participant list was shared with all attendees to provide additional opportunities to network.

Jim MacDougall provided closing comments, thanked participants for attending and explained that the HARS Coordinator will be reaching out to everyone to further gather information on their roles and responsibilities.

Several broad conclusions can be made from the workshop. The workshop participants were able to provide valuable insight into local issues, including knowledge of:

- The impacts of climate change
- Potential vulnerable populations

Other municipalities in Nova Scotia will have the opportunity to collaborate with Kings County to develop a municipal HARS plans.

Way Forward

The workplan continues with developing a HARS plan with Kings County to serve as a community demonstration project for the rest of the province. As follow up to the workshop, the HARS coordinator will have individual consultation meetings with each stakeholder. This will allow for more input from each organization, including a discussion on roles and responsibilities in an extreme heat event. This will also allow for further discussion about the population(s) each organization serves and the best communication and mitigation strategies.

The workshop and scheduled meetings will greatly contribute to the development of a community demonstration project for the Nova Scotia HARS program.

Contacts

Questions related to this project can be directed to:

Jim MacDougall
Manager, Planning, Exercises and Training
Health Services Emergency Management
Nova Scotia Department of Health and Wellness
Jim.Macdougall@novascotia.ca

Annex 1: Workshop Agenda

Kings County

Heat Advisory & Response System (HARS) Meeting

Wednesday, February 13, 2019
10:00 am – 1:00 pm
Municipality of the County of Kings, 87 Cornwallis Street
Orchards Room

Desired Outcomes:

1. To gain an understanding of the impacts of extreme heat events in general and within the Nova Scotia context.
2. Discuss the process of developing an extreme heat response plan for King's County.

Suggested video to help our discussions for the meeting: https://www.youtube.com/watch?v=RBwgS_1D5FM

Meeting Agenda

10:00-10:05 **Welcome** – Dan Stovel, Kings REMO REMC

10:05-10:10 **Introductions**

10:10-10:15 **Community HARS Demonstration Project in Kings County** – Jim MacDougall
Department of Health and Wellness, Health Services Emergency Management

- Creating a municipal level HARS plan
- Update on work currently underway at the provincial level

1010 – 10:45 **HARS Presentation** – Vanessa Nickelo
Nova Scotia Health Authority, HARS Coordinator

- What is an extreme heat event?
- Why are we concerned?
- Experience from Montreal 2018
- Lessons learned
- Heat events in Nova Scotia
- Areas of susceptibility
- Vulnerable populations
- Alerts and notifications
- High level jurisdiction review of HARS planning

10:45 -11:05 Break

11:05– 12:45 Workshop Discussions

Discussion #1 – Heat and Extreme Heat Events (Vanessa Nickelo)
35 mins

- Are we currently experiencing challenges related to heat events?
- What are the impacts of each type of event?
- What are the indicators for each type of event?
- Who is most impacted by these events?
- What resource demands can we anticipate?

Discussion #2 – Extreme Heat Events & your Organization (Jim MacDougall)
35 mins

- What are *your* concerns when it comes to extreme heat events?
- What groups, departments and/or agencies are impacted by extreme heat?
    - The departments themselves
    - The clients of the departments
- Where are there opportunities for further collaboration?
- What are some ways that we can work toward addressing them?

Discussion #3 – Response in King's County (Dan Stovel)
30 mins

- How do we currently communicate to the community?
- What mitigating strategies can be used to reduce harm for employees, clients and the public?
- How we respond in King's County
- Communicating with the community
- Non-structural (i.e., water distribution)
- Structural (i.e., cooling centres)

12:45-13:00 Next Steps

13:00 Adjournment

Annex 2: List of Participants

First	Last	Organization	Title
1. Bob	Caissie*	Acadia University	Senior Manager, Events and Hospitality
2. George	Thomson*	AVRCE	Occupational Health and Safety
3. George	Hardy*	Brigadoon Village	Facility Manager
4. Jeff	Skaling	Kings County Fire	Fire Chief
5. Debbie	Mahoney*	Community Services	
6. Jim	MacDougall	Health Services Emergency Management, DHW	Manager, Planning, Exercises and Training
7. Dan	Stovel	Kings REMO	Regional Emergency Management Coordinator
8. Andrew	Mitton	NS EMO	Emergency Planning Officer
9. Jessica	McCarthy	NSHA	Public Health Manager
10. Vanessa	Nickelo	NSHA	HARS Coordinator
11. Dennis	Oxner*	NSHA	Manager Emergency Preparedness
12. Andrew	Buckle	RCMP	Officer
13. Laura	McNamara	Red Cross	Service Centre Supervisor
14. Jay	Walker	EHS	Special Operations and Safety
15. Saxon	Peters	RCMP	Officer
16. Andrew	Buckle*	RCMP	Peace Officer
17. Patrick	Difford*	Acadia University	Security Staff
18. Lori	Errington*	EMO	Manager of Planning
19.			
20.			
21.			
22.			

*denotes absenteeism

AVRCE – Annapolis Valley Regional Centre for Education

DHW - Department of Health and Wellness

NS EMO – Nova Scotia Emergency Management Office

EHS – Emergency Health Services

EP - Emergency Preparedness

HARS - Heat Alert and Response System

NSE - Nova Scotia Environment

NSHA - Nova Scotia Health Authority

RCMP- Royal Canadian Mounted Police

Annex 3: Presentation

Heat Alert and Response System (HARS)

February 15th, 2019

Vanessa Nickelo
Health Protection Program Officer – HARS Coordinator

Why is Heat a Health Concern?

Extreme Heat is the leading cause of illness and death from weather-related Hazards in Canada

NEWS

Regular heatwaves 'will kill thousands'

The New York Times
How Record Heat Wreaked Havoc on Four Continents

CBC

Check on loved ones, neighbours during heat wave, health officials urge

The ChronicleHerald

Halifax councillors join Vancouver in declaring climate emergency

(Health Canada, 2018)

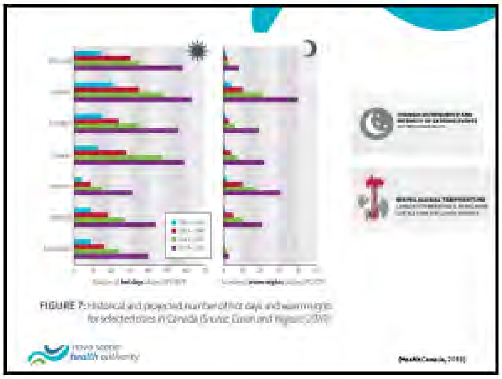
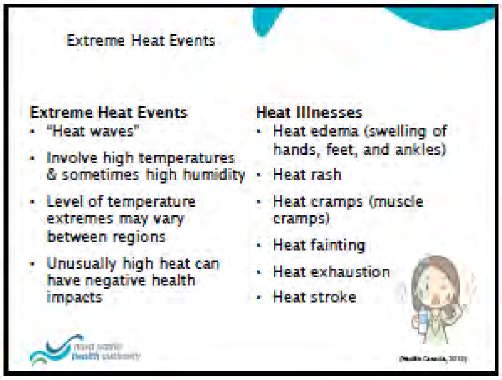


FIGURE 7: Historical and projected number of hot days and warm nights for selected cities in Canada (Source: Casati and Yagouti (2010))

(Health Canada, 2018)



Extreme Heat Events

Extreme Heat Events
- "Heat waves"
- Involve high temperatures & sometimes high humidity
- Level of temperature extremes may vary between regions
- Unusually high heat can have negative health impacts

Heat Illnesses
- Heat edema (swelling of hands, feet, and ankles)
- Heat rash
- Heat cramps (muscle cramps)
- Heat fainting
- Heat exhaustion
- Heat stroke

(Health Canada, 2018)

Montreal Heat Event – July 1-July 8/18

Six die in Montreal as heat wave grips eastern Canada

Heat wave: 33 Quebecers have died

Deadly heat wave blamed for up deaths in Quebec

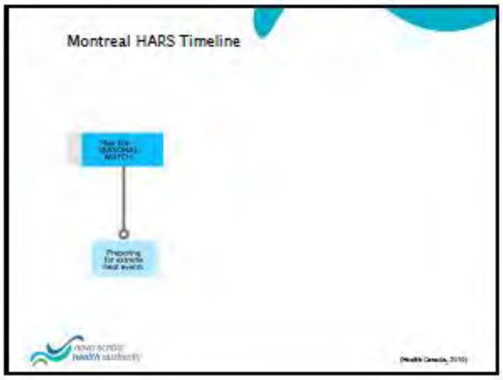
THE STAR

More than 90 deaths no to heat wave in Quebec

CBC

After heat wave deaths, mourning Quebec families wonder what could have been done differently

(Health Canada, 2018)

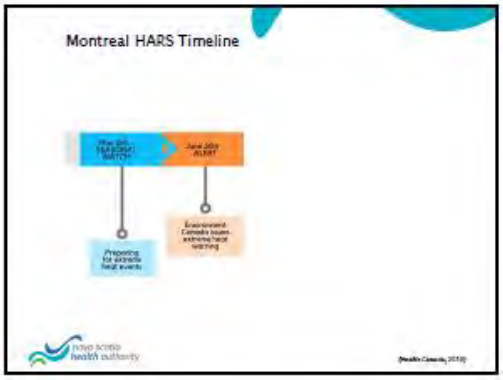


Montreal HARS Timeline

May 15th - SEASONAL WATCH

Preparing for extreme heat events

(Health Canada, 2018)



Montreal HARS Timeline

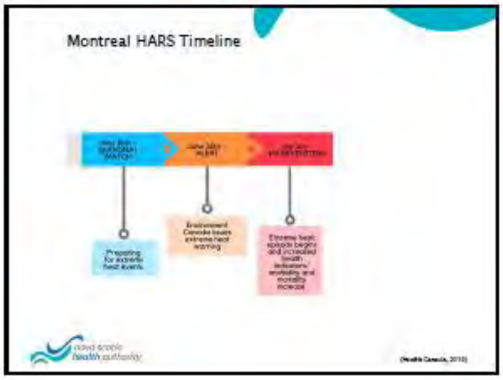
May 15th - SEASONAL WATCH

June 30th - ALERT

Preparing for extreme heat events

Environment Canada issues extreme heat warning

(Health Canada, 2018)



Montreal HARS Timeline

May 15th - SEASONAL WATCH

June 30th - ALERT

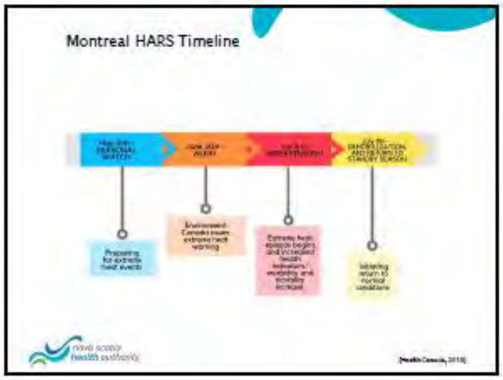
[illegible] - INTERVENTION

Preparing for extreme heat events

Environment Canada issues extreme heat warning

Extreme heat episode begins and increased health indicators/ morbidity and mortality increase

(Health Canada, 2018)



Montreal HARS Timeline

May 15th - SEASONAL WATCH

June 30th - ALERT

[illegible] - INTERVENTION

[illegible] - DEMOBILIZATION AND RETURN TO STANDBY SEASON

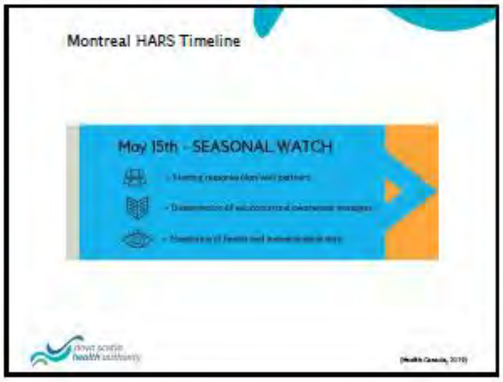
Preparing for extreme heat events

Environment Canada issues extreme heat warning

Extreme heat episode begins and increased health indicators/ morbidity and mortality increase

[illegible] return to normal conditions

(Health Canada, 2018)

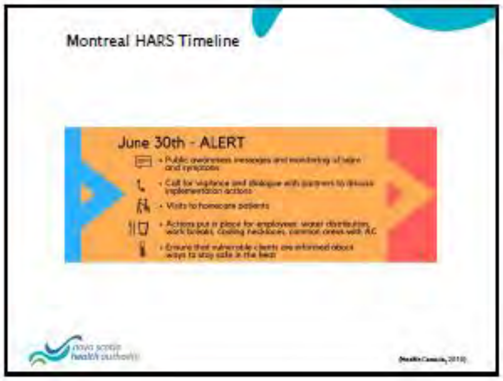


Montreal HARS Timeline

May 15th - SEASONAL WATCH

- Sharing response plan with partners
- Dissemination of educational awareness messages
- [illegible]

(Health Canada, 2018)

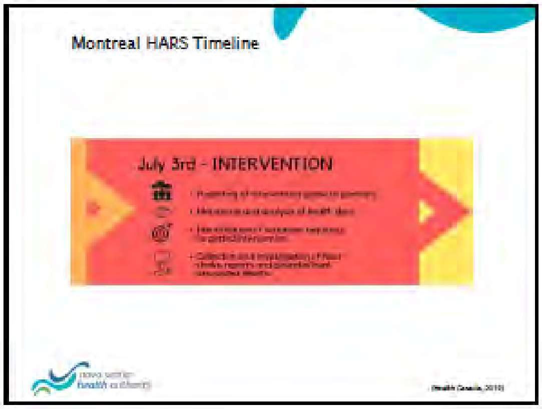


Montreal HARS Timeline

June 30th - ALERT

- Public awareness messages and monitoring of signs and symptoms
- Call for vigilance and dialogue with partners to discuss implementation actions
- Visits to homecare patients
- Actions put in place for employees: water distribution, work breaks, cooling necklaces, common areas with AC
- Ensure that vulnerable clients are informed about ways to stay safe in the heat

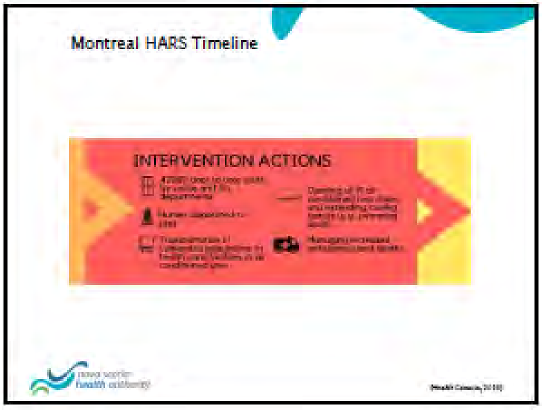
(Health Canada, 2018)



Montreal HARS Timeline

July 3rd - INTERVENTION

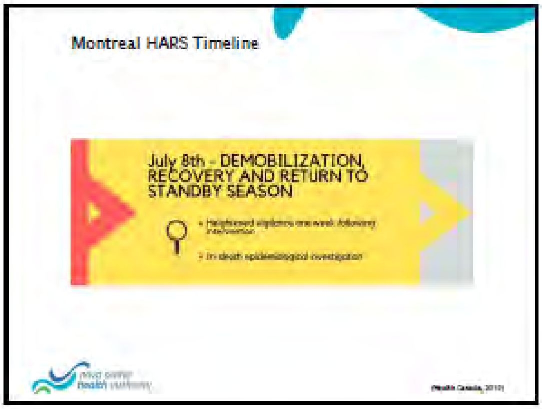
(Health Canada, 2018)



Montreal HARS Timeline

INTERVENTION ACTIONS

(Health Canada, 2018)

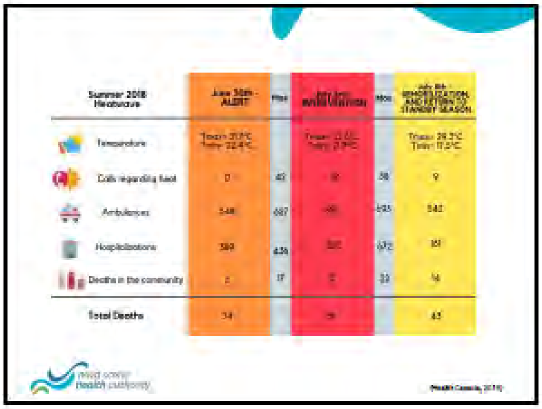


Montreal HARS Timeline

July 8th - DEMOBILIZATION, RECOVERY AND RETURN TO STANDBY SEASON

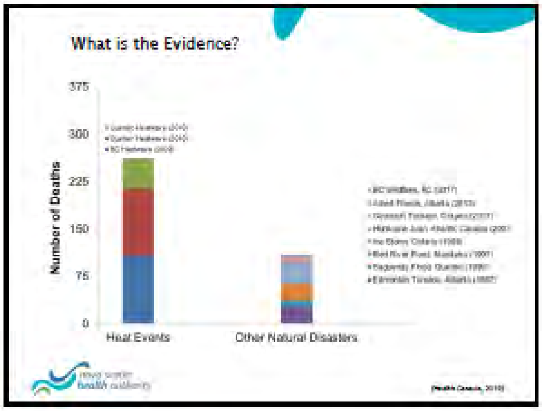
- Heightened vigilance one week following intervention
- In-depth epidemiological investigation

(Health Canada, 2018)



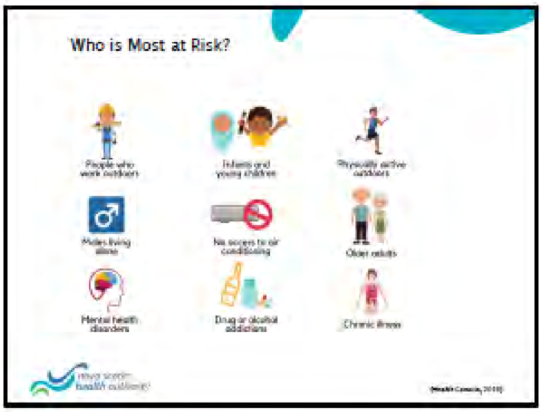
Summer 2018 Heatwave	June 30th - ALERT	Max	July 3rd - INTERVENTION	Max	July 8th - DEMOBILIZATION AND RETURN TO STANDBY SEASON
Temperature	Tmax: 31.9°C Tmin: 22.4°C		[illegible]		Tmax: 28.3°C Tmin: 17.3°C
Calls regarding heat	0	40	[illegible]	38	9
Ambulances	548	687	[illegible]	695	542
Hospitalizations	389	436	[illegible]	672	181
Deaths in the community	2	17	[illegible]	33	16
Total Deaths	34		[illegible]		43

(Health Canada, 2018)



What is the Evidence?

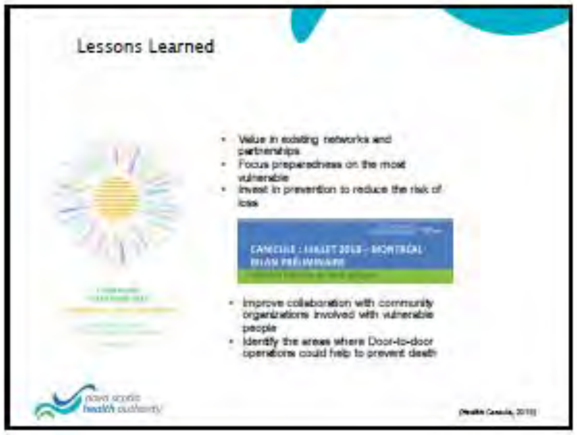
(Health Canada, 2018)



Who is Most at Risk?

People who work outdoors
Infants and young children
Physically active outdoors
Males living alone
No access to air conditioning
Older adults
Mental health disorders
Drug or alcohol addictions
Chronic illness

(Health Canada, 2018)



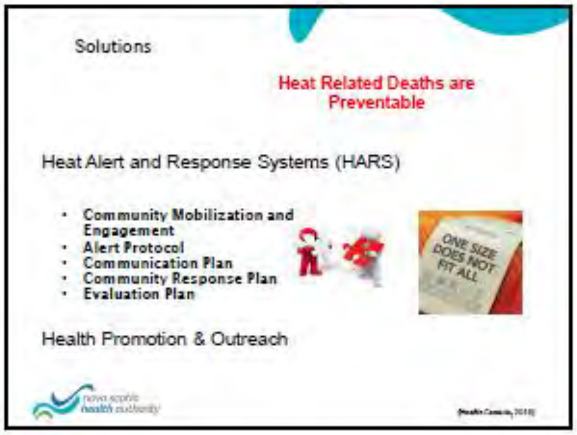
Lessons Learned

- Value in existing networks and partnerships
- Focus preparedness on the most vulnerable
- Invest in prevention to reduce the risk of loss

CANICULE : JUILLET 2018 – MONTRÉAL
BILAN PRÉLIMINAIRE

- Improve collaboration with community organizations involved with vulnerable people
- Identify the areas where Door-to-door operations could help to prevent death

(Health Canada, 2010)



Solutions

Heat Related Deaths are Preventable

Heat Alert and Response Systems (HARS)

- **Community Mobilization and Engagement**
- **Alert Protocol**
- **Communication Plan**
- **Community Response Plan**
- **Evaluation Plan**

ONE SIZE DOES NOT FIT ALL

Health Promotion & Outreach

(Health Canada, 2010)

Heat-Health Publications

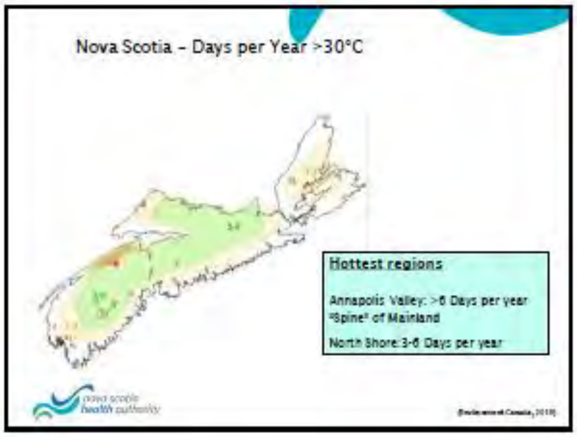
http://www.hc-sc.gc.ca/ewh-semt/pubs/climat/index-eng.php

(Health Canada, 2010)

News! Heat-Health Fact Sheets

(Health Canada, 2010)

Heat Climatology and the Heat Warning Program for Nova Scotia



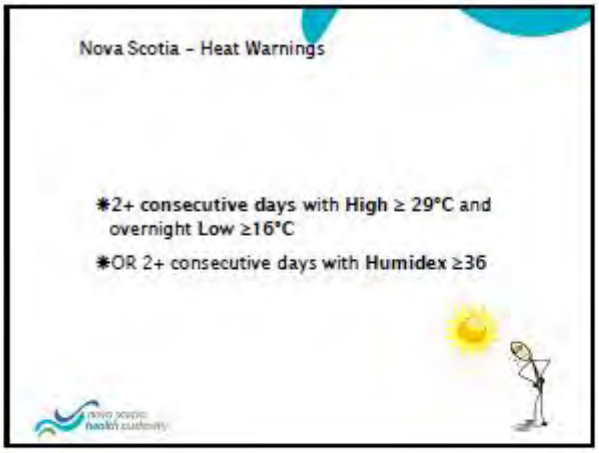
Nova Scotia – Days per Year >30°C

Hottest regions

Annapolis Valley: >6 Days per year
"Spine" of Mainland

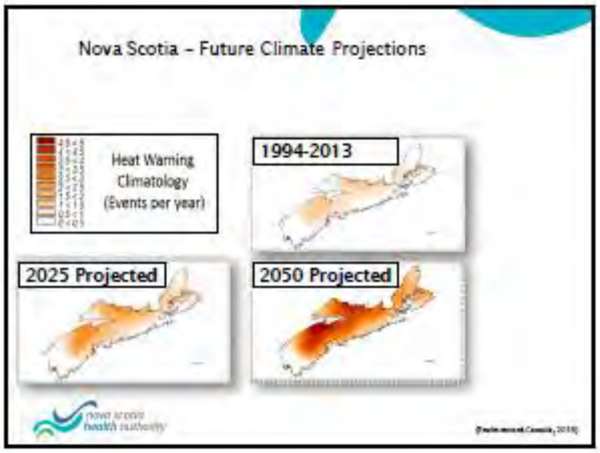
North Shore: 3-6 Days per year

(Environment Canada, 2018)



Nova Scotia – Heat Warnings

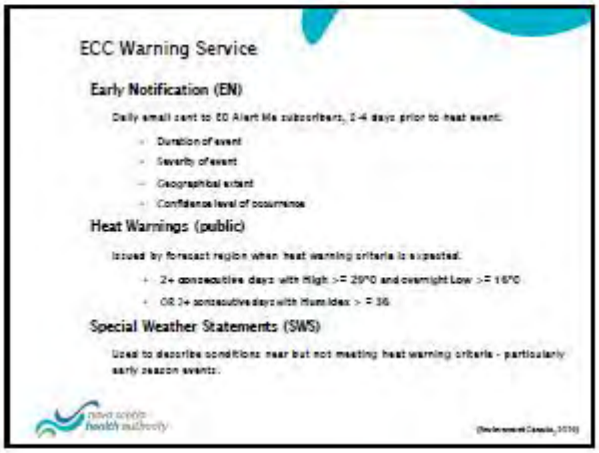
- 2+ consecutive days with **High ≥ 29°C** and overnight Low ≥16°C
- OR 2+ consecutive days with **Humidex ≥36**



Nova Scotia – Future Climate Projections

Heat Warning Climatology (Events per year)
1994-2013
2025 Projected
2050 Projected

(Environment Canada, 2016)



ECC Warning Service

Early Notification (EN)

Daily email sent to EC Alert Me subscribers, 2-4 days prior to heat event:

- Duration of event
- Severity of event
- Geographical extent
- Confidence level of occurrence

Heat Warnings (public)

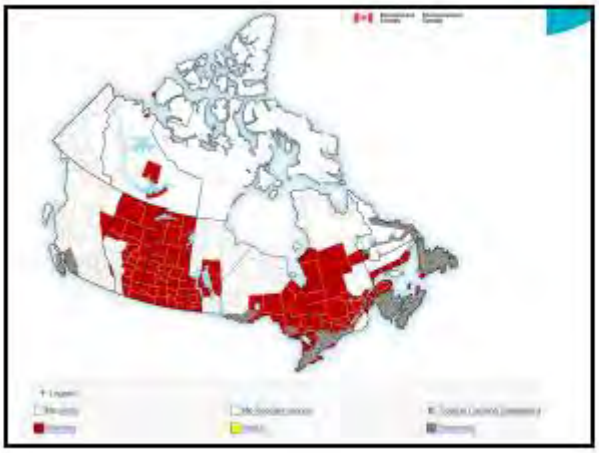
Issued by forecast region when heat warning criteria is expected:

- 2+ consecutive days with High >= 29°C and overnight Low >= 16°C
- OR 2+ consecutive days with Humidex > = 36

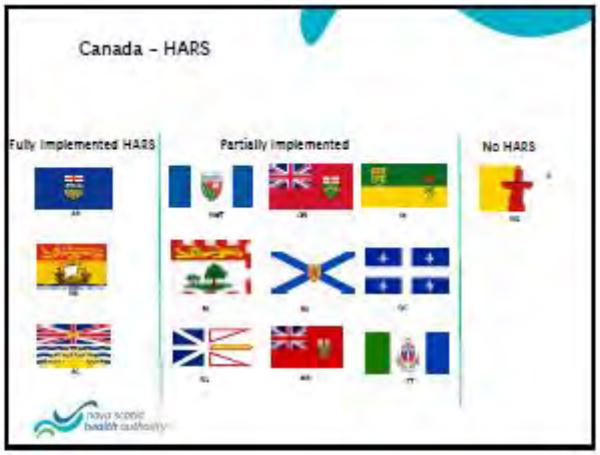
Special Weather Statements (SWS)

Used to describe conditions near but not meeting heat warning criteria - particularly early season events.

(Environment Canada, 2016)

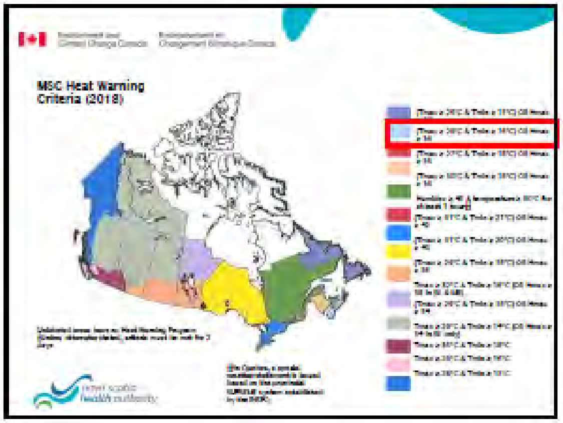


Jurisdictional Review



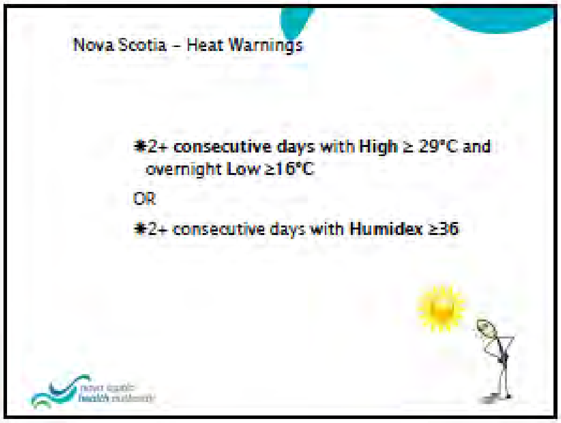
Canada – HARS

Fully Implemented HARS
AB
NB
BC
Partially Implemented
NWT
ON
SK
NS
QC
NL
MB
YT
No HARS
NU



Environment and Climate Change Canada / Environnement et Changement climatique Canada

MSC Heat Warning Criteria (2018)



Nova Scotia – Heat Warnings

- 2+ consecutive days with **High ≥ 29°C** and overnight **Low ≥16°C**

OR

- 2+ consecutive days with **Humidex ≥36**

The heat is on for Halifax with record-breaking temperatures possible

Heat warnings for

Hot and

remain t

Canada

From freezing to sweltering: Annapolis Valley farmers coping with heat wave

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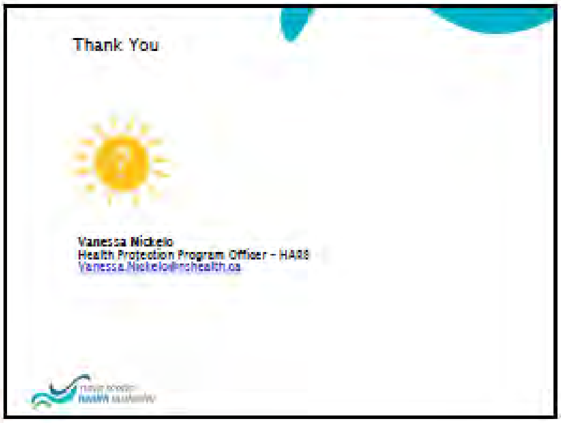
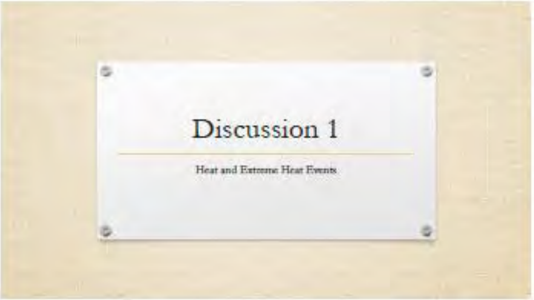


Thank You

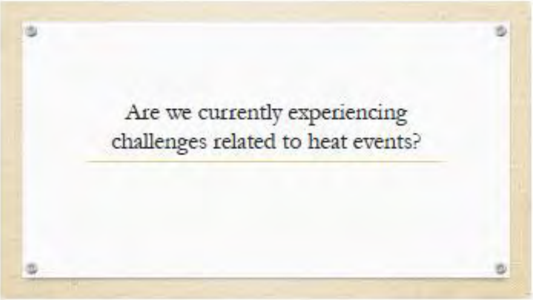
Vanessa Nickelo
Health Protection Program Officer – HABS
Vanessa.Nickelo@nshealth.ca

Annex 4: Discussion Prompts

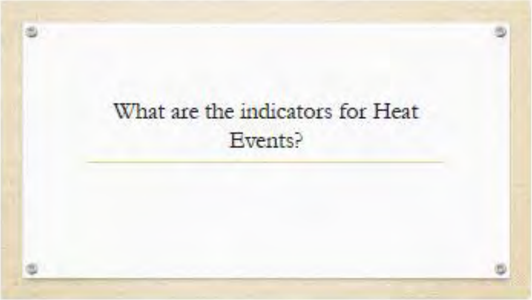


Discussion 1

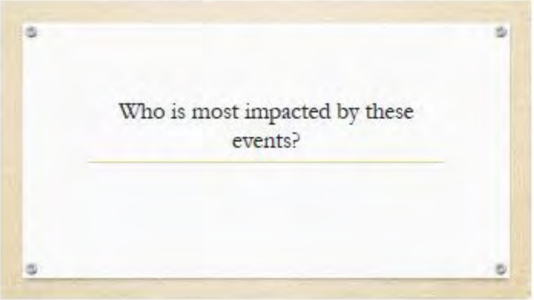
Heat and Extreme Heat Events



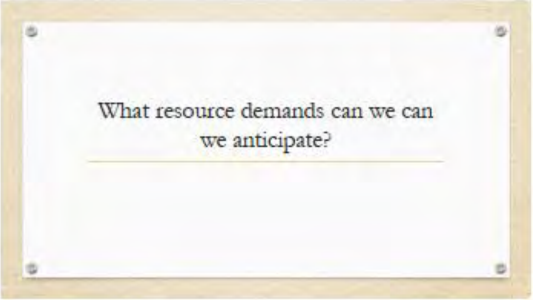
Are we currently experiencing challenges related to heat events?



What are the indicators for Heat Events?

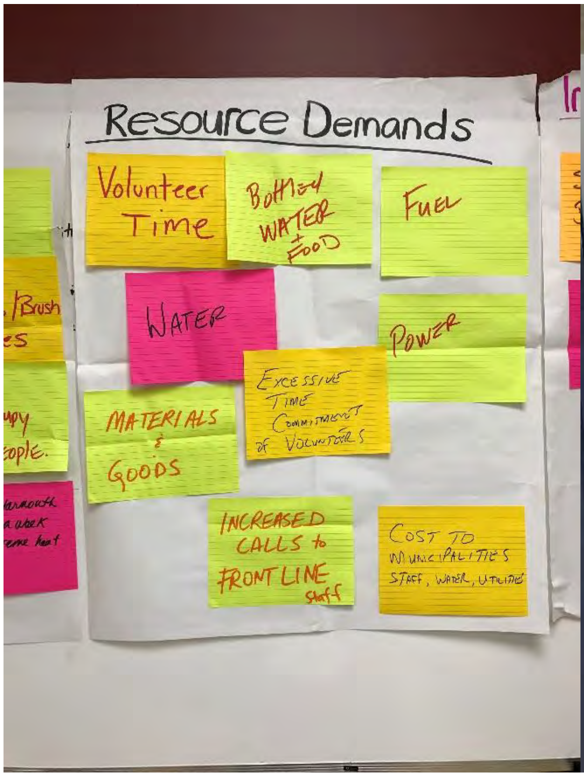


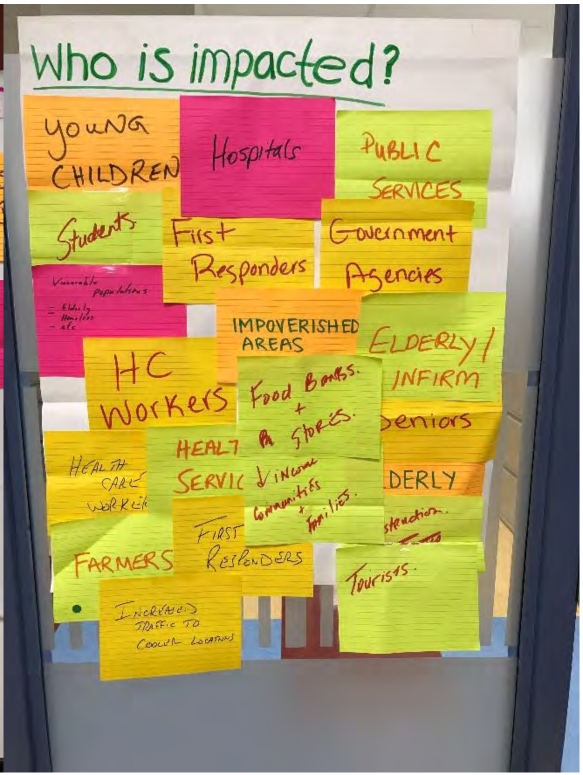
Who is most impacted by these events?

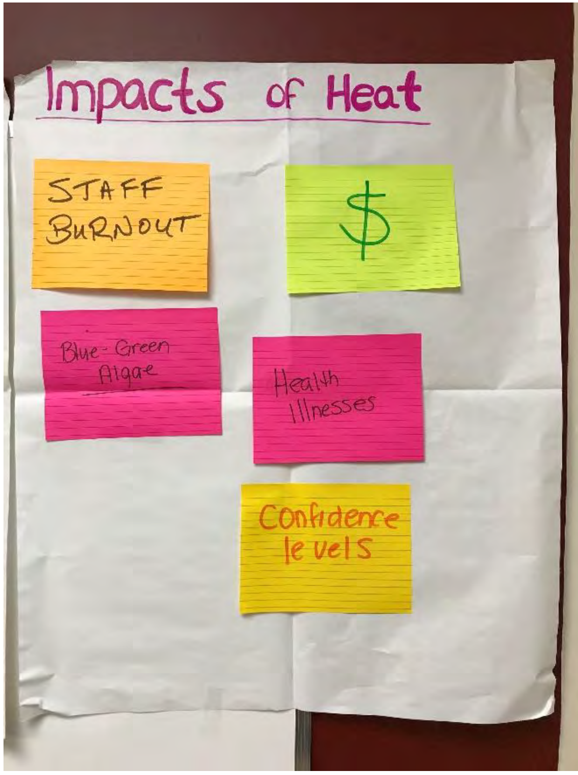


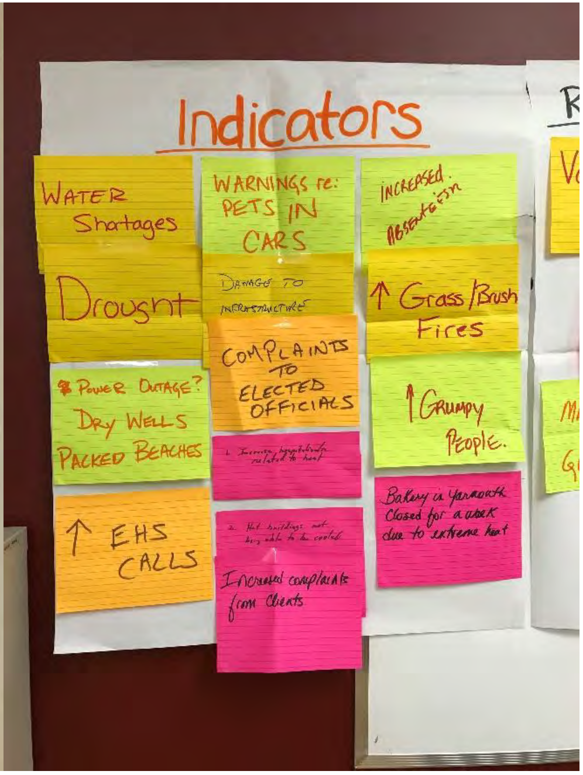
What resource demands can we can we anticipate?

Annex 5: Discussion Exercise


Resource Demands
Volunteer Time
Bottled WATER + FOOD
FUEL
WATER
POWER
EXCESSIVE TIME COMMITMENT of VOLUNTEERS
MATERIALS & GOODS
INCREASED CALLS to FRONT LINE Staff
COST TO MUNICIPALITIES STAFF, WATER, UTILITIES


Who is impacted?
YOUNG CHILDREN
Hospitals
PUBLIC SERVICES
Students
First Responders
Government Agencies
Vulnerable populations
- Elderly
Homeless
- etc
IMPOVERISHED AREAS
ELDERLY / INFIRM
HC Workers
Food Banks + Stores.
Seniors
HEALTH CARE WORKERS
HEALTH SERVICES
↓ Income communities + families.
DERLY
FARMERS
FIRST RESPONDERS
Tourists.
INCREASED TRAFFIC TO COOLER LOCATIONS


Impacts of Heat
STAFF BURNOUT
$
Blue-Green Algae
Health Illnesses
Confidence levels


Indicators
WATER Shortages
WARNINGS re: PETS IN CARS
INCREASED ABSENTEEISM
Drought
DAMAGE TO INFRASTRUCTURE
↑ Grass/Brush Fires
COMPLAINTS TO ELECTED OFFICIALS
POWER OUTAGE? DRY WELLS PACKED BEACHES
↑ Grumpy People.
1. Increase hospitalizations related to heat
Bakery in Yarmouth Closed for a week due to extreme heat
↑ EHS CALLS
2. Hot buildings not being able to be cooled
Increased complaints from Clients

Heat Alert and Response System

Nova Scotia

Provincial Stakeholder Workshop

January 17, 2019

Department of Health and Wellness
Health Services Emergency Management
1894 Barrington Street, Halifax, NS
B3J 3H6

Table of Contents

Foreword 1

Acknowledgement 1

Background 1

Objectives 1

HARS Provincial Action Plan Stakeholder Workshop 1

  Workshop Summary 1

  Introduction 2

Presentations 2

  Health Canada 2

  Environment Canada 3

  HARS Coordinator 4

Workshop Discussions 5

  Discussion 1: Differences Between Heat and Extreme Heat Events 6

  Discussion 2: Focus on Extreme Heat Events 8

  Discussion 3: Where Do We Go from Here and Next Steps 10

Closing 10

Way Forward 11

Contacts 11

Annex 1: Workshop Agenda 12

Annex 2: List of Participants 14

Annex 3: List of Acronyms 15

Annex 4: Presentations 16

Foreword

This workshop report is based on the Nova Scotia Order in Council 2018-265 and associated Memorandums of Agreement between Health Canada and the Department of Health and Wellness for the Provincial Extreme Heat Action Plan.

Acknowledgement

This workshop was developed in partnership between Nova Scotia Department of Health and Wellness and the Nova Scotia Health Authority. We would like to thank Health Canada and Environment Canada for their support of this Heat Alert and Response (HARS) project.

Background

Nationally, the number of extreme hot days are projected to increase; Nova Scotia is not immune. The Province of Nova Scotia entered into a formal Memorandum of Agreement (MOA) with Health Canada to develop a HARS. The HARS project will include the development of a Provincial Extreme Heat Action Plan and a Community Heat and Response System Demonstration Project. Health Canada and Nova Scotia Health Authority provide the financial resources to hire a coordinator to advance these projects.

In addition to the preparedness work related to heat emergencies, the HARS initiative provides an opportunity and a venue to discuss public health emergency planning. The intention of the HARS project is not only a means of meeting the requirements of the MOA but to establish a framework for advancing other public health emergency planning initiatives.

Objectives

The Department of Health and Wellness acknowledges the need for a strategy for Nova Scotia to be prepared for and respond to extreme heat events. Effective steps are being taken to ensure that the key departments and stakeholders have the knowledge, means of involvement and opportunity to engage and support the initiative and its implementation. The Provincial Stakeholder Workshop severed as an avenue to engage various levels of government participation and consultation of the protocol development.

The workshop ad the following specific objectives:

1. To gain an understanding of the impacts of extreme heat events in general and within the Nova Scotia context;
2. To begin the process of developing an extreme heat response plan for Nova Scotia.

HARS Provincial Action Plan Stakeholder Workshop

Workshop Summary

This report provides a summary of the workshop hosted by Nova Scotia Department of Health and Wellness (DHW) and the Nova Scotia Health Authority (NSHA) on January 17, 2019. The workshop was held in Halifax and was attended by approximately 30 participants including 20 participants from Provincial Departments, 7 from Federal Departments, and 3 Municipal participants (Annex 2). Participants represented various stakeholder groups and the purpose of the workshop was to gain their input into the development of a Provincial Heat Alert and Response System (HARS) protocol. The stakeholders had the opportunity to network and enhance their knowledge of provincial climate change.

Stakeholder engagement and consultation is a priority of this project and is integral to the development of a provincial protocol. Stakeholder engagement supports information sharing, awareness building and an opportunity for constructive feedback. Active stakeholder involvement will provide a foundation for the successful implementation of the HARS protocol.

Presentations and discussions led to an exchange of ideas and lessons learned in regard to communication, engagement, and knowledge-sharing.

Introduction

Dr. Robert Strang, Chief Medical Officer of Health, set the context for the workshop by outlining the following:

- The development of a Heat Alert and Response System for Nova Scotia is important to protect those most vulnerable to extreme heat and decrease heat illnesses and death
- Hosting a provincial workshop provides a venue to foster multiple partnerships and will allow Nova Scotia to build responses to heat alerts
- Nova Scotia will be working with the municipality of Kings County to develop a community HARS demonstration project
- The HARS planning process is similar to other emergency preparedness events, such as power outages, or cold temperatures
- Developing a Provincial HARS Protocol will enhance capacity in the emergency management and response system for being climate change prepared
- This workshop will increase awareness of heat events, identify the stakeholder groups and their potential roles and responsibilities

Presentations

The following are summaries of the presentations made at the workshop. Copies of the presentations are found in Annex 4.

Health Canada

The first presentation of the day was given by Senior Policy Analysist Melissa Shaw from Environment and Climate Change Canada (ECCC), with Health Canada. The stakeholders were able to recognize lessons learned and best practices that can be applied across other regions. Melissa presented the main messages from Health Canada:

- Extreme heat is the leading cause of illness and death from weather-related hazards in Canada
- Canada's temperature is rising more quickly than the global average
- Over the next 30 years, the number of extremely hot days in a year is expected to more than double in some parts of Canada
- Vulnerable populations were identified
- The Montreal heat event, which took place July 1-July 8, 2018, set record temperatures resulting in multiple deaths over the Canada Day weekend
- Montreal has an advanced heat response alert system that that was discussed in detail
- There are many lessons learned from those jurisdictions who have HARS plans in place
- There is great value in existing networks and partnerships
- Heat related deaths are preventable, but every community is different
- It is critical to identify the vulnerable population in the community and strategies that will work in the community
- A culture of prevention is the trigger for action
- Evaluation and continuous innovation is essential

Melissa concluded by identifying various components of a HARS plan. There is no one size fits all and it is important to be flexible, use best judgement, make the best use of what exists and know when it is best to use different methods. Preventative and response plans need to be designed to fit the community served.

Environment Canada

The second presentation of the day was given by Tracey Talbot, Health and Air Quality Program Supervisor, from Environment and Climate Change Canada. Her presentation entitled "Overview of Heat Climatology and the ECCC Heat Warning Program for Nova Scotia" brought climate change science to the local level to assist the stakeholders in understanding the impacts and issues facing the province. Tracey presented the main messages from Environment Canada:

- Weather in Nova Scotia can vary; temperatures are influenced by the ocean and are cooler along the Atlantic coastline
- Some areas across the province do not feel the coastal influence as much, but inland, there are significant increases in the number of hot days, especially in the Annapolis Valley and along the mainland portion of the province into the North Shore
- Weather projections can show expansion of heat event into areas that currently do not experience many heat events
- Prior to summer 2018, Environment and Climate Change Canada (ECCC) heat warnings for Nova Scotia were triggered by Humidex = 40
- Over past two years, ECCC has worked with Health Canada, who have conducted a Heat-Health Analysis for the region to develop new, regionally relevant, 2-day Heat Warning criteria for NS which is as follows:

Day 1 High ≥29°C, Overnight Low ≥16°C,	Day 2 High ≥29°C
Or	
Two consecutive days with Humidex ≥36	

Environment Canada's presentation concluded with the notice that Environment Canada provides different services through their heat warning program. "EC Alert Me" is a program users can sign up for to receive notification messages if there is the potential for a heat event a defined region. As the event closer approaches, public notifications are given out.

HARS Coordinator

The final presentation of the workshop was given by Vanessa Nickelo, a Health Protection Officer and HARS Coordinator. The goal of this presentation was to give the stakeholders a high-level jurisdictional review of HARS planning:

- HARS is designed to protect people, particularly those most vulnerable to extreme heat and the health impacts
- It is primarily a community- driven process that draws upon local resources to minimize heat-related morbidity and mortality
- Provinces are preparing for changes in the climate and developing strategies to protect people's health during extreme heat events
- Local and regional efforts to prepare for extreme heat are supported by provincial and federal governments, and by a number of other stakeholders taking action now to increase the resilience and safety of communities
- The majority of Canada has partially implemented HARS programs, including Nova Scotia
- Partially implemented may mean only certain regions have HARS, or that the province or territory has laid out criteria as to what makes a heat warning – but are still in the process of developing a preventation and response plan
- Evaluations of existing HARS, though few in number, demonstrate that HARS systems help protect people from illness and death associated with extreme heat events
- Analyses of past extreme heat events that resulted in mortality suggest that the lack of intervention plans and limited coordination between organizations were likely major contributing factors to negative health outcomes[1].
- By examining HARS at a national level, we can see that the provinces and territories have different criteria for triggering alerts to an extreme heat event.

---

[1] Health Canada (2012). *Heat Alert and Response Systems to Protect Health: Best Practices Guidebook.* Health Canada, Ottawa, ON. Prepared by Water, Air and Climate Change Bureau Health Environments and Consumer Safety Branch

- There are factors that influence how different areas experience heat such as geographical variables, including latitude, elevation, and proximity to bodies of water
- Most jurisdictions define extreme heat events based on the potential for hot weather conditions to result in an unacceptable level of health effects, including increased mortality
- Environment Canada heat warnings are only issued when very high temperatures or humidity conditions are expected to pose an elevated risk of heat-related illnesses, such as heat stroke or heat exhaustion
- The involvement of stakeholders who have knowledge of the specific needs and vulnerabilities of its populations is required to develop a HARS plan
- A timely response requires that measures to protect health can be activated when alerting conditions are forecasted and the trigger is reached – before extreme heat arrives

Workshop Discussions

The second part of the workshop was to facilitate discussion amongst stakeholders. A discussion period facilitated by Jim MacDougall, Manager, Planning, Exercises and Training, Health Services Emergency Management, Nova Scotia Department of Health and Wellness, encouraged participants to share their knowledge and experience on the following topics:

Discussion 1 – The Differences Between Heat and Extreme Heat Events

- What are the impacts of each type of event?
- What are the indicators for each type of event?
- Who is most impacted by these events?
- What resource demands can we anticipate?
- How do we currently communicate with impacted stakeholders?

Discussion 2 – Focus on Extreme Heat Events

- What groups, departments and/or agencies are impacted by extreme heat?
    - The departments themselves
    - The clients of the departments
- What are the various government departments/agencies roles and responsibilities during an extreme heat event?
- What mitigating strategies can be used to reduce harm for employees, clients and the public?

Discussion 3 – Where Do We Go from Here and Next Steps

The goal of the discussion was to give participants the opportunity to discuss heat event impacts, barriers, needs, actions and solutions with fellow stakeholders from other departments in the province. The following sections summarize the discussions.

Discussion 1: Differences Between Heat and Extreme Heat Events

The workshop participants shared various stories of extreme heat events that have taken place in the province of Nova Scotia and described what changes they have seen as a result of climate change.

Question 1 – What are the impacts of each type of event?

Based on a potential heat event scenario, participants were asked what they believed will be the key impacts, risks or vulnerabilities in their department. In general, there is a vast need to develop capacities in heat issues at the provincial level. The following is a list of impacts identified by participants:

- There are various impacts of hot summers (heat) and extreme heat events
- Nova Scotia has history of a flood and drought occurring at the same time
- Drought
- Environmental sanitation
- Shortage of water supply
- Forest fires have direct health impacts – smoke inhalation, etc.
- Spread of some vector diseases
- Food safety
- Decreased forage

Question 2 – What are the indicators for each type of event?

Workshop participants identified several indicators for heat events. The group commenced by listing a number of indicators of heat events:

- The 2018 weather forecast had farmers start to worry about their crops
- Increased visits to the emergency room based on heat related illnesses
- Recreational and sporting events cancelled
- An increase in blue-green algae blooms. This could be problematic if at the same time people are told to cool off but the lake has to be closed due to environmental issues
- Indicators could also include an increase of violence
- Buildings or places of work with the air conditioning shutting down and staff sent home – failure of technology.
- Emergency Health Services notice an increase in volume at night
- There are different patterns to sickness and illness. E.g. asthma, excess of COPD at night
- Heat related illness is on the rise
- Nighttime temperatures are not allowing cooling
- There is often increased domestic disturbances and bad behavior requiring EHS to support local police services
- Dry forests can result in forest fires

Question 3 – Who is most impacted by these events?

The participants were able to further the discussion by describing who is most impacted by these events:

- Stakeholders discussed an eight-week period when wells ran dry in Southern NS. Dry wells have complex issues depending on the type of well. Communities were not able to access water in their homes
- There was an increase of people consuming unsafe water sources because they had no water
- Reemergence of temperature related zoonotic diseases displayed in people, e.g. West Nile and other vector borne diseases
- Primary care is impacted with an increase in hospital visits
- Those who have preexisting conditions start to get worse over time
- There is an impact of some existing building designs. Older buildings, such as the IWK, have limited humidity control

Question 4 – What resource demands can we anticipate?

A number of barriers and demands in emergency management were identified by the stakeholders, with a barrier being access to sufficient financial resources. Municipalities often have limited budgets and need to prioritize those funds which could make it difficult to invest in proactive adaptive measures.

The participants were able to identify a host of other resource demands:

- The demand for water for example can lead to areas becoming dry
- Bottled water was purchased for the affected municipalities
- Capacity constraints – staff resources and time
- When we have heat and dry climate – subsequent effects from proximity to fires
- Demand on the health system
- Diversion of other resources
- Possibility of increased demand of power grids
- Electrical system brownouts - to conserve power
- Shortage of fans and air conditioners available due to supply and demand

Question 5 – How do we currently communicate with impacted stakeholders?

The stakeholders shared examples of tools and methods for how organizations communicate:

- Kings County has a community outreach program including an emergency notification subscription-based email

- Public Health aims to work before the season to support them with the health messages. Currently not proactive – this may be an issue that needs to be developed moving forward
- Nova Scotia Environment has well monitoring data to ensure safe water resources. NSE established a response team to support others. There is an increase in monitoring to know when wells get lower in future years
- Some stakeholders did not feel as if they were impacted and did not have specific examples/differences outside the normal summer finds
- Mass notification and incident communications programs
- Social media
- There is still need for communication for those who do not have access to a computer
- Community Services has drafted a homelessness project as there is currently no way to communicate with this demographic unless they come into a shelter
- The client network
- Community outreach and trust
- Use indicators, such as increased mortality, to trigger communication lines to work with other organizations/departments
- Kings Regional Emergency Management Office has only been active since 2018 and is under trial until 2020
- Reliance on Department of Lands and Forestry
- Some stakeholders identified the need for better internal communication. There needs to be better relationships to be situationally aware to ensure they can to provide that support to other departments and originations.

Discussion 2: Focus on Extreme Heat Events

Question 1 – What groups, departments and/or agencies are impacted by extreme heat?

  - **The departments themselves**
  - **The clients of the departments**

Stakeholders identified those who are impacted by extreme heat events:

- Organizations that work in old offices and buildings. Strategies may need to be developed for existing buildings as retro-fitting buildings can be costly
- Clients with limited income, e.g. purchasing essential needs over an air conditioner
- Homeless shelters are currently at 20% over capacity
- Comfort centers may be supplied with heat but not air conditioners.
- Daycares or other facilities that do not have heat pumps
- Food safety issues

Question 2 – What are the various government departments/agencies roles and responsibilities during an extreme heat event?

Consultation meetings will be scheduled by the HARS Coordinator with the participating stakeholders.

Some examples of roles and responsibilities were mentioned:

- Emergency Health Services has a key role as their paramedics are familiar with vulnerable populations and their locations
- 211 and 811 are resources to identify vulnerability by monitoring the types of calls they receive
- Community outreach – some members of the community may not realize the importance of heat warnings. Health communication and education is important

Question 3 – What mitigating strategies can be used to reduce harm for employees, clients and the public?

When asked what mitigating strategies could be developed or implemented in Nova Scotia to reduce harm, a number of ideas were suggested by the participants. The suggestions related to mitigation strategies are organized into two broad categories of comments*: non-structural* and *structural* mitigating strategies.

Participants identified the following as non-structural examples:

- Changing of building codes – new builds/new building design
- Commitment of resources
- Policy/procedures/communication
- Recreational sporting center design requirements
- Transportation strategies – reducing fares
- Regulations for mass gatherings being developed
- Designating common areas in housing where residents can cool down and seek relief from the heat
- In some cities, the housing division staff may check on residents/seniors
- Data obtained from these observations need to be converted into useful information for decision-making, e.g. illness and death data
- Vulnerability assessment
- There are challenges with timely emergency room data. Surveillance data needs work

Participants identified the following as structural examples:

- Web based incident management programs
- Splash pads
- Community centers

- Tree planting to provide shade

Discussion 3: Where Do We Go from Here and Next Steps

The workshop was deemed to be beneficial to those in attendance. Participants were asked to take back the information to their respective provincial departments in terms of their roles and responsibilities for discussion.

A goal of the day was to introduce stakeholders to the concept about extreme heat emergencies. The 2018 Montreal extreme heat event served as an example on how heat emergencies can have severe consequences in a short period of time.

A discussion about Nova Scotia's heat projection occurred and it was shared that weather may not suddenly happen and it could be more of a slow moving disaster. A challenge is communication. A challenge was made to the stakeholders to think about the triggers within their respective departments. There is an opportunity now to develop a preventative plan, in addition to a response plan. Heat season is approaching. It is important as a province and the public to know how the province responds and where to access resources in the community.

Closing

The provincial stakeholder workshop report is intended to continue the conversation and collaboration initiated on January 17, 2019. The workshop was an opportunity to exchange ideas to help inform the development of a protocol.

The workshop was a success and allowed stakeholders the opportunity to get together and develop relationships. The workshop participant list was shared with all attendees to provide additional opportunities to network.

Jim MacDougall provided closing comments, thanked participants for attending and explained that the HARS Coordinator will be reaching out to everyone to further gather information on their roles and responsibilities. The workshop and follow-up discussions will help draft the province wide protocol.

Several broad conclusions can be made from the workshop. Firstly, the workshop participants were able to provide valuable insight into provincial issues, including knowledge of:

- The impacts of climate change
- Potential vulnerable populations
- Identifying work the province has already accomplished in relation to heat events

Secondly, water supply was identified as a key issue by the stakeholders. This emphasizes the provincial importance of water economically, environmentally and socially. However, thresholds for many activities may be dependent on location in the province.

Participants were familiar with the top-down support, which is received from Health Canada and Environment Canada. They identified the need for bottom-up information transfer and situational awareness between organizations. Consultation and communication will continue to hold an essential role in further development and implementation of the provincial plan.

The stakeholders that were engaged in the workshop process offered valuable input and will be continually engaged in the ongoing development of the Provincial HARS Plan. In some cases, there are opportunities for potential partnerships or shared responsibility for specific action items. In addition to the development of a Provincial HARS Protocol, Nova Scotia will have the opportunity to collaborate with Kings County to develop a template of a municipal plan. This will allow for information to be shared throughout the province.

Way Forward

The mandate is to develop a Provincial plan. Following the workshop, the HARS coordinator will have individual consultation meetings with each stakeholder. This will allow for more input from each Department, including a discussion on roles and responsibilities in an extreme heat events. This will also allow for further discussion about the population(s) each group serves and the best communication and mitigation strategies. Once there is a consensus following the consultations, a final draft will be circulated and signed.

Contacts

Questions related to this project can be directed to:
Jim MacDougall
Manager, Planning, Exercises and Training
Health Services Emergency Management
Nova Scotia Department of Health and Wellness
Jim.Macdougall@novascotia.ca

Annex 1: Workshop Agenda

HARS Provincial Action Plan Workshop

January 17, 2019
0900-1300 Hours

The purpose of the meeting is twofold:

1. To gain an understanding of the impacts of extreme heat events in general and within the Nova Scotia Context.
2. To begin the process of developing an extreme heat response plan for Nova Scotia.

Meeting Agenda

0900 – 0905 Welcome, Introductions – Dr. Robert Strang

0905 – 0935 HARS Presentation - Dr. Shawn Donaldson and Melissa Shaw Health Canada, Climate Change and Innovation Bureau.

- What is an extreme heat event?
- Why are we concerned?
- Experience from Montreal 2018
- Lessons learned
- National approaches

0935 – 1000 – Environment and Climate Change Canada Presentation – Tracy Talbot and Bob Robichaud, Environment and Climate Change Canada.

- Heat events in Nova Scotia
- Areas of susceptibility
- Alerts and notifications

1000 -1015 NS HARS Presentation – Vanessa Nickelo, NS HARS Coordinator

- High level jurisdiction review of HARS planning

1015 -1045 – Break

1045 – 11:50 Workshop discussions – Jim MacDougall, Department of Health and Wellness, Health Services Emergency Management.

Discussion 1. The differences between heat and extreme heat events

- What are the impacts of each type of event?
- What are the indicators for each type of event?

- Who is most impacted by these events?
- What resource demands can we anticipate?
- How do we currently communicate with impacted stakeholders?

Discussion 2. Focus on Extreme Heat Events

- What groups, departments and/or agencies are impacted by extreme heat?
    - The departments themselves
    - The clients of the departments
- What are the various government departments/agencies roles and responsibilities during an extreme heat event?
- What mitigating strategies can be used to reduce harm for employees, clients and the public?

1200 -1230 Lunch and Network

1230 – 1300

Discussion 3 – Where do we go from here and next steps – Jim MacDougall

Suggested video to help our discussions for the meeting:
https://www.youtube.com/watch?v=RBwgS_1D5FM

Annex 2: List of Participants

First	Last	Organization	Title
1. Dawn	Stegen	CCH	Director, Regional Services
2. Terry Lynn	Slaunwhite	DCS	Director Emergency Social Services
3. Jim	MacDougall	DHW	Manager, Planning, Exercises and Training, HSEM
4. Robert	Strang	DHW	Chief Public Health Officer
5. Andy	Boutilier	DHW	Manager, Operational Readiness, HSEM
6. Carolyn	Dohoo	DHW	Senior Epidemiologist
7. Gaynor	Watson-Creed	DHW	A/Deputy Chief Medical Officer of Health
8. Melissa	MacDonald	EC	Health and Air Quality Forecast Services
9. Bob	Robichaud	EC	Meteorologist
10. Tracey	Talbot	EC	Program Supervisor, Environment and Climate Change Canada
11. Ian	Hubbard	EC	Services Support Meteorologist
12. John (Jay)	Walker	EHS	Provincial Special Operations and Emergency Preparedness
13. Carl	Jarvis	EHS	Emergency Preparedness Medical Director
14. Jason	Mew	EMO NS	Director, Operations
15. Lori	Errington	EMO NS	Manager of Planning
16. Melissa	Shaw	HC	Senior Policy Analyst
17. Phil	Porter	IWK	Emergency Preparedness and Risk Management Coordinator
18. Michelle	Muise	Justice	Medical Examiner's Office
19. Andrew	Mitton	Mun Affairs	Emergency Management Planning Officer
20. Julien	Stephane	Mun Affairs	Manager of Operations
21. Kyla	Milne	NSE	Adaptation Specialist
22. Sara	Rumbolt	NSE	Environmental Health Consultant
23. Paula	Burghgraef	NSHA	Manager, Public Health
24. Angela	LeBlanc	NSHA	Director, Enterprise Risk & Emergency Preparedness
25. Gary	O'Toole	NSHA	Senior Director, Population and Public Health
26. Vanessa	Nickelo	NSHA	Health Protection Program Officer, HARS & EP
27. Denys	Doiron	PHAC	Emergency Preparedness & Response Office
28. Donna	Malone	PHAC	Senior Advisor, Health Security Infrastructure
29. Ancel	Langille	Red Cross	Provincial Manager, Disaster Management & Training
30. Dan	Stovel	Regional EMO	Municipality of the County of Kings
31. Angela	Henhoeffer	West Hants	Regional Emergency Management Organization Coordinator

Annex 3: List of Acronyms

A/ - Acting

CCH - Communities, Culture and Heritage

DCS - Department of Community Services

DHW - Department of Health and Wellness

EC – Environment Canada

EHS - Emergency Health Services

EMO - Emergency Management Office

EP - Emergency Preparedness

HARS - Heat Alert and Response System

HSEM - Health Services Emergency Management

NS - Nova Scotia

IWK - IWK Health Centre

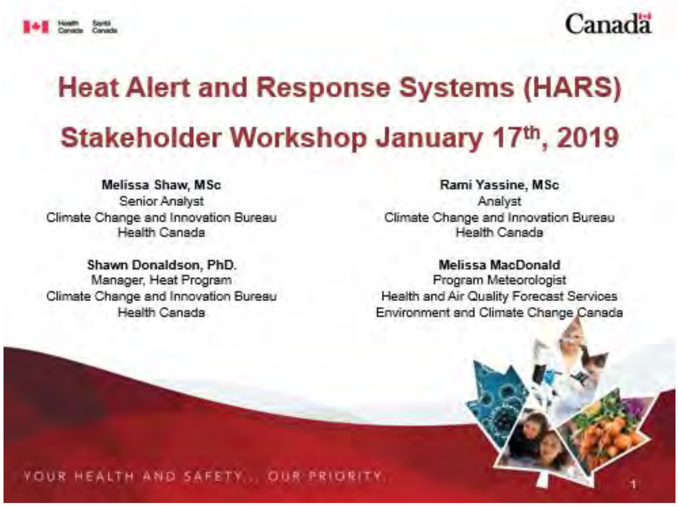
NSE - Nova Scotia Environment

NSHA - Nova Scotia Health Authority

PHAC - Public Health Agency of Canada

Annex 4: Presentations

Health Canada



Canada

Heat Alert and Response Systems (HARS)

Stakeholder Workshop January 17th, 2019

Melissa Shaw, MSc
Senior Analyst
Climate Change and Innovation Bureau
Health Canada

Rami Yassine, MSc
Analyst
Climate Change and Innovation Bureau
Health Canada

Shawn Donaldson, PhD.
Manager, Heat Program
Climate Change and Innovation Bureau
Health Canada

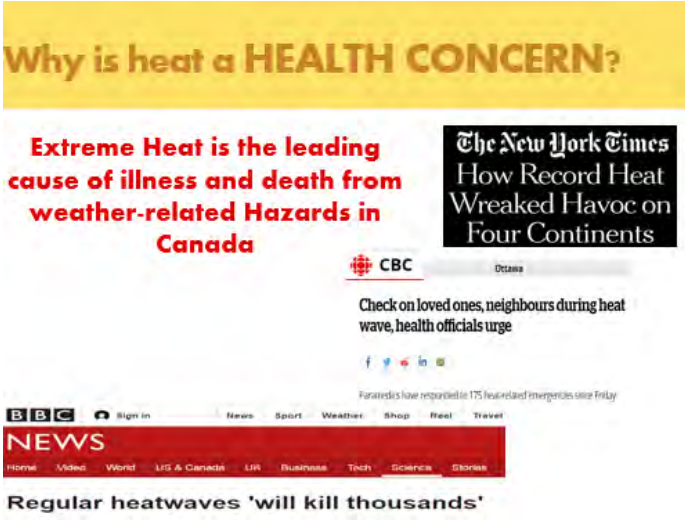
Melissa MacDonald
Program Meteorologist
Health and Air Quality Forecast Services
Environment and Climate Change Canada

YOUR HEALTH AND SAFETY... OUR PRIORITY.

1

Why is heat a HEALTH CONCERN?

Extreme Heat is the leading cause of illness and death from weather-related Hazards in Canada



Why is heat a HEALTH CONCERN?

Extreme Heat is the leading cause of illness and death from weather-related Hazards in Canada

The New York Times
How Record Heat Wreaked Havoc on Four Continents

CBC Ottawa

Check on loved ones, neighbours during heat wave, health officials urge

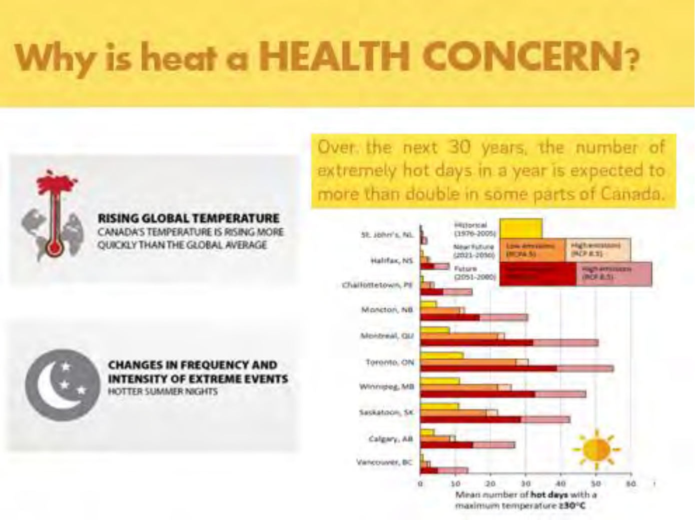
Paramedics have responded to 175 heat-related emergencies since Friday

BBC Sign in News Sport Weather Shop Reel Travel

NEWS

Home Video World US & Canada UK Business Tech Science Stories

Regular heatwaves 'will kill thousands'

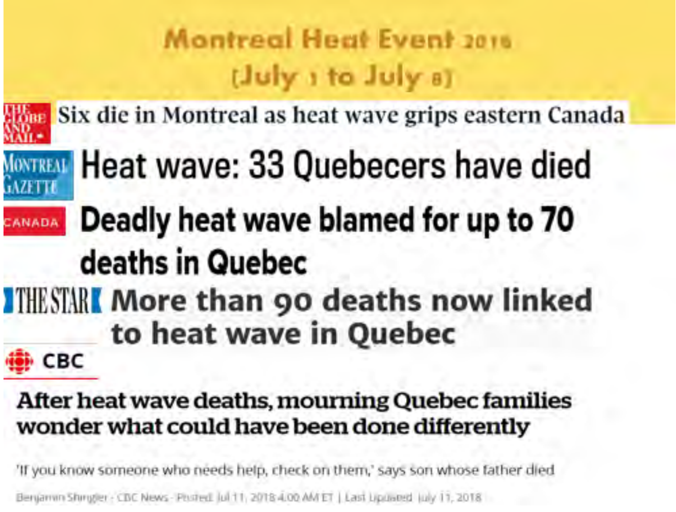


Why is heat a HEALTH CONCERN?

RISING GLOBAL TEMPERATURE
CANADA'S TEMPERATURE IS RISING MORE QUICKLY THAN THE GLOBAL AVERAGE

CHANGES IN FREQUENCY AND INTENSITY OF EXTREME EVENTS
HOTTER SUMMER NIGHTS

Over the next 30 years, the number of extremely hot days in a year is expected to more than double in some parts of Canada.



Montreal Heat Event 2018
(July 1 to July 8)

THE GLOBE AND MAIL Six die in Montreal as heat wave grips eastern Canada

MONTREAL GAZETTE Heat wave: 33 Quebecers have died

CANADA Deadly heat wave blamed for up to 70 deaths in Quebec

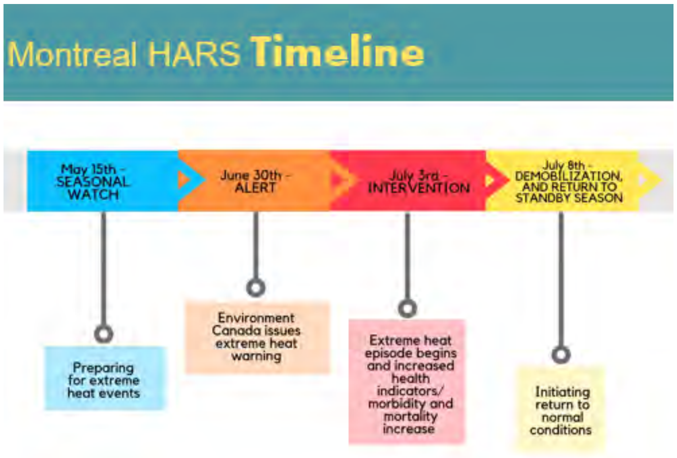
THE STAR More than 90 deaths now linked to heat wave in Quebec

CBC

After heat wave deaths, mourning Quebec families wonder what could have been done differently

'If you know someone who needs help, check on them,' says son whose father died

Benjamin Shingler · CBC News · Posted: Jul 11, 2018 4:00 AM ET | Last Updated: July 11, 2018



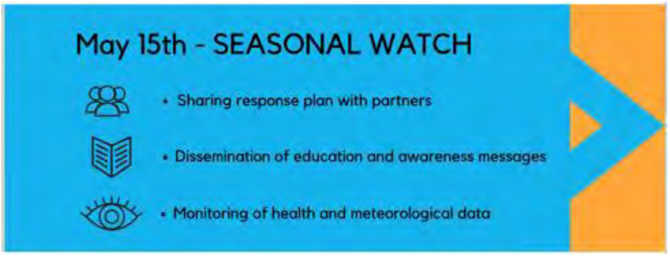
Montreal HARS Timeline

May 15th - SEASONAL WATCH: Preparing for extreme heat events

June 30th - ALERT: Environment Canada issues extreme heat warning

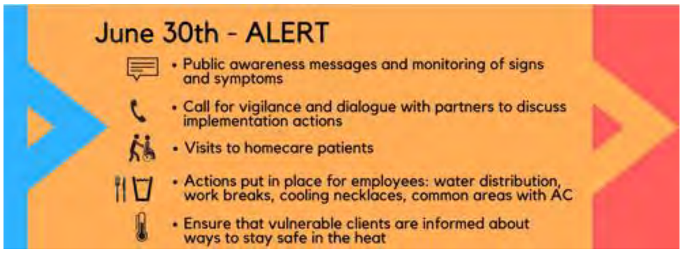
July 3rd - INTERVENTION: Extreme heat episode begins and increased health indicators/ morbidity and mortality increase

July 8th - DEMOBILIZATION, AND RETURN TO STANDBY SEASON: Initiating return to normal conditions



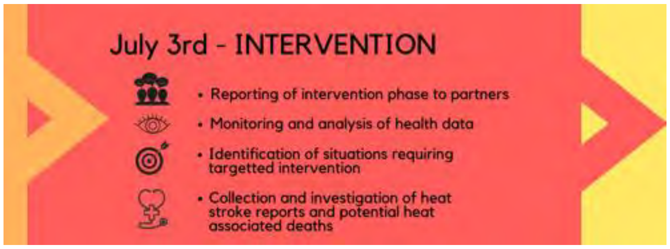
May 15th - SEASONAL WATCH

- Sharing response plan with partners
- Dissemination of education and awareness messages
- Monitoring of health and meteorological data



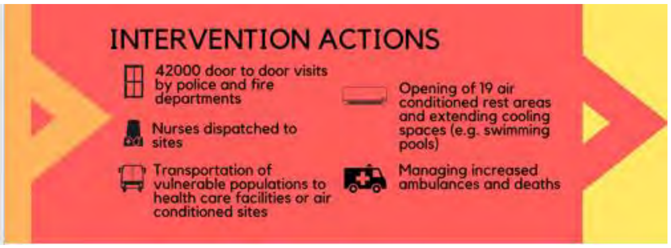
June 30th - ALERT

- Public awareness messages and monitoring of signs and symptoms
- Call for vigilance and dialogue with partners to discuss implementation actions
- Visits to homecare patients
- Actions put in place for employees: water distribution, work breaks, cooling necklaces, common areas with AC
- Ensure that vulnerable clients are informed about ways to stay safe in the heat



July 3rd - INTERVENTION

- Reporting of intervention phase to partners
- Monitoring and analysis of health data
- Identification of situations requiring targetted intervention
- Collection and investigation of heat stroke reports and potential heat associated deaths



INTERVENTION ACTIONS

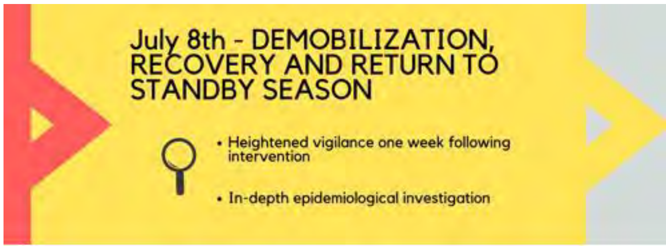
42000 door to door visits by police and fire departments

Nurses dispatched to sites

Transportation of vulnerable populations to health care facilities or air conditioned sites

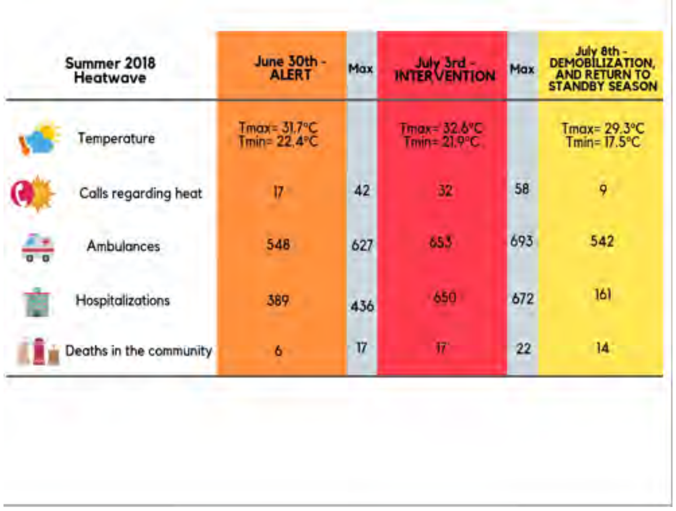
Opening of 19 air conditioned rest areas and extending cooling spaces (e.g. swimming pools)

Managing increased ambulances and deaths



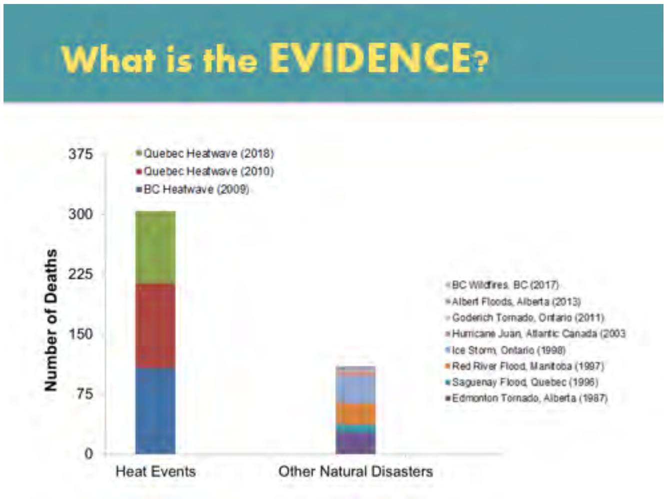
July 8th - DEMOBILIZATION, RECOVERY AND RETURN TO STANDBY SEASON

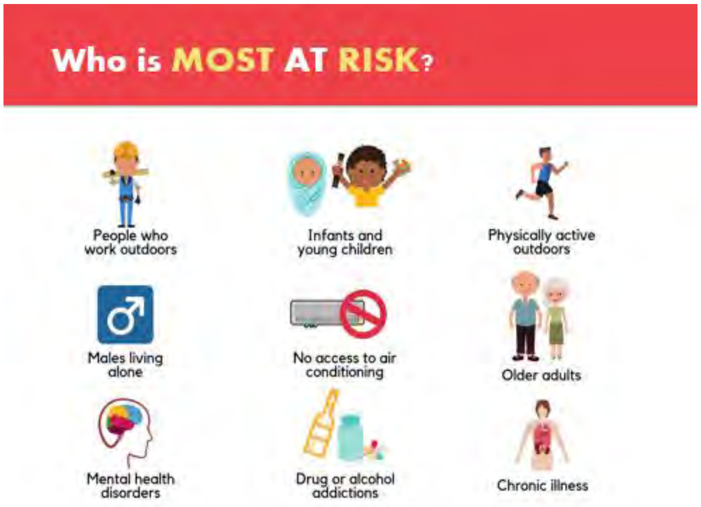
- Heightened vigilance one week following intervention
- In-depth epidemiological investigation



Summer 2018 Heatwave	June 30th - ALERT	Max	July 3rd - INTERVENTION	Max	July 8th - DEMOBILIZATION, AND RETURN TO STANDBY SEASON
Temperature	Tmax= 31.7°C Tmin= 22.4°C		Tmax= 32.6°C Tmin= 21.9°C		Tmax= 29.3°C Tmin= 17.5°C
Calls regarding heat	17	42	32	58	9
Ambulances	548	627	653	693	542
Hospitalizations	389	436	650	672	161
Deaths in the community	6	17	17	22	14

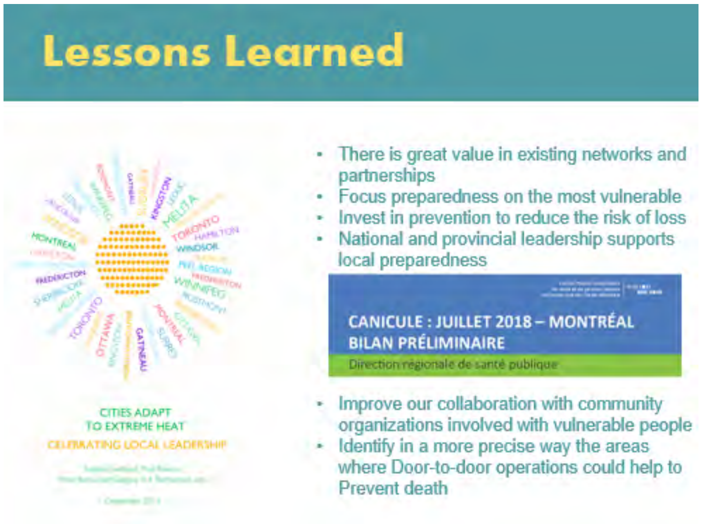
What is the EVIDENCE?





Who is MOST AT RISK?

- People who work outdoors
- Infants and young children
- Physically active outdoors
- Males living alone
- No access to air conditioning
- Older adults
- Mental health disorders
- Drug or alcohol addictions
- Chronic illness



Lessons Learned

CITIES ADAPT
TO EXTREME HEAT
CELEBRATING LOCAL LEADERSHIP
CANICULE : JUILLET 2018 – MONTRÉAL
BILAN PRÉLIMINAIRE
Direction régionale de santé publique

- There is great value in existing networks and partnerships
- Focus preparedness on the most vulnerable
- Invest in prevention to reduce the risk of loss
- National and provincial leadership supports local preparedness
- Improve our collaboration with community organizations involved with vulnerable people
- Identify in a more precise way the areas where Door-to-door operations could help to Prevent death

Solutions

Heat Related Deaths are Preventable

Heat Alert and Response Systems (HARS)

Community Mobilization and Engagement
Alert Protocol
Communication Plan
Community Response Plan
Evaluation Plan

Health Promotion & Outreach

ONE SIZE DOES NOT FIT ALL

Heat-Health Publications

It's way too hot!
Keep children cool!
You're active in the heat. You're at risk!

http://www.hc-sc.gc.ca/ewh-semt/pubs/climat/index-eng.php

New! Heat-Health Fact Sheets

STAYING HEALTHY in the HEAT
HEAT EXHAUSTION
HEAT STROKE
What are the SIGNS AND SYMPTOMS of heat illness?
Who is MOST AT RISK?
FACT 1
FACT 2
FACT 3
FACT 4
SAFETY TIPS
TIP 1
TIP 2
TIP 3
TIP 4
TIP 5

Thank you!

Melissa Shaw
Senior Analyst - Climate Change and Innovation Bureau
Melissa.Shaw@canada.ca
613 941-4745

Shawn Donaldson, PhD.
Manager - Climate Change and Innovation Bureau
Shawn.Donaldson@canada.ca
613-799-8140

Rami Yassine
Analyst - Climate Change and Innovation Bureau
Rami.Yassine@canada.ca
343 542-3240

Maria Malik
Analyst - Climate Change and Innovation Bureau
Maria.malik@canada.ca
613-948-6774

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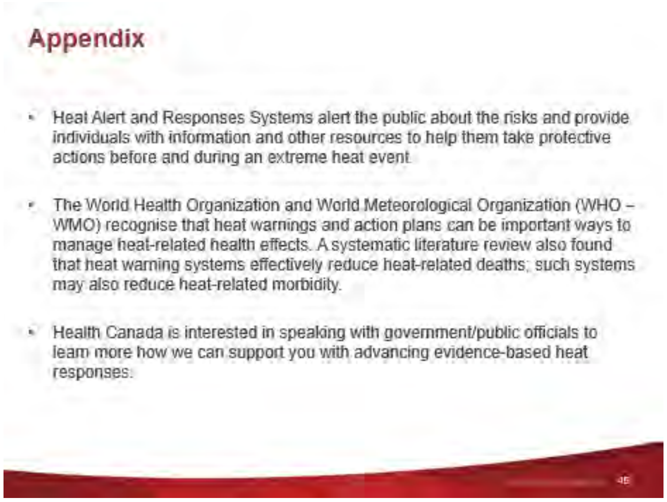
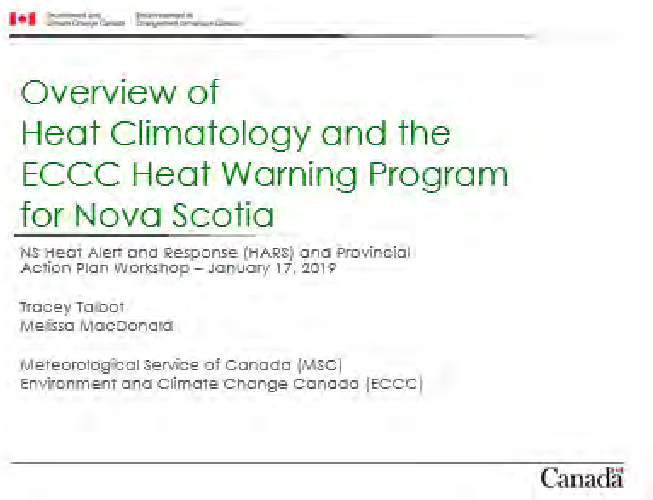


Appendix

- Heat Alert and Responses Systems alert the public about the risks and provide individuals with information and other resources to help them take protective actions before and during an extreme heat event.
- The World Health Organization and World Meteorological Organization (WHO – WMO) recognise that heat warnings and action plans can be important ways to manage heat-related health effects. A systematic literature review also found that heat warning systems effectively reduce heat-related deaths; such systems may also reduce heat-related morbidity.
- Health Canada is interested in speaking with government/public officials to learn more how we can support you with advancing evidence-based heat responses.

Health Canada



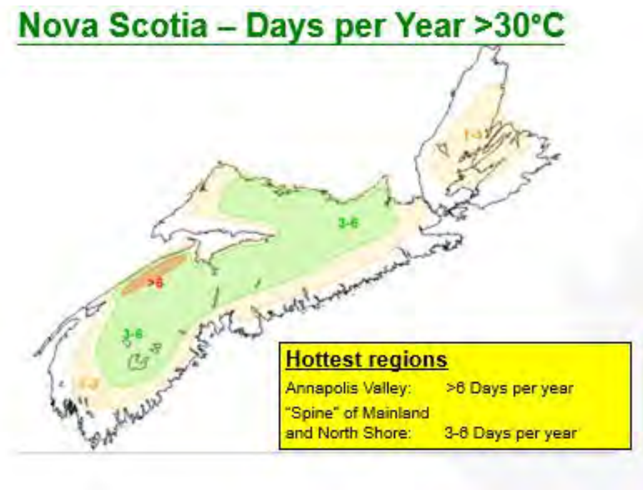
Overview of Heat Climatology and the ECCC Heat Warning Program for Nova Scotia

NS Heat Alert and Response (HARS) and Provincial
Action Plan Workshop – January 17, 2019

Tracey Talbot
Melissa MacDonald

Meteorological Service of Canada (MSC)
Environment and Climate Change Canada (ECCC)

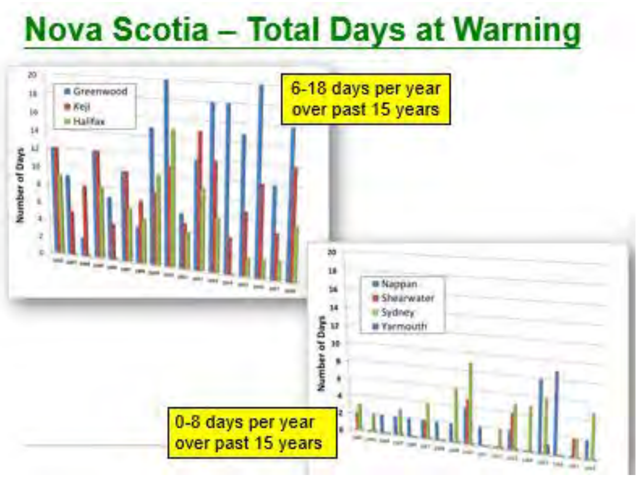
Canada



Nova Scotia – Days per Year >30°C

Hottest regions

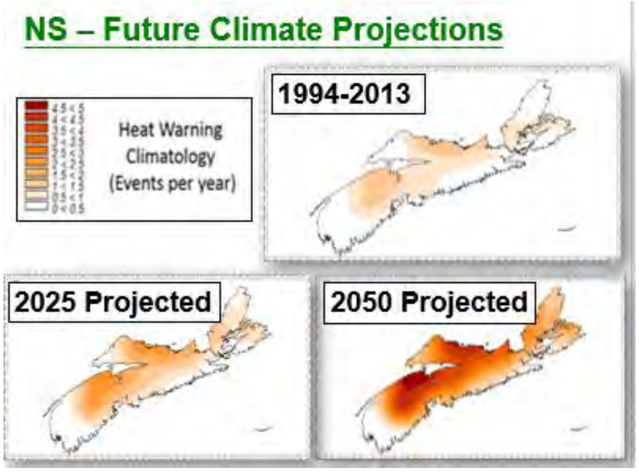
Annapolis Valley:	>6 Days per year
"Spine" of Mainland and North Shore:	3-6 Days per year



Nova Scotia – Total Days at Warning

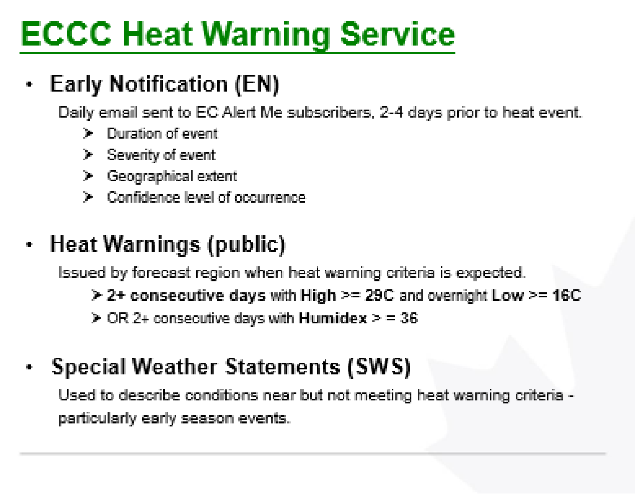
6-18 days per year over past 15 years

0-8 days per year over past 15 years



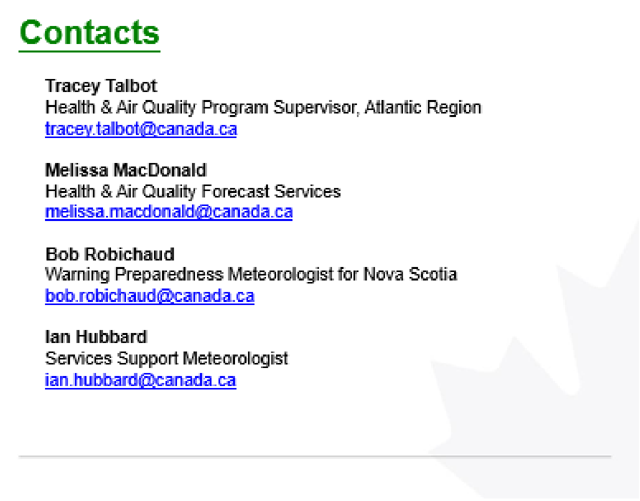
NS – Future Climate Projections

Heat Warning Climatology (Events per year)



ECCC Heat Warning Service

- **Early Notification (EN)**
  Daily email sent to EC Alert Me subscribers, 2-4 days prior to heat event.
  - Duration of event
  - Severity of event
  - Geographical extent
  - Confidence level of occurrence
- **Heat Warnings (public)**
  Issued by forecast region when heat warning criteria is expected.
  - **2+ consecutive days** with **High >= 29C** and overnight **Low >= 16C**
  - OR 2+ consecutive days with **Humidex > = 36**
- **Special Weather Statements (SWS)**
  Used to describe conditions near but not meeting heat warning criteria - particularly early season events.



Contacts

Tracey Talbot
Health & Air Quality Program Supervisor, Atlantic Region
tracey.talbot@canada.ca

Melissa MacDonald
Health & Air Quality Forecast Services
melissa.macdonald@canada.ca

Bob Robichaud
Warning Preparedness Meteorologist for Nova Scotia
bob.robichaud@canada.ca

Ian Hubbard
Services Support Meteorologist
ian.hubbard@canada.ca

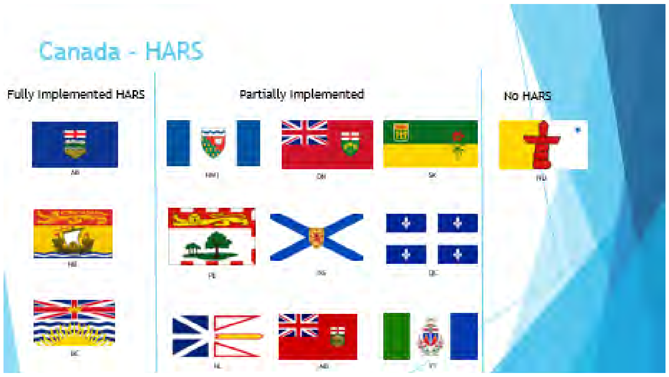
HARS Coordinator

Heat Alert Response System

January 17th, 2019

Vanessa Nickelo
Health Protection Program Officer - HARS

nova scotia health authority
NOVA SCOTIA



Canada - HARS

Fully Implemented HARS	Partially Implemented	No HARS
AB NB BC	NWT ON SK PE NS QC NL MB YT	NU

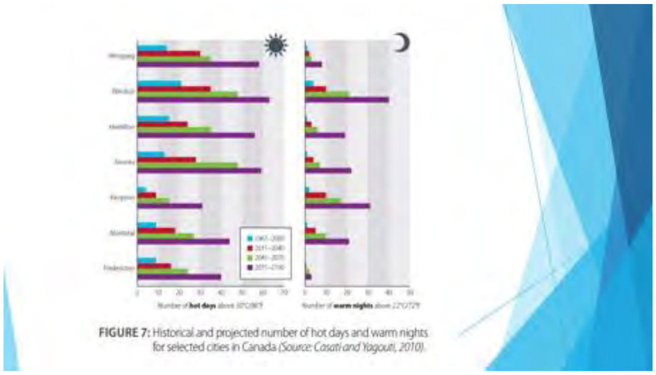
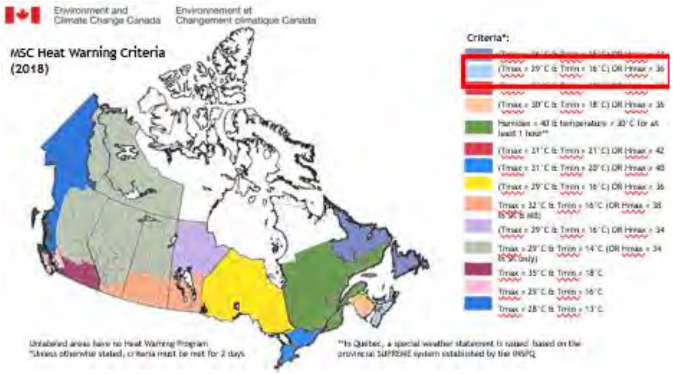


FIGURE 7: Historical and projected number of hot days and warm nights for selected cities in Canada *(Source: Casati and Yagouti, 2010)*.



Environment and Climate Change Canada
Environnement et Changement climatique Canada

MSC Heat Warning Criteria (2018)

Criteria*:

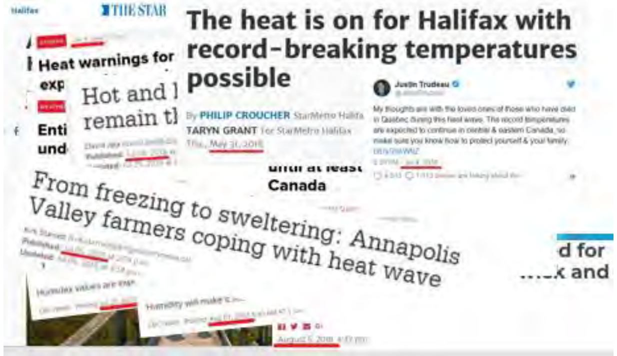
- (Tmax ≥ 29°C & Tmin ≥ 16°C) OR Hmax ≥ 36
- (Tmax ≥ 30°C & Tmin ≥ 18°C) OR Hmax ≥ 36
- Humidex ≥ 40 & temperature ≥ 30°C for at least 1 hour**
- (Tmax ≥ 31°C & Tmin ≥ 21°C) OR Hmax ≥ 42
- (Tmax ≥ 31°C & Tmin ≥ 20°C) OR Hmax ≥ 40
- (Tmax ≥ 29°C & Tmin ≥ 16°C) OR Hmax ≥ 36
- Tmax ≥ 32°C & Tmin ≥ 16°C (OR Hmax ≥ 38 in SK & MB)
- (Tmax ≥ 29°C & Tmin ≥ 16°C) OR Hmax ≥ 34
- Tmax ≥ 29°C & Tmin ≥ 14°C (OR Hmax ≥ 34 in SK only)
- Tmax ≥ 35°C & Tmin ≥ 18°C
- Tmax ≥ 29°C & Tmin ≥ 16°C
- Tmax ≥ 28°C & Tmin ≥ 13°C

Unlabeled areas have no Heat Warning Program
*Unless otherwise stated, criteria must be met for 2 days

**In Quebec, a special weather statement is issued based on the provincial SUPREME system established by the INSPQ

Nova Scotia - Heat Warnings

- **2+ consecutive days** with **High ≥ 29C** and overnight **Low ≥16C**
- OR 2+ consecutive days with **Humidex ≥36**



Halifax

THE STAR

The heat is on for Halifax with record-breaking temperatures possible

By PHILIP CROUCHER StarMetro Halifax
TARYN GRANT For StarMetro Halifax
Thu., May 31, 2018

Heat warnings for
exp

Hot and h
remain th

Enti
und

until at least
Canada

Justin Trudeau

My thoughts are with the loved ones of those who have died in Quebec during the heat wave. The record temperatures are expected to continue in central & eastern Canada, so make sure you know how to protect yourself & your family.

From freezing to sweltering: Annapolis Valley farmers coping with heat wave

Humidex values are exp

Humidity will make it

August 5, 2018

d for
k and

Thank you

Vanessa Nickelo
Health Protection Program Officer - HARS
Vanessa.Nickelo@nshealth.ca
902-240-8926

Helping Us Help You

Even with the VPR, you should always be prepared to take care of yourself and your family for at least 3 days in a large scale emergency.
~ Emergency Management Ontario

There is no way of knowing when help can arrive

Be Prepared for an Emergency

Since registering with the VPR will *not* change your need to be prepared, helpful resources are provided. Resources are also available at:
www.soovpr.com
www.ontario.ca/emo

IN CASE OF EMERGENCY
CALL
911
POLICE · FIRE · MEDICAL

Vulnerable Persons Registry

Mission Statement:
To increase the safety of Sault Ste. Marie residents living within their own homes who would be at greater risk during an emergency or disaster. To offer a beneficial public service that will continue our community's commitment to increasing the safety of Sault Ste. Marie residents

Vision Statement:
To provide an emergency planning model that will increase the safety of vulnerable persons nationwide by fostering development across Ontario and Canada

99 Foster Drive, Level 6
Sault Ste. Marie, ON, P6A 5X6

VPR Coordinator can be contacted at:
rscott@soovpr.com
942-7927 x3041
Website: www.soovpr.com

VPR™
Vulnerable Persons Registry

In Loving Memory of
Lewis Wheelan

1981-2003

What is the VPR?

- A free, voluntary and confidential registry for persons at greater risk during an emergency or disaster

- A secure communication tool that provides local first responders and PUC with the key information they need to help increase one's safety during the following situations:

  -Large Scale Emergencies
  -Power Outages (PUC)
  -Home Emergencies

- A service that will help our citizens to be prepared for an emergency by providing helpful resources

Vulnerable
Persons
Registry

Who Should Register?

Any Sault Ste. Marie resident without 24-hour support who experiences severe difficulty with any of the following:

- Mobility, Vision or Hearing
- Developmental, Cognitive or Mental Health

OR

Any Sault Ste. Marie resident living at home who needs any of the following:

- Electricity for life-sustaining equipment such as life support, oxygen, dialysis etc.

Safeguard
Independence
Award-Winning
Peace-of-Mind
Helping
Safety
Community
Sault
First-of-its-Kind
Preparedness
VPR
Emergencies

How it Helps

Power Outages

- PUC will receive only the information of those who need electricity for life-sustaining equipment
- PUC will be able to help increase the safety of those needing electricity by knowing who is located in an affected area

Home Emergencies

- House fires and other home emergencies
- A VPR flag will appear on dispatch screen
- Will notify first responders of the vulnerability in order to help prepare effective responses

Larger Scale Emergencies

- Ice storms, extended citywide blackouts, hazardous chemical releases etc.
- The on-site emergency command centre will be able to locate or contact individuals who would need extra

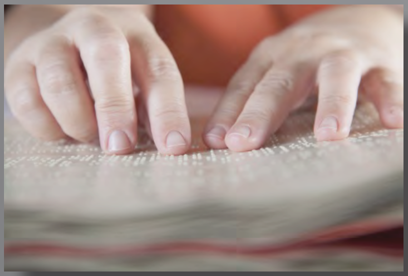
If you have any questions or concerns, please contact the VPR coordinator.

SAULT STE. MARIE
INNOVATION
CENTRE

Please remember...You still need to call 911 in an emergency!

Vulnerable Persons Registry™

Improving the safety of those most vulnerable during emergencies.



Looking Back: Moving Forward

An evaluation of the one-year VPR pilot

July 2013

Table of Contents

An Initiative in Memory of Lewis Wheelan 3
Executive Summary 4
Introduction 6
Program Rationale & Logic 7
Program Description 8
Program Evaluation 10
Survey Results 12
General Pilot Results 15
Discussion 17
Moving Forward 18
Acknowledgements 19
Contact Information 20

An Initiative in Memory of Lewis Wheelan

The idea of the Vulnerable Persons Registry was fueled by the heart-wrenching tragedy of a young man from Sault Ste. Marie, Lewis Wheelan. In 2001, 19-year-old Lewis, spent a summer during university working in his home town of Sault Ste. Marie. He was responsible for clearing brush along electrical distribution lines, when unbeknownst to him he would be faced with a life-altering experience.

On the second day of his job, a co-worker cut a tree that caused a power line to fall, shocking Lewis with 7,200 volts of electricity which resulted in Lewis being severely injured. He suffered burns to over 65 percent of his body and required amputations of his legs, right arm and right shoulder, placing him in a wheelchair. The burns to his body also left Lewis reliant on air-conditioning to regulate his body temperature.

Lewis overcame this adversity and eventually accepted his altered life and new body and was determined to lead an independent lifestyle. He moved back to Southern Ontario and re-enrolled in university. In August 2003, Lewis experienced the widespread electrical outage that impacted most of the province and the U.S. northeast. Lewis, who relied on electricity for air-conditioning, was without power for 22 hours. His family, being eight hours away in Sault Ste. Marie, tried frantically to reach him or anyone who could have helped ensure his safety, but to no avail. Lewis died early in the morning on August 15, 2003, before power was restored to his building. He was only 21 years old at the time. Through tragedy comes hope, and the ill-fated passing of Lewis spurred the concept of the VPR with the goal of preventing future incidences – a concept developed by Accessibility Sault Ste. Marie and the Sault Ste. Marie Innovation Centre.

> *"I couldn't be more proud to have such a needed initiative named in memory of my son, Lewis, whose death exemplifies all that can go wrong when a registry like the VPR is not in place. It will save a life one day."*
>
> *~ Melanie Wheelan*

Executive Summary

PROGRAM OVERVIEW

The Sault Ste. Marie Vulnerable Persons Registry (VPR), hosted by the Sault Ste. Marie Innovation Centre (SSMIC), is an award-winning and first-of-its-kind program that launched in October 2011 and brought together over 25 local partners. The program aimed to improve the safety of those most vulnerable during emergencies by providing local emergency service groups with immediate access to key information surrounding individual circumstances.

Information becomes available on the dispatch screen when 911 is called to the registrant's address whether the situation requires fire, police or emergency medical services. Information can also be accessed by authorized users when responding to a disaster in order to locate who may need unique assistance when disaster strikes. The local utility company notifies electric-dependent registrants of planned outages that will be one hour or more and the Canadian Red Cross will contact those who will be affected by a major outage lasting six hours or more. Registrants are educated about how to prepare for emergencies through helpful resources and one-on-one emergency preparedness training by Red Cross volunteers.

Eligible residents can register on a voluntary, no-fee basis and are required to sign a consent form acknowledging that they would like their information to be provided to emergency service groups and recognize that registering does not guarantee one's safety nor does it negate personal responsibility.

The concept, initiated by Accessibility Sault Ste. Marie and SSMIC, began in 2003 with municipal approval granted in 2007. Start-up funding from the District of Sault Ste. Marie Social Services Administrative Board was granted in 2009. The Community Endowment Fund, the Northern Ontario Heritage Fund Corporation and the Ontario Trillium Foundation contributed one-time funding towards the implementation and operation of the VPR program while Accessibility Sault Ste. Marie and United Way of Sault Ste. Marie provide core funding.

After the pilot, 95 total registrations were received but the program has since increased by 106 per cent with 196 total registrations as of July 22, 2013.

PROGRAM EVALUATION

An evaluation of the pilot program took place with surveys distributed and received by mid-February 2013. Surveys were created and made available to registrants, partners and the general public through online, mail and phone. Evaluation meetings also took place with frontline staff for Fire Services and the ambulance communication centre. Ongoing feedback was also collected through various discussions with partners and the VPR steering committee.

Key items evaluated in surveys related to awareness, privacy, peace of mind, connotation of program name and perceived program value.

- 52 per cent of respondents (216 total community responses) were not aware of the program
- 39 per cent of registrants became aware of the program through a community agency (58 total responses - 61 per cent response rate from 95 pilot registrants)
- 69 per cent of community responses, 72 per cent of registrant responses and 75 per cent of legal guardian responses were unconcerned with providing their information for purposes of improving safety

These findings suggest that lack of awareness may have played a larger role than privacy concerns when considering the limited number of registrants (95).

The program was designed to provide an extra layer of support and to complement the existing support services available to persons with disabilities and older adults living at home.

- 59 per cent of registrant responses felt that the program enabled them to stay in their home longer because of a greater sense of security with 26 per cent being unsure, 12 per cent being not applicable and 3 per cent feeling it didn't

Many expressed a concern that the program name, Vulnerable Persons Registry, may deter people as they don't want to be identified as being vulnerable.

- 58 per cent of community responses and 67 per cent of registrant responses felt the connotation of the name was positive but many did suggest that the term emergency may be beneficial to add

Perceived value of the program from both the community and registrants was quite positive.

- 83 per cent of registrants and 60 per cent of community responses felt it was very valuable with 14 per cent of registrants and 36 per cent of community responses feeling the program was valuable

In addition to survey results, the VPR coordinator also collected feedback throughout the pilot. Significant achievements from the pilot included the following:

- Recipient of provincial and national awards
- Gained international interest from over 17 countries
- Interest from over 25 Ontario and Canadian cities
- Experienced continuous growth in registrants
- Published three articles
- Attracted extensive media coverage with over 25 news releases (including two CBC national stories), 3 television segments (including CTV news) and 4 radio segments (both local and CBC)

As with any pilot, weaknesses were identified and will be the foundation on which improvements can be made. Weaknesses included:

- Dispatchers had difficulty filtering through multiple VPR registrants within one apartment building
- Registration locations identified difficulty with registering clients in addition to their existing day-to-day responsibilities
- Absence of creating opportunities for social interaction with registrants
- Misunderstandings and limited awareness of the program for frontline emergency staff
- Misunderstandings related to eligibility criteria
- Time consuming update processes and concerns that SSMIC did not have the resources or capacity to help other communities expand the program as was originally intended

MOVING FORWARD

A partnership was created in May 2013 between SSMIC and the Canadian Red Cross that will enable both organizations the opportunity to work together to expand and promote the VPR to other communities while transitioning the program to the Canadian Red Cross. The VPR will complement the mission and services of the Red Cross while also positioning the organization as both proactive and reactive when helping those most vulnerable during emergencies.

Many of the key areas of improvement required to refine the program can be addressed as a result of this partnership. Program awareness will be enhanced as a result of the positive and widespread reputation of the Canadian Red Cross alongside the VPR becoming a program within a humanitarian organization instead of a technology-based organization. Concerns over the capacity to expand to other communities, increasing efficiencies and creating a scalable solution can be addressed by developing a revised framework that takes into account the resources and capacity of both SSMIC and the Red Cross.

All of the information contained within this report will be taken into consideration when developing the new framework. Communities interested in implementing a VPR can contact the Red Cross (see page 20), which will enable the Red Cross to monitor program interest and plan for expansion. No timelines have been identified yet for implementation in another community; however every step taken gets us one step closer to helping those most vulnerable during emergencies.

Introduction

The Vulnerable Persons Registry (VPR), a first-of-its-kind and award-winning program, was launched October 2011 as a one-year pilot by the Sault Ste. Marie Innovation Centre in Sault Ste. Marie, Ontario – a Northern Ontario community with a population of 75,000. The VPR program brought together over 25 local agencies, all with the common goal of improving the safety of those most vulnerable during emergencies. Improved safety is achieved by enabling local emergency service groups immediate access to key information surrounding individual circumstances and helping registrants be better prepared for emergencies. Eligible residents can register on a voluntary, no-fee basis. The VPR stands apart from other registries as it is the only comprehensive program that assists individuals with varying types of vulnerabilities in all emergency situations whether it is a power outage, home emergency or disaster. The importance of such a proactive measure initially stemmed from the heart-wrenching tragedy of Lewis Wheelan, a young man from Sault Ste. Marie *(see page 3)*.

Safeguard
Independence
Award-Winning
Peace-of-Mind
Helping
Safety
Community
Sault
First-of-its-Kind
Preparedness
VPR
Emergencies
PUC
Canadian Red Cross
Ontario
United Way
BFAA
Community Living
revera
Arthritis Society
Alzheimer Society
Canadian Mental Health Association
Bayshore
Premier Homecare Services
we care
CHS SCO
SAFE
Ontario March of Dimes
Sault Area Hospital
Autism Ontario
cnib
inca
ccac casc
Innovation Centre

In 2003, Accessibility Sault Ste. Marie and the Sault Ste. Marie Innovation Centre (SSMIC) began lobbying the City of Sault Ste. Marie, the Sault Ste. Marie Emergency Management Committee and the Public Utilities Commission in order to gain the support and approval of developing and implementing a VPR. Approval to proceed was granted in 2007 after successfully addressing primary concerns, which included liability and the validity of data. Concerns were primarily addressed by demonstrating through a pilot that the ability to provide information to dispatch systems was feasible.

The pilot involved providing the locations of home daycares to the Sault Ste. Marie Fire department's dispatch system along with key information such as the number of children. Proving that the technology exists to create the concept of a VPR helped to encourage the municipality to participate in its development. Concerns of liability were mitigated by ensuring that applicants would be required to consent to their understanding that the program doesn't guarantee one's safety. The concern regarding validity of data was addressed by ensuring regular registrant updates would be performed by SSMIC.

Start-up funding for the development of the program was provided in 2009 by the District of Sault Ste. Marie Social Services Administration Board. The Community Endowment Fund, the Northern Ontario Heritage Fund Corporation and Ontario Trillium Foundation have contributed one-time funding towards the implementation and operation of the VPR program. Accessibility Sault Ste. Marie and United Way of Sault Ste. Marie are also providing core funding for the program. Since the launch of the program, the VPR has seen a continuous increase in exposure and registration. As of July 22, 2013, there were 196 total registrations with 170 active at that time – an increase of 106 per cent since the pilot ended (pilot had a total of 95 registrations).

***MISSION:** To improve the safety of those most vulnerable during emergencies.*

***VISION:** To provide an emergency planning model that will help improve the safety of those most vulnerable nationwide.*

Program Rationale & Logic

While the VPR concept initiated in 2003 following the unfortunate passing of Lewis Wheelan, further support for the need of a VPR became evident as increasing environmental and social concerns occurred. In North America, Hurricane Katrina was one of the defining disasters where authorities realized the necessity of knowing where those most vulnerable live as the highest mortality rates were older adults and persons with disabilities. Between an aging population, a desire to remain independent and reduced availability of long-term care, municipalities are seeing a continuous rise in the number of older adults aging in place. Authorities can plan for the needs of existing care facilities such as hospitals, retirement or nursing homes, but it is exceptionally difficult to plan for those living at home who would be most vulnerable during an emergency. Recently, there has also been an increase in severe weather which is expected to continue, further supporting the need of a VPR program.

Other registries exist, however, they typically only focus on one vulnerability or the information can only be used by one emergency group. Often times, the information is not available to be used during all emergencies and updating is the responsibility of the registrant as opposed to having the update process being twofold: responsibility of both registrant and host organization. Other registries also don't include the value-added components of frequent one-on-one personal updates which is particularly helpful for vulnerable populations nor do they provide a means to become educated on emergency preparedness or other services.

The VPR program was designed to be one complete solution with the goal of providing an extra layer of support during all emergencies, preparing registrants for emergencies, and creating greater response efficiencies for emergency groups. The design process was focused on creating a centralized solution that would be inclusive, useful and collaborative, thus generating a concept with one host organization (SSMIC), useable data and processes for all emergencies and bringing together over 25 agencies. Designing one solution is more cost-effective and less labour-intensive than if multiple single-focused registries were to be implemented.

SSMIC became the host organization as the Community Geomatics Centre (CGC), a division of SSMIC, had the technology and expertise necessary to navigate the development of the program and subsequently manage the program once implemented. The CGC is unique in Canada, in that it functions as a not-for-profit organization to promote and establish the partnerships and technological means to efficiently share geospatial data, tools and knowledge amongst community organizations to create safer, healthier and more prosperous communities. SSMIC worked closely with the program's many partners to ensure the program met the needs of the community.

SSMIC collects, evaluates and secures all applications; enters data into the VPR database; performs three-month updates with registrants; and distributes data monthly to authorized local emergency service groups. Numerous community agencies (see page 19) partnered with the VPR for the purpose of providing clients with access to the VPR and to assist in generating further awareness within the community. Emergency service groups partnered to help improve safety and to create efficiencies when responding to emergencies. Educating registrants on emergency preparedness was important to increase awareness and to ensure personal responsibility was not negated.

NOTE:

For purposes of this report, emergency service groups refer to police, fire, emergency medical services, the community emergency management coordinator, utility company (PUC) and Canadian Red Cross.

Program Description

ISSUE & SOLUTION

- Concerns regarding the safety of those living at home who are most vulnerable during emergencies
- Developed a voluntary, confidential, and no-fee service for eligible residents that would enable local emergency service groups access to key information surrounding individual circumstances

KEY OBJECTIVES

- To improve the safety of those most vulnerable during emergencies by securely providing key information to local emergency services to enable efficient and effective responses
- Educate registrants about how to be prepared for emergencies and about available local services

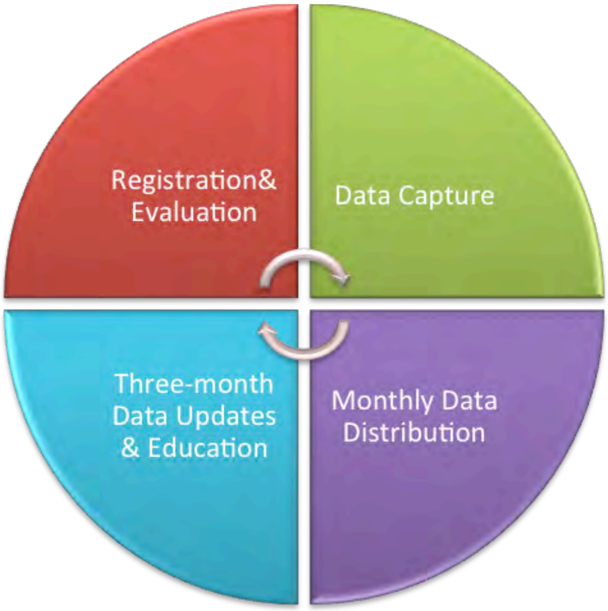
ELIGIBILITY CRITERIA

- Ability to benefit older adults, persons with disabilities and others who are living at home with critical needs
- Eligibility included those 18 years old and older living at home without 24-hour care who experience difficulties with mobility, vision, hearing, cognitive, developmental or mental health
- Eligibility also included those of any age living at home who relied on electricity for life sustaining equipment such as oxygen, whether they had 24-hour care or not

SERVICES

a) Provision of Services

- SSMIC is the host of the VPR program with a VPR Coordinator responsible for collecting and securing all registrations, entering data, performing updates, distributing data, community outreach, partner relations and service referrals
- Local emergency service groups use data in response planning of power outages, home emergencies and disasters
- Eleven community agencies partnered with the VPR to promote and assist with registering interested clients (i.e. CNIB, Canadian Red Cross, etc.)
- North East Community Care Access Centre and corresponding service providers in addition to private home care agencies partnered with the VPR to promote and provide access to program information and forms
- Sault Ste. Marie Canadian Red Cross volunteers provide one-on-one emergency preparedness training

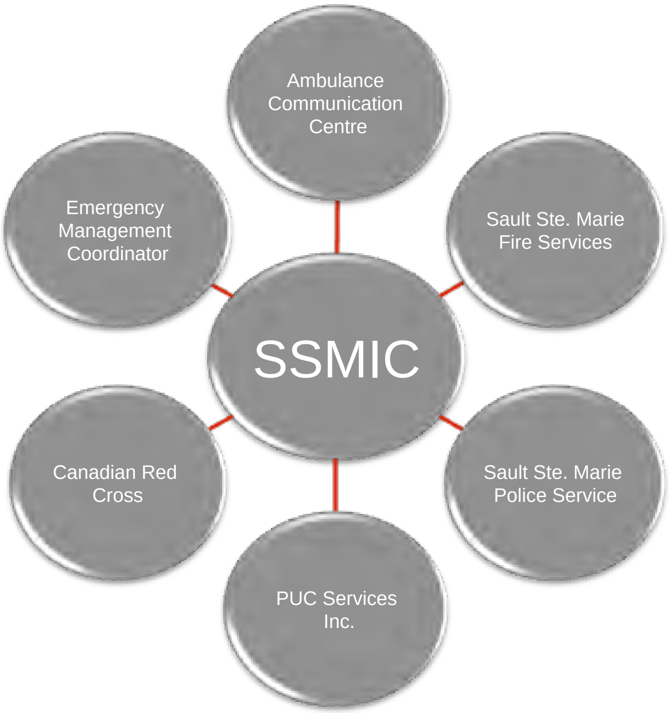

Registration& Evaluation
Data Capture
Three-month Data Updates & Education
Monthly Data Distribution

b) Program Registration

- Registration can be online, by mail or through one of 11 registration locations
- Applications are evaluated based on eligibility followed by appropriate correspondence
- If approved, information is entered into the VPR database and if declined the information would be secured as a hard copy and would notify the point of contact

c) Data Distribution and Usage

- VPR data is provided monthly to authorized emergency personnel through a secured FTP site in a format compatible to the user's system; however, authorized users also have access to real-time data for use when required in an emergency
- Sault Ste. Marie Fire Services, Emergency Medical Services and Police Service have VPR data available in their dispatch system so when a 911 call is placed to a registrant's address, the dispatcher can relay it to the crew responding
- The Community Emergency Management Coordinator and the Police Service also have authorized access to an interactive report to perform specialized queries during evacuations or city-wide declared emergencies
- Public Utilities Commission and Canadian Red Cross have access to filtered electric-dependent registrant information in order to inform registrants of planned power outages and to learn if assistance is needed during major outages lasting six hours or more


Ambulance Communication Centre
Emergency Management Coordinator
Sault Ste. Marie Fire Services
SSMIC
Canadian Red Cross
Sault Ste. Marie Police Service
PUC Services Inc.

d) Three month Updates

- Registrants are contacted every three months according to their preferred method of communication (phone, mail, online or in-person)
- Registrants are also encouraged to notify the VPR coordinator if anything changed prior to their scheduled three month update (i.e. change of address)

e) Emergency Preparedness Education and Local Service Referrals

- Provide resources on being prepared for emergencies in registration kits and on the VPR website
- Offer one-on-one emergency preparedness training for registrants through Red Cross volunteers
- During general inquiries and three month updates, offer service referrals to available local services

PROGRAM COSTS

- $100,000 in start-up funding was provided in 2009 to assist in performing research and overcoming necessary legal and technical hurdles
- Upwards of $150,000 of in-kind support from SSMIC staff throughout the development and implementation of the one-year pilot
- $60,000 annual operating budget for Sault Ste. Marie

Program Evaluation

The evaluation was based on the program's one-year pilot from October 20, 2011 to October 20, 2012. This report captures feedback received through a formal survey process in addition to general pilot findings.

METHODS

Information gathered for the program evaluation included self-completion of surveys either online or by mail in addition to availability of hard copy surveys at three public events that were hosted during the time that surveys took place (Jan.25/13 to Feb. 18/13). Surveys could also be completed by phone during the same time period. Some groups completed surveys and provided further feedback during information sessions. Ongoing feedback was also gathered through various meetings and discussions that occurred over the course of the pilot. All survey responses, regardless of response method, were entered and analyzed using an online survey tool.

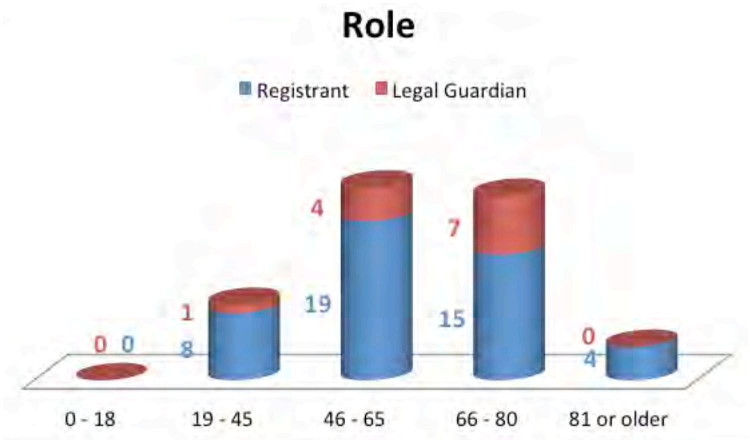
PARTICIPANTS

a) Registrants

Only those registrants who were a part of the program within the one-year pilot (Oct. 20, 2011 - Oct. 20, 2012) were included in the formal evaluation process. There were 95 registrants/legal guardians contacted to participate in the evaluation. Surveys were provided to the point of contact (i.e. registrant or legal guardian) using their preferred method of communication for three month updates, which is identified upon registering for the program. This method was chosen to increase participation by providing formats compatible to registrant needs. Every survey also corresponded to whether the individual was a registrant or legal guardian. An incentive was provided for registrants where they could enter for a chance to win a $100 gift card.

The VPR Coordinator attempted to contact 95 registrants/legal guardians in their preferred method of contact (i.e. phone, email or mail). 18 surveys were mailed with pre-paid return postage, 32 were emailed a link to the survey and 45 were phoned.

There were 58 registrant surveys completed - a 61per cent response rate. Of the 58 completed registrant surveys, 57 represented unique registrant responses since two legal guardians completed the survey pertaining to one registrant. 6 surveys were completed via mail, 19 via online and 33 via phone. Where registrants/legal guardians were unable to be reached, the VPR coordinator made two additional attempts using their preferred method.



b) Partners

Program partners vary in their roles ranging from local emergency service groups and the local utility company to home care services and community agencies. Role specific surveys were provided in both online and hard copy formats in addition to some surveys being completed after in-person evaluation sessions took place. All partners were reminded three times of the importance of receiving feedback.

Local Emergency Service Groups

Police Services completed 26 surveys and Fire Services completed 49 surveys after hosting an evaluation meeting. An evaluation meeting with EMS was unable to occur during the evaluation timeframe, but feedback was provided throughout the pilot during various discussions and will be touched upon in the results of this report. The two primary VPR users within the utility company, PUC Services, completed their survey while other discussions regarding feedback took place with the management responsible for implementing procedures. Gathered feedback will also be included in this report.

Community Agencies

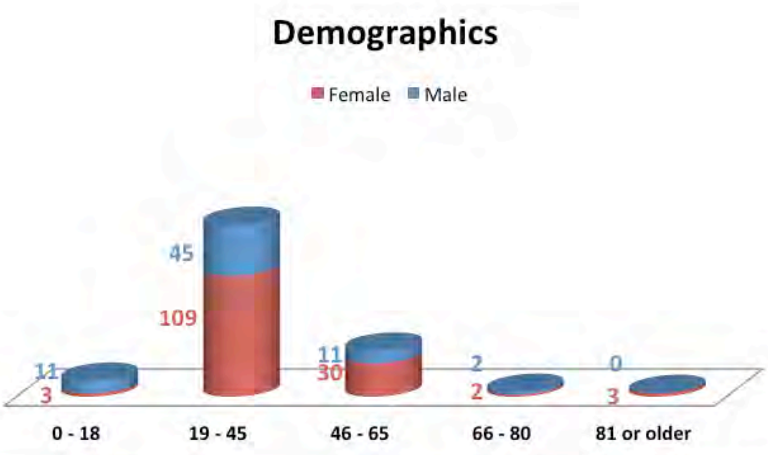
There are 11 community agencies (see pg. 19) that have partnered with the VPR program – all of which have primary VPR contacts that are responsible for collecting any completed registration forms from clients and other client completed forms submitted by staff. The primary contact is also the central person within their organization where VPR feedback is submitted and communicated to the VPR Coordinator. Of the 11 community agencies, eight agencies submitted survey responses.

VPR Steering Committee

The committee is comprised of representatives from the Sault Ste. Marie Innovation Centre, local emergency service groups, PUC Services Inc., Canadian Red Cross and Accessibility Sault Ste. Marie. The committee assists in governing the program in Sault Ste. Marie. Feedback on how to perform the evaluation was provided prior to initiating the evaluation process in addition to program feedback provided throughout the one-year pilot.

c) Community

A request for feedback was broadcasted through various public events, community presentations, news releases and the VPR website. A chance to win a gift card for $100 was also included in the promotions to help encourage participation. Surveys could be completed online, by mail, phone or in-person at public events. People of all ages were able to participate, however, only those 18 and above were able to enter for a chance to win the gift card. Unfortunately, only 216 responses were received, but indicated trends similar to those found from partners and registrants were identified among those who responded.



STRENGTHS AND WEAKNESSES OF METHODS

There are strengths and weaknesses with any method chosen during an evaluation process. Online access to the surveys provides not only quick and easy access but also more unbiased feedback as respondents can answer anonymously. In this particular instance, a primary weakness of the online component was the inability to reach an audience whose feedback would be critical to the program, specifically older adults and those most isolated in the community.

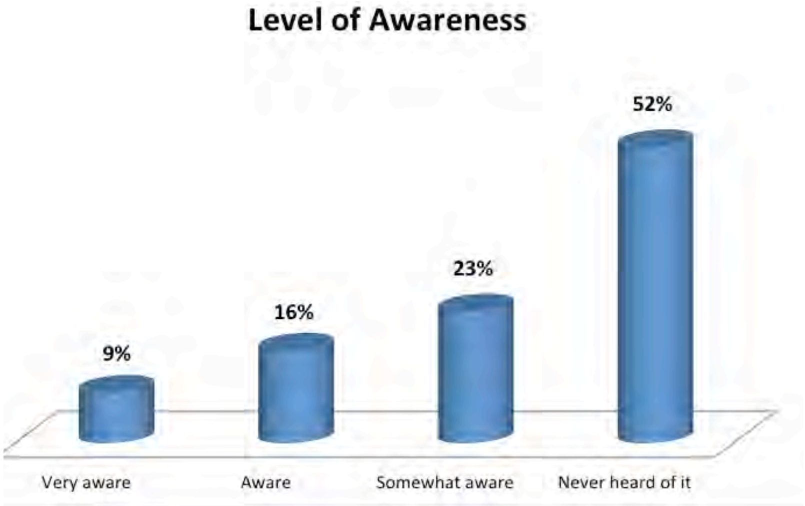
Phone surveys, which reflected our largest number of responses from registrants, can impact the level of honesty one provides as they may feel uncomfortable providing a poor review to a program representative. The greatest strength that resulted from surveying individuals via phone was the ability to receive additional feedback surrounding the program – very few respondents provided additional comments when completing surveys online.

Hard copy surveys made available through mail and in-person events provided an opportunity for respondents to feel comfortable answering questions honestly and at their leisure. However, the process of receiving feedback in a timely manner is not as effective as online or phone. A significant weakness was our inability to provide neighbourhood mail-outs encouraging participation in order to reach those most isolated.

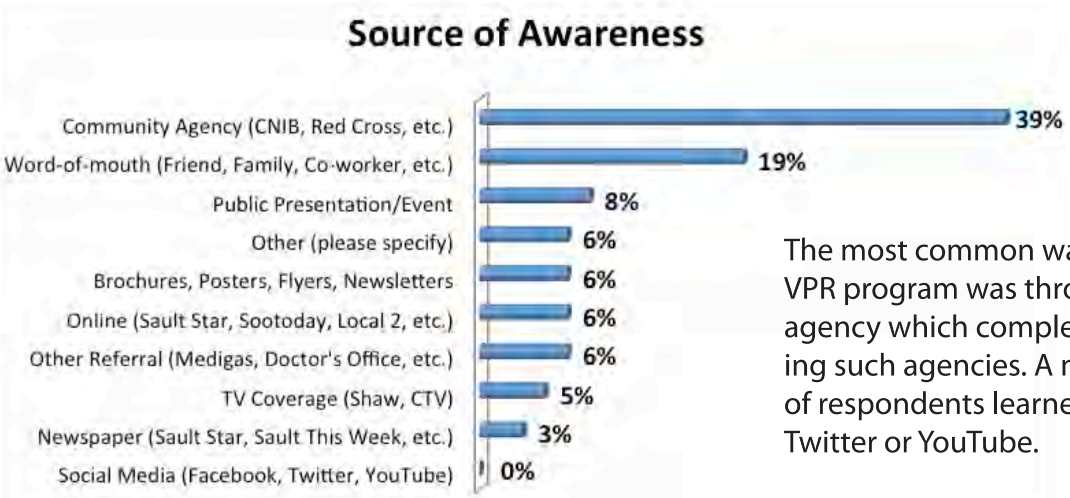
Perhaps the most significant weakness of the evaluation process as a whole was that it was performed by the host organization as opposed to an independent third party because of an insufficient budget. Knowing this was a drawback, the Sault Ste. Marie Innovation Centre collected feedback in various ways from as many groups as possible to ensure an opportunity to provide both positive and negative input.

PROGRAM AWARENESS

Of the 216 responses from the public, 52 per cent were not aware of the program. Although the number of responses was not significant, the lack of awareness is indicative of similar trends identified throughout the pilot phase. Even with the extensive media coverage, partner outreach, public events and social media – general discussions with the public confirmed that knowledge of the program was not widespread.



Community Survey



Registrant Survey

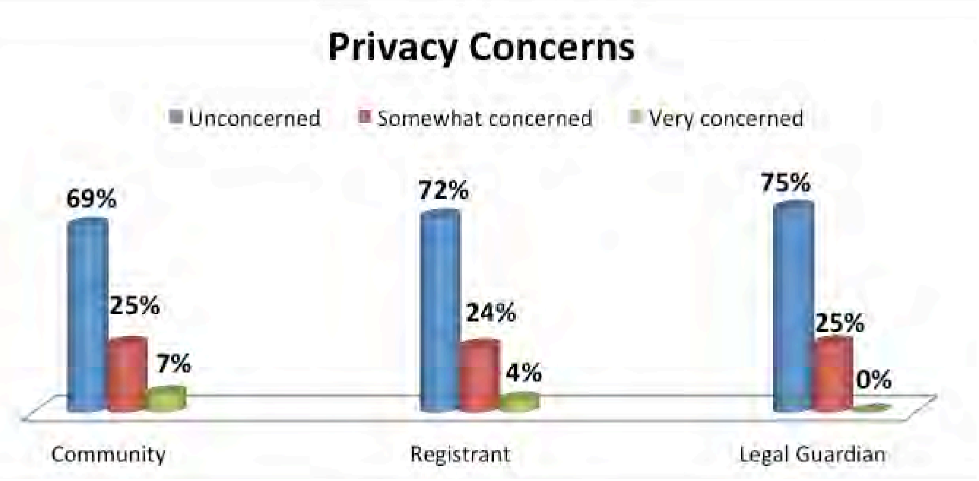
The most common way a VPR registrant learned of the VPR program was through a partnering community agency which complements the primary goal of involving such agencies. A notable finding is that 0 per cent of respondents learned of the program via Facebook, Twitter or YouTube.

The goal of the program was to achieve awareness by reaching out to not only vulnerable persons but also to family members, friends or others in someone's social network. Although 0 per cent learned of the program through social media, 19 per cent learned of the program through word-of-mouth which suggests social media may have reached the intended audience. These results suggest a greater focus should be placed on other tangible communication methods such as public events/presence, marketing materials, television and radio in order to achieve a broader reach.

Survey Results

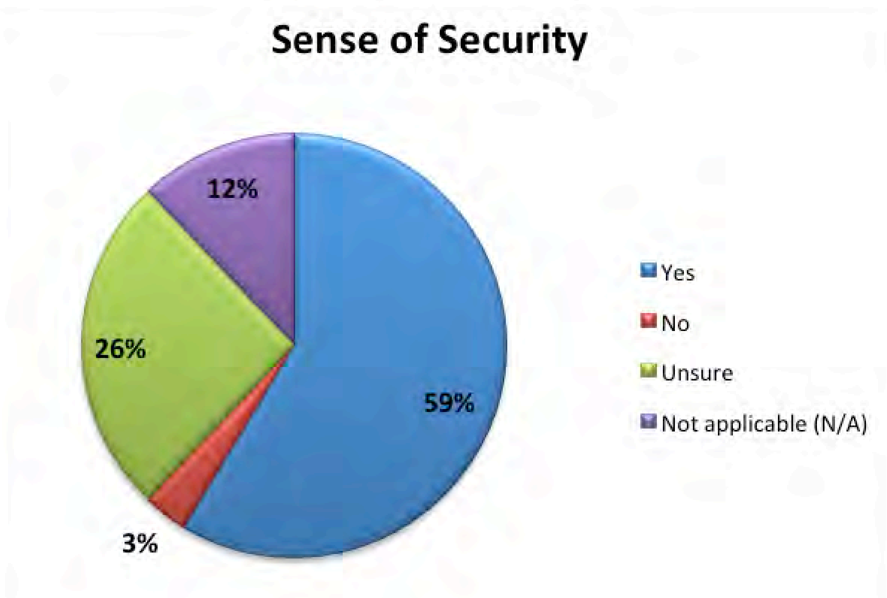
PRIVACY CONCERNS

Privacy is often touted as the primary concern related to providing personal information. Interestingly, regardless of being a community member, registrant or legal guardian – 69 per cent to 75 per cent felt unconcerned about providing personal information for the purpose of improving safety during emergencies. These results suggest that the lower number of registrants during the pilot may have been unrelated to privacy concerns but more to do with a lack of awareness.



PEACE OF MIND

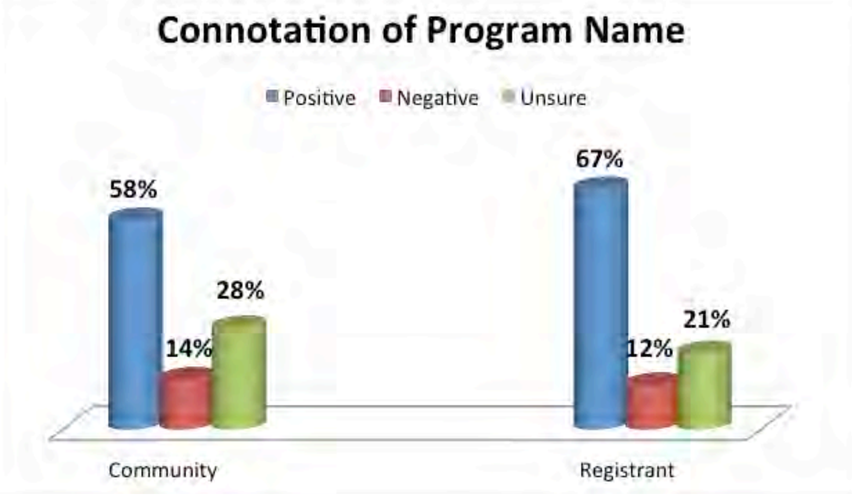
It was important to try to examine whether registrants felt the program contributed to living at home longer by providing an extra layer of support and subsequently a greater sense of security. Fifty-nine per cent of respondents felt the program provided a greater sense of security. Although limited in responses, the program purpose and general findings below can position the VPR as a program that complements the aging at home strategy and the many community support services in place.



> *"Since registering for the program, I feel safer knowing that first responders know where I am." ~ Registrant*
>
> *"The VPR is a great security blanket when you're in your home." ~ Registrant*

PROGRAM NAME

Another aspect examined was related to the public's perception of the program, particularly concerning the name of the program. The Sault Ste. Marie Innovation Centre suspected that the name may be deterring people from learning more about the program as having the term 'Vulnerable' in the name may pose potential negative stereotypes. Fifty-eight per cent of community responses and 67 per cent of registrant responses felt the name had a positive connotation. Additional comments by many respondents expressed that the name can be easily viewed in a positive or negative light. Most respondents felt the name could be considered positive as it can immediately explain what the service is but felt a negative connotation could also exist because some may not want to identify themselves as 'vulnerable'. Others felt that the name should include something emergency related so people understand the purpose of the registry immediately.



"I feel the name explains the service perfectly but I feel that some people may not want to view themselves as vulnerable." ~ Registrant

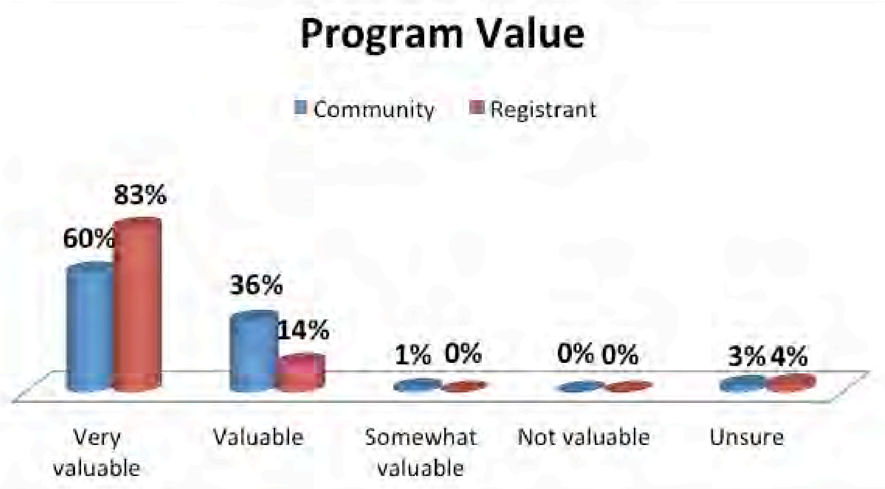
"Maybe find a way to have 'emergency'added to the name of the program." ~ Registrant

PROGRAM VALUE

As this was the first program of its kind, it was important to learn how registrants and the community viewed the value of the program. Eighty-three per cent of registrants felt the program was very valuable compared to 60 per cent of the community responses. It is a positive result that those using the program placed a higher level of value of the program compared to community members. The majority of remaining respondents felt the program was valuable with minimal respondents being unsure of the value.

"I haven't had to use the VPR yet, but feel reassured that it's in place. Thank you!" ~ Registrant

"This is a very valuable program and it should be country-wide. It just makes sense!!!" ~ Community member



General Pilot Results

Aside from collecting general feedback through surveys, ongoing feedback was also gathered in order to assist in determining any future improvements to the program.

PROGRAM CREDIBILITY

- Attracted over 25 local partners
- Garnered international interest with over 17 countries visiting the VPR website since launching
- Over 25 cities have directly contacted the VPR for more information
- Achieved extensive media coverage & recognized with a provincial and national award
- Secured provincial government funding for two years and core community and municipal funding
- Continuous increase in exposure and registrants
- Surpassed the pilot and became a permanent Sault Ste. Marie public service

PILOT PROGRAM STATISTICS

- Registered 95 Sault Ste. Marie residents within the one-year pilot timeframe ending October 20, 2012
- 85 service referrals were given to registrants, legal guardians or general public during discussions
- Out of 95 registrants, 20 were interested in receiving the one-on-one emergency preparedness training
- Specific statistics such as types of vulnerability and living situation for registrants was not tracked explicitly during the pilot; however a current snapshot of these statistics can be found on page 18

ONGOING PROGRAM FEEDBACK

a) Registrants

- High interest for registrant-focused social events in order to enable interaction and to offer an opportunity to meet those involved with the VPR
- Expressed a need for increased outreach as many people are unaware of the VPR when they are advocating for it

b) Emergency Service Groups

- Overall, emergency service groups were pleased with how the program functioned
- At times, felt some of the information provided in monthly reports was not relevant for 911 but more for disasters
- An identified inefficiency arose once numbers increased because of how the dispatch systems functioned when a 911 call came from an apartment building with multiple VPR registrants - The dispatch systems can only go by the parent address which causes the dispatcher to filter through all of the VPR registrants that are from that apartment building
- Mid-way through the pilot, learned that frontline staff had some misunderstandings and limited awareness regarding the VPR as training by the VPR coordinator was declined prior to launching and was performed internally instead
- Tracking 911 usage was not feasible; however emergency service groups expressed high usage in surveys and during general program discussions
- A minimum benchmark was never put in place regarding the notification of electric-dependent registrants for planned power outages, which led to a feasibility concern by the local utility company as the most frequent planned outages last less than an hour

c) Community Agencies & Home Care Services

- Expressed full support for the program and how it creates a complementary service to those they provide to clients
- Agencies learned throughout the pilot that it was difficult to perform day-to-day responsibilities in addition to assisting with the education and registration of interested clients
- Agencies and home care services suggested that referrals or phone registration would be an ideal addition to registration options
- Another suggestion related to extending the eligibility criteria to include those living at home with severe cognitive difficulties even if a spouse is living with them full-time

d) General Public in Sault Ste. Marie

- Registration criteria created some confusion and misunderstanding (i.e. many people misinterpreted what 24-hour care refers to even though a definition was included with the criteria which solidifies that the definition was flawed as well)
- Several suggestions or comments related to wanting to see the VPR expand to include children with disabilities
- Many townships surrounding Sault Ste. Marie and the entire Algoma District expressed interest in having the program expand geographically to serve all rural residents

e) Internal Observations

- Regardless of the extensive outreach, awareness of the program lacked – suspected that it may be related to the Innovation Centre not being a prominently recognized organization within demographics of the average VPR registrant
- The program's vision was to provide a model that could help improve safety of vulnerable persons nationwide – but SSMIC on its own didn't have the resources or capacity to expand the program to where it could be scalable
- Every community who showed interest in the program expressed concern that their community wouldn't be able to implement the program be cause they don't have an Innovation Centre - no other organization wanted to take ownership
- VPR website contained too much information and was difficult to navigate on both an administrative and public user level - even though feedback was requested prior to implementing
- Some partners were not familiar with what other partner roles were in relation to the VPR program
- Marketing budget was far too limited to achieve the extent of outreach required to reach those most isolated
- Communication plan needed to be improved to include creative inexpensive outreach methods
- The inability to offer in-home or phone registration through the VPR coordinator significantly impacted the accessibility of the program
- The disclaimer/consent was too complex and lengthy even though written in plain language and required too many signatures (4)
- Even with an eligibility criteria, encountered various unique circumstances that warranted exceptions as no criteria could capture all scenarios
- Performing three-month updates and monitoring obituaries can pose challenges for one coordinator who is managing all aspects of the program as many phone updates would be a half hour or more because most registrants lived alone and enjoyed the opportunity to socialize

Discussion

The VPR proves the value of goodwill, technology and partnerships. It may have taken eight years to make the concept a reality, but overcoming the many hurdles presented enables the pilot to act as a benchmark moving forward. Lessons learned throughout the process ranging from gaining municipal approvals to program implementation, will enable future implementations to be more streamlined and cost-effective.

Many significant program weaknesses identified during the pilot were corrected as of January 2013 and will be outlined below. Other notable findings related to a lack of awareness in the community combined with the extensive interest from other communities generated a new opportunity for the VPR program. A partnership was created in May 2013 between SSMIC and the Canadian Red Cross.

This partnership will enable both organizations the opportunity to work together to expand the VPR program to other communities while allowing the program to transition to a Canadian Red Cross program. The VPR will complement the mission and services of the Red Cross while also positioning the organization as both proactive and reactive when helping those most vulnerable during emergencies.

Key areas of improvement relate to program awareness and communication, partner procedures, scalability and public experience.

PROGRAM AWARENESS AND COMMUNICATION

- Transition the VPR program from an SSMIC program to a Red Cross program
- Generate a new VPR brand that encompasses the graphic standards of the Red Cross
- Implement consistent and constant community outreach activities to generate greater presence
- Create registrant-focused communication through newsletters and social events
- Simplify eligibility criteria to generate increased awareness and understanding
- Future implementations should require mandatory front line staff training
- Develop a comprehensive Memorandum of Understanding outlining all partner roles

PARTNER PROCEDURES

- Transition from registration locations to service referrals whereby a VPR program representative would follow up with interested clients to learn more and receive assistance with registering
- Adapt registration form to have less free form and re-format reports so relevant information is filtered for 911 purposes
- Implement new procedures and communication materials related to the utility company's minimum one hour requirement for notifying registrants of planned power outages
- Implement annual training on the VPR through mock disasters and other standard internal training meetings

SCALABILITY

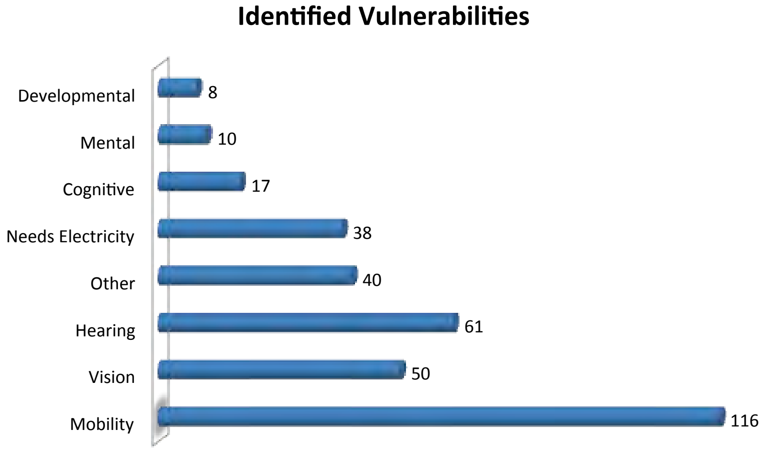
- Generate program efficiencies for intake and updates using the resources and capacity of both SSMIC and Red Cross
- Examine and re-define current eligibility criteria so it has the potential to be consistent with and inclusive of those who would be most vulnerable during emergencies within any community
- Develop the third most compatible reporting format to ensure compatibility with 95 per cent of GIS dis patch systems as two are already developed
- Adapt current VPR website to align with Red Cross graphic standards in addition to creating one multi-community VPR website solution

PUBLIC EXPERIENCE

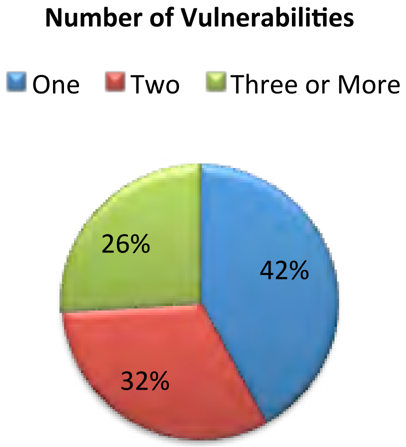
- Enable phone and in-home registrations to provide a more accessible registration process
- Initial website was re-designed and implemented in January 2013 to create a more user-friendly site
- A simplified registration form was implemented in January 2013 to reduce the length of the consent and only one signature as opposed to four

Moving Forward

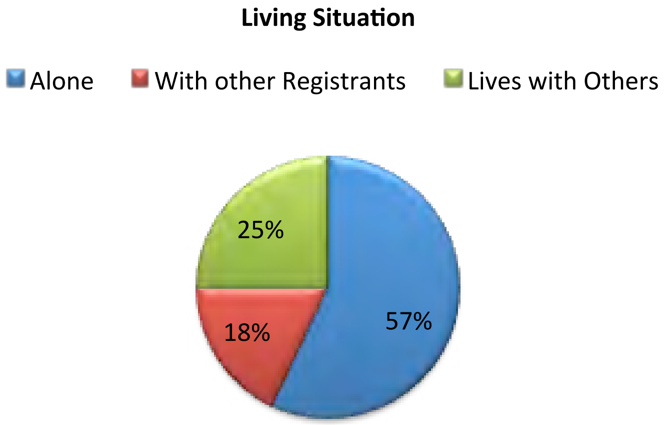
Since the pilot ended, the VPR has experienced continued growth and increased exposure with 196 total registrants as of July 22, 2013 - 170 of which are active. Total numbers differ from active as registrants may move to long-term care, re-locate outside the Sault Ste. Marie area or pass away, which causes the registrant to be removed from the registry. Below is a snapshot of who the program currently benefits:



As you can see, mobility is the most common vulnerability of those registered with the fewest registrants having developmental or mental health difficulties. Moving forward, greater outreach will be done with mental health support groups to help raise awareness and build a rapport with those struggling with mental health. Greater outreach will also aim to reach caregivers and loved ones of those with developmental disabilities.



The extent of how vulnerable registrants may be in an emergency can be reflected by the fact that 74 per cent have two or more vulnerabilities. Furthermore, 57 per cent of registrants live alone with an additional 18 per cent living with other registrants - making them even more at risk during emergencies.



Seeing the continued growth and rise in exposure is certainly a positive affirmation of the importance of such a program. As awareness increases, the number of registrants will increase thus enhancing the public's confidence in the program. It was SSMIC and its program partners that were pioneers in bringing this first-of-its-kind program to fruition.

SSMIC is optimistic about the future of the VPR and its ability to achieve the vision of becoming an emergency planning model capable of improving safety for those most vulnerable nationwide. SSMIC and Canadian Red Cross are looking forward to working together to refine and expand the program into other communities.

Although Red Cross will become the lead agency offering the program, SSMIC, municipalities and community partners will continue to play a significant part in bringing the VPR to communities. At this time, Red Cross and SSMIC are in the preliminary phase of creating a revised VPR framework that will accommodate suggested program improvements, increase efficiencies and enhance the program's scalability.

Communities interested in implementing a VPR can contact the Red Cross (see page 20), which will enable the Red Cross to monitor program interest and plan for expansion. No timelines have been identified yet for implementation in another community; however every step taken gets us one step closer to helping those most vulnerable during emergencies.

Acknowledgements

The VPR program would not have come to fruition if it wasn't for the overwhelming support of so many. We would like to take this opportunity to acknowledge and thank all of those involved during the development, implementation and ongoing operation of the program as well as the evaluation (alphabetical order).

COMMUNITY PARTNERS:

Alzheimer Society Sault Ste. Marie & Algoma District
Arthritis Society of Sault Ste. Marie
Autism Ontario Sault Ste. Marie Chapter
Barrier Free Algoma Association
Bayshore Home Health
Canadian Hearing Society
Canadian Mental Health Association
Canadian National Institute for the Blind
Canadian Red Cross
Central Ambulance Communications Centre
Children's Rehabilitation Centre
Community Care Access Centre - NorthEast region
Community Living Algoma
Indian Friendship Centre
Ontario March of Dimes
Program for Assertive Community Treatment
PUC Services Inc.
Premier Home Care Services
Revera Home Health
Safe Communities Partnership
Sault Search and Rescue
Sault Ste. Marie Emergency Medical Services
Sault Ste. Marie Fire Services
Sault Ste. Marie Innovation Centre
Sault Ste. Marie Police Service
Seniors Mental Health
Spinal Cord Injury Ontario
We Care Home Health

PROUDLY FUNDED BY:

Accessibility Moving Forward
Sault Ste. Marie - Algoma Region

The Corporation of the City of Sault Ste. Marie Canada

Community Endowment Fund

Ontario
Northern Ontario Heritage Fund Corporation
Société de gestion du Fonds du patrimoine du Nord de l'Ontario

Ontario Trillium Foundation
Fondation Trillium de l'Ontario

United Way
Sault Ste. Marie and district

District of Sault Ste. Marie
Social Services Administration Board

SPECIAL THANK YOU

Thank you to the Wheelan family for their ongoing support of the program and allowing us to have the program in memory of their son and brother, Lewis. We can only hope that the program will continue to honour his name and story by helping to improve safety for those most vulnerable during emergencies. We would also like to recognize the VPR's first registrant, Jean Wyatt, for her contribution and constant advocacy of the program. She sadly passed away in January 2013, but left an incredible legacy through her exceptional commitment to giving back to her community and inspiring all those around her to do the same.

Vulnerable Persons Registry™

Improving the safety of those most vulnerable during emergencies.

"The VPR proves the value of good will,technology and partnerships."

~ Paul Beach, Manager, Community Geomatics Centre, Sault Ste. Marie Innovation Centre

"The Spinal Cord Injury Ontario is proud to partner with the VPR as it provides our clients with an extra layer of confidence in case of emergency."

~ Diane Morrell, Regional Services Coordinator, Spinal Cord Injury Ontario

"It's a phenomenal program safeguarding our consumers living with communication and health challenges. Congratulations VPR!"

~ Linda Schraeder, Mental Health Counsellor, Canadian Hearing Society

"During an emergency, material and physical resources are stretched thin; the VPR has the potential to provide an extra safeguard for vulnerable populations both during large scale disasters and every day emergencies."

~ Lauren Perry, Emergency Management Coordinator, City of Sault Ste. Marie

Interested in having a VPR in your community? Please contact:

Kimberley LeClair, VPR Outreach Coordinator | Ontario Zone, Canadian Red Cross

Kimberley.LeClair@redcross.ca | (905) 501-2355 | www.soovpr.com

Sault Ste. Marie
Vulnerable Persons Registry

REGISTRATION FORM

Please print and fill out this **confidential** application as accurately as possible.

HOW DID YOU LEARN ABOUT THE VPR? CHOOSE ONLY ONE.

☐ Community agency (CNIB, Red Cross, etc.)
☐ Other referral (Medigas, Doctor’s office, etc.)
☐ Online (Sault Star, SooToday, Local2, etc.)
☐ Public presentation or event
☐ Newspaper (Sault Star, Sault this Week, etc.)
☐ Brochure, poster, newsletter or flyer
☐ TV Coverage (Shaw, CTV, etc.)
☐ Social Media (Facebook, Twitter, YouTube, etc.)
☐ Word-of-mouth (Friend, family or co-worker)
Other: ☐

Personal Information of Applicant

First Name:	Last Name:
Date of Birth:	Sex: ☐ Male ☐ Female
Address:	Unit #:
City/Town:	Access Code*:
Province:	Postal Code:
Home Phone #: ☐ TTY (Teletypewriter)	Secondary Phone #: ☐ TTY (Teletypewriter)
E-mail:	

I receive homecare services from:

☐ Revera Health Services ☐ We Care Home Health ☐ Premier Homecare
☐ Bayshore Home Health ☐ Canadian Red Cross Community Health Services

By providing your* ***access code**, you will ensure that first responders can enter into your home or apartment building when needed in an emergency**

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Vulnerable Needs of Applicant

Please check all that apply:

☐ Vision
☐ Deaf, Deafened or Hard of Hearing
☐ Mobility
    ☐ Bedridden
☐ Developmental/Intellectual (eg. Autism Spectrum Disorder, Down Syndrome)
☐ Cognitive (e.g. Alzheimer)
☐ Mental Health
☐ Other, please specify: ___________________

Life Sustaining Equipment

    ☐ Ventilator
    ☐ Oxygen
    ☐ Dialysis
    ☐ Other, please specify:

☐ I will not be able to exit my home by stairs

☐ I require electricity for life-sustaining equipment
I require electricity after ______ **(minimum 6)** hour (s) to remain safe

☐ I do not receive 24-hour support at home

☐ I live alone

☐ I currently receive meals from Meals on Wheels
Note: If selected, it will not guarantee meal assistance during large-scale emergencies

☐ I do not have family support locally

☐ I have trouble with speech or language *(e.g. uses an ASL interpreter)*
Please specify:

How long can you care for yourself in a large-scale emergency?
(As a guide, think about your day-to-day activities)

☐ Less than 6 hours
☐ 6 to 12 hours
☐ 12 to 24 hours
☐ 24 to 48 hours (1-2 Days)
☐ 48 to 72 hours (2-3 Days)
☐ Greater than 72 hours (3 Days or more)

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Information Tips (Optional)

Please provide any important additional information that will help first responders assist you during an emergency (for example, use a wheelchair).

Emergency Contact Information

Primary Emergency Contact

First Name:	Last Name:

Relationship (Please check one of the following):

☐ Spouse/Partner ☐ Parent ☐ Son/Daughter ☐ Sibling
☐ Relative ☐ Friend ☐ Other

If other, please specify:

Primary Phone #:	Secondary Phone #:

E-mail:

Secondary Emergency Contact

First Name:	Last Name:

Relationship (Please check one of the following):

☐ Spouse/Partner ☐ Parent ☐ Son/Daughter ☐ Sibling
☐ Relative ☐ Friend ☐ Other

If other, please specify:

Primary Phone #:	Secondary Phone #:

E-mail:

Legal Guardian Information (If applicable)

First Name:	Last Name:

Relationship (Please check one of the following):

☐ Spouse/Partner ☐ Parent ☐ Son/Daughter ☐ Sibling
☐ Relative ☐ Friend ☐ Other

If other, please specify:

Address:	Unit/Apt. #:
City/Town:	Province:

Postal Code:

Primary Phone #:	Secondary Phone #:

E-mail

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Six-Month Updates

Please contact: ☐ Applicant ☐ Legal Guardian ☐ Primary Emergency Contact

Choose one of the following update methods:

☐ Phone ☐ Mail ☐ Online (must include email for above contact) ☐ VPR Coordinator's Office

Consent

Please read and sign below for your application to be reviewed:

I allow the Sault Ste. Marie Innovation Centre to provide the information I included in my VPR registration form to local fire, police and paramedics for use during emergencies. I understand that if I rely on electricity for life-sustaining equipment such as oxygen, my information will also be provided to PUC Services Inc. and Canadian Red Cross for use during power outages. I know that it is important for me to ensure that the VPR program has accurate and up-to-date information at all times. I understand that I still need to call 9-1-1 in an emergency and am also responsible for having an emergency plan in place in order to be prepared to remain safe for at least three days. I recognize that the VPR does not guarantee my safety, but is an added safeguard where local emergency service groups will make every effort to increase the possibility of my safety during emergencies.

I understand that if I am approved, my information will be available to authorized local emergency service groups within 45 days of receipt of my application. I also understand that I will be notified of the date on which my information will be made available to those authorized emergency service groups. I further understand that as part of the program, six-month updates are required using whichever method I have selected. I acknowledge that the VPR Coordinator will make every effort over a two-month period to complete an update; however, if unsuccessful the VPR Coordinator can remove me from the VPR and I will be notified accordingly. I know that I can request to be removed from the VPR at any time.

Signature of Applicant/Legal Guardian

Date

Witness Signature (Only if signing with an 'X')

Relationship

Privacy Statement

SSMIC ensures all internal and external measures are taken to protect your information so only those who need access to your information will be able to do so. SSMIC will secure your data at all times and with your consent will provide your information only to authorized emergency service groups in order to improve your safety during emergencies.

For more information on our privacy policies and how your information will be used, please visit **www.soovpr.com**

ACORN
INFORMATION SOLUTIONS

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Kings REMO – Community Outreach Program

Kings REMO Community Outreach - Emergency Preparedness Presentation			
Date	**Organization**	**Location**	**Venue**
2018-04-24	Kings County Family Resource Centre	Kentville	Family Resource Centre
2018-06-02	Kings County Amateur Radio Group	Kentville	Fire Department
2018-07-25	Lake Paul Community Centre	Lake Paul	Community Centre
2018-09-11	Kings County Firefighters Assocation (KCFFA)	Waterville	Fire Department
2018-09-22	North Alton	North Alton	Baptist Church
2018-10-01	Kingston & District Lions Club	Kingston	Lions Club
2018-10-04	Valley Search and Rescue	North Kentville	VSAR Building
2018-10-10	Aylesford and District Lions Club	Aylesford	Lions Club
2018-10-17	Millville Community Centre	Millville	Community Centre
2018-10-18	East Dalhousie Community Centre	East Dalhousie	Community Centre
2018-10-24	Canadian Federation of University Women (CFUW)	Wolfville	Community Centre
2018-11-01	Kingsport Community Centre	Kingsport	WU Conference Centre
2018-11-05	Black Rock Community Centre	Black Rock	Community Centre
2018-11-22	Mud Creek Rotary Club	Wolfville	Landmark East School
2018-11-26	Greenwood Hospital Auxiliary	Greenwood	St Marks Chapel
2018-11-29	Grafton Community Association	Grafton	Community Centre
2019-01-10	Annapolis Valley Ridge Runners (AVRR)	Waterville	Fire Department
2019-02-07	Port Williams Community Centre	Port Williams	Community Centre
2019-03-08	Port Williiams Library Community Group	Port Williams	Library
2019-03-21	Special Care Emergency Preparedness Assoc (SCEPA)	New Germany	Rosedale Home for Special Care
2019-03-25	Harbourville Community Centre	Harbourville	Community Centre
2019-03-28	Grand View Manor Staff	Berwick	Grand View Manor
2019-04-02	Kentville Library Community Group	Kentville	Library
2019-04-18	Berwick & District Lions Club	Berwick	Lions Club
2019-05-14	Port Williams Health Authority	Port Williams	Baptist Church
2019-05-16	Wolfville & District Lions Club	Wolfville	Lions Club
2019-05-24	Berwick Library Community Group	Berwick	Library
tbc	White Rock Community Hall	White Rock	Community Centre
tbc	Woodville Community Hall	Woodville	Community Centre
tbc	Fundy View Community Centre	Halls Harbour	Community Centre

News Release

FOR IMMEDIATE RELEASE
April 1, 2019

Wildfire Season Awareness

Kings County, NS – The Wildfire season in Nova Scotia runs from March 15th through to October 15th. Were you aware that there were 190 wildfires in Nova Scotia in 2018, and Kings County had a reported 13 wildfires burning 3.25 hectares (approximately 8 acres).

The frequency of fires changes throughout the fire season (April to October). May is usually the busiest month due to the fact that vegetation hasn't fully come out of dormancy and begun to grow. The moisture content of these fuels is low, making them are more flammable. This is known as a "before green up" condition.

Prevention is the best way to reduce the occurrences of forest fires. We all have a role to play in preventing Wildfires. Homes and businesses, particularly those near wooded areas, should take steps now, to prepare for the season and to prevent loss or damage. If you see a wildfire, please report it by calling **9-1-1.** If you observe an illegal fire (not a wildfire), then please call the Department of Lands and Forestry at 1-800-565-2224.

For more information on Wildfire prevention, visit the Department of Lands and Forestry Wildfire website at https://novascotia.ca/natr/forestprotection/wildfire/ or follow **@REMO_KingsCty** on Twitter.

- 30 -

For Additional Information Contact:

Dan Stovel
Regional Emergency Management Coordinator
Kings County, NS
Telephone: (902) 670-1514
Email: REMO_KingsCounty@wolfville.ca

DRAFT

News Release

FOR IMMEDIATE RELEASE
May 1, 2019

Emergency Preparedness Week 2019

72
HOURS
IS YOUR FAMILY
PREPARED?

Kings County, NS – May 5 – 11, 2019 is recognized in Kings County as **Emergency Preparedness Week**. This is an annual event that takes place each year during the first full week of May, and this year's theme is "**Be Emergency Ready**."

The campaign is aimed to help Canadians take action to protect themselves and their families during emergencies. Working together with community leaders, first responders, non-government organizations and all levels of government, we can build a more resilient and safer Kings County.

We all have a role to play in emergency preparedness and knowing what can happen in your area is an important first step in getting prepared. We all need to know how to take action to protect ourselves and our families during emergencies and Emergency Preparedness Week is the perfect time for you and your family to practice your plan and adjust it based on new information. By planning ahead, you and your family will be better able to cope if an emergency happens.

For more information on preparing a **Home Emergency Plan**, and to learn how to prepare for all types of emergencies, visit www.GetPrepared.gc.ca or follow **@REMO_KingsCty** on Twitter.

- 30 -

DRAFT

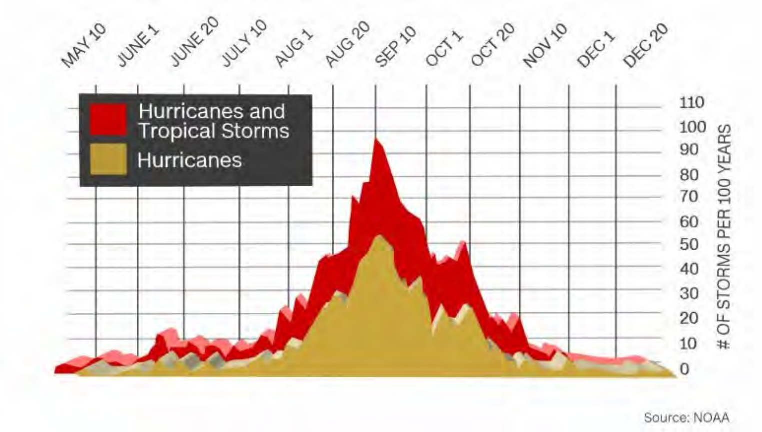
For Additional Information Contact:

Dan Stovel
Regional Emergency Management Coordinator
Kings County, NS
Telephone: (902) 670-1514
Email: REMO_KingsCounty@countyofkings.ca

News Release

FOR IMMEDIATE RELEASE
June 1, 2019

Hurricane Preparedness 2019



Source: NOAA

Kings County, NS – With the start of hurricane season approaching on June 1st, Kings County is proud to promote Hurricane Awareness.

Each year, the devastating impacts that hurricanes can cause are witnessed. Hurricanes are not just a threat to coastal communities. High winds, heavy rainfall, and flooding can be felt hundreds of miles inland, potentially causing loss of life and catastrophic damage to property. It is not just major Hurricanes (Category 3 or higher) that we need to worry about, but all hurricanes have the ability to cause significant damage, as with Hurricane Juan (Category 2) in September 2003.

Kings County's Regional Emergency Management Organization (REMO) is committed to ensuring the safety of Kings County citizens and we're calling on you to prepare with us. Knowing your risk, getting prepared, and staying informed are just a few of the steps that you can take to get ready for hurricane season (June 1 – November 30, 2019). Subscribe for **Kings County Emergency Email Notifications** by sending an email to: **REMO_KingsCounty@countyofkings.ca**, Subject: Emergency Email Notifications.

Additional Hurricane information is available from Canada's Department of Public Safety and Emergency Preparedness at: www.getprepared.gc.ca/cnt/hzd/hrcns-en.aspx, or follow your Regional Emergency Management Coordinator on Twitter **@REMO_KingsCty**.

- 30 -

For Additional Information Contact:

Dan Stovel
Regional Emergency Management Coordinator
Kings County, NS
Telephone: (902) 670-1514
Email: REMO_KingsCounty@countyofkings.ca

Kings County
Emergency Coordination Centre
(ECC)

WINTER STORM-POWER OUTAGE
Discussion-Based Exercise

After Action Report (AAR)

January 25, 2019

Table of Contents – After Action Report

Exercise Name 2

Number of Participants/Observers 2

Departments/Facilities/Agencies Represented 2

Summary of Feedback (15 Feedback Forms): 3

Exercise Overview 4

Exercise Objectives 4

Top Three Things That Went Well 5

Top Three Areas for Improvement 5

Corrective Action Plan / Improvement Plan 5

Other issues, concerns, challenges, recommendations 6

Next Steps 6

After Action Report (AAR) – Winter Storm/Power Outage Exercise

Exercise Name: Winter Storm/Power Outage Discussion-Based Exercise	**Exercise Date:** **2019-01-25**

Number of Participants/Observers: **29**

Departments/Facilities/Agencies Represented:

- Kings REMO
- NS EMO
- Municipal Staff
    - Municipality of the County of Kings
    - Town of Berwick
    - Town of Kentville
    - Town of Wolfville
- Emergency Social Services (ESS)
- Emergency Health Services (EHS)
- Fire Services (Municipal Fire Departments)
- Kings RCMP
- Kentville Police Services
- Red Cross
- Valley Communications
- Valley Search and Rescue

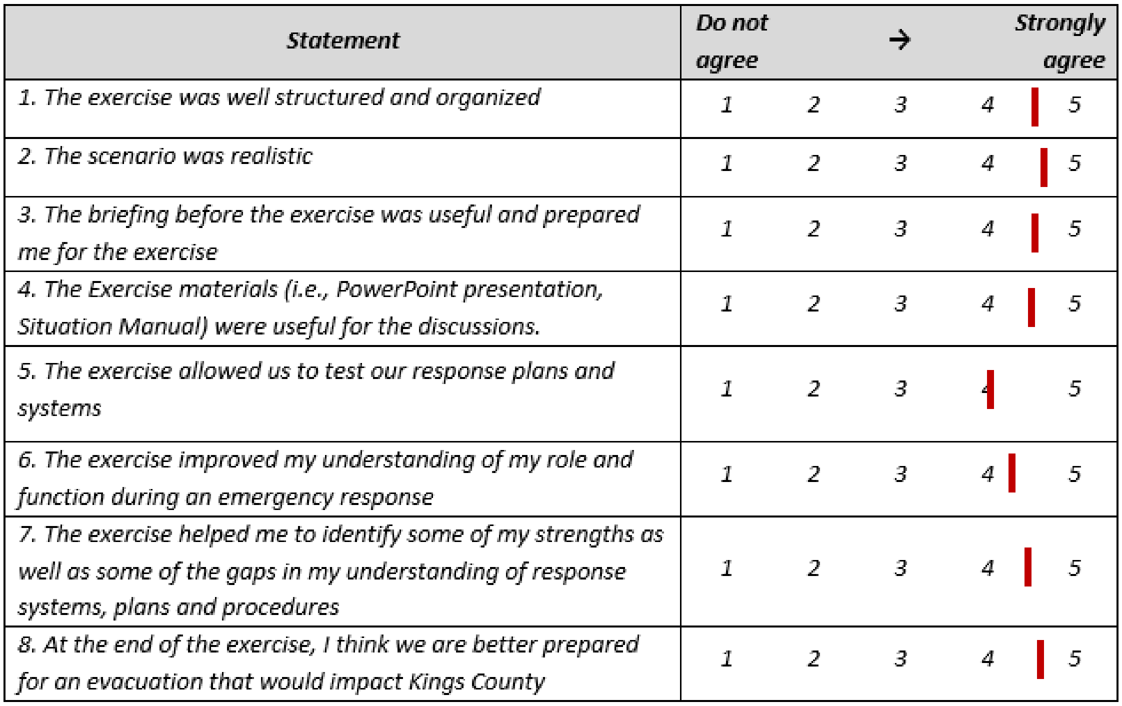
Observing Organizations/Agencies:

- West Hants REMO
- Digby REMO

After Action Report (AAR) – Winter Storm/Power Outage Exercise

Exercise Name: Winter Storm/Power Outage Discussion-Based Exercise	**Exercise Date:** **2019-01-25**

Summary of Feedback (15 Feedback Forms):



Statement	*Do not agree*		→		*Strongly agree*
1. The exercise was well structured and organized	1	2	3	4 ❙	5
2. The scenario was realistic	1	2	3	4 ❙	5
3. The briefing before the exercise was useful and prepared me for the exercise	1	2	3	4 ❙	5
4. The Exercise materials (i.e., PowerPoint presentation, Situation Manual) were useful for the discussions.	1	2	3	4 ❙	5
5. The exercise allowed us to test our response plans and systems	1	2	3	4❙	5
6. The exercise improved my understanding of my role and function during an emergency response	1	2	3	4 ❙	5
7. The exercise helped me to identify some of my strengths as well as some of the gaps in my understanding of response systems, plans and procedures	1	2	3	4 ❙	5
8. At the end of the exercise, I think we are better prepared for an evacuation that would impact Kings County	1	2	3	4 ❙	5

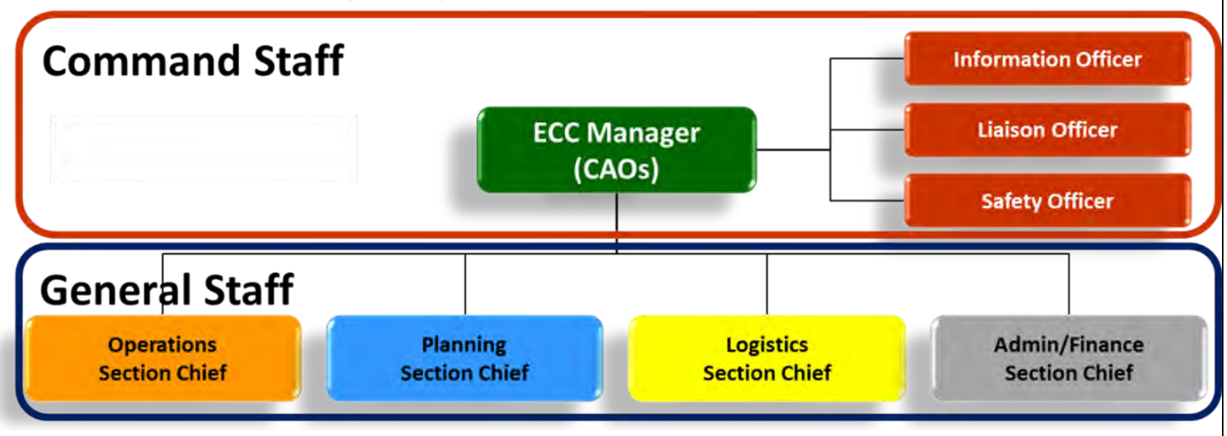
After Action Report (AAR) – Winter Storm/Power Outage Exercise

Exercise Name: Winter Storm/Power Outage Discussion-Based Exercise	**Exercise Date:** **2019-01-25**

Exercise Overview

This exercise was held as a Discussion-Based format, Friday, January 25, 2019, at the Municipality of the County of Kings – Orchards Room (87 Cornwallis St). Exercise play involved municipal staff of the four municipalities of Kings County and members of the Regional Emergency Management Planning Committee (REMPC).

The exercise was structured around the Incident Command System structure for the ECC:


Command Staff
ECC Manager (CAOs)
Information Officer
Liaison Officer
Safety Officer
General Staff
Operations Section Chief
Planning Section Chief
Logistics Section Chief
Admin/Finance Section Chief

Exercise Objectives

- **Overarching objective**: Through a discussion-based exercise, practice the coordination and communication activities in a Winter Storm-Power Outage Response Scenario impacting Kings County.
- **Planning**
    - Practice response to a hazard-specific scenario (Winter Storm) to determine how Kings REMO would respond
- **Operational Coordination**
    - Through discussion, communication, each section to demonstrate an understanding of their role and the relationship with other sections within the ICS structure
- **Disaster Response/Recovery**
    - Debrief after the scenario to improve Kings REMO response/recovery to emergencies and disasters and troubleshoot any other unresolved questions

After Action Report (AAR) – Winter Storm/Power Outage Exercise

Exercise Name: Winter Storm/Power Outage Discussion-Based Exercise	**Exercise Date:** **2019-01-25**

Top Three Things That Went Well

1. **Capabilities/Limitations -** Familiarization with the capabilities and limitations of other participating agencies (e.g., Kings County Red Cross has 15 volunteers to support staffing of Emergency Shelters in Kings County)
2. **Level of Participation -** Participation level from all municipal units and an increased understanding where staff fit in to the Kings REMO emergency planning structure
3. **Incident Command System -** Incident Command System training is paying off – there is an increasing awareness between all Kings REMO agencies

Top Three Areas for Improvement

1. **Operational Exercise** – Kings REMO needs practice with an actual disaster/emergency exercise to expand on staff's knowledge of ECC roles and responsibilities
2. **Exercise Participants –** Invite other Kings County partners to future Kings REMO exercises (e.g., representatives from CFB Greenwood)
3. **Level of Discussion –** Develop future scenarios to increase level of discussion across ICS sections (Operations, Planning, Logistics, Finance-Admin) to increase level of understanding of roles & responsibilities across the entire ICS structure

Corrective Action Plan / Improvement Plan

Corrective Action / Improvement	Responsible Party	Date Due
Operational Exercise • Develop a 'no-notice' exercise for Kings REMO ECC Staff and supporting agencies	REMC	2019-10 Hurricane scenario operational exercise
Exercise Participants • Increase level of participation across Kings County municipal staff and investigate the involvement of agencies outside of Kings REMO	REMC CAOs	2019-04 Flood scenario discussion-based exercise
Level of Discussion • Adapt future Discussion-Based exercises to be more participant-led discussion	REMC	Future Kings REMO Discussion-Based Exercises

After Action Report (AAR) – Winter Storm/Power Outage Exercise

Exercise Name: Winter Storm/Power Outage Discussion-Based Exercise	**Exercise Date:** **2019-01-25**

Other issues, concerns, challenges, recommendations:

- **Exercise structure:**
  - Well-paced exercise
  - Background information (Situation Manual) prepared participants to have meaningful discussion
- **Exercise Program**
  - Continue to conduct quarterly discussion-based exercises leading up to an actual operational exercise
- **Kings REMO Resources:**
  - Great discussion on who does what in an emergency/disaster, providing a good indication of what resources are available across Kings County

Next Steps:

- Quarterly ECC Training Program – Exercise Staff & Supporting Agencies:
  - 2019-04 Flood – Evacuation Scenario
  - Fall 2019 Operational Exercise
    - Full staffing of ECC (Hurricane Scenario)
  - Spring 2020 Regional Disaster Exercise – community involvement
    - Flood-Evacuation scenario

Annex A – Kings REMO - ECC Staffing Positions Template

	Municipality of Kings		
	LName	**Fname**	**Position**
Command	Conrod	Scott	ECC Manager
	Frost	Rob	ECC Manager
			REMO Liaison
			Public Info
			Liaison Officer
			Safety Officer
Operations			Section Chief
			Branch(es)
			Divisions/Groups
			Resources
Planning			Section Chief
			Resources Unit
			Situation Unit
			Demobilization Unit
			Documentation Unit
			Technical Specialist
Logistics			Section Chief
			Service Branch
			* Supply Unit
			* Ground Support Unit
			* Facilities Unit
			Support Branch
			* Food Unit
			* Communications Unit
			* Medical Unit
Admin Finance			Section Chief
			Compensation Unit
			Cost Unit
			Procurement Unit
			Time Unit

	Town of Berwick		
	LName	**Fname**	**Position**
Command	Regan	Don	ECC Manager
	Payne	Mike	ECC Manager
			REMO Liaison
			Public Info
			Liaison Officer
			Safety Officer
Operations			Section Chief
			Branch(es)
			Divisions/Groups
			Resources
Planning			Section Chief
			Resources Unit
			Situation Unit
			Demobilization Unit
			Documentation Unit
			Technical Specialist
Logistics			Section Chief
			Service Branch
			* Supply Unit
			* Ground Support Unit
			* Facilities Unit
			Support Branch
			* Food Unit
			* Communications Unit
			* Medical Unit
Admin Finance			Section Chief
			Compensation Unit
			Cost Unit
			Procurement Unit
			Time Unit

	Town of Kentville		
	LName	**Fname**	**Position**
Command	Phillips	Mark	ECC Manager
			REMO Liaison
			Public Info
			Liaison Officer
			Safety Officer
Operations			Section Chief
			Branch(es)
			Divisions/Groups
			Resources
Planning			Section Chief
			Resources Unit
			Situation Unit
			Demobilization Unit
			Documentation Unit
			Technical Specialist
Logistics			Section Chief
			Service Branch
			* Supply Unit
			* Ground Support Unit
			* Facilities Unit
			Support Branch
			* Food Unit
			* Communications Unit
			* Medical Unit
Admin Finance			Section Chief
			Compensation Unit
			Cost Unit
			Procurement Unit
			Time Unit

	Town of Wolfville		
	LName	**Fname**	**Position**
Command	Beaudin	Erin	ECC Manager
			ECMO Liaison
			Public Info
			Liaison Officer
			Safety Officer
Operations			Section Chief
			Branch(es)
			Divisions/Groups
			Resources
Planning			Section Chief
			Resources Unit
			Situation Unit
			Demobilization Unit
			Documentation Unit
			Technical Specialist
Logistics			Section Chief
			Service Branch
			* Supply Unit
			* Ground Support Unit
			* Facilities Unit
			Support Branch
			* Food Unit
			* Communications Unit
			* Medical Unit
Admin Finance			Section Chief
			Compensation Unit
			Cost Unit
			Procurement Unit
			Time Unit

Flood-Evacuation Discussion-Based Exercise

2019-04-26

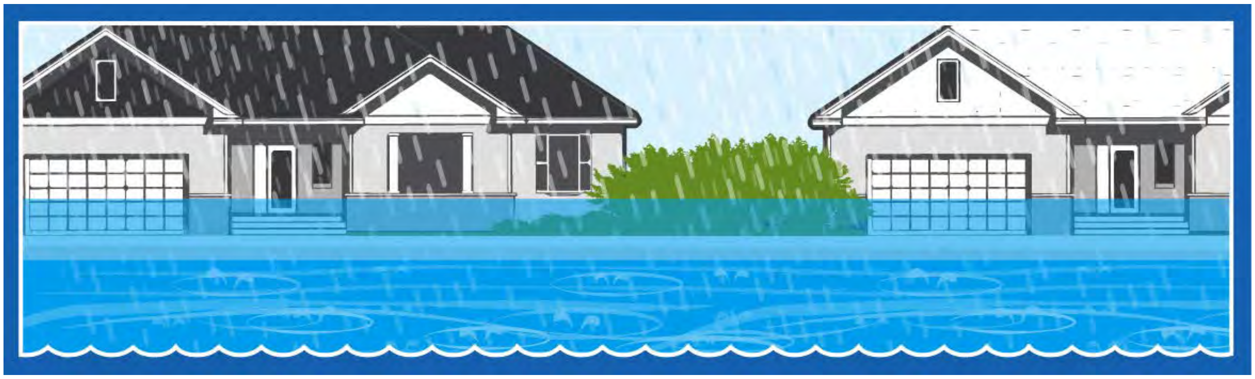
Exercise Objectives:

- Discuss the capability to deliver coordinated, prompt, reliable and actionable information to the whole community.
- Discuss the ability to stabilize critical infrastructure functions, minimize health and safety threats, and efficiently restore vital systems.
- Discuss the capability to return economic and business activities to a healthy state.
- Discuss the capability to provide decision-makers with decision-relevant information regarding the nature and extent of hazards.

The Role of Emergency Management in overall Flood Management:

Flood emergency management plays a vital role in overall flood management. It can be divided into three stages:

— **Preparedness**:	pre-flood measures to ensure effective response;
— **Response**:	measures to reduce adverse impacts during flooding;
— **Recovery**:	measures to assist the affected community to rebuild itself



Module 1: Flood-Evacuation Preparedness

Date: Monday, April 29, 2019
Time: 09:00 am
Location: Kings County, NS

- Soil conditions are nearly saturated across the region due to recent rains.
- A seasonal frontal boundary has stalled across the province and a low pressure system has developed just south of the front.
- The low is forecast to strengthen and move through the area over the next 72 hours bringing a serious threat for excessive rainfall across the region.
- Environment Canada has issued a Rainfall Warning for Kings County and is predicting 50-75mm rainfall over the next 24-48 hours with more over the next 72 hours.
- A high threat for flooding in low-lying areas exists, with many drainage basins likely to be overtopped later today or Tuesday. High water may accumulate in residential and agricultural areas, as well as cover roadways.
- Areas near small streams, drainage canals and poor drainage systems will be the first to flood and will experience the most significant impacts.
- Decision has been made to activate the ECC at 8:00am Tuesday in order to coordinate a regional response to areas impacted by flooding.

Key Issues

- Issuance of timely and effective early warnings and the temporary evacuation of individuals and property from threatened locations
- Communications of risk information – strong communications channels with built-in back up is necessary to ensure the timely flow of information to the target audiences
- Employee notifications and communications
- Employee work status and key personnel
- Protocol for early closure
- Process for accounting for employees & citizens
- The next 24 hours: decision-making and decision makers

Module 2: Flood Response

Date: Tuesday, April 30, 2019
Time: 10:00 am
Location: Kings County, NS

- Kings County ECC was activated at 8:00 am
- Rain totals due to the storm have already reached 30-40mm across portions of the region with isolated totals as high as 50mm in several areas
- Abundant moisture will remain across the region through Wednesday with a nearly stationary areas of low pressure causing bands of torrential rain to persist and further aggravate flooding which has already become serious in some areas
- An additional 10-20mm of rain is likely producing a total of between 50-75mm of rain over a wide swatch of the County.
- Rainfall accumulations will produce areas of significant flooding in low-lying areas, resulting in a serious threat to life and property.

Key Issues

- Immediate actions and priorities – Protection of Critical Infrastructure
- Continuity of operations; back-up systems
- Accounting for employees, citizens and visitors
- Property damage
- Reporting of injuries
- Identification of emergency shelters and access routes
- Road closures – who has the authority to determine roads open/closed, and how is this information relayed to the ECC?

Module 3: Flood Recovery

Date: Wednesday, May 1, 2019
Time: 10:00 am
Location: Kings County, NS

- By mid-afternoon Wednesday the rains have stopped and the low pressure system that had stalled over the region has moved off to the Northeast
- As the rain stops, area residents that did not evacuate begin to emerge from their homes to inspect the damage and destruction caused to their neighbourhood due to the flooding
- Once the areas affected by the flood waters become accessible, local and regional emergency response personnel initiate life safety operations.
- From conducting needs assessment to, carrying out search and rescue operations, law enforcement agencies, fire departments, EHS, emergency management officials and various volunteer agencies are working together to meet the immediate flood-caused needs of the area's residents
- In the hours following the flood, local television is filled with images of damaged homes and commercial buildings along with roads and bridges. Initial estimates indicate that as many as 100 homes throughout the region have sustained some level of damage with possibly 50 so badly damaged that they will need to be demolished.
- Flood waters have begun to rapidly recede throughout the region

Key Issues

- Immediate actions and priorities
- Critical community services
- Employee communications
- Employee work status
- Vital business documents
- Community support
- Recovery