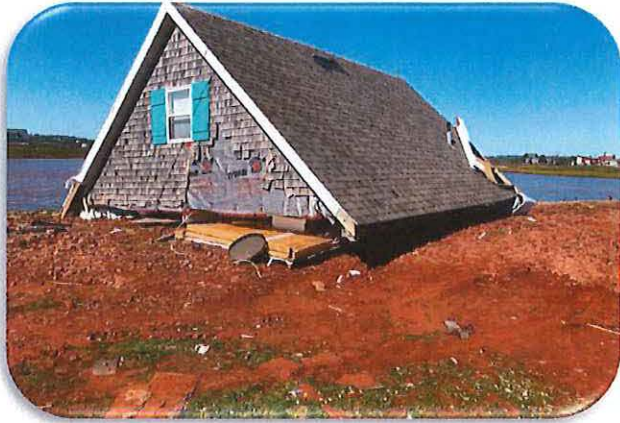


Hon. Thompson

10-11-23



After-Action Review

Post-Tropical Storm Fiona

After-Action Report

Submitted to: **Emergency Measures Organization**
Government of Prince Edward Island

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Executive Summary

On September 24, 2022, Post-Tropical Storm Fiona (herein referred to as Fiona) made landfall on Prince Edward Island (PEI). PEI Emergency Measures Organization (EMO) had activated its Provincial Emergency Operations Centre (PEOC) at Level 2 (Partial Activation) on September 22, 2022, and escalated to Level 3 (Full Activation) on September 27, 2022. The PEOC was activated at a Level 2/3 for 21 days. On October 17, 2022, the PEOC moved from response to recovery. Fiona was an unprecedented event. It tested response agencies and exposed additional gaps in the processes and systems implemented by PEI EMO.

As part of a continual improvement model, the Government of PEI engaged an independent third party, Calian, to prepare a comprehensive After-Action Review (AAR) to examine how the provincial, municipal governments and non-government agencies responded to the incident, and to identify areas that could be improved through the modification / addition of procedures, resources, skills, capabilities, or other corrective actions.

The AAR process involved a thorough review of documentation including status reports, provincial plans, and any other available references provided by the Province. Additional data was collected from the public and municipalities/response agencies through on-line surveys, followed by a series of one-on-one interviews and facilitated focus groups with key stakeholder representatives. Data was analyzed to identify strengths, opportunities for improvement, and possible gaps in the response and early recovery. Findings were compartmentalized into six (6) key functional areas of response: Resource Management, Training and Exercises, Information Management, Concept of Operations, Business Continuity, and Decision Centre Tools.

Strengths

Overall, the Province conducted a well-coordinated response and recovery to Post-Tropical Storm Fiona. There were thirteen (13) best practices identified across the six functional areas of response. Below are the most significant strengths that should be sustained:

- Pre-planning and having established practices already in place to manage increased human resource demands was a critical component to an effective response and recovery effort.
- Similarly, organizations and municipalities who took a proactive approach to acquire equipment and supplies were better positioned to manage challenges.
- As was mentioned by many stakeholders, the provision of fuel and critical supplies for the continuity of essential services was excellent. These practices and procedures should be continued.
- Having redundant methods of communication or pre-established plans for power outages makes acquiring situational awareness more effective.
- Collective teamwork at all levels was an essential component to an effective response and recovery effort.

Opportunities for Improvement

There were sixteen (16) opportunities for improvement identified across the six functional areas of response. Below are the most significant findings in three (3) themes:

Increasing and / or Optimizing Resource Capacity

Some organizations and departments had limited human resource capacity to support the response. There was a decline in capacity as the duration of efforts continued. Due to this lack of capacity and support, many individuals that were available and involved in the response experienced overwork, stress, and burnout. The following recommendations should be considered to address human resource limitations and ensure optimal resource capacity:

- Organizations and municipalities should ensure that they have the capacity to quickly augment staff and volunteers during an emergency. Some actions that could be taken proactively include:
 - Developing and maintaining an inter-departmental emergency reserve or roster of qualified personnel.
 - Collective agreements between EMO and partner organizations.
 - Cross training to fill various positions (for example, EMO staff could be trained for Logistics, Information Officer, or Administrative Support roles).
- The provision of appropriate mental and physical health support to staff was not optimized across some departments and organizations. EMO and partners should consider proactive measures to ease the stress on staff including:
 - Developing mental health programs.
 - Identifying and communicating free mental health and well-being supports to staff and volunteers.
 - Creating dedicated spaces to rest.
 - Obtaining specialized services from health care professionals.
 - Creating an effective staff rotation schedule spanning multi-days, which can realistically be maintained for longer duration events.

Creating a Clear Common Operating Picture and Improving Information Exchange

Information is an essential aspect in an organization's ability to make decisions and gain (or lose) visibility and credibility. Above all, it is necessary for rapid and effective assistance for those affected by the emergency. Some organizations noted that a clear and consistent Common Operating Picture was not obtained within the PEOC; this led to occasional confusion and impacted collaborative decision-making. Less than half of survey respondents felt that the information exchange between provincial departments and other responding agencies (e.g., municipalities, CI partners, etc.) was effective. Some felt that information was not consistent, concise, or current, while EMO / staff within the PEOC noted that it was difficult and time consuming to collect information from some organizations / departments.

- During events of this scope, the Province should discuss implementing at least one primary Incident Command Post (ICP) in the field to help create a more robust and unified Common Operating Picture.
- Reporting requirements should be a part of regular ongoing training and exercises. All departments and partner agencies should know their role and responsibility regarding information sharing in advance of activation.
- Restoration times and status updates were not always readily available which hampered decision making and response activities. Greater transparency about the restoration process could help alleviate frustrations. EMO should work closely with Maritime Electric to develop educational tools that inform the public and other organizations on how decisions are made to restore services.

Improving Coordination and Prioritization

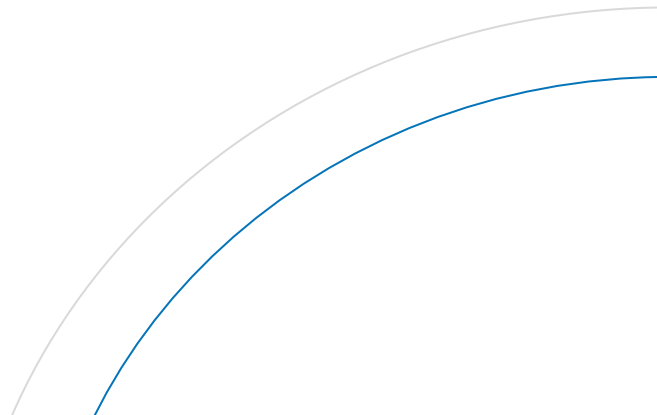
Responding to emergencies involves a coordinated, co-operative process of matching essential needs with available resources. Many agencies felt the response operations were conducted effectively; however, public perception felt that this was not the case.

- Telecommunications and other CI partners had priority positions for fuel during the shortages. This caused tension and stress for both the workers and for members of the public who did not have visibility on the workers' roles. The Province should consider having a separate fuel depot / time for CI partners that separates essential workers from the public for replenishing supplies that are in great demand by the general population. EMO should also generate and distribute information to the public regarding the prioritization of access to essential supplies and equipment during emergencies.
- EMO should look into developing a process to work with CI stakeholders to assist with prioritization during an emergency; however, it should be noted that there are dynamics

that may change the order of prioritization (for example, time of year, vulnerable populations).

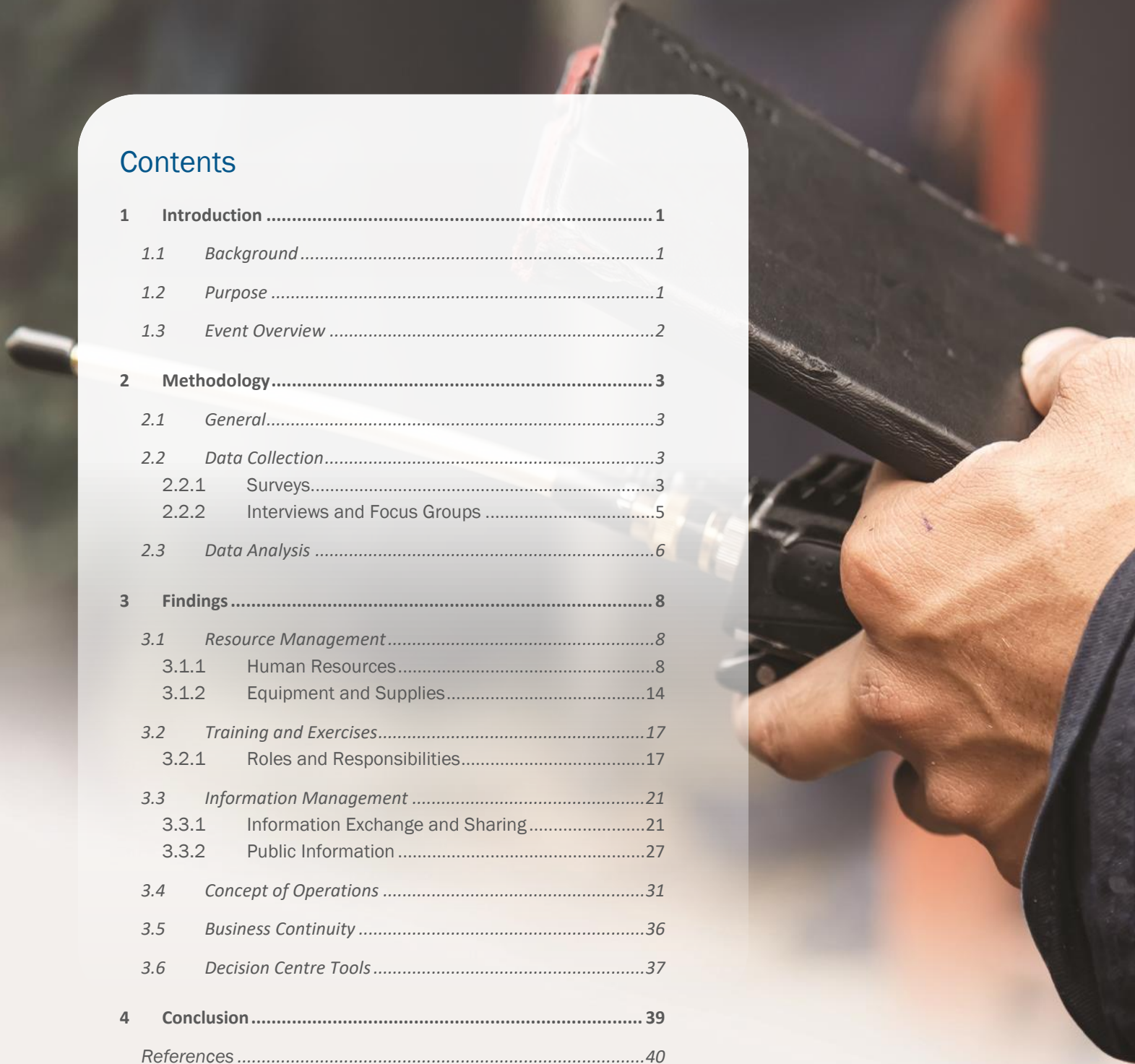
- Coordination of accommodations and food logistics for response organizations could be improved. A collaborative process around booking accommodations for response crews, and how accommodations are reported to EMO should be explored and organizations should have contingency plans in place for seasonal emergencies. This may include:
 - Building relationships with local accommodation providers including Air BnB hosts.
 - Sourcing other locations which may be used when no accommodations can be found (e.g., schools, recreation centres).

While some actions to improve emergency response and recovery have already been taken by the Province, a corrective action plan based on the findings from the final AAR will continue to mitigate issues in future responses and will serve to support a model of continual improvement moving forward.



Contents

- 1 Introduction 1**
 - 1.1 *Background*1
 - 1.2 *Purpose*1
 - 1.3 *Event Overview*2
- 2 Methodology..... 3**
 - 2.1 *General*.....3
 - 2.2 *Data Collection*.....3
 - 2.2.1 *Surveys*.....3
 - 2.2.2 *Interviews and Focus Groups*5
 - 2.3 *Data Analysis*6
- 3 Findings 8**
 - 3.1 *Resource Management*8
 - 3.1.1 *Human Resources*.....8
 - 3.1.2 *Equipment and Supplies*.....14
 - 3.2 *Training and Exercises*.....17
 - 3.2.1 *Roles and Responsibilities*.....17
 - 3.3 *Information Management*21
 - 3.3.1 *Information Exchange and Sharing*.....21
 - 3.3.2 *Public Information*27
 - 3.4 *Concept of Operations*31
 - 3.5 *Business Continuity*36
 - 3.6 *Decision Centre Tools*37
- 4 Conclusion 39**
- References*40
- Acronyms*.....41
- ANNEX A. Event Timeline*.....42
- ANNEX B. Summary of Findings and Recommendations*.....43

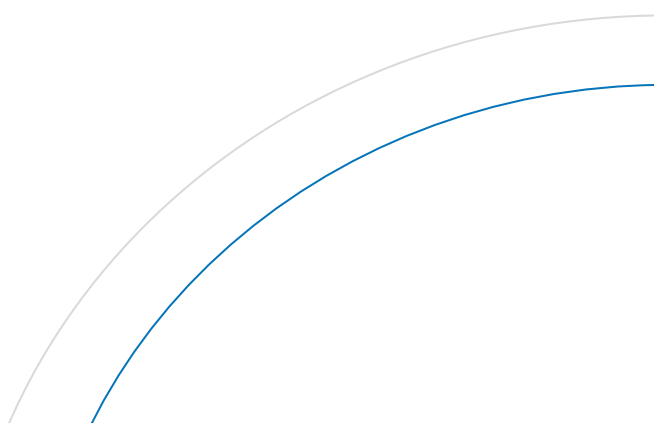


Tables

- Table 1: Survey details* 4
- Table 2: Agency & Municipality Survey Demographics* 4
- Table 3: Public Survey Demographics* 5
- Table 4: Focus Group Participants* 5
- Table 5: Additional Technology / Applications / Tools* 37
- Table 6: Summary of Best Practices and Recommendations*..... 43
- Table 7: Summary of Opportunities for Improvement and Recommendations*..... 46

Figures

- Figure 1: Fiona staffing capacity and capabilities* 9
- Figure 2: Public Duration Without Power*..... 28
- Figure 3: Public Information Sources*..... 29
- Figure 4: Variables that affected the response*..... 31
- Figure 5: Preparedness of Agencies / Municipalities*..... 32



1 Introduction

1.1 Background

On September 24, 2022, Post-Tropical Storm Fiona (herein referred to as Fiona) made landfall on Prince Edward Island (PEI). PEI Emergency Measures Organization (EMO) had activated its Provincial Emergency Operations Centre (PEOC) at Level 2 (Partial Activation) on September 22, 2022, and escalated to Level 3 (Full Activation) on September 27, 2022. The PEOC was activated at a Level 2/3 for 21 days. On October 17, 2022, the PEOC moved from response to recovery.



Fiona toppled trees, caused damage to homes, destroyed wharves and infrastructure on the shoreline, and left over 82,000 customers, nearly the entire province, without power. Primary issues during the storm were widespread power outages, telecommunications outages, road closures, downed trees, and infrastructure damages. As a result of the extensive power outage, telecommunications towers were impacted which affected the ability of some residents to use their mobile phones to communicate with others or to access emergency 911 services.

Fiona was an unprecedented event. It tested response agencies and exposed additional gaps in the processes and systems implemented by PEI EMO. Analysis of Fiona identified opportunities for improvement (OFIs) to support PEI EMO's continuous improvement cycle.

A key step to continually improve emergency programs is to assess the overall response to major incidents. Subsequently, the Government of PEI engaged an independent third party, Calian, to prepare a comprehensive After-Action Review (AAR) to examine how the provincial, municipal governments and non-government agencies responded to the incident, and to identify areas that could be improved through the modification / addition of procedures, resources, skills, capabilities, or other corrective actions.

1.2 Purpose

The purpose of this AAR is to assess the collective response and early recovery activities of provincial, municipal, and non-government organizations (OGDs) through the identification of strengths, deficiencies, and gaps in emergency preparedness and response capabilities. The findings contained in this report are derived from observations obtained from participating provincial departments, municipalities, and NGOs who had a role in the response or recovery phases of this situation. Findings contained within this AAR will serve to assist in the development of a corrective action plan designed to further optimize response capabilities, improve public safety, and enhance resiliency across the island.

1.3 Event Overview

On September 24, 2022, Fiona hit PEI as a strong post-tropical storm with the winds of a Category 2 Post-Tropical Storm and unprecedented storm surge. Fiona made landfall early morning on September 24, 2022. PEI EMO had activated its PEOC at Level 2 (Partial Activation) at 0800 on September 22, 2022, escalating to Level 3 (Full Activation) on September 27, 2022. The PEOC was activated at a Level 2/3 for 21 days. On October 17, 2022, the PEOC moved from response to recovery.



Wind gusts ranged from 111-149 kmh. Rainfall exceeded 90 mm in some locations. Large areas of PEI were impacted with fierce winds and storm surge. Fiona toppled trees, caused severe damage to some homes, destroyed wharves and infrastructure on the shoreline, and left over 82,000 customers, nearly the entire province, without power. Primary issues during the storm were widespread power outages, road closures, downed trees, bridge damages (two requiring replacements), and flooding, and cell and landline service issues. With the extensive power outage, telecommunications towers were impacted which affected the ability of some residents to use their mobile phones to communicate with others or to access emergency 911 services.



There were 936 fire calls, primarily in the first four days. At one point there were 48 open Reception Centres, over 265 crews in the field the province assisting Maritime Electric (ME) with power restoration, and 193 Canadian Armed Forces (CAF) personnel on the island. Power was not fully restored across the province until October 21, 2022. This unprecedented event tested response agencies and generated lessons learned.

Annex A provides a pictorial summary timeline of events and actions taken by the numbers.

2 Methodology

2.1 General

Calian employs four (4) phases when conducting an AAR: Plan, Prepare, Conduct, and Report. Each phase was carried out in consecutive order and builds from the previous phase until the evaluation process has ended.

The data collection and analysis methodology enabled the collection of both quantitative and qualitative information. As part of this process, numerous plans and guidelines were considered that served as a baseline for expected actions including, the Prince Edward Island All Hazards Emergency Plan, and other related documentation.

Through consultation with the Province, response and recovery activities that were included in this assessment focused on six categories. The categories included:

- **Resource Management:** Considered the ability of the Province and individual departments to sustain long-term operations through the provision of adequately trained resources, appropriate equipment, and required support mechanisms to ensure an effective response.
- **Training and Exercise:** Considered the knowledge and experience available to staff required to fill emergency management functions and positions.
- **Information Management:** Considered the effectiveness of the exchange of information between supporting agencies and PEOCs, and the quality of messaging to the public.
- **Concept of Operations:** Considered governance, policies, plans, processes, and procedures in place to support a coordinated emergency response and recovery operation.
- **Business Continuity:** Considered the ability of the Province and each respective department to continue essential operations during the response to an emergency through adequate planning, processes, equipment, and resources.
- **Decision Centre Tools:** Considered the effectiveness of the tools available to support information exchange, coordination, decision making and situational awareness in an emergency.

2.2 Data Collection

2.2.1 Surveys

Data collection involved two key phases; each designed to gather specific types of data. The first phase was the administration of two web-based surveys that were distributed to agencies and municipalities, and the public respectively; details are noted below in Table 1.

Table 1: Survey details

Survey	Purpose	Method of Distribution	Distribution Period	Total Completed
Agency & Municipality	Captures operational information from agencies and municipalities who supported the response and early recovery	Emailed out to 160 departments and agencies and 112 Municipalities	May 23 – June 6, 2023	140
Public	Captures feedback from the public regarding their perception of both local and Provincial response activities	Posted on the website and shared on social media	May 29 - June 9, 2023	309

The online surveys were comprised of various types of questions including rating scales, multiple choice, and opened-ended.

Survey Demographics

Agency & Municipality Respondents

A total of 140 agency/department/municipal representatives completed the online survey with a 51% response rate. When asked which best described their organization/agency, 29% of respondents selected Government Department and 20% selected Municipality.¹ Table 2 shows a breakdown of representation across the various response areas. It should be noted that some respondents conducted multiple activities and subsequently selected more than one category.

Table 2: Agency & Municipality Survey Demographics

Area of Response	% of respondents	# of respondents
Municipal or Regional	26%	35
Other	24%	32
Public Safety (e.g., Emergency Medical Services (EMS), Fire, etc.)	21%	29
Incident Management Team in the Provincial Emergency Operations Centre	19%	26
Community and/or Social Services (incl. Reception Centres)	14%	19
Utilities, Energy or Telecommunications	13%	18
Transportation, Infrastructure (e.g., debris removal)	10%	14
Public Communications	10%	13
Environment/Agriculture/Aquaculture	7%	10
Finance or Municipal Affairs	7%	9
Health	5%	7

¹ Based on 135 agency/municipality survey respondents who answered Q1. *What area of response and / or recovery were you associated with during Post-Tropical Storm Fiona? (Check all that apply).*

Public Respondents

A total of 309 members of the public completed the public survey. Table 3 shows a breakdown of representation across the various regions of the province.

Table 3: Public Survey Demographics

Region	%	#
Charlottetown	29%	88
Queens County (other than Charlottetown)	46%	140
Prince County	14%	42
Kings County	12%	36

Results from the surveys provided guidance on preparation for phase two of data collection; in-person focus groups and virtual / in-person interviews.

2.2.2 Interviews and Focus Groups

A total of fourteen (14) interviews were conducted; each discussion lasted up to 60 minutes. Individuals from the following organizations, municipalities, departments participated in interview sessions:

- Information Officer
- Rogers Communications
- Highway Maintenance
- University of PEI (UPEI)
- Hunter Valley
- Health PEI
- Information Technology Shared Services (ITSS)
- Finance
- Fire Marshal's Office
- Agriculture
- Incident Management Team / PEOC
- Department of National Defense
- Environment Canada
- Team Rubicon

A series of nine (9) focus groups were conducted; each group session lasted between one (1) to two (2) hours. Table 4 lists those agencies, organizations, and municipalities that participated in a focus group session.

Table 4: Focus Group Participants

Focus Group Area	Participant Organizations/Departments/Municipalities
PEI EMO	<ul style="list-style-type: none"> • EMO
Recovery and Debris Removal	<ul style="list-style-type: none"> • Highway Maintenance • Parks Canada • Transportation and Infrastructure • Samaritans Purse
Power and Utilities	<ul style="list-style-type: none"> • Maritime Electric • Eastlink
Public Safety	<ul style="list-style-type: none"> • Public Safety Radio/911 Dispatch • Fire Marshal's Office

	<ul style="list-style-type: none"> • RCMP • Public Safety Canada • Summerside Police • Island EMS • Medacom Atlantic • Charlottetown Police
Health and Wellness	<ul style="list-style-type: none"> • Health and Wellness/Emergency Services • Public Health • Health PEI
Environment and Agriculture	<ul style="list-style-type: none"> • Environment, Energy, Climate Action • Hazardous Materials • Agriculture • Environment, Energy, Climate Action • Water & Wastewater
Social Services and Education	<ul style="list-style-type: none"> • Housing, Land and Communities • Education and Early Years • Canadian Red Cross • Social Development and Seniors • Municipal Affairs • Housing, Land and Communities • Library Services and Archives • Maple Group Home
Municipalities	<ul style="list-style-type: none"> • Charlottetown • Cornwall • North Shore • Resort
First Nations	<ul style="list-style-type: none"> • Lennox Island First Nation

2.3 Data Analysis

Data extracted from the online surveys, interviews and focus groups were analyzed to address common themes and similarities that indicated trends in each area of response and recovery. To be considered a theme or key finding (KF), supporting observations (SO) were required to validate the finding.

For each of the six categories, KF are identified accordingly and presented with one or more SO that were obtained from the data. KF's were categorized as either a Best Practice (BP) or an Opportunity for Improvement (OFI), depending on the impact to the event response. Recommendations are also provided for each finding (R). The following legend shows the terms that will be used throughout the findings section.

Definitions

Best Practice:	An activity, procedure, or process that consistently enhances performance and excels from current standards. It is appropriate to single this out as a good practice for consideration for implementation elsewhere.
Opportunity for Improvement:	Issues that reflect a weakness that caused or had the potential to cause a negative impact on the effectiveness of a response activity. Identified opportunities for enhancement could be related to existing procedures, training, concept of operations, etc.
Gap:	Gaps are process or practice shortfalls that caused or had the potential to cause a negative outcome in the overall response. Gaps have the highest priority for rectification.
Recommendation:	A suggestion that is considered a best course of action, based on best practices, which may address any identified shortcomings in response, or perpetuate high standards of performance moving forward to optimize response.

3 Findings

3.1 Resource Management

Fiona was an unprecedented event, which placed significant strain on the availability and sustainability of required resources for both the response and recovery. Although the need for resources can vary for large-scale responses, the focus for this review addressed resources that included the availability of staff, equipment, and supplies. Despite the magnitude of the storm, and the demand that it placed on resources, the Province, organizations, and municipalities found opportunities to augment human resource capacity, acquire necessary equipment, and some were also able to minimize the physical and mental stress on staff. Even when resources were not readily available, some organizations were well positioned to obtain those resources in a timely manner, citing strong relationships with contractors, a national pool of resources, and other organizations that enabled that support. It was noted several times throughout the interviews and focus groups that EMO did an excellent job at providing partner organizations with fuel and other supplies and were able to meet resource requests quickly when required.

3.1.1 Human Resources

Many organizations and agencies were able to meet human resource requirements throughout the response and early recovery. Figure 2 illustrates the capability and capacity of organizations to meet staffing levels throughout each phase of the response based on agency/municipality survey data. Initial operations include activities between September 22-24, sustained operations cover September 26 to October 16, and recovery operations includes activities from October 17th and onward. While 66% of agency/municipality survey respondents noted adequate capacity during initial operations, there was a slight decline in capability as the duration of efforts continued into sustained operations and recovery (60% each respectively).²

Staff became aware of their own limitations to support the response once the storm made landfall. Some staff, including some Department Emergency Services Officers (DESOs), despite their best efforts and wishes to assist, were unable to assist for various reasons, including limitations resulting from multiple road closures, the power outage, telecommunications outage, lack of available fuel, or having significant damage to their own home. Anticipated staffing levels for future emergencies may need to be adjusted based on these limitations and the personal impacts of the emergency on staff.

² Top two score (sum of agree and strongly agree) based on 114 agency/municipality survey respondents who answered Q3. *My agency had adequate capability and capacity to meet staff levels needed for each of the following phases.*

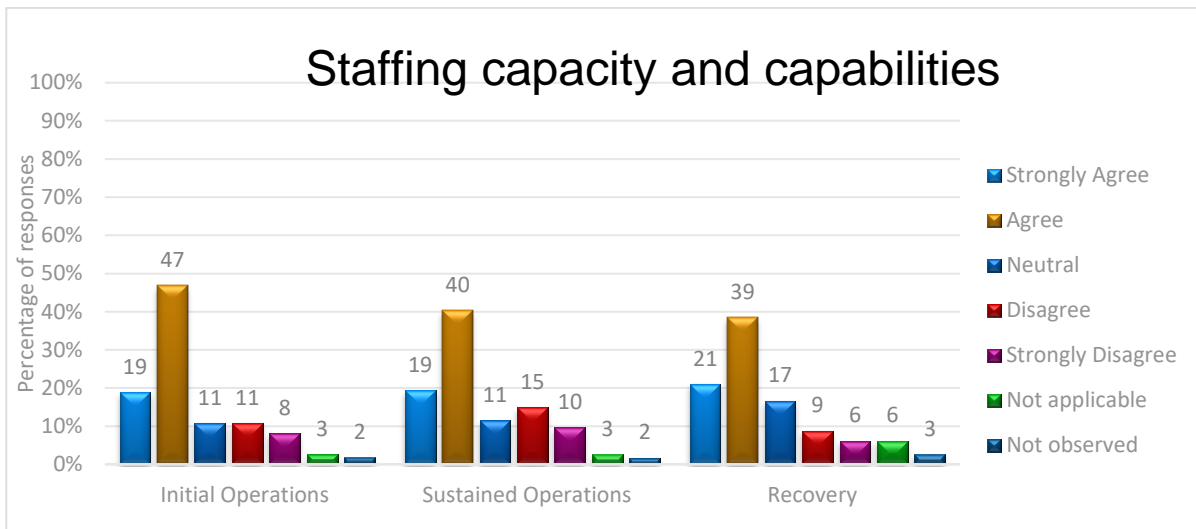


Figure 1: Fiona staffing capacity and capabilities

Human Resources Best Practices

BP #1

Organizations, agencies, and municipalities were better able to meet human resource requirements when they pre-planned or had practices already in place to manage surge capacity.

- SO-01:** The timing of the storm (early fall) was advantageous for some organizations that conduct seasonal work (e.g., Department of Transportation and Infrastructure, Parks Canada) who were able to extend worker contracts as part of their Business Continuity Plan (BCP).
- SO-02:** Some organizations had depth of reach for resources within their own department, or across departments to acquire additional staff if required. Organizations, including Parks Canada and Rogers Communications, have a national pool of resources across the country that were pre-deployed or put on stand-by prior to the storm to assist if needed. Rogers Communications also alerted workers from Ontario who were already in New Brunswick when the storm made landfall.
- SO-03:** Many organizations, including first response agencies, used lessons learned from Post-Tropical Storm Dorian to readily augment additional volume and capacity when it was required. The agency / municipality survey found that 78% of respondents had plans and procedures in place to request and mobilize additional support staff if needed.³

³ Based on the 110 agency/municipality survey respondents who answered Q6. My agency has plans and procedures in place to request and mobilize additional support staff if needed.

SO-04: Some organizations, including Parks Canada and Maritime Electric, contacted additional resources, including contractors and industry competitors, prior to the storm as part of their preparedness activities.

R-01: To ensure that EMO, municipalities, partner organizations, and non-government agencies can support the demands of a widespread and / or prolonged provincial response and / or recovery effort, organizations involved in the response are encouraged to identify processes during normal operations that will enable a quick augmentation of staffing levels. All organizations have a responsibility to ensure that optimal staffing levels can be achieved for a prolonged response effort if required.

EMO should continue their efforts to raise awareness on the importance of organizations meeting their expected roles and responsibilities during an emergency.

Where possible pre-storm procedures and practices should be continued and enhanced, including:

- Establish standby protocols that include early notification to contractors to ensure resources are on standby to respond.
- Pre-arranged mechanisms to enable extensions of seasonal based work contracts during peak storm season.
- Developing and/or maintaining an inter-departmental emergency reserve or roster of qualified personnel.
- Investigate the possibility of developing provincial government policy to deploy provincial government staff to support field operations when required, (for example go door to door for wellness checks).
- Standing MOUs between EMO and partner organizations, which would enable agreements to be expedited in times of emergency, should be reviewed, and renewed annually.
- Cross training of essential positions.

BP #2 Pre-established processes designed to minimize physical and mental stress on staff throughout each phase of the response were effective.

SO-05: Some organizations had wellness programs already embedded within the work culture. For example, Maritime Electric had a mindfulness practice that was started after Post-Tropical Storm Dorian whereby all employees practiced this daily regardless of the occurrence of an emergency. Employees knew they had complete authority to stop their work if they did not feel mentally prepared, which is essential to ensure worker safety.

- S0-06:** Some organizations (e.g., Team Rubicon, Health PEI, Royal Canadian Mounted Police, (RCMP), and Island Emergency Medical Services (EMS)) took extra measures to ensure the well-being of staff throughout the response. These actions had a positive impact on overall morale, reduced worker fatigue, and increased overall effectiveness of work activities. Some of these measures included:
- Posters that indicated support health lines available to staff.
 - Provision of food.
 - Staff reminders of available Employment Assistance Programs (EAPs).
 - Designated comfort areas for rest.
 - Provision of showers, meals, and access to laundry.
- S0-07:** Some departments and organizations (e.g., first responders, Information Technology Shared Services (ITSS), Team Rubicon) implemented their own internal processes including team structures with staff / volunteer rotations to provide regularly scheduled days off, which prevented stress and mitigated exhaustion as the response continued.
- R-02:** Organizations should continue to ensure that appropriate measures are in place to reduce physical and mental stress on staff, particularly when staffing levels are reduced.

Where possible pre-existing measures to reduce physical and mental stress on staff should be formalized into processes and plans, and responsibilities for implementation should be assigned accordingly. Examples of pre-existing measures that could be formalized include:

- Designated comfort areas for rest
- Provision of showers, meals, and access to laundry
- Pre-storm mindfulness programs
- Pre-determined staff/volunteer rotations to ensure regular days off.

Those who currently have no pre-existing processes and programs in place should begin to establish, normalize, and raise staff awareness of mental health and wellbeing practices and free programs prior to the next emergency event.

BP #3 The dedication and resilience of EMO staff was highlighted by partner agencies.

- S0-08:** Some organizations noted that the EMO staff had a strong sense of duty and dedication, they were willing to go beyond, and they offered significant support to partner agencies and departments when required. It was also noted that despite challenges, many departments appreciated the efforts of EMO, which served to strengthen working relationships and build trust.
- R-03:** EMO staff could continue to foster strong working relationships and trust with partner agencies through:
- Continued outreach to municipalities and partner organizations.
 - Defining a schedule for recurring multi-stakeholder and multi-jurisdictional exercises and training.

- Creating a Working Group or Committee of core Emergency Management personnel and agencies in all jurisdictions and meet quarterly to discuss pre-storm planning.

It should be noted that the Province has already taken steps in this area, and recently announced the creation of a Major Incident Readiness Team (MIRT), which is comprised of elected and government officials, to prepare for major events and emergencies that have the potential to impact the Island.

BP #4 The decision to bring in additional resources to leverage knowledge and experience of other organizations and consultants was beneficial to some newer staff in the EOC.

SO-09: To provide guidance to new staff who had limited to no EOC experience during an activation, the EMO Director brought in support from the province of New Brunswick and external consultants early in the response to provide mentorship and guidance for newer staff. This decision ensured that newer staff had access to support through more experienced emergency management professionals at the height of the emergency.

R-04: As applicable, pre-approved partners should continue to be engaged in an emergency to support EMO staff (especially those with minimal experience) in responding to the event. In large-scale emergencies some partners and counterparts may also be affected by the emergency. Pre-approving consultants ensures that EMO has support if other impacted partners are unable to offer support.

Human Resources Opportunities for Improvement

OFI #1 Some departments did not have the human resource capacity to support sustained operations for a prolonged event or an event of that magnitude.

SO-10: Although noted as a best practice for some agencies with pre-existing internal processes to augment staff when required, EMO and some partner agencies did not have depth of reach within their own organization to meet human resource needs. This lack of depth does not facilitate a reasonable reserve of resources to support response activities of an emergency of this magnitude, and over a prolonged period. It was noted in many of the focus groups and interviews that staffing was an issue as staff and volunteers were quickly overwhelmed, and that there were not enough individuals who could step-in and provide days off which led to exhaustion.

Survey, focus group, and interview findings confirmed there is a need for more resources to check on vulnerable residents and other members of the community whose finances cannot support their need to better prepare for an emergency of this scope (e.g., access to generators, food and supplies for low-income families, vulnerable seniors, etc.).

S0-11: Some organizational, municipal, and provincial staff, including EMO personnel, were required to fill multiple roles and / or carry out additional duties. While many were able to manage, smaller organizations and municipalities with minimal staff were challenged at filling roles. Some staff noted in the surveys (i.e., 36%) that they carried out tasks that were not normally their responsibility or for which they had not been trained.⁴ Approximately 36% of agency / municipality survey respondents working in an environment implementing an Incident Command Structure (ICS) that they did not have enough staff to effectively carry out the ICS functions. was implemented, 36% noted that they did not have enough / sufficient resources to effectively carry out some ICS functions.⁵

R-05: Organizations and municipalities should ensure that they have the capacity to quickly augment staff and volunteers during an emergency. Bolstering numbers internally within departments would be ideal; however, for most organizations, this is not a feasible solution. There are numerous actions that can be taken proactively that could prove beneficial should an emergency of this size and scope occur again. These actions include:

- Investigate the opportunities and challenges (e.g. unions) of developing an inter-departmental emergency reserve or roster of qualified personnel. In the days following Fiona, many provincial government employees were home, unable to go to their workplace because of facility damage. Those employees could be tasked to support the emergency response. These employees already have criminal reference checks, possess government emails, and are already on the payroll. Tasks such as conducting wellness checks, supporting activities within the PEOC are areas of needed support in an emergency. When an emergency unfolds, EMO and municipalities could potentially use this roster to quickly identify and allocate resources accordingly. The investigation could include an identification of possible solutions to address union challenges.
- Develop standing MOUs between EMO and partner organizations, which would expedite the engagement of agreements during emergencies and gain access to qualified staff, particularly when resources are limited. The standing MOUs should be reviewed and renewed annually.
- Cross training to fill various positions.
- Explore resource (personnel) sharing between communities.

OFI #2 The provision of appropriate mental and physical health support to staff was not optimized across some departments and organizations.

S0-12: While considered a best practice by those who provided appropriate worker support, there were numerous organizations and municipalities who did not or were not able

⁴ Based on the 106 agency/municipality survey respondents that answered Q9. *During the response and / or recovery period, I carried out tasks that are not normally my responsibility or for which I had not been trained.*

⁵ Based on the 64 agency/municipality survey respondents that answered Q5. *During the response to Post-Tropical Storm Fiona, did you have enough/sufficient resources for you / your organization to effectively carry out your ICS functions?*

to provide preventative care or support to staff. Some noted that they do not have the capacity or funding available to provide professional mental health assistance.

SO-13: Some organizations and departments had challenges with determining the proper staff rotations to prevent fatigue and exhaustion. For example, some agencies noted that their staff were working long hours (e.g., 16-hour days) and / or many days in a row (e.g., 18 days in a row) with no days off. Increased stress, burnout, and diminished morale was noted in the surveys and in-person sessions.

SO-14: Due to the magnitude of the storm, staff had personal challenges (e.g., homes were damaged), which contributed to feelings of strain and stress, and created additional scheduling challenges.

R-06: Where possible, EMO, departments, municipalities, and partner organizations should consider what measures can be taken to ease the stress on staff as part of their emergency pre-planning. These could include:

- Creating dedicated spaces where staff/volunteers can have a quiet place away from the demands of the response.
- Predetermining plans and practices around provision of showers, meals, and access to laundry.
- Posting “box breathing” visuals and other stress reduction techniques around to encourage healthy coping mechanisms.
- Identifying free mental health and wellbeing supports which are communicated to staff and volunteers, well in advance of emergency situations.
- Setting a schedule for regular check-ins with staff during an activation.
- Training for EOC Management on staff care and mental health first aid
- Obtaining specialized services from health care professionals and / or access to mental health supports.
- Creating an effective staff rotation schedule spanning multi-days, which can realistically be maintained for longer duration events. By identifying staff rotations and scheduling in advance and ensuring that the proper procedures and / or planning is pre-arranged, burnout and exhaustion may be reduced during emergency events. If staff are aware that they will have scheduled time off to deal with personal challenges, it may assist in mitigating stress.

3.1.2 Equipment and Supplies

Availability of equipment and supplies became challenging as the response progressed. When asked, only 57% of agency /municipality survey respondents felt they had adequate equipment (e.g., computers, vehicles, etc.) to support the response and recovery operations.⁶ During the focus groups and interviews, some confirmed that they were well equipped; however, many noted that

⁶ Based on the 109 agency/municipality survey respondents who answered the question Q7. *During an emergency, my agency has adequate equipment to support response/recovery operations (e.g., computers, personal protective equipment, vehicles, deployment kits, etc.)*

there were shortages of fuel, chainsaws, chainsaw fuel, oxygen tanks, generators, and other similar equipment and supplies, and that lessons learned are currently under review to prepare for the next event.

Equipment and Supplies Best Practices

BP #5 Organizations and municipalities who took a proactive approach to acquire equipment and supplies were better positioned to manage challenges.

SO-15: Many municipalities were able to leverage community members and personal contacts to acquire required resources and supplies (e.g., food).

SO-16: EMO, some departments, and some organizations (e.g., Department of Transportation and Infrastructure, Maritime Electric, Parks Canada, and University of Prince Edward Island (UPEI)) had existing Memorandums of Understanding (MOUs) and / or contracts with service providers / contractors and made appropriate arrangements prior to the storm. Due to their proactive approach, they were able to receive resources, supplies, and equipment quickly.

R-07: As applicable, the following approaches and actions should continue to be used and enhanced:

- Companies and contractors should continue to be identified, vetted, and approved during normal operations.
- Standing MOUs, which enable agreements to be expedited in times of emergency, should be reviewed, and renewed annually.
- EMO and partners should update lists annually of available suppliers across the province, and neighbouring provinces. Agencies may want to develop standing offers with suppliers to facilitate a more efficient acquisition of required equipment and supplies where possible.
- Relationships between organizations / EMO / municipalities and contractors as well as community members should continue to be fostered. This could be done through creation of a multi-jurisdiction, multi-agency Emergency Management Working Group or Committee, or by holding regular trainings or round table discussions.

It should be noted that the Province has already taken steps in this area, and recently announced the creation of the Major Incident Readiness Team (MIRT), which is comprised of elected and government officials, to prepare for major events and emergencies that have the potential to impact the Island.

BP #6 The provision of fuel and critical supplies for the continuity of essential services was excellent.

SO-17: It was noted by First Nations, municipalities, agencies, and departments that EMO and the Department of Transportation and Infrastructure quickly and efficiently

delivered fuel, or made fuel accessible, for essential services. Several noted this as one of the most successful aspects of the response.

- SO-18:** Some partners (e.g., Health PEI, Housing, Land and Communities, Agriculture, and first responders) noted that the EMO team fulfilled supply and resource requests quickly and efficiently.
- SO-19:** Partner agencies and organizations delivered supplies to assist others when needed (e.g., Island EMS provided oxygen tanks to assist Health PEI, Red Cross delivered blankets and cots).
- R-08:** EMO and partner agencies should document any ad hoc examples of the provision of equipment and / or supplies to ensure the inclusion of any unplanned processes that were effective during the response to Fiona into existing plans and procedures.

EMO and other key stakeholders should create a list of best practices regarding the provision and delivery of supplies. Documented best practices should be shared to ensure that other agencies have optimal processes in place for the provision of supplies and equipment within their respective area.

Equipment and Supplies Opportunities for Improvement

OFI #3 The acquisition of some equipment and supplies became increasingly challenging as the event progressed.

- SO-20:** Some essential supplies became difficult to acquire for certain aspects of the response (e.g., fuel, chainsaws, forklifts, generators, oxygen tanks, etc.) due to the demand across the province.
- SO-21:** The scale of the cleanup required specialized equipment for debris removal that is not normally kept as part of a standard inventory; this became increasingly difficult to acquire as the response continued.
- R-09:** To facilitate a more efficient procurement process during an emergency, organizations, including EMO, should consider:
- Identifying, vetting, and approving contractors and suppliers during normal operations.
 - Develop standing MOUs, which would enable agreements to be expedited in times of emergency. The standing MOUs should be reviewed and renewed annually.
 - Annually updating lists of available suppliers across the province, and neighbouring provinces. Suppliers should be encouraged to disclose where possible if they have agreements with communities / organizations and how those previous commitments / agreements could impact the response during an emergency. Agencies should develop standing offers with suppliers to facilitate a more efficient acquisition of required equipment and supplies where possible.

S0-22: Some critical infrastructure (CI) owners and operators, such as the Irving Oil tank farm, did not have a working generator, or had an inappropriately sized generator that was not operational at critical sites prior to the storm. This caused an increasingly high demand for generators. In some cases, this also caused generators or personnel to be relocated, which used fuel and resources unnecessarily.

R-10: It is essential that the Province has advance knowledge if CI operators are not properly prepared for a large-scale emergency.

Although the Province cannot force CI owners and operators to purchase generators, the Province should consider:

- Conducting an audit / survey of CI owners and operators.
- Creating a database or GIS map of CI generator sizes and locations prior to the start of hurricane and ice-storm seasons.

Knowledge of CI related generator locations and their limitations prior to an emergency will better position the Province to mitigate the impacts of IC failures and the subsequent impacts on the public.

3.2 Training and Exercises

This section addresses how previous training and / or experience impacted staff understanding of their role during the response, confidence in their ability to carry out their role, and identification of any additional training requirements that could help them in future response efforts.

3.2.1 Roles and Responsibilities

Overall, 51% of agency / municipality survey respondents had an exceptional or above average understanding of their role and assigned responsibilities during the response and recovery efforts for Fiona.⁷ With that level of understanding, 64% of agency / municipality survey respondents felt confident and comfortable in their roles and responsibilities during operations.⁸

While most organizations recognized the value and importance of regular training and exercising, some organizations did not take advantage of available training offered by the Province; it should be noted that the COVID-19 pandemic interrupted regular in-person and online training cycles. It was found that 23% of agency / municipality survey respondents had not participated in previous

⁷ Based on 106 agency/municipality survey respondents who answered Q8. *Please rate your understanding of your role and assigned responsibilities during the response and recovery efforts to Post-Tropical Storm Fiona.*

⁸ Top two score (agree and strongly agree) based on the 107 agency/municipality survey respondents that answered the question Q10. *Please rate your agreement with the following statement: "I felt confident and comfortable in my role and responsibilities during operations."*

training or exercises focusing on emergency response / recovery and some noted in the open-ended comments that the reason they had not was because it was not offered.⁹ Future training, specifically training on provincial plans, procedures, and processes (65%) were noted as being helpful for organizations to help them better prepare for future emergencies.¹⁰

Training Best Practices

BP #7 Those that had participated in training and / or exercises prior to Fiona were better prepared for the response and recovery.

S0-23: Partner agencies, departments, and municipalities who had participated in training and / or a tabletop exercise in the year leading up to Fiona felt better prepared to handle the response and recovery to the storm.

R-11: Where possible, organizations and agencies should leverage all opportunities to participate in available training and exercise opportunities. Strategies to increase training and exercise opportunities should include:

- Implementing an ongoing training strategy with a set schedule.
- Targeted e-learning and/or online videos that include role specific responsibilities, EOC processes, IMS, and reporting at a minimum.
- Printed material including posters and cheat sheets.
- Attending official training / exercises provided by EMO.

BP #8 Pro-actively cross-training staff helped organizations better prepare for response and recovery.

S0-24: Partner agencies, departments, and municipalities who had pro-actively cross-trained staff (e.g., Finance, Housing, Parks and Recreation, etc.) felt better able to meet the challenges of the storm, particularly when road closures impacted some staff and were unable to travel to their work location and effectively fulfill their role.

R-12: Cross-training creates greater depth in capacity and can help mitigate the impact of circumstances that personally affect staff and prevent their ability to carry out their response functions. EMO, partner organizations, and municipalities should leverage every opportunity to offer cross-training to staff, particularly newer staff, during normal and activated operations. Cross-training steps could include:

- Creating a list of current staff, as well as staff on the inter-departmental emergency reserve or roster of qualified personnel, with strengths, specialized capabilities, and skills.

⁹ Based on the 106 agency/municipality survey respondents that answered the question Q13. *Have you participated in previous training or exercises focusing on emergency response / recovery to a widespread incident?*

¹⁰ Based on the 105 agency/municipality survey respondents that answered the question Q15. *What future training would help you to carry out your duties more effectively in another situation? (Check all that apply)*

- Offering e-training modules and/or practical training to those who may be able to assist in other capacities.
- Shadowing more experienced staff as they carry out their roles.
- Offering refresher training for staff on all emergency management positions.
- Conducting an exercise where EOC staff take-on a different role than would be their usual position within an EOC.

Training Opportunities for Improvement

OFI #5 Some staff were not properly trained for their response role which affected confidence levels and task efficiencies.

SO-25: Some staff, including Elected officials at the provincial and municipal levels, were not aware of emergency management protocols and procedures throughout the response and recovery efforts. Some interview and focus group participants noted that awareness of process and procedures could be improved (e.g., some did not know where to sit, respective responsibilities, and others noted that EMO did not have an organized meeting / call schedule at the start of the response, etc.,).

SO-26: Lack of training for some new staff may have impacted their ability to carry out their role efficiently and with diminished confidence. At that time, some newer staff were not aware of available training or had not had the ability to receive prior training. This was also noted in the open-ended comments of the agency / municipality survey.

SO-27: Lack of regularly scheduled training, education, and exercises (due to the interruption of training cycles caused by COVID-19), impacted the response. However, even when training had been made available to staff (e.g., virtual training offered by EMO), not everyone took advantage of this opportunity.

R-13: All staff would benefit from additional practical training to effectively carry out their roles during and emergency. The Province, Elected officials, and partner agencies should leverage all opportunities to participate in available training and exercise opportunities related to emergency management processes and procedures. Strategies to increase training and exercise opportunities could include:

- Implementing an ongoing training strategy with a set schedule.
- Targeted e-learning and/or online videos.
- Printed material including posters and cheat sheets.
- Holding regular official training provided by EMO.
- Conducting multi-agency, multi-jurisdictional exercises. EMO should champion the development of a large-scale exercise that includes provincial departments, partner agencies, NGOs, and municipalities to stress test any revisions made to existing plans / procedures. When asked what future training would help staff to carry out their duties more effectively, 55% of agency / municipality respondents chose simulated emergency exercises.

When asked what future training would help staff to carry out their duties more effectively, 55% of agency / municipality respondents chose simulated emergency exercises.¹¹

Considerations for new staff should include:

- Receiving emergency management training in the first month of employment as part of the onboarding process. Specific courses should be identified which should be completed as part of basic training.
- Functionally training and exercising staff on processes for which they are responsible to ensure efficient and effective facilitation of response activities.
- Developing quick reference guides that provide new staff with an overview of the roles and responsibilities of various functions during an emergency.
- Shadowing more experienced staff or having a buddy system where a more experienced staff member mentors a newer staff member.

It is advisable that provincial departments and partner organizations look at implementing a consistent training schedule if one does not currently exist for their agency. Ideally, the training schedule should be incorporated into the professional development culture and implemented as part of a maintenance model.

OFI #6 Roles and responsibilities were not always well defined or understood within and between agencies, departments, municipalities, and the province.

SO-28: Some departments, municipalities, and organizations felt that at times there were unclear, changed, or misaligned expectations from other organizations (e.g., delivery of food and services to independent seniors, providing Thanksgiving dinners, etc.). Because of the rapidly changing needs of this storm, decisions were made quickly; however, not all stakeholders received information at the same time (e.g., school food program). Sometimes these decisions were made outside of EMO, as the PEOC's structure with different departments can create challenges of competing objectives. This can create misaligned expectations, actions, and cause confusion.

SO-29: Some departments and municipalities did not fully understand their role in providing support to the provincial response, including decision making and planning.

R-14: It is essential that response staff fully understand the roles of all positions and response partners in an integrated, multi-organization coordinated response. Further training is required for staff to better understand expectations of partners that support the overall response and decision making. EMO should champion this requirement more frequently with other departments and municipalities.

EMO, organizations, municipalities, and departments should:

¹¹ Based on the 105 agency/municipality survey respondents that answered the question Q15. *What future training would help you to carry out your duties more effectively in another situation? (Check all that apply)*

- Ensure that all roles, responsibilities, and processes are formalized and readily available to staff for quick reference.
- Conduct an annual review of EOC Section checklists and procedures with staff contributions.
- Train all staff on processes and roles for which they are responsible to ensure efficient and effective facilitation of response activities.
- Investigate how best to communicate decisions so that all affected stakeholders receive the information simultaneously when possible.
- Participate where possible in any Section specific training.
- Participate where possible in functional exercises. A multi-agency, multi-jurisdictional exercise would be ideal.

3.3 Information Management

Information is the most valuable commodity during emergencies. It is an essential aspect in an organization's ability to make decisions and gain (or lose) visibility and credibility. Above all, it is necessary for rapid and effective assistance for those affected by the emergency. This section addresses the effectiveness of information management between responding agencies, municipalities, and organizations, as well as messaging provided to the public.

3.3.1 Information Exchange and Sharing

Overall, information exchange was effective as 82% of agency / municipality survey respondents reported an average, above average or exceptional level of situational awareness.¹² While there were BPs identified, including the EMO morning briefings, there were also some issues noted. Only 42% of survey respondents felt that the information exchange between provincial departments and other responding agencies (e.g., municipalities, CI partners, etc.) was effective.¹³ When probed on information exchange further, only 48% of agency / municipality survey respondents agreed or strongly agreed that information flowed through the correct chain of command and only 55% of respondents felt that information was consistent, concise, and current.¹⁴

Some survey respondents noted that the outages with power and telecommunications made communication difficult, particularly in establishing an alignment between information reported into the PEOC and events that occurred on the ground. There was a lack of a common operating picture which created challenges in obtaining information for decision-making (including restoration of critical services).

¹² Based on 106 agency/municipality survey respondents who answered Q16. *Within your area, what level of situational awareness did you have during your time supporting emergency operations?*

¹³ Top two score (effective and extremely effective) based on 104 agency/municipality survey respondents who answered Q17. *In your opinion, how effective was the information exchange between Provincial Departments and other responding agencies (e.g., municipalities, NGO's, Utilities, etc.).*

¹⁴ Top two score (agree and strongly agree) of 104 agency/municipality survey respondents who answered Q18b/c. *Rate your agreement: Information flowed through the correct chain of command and Information was consistent, concise, and current.*

In general, EMO staff provided timely updates to provincial officials and organizations. Approximately 69% of agency / municipality survey respondents indicated that information was communicated at regular and expected intervals to their organization.¹⁵ The following sections address both strengths and opportunities for improvement related to information exchange.

Information Exchange & Management Best Practices

BP #9 Organizations that had redundant methods of communication or a pre-established plan for a power outage were able to acquire situational awareness more effectively.

S0-30: While email, phone, and text were the primary methods of communication, some departments used non-traditional methods that aided in the relay of required information for decision making. For example, some departments had the PICS 2 radio system (e.g., Fire, Police, Environment, Energy and Climate Action, Health); a reliable method that the province could support. Satellite phones were also used by some organizations.

S0-31: Lessons learned from Post Tropical Storm Dorian assisted some to prepare for the power and telecommunications outages experienced during Fiona. After Dorian, some CI partners sought to use dual Sim Cards with multiple providers to ensure service with any unaffected provider if another provider lost power. Following Dorian, Communications developed a Crisis Communications plan. This plan proved to be effective during Fiona by eliminating ambiguity in messaging.

S0-32: Some agencies and departments (e.g., Department of Agriculture, Environment, Energy and Climate Action, Highway Maintenance) identified a muster point to meet in person if communications were down and a contingency plan was needed.

R-15: Redundancy in communication methods is critical to effective information exchange. Organizations should augment their normal communication processes with some informal processes that may have worked well during Fiona.

EMO, municipalities, and partner organizations should continue to:

- Make and formalize communication plans with built-in methods of redundancy (e.g., identifying muster points).
- Employ redundant methods of communications (e.g., organizations who have yet to do so may wish to adopt the PICS 2 radio system or acquire multiple Sim cards across multiple service providers).

¹⁵ Based on 104 agency/municipality survey respondents who answered Q18d. *Rate your level of agreement: Information was delivered at regular and expected intervals to my organization.*

BP #10 The provincial morning briefings provided good situational awareness to agencies that participated in the daily calls.

SO-33: Organizations were able to gather a lot of information from the briefings provided by the Province. Some noted (e.g., Communications, Agriculture) that the morning operational briefings conducted by the Province were helpful. This was echoed by open-ended comments from some of the agency / municipality survey respondents.

R-16: The Province should continue to provide morning briefings involving all response organizations during emergency events. EMO should review the distribution list to ensure that all stakeholders who may need information for their own response activities can participate in the conference calls if needed.

Conducting morning briefings is a good practice. Those organizations that do not already conduct their own internal morning briefing with staff should incorporate the practice in EOC procedures to optimize situational awareness, mitigate issues, and prepare staff for potential outcomes prior to the provincial briefing calls.

As discussed further below, there may be some merit in splitting the calls into two separate calls – an operational call and more of an informative / planning call.

Information Sharing & Management Opportunities for Improvement

OFI #7 EMO morning operational briefings were beneficial but could be improved.

SO-34: Although noted as a strength by some, some DESOs, CI partners, and first responders noted that the EMO morning operational briefings were too lengthy and extraneous for their respective response role (e.g., operational agencies required more operational direction and strategic agencies required more planning).

R-17: EMO should continue to provide morning briefings with conference calls during emergency events. To optimize the morning briefings, EMO should:

- Shorten the length of the call (i.e., average call length is 2 hours) as the longer call delayed organizations from further planning or implementing operational activities.
- Split the briefing into two separate calls – a brief and targeted operational call to address activities with specific partners that is more informative and planning in nature. Further, some stakeholders have more of a strategic role that doesn't necessitate an operational discussion.
- Review the distribution list and engage partners ahead of time to ensure all stakeholders who may need operational information can participate in that call, while those that may need or want a more informative briefing can participate in one or both calls.

OFI #8 A clear and consistent Common Operating Picture was not obtained within the PEOC.

S0-35: Some organizations and departments noted that a clear Common Operating Picture or “ground truth” was not always available at the PEOC; this led to occasional confusion and impacted collaborative decision-making. Survey and in-person feedback noted a disconnect (at times) from reported information into the PEOC and the challenges that were facing some populations (e.g., vulnerable seniors). Only half (50%) of agency respondents felt that documentation was appropriately developed and maintained at their location during operations.¹⁶

R-18: During events of this scope, the Province should discuss implementing at least one primary Incident Command Post (ICP) in the field to help create a more robust and unified Common Operating Picture between the PEOC and the ground truth. While this could prove challenging, particularly in an event such as Fiona, field reporting should be more formalized. This could reduce the disconnect between the higher-level provincial response and ‘boots on the ground’ response.

Additionally, leveraging Incident Management software, GIS mapping systems, and other data management and visual tools would allow information to be shared effectively between partners and would better support the consolidation of essential information into a Common Operating Picture. This is discussed in greater detail in Section 3.6.

Finally, EMO should consider requests by partner organizations to provide a representative in person into the PEOC (pending available space) if communications are hampered and agencies have no alternative means of acquiring situational awareness (recognizing that resource capacity may impact availability of staff).

OFI #9 Some organizations were unaware of the reporting requirements into the PEOC which negatively impacted decision making and information sharing.

S0-36: Some organizations and departments noted that there were unclear expectations of why and what information the Province needed (e.g., why the reporting of the specific number of crews out in the field each day was necessary). Some also stated that the reporting deadline of 2:00 pm was difficult to meet, inconvenient, or not useful as many still had crews conducting response activities. Organizations had to interrupt workers and volunteers to obtain updates, resulting in inaccurate or late information that was reported to the Province.

¹⁶ Top two score (agree and strongly agree) of 106 agency/municipality respondents who answered Q19. Documentation, such as Situation Reports or status boards, were appropriately developed and maintained at my location during operation.

SO-37: EMO / staff within the PEOC noted that it was difficult and time consuming to collect information from some organizations / departments. This is directly related to an inadequate understanding of reporting requirements and the impacts of late / absent reporting to the Province.

R-19: All departments and partner agencies should know their role and responsibility regarding information sharing. It is important that partner agencies understand the importance of reporting accurate and timely information and acknowledge the impacts that delays or absence of updates can have on overall decision making. EMO should identify existing reporting challenges between partners to determine workarounds and solutions.

Expectations for information sharing must be well understood. These expectations should be established during the pre-storm season. Reporting requirements and deadlines must be well understood by all organizations, departments, and municipalities. Reporting requirements and processes/procedures regarding reporting should be:

- Established and confirmed with all organizations, departments, and municipalities prior to the event.
- Part of regular ongoing training and exercises.
- Championed by EMO and adopted as an essential practice across all response organizations. EMO should expect proper reporting procedures with partner organizations, NGOs, and municipalities to ensure that the impacts of non-reporting / misreporting and the impacts on provincial decision making and the public are well understood.

While reporting deadlines were advised by EMO (i.e., time cutoff to report updates), some organizations were unsure of what information should be included as part of their update as their crews may not have completed their work for that day. EMO should ensure that:

- Information provincial reporting requirements are clearly communicated to Partner organizations both verbally and in writing that identify submission deadlines, what information updates will be expected (including interim or incomplete updates based on misalignment of reporting schedules and crew shifts), to whom should the information be provided, and identification of constraints that may impact the ability of an organization to meet the reporting requirements set by EMO.
- There is clarity on what organizations should report if the deadline comes prior to crews having completed their work.

OFI #10

Critical information was not always effectively communicated in advance by the Province to those that would be affected.

SO-38: Some organizations and departments noted that there were cases where advanced notice of key decisions or response activities that would have direct impacts were not communicated in advance (e.g., the Province announcing Reception Centres would provide Thanksgiving meals, cruise ships would be allowed back to the island, etc.). EMO made decisions to address a very fluid scenario; however,

information did not reach organizations simultaneously which caused some confusion. This was further complicated by the fact that some organizations made decisions on their own which were not always communicated to EMO. This created some misalignment in understanding across some of the response organizations.

R-20: It is imperative that departments, partner organizations, and municipalities understand the full impact of decisions and / or actions that are carried out independently (i.e., outside of the EMO's coordination role). All organizations should investigate how best to communicate internal decisions that have external consequences with EMO so that all affected stakeholders receive situational awareness in a timely manner. While it is not reasonable to expect organizations to report every internal decision to EMO, organizations should work closely with EMO to identify and itemize key decisions made locally that could have ripple effects on provincial activities. Similarly, it is essential that EMO work closely with partner organizations to better understand the impacts of provincial decisions and announcements on external organizations and municipalities, especially when they are directly affected. Identified impacts should be well documented and factored into the decision-making processes across EMO and all other organizations.

OFI #11 Practices to relay real-time restoration times for critical services could be improved.

SO-39: Restoration times and status updates were not always readily available which hampered decision making and response activities. Some organizations noted the difficulty in obtaining updates from telecommunications and Maritime Electric, particularly when DESOs were not present in the PEOC. Participants in the in-person sessions noted that the physical presence of DESOs was beneficial.

It was also noted that the transparency of timelines for restoration of services could have been improved. Many public survey respondents who experienced prolonged power outages indicated that it would have been helpful to receive a notification of approximate timelines to enable better planning for personal hygiene and preserving food. Lack of information was frustrating for residents who lived in areas with only partial restoration (e.g., residents without power living across the street from restaurants and bars that were open that did have power). While Maritime Electric followed a systematic approach to re-establishing the network, neither organizations nor the public were aware of restoration timelines.

R-21: Although Maritime Electric restored power as quickly and as safely as possible, there was an expectation from organizations, departments, and the public for greater transparency on how and when services would be reestablished. There is a need to educate EMO, organizations, and the public on restoration procedures. Knowledge of how the electrical grid works is limited and the prioritization process for restoration is not well understood (e.g., a restaurant regains power before residents who reside on the same street).

Although power restoration is a dynamic process, greater transparency about the restoration process could help alleviate frustrations. Some potential actions and / or practices which may help could include:

- Holding a round table with EMO, Maritime Electric, CI partners, and DESOs to discuss options of how best to communicate prioritization and restoration times (e.g., live update on a GIS map).
- EMO working with Maritime Electric to develop educational tools (e.g., YouTube videos) that inform the public on how decisions are made to restore services and / or why certain locations are restored earlier (i.e., because of the grid layout). This will also demonstrate a unified and collaborative process with structure and formality that may help to manage expectations of the public.

3.3.2 Public Information

Information exchange is essential to ensuring public safety. Information sources used by the public varied as there were widespread power and telecommunications outages. Prior to the storm, 49% of public survey respondents were informed of the approaching storm via weather forecasts (e.g., Environment Canada, the Weather Network, etc.), with many relying on social media (24%) or the news (19%) to monitor the situation.¹⁷ The Province was not considered a source for information related to the storm system approaching the island. Approximately 68% of agency / municipality survey respondents thought that the provincial warnings and preparedness messages to the public were sufficient during this response¹⁸ ; 53% of agency / municipality survey respondents thought that all accessible platforms were effectively used to convey information to the public (e.g., radio, social media, community announcements, text messages etc.).¹⁹ Regardless of how members of the public learned of the approaching storm, only 44% of public survey respondents knew what to do and how to prepare for the arrival of the storm.²⁰

Almost all (99%) of the public survey respondents were impacted by the power outage²¹; 77% of public survey respondents were without power for more than 72 hours (see Figure 4).²²

¹⁷ Based on 306 public survey respondents who answered Q2. *How did you first learn that Post-Tropical Storm Fiona could have a possible impact to the Province?*

¹⁸ Based on 102 agency/municipality survey respondents who answered Q20a. *Warnings and preparedness messages to the public were sufficient during this response.*

¹⁹ Based on 102 agency survey respondents who answered Q20g. *All accessible platforms were effectively used to convey information to the public (e.g., radio, social media, community announcements, text messages etc.).*

²⁰ Based on 305 public survey respondents who answered Q3. *Once notified, did you know what to do and how to prepare for the arrival of the storm?*

²¹ Based on 305 public survey respondents who answered Q4. *Were you impacted by the power outage?*

²² Based on 306 public survey respondents who answered Q5. *How long were you without power?*

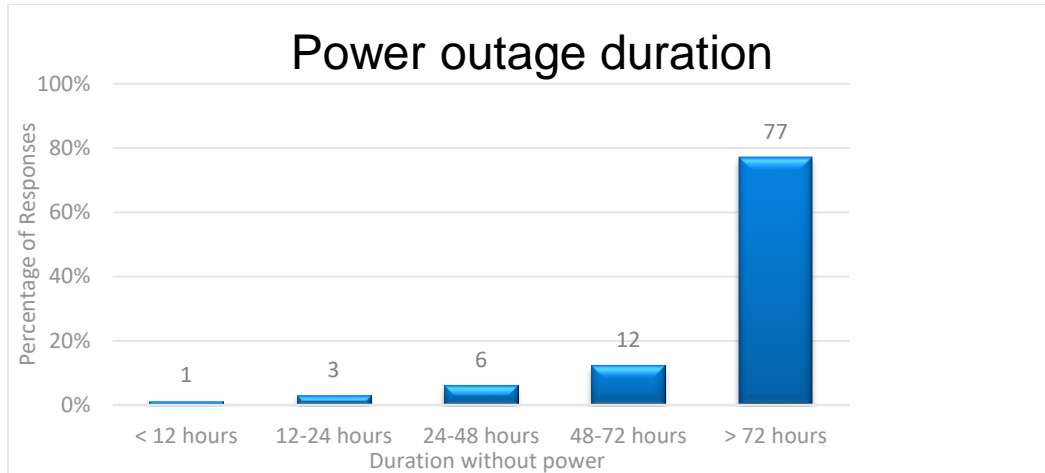


Figure 2: Public Duration Without Power

Half (50%) of public survey respondents did not know who to contact for assistance or where to go to get information about the storm.²³ Approximately 60% of agency / municipality survey respondents felt that information provided to the public was shared in a timely manner²⁴ ; however, only 37% of public survey respondents felt that information updates were issued by the Province in a regular and timely manner.²⁵ Once the storm had passed, the public still needed to receive information updates on the status of the response activities. Figure 5 illustrates a significant increase in conversations with others (22%) for updates for those residents who had no power.²⁶

²³ Based on 297 public survey respondents who answered Q6. *Did you know who to contact for assistance or for more information on the storm?*

²⁴ Top two score (agree and strongly agree) based on 102 agency/municipality respondents who answered Q20f. *In general, information to the public was shared in a timely manner.*

²⁵ Based on 296 public survey respondents who answered Q7. *In your opinion, were information updates issued by the Province provided regularly and timely (i.e., did you feel like you were well informed on the situation)?*

²⁶ Based on 292 public survey respondents who answered Q8. *What information source did you rely on the most to obtain information updates once the storm had passed?*

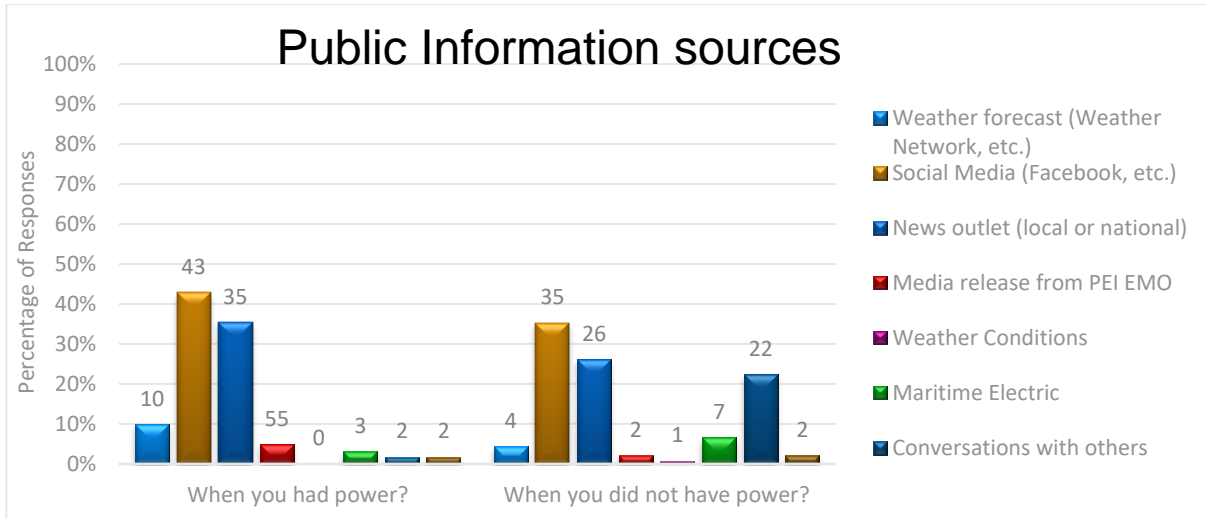


Figure 3: Public Information Sources

Public communications play a large role in building and maintaining public and stakeholder confidence in the actions and decision-making of those who are handling the emergency. Overall, 62% of agency / municipality survey respondents felt that the Province maintained public confidence throughout the response and recovery to Fiona.²⁷ By comparison, only 20% of public survey respondents felt confident in the ability of the Province and supporting agencies to effectively respond and recover from the storm.²⁸ Issues that affected public confidence are addressed in this section.

Public Information Opportunities for Improvement

OFI #12 The timeliness, efficacy, and accuracy of public communications issued by the Province, municipalities, and various agencies could be improved.

SO-40: Many respondents from the public survey noted that information updates issued by the Province, organizations, municipalities, and various agencies were not provided in a regular or timely manner, including power outage restoration times, road closures in their areas, etc.

SO-41: The Province does issue seasonal preparedness messaging on their social media platform. Prior to peak hurricane season, they typically post information on how to prepare; however, this messaging is limited to social media platforms and may not capture the attention of any audience that does not follow social media. Agencies and departments noted that key messaging regarding specific activities may have served the public more effectively had it been issued on many platforms prior to

²⁷ Based on 98 agency/municipality survey respondents who answered Q21. Do you feel that the Province maintained public confidence throughout the response and recovery to Post-Tropical Storm Fiona?

²⁸ Based on 285 public survey respondents who answered Q15. Overall, I felt confident in the ability of the Province and supporting agencies to effectively respond and recovery to Post-Tropical Storm Fiona.

the storm (e.g., how to prepare for a prolonged power outage, how to safely check and operate a generator, when to call 911 (i.e., what constitutes an emergency), and cautioning the at-home use of chainsaws). During Fiona, 911 operators received many non-emergency calls from the public, and hospitals saw a dramatic increase in volume for non-critical issues.

SO-42: Both the public and agency / municipality survey data indicated that the public had limited knowledge of the location, contact, and available services of their closest Reception Centre. Only 39% of public survey respondents felt informed or very informed on available social support services that were accessible in their respective area (e.g., Reception Centres, community supports, etc.).²⁹ Of those survey respondents (24%) that needed to leave their home due to the impacts of the storm, only 43% knew where to go or what services would be available to them.
30

R-22: During any type of emergency, members of the public look to the authorities for guidance, and to reduce stress and anxiety.

EMO relies heavily on social media platforms to communicate with the public, but during a power and telecommunications outage, many may not have access to social media. Further, social media may not be a platform that some populations (e.g., seniors) use regularly or at all. Messages that are released are not necessarily received, as was demonstrated by the discrepancy in level of awareness between those involved in the response, and members of the public.

EMO should consider issuing a public survey to understand where and how the public gathers information both during emergencies and normal operations. Survey results will inform EMO on how best to message seasonal preparation, storm preparation, and response messaging so that it reaches the greatest number of residents as quickly as possible.

Although it can be difficult for the Province to determine if members of the public are able receive messaging, particularly during a power outage, it is recommended that any future updates to the Crisis Communications Plan include proper checks and balances to gauge the effectiveness of the communications products. Much of this process will be informed by the recommendation to survey the public on how they acquire information as part of their emergency preparedness.

²⁹ Based on the 297 public survey respondents that answered Q10d. Level of awareness of: *Available social support services that were accessible to me in my area (e.g., reception centres, community support centres, etc.).*

³⁰ Based on the 295 public survey respondents that answered Q11. *Did you have to leave your home due to the impacts from the storm (e.g., prolonged power outage, property damage, medical issues, etc.)?*

3.4 Concept of Operations

Responding to emergencies involves a coordinated, co-operative process of matching essential needs with available resources. Approximately 74% of agency / municipality survey respondents thought that response operations were conducted effectively by their organization.³¹ Conversely, 18% of public survey respondents felt that the province and supporting agencies conducted a well-coordinated, efficient, and effective response to Fiona.³² Despite the challenges created by the widespread power outage, over half (55%) of agency / municipality survey respondents felt that their organization had enough redundancy built into plans, procedures, and protocols that there was little to no interruption in their ability to carry out their response function.³³

For those that felt the response operations were not effective, there were numerous reasons cited as to why the response was not considered effective (see Figure 6).³⁴ Poor communication (breakdown in procedures) was chosen the most.

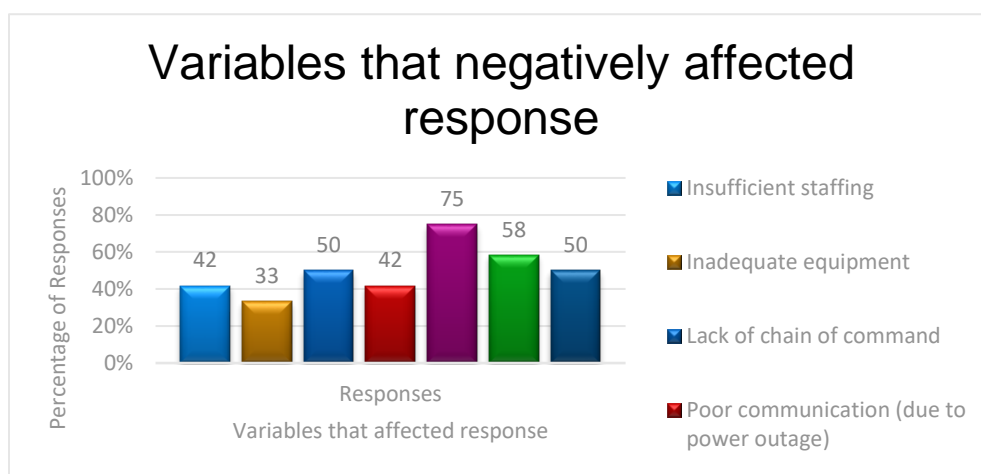


Figure 4: Variables that affected the response

Approximately 67% of public survey respondents also noted the Province and supporting agencies must improve on preparedness before the next large-scale event occurs.³⁵ Although not noted in the focus groups or interviews, only 59% of agency / municipality survey respondents felt that they were prepared or exceptionally prepared for initial operations.³⁶

³¹ Top two score (agree and strongly agree) based on 99 agency/municipality survey respondents who answered Q27. Rate your agreement with: I felt that response operations were conducted effectively by my organization.

³² Based on 284 public survey respondents who answered Q16. The Province and supporting agencies conducted a well-coordinated, efficient, and effective response to Post-Tropical Storm Fiona.

³³ Top two score (agree and strongly agree) based on 98 agency/municipality survey respondents who answered Q31. Although the power outage created challenges, my agency has enough redundancy built into plans, procedures, and protocols that there was little to no interruption in our ability to carry out our response function.

³⁴ Based on 11 agency/municipality survey respondents who answered Q28. If you felt that response operations were not effective, please select the reason why (check all that apply).

³⁵ Based on 283 public survey respondents who answered Q17. Relative to the response and recovery efforts by the province and supporting agencies, is there anything that you feel could be improved if this happens again?

³⁶ Based on 101 public survey respondents who answered Q26. How prepared was your organization/agency/municipality for the following phases: Initial Operations (Sept 22-24)

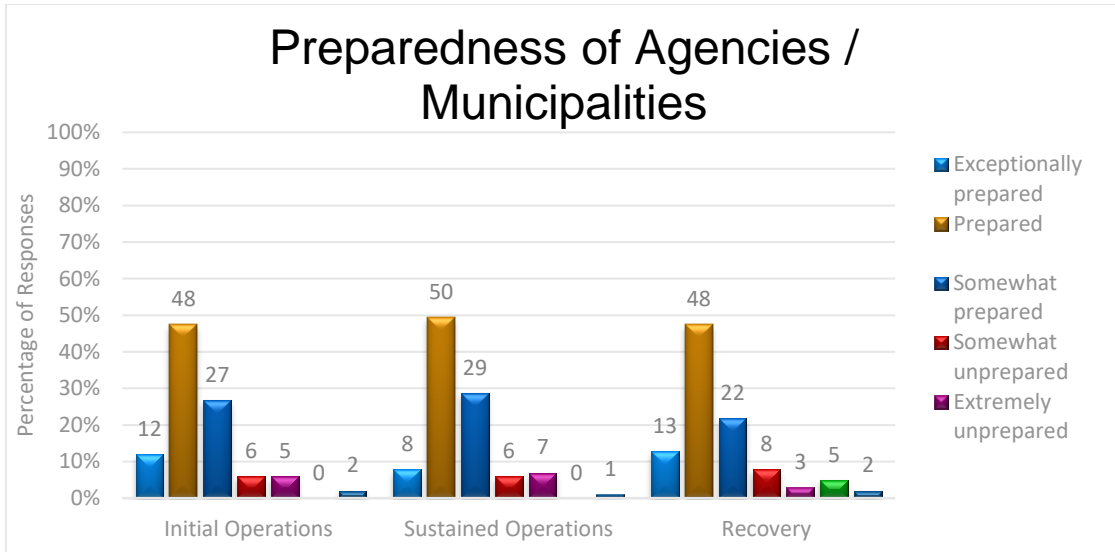


Figure 5: Preparedness of Agencies / Municipalities

There were several best practices noted during in-person sessions which will be outlined below; however, some challenges including prioritization processes are also addressed.

Concept of Operations Best Practices

BP #11 Organizations at all levels demonstrated collective teamwork that contributed to a well coordinated and collaborative response.

SO-43: There were numerous examples of coordination of activities between agencies, organizations, and departments to support the response:

- Telecommunications agencies worked closely with Maritime Electric in the restoration of both power and telecommunications.
- Samaritans Purse worked closely with provincial departments to assist with debris cleanup.
- Within municipalities, recreation staff accompanied and supported wastewater staff to assist where they could when human resources were stretched.
- Several focus group and interview participants noted how exceptional the Department of Transportation and Infrastructure was at providing fuel and other supplies quickly and efficiently.
- Social Development and seniors staff supported Housing Assistant staff.
- Team Rubicon was a wealth of knowledge to new staff within the PEOC.

SO-44: The response at the community level was extraordinary. Volunteers and local firefighters were exceptional at the provision of support and delivery of critical supplies to members of the public. Volunteers coordinated and delivered hot meals, clothing, and supplies to those in need. Residents also noted how neighbours helped neighbours during this unprecedented storm.

R-23: The Province should continue to encourage coordination and cooperation between departments, municipalities, and organizations. Training and functional exercises are an effective means of uniting organizations to establish / maintain working relationships while building resilience in emergency response plans and fostering continual improvement. EMO has an established training and exercise program in place; there should be a steadfast approach to engage other departments, partner organizations, NGOs, and municipalities to participate in tabletop exercises (TTXs) and full-scale exercises. Results of this AAR process and subsequent discussions may serve to motivate partner organizations to participate in EMO led exercises and training sessions.

EMO may also want to consider generating opportunities for partners, municipalities, and organizations to visit or tour the PEOC during non-emergency times to gain more perspective on PEOC activities and procedures.

Finally, the creation of a multi-jurisdiction, multi-agency Emergency Management Working Group or Committee, may encourage coordination and cooperation between key stakeholders. This may have been addressed already by the time of publishing as aforementioned MIRT has been formed by the Province.

BP #12 The on-site presence of DESOs within the PEOC enabled effective collaboration and efficient decision making.

SO-45: The early on-site presence of some DESOs at the PEOC (e.g., ITSS, Highways, Environment, Health PEI) was well-received and allowed for effective pre-planning and collaboration (including resource requests and decision-making) before, during, and after the storm.

R-24: While the PEOC can operate effectively in a virtual environment, EMO should encourage the on-site presence of DESOs during Level 2 and 3 activations. There are several benefits to having DESOs attend the PEOC in person including:

- In-person enables more fluid conversations and communications between other departments and partner organizations.
- Individuals in the PEOC are better positioned to plan collaboratively by sitting next to one another, gather situational awareness, and coordinate the response faster as a group rather than across virtual team meetings.
- The in-person environment cannot be disrupted by faults with technology including accidentally muted mics or bad internet connections.

EMO should continue to encourage DESOs to attend the PEOC in person prior to the event or early into the activation as well. Circumstances whereby DESO's are unable to attend in person must be clearly defined by EMO within procedures to ensure consistency and to help manage expectations regarding PEOC roles and responsibilities.

Concept of Operations Opportunities for Improvement

OFI #13 Public awareness of prioritization of CI access to essential supplies / equipment could be improved.

SO-46: Telecommunications and other CI partners had priority positions for fuel during the shortages (e.g., they could bypass the public in line and / or had gas cards). This caused tension and stress for both the workers and for members of the public who did not have visibility on the workers' roles.

R-25: Although CI partners must have access to fuel for response activities, the process of bypassing the public line and / or having gas cards was uncomfortable for crews and the public. The Province should consider:

- Identifying a separate fuel depot location (e.g., separate fuel station) for CI partners that separates essential workers from the public when replenishing supplies that are in great demand by the general population.
- Having a specific fuel time window for CI partners (this was demonstrated with gas stations that were closed to the public for a specific time window for Police).
- Generating and distributing information (e.g., social media campaign) educating the public regarding the prioritization of access to essential supplies and equipment during emergencies.

OFI #14 The prioritization of the restoration of critical services and / or public amenities is not well understood.

SO-47: Many departments, municipalities and organizations do not understand how the restoration of essential services (i.e., power restoration) are managed by CI operators and / or the Province. While many organizations have their own priority lists for restoration; they were not always aligned with the Province once reported or were unsure of where their issues were represented overall on the list of priorities.

SO-48: Several departments and organizations noted that the prioritization of supplies, such as fuel, needs to be more clearly coordinated, identified, and communicated.

R-26: Restoration of power is a dynamic process. Prioritization may change daily during a significant event as urgent needs may arise. Although there is no standardized list that exists for the duration of the response, there is a need for greater transparency of how restoration of essential services is restored. While priorities may change, particularly in the early stages of response, it is essential to maintain communication with stakeholders on what those priorities are on a regular basis. The provision of critical restoration prioritization is essential in decision making for departments and agencies; any transparency on that process will aide in decision making within and external to EMO.

EMO should champion this initiative by:

- Hosting a round table with Maritime Electric, other CI partners, and DESOs to discuss options of how best to communicate prioritization and restoration times (e.g., live update on a GIS map).
- Developing materials that outline how the prioritization process works, strategic planning behind the decisions that guide prioritization, and decision trees (if applicable) that identify the factors that are considered for restoration planning. Priorities should be based on pre-determined criteria and indicators to establish a clear and transparent process including urgency, severity, feasibility, sustainability, equity, and alignment with the provincial public safety values. By establishing criteria for prioritization, EMO will ensure that the process is based on evidence, logic, and fact that reflects a collective and unified response approach. These criteria should be made available to all entities, including the public, to help manage expectations during future response efforts. By consulting and coordinating with other agencies, emergency managers, and partners, EMO can enhance the legitimacy, accountability, and effectiveness of prioritization and response.

OFl #15 Coordination of accommodations and food logistics for response organizations could be improved.

S0-49: Peak tourism in PEI draws heavily on area hotels; this period also aligns with hurricane season. Fiona struck at the end of a high traffic tourist period and many CI partners, departments and other organizations found it difficult to secure accommodations and food for their crews, volunteers, and staff.

S0-50: Some organizations had their own systems of booking accommodations, which led to confusion and competition for available space. In some cases, it also led to inappropriately housed crews, where those that needed extra parking for trucks stayed at locations which did not have the necessary parking space. Other response agencies were situated in hotels that were not conveniently located to their work sites.

S0-51: While EMO was prepared to coordinate accommodations for incoming response crews, they had limited visibility on the availability status of local hotels. Many organizations that did not coordinate accommodations through EMO also did not report their locations to the Province. This created a greater level of effort for EMO to track, locate and book hotels for other organizations requesting assistance in securing accommodations.

R-27: Organizations should have contingency plans in place for seasonal emergencies that address potential challenges in securing the appropriate accommodations that can provide the required amenities (e.g., available accommodations with power, appropriate parking for larger vehicles, etc.). The Province cannot compel hotels to evict guests, in light of this:

- EMO, working through Tourism PEI, could discuss opportunities and practices they could employ with local accommodation providers to identify

capacity / capability in meeting the needs of response organizations, including Air BnB hosts.

- Source other locations which may be used when no accommodations can be found (e.g., schools, recreation centres, churches, entertainment halls, or college dorms) to house response staff.
- Create and / or update MOUs for lodging and food for volunteers and staff.

A collaborative process around booking accommodations for response crews, and how accommodations are reported to EMO should be explored (e.g., a database, common booking platform, GIS map). Should EMO assume responsibility for ensuring accommodations for response crews/organizations as part of the coordination of activities, there must be a dedicated EMO staff member available to liaise, coordinate, and problem solve logistical issues during peak times of an emergency to ensure accommodation needs can be met for external agencies.

3.5 Business Continuity

The response to Fiona was a prolonged event that challenged departmental capacity to staff roles for the entire duration of the emergency. For some departments, the duration of the response caused other work priorities to be shelved or re-distributed. Overall, it was found that business continuity was well-maintained, and the availability of most services were maintained.

Approximately 71% of agency survey respondents discussed or considered business continuity within their organization during response operations.³⁷ Some organizations were proactive in the activation of their Business Continuity Plan (BCP) to minimize disruption in day-to-day operations. Approximately 53% of agency / municipality survey respondents felt that their service area had enough resources and / or equipment to maintain regular day-to-day operations throughout the duration.³⁸ When required, residents were notified of any changes to regular services; however, except for some mental health services, most of these were not critical in nature.

Business Continuity Best Practices

BP #13

Organizations with current Business Continuity Plans were better able to provide consistent services to residents during the prolonged event.

S0-52:

Some departments and organizations (e.g., Department of Finance, Public Library Services, Highway Maintenance), noted that their BCP was reviewed and / or updated prior to the storm. This led to pro-active measures, which ensured that

³⁷ Based on 101 agency/municipality survey respondents who answered Q33. *Was business continuity discussed / considered within your organization during response operations?*

³⁸ Top two score (agree and strongly agree) based on 101 agency survey respondents who answered Q34. *I felt that my service area had sufficient resources and / or equipment to maintain regular day-to-day operations throughout the situation.*

services were still provided during the response and recovery (e.g., Social Services held cheques for clients as the Postal Service would not be running).

R-28: Departments and organizations should continue to review their BCPs on a regular basis, at least annually, to ensure that they are updated and aligned with the Provincial BCP. Where possible, departments and organizations should exercise their BCPs.

While reviewing BCPs, departments and organizations should be particularly mindful of both human and equipment / supply resource requirements to maintain day-to-day operations while in response operations.

3.6 Decision Centre Tools

Only 43% of agency / municipality survey respondents agreed that technology and applications used to support the response were sufficient.³⁹ The Province is in the process of implementing a new software tool; however, it has not been implemented yet. When asked what additional technology, applications, or tools would have better supported their response activities, respondents (41%), focus group and interview participants all noted that a tool that provides an EOC Common Operating Picture capability is essential. For the full breakdown of additional technology / applications / tools please see Table 4.⁴⁰

Table 5: Additional Technology / Applications / Tools

Additional Tools / Applications	%	#
EOC Common operating picture capability	41%	30
Social Media management tools	30%	22
Electronic emergency response procedures	34%	25
Additional computing power	21%	15
Computer-based ICS forms	19%	14
Computer-based documentation capability	25%	18

³⁹ Top two score (Agree and Strongly Agree) based on 99 agency/municipality survey respondents that answered Q35. Please rate your agreement with the following statement: *The technology and applications used to support response operations were sufficient.*

⁴⁰ Based on 56 agency/municipality survey respondents that answered Q36. *What additional technology / applications / tools would have better supported your response activities? (Check all that apply)*

Decision Centre Tools Opportunities for Improvement

OFI #16

The use of available tools from other departments and agencies for decision making was not optimized.

SO-53: EMO did not have overall Geographic Information System (GIS) capability. Multiple departments, municipalities, and agencies noted that there were no resources in place to support GIS within the PEOC, and that although many departments use GIS (e.g., ArcGIS by ESRI), there were different layers of GIS mapping that were not coordinated to create one Common Operating Picture.

SO-54: Situational awareness tools, including GIS / maps, would have been useful to provide information on Reception Centres, outages provided by Maritime Electric, road closures, damage assessments, and key issues within the province.

R-29: GIS and mapping capability is available throughout numerous departments and organizations. EMO and its partner organizations should assess their current technology (e.g., who has what data, in which format, and is it compatible / how to make it compatible). It is recommended that all available technology be catalogued and mapped for capability for reference during an emergency.

The Province is in the process of implementing a new software that includes this capability, and currently working with government departments to ensure properly trained human resources to input all relevant data in an emergency.

4 Conclusion

Post-Tropical Storm Fiona was the costliest weather event to ever hit Atlantic Canada. For an event of that magnitude, which effected the entire island, the Province managed a well-coordinated response to the storm. Two on-line surveys were developed and distributed to collect information on the response from both members of the public and response agencies / municipalities. Results from the surveys were analyzed and used to inform the development of questions for the interviews and focus groups, which were conducted between June 12th to 22nd. Qualitative and quantitative data were both considerations in the overall findings presented in this report.

While the overall response was successful, there were opportunities for improvement identified in each of the six categories used to guide data collection and analysis: resource management, training and exercise, information management, concept of operations, business continuity and decision centre tools.

The duration of the response and recovery was prolonged, placing great strain on the capacity to sustain operations and maintain staffing levels. It was widely noted that the timing of the storm reduced the overall impact as seasonal workers were still available, and the weather was relatively mild. Resource management became a challenge for some departments as staff began to tire; exacerbated by the need for more training for staff to effectively carry out their roles.

The power and telecommunications outages significantly impacted communications in the early stages; however, agencies were proactive and innovative as they used non-traditional methods to communicate. Information exchange between organizations was not optimal at times, in part, due to awareness of reporting requirements to EMO. Public communications were challenging and could be improved if the Province, municipalities, and organizations send out messaging and products ahead of emergency events on various platforms.

While the Province could improve the coordination of some response activities, the community-based emergency management model worked well across the island. The level of dedication displayed by provincial staff, volunteers, organizations, and residents was outstanding. By actioning the lessons learned identified within this report, the Province, municipalities, and response agencies will continue to improve overall response and recovery efforts in the future.

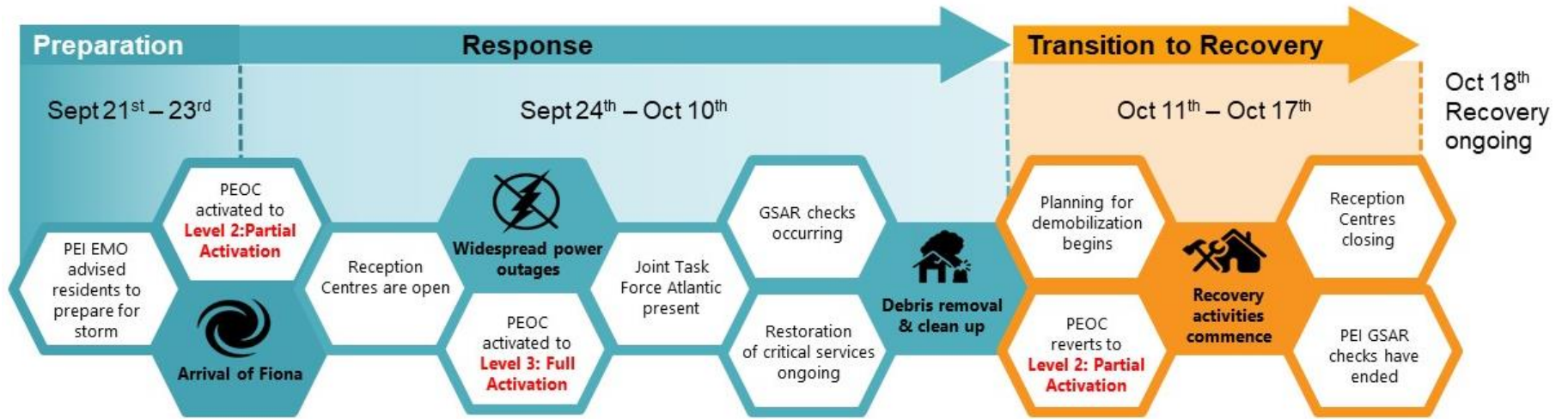
References

- [1] Justice and Public Safety, Prince Edward Island All Hazards Plan, June 2017

Acronyms

AAR	After Action Review
BCP	Business Continuity Plan
BEM	Basic Emergency Management
BP	Best Practice
CAF	Canadian Armed Forces
CHC	Canadian Hurricane Centre
CI	Critical Infrastructure
CRC	Canadian Red Cross
DESO	Department Emergency Services Officer
DND	Department of National Defence
EAP	Employment Assistance Program
EMS	Emergency Medical Service
EMO	Emergency Measures Organization
FN	First Nations
GIS	Geographic Information Systems
IAP	Incident Action Plan
ICP	Incident Command Post
ICS	Incident Command System
IMS	Incident Management System
IO	Information Officer
ISC	Indigenous Services Canada
IT	Information Technology
ITSS	Information Technology Shared Services
JPS	Justice and Public Safety
KF	Key Finding
ME	Maritime Electric
MOU	Memorandum of Understanding
NGO	Non-government organization
OFI	Opportunity for Improvement
OFM	Office of the Fire Marshal
PEI	Prince Edward Island
PEOC	Provincial Emergency Operations Centre
PPE	Personal Protective Equipment
RCMP	Royal Canadian Mounted Police
SO	Supporting Observation
SOLE	State of Local Emergency
UPEI	University of PEI

ANNEX A. Event Timeline



Fiona By The Numbers

>82K	Customers lose power
48	Reception Centres
\$660m	Insurable Damages
2.5m	Storm surge

Response By The Numbers

21 Days	Level 2/3 PEOC activation
936	Fire calls
193	Canadian Armed Forces personnel
>400	PEI GSAR check-ins of residents

ANNEX B. Summary of Findings and Recommendations

Table 6: Summary of Best Practices and Recommendations

Finding No.	Best Practice	Summary of Recommendations
BP #1	Organizations, agencies, and municipalities were better able to meet human resource requirements when they pre-planned or had practices already in place to manage surge capacity.	<p>EMO should continue their efforts to raise awareness on the importance of organizations meeting their expected roles and responsibilities during an emergency. Where possible pre-storm procedures and practices should be continued and enhanced, including:</p> <ul style="list-style-type: none"> • Establish standby protocols that include early notification to contractors to ensure resources are on standby to respond. • Pre-arranged mechanisms to enable extensions of seasonal based work contracts during peak storm season. • Developing and/or maintaining an inter-departmental emergency reserve or roster of qualified personnel. • Investigate the possibility of developing provincial government policy to deploy provincial government staff to support field operations when required, (for example go door to door for wellness checks). • Standing MOUs between EMO and partner organizations, which would enable agreements to be expedited in times of emergency, should be reviewed, and renewed annually. • Cross training of essential positions.
BP #2	Pre-established processes designed to minimize physical and mental stress on staff throughout each phase of the response were effective.	<p>Organizations should continue to ensure that appropriate measures are in place to reduce physical and mental stress on staff, particularly when staffing levels are reduced. Where possible pre-existing measures to reduce physical and mental stress on staff should be formalized into processes and plans, and responsibilities for implementation should be assigned accordingly. Examples of pre-existing measures that could be formalized include:</p> <ul style="list-style-type: none"> • Designated comfort areas for rest • Provision of showers, meals, and access to laundry • Pre-storm mindfulness programs • Pre-determined staff/volunteer rotations to ensure regular days off. <p>Those who currently have no pre-existing processes and programs in place should begin to establish, normalize, and raise staff awareness of mental health and wellbeing practices and free programs prior to the next emergency event.</p>

BP #3	The dedication and resilience of EMO staff was highlighted by partner agencies.	<p>EMO staff could continue to foster strong working relationships and trust with partner agencies through:</p> <ul style="list-style-type: none"> • Continued outreach to municipalities and partner organizations • Defining a schedule for recurring multi-stakeholder and multi-jurisdictional exercises and training. • Creating a Working Group or Committee of core Emergency Management personnel and agencies in all jurisdictions and meet quarterly to discuss pre-storm planning.
BP #4	The decision to bring in additional resources to leverage knowledge and experience of other organizations and consultants was beneficial to some newer staff in the EOC.	As applicable, pre-approved partners should continue to be engaged in an emergency to support EMO staff (especially those with minimal experience) in responding to the event. In large-scale emergencies some partners and counterparts may also be affected by the emergency. Pre-approving consultants ensures that EMO has support if other impacted partners are unable to offer support.
BP #5	Organizations and municipalities who took a proactive approach to acquire equipment and supplies were better positioned to manage challenges.	<p>As applicable, the following approaches and actions should continue to be used and enhanced:</p> <ul style="list-style-type: none"> • Companies and contractors should continue to be identified, vetted, and approved during normal operations. • Standing MOUs, which enable agreements to be expedited in times of emergency, should be reviewed, and renewed annually. • EMO and partners should update lists annually of available suppliers across the province, and neighbouring provinces. Agencies may want to develop standing offers with suppliers to facilitate a more efficient acquisition of required equipment and supplies where possible. • Relationships between organizations / EMO / municipalities and contractors as well as community members should continue to be fostered. This could be done through creation of a multi-jurisdiction, multi-agency Emergency Management Working Group or Committee, or by holding regular trainings or round table discussions.
BP #6	The provision of fuel and critical supplies for the continuity of essential services was excellent.	EMO and partner agencies should document any ad hoc examples of the provision of equipment and / or supplies to ensure the inclusion of any unplanned processes that were effective during the response to Fiona into existing plans and procedures. EMO and other key stakeholders should create a list of best practices regarding the provision and delivery of supplies. Documented best practices should be shared to ensure that other agencies have optimal processes in place for the provision of supplies and equipment within their respective area.
BP #7	Those that had participated in training and/or exercises prior to Fiona were better prepared for the response and recovery.	<p>Where possible, organizations and agencies should leverage all opportunities to participate in available training and exercise opportunities. Strategies to increase training and exercise opportunities should include:</p> <ul style="list-style-type: none"> • Implementing an ongoing training strategy with a set schedule. • Targeted e-learning and/or online videos that include role specific responsibilities, EOC processes, IMS, and reporting at a minimum. • Printed material including posters and cheat sheets. • Attending official training / exercises provided by EMO.

<p>BP #8</p>	<p>Pro-actively cross-training staff helped organizations better prepare for response and recovery.</p>	<p>EMO, partner organizations, and municipalities should leverage every opportunity to offer cross-training to staff, particularly newer staff, during normal and activated operations. Cross-training steps could include:</p> <ul style="list-style-type: none"> • Creating a list of current staff, as well as staff on the inter-departmental emergency reserve or roster of qualified personnel, with strengths, specialized capabilities, and skills. • Offering e-training modules and/or practical training to those who may be able to assist in other capacities. • Shadowing more experienced staff as they carry out their roles. • Offering refresher training for staff on all emergency management positions. • Conducting an exercise where EOC staff take-on a different role than would be their usual position within an EOC
<p>BP #9</p>	<p>Organizations that had redundant methods of communication or a pre-established plan for a power outage were able to acquire situational awareness more effectively.</p>	<p>Organizations should augment their normal communication processes with some informal processes that may have worked well during Fiona. EMO, municipalities, and partner organizations should continue to:</p> <ul style="list-style-type: none"> • Make and formalize communication plans with built-in methods of redundancy (e.g., identifying muster points). • Employ redundant methods of communications (e.g., organizations who have yet to do so may wish to adopt the PICS 2 radio system or acquire multiple Sim cards across multiple service providers).
<p>BP #10</p>	<p>The provincial morning briefings provided good situational awareness to agencies that participated in the daily calls.</p>	<p>The Province should continue to provide morning briefings involving all response organizations during emergency events. EMO should review the distribution list to ensure that all stakeholders who may need information for their own response activities can participate in the conference calls if needed. Those organizations that do not already conduct their own internal morning briefing with staff should incorporate the practice in EOC procedures to optimize situational awareness, mitigate issues, and prepare staff for potential outcomes prior to the provincial briefing calls.</p>
<p>BP #11</p>	<p>Organizations at all levels demonstrated collective teamwork that contributed to a well coordinated and collaborative response.</p>	<p>The Province should continue to encourage coordination and cooperation between departments, municipalities, and organizations. Training and functional exercises are an effective means of uniting organizations to establish / maintain working relationships while building resilience in emergency response plans and fostering continual improvement.</p>
<p>BP #12</p>	<p>The on-site presence of DESOs within the PEOC enabled effective collaboration and efficient decision making.</p>	<p>EMO should encourage the on-site presence of DESOs during Level 2 and 3 activations. There are several benefits to having DESOs attend the PEOC in person including but not limited to:</p> <ul style="list-style-type: none"> • In-person enables more fluid conversations and communications between other departments and partner organizations. • Individuals in the PEOC are better positioned to plan collaboratively by sitting next to one another, gather situational awareness, and coordinate the response faster as a group rather than across virtual team meetings. • The in-person environment cannot be disrupted by faults with technology including accidentally

		<p>muted mics or bad internet connections.</p> <p>EMO should continue to encourage DESOs to attend the PEOC in person prior to the event or early into the activation as well. Circumstances whereby DESO's are unable to attend in person must be clearly defined by EMO within plans and procedures to ensure consistency and to help manage expectations regarding PEOC roles and responsibilities.</p>
BP #13	Organizations with current Business Continuity Plans were better able to provide consistent services to residents during the prolonged event.	Departments and organizations should continue to review their BCPs on a regular basis, at least annually, to ensure that they are updated and aligned with the Provincial BCP. Where possible, departments and organizations should exercise their BCPs. While reviewing BCPs, departments and organizations should be particularly mindful of both human and equipment / supply resource requirements to maintain day-to-day operations while in response operations.

Table 7: Summary of Opportunities for Improvement and Recommendations

Finding No.	Opportunity for Improvement	Recommendations
OFI #1	Some departments did not have the human resource capacity to support sustained operations for a prolonged event or an event of that magnitude.	<p>Organizations and municipalities should ensure that they have the capacity to quickly augment staff and volunteers during an emergency. Actions that can be taken proactively that could prove beneficial include:</p> <ul style="list-style-type: none"> • Investigate the opportunities and challenges (e.g. unions) of developing an inter-departmental emergency reserve or roster of qualified personnel. When an emergency unfolds, EMO and municipalities could potentially use this roster to quickly identify and allocate resources accordingly. The investigation could include an identification of possible solutions to address union challenges. • Develop standing MOUs between EMO and partner organizations, which would expedite the engagement of agreements during emergencies and gain access to qualified staff, particularly when resources are limited. The standing MOUs should be reviewed and renewed annually. • Cross training to fill various positions. • Explore resource (personnel) sharing between communities.
OFI #2	The provision of appropriate mental and physical health support to staff was not optimized across some departments and organizations.	<p>Where possible, EMO, departments, municipalities, and partner organizations should consider what measures can be taken to ease the stress on staff as part of their emergency pre-planning. These could include:</p> <ul style="list-style-type: none"> • Creating dedicated spaces where staff/volunteers can have a quiet place away from the demands of the response. • Predetermining plans and practices around provision of showers, meals, and access to laundry. • Posting “box breathing” visuals and other stress reduction techniques around to encourage healthy coping mechanisms.

		<ul style="list-style-type: none"> Identifying free mental health and wellbeing supports which are communicated to staff and volunteers, well in advance of emergency situations. Setting a schedule for regular check-ins with staff during an activation. Training for EOC Management on staff care and mental health first aid Obtaining specialized services from health care professionals and / or access to mental health supports. Creating an effective staff rotation schedule spanning multi-days, which can realistically be maintained for longer duration events.
OFI #3	The acquisition of some equipment and supplies became increasingly challenging as the event progressed.	<p>To facilitate a more efficient procurement process during an emergency, organizations, including EMO, should consider:</p> <ul style="list-style-type: none"> Identifying, vetting, and approving contractors and suppliers during normal operations. Develop standing MOUs, which would enable agreements to be expedited in times of emergency. The standing MOUs should be reviewed and renewed annually. Annually updating lists of available suppliers across the province, and neighbouring provinces. Suppliers should be encouraged to disclose where possible if they have agreements with communities / organizations and how those previous commitments / agreements could impact the response during an emergency. Agencies should develop standing offers with suppliers to facilitate a more efficient acquisition of required equipment and supplies where possible.
OFI #4	The use of generators to ensure the provision of essential services and supplies was not optimized.	<p>It is essential that the Province has advance knowledge if CI operators are not properly prepared for a large-scale emergency. Although the Province cannot force CI owners and operators to purchase generators, the Province should consider:</p> <ul style="list-style-type: none"> Conducting an audit / survey of CI owners and operators. Creating a database or GIS map of CI generator sizes and locations prior to the start of hurricane and ice-storm seasons.
OFI #5	Some staff were not properly trained for their response role which affected confidence levels and task efficiencies.	<p>All staff would benefit from additional practical training to effectively carry out their roles during and emergency. Strategies to increase training and exercise opportunities could include:</p> <ul style="list-style-type: none"> Implementing an ongoing training strategy with a set schedule. Targeted e-learning and/or online videos. Printed material including posters and cheat sheets. Holding regular official training provided by EMO. Conducting multi-agency, multi-jurisdictional exercises. EMO should champion the development of a large-scale exercise that includes provincial departments, partner agencies, NGOs, and municipalities to stress test any revisions made to existing plans / procedures. <p>Considerations for new staff should include:</p> <ul style="list-style-type: none"> Receiving emergency management training in the first month of employment as part of the onboarding process. Specific courses should be identified which should be completed as part of

		<p>basic training.</p> <ul style="list-style-type: none"> Functionally training and exercising staff on processes for which they are responsible to ensure efficient and effective facilitation of response activities. Developing quick reference guides that provide new staff with an overview of the roles and responsibilities of various functions during an emergency. Shadowing more experienced staff or having a buddy system where a more experienced staff member mentors a newer staff member.
OFI #6	Roles and responsibilities were not always well defined or understood within and between agencies, departments, municipalities, and the province.	<p>It is essential that response staff fully understand the roles of all positions and response partners in an integrated, multi-organization coordinated response. Further training is required for staff to better understand expectations of partners that support the overall response and decision making. EMO should champion this requirement more frequently with other departments and municipalities. EMO, organizations, municipalities, and departments should:</p> <ul style="list-style-type: none"> Ensure that all roles, responsibilities, and processes are formalized and readily available to staff for quick reference. Conduct an annual review of EOC Section checklists and procedures with staff contributions. Train all staff on processes and roles for which they are responsible to ensure efficient and effective facilitation of response activities. Investigate how best to communicate decisions so that all affected stakeholders receive the information simultaneously when possible. Participate where possible in any Section specific training. Participate where possible in functional exercises. A multi-agency, multi-jurisdictional exercise would be ideal.
OFI #7	EMO morning operational briefings were beneficial but could be improved.	<p>EMO should continue to provide morning briefings with conference calls during emergency events. To optimize the morning briefings, EMO should:</p> <ul style="list-style-type: none"> Shorten the length of the call (i.e., average call length is 2 hours) as the longer call delayed organizations from further planning or implementing operational activities. Split the briefing into two separate calls – a brief and targeted operational call to address activities with specific partners that is more informative and planning in nature. Further, some stakeholders have more of a strategic role that doesn't necessitate an operational discussion. Review the distribution list and engage partners ahead of time to ensure all stakeholders who may need operational information can participate in that call, while those that may need or want a more informative briefing can participate in one or both calls.
OFI #8	A clear and consistent Common Operating Picture was not obtained within the PEOC.	<p>During events of this scope, the Province should discuss implementing at least one primary Incident Command Post (ICP) in the field to help create a more robust and unified Common Operating Picture between the PEOC and the ground truth. Field reporting should be more formalized. This could reduce the disconnect between the higher-level provincial response and 'boots on the ground' response.</p>

		<p>Additionally, leveraging Incident Management software, GIS mapping systems, and other data management and visual tools would allow information to be shared effectively between partners and would better support the consolidation of essential information into a Common Operating Picture.</p> <p>EMO should consider requests by partner organizations to provide a representative in person into the PEOC (pending available space) if communications are hampered and agencies have no alternative means of acquiring situational awareness.</p>
OFI #9	Some organizations were unaware of the reporting requirements into the PEOC which negatively impacted decision making and information sharing.	<p>All departments and partner agencies should know their role and responsibility regarding information sharing. EMO should identify existing reporting challenges between partners to determine workarounds and solutions.</p> <p>Expectations for information sharing should be established during the pre-storm season. Reporting requirements and deadlines must be well understood by all organizations, departments, and municipalities. Reporting requirements and processes/procedures regarding reporting should be:</p> <ul style="list-style-type: none"> • Established and confirmed with all organizations, departments, and municipalities prior to the event. • Part of regular ongoing training and exercises. • Championed by EMO and adopted as an essential practice across all response organizations. EMO should expect proper reporting procedures with partner organizations, NGOs, and municipalities to ensure that the impacts of non-reporting / misreporting and the impacts on provincial decision making and the public are well understood. <p>While reporting deadlines were advised by EMO (i.e., time cutoff to report updates), some organizations were unsure of what information should be included as part of their update as their crews may not have completed their work for that day. EMO should ensure that:</p> <ul style="list-style-type: none"> • Information provincial reporting requirements are clearly communicated to Partner organizations both verbally and in writing that identify submission deadlines, what information updates will be expected (including interim or incomplete updates based on misalignment of reporting schedules and crew shifts), to whom should the information be provided, and identification of constraints that may impact the ability of an organization to meet the reporting requirements set by EMO. • There is clarity on what organizations should report if the deadline comes prior to crews having completed their work.
OFI #10	Critical information was not always effectively communicated in advance by the Province to those that would be affected.	It is imperative that departments, partner organizations, and municipalities understand the full impact of decisions and / or actions that are carried out independently (i.e., outside of the EMO's coordination role). All organizations should investigate how best to communicate internal decisions that have external consequences with EMO so that all affected stakeholders receive situational awareness in a timely manner.

		It is essential that EMO work closely with partner organizations to better understand the impacts of provincial decisions and announcements on external organizations and municipalities, especially when they are directly affected. Identified impacts should be well documented and factored into the decision-making processes across EMO and all other organizations.
OFI #11	Practices to relay real-time restoration times for critical services could be improved.	Although power restoration is a dynamic process, greater transparency about the restoration process could help alleviate frustrations. Some potential actions and / or practices which may help could include: <ul style="list-style-type: none"> • Holding a round table with EMO, Maritime Electric, CI partners, and DESOs to discuss options of how best to communicate prioritization and restoration times (e.g., live update on a GIS map). • EMO working with Maritime Electric to develop educational tools (e.g., YouTube videos) that inform the public on how decisions are made to restore services and / or why certain locations are restored earlier (i.e., because of the grid layout). This will also demonstrate a unified and collaborative process with structure and formality that may help to manage expectations of the public.
OFI #12	The timeliness, efficacy, and accuracy of public communications issued by the Province could be improved.	EMO should consider issuing a public survey to understand where and how the public gathers information both during emergencies and normal operations. Survey results will inform EMO on how best to message seasonal preparation, storm preparation, and response messaging so that it reaches the greatest number of residents as quickly as possible. It is recommended that any future updates to the Crisis Communications Plan include proper checks and balances to gauge the effectiveness of the communications products. Much of this process will be informed by the recommendation to survey the public on how they acquire information as part of their emergency preparedness.
OFI #13	Public awareness of prioritization of CI access to essential supplies / equipment could be improved.	The Province should consider: <ul style="list-style-type: none"> • Identifying a separate fuel depot location (e.g., separate fuel station) for CI partners that separates essential workers from the public when replenishing supplies that are in great demand by the general population. • Having a specific fuel time window for CI partners (this was demonstrated with gas stations that were closed to the public for a specific time window for Police). • Generating and distributing information (e.g., social media campaign) educating the public regarding the prioritization of access to essential supplies and equipment during emergencies
OFI #14	The prioritization of the restoration of critical services and / or public amenities is not well understood.	The provision of critical restoration prioritization is essential in decision making for departments and agencies; any transparency on that process will aide in decision making within and external to EMO. EMO should champion this initiative by: <ul style="list-style-type: none"> • Hosting a round table with Maritime Electric, other CI partners, and DESOs to discuss options of how best to communicate prioritization and restoration times (e.g., live update on a GIS map). • Developing materials that outline how the prioritization process works, strategic planning behind

		the decisions that guide prioritization, and decision trees (if applicable) that identify the factors that are considered for restoration planning. Priorities should be based on pre-determined criteria and indicators to establish a clear and transparent process including urgency, severity, feasibility, sustainability, equity, and alignment with the provincial public safety values. These criteria should be made available to all entities, including the public, to help manage expectations during future response efforts.
OFI #15	Coordination of accommodations and food logistics for response organizations could be improved.	<p>Organizations should have contingency plans in place for seasonal emergencies that address potential challenges in securing the appropriate accommodations that can provide the required amenities (e.g., available accommodations with power, appropriate parking for larger vehicles, etc.,). The Province cannot compel hotels to evict guests, in light of this:</p> <ul style="list-style-type: none"> • EMO, working through Tourism PEI, could discuss opportunities and practices they could employ with local accommodation providers to identify capacity / capability in meeting the needs of response organizations, including Air BnB hosts. • Source other locations which may be used when no accommodations can be found (e.g., schools, recreation centres, churches, entertainment halls, or college dorms) to house response staff. • Create and / or update MOUs for lodging and food for volunteers and staff. <p>A collaborative process around booking accommodations for response crews, and how accommodations are reported to EMO should be explored (e.g., a database, common booking platform, GIS map).</p>
OFI #16	The use of available tools from other departments and agencies for decision making was not optimized.	GIS and mapping capability is available throughout numerous departments and organizations. EMO and its partner organizations should assess their current technology (e.g., who has what data, in which format, and is it compatible / how to make it compatible). It is recommended that all available technology be catalogued and mapped for capability for reference during an emergency.