

Prince Edward Island After Action Review Post Tropical Storm Dorian



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Calian is pleased to present this report to the Government of Prince Edward Island to outline the findings (best practices and areas of improvement) of the response to Post Tropical Storm Dorian.

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EXECUTIVE SUMMARY

On September 7th, 2019 Post Tropical Storm Dorian made landfall on Prince Edward Island (PEI), causing localized flooding, downed power lines, damage to infrastructure, widespread power and communication outages, and extensive damage to aquaculture and agriculture. The Provincial Emergency Operations Centre activated to Level 2 (Partial Activation), engaged 35 departments for a coordinated response effort, and began a comprehensive damage assessment. On October 11th, PEI Emergency Measures Organization (EMO) reverted to (Level 1) Routine Monitoring resulting in the longest period of PEOC activation in the history of the Province. As part of a continual improvement model, the Province contracted Calian to conduct an After Action Review (AAR) of the provincial and local preparedness, response and early recovery to Post Tropical Storm Dorian.

The AAR process involved a thorough review of documentation including status reports, provincial plans, logbooks and any other available references provided by the Province that were used or generated throughout the event. Additional data was collected from the public and 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 where the capability did not exist. 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 very well-coordinated response and recovery to Post Tropical Storm Dorian. There were nine (9) best practices identified across the six functional areas of response. Below are the most significant strengths that should be sustained:

- Effective coordination and collective teamwork at all levels were a critical component to an effective response and recovery effort. The community-based emergency management model was very effective, particularly in the more remote areas that were greatly affected by the power outage;
- Some organizations had the ability to provide just-in-time training to augment staffing and enhance response capabilities;
- Organizations that had redundant methods of communication during the power outage were able to acquire situational awareness more effectively between agencies; and
- The Provincial briefings and Situation Reports, including the pre-storm briefing process, provided excellent situational awareness to agencies that were on the distribution list.



Opportunities for Improvement

There were 25 opportunities for improvement identified across the six functional areas of response. Below are the most significant findings in three (3) categories:

Optimize Resource Capacity

Many provincial departments had limited human resource capacity to support sustained operations and day-to-day functions. This identified a need for dedicated staff to carry out certain essential functions. The following recommendations should be considered to address human resource limitations and ensure optimal resource capacity:

- Develop and maintain an inter-departmental emergency reserve or roster of qualified personnel. This roster can include personnel from all provincial departments, including previously trained or cross-trained staff to fill various positions when required;
- EMO and its partner organizations should also ensure that an effective staff rotation schedule can be maintained for longer duration events;
- More communication personnel and dedicated scribes should be available within the PEOC to alleviate the workload for staff carrying out multiple roles; and
- Agencies should assess and consider what measures can be taken to ease the stress on workers as part of their emergency pre-planning (including comfort areas, provision of health services, etc.).

Improve Crisis Communications

Public communications played a large role in building and maintaining public and stakeholder confidence in the actions and decision-making of those who were handling the emergency. While there is a PEI Emergency Communications Plan in place, it was not activated and information exchange to the public was not optimal. The following recommendations should be considered:

- The PEI Emergency Communications Plan requires an update to ensure that it is aligned with the provincial plan and provides the required structure and guidance to effectively coordinate and develop messaging to the public during an emergency. The plan must be accepted, endorsed and followed by senior management;
- The Province should quickly select a single and consistent spokesperson to be the 'face' of the emergency who is aware of emergency communication and management protocols; and
- The content of the messaging must meet the needs of the public, including the provision of a rationale for response decisions, more community education on what is required to prepare for an emergency, and must be available on an accessible platform that reaches the greatest number of people including vulnerable populations.



Increase Technical Resilience

The power interruptions identified several vulnerabilities in the critical technology that supports an effective response. Communications were compromised immediately following the storm that affected the exchange of information required for decision-making. The following recommendations should be considered:

- EMO should explore other opportunities to increase redundancy and resiliency in their web environment. ITSS may wish to consider migrating to a cloud-based email provider to ensure more resilient communications away from the existing network;
- The Province should assess the level of existing redundancy and resiliency in the existing backup equipment and tools (e.g., generators required to power data centres) to ensure that replacements are readily available. Older equipment and hardware nearing the end of their lifecycle should be decommissioned accordingly. Agencies should have self-contained emergency server / IT systems that can be easily activated should the provincial server go down;
- Organizations who work in the PEOC should conduct regular checks for equipment and system compatibility and install IT upgrades if required; and
- EMO should provide additional training to their partner organizations on how to request equipment necessary to carry out their role in the response.

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.



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1. INTRODUCTION

1.1 Background

Post Tropical Storm Dorian affected Prince Edward Island on September 7th and overnight into September 8, 2019. All areas of the Province were impacted by tropical force or hurricane force winds, heavy rainfall and storm surge. The damage assessment is ongoing.

The Emergency Measures Organization (EMO) is a section of the Public Safety; EMO is responsible to coordinate and manage provincial emergency management activities. In accordance with the Department of Justice and Public Safety's (JPS) practice on continuous improvement in security and emergency management, JPS is conducting an After Action Review (AAR) of the provincial and local preparedness, response and early recovery to this post tropical storm event.

The After Action Review (AAR) serves to support the identification of opportunities for improvement of current capacities, and to build on the best practices implemented during the response to Post Tropical Storm Dorian.

1.2 Purpose

The purpose of this AAR is to assess the provincial response and early recovery activities through the identification of strengths, deficiencies, and gaps in existing emergency preparedness and response capabilities. The findings contained in this report are derived from observations obtained from participating departments and non-governmental organizations (NGO) who had a role in the response or recovery phases of this situation.

Findings contained within this AAR will serve to assist the Province in the development of a corrective action plan designed to further optimize response capabilities, improve public safety and enhance resiliency across the island.



2. EVENT OVERVIEW

PEI EMO activated the Provincial Emergency Operations Centre (PEOC) on Friday, September 6th, 2019 to Level 1 (Enhanced Monitoring) in anticipation of the arrival of Hurricane Dorian. On September 7, 2019 and into the early morning of September 8th, Dorian made landfall in PEI as a Post Tropical Storm. EMO increased their level of activation to Level 2 (Partial Activation) at 08:30 on September 8th.

All areas of PEI were impacted by tropical force or hurricane force winds, heavy rainfall and or storm surge. This storm caused localized flooding, significant damage to trees, power lines and some infrastructure, and extensive damage to aquaculture and agriculture sectors.

Primary issues during the storm were internet, cell and landline operations, coordination of municipal reception centers, power outages and identification of critical infrastructure sites on generator power. Nearly 80% of the island's population lost power (i.e., approximately 62,000 Maritime Electric customers) and more than 2,200 residents lost phone and cellular service. As part of the response coordination effort, 35 agencies began reporting daily to the PEOC; 25 were represented in person while 10 reported in remotely. Samaritan's Purse joined Transportation, Infrastructure and Environment (TIE), Parks Canada, and Forestry on September 9th to assist with debris removal and clearing. Damage assessments are ongoing and final tallies may not be available until they are completed later in 2020.

At the peak of the response, 31 reception centres were open and served 772 Islanders, with another 10 municipal town halls ready and on standby if required. Approximately 267 families were served at Island Food Banks during activation.

On September 17, 2019, the PEOC deactivated to Level 1 (Enhanced Monitoring) and transitioned to Recovery operations, marking the longest activation period in the history of the Province. The Canadian Red Cross (CRC) began to administer the Provincial Disaster Financial Assistance Program for homeowners, not for profit and small businesses. Recovery efforts were ongoing at the time of this review.

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



3. METHODOLOGY

3.1 General

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 [1] and PEI Emergency Crisis Communications Plan [2], 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:** Considers 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:** Considers the knowledge and experience available to staff required to fill emergency management functions and positions;
- **Information Management:** Considers the effectiveness of the exchange of information between supporting agencies and PEOCs, and the quality of messaging to the public;
- **Concept of Operations:** Considers governance, policies, plans, processes and procedures in place to support a coordinated emergency response and recovery operation;
- **Business Continuity:** Considers the ability of the Province and each respective department to continue essential operations during a response to an emergency through adequate planning, processes, equipment and resources; and
- **Decision Centre Tools:** Considers the effectiveness of the tools available to support information exchange, coordination, decision making and situational awareness in an emergency.

3.2 Data Collection

Data collection was performed through three mechanisms: web-based surveys, individual interviews with agency representatives, and focus groups with various Provincial departments and NGO's involved in the emergency response. The categories noted above guided the development of the survey and interview questions. Information collected through each platform was subsequently aggregated to preserve anonymity and identify general trends in observations, rather than personal performances.



Following the document review and in consultation with the Province, a series of questions were developed to collect both quantitative and qualitative data. Initial data was collected through two separate web-based surveys which were made available to members of the public, as well as agency representatives. The public survey was available in both English and French via the provincial website. The agency survey was sent directly by EMO to a database of representatives who had participated in some capacity within the provincial response. The online surveys were comprised of various types of questions including rating scales, multiple choice, and opened ended (Annex B).

3.3 Demographics

3.3.1.1 Agency Respondents

A total of 86 agency representatives completed the online survey with a 77% completion rate. The typical time spent to complete the survey was 15 minutes. Table 1 illustrates a breakdown of representation across the various response agencies. It should be noted that some respondents conducted multiple activities and subsequently selected more than one category.

Table 1: Agency Survey Demographics

| Area of Response | % of responses | # of responses |
|--|----------------|----------------|
| Provincial Emergency Operations Centre | 25.8 | 22 |
| Public Communications | 10.5 | 9 |
| Transportation, Infrastructure (debris removal) | 16.4 | 14 |
| Community and/or Social Services including reception centres | 28.2 | 24 |
| Utilities, Energy, or Telecommunications | 8.2 | 7 |
| Public Safety | 17.6 | 15 |
| Health | 1.1 | 1 |
| Environment / Agriculture / Aquaculture | 9.4 | 8 |
| Finance or Municipal Affairs | 10.5 | 9 |
| Other (please specify): Municipalities, Non-Government Organizations (NGOs), Insurance, and Program Officers | 27.0 | 23 |

3.3.1.2 Public Respondents

Surveys were provided to the public in both English and French. A total of 184 members of the public completed the English survey with an 83% completion rate. There were no members of the public who completed the French survey. The typical time spent to complete the survey was seven (7) minutes. Table 2 illustrates a breakdown of representation across the various regions.¹

¹ Based on 182 public survey respondents who answered Q1: Which region were you located in when Post Tropical Storm arrived in PEI?

Table 2: Public Survey Demographics

| Region | % of responses | # of responses |
|--|----------------|----------------|
| Charlottetown | 21.98% | 40 |
| Queens County (other than Charlottetown) | 31.87% | 58 |
| Prince County | 27.47% | 50 |
| Kings County | 18.68% | 34 |

3.3.2 Interviews and Focus Groups

3.3.2.1 Focus Groups

A series of eight (8) focus groups were conducted; each group session lasted between 45 minutes to two (2) hours depending on their role and the number of participants in each session. It should be noted that the onset of Covid-19 prevented the participation of the Health agencies. Finance and Information Technology (IT) groups were also postponed due to other priorities. Table 3 lists those organizations that participated in a focus group session.

Table 3: Focus Group Participants

| # | Focus Group | Agencies |
|---|-----------------------------|--|
| 1 | PEI EMO | <ul style="list-style-type: none"> • EMO • Department of National Defense (DND) |
| 2 | Communications | <ul style="list-style-type: none"> • Emergency Operations Centre (PEOC) Crisis Communications • Public Information Officers (PIOs) from government departments • Maritime Electric • Royal Canadian Military Police (RCMP) |
| 3 | Recovery and debris removal | <ul style="list-style-type: none"> • Transportation, Infrastructure and Environment (TIE) • Parks Canada • Forestry • Samaritan's Purse |
| 4 | First Nations | <ul style="list-style-type: none"> • Indigenous Services Canada (ISC) • Mi'kmaq Confederacy of Prince Edward Island (MCPEI) |
| 5 | Public Safety | <ul style="list-style-type: none"> • JPS • Fire Marshal's Office • Island Emergency Medical Service (EMS) / MEDACOM • Public Safety Canada • RCMP "L" Division, • 911 Dispatch |

| | | |
|---|--|---|
| 6 | Environment/ Aquaculture / Agriculture | <ul style="list-style-type: none"> • Fisheries • Environment, Water, Climate Change • Agriculture & Aquaculture |
| 7 | Social services | <ul style="list-style-type: none"> • Education and Lifelong Learning • Canadian Red Cross (CRC) • Municipal Affairs • Social Development • Housing |
| 8 | Municipalities | <ul style="list-style-type: none"> • Charlottetown • Stratford • Morell |

3.3.2.2 Interviews

A total of 15 interviews were conducted; each discussion lasted up to 60 minutes. The following organizations participated in an interview session:

- PEOC Communications
- Bell Aliant
- Maritime Electric
- Municipal Affairs
- Health and Wellness
- Health PEI
- TIE
- Information Technology Shared Services (ITSS)
- Justice & Public Safety
- Fire Marshal's Office
- Agriculture
- Executive Council
- Department of National Defence
- Aquaculture
- Environnement Canada – Canadian Hurricane Centre

3.4 Data Analysis

Data extracted from the online surveys was 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, key findings are identified accordingly and presented with supporting observations that were obtained from the survey results. 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). Where applicable, early actions taken by EMO (A-EMO) to address recommendations are noted accordingly.

4. FINDINGS

4.1 Resource Management

Post Tropical Storm Dorian placed significant strain on the availability and sustainability of required resources for both response and early recovery. Although the need for resources can vary dramatically for large-scale responses, the focus for this review will address resources that include the availability of staff, equipment and supplies, and facilities. Despite the length of this response effort and the demand that it placed on resources, organizations found opportunities to augment human resource capacity, acquire necessary equipment, and operate staffed reception centres for the duration of the response. Even when resources were not readily available, some organizations were well positioned to obtain those resources in a timely manner, citing strong relationships within a community-based emergency management structure and other municipalities across the province that enabled the support.

Findings are presented as either a Best Practice (BP) or an Opportunity for Improvement (OFI). Both types of findings are based on Supporting Observations (SO). Recommendations (R) are provided for all findings. The following legend is displayed at the beginning of each primary section.

| | | | |
|---------------|-----------------------------|------------|------------------------|
| BP: | Best Practice | SO: | Supporting Observation |
| OFI: | Opportunity for Improvement | R: | Recommendation |
| A-EMO: | Actions Taken by EMO | | |

4.1.1 Human Resources

Residents contributed greatly to the resilience of communities by helping each other throughout the emergency. Figure 1 illustrates the capability and capacity of organizations to meet staffing levels throughout each phase of the response. While 70% of agency survey respondents noted adequate capacity during initial operations, there was a slight decline in capability as the duration of efforts continued into sustained operations (65%) and recovery (62%).²³

Many staff inadvertently became aware of their own limitations to support the response once the storm made landfall on the island. Some agency personnel, who had always anticipated being available to assist with a response effort, were unable to for various reasons including family obligations, the power outage, or having a spouse who had a more involved role in the overall response effort. This was an important lesson learned as the anticipated staffing levels may need

² Percentages are reported as a combination of Agree/Strongly Disagree or Disagree/Strongly Disagree.

³ Based on 74 agency survey respondents who answered Q2: My agency had adequate capability and capacity to meet staff levels needed for each of the following phases.



to be adjusted based on personal limitations and impact of the emergency on those staff members expected to respond.

It should also be noted that Post Tropical Storm Dorian arrived on a weekend when some senior staff were not available. Some of the Chief Administrative Officers (CAOs) in the smaller municipalities were not available on the weekend, and others were difficult to contact, which diminished staffing capability and hindered information gathering.

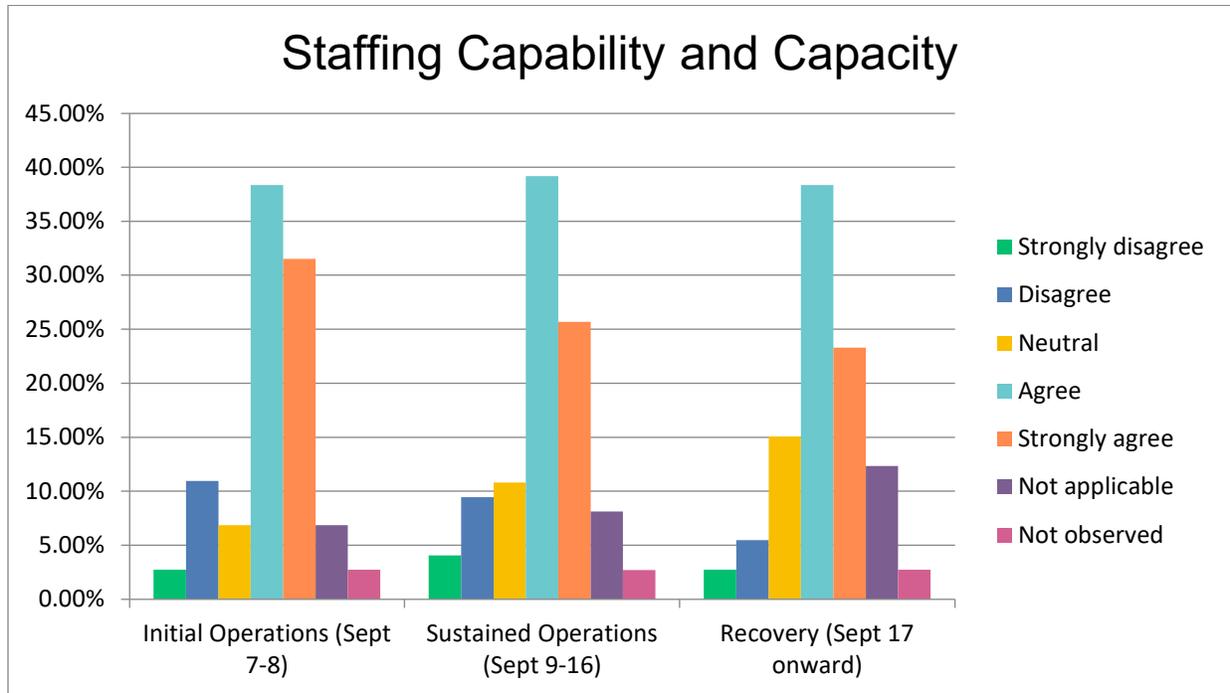


Figure 1: Staffing Capability and Capacity

4.1.1.1 Human Resources - Best Practices

BP #1 Organizations were better able to meet human resource requirements when pre-established processes were in place to proactively augment capacity.

SO-01: The timing of the storm was advantageous for some organizations that conduct seasonal work (e.g., Forestry, Parks Canada) who were able to renew or extend worker contracts or recall staff as part of their Business Continuity Plan (BCP). As the storm occurred during the late summer weeks, Parks Canada still had approximately 70% of their staff employed. Crews that had recently been laid off in September due to the late-season timing had contract extensions awarded to augment staffing



levels.⁴

SO-02: Some organizations have depth within their own department, or across departments to acquire additional staff if required. Many federal organizations, like Parks Canada, have a national pool of resources across the country that were deployed or put on stand-by to assist.

SO-03: Some organizations have existing processes in place to quickly access additional staff when required (e.g., volunteers or specialized resources). More than 72% of agency survey respondents indicated that their organization has a plan or procedure in place to request and mobilize additional support staff if needed. For example, Samaritans Purse has a base of pre-registered volunteers; citing that the processes and procedures to respond to the storm were prearranged (including the deployment of some volunteers from the United States who were brought in to assist).

Other organizations, such as Maritime Electric took proactive measures to put employees on alert, including operations crews prior to the storm. Efforts were made to complete major projects before the storm made landfall to ensure that there were no sections of the transmission system that were in repair. Canadian Red Cross also placed additional volunteers on standby if more resources were needed, citing that there are processes in place to engage supplementary volunteers when required.

While some smaller communities had difficulties in acquiring staff, municipalities like Stratford were able to recall municipal employees to fulfill regular functions for the duration of the emergency. Other communities, including First Nations and Morell, did not have human resource issues as the members of their respective communities came together to provide the necessary support.

R BP-1: To ensure that EMO, partner organizations, and non-government agencies can support the demands of a prolonged provincial response and / or recovery effort, organizations involved in the response are encouraged to identify processes that will allow them to quickly augment their staffing levels when necessary. All organizations have a responsibility to ensure that optimal staffing levels can be attained for a prolonged response effort if required. Some noted that their community will soon develop a plan with other nearby communities that will support the augmentation of human resources collectively. Recommendations on how to augment resource capacity are provided throughout this section to address specific issues related to human resource capacity.

⁴ Statistic provided by Parks Canada in a Focus Group discussion focused on debris removal.

BP #2 Organizations can increase effectiveness of staff members by addressing physical and mental stress in the workplace throughout the response.

SO-04: Some organizations took extra measures to ensure staff well-being was addressed throughout the prolonged response. For example, some agencies like Maritime Electric hired massage therapists and chiropractors to treat staff who were experiencing fatigue. Others had designated comfort areas for staff to rest, take breaks, or to work in where there was available space. These actions can have a positive impact on overall morale, and greatly reduce worker fatigue that can negatively impact productivity and overall effectiveness of work activities.

R BP-2: Where possible, organizations should continue to ensure that appropriate measures are in place to reduce staff fatigue, particularly when staffing levels are minimal. These measures should be included in departmental plans to formalize the process and ensure that the responsibilities for implementing these actions are assigned accordingly. Recommendations on how to optimize mental and physical health are provided in Section 4.1.1.2 for those organizations who identified this as an issue.

4.1.1.2 Human Resources - Opportunities for Improvement

OFI #1 Some departments do not have the human resource capacity to support sustained operations for a prolonged event.

SO-05: Some organizations had limited human resource capacity and needed dedicated staff for certain functions that are essential to an effective response. During the early stages, there were minimal staff available in the PEOC to manage administrative functions (e.g., answering phone lines, emails, collation of information, etc.) and it became increasingly difficult to carry out other critical functions. When combined with having to manage incoming information and / or outreach to municipalities for updates, proper record keeping became challenging as the response continued. There were no dedicated scribes or phone staff available within the PEOC to ensure consistent record keeping throughout the response.

Although noted as a best practice for some agencies with pre-existing internal processes to augment staff when required, EMO and most partner agencies did not have the depth within their own organization to meet human resource needs for this prolonged event. There did not appear to be a reasonable reserve of emergency resources to coordinate support across various organizations. Within some call centres (e.g., Island EMS/ 911 Dispatch), the call volume was more than triple the normal volume and detracted from the agency's ability to dispatch resources efficiently and conduct work outside of managing the phone lines. Within Justice and Public Safety, mutual aid dispatch support is not formally in place; therefore,



accessing additional trained communications personnel was difficult. Similarly, the Department of Agriculture and Aquaculture required more advisors to conduct damage assessments for affected sites; particularly those locations dedicated to cultured mussels that sustained significant damage.

Public survey results indicated that residents expected more manpower to clear the debris from roads to provide access for emergency vehicles who needed to respond to medical calls, especially in the more remote areas. It was noted in both surveys that 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., purchasing a generator). It was widely noted throughout the in-person sessions (i.e., focus groups and interviews) that had the response continued any longer, staffing would have become a critical issue and vital response functions would have been very challenging to carry out.

SO-06: Some provincial staff, including EMO personnel, were required to fill multiple positions for a prolonged period. While many were able to manage, smaller organizations with minimal staff were challenged at filling all required positions. Approximately 39%⁵ of agency survey respondents were situated at a location where the Incident Command System (ICS) was implemented (e.g., PEOC); however, 13% did not have enough resources to fill all required ICS positions effectively.⁶ Within the PEOC, Planning and Logistics were the responsibility of one individual during the early stages of response. Similarly, the Public Information Officer (PIO) was overtasked and not able to dedicate the required amount of time necessary to provide regular updates. Further to this, the PEOC Director also served as the Operations Section Chief and Liaison Officer (LO) to many agencies. For some, it was not always a lack of resources; rather, the duration of the event that created a strain on staffing.

R OFI-1: Organizations should ensure that they have the capacity to quickly augment staff during an emergency. Bolstering numbers internally within departments would be ideal; however, for most organizations, this is not the most feasible or cost-effective solution. There are numerous actions that can be taken proactively that could prove beneficial should an emergency of this size and scope occur again.

Developing and maintaining an inter-departmental emergency reserve or roster of qualified personnel is the most effective way to address human resource limitations. By identifying staff across all provincial departments with specific capabilities and skills, EMO and their partner organizations will benefit from greater flexibility across

⁵ Based on 76 agency survey respondents who answered Q3: During the response to Post Tropical Storm Dorian

⁶ Based on 76 agency survey respondents who answered Q4: Please rate your agreement with the following statement: Overall, there were sufficient resources available to carry out ICS functions effectively.



the broader public sector. When an emergency unfolds, EMO could use this roster to quickly identify and allocate resources accordingly.

The emergency management staff roster should consider trained personnel across all provincial departments. Accessing resources who continue to maintain skills, knowledge and ability would help to increase the depth of capability when an emergency unfolds. In some cases, it may be necessary to develop collective agreements between EMO and their partner organizations to ensure availability of identified resources when additional staffing requirements are essential to a response. Existing rosters can be leveraged by other partner organizations to gain access to qualified staff, particularly when resources within a department are limited. Cross training to fill various positions is also an effective means of enhancing staffing capability and is addressed in Section 4.2.

There should be two communications staff within the PEOC during an emergency as the simultaneous management of communicating with government officials and the public is very challenging for one person.

Finally, a dedicated trained scribe (at least for the PEOC Manager) would be beneficial to ensure consistency in record keeping.

OFI #2 Some departments were challenged at providing the appropriate mental and physical health support to staff throughout the response and recovery phases.

SO-07: While considered a best practice by those agencies who provided the appropriate worker support, there were numerous agencies who did not or were not able to provide preventative care to staff. Debris removal teams had diminished morale after they were assigned to various tasks; often moving on to the next without first finishing what they had started. Leaving tasks partially completed was challenging for some workers and impacted their sense of accomplishment and contribution to the overall effort. There was no formal support offered to these workers and a drop in overall morale was reported. Also, due to space limitations within the PEOC, there were no comfortable places for staff to take breaks and periodically rest. Breakout rooms were not specifically dedicated to staff who needed a quiet environment to refresh or more private places to conduct phone conversations.

SO-08 Some departments had challenges with determining the proper staff rotations to prevent fatigue and burnout for longer shifts. For example, multiple power outages impacted several data centres which resulted in the need for extra resources over extended durations. There was no food or rest areas available at the data centres to sustain staff for the first couple of days following the storm impact. Initially, the department had planned to feed and house staff while working remotely from their homes; however, provisions to accommodate off-site staff were not in place in the



early stages of response. It took several days to determine an appropriate and feasible staff rotation with the available personnel.

R OFI-2: Where possible, EMO and partner agencies should consider what measures can be taken to ease the stress on workers as part of their emergency pre-planning. This can include locating dedicated spaces to rest, specialized services from health care professionals, and / or access to mental health support as required. EMO and its partner organizations should also ensure that an effective staff rotation schedule can be maintained for longer duration events. By identifying these aspects in advance and ensuring that the proper procedures and / or service contracts are arranged, the necessary support can be made available when it is most needed.

OFI #3 Procedures around staff recruitment and dispatch were complicated when workers were unionized.

SO-09: Regulations involved in contracting unionized workers to carry out roles that are not part of their daily activities could have created unforeseen challenges had the duration of the response been any longer. This was a consideration for some agencies (e.g., Forestry) and impacted their ability to quickly and easily dispatch staff. As some seasonal workers were still under contract, the issues were minimal; however, had this event occurred once workers were no longer under contract, there would have been further challenges in acquiring staff for debris removal.

R OFI-3: Organizations who employ unionized workers should ensure that all worker roles, regulations, and policies are fully understood during emergency situations. Agencies should recognize who is available, identify all skillsets, and what employment parameters are in effect for each worker. Agencies should identify in advance any limitations or liabilities that are introduced when contracts must be extended for extenuating circumstances or staff are required to work in conditions that are outside of their existing contract rules. This knowledge will help organizations better prepare for sustained staffing and avoid the pitfalls of contract negotiation when time is of the essence.

4.1.2 Equipment and Supplies

Availability of equipment and supplies became challenging as the response progressed. When asked, approximately 79% of agency survey respondents used some type of equipment as part of the response⁷. Of those, 55% indicated they had adequate equipment (e.g., computers, personal protective equipment (PPE), vehicles, deployment kits, etc.). While some confirm that they were

⁷ Based on 76 agency survey respondents who answered Q6: My agency had adequate equipment (e.g., computers, personal protective equipment, vehicles, deployment kits, etc.).

well equipped, many of the agencies noted that there were lessons learned that are currently under review and solutions already implemented in many cases.

4.1.2.1 *Equipment – Best Practices*

BP #3 Organizations who took a more proactive approach to acquire equipment and supplies were well positioned to manage the challenges that resulted from the storm.

- SO-10:** Some communities, like First Nations, had pre-existing mechanisms in place to acquire needed equipment and supplies more readily. Municipalities, including Stratford, Charlottetown, and Morell, used standing tenders for quicker approvals to acquire required generators, chippers, and chainsaws. EMO also used an emergency fuel list that indicated which fuel suppliers were open and allowed staff to prioritize more quickly after the first couple of days of response.
- SO-11:** Some municipalities were able to leverage community members to acquire required resources or expertise. For example, Morell was able to pull in personal contacts to acquire electricians, plumbers, and tradespeople as required.
- R BP-3:** Knowing where and how to acquire equipment and / or supplies in advance of a response is a good practice that agencies should consider and continue to implement. Agencies may want to develop standing offers with suppliers to facilitate a more efficient acquisition of required equipment and supplies where possible. A standing offer is an offer from a potential supplier to provide goods and / or services at pre-arranged prices, under set terms and conditions, when and if required. Agencies are under no actual obligation to purchase; however, these agreements could assist organizations in meeting equipment needs more quickly during an emergency.

4.1.2.2 *Equipment – Opportunities for Improvement*

OFI #4 There were some challenges in acquiring specialized equipment and supplies as the event progressed.

SO-12: Though availability and deployment of required equipment was largely based on prioritization of need, there were some delays in acquiring equipment to remove larger debris. Within the First Nations communities, debris removal equipment was available; however, as everyone was looking for the same equipment to respond to their own locations, availability became a challenge very quickly. Those individuals that were proactive in acquiring some equipment, like chainsaws and generators, created a shortage during the response for those who needed them. There was also a waiting period to acquire the required contractors to assist with removal of the larger debris.

SO-13: Some essential supplies became difficult to acquire (e.g., chainsaw oil) due to the demand across the province. This rendered some of the acquired equipment unusable at times. There was also a lack of battery back-ups for phone / radio charging stations.

R OFI-4: There are processes currently in place to access provincially owned equipment that could be provided and deployed during an emergency (e.g., TIE has generators that could be deployed). It is recommended that EMO provide additional training to their partner organizations on how to request equipment necessary to carry out their role in the response (e.g., accessing generators to support vulnerable populations). To facilitate a more expeditious procurement process during an emergency, provincial departments, including EMO, should consider maintaining a short list of larger suppliers that can provide specialized equipment and services in a timely manner. As applicable, pre-approved contracting service companies could be quickly engaged in an emergency to support agencies in their response to the event. Companies should be identified, vetted and approved as a preferred provincial supplier prior to an emergency to support the urgency of the emergency-time procurement process. This reserve list, or supply roster would be comprised of 5-10 companies based on supply and availability of specialized equipment and pre-approved pricing.

OFI #5 Incompatible equipment created avoidable challenges that can slow the response and / or decision-making process.

SO-14: There were some challenges with equipment within the PEOC that resulted in the creation of additional work for some staff who were tasked with gathering situational awareness. In the early phases of response, the power outage disabled



phone lines within and between departments. The teleconference system was impacted and did not work well for the size of the facility.

The provincial Information Technology (IT) system was challenged and staff experienced widespread issues sending and receiving emails over the first few days. Departmental representatives were also unable to remotely connect to the provincial server. For those representatives who came into the PEOC and did not have laptops and / or required passwords, EMO was limited in their ability to quickly outfit staff with the requisite equipment / credentials to conduct their work.

During the power outage, ITSS noted that one of the larger generators that was reaching the end of its lifecycle had started to fail. Had the event lasted any longer and the generator fully failed, the impacts to network connectivity in Western Prince County would have been significant. By relying on specialized equipment (i.e., large generators) the level of redundancy and resiliency in the provision of power is reduced during the response as trying to quickly locate and procure similar equipment during the response in the event of a failure would have been extremely challenging.

There were also some vulnerabilities identified with the power supply for the provincial data centre in Charlottetown. Both TIE and ITSS were involved in efforts to repair the generator. Following several power disruptions during this process, the power was restored; however, the storage environment shut down to protect the system from failure. This shutdown could have been avoided.

Some responding agencies did not have redundancies in place for their own emergency communications which affected their ability to connect with EMO (i.e., battery back-up or back up generation for communications).

R OFI-5: While some of the IT issues have since been resolved, it is recommended that all agencies have self-contained emergency server / IT systems or redundant capabilities that can be easily activated should the primary and secondary provincial systems fail. All personnel delegated as a representative for the PEOC should be provided with a laptop and / or cell phone by their respective departments to ensure that they can work remotely or within the PEOC. Regular appointments should also be scheduled for key provincial staff who respond to EMO to ensure that departmental equipment can connect and share information with EMO internally without the use of e-mail / internet. Agencies who operate in essential service facilities should consider the installation or upgrade of emergency generators to ensure continuity of business operations.

It is also recommended that EMO and its partner organizations assess the level of redundancy and resilience in the existing backup equipment and tools required for



the response effort to ensure that replacements are readily available in a quick and effective manner when required. Older equipment and hardware should be decommissioned accordingly. Roles and responsibilities around generator maintenance and repair must be clearly defined to avoid unnecessary failures when several departments are working together on the same issue.

A-EMO: EMO has since added an EOC activation printer and provided wireless access to PEOC members. To ensure that platforms are reliable, weekly testing is conducted on applications like WebEx, and Ham Radio representatives have since tested radio equipment. EMO is currently considering building a reserve of extra laptops that can be provided to PEOC members if there are issues using other departmental equipment. DESO's are now provided with a technology checklist when newly delegated to ensure compatibility with equipment.

4.1.3 Facilities

Facilities used for the response and recovery included the establishment of 31 reception centres to provide water and power for phone charging to the affected public. Nearly 12% of public survey respondents left their home because of the storm⁸. Only 5% of respondents who left their home went to a reception centre,⁹ however, 19% of all public survey respondents provided feedback on the facilities as many checked in on other community members or needed supplies. Of those who attended a reception centre, 7% did not think that the centre was adequately staffed with knowledgeable personnel and only 18% thought that the centre provided all the services that were needed (9% did not).¹⁰

Overall, centres were opened quickly to respond. Several municipalities, including Eastern Kings, utilized their local Community Centre to provide services and many considered this to be the most successful part of the community operations. There were some areas that did not open a centre (e.g., Hunter River) despite an identified need for one as noted by public survey respondents. Some members of the public noted disappointment in this after considerable funds were invested to ensure the availability of a facility in times of need.

4.2 Training and Exercises

This section addresses how previous training and / or experience impacted staff members' understanding of their role during the response, confidence in their ability to carry out their role,

⁸ Based on 174 public survey respondents who 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.)?

⁹ Based on 44 public survey respondents who answered Q13: Did you go to a Reception Centre?

¹⁰ Based on 44 public survey respondents who answered Q14: Please rate your agreement with the following statements related to reception centres: A. The centre was adequately staffed with knowledgeable personnel and B. The centre provided all the services that I needed.

and identification of any additional training requirements that could help them in future response efforts.

While most organizations recognize the value and importance of regular training and exercising; it should be noted that some organizations have greater access to training programs that are aligned with the provincial response than others. Further training and specifically exercises were identified by Stratford as being a useful tool that can help them better prepare for emergencies. In many cases, agency staff and their ability to anticipate and adapt during adverse conditions contributed greatly to their overall response capability. There was no over-reaction from the onset of the emergency which set the proper tone to effectively respond during the early phases of response.

Findings Legend:

| | | | |
|---------------|-----------------------------|------------|------------------------|
| BP: | Best Practice | SO: | Supporting Observation |
| OFI: | Opportunity for Improvement | R: | Recommendation |
| A-EMO: | Actions Taken by EMO | | |

4.2.1 Roles and Responsibilities

Overall, 72% of agency survey respondents had an average or above average understanding of their role and assigned responsibilities during the response and recovery efforts for Post Tropical Storm Dorian (see Figure 2)¹¹. With that level of understanding, 55% of agency survey respondents felt confident and comfortable in their roles and responsibilities during operations citing previous experience or training as the primary contributing factor. Many staff also had proper ICS training prior to the storm which enhanced overall knowledge of specific functions within the PEOC, increased overall understanding of needs and requests of various support roles, and increased confidence levels to carry out their roles effectively. While some did not feel confident in their roles at the start, many noted that their confidence levels increased as they had access to knowledgeable resources and their experience increased over the duration of the response.

¹¹ Based on 76 agency survey respondents who answered Q7: Rate your understanding of your role and assigned responsibilities during the response and recovery efforts for Post Tropical Storm Dorian.



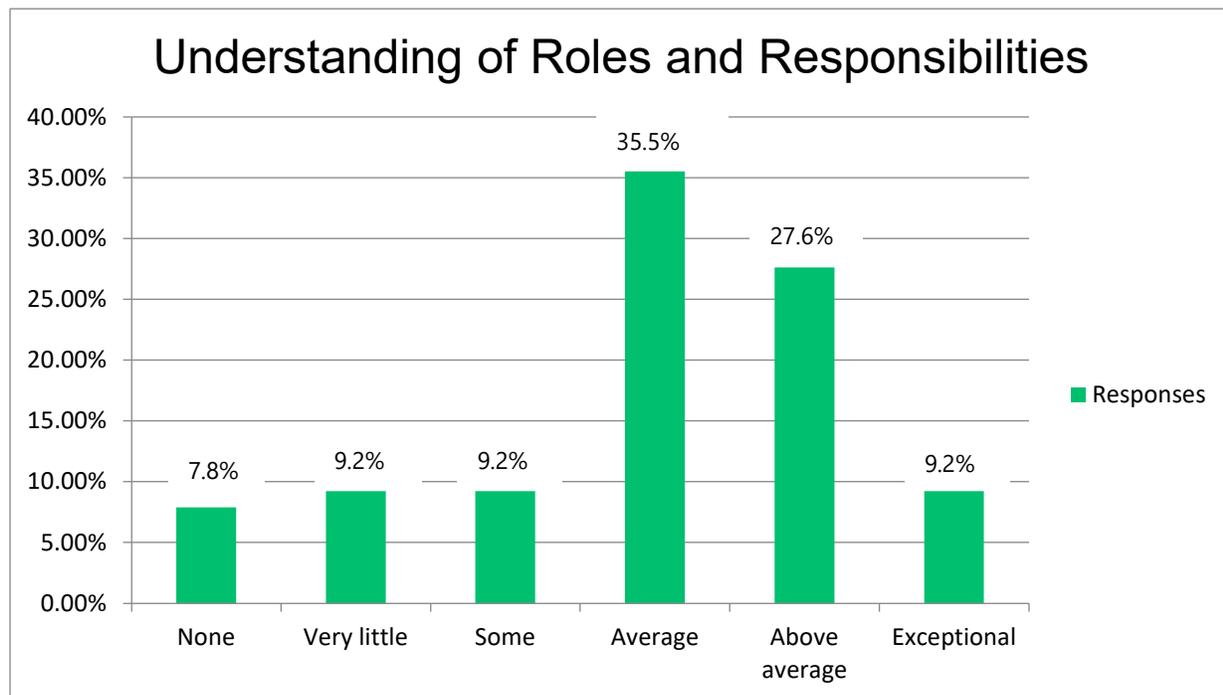


Figure 2: Understanding of Roles and Responsibilities

Approximately 26% of the same group had only some, very little or no understanding of their responsibilities, identifying a potential need for additional training in some areas of response. As a new provincial government had recently transitioned into place, and knowledge of emergency management procedures may have been limited, this may have contributed to some unfamiliarity with roles and expectations (from other departments as well as the public).

4.2.1.1 Roles and Responsibilities – Opportunities for Improvement

OFI #6 Roles and responsibilities were not always well defined or understood within and between departments.

SO-15: Some departments and municipalities do not fully understand their role in providing support to provincial decision making and planning. While many had a clear understanding of their internal roles and linkages between agencies, there were discrepancies in understanding and expectation of what those functions should be outside of their agencies. For example, Indigenous Services Canada (ISC) was unclear of what their role was to EMO and who their Point of Contact (POC) was within the PEOC (e.g., LO, Fire Chief, etc.). It was noted that ISC regularly conversed with different representatives at EMO throughout the response.



There was also uncertainty amongst the various Designated Emergency Services Officer's (DESOs) as to what their roles and responsibilities were within the PEOC. Some designated DESO's noted that they were unaware of who to report to, what the reporting expectations were, and when they needed to be situated within the PEOC. There is a certain authority that comes with being a DESO (or alternate) that was not fully understood. For example, there was an expectation for the Royal Canadian Mounted Police (RCMP) to ensure that there was a representative in the PEOC; however, public safety and policing were not major issues throughout the emergency. When there is no requirement to attend the PEOC, there were still discrepancies in understanding whether a DESO was required to participate in daily briefings. There was a need for EMO to further define the parameters of when an agency needed to be physically present in the PEOC especially for organizations that were conducting 'business as usual' when emergency measures were not required. This would enable better agency planning for the distribution of resources.

At the municipal level, there were clear discrepancies in understanding of reporting requirements to the PEOC. Some people were not aware of why a staff member from the PEOC was reaching out to them in search of information from the municipality. While training at the local level has begun, capacity to have dedicated resources for reporting remains a challenge in some areas, particularly in unincorporated areas where there are no paid staff to ensure that these functions are carried out effectively.

R OFI-6: It is essential that EMO partner organizations fully understand their role in an integrated, multi-organization coordinated response. Further training is required across agencies to better understand EMO expectations that support the overall response and decision making. Provincial departments should ensure that they know who their designated POC is within the PEOC. DESO's should be required to attend available provincial training sessions relative to their responsibilities within the PEOC, requirement to participate in daily briefings, when they are to show up, who they report to, and what the expectations are of them.

A-EMO: EMO has since developed a training session to educate and build awareness for senior management on the roles, responsibilities, and reporting requirements of the PEOC members and DESOs. A half-day workshop for the PEOC Team and alternates has also been created that outlines how the PEOC functions, and what the role of EMO is once activated.

OFI #7 Some staff did not have access to various components of departmental plans that identify critical services.

SO-16: Departmental plans and processes were not always readily available for some



provincial staff working outside of the PEOC to assist with carrying out their respective tasks. While there are plans in place, including response plans and BCPs, there were occasions when their respective departmental plan was not available to help staff identify the critical services required, and confirm roles and responsibilities, both internally and across other agencies. It was noted that some provincial staff relied on management to guide them through the plan and processes. When more senior staff members were engaged in other required activities, that guidance was not always available.

R OFI-7: Provincial agencies should ensure that all relevant plans are updated and readily available to their staff throughout each phase of an emergency. For critical components of shared plans, key aspects should be available in real-time if possible (e.g., master contact list), as changes can be imposed quickly during an emergency.

4.2.2 Training Requirements

More than 80% of agency survey respondents received some form of previous training or exercise experience that better prepared them to carry out their role; highlighting the value of training when it can be made available.¹² Table 4 illustrates that the Basic Emergency Management (BEM) course was most prevalent at 78%; followed by ICS 100 at 67%. Other courses mentioned included ICS 400, PEOC essentials, communications, recovery planning, and reception centres.¹³

Table 4: Training Experience

| Training Experience | Responses | |
|---|-----------|----|
| | % | # |
| Incident Command System 100 | 66.6 | 40 |
| Incident Command System 200 | 45.0 | 27 |
| Incident Command System 300 | 33.3 | 20 |
| Emergency Operations Centre Management (EOCM) | 50.0 | 30 |
| Basic Emergency Management (BEM) | 78.3 | 47 |
| Emergency Public Information (EPI) | 28.3 | 17 |
| Simulated emergency exercises | 65.0 | 39 |
| Department/Organization-specific emergency procedures | 50.0 | 30 |

Some municipalities, such as Stratford, acknowledge that they need to conduct more exercises that encompass large-scale events, like Post Tropical Storm Dorian. It was noted that although many primary emergency management resources have taken courses offered by EMO in the past,

¹² Based on 76 agency survey respondents who answered Q12: Have you participated in previous training or exercises focusing on emergency response/recovery to a widespread incident?

¹³ Based on 60 agency survey respondents who answered Q12b: What emergency management-specific training have you taken?



updates to municipal training polices are required as these courses have not been taken by new individuals in emergency management roles.

4.2.2.1 Training Requirements – Best Practices

BP #4 Some organizations had the ability to provide just-in-time training to augment staffing and enhance response capabilities.

SO-17: Some provincial departments conducted real-time cross-training to support the increase in staffing demands. For example, while 911 Dispatch has a shared service model with other provinces, they conducted some just-in-time training with other staff to support the handling of call volume and social media contacts. Further, some firefighters requested a review of the plans while working to ensure they could carry out their tasks in an optimal manner.

R BP-4: Just-in-time training is having access to knowledge when someone needs it. While scheduled training curriculums ensure that staff can be ready, this option is not always available due to budgetary constraints or staffing limitations. When possible, and when regular training is not available, agencies should consider implementing a just-in-time strategy in advance. This approach can include targeted e-learning, online videos, printed material, or related real-world information that can be made available to staff to meet immediate response needs.

4.2.2.2 Training Requirements – Opportunities for Improvement

OFI #8 Some staff require more practical training opportunities to better understand emergency management roles and responsibilities.

SO-18: Some resources were required to carry out tasks for which they were not trained. Approximately 25% of agency survey respondents carried out tasks that were not part of their normal duties or for which they were not trained (e.g., ICS).¹⁴ Similarly, 38% of agency survey respondents observed staff in other positions or agencies who did not appear to understand their role, or their agency's role, to effectively carry out their response function.¹⁵ Even when some staff had basic training, there were occurrences (e.g., Parks Canada) where some resources were required to perform at an ICS 200 training level to manage an entire section. Some TIE crews

¹⁴ Based on 76 agency survey respondents who answered Q8: 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.

¹⁵ Based on 76 agency survey respondents who answered Q10: I observed staff in other positions or agencies who did not appear to understand their role, or their agency's role, to effectively carry out their response function.

were not trained to carry out some specific debris removal tasks (e.g., operation of chainsaws) but were able to quickly acquire the knowledge and skillsets needed. In addition, at the Lennox Island Health Centre, there were several individuals who prepared meals in the kitchen who did not have the basic food prep course training.

Some partner organizations took on new roles where there were no defined responsibilities to follow. For example, while many organizations had worked with Canadian Red Cross (CRC) in the past, the process of administering Disaster Financial Assistance (DFA) was new territory and some agencies were unaware of how that administration would work in the recovery process. Also, the Information Officer (IO) in the PEOC was new to the position and not fully equipped to understand what was involved when the PEOC is activated.

SO-19: Some resources did not fully understand how the PEOC works and the reporting chain of command utilized to manage situational awareness. Reporting procedures and EMO expectations were not clearly defined for some of the municipalities. It was noted that many agencies do understand how the PEOC operates during a crisis; however, it was the urgency for the provision of information that wasn't well understood or appreciated. In addition, some municipalities viewed the PEOC solely as a source for information and did not fully understand their responsibility for providing information back to the PEOC during the response.

SO-20: Some organizations require additional training on the processes and protocols related to a multi-agency response effort. For example, the integration of Samaritan's Purse in a coordinated response operation is not fully understood by some responders in the field. Some agencies, such as Maritime Electric, were not aware of the qualifications of the volunteers, what their level of safety considerations were, and what level of authority they had when working around utility sites. Their role in the overall response model was not well understood.

R OFI-8: There is a requirement for EMO and partner agencies to leverage all opportunities to participate in available training and exercise opportunities related to specific emergency management procedures. When asked what future training would help staff in their respective roles moving forward, 56% of agency survey respondents noted simulated training exercises and 46% indicated additional instruction on departmental/organization emergency plans, procedures and processes (see Table 5).¹⁶ Future PEOC training could include information on how sitreps and situational information are shared amongst the department and with additional levels of management.

¹⁶ Based on 74 agency survey respondents who answered Q13: What future training would help you to carry out your duties more effectively in another situation?

All provincial departments have a responsibility to develop and promote a culture that encourages professional development. While EMO does not have the authority to mandate emergency management training across the various provincial departments, senior management should endorse a more proactive approach within their staff to participate in structured training courses offered by EMO. A minimum level of exercising and training should be established and required by all department staff who would be involved in a coordinated response effort.

Table 5: Future Training Requirements

| Future Training | Responses | |
|--|-----------|----|
| | % | # |
| Role / Function-specific training | 36.9 | 27 |
| ICS-specific training (e.g. Incident Command Post, departmental responsibilities, Emergency Operations Centre) | 30.1 | 22 |
| Training on departmental/organizational emergency plans, procedures and processes | 35.6 | 26 |
| Training on the Provincial plans, procedures and processes | 46.5 | 34 |
| Simulated emergency exercises | 56.1 | 41 |
| None | 8.2 | 6 |

Other training courses that were noted in the surveys included emergency communications systems, recovery processes, and established policies and expectations of all agencies involved in the response. Of special note, there is a requirement to implement chainsaw courses for new crew members involved in debris removal.

OFI #9 Awareness of the emergency management training curriculum, particularly for staff transitioning to a new government, could be improved.

SO-21: Some new staff at senior management levels of government, including elected officials and Members of Legislative Assembly (MLAs), were not aware of emergency management protocols throughout the response efforts. The transition period of the recently elected government was still in effect and may have contributed to several issues related to communication protocols. From the public's perspective, based on responses provided in the survey, there appeared to be a lack of coordination between provincial and local governments on communication.

SO-22: Lack of training awareness for some new communications staff may have impacted their ability to carry out their role efficiently. At that time, there were many new communications officers who were not aware of training or had not received prior



training on emergency management operations or procedures at the government level which would have supported them.

R OFI-9: New government staff, especially senior management, should receive emergency management training in the first month of a new term as part of the onboarding process. Expectations of those in more senior roles should also be fully defined. It is advisable that provincial departments look at implementing a consistent training schedule if one does not currently exist for their agency and identify specific courses that must be completed as basic training for new hires. Pre-training on specific programs, for example DFA or the recovery program, would enable newer staff to be more effective in their role at the onset. Ideally, the training schedule should be incorporated into the professional development culture and implemented as part of a maintenance model. Other courses that should be considered could include PEOC Incident Action Plans (IAPs), situation reports, reporting requirements, etc. Finally, organizations may wish to develop quick reference guides that provide new staff with an overview of the roles and responsibilities of various functions during an emergency.

A-EMO: EMO has since created a Minister / MLA EMO awareness session. The first session was delivered in early March 2020.

4.3 Information Management

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

Overall, information exchange was effective as 72% of respondents reported an average or above average level of situational awareness.¹⁷ Despite the challenges that were introduced during the power outage, approximately 54% of agency survey respondents felt that information exchange between Provincial Departments and other responding agencies (e.g., municipal, NGOs, Utilities, Critical Infrastructure (CI) owners etc.) was effective.¹⁸ Some noted that the ability to participate in PEOC conference calls and receive situation reports (sitreps) was very helpful and significantly enhanced their level of awareness. Many respondents felt 'in the loop' and were subsequently well

¹⁷ Based on 73 agency survey respondents who answered Q14: Within your area, what level of situational awareness did you have during your time supporting emergency operations?

¹⁸ Based on 74 agency survey respondents who answered Q15: I felt that information exchange between Provincial Departments and other responding agencies (e.g., municipal, NGO's, Utilities, Critical Infrastructure owners etc.) was effective.

informed. For those who had access to social media platforms, including members of the public, their level of situational awareness was greatly enhanced.

While there were some best practices identified, 31.5% of agency survey respondents indicated that had only some, very little or no situational awareness during their time supporting emergency operations.¹⁹ There were issues noted with awareness of reporting requirements, challenges in obtaining information for decision making (including restoration of critical services), and consistency of information that was relayed to agencies and the public. Information exchange and public communications are addressed in this section.

Findings Legend:

| | | | |
|---------------|-----------------------------|------------|------------------------|
| BP: | Best Practice | SO: | Supporting Observation |
| OFI: | Opportunity for Improvement | R: | Recommendation |
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4.3.1 Information Exchange

In general, EMO staff operated well together and provided timely updates to provincial officials as well the public. Approximately 70% of agency survey respondents indicated that information was communicated at regular and expected intervals to other departments.²⁰ Overall, many agency survey respondents noted that staff followed proper reporting protocols which provided an excellent picture of the state of the provincial infrastructure. The following sections address both strengths and opportunities for improvement related to information exchange between organizations.

4.3.1.1 Information Exchange – Best Practices

BP #5 Organizations that had redundant methods of communication during the power outage were able to acquire situational awareness more effectively between agencies.

SO-23: While email, phone, and text were the primary methods of communication, some departments resorted to non-traditional methods that aided in the relay of required information for decision making. For example, many fire departments were without their paging systems due to the power outage; however, some had the PICS 2 radio system and amateur radio systems; both of which are reliable methods that the

¹⁹ Based on 73 agency survey respondents who answered Q14: Within your area, what level of situational awareness did you have during your time supporting emergency operations?

²⁰ Based on 73 agency survey respondents who answered Q16d: Rate your level of agreement: Information was delivered at regular and expected intervals to my organization.



province could support. Office of the Fire Marshal (OFM) also used an application called IMRESPONDING to relay information to the PEOC regarding structures and utility pole fires.

Island Emergency Medical Services (EMS) deployed portable radios to their health sites; however, communications were limited to within their own organization as Health PEI did not use the PICS2 radio system.

Municipal Affairs used Mail Chimp to reach out to municipalities and reception centres when email was not available. Social media platforms were also readily used to send and receive information, including Facebook and Messenger. Other agencies, who were without any means to communicate, relied on word of mouth to relay information.

R BP-5: Redundancy in communication methods is critical to effective information exchange, particularly in the early stages of response. EMO and their provincial partners would benefit from a full assessment of their current communications to ensure that redundancy is built in during a power outage. There is a requirement to adopt an Omni-channel broadcast technology that allows all staff to control how they are notified and updated with essential information.

The PICS 2 radio system is a reliable and compatible method, and some organizations (e.g., volunteer firefighters, Health PEI) should consider adopting the radios as a backup.

BP #6 The Provincial briefings and situation reports provided excellent situational awareness to agencies that were on the distribution list.

SO-24: Organizations were able to gather a lot of information from the situation reports and briefings provided by the Province. Initially, there were issues in obtaining information; however, once conference call capability was established, information exchange with stakeholders was effective. Samaritan's Purse noted that the briefings were essential to their response activities and were subsequently able to communicate valuable information back to the EMO (e.g., report the number of work orders that were in process, completed, number of volunteers, etc.).

Many agencies noted that the situation reports issued by the Province were helpful. EMO had sent an email to municipalities prior to the storm identifying specific information requirements they would need once the storm had passed, including reception centre status. Information that was reported in from the municipalities was included in the daily reports. Many stated that the information contained within the situation reports was useful to for their response activities.



R BP-6: The Province should continue to disseminate information to stakeholders through situation reporting and conference calls, leveraging available communication platforms. The Province may wish to review the distribution list to ensure that all stakeholders who may need information for their own response activities can receive the daily reports and / or participate in the conference calls if needed.

A-EMO: EMO is currently exploring how to create the required layers of back-up communication for large-scale incidents like Post Tropical Storm Dorian (e.g., how to disseminate situation reports when the provincial network fails). EMO has begun discussions with ITSS on improvements that could strengthen their existing systems to build resiliency.

4.3.1.2 *Information Exchange – Opportunities for Improvement*

OFI #10 Some organizations were inconsistent or unaware of the reporting requirements which caused some delays in decision making and response activities.

SO-25: There are some response organizations that do not have a mandate to report information to government agencies. Private organizations, like Samaritans Purse, are essential to CI; however, they do not have a requirement to provide information to the Province. At times, there were delays in obtaining this information from the field which caused issues for some response activities.

SO-26: While only some municipalities are aware of their reporting requirements, there were others who did not provide the necessary information to the Province. As a result, EMO was required to reach out to numerous agencies and municipalities for updates which drew valuable resources away from their normal function. It was noted that some of the municipalities have limited people who were busy trying to acquire supplies and unable to fulfill reporting requirements. Some departments, like Social Services, who needed information regarding the status of reception centres, resorted to using social media to find out the answers to key questions.

SO-27: Some organizations were unclear about EMO expectations for communication based on their response function. For example, EMO wanted information from the police; however, their response to the event was a normal day-to-day operation that did not warrant specific updates. Volunteer firefighters conducted impromptu wellness checks; however, this information was not logged in a way that could be reported up to a higher-level authority. The Fire Department may have reported some of the wellness checks up to the Deputy Fire Marshal; however, that represented only some of the information that the PEOC required. Maritime Electric was also uncertain on the frequency and timing of reporting requirements



to EMO. While they provide updates to EMO, it was not aligned with when the information was requested or required.

SO-28: Some organizations need to improve their internal reporting structure. It was noted that a better reporting structure for First Nations to brief ISC and MCPEI is required.

R OFI-10: Reporting requirements must be well understood by EMO provincial partners. These requirements should be established and confirmed prior to the event and communicated by the Province once the requirement to exchange information has been established. While reporting deadlines were included in each sitrep issued by EMO (i.e., time cutoff to report any updates), some provincial partners were unsure of what information should be included. EMO should ensure that partner organizations should have a list of information that will be anticipated by EMO to ensure that information updates are as complete and detailed as much as possible under the circumstances. It is important that partner agencies understand the importance of the reporting structure and the impacts that delays or absence of updates can have on overall decision making.

A-EMO: EMO is in the process of developing ongoing training opportunities with municipalities and Municipal Affairs to ensure full understanding of their roles and responsibilities in a coordinated provincial response.

EMO will now advise Municipalities earlier in the preparation phase to ensure they understand their role in the response activities.

OFI #11 Information exchange between the PEOC and some provincial departments or agencies was not always optimal.

SO-29: Acquiring information from some EMO partner agencies with a critical role in the response was challenging without a department or agency representative situated in the PEOC. Maritime Electric and Provincial Forestry, both essential stakeholders in the response effort, did not have a representative situated in the PEOC on a regular basis. As a result, information sharing was limited with these key agencies and coordination of activities was somewhat hindered. Health and Wellness also did not have consistent representation in the PEOC.

It was noted that information exchange between the PEOC and the First Nations representatives (including ISC, Mi'kmaq Confederacy of Prince Edward Island (MCPEI), Abegweit First Nation and Lennox Island First Nation) was significantly hampered during Post Tropical Storm Dorian. There were multiple POCs between First Nations communities, MCPEI and ISC. Information flowed directly to ISC from multiple individuals within the communities as well as from MCPEI. This dynamic



resulted in the relay of inconsistent information. While ISC is a member of the PEOC team, they do not have a representative situated in PEI and must work virtually with the Province. Information sharing was challenged internally and subsequently, reporting requirements were not met which affected the level of situational awareness available to the EMO.

SO-30: Agencies reported difficulties in obtaining much needed information for their own decision making. Bell Aliant required information regarding debris on roads to ensure safe passages for repair crews. Emergency Communications (i.e., 911 Dispatch) needed a true understanding of how long the event was going to last as they had triple the regular call volume to manage staffing levels. Social Services required information from the municipalities regarding the status of the reception centres. EMO required damage assessment information from Agriculture; however, it was too soon to be able to provide that data.

SO-31: Communication networks did not have reliable back-up systems in place resulting in entire networks being down for extended periods. While service providers were affected and systems were down, agencies did not receive any information. Parks Canada did not receive the official notification that EMO was activating due to downed networks and the power outage. During the first 10 hours of operation, critical information was not available to the department to assist with planning response activities.

R OFI-11: Department and agency representatives are a key resource that can effectively facilitate information exchange with the PEOC. When possible, partner agencies should be prepared to send a representative to the PEOC if requested by the province. Similarly, the PEOC should consider requests by agencies to provide a representative to the PEOC (pending available space) if communications are hampered and agencies have no alternative means of acquiring situational awareness. At a minimum, EMO partner organizations who are invited to participate in the daily briefings should make a concerted effort to ensure full representation, either in person or on the daily briefing calls. If representatives are unable to participate, there should be assigned delegates to ensure that information can be disseminated in a timely manner to other organizations who do not participate in the PEOC briefings.

To facilitate better information exchange within the health sector, agencies should consider the development of a health portfolio with a dedicated PEOC that can amalgamate all agency information into a common health operating picture. While Health PEI does have their own PEOC, operating within the umbrella of a health portfolio would improve overall coordination of health information; in addition to sharing the physical space of an EOC. This information could be shared with the Province to enhance situational awareness.



Information updates provided by the Province must be made available in multiple formats to all agencies, including social media, provincial website, text and email. Some agencies suggested that briefings be made available through a recorded message that is regularly updated. Other multi-channel communication tools should also be considered to mitigate interruptions in the exchange of information. It is also recommended that EMO along with its partner organizations determine the preferred or optimal method to exchange information with certain individuals and / or agencies when communications are compromised (e.g., analog versus digital communications, web applications, telephone, etc.).

OFI #12 Some documentation that was generated to relay information could be improved or better managed.

SO-32: Partner organizations are not completely aligned in their understanding of the purpose and utility of the daily situation reports. Situation Reports that were distributed by EMO provided agencies with a snapshot of activities that had been completed or were underway; however, some partner organizations had different expectations of what information should be included within the document to assist in the planning of their own activities. It was noted that some agencies needed to know how far along the Province was in the overall response to better gauge human resource and equipment requirements, business continuity planning, and management of their own response activities (e.g., debris removal). Some agencies consider the updates to be a guiding document for the response of all organizations in the planning of future activities, in addition to a summary of completed tasks. As a result, the updates did not always meet the needs of the partner organizations based on their pre-existing expectations of its purpose. It should be noted that partner organizations do not always participate in the update briefings or maintain reporting requirements which has a direct impact on EMO's ability to including planning information on the situation reports.

SO-33: There is a need to better manage and store documentation for longer events within the PEOC. Historically, this was not a problem; however due to the significance and duration of the event, tracking information was challenging at times and compiling all the information that was generated across the various platforms throughout the response and recovery was very difficult.

R OFI-12: Further training should be provided by EMO on how the situation reports are currently compiled, the importance of participation in the briefings and regular reporting, and the role of DESO's in their own departmental planning processes outside of their day-to-day operational role. EMO is not responsible for determining the planning considerations for how partner agencies conduct their



activities; however, there is an opportunity to better facilitate this process by actively promoting the role that EMO plays in the information exchange and knowledge transfer to senior managers of the DESO's. By better understanding what EMO does once activated, the planning and coordination of response activities could be provided to partner organizations for improved situational awareness.

EMO should consider the development of a planning document that can support the situation reports and provide some guidance to partner agencies in the planning of their own response activities. As planning documents are only useful when they are fulsome, this would require a commitment by all partner agencies to participate in the daily update briefings and consistently meet reporting requirements. When possible, future planning activities that are known should be considered for inclusion on the situation reports that are distributed.

While PEOC staff have some tools to maintain logs for the purpose of filing documentation and tracking information (e.g., sign-in sheets, spreadsheets to track PEOC hours, and daily tracking sheets), there is a need to promote better accountability for this documentation, especially for longer term events. EMO should investigate other options for record management that would have better uptake amongst the staff.

A-EMO: EMO will continue the process of compiling all event documentation into one binder, including statistics throughout each phase of response and early recovery.

OFI #13 Mechanisms to relay real-time information regarding restoration times for critical services could be improved.

SO-34: Restoration times were not readily available which hampered decision making and response activities. Utilities and telecommunications were significantly affected by the storm, creating wide-spread outages across the island. Many agencies noted the difficulty in obtaining updates from Maritime Electric on the restoration of power and confirmation of live wires / lines that could complicate response activities and compromise safety of workers and the public.

It was noted that the communication of timeframes for restoration of services could have been improved. Many public survey respondents who experienced prolonged power outages noted that it would have been helpful to receive individual notices or a planned schedule of repairs to enable better planning for personal hygiene and preserving food on ice. This was particularly frustrating for residents who lived in areas with only partial restoration (i.e., neighbours without power living across the street from those who did have power). While Maritime Electric followed a systematic approach to re-establishing the network, neither



agencies nor the public were aware of restoration priorities.

EMO also noted that restoration times for phone and cellular service was difficult to acquire from Bell Aliant and Eastlink. Downed cell towers significantly impacted communications for the first 72 hours.

R OFI-13: Although Maritime Electric restored the transmission and distribution as quickly as possible, there was an expectation from agencies and the public for greater transparency on how services would be reestablished. There is a need to educate EMO and provincial partner organizations on restoration procedures, establishment of priorities, and realistic timeframes for the return of services based on damage assessments. There is also a need to confirm how Maritime Electric links into the PEOC and who their primary contact should be during an emergency. While information may be limited in the early stages of response, it is essential to maintain communication with stakeholders on a regular basis, even if there are no new updates to report. The provision of critical restoration information to the Province is essential in decision making and is directly associated to the delivery of nearly all essential services to the public.

A-EMO: Moving forward, EMO will invite other telecommunication providers to virtually participate in PEOC briefings when activated to ensure full understanding of status and restoration of essential services.

4.3.2 Public Information

Information exchange with the public was an important component of the response efforts and was essential to ensuring their public safety. Information sources used by the public varied greatly and depended largely on whether there was available power. Prior to the storm, 65% of public survey respondents were informed of the approaching storm via weather forecasts, with some relying on social media (14%) or the news (16%) to monitor the situation (see Table 6).²¹ The Province was not considered a source for information related to the storm system approaching the island.

²¹ Based on 183 public survey respondents who answered Q2: How did you first learn that Post-Tropical Storm Dorian could have a possible impact to the Province?

Table 6: Public Notification of Dorian

| Source of Notification | Responses | |
|--|-----------|-----|
| | % | # |
| Weather forecast (Environment Canada, Weather Network, etc.) | 65.0 | 119 |
| Social Media (Facebook, Twitter, Instagram, etc.) | 14.2 | 26 |
| News outlet (local or national) | 16.3 | 30 |
| Media release from PEI EMO | 0.0 | 0 |
| Weather conditions | 2.7 | 5 |
| Conversations with others (phone, in person) | 1.6 | 3 |

Regardless of how members of the public learned of the approaching storm, 65% of public survey respondents knew what to do and how to prepare for its arrival (32% knew somewhat and 3% did not know what to do).²² By comparison, 81% of agency survey respondents thought that the provincial warnings and preparedness messages to the public were sufficient during this response.²³ While the province was not a primary source of information regarding updates on the storm, 61% of agency 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.).²⁴

Nearly 84% of public survey respondents were impacted by the power outage.²⁵ Approximately 60% of public survey respondents indicated that they had power restored within 48 hours (see Table 7).²⁶

Table 7: Duration of Power Outage

| Duration without Power | Responses | |
|------------------------|-----------|----|
| | % | # |
| Less than 12 hours | 18.6 | 30 |
| 12-24 hours | 21.7 | 35 |
| 24-48 hours | 19.2 | 31 |
| 48-72 hours | 17.3 | 28 |
| Greater than 72 hours | 22.9 | 37 |

²² Based on 184 public survey respondents who answered Q3: Once notified, did you know what to do and how to prepare for the arrival of the storm?

²³ Based on 73 agency survey respondents who answered Q18a: Rate your agreement with the statement 'Warnings and preparedness messages to the public were sufficient during this response'

²⁴ Based on 72 agency survey respondents who answered Q18G: All accessible platforms were effectively used to convey information to the public (e.g., radio, social media, community announcements, text messages etc.).

²⁵ Based on 184 public survey respondents who answered Q4: Were you impacted by the power outage?

²⁶ Based on 161 public survey respondents who answered Q5: How long were you without power?

Some residents were able to keep their appliances charged throughout the outage period. The use of generators was the most common method that residents used to charge their phones and computers to stay connected. Others relied on battery operated radios, wind-up radios, and car radios, for information updates.

Once the storm had passed, those without power still needed to receive information updates on the status of the response activities. Figure 3 illustrates a greater reliance on social media and news for residents with or without power once the storm had passed, and a significant increase in monitoring Maritime Electric (13%) and conversations with others (22%) for updates for those residents who had no power.²⁷ The number of residents who obtained information from PEI EMO media releases was consistent at 2% regardless of whether they had power.

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. Approximately 61% of agency survey respondents felt that the Province maintained public confidence throughout the response and recovery to Post tropical Storm Dorian.²⁸ By comparison, only 54% of public survey respondents felt confident in the ability of the Province and supporting agencies to effectively respond and recovery from the storm.²⁹ Issues that affected public confidence are addressed in this section.

²⁷ Based on 174 public survey respondents who answered Q8: What information source did you rely on the most to obtain information updates once the storm had passed?

²⁸ Based on 72 agency survey respondents who answered Q19: Please rate your agreement with the following statement: I felt that the Province maintained public confidence throughout the response and recovery to Post tropical Storm Dorian.

²⁹ Based on 166 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 Dorian.



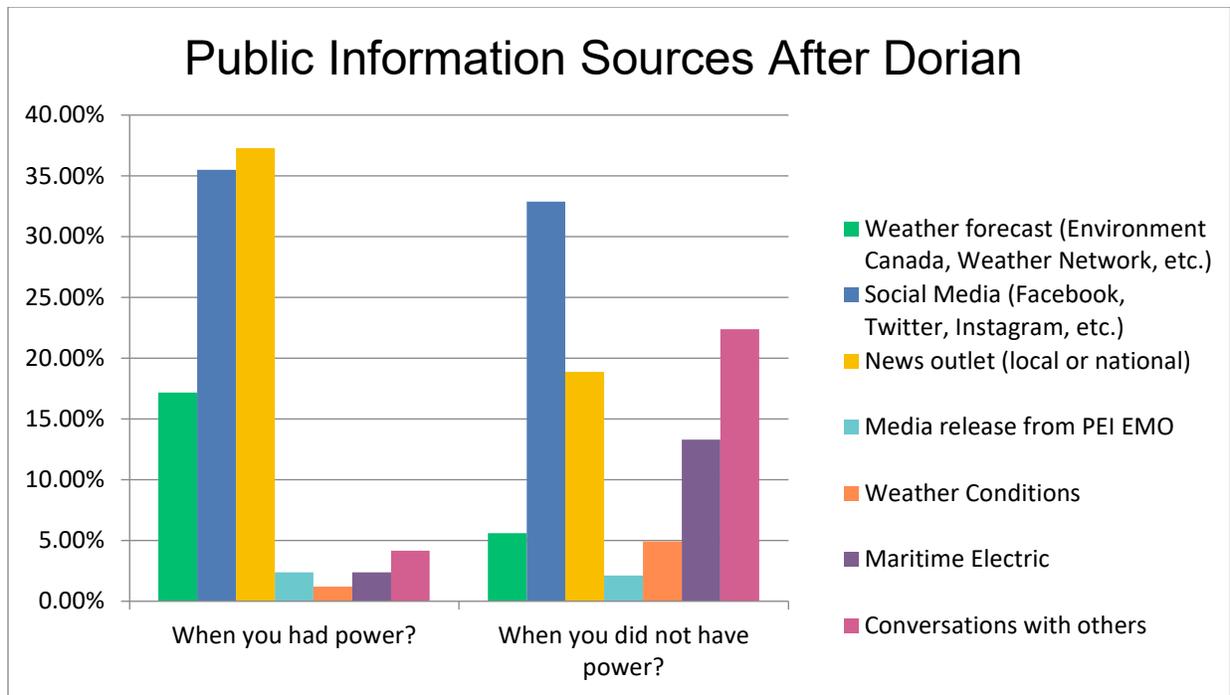


Figure 3: Public Information Sources After Dorian

4.3.2.1 Public Communications – Best Practices

BP #7 While obtaining information was challenging at times, organizations did use effective mediums to communicate with members of the public who had access.

SO-35: Organizations relied heavily on social media platforms to release key messaging. Within the First Nations communities, the Chiefs used social media to inform community members with the information that was available. Municipalities also relied heavily on social media channels to release information regarding reception centres and where residents could access electricity and essential services if required. Charlottetown used social media almost exclusively to disseminate information. As power was not a large issue within the municipality, most residents living in Charlottetown could access information online very easily.

SO-36: Organizations also used 'old fashioned' methods to relay information to the public in areas experiencing communication challenges. EMO produced flyers and handouts that were distributed at reception centres across the province. The Province also developed news releases for newspapers and radio stations. First Nations communities and other municipalities relied on word-of-mouth and leveraged personal relationships to communicate key messaging (e.g., reception centre locations). The Province contacted the Canadian Red Cross (CRC) to establish a 1-800 number to provide information and assurance to the public.



- R BP-7:** The Province should continue to use multiple avenues for public communications. Smaller communities should also continue to leverage personal relationships and a 'look out for each other' approach to ensure that all affected residents receive the information that they need, especially those who are significantly impacted or unable to obtain updates on their own.

4.3.2.2 *Public Communications – Opportunities for Improvement*

OFI #14 Organizations did not jointly coordinate and develop public communications products and messaging.

SO-37: While there is a PEI Emergency Communications Plan in place that provides guidance and some structure on developing a communications strategy during an emergency, the plan is not well understood or accepted across the provincial departments and was not activated during Post Tropical Storm Dorian. As a result, organizations did not jointly coordinate public messaging. Results from the public survey indicate that messaging did not always meet the needs of the public which had an overall impact on public confidence in the Province's ability to effectively respond to the storm.

SO-38: There were some discrepancies and misalignment in messaging released to the public. Individual departments were sending out their own information that was not consistent across the various communication platforms. There were also no federal communications officers in the region to ensure that the federal public information was aligned and coordinated with the provincial messaging. For example, TIE released messaging to the public confirming that debris removal staff would go on private property to remove downed trees; however, provincial resources were not able to do so. There were also conflicting reports submitted to ISC regarding the availability of Recovery Funding to the First Nations communities (i.e., inconsistencies in the amount of funding available to residents depending on their community).

SO-39: Governance protocols regarding public messaging are not well defined or understood by some organizations. There was messaging issued from the Premier's office that was not coordinated with EMO communications and resulted in small inconsistencies in information released to the public (e.g., provision of 50K to the foodbank was announced to the public before it was shared with EMO). There were also requests from higher authorities for EMO to release messaging that had not been validated. This created challenges for communications staff in determining what messaging should be developed and when it should be released to the public. In some instances, the IO became the LO between the PEOC and government officials which caused delays in the development of time-sensitive



messaging.

R OFI-14: The PEI Emergency Communications Plan requires an update to ensure that it provides the required structure and guidance to effectively coordinate and develop messaging to the public during an emergency. This would include the inclusion of a detailed concept of operations that walks each department through the coordination and collaboration process during a multi-agency provincial response effort. The plan must be aligned with EMO plans and procedures, other departmental plans, and be regularly maintained by a dedicated staff member familiar with the provincial plan to ensure alignment.

Once updated, EMO and all partner organizations should adopt this plan as an annex to their own departmental plan. The plan must be accepted, endorsed and followed by senior management to ensure consistency, continuity, and effectiveness in the communication of essential information to the public. Communications officers and senior managers across the various provincial departments should be trained on the communications plan. This will reduce confusion that can result from conflicting or inaccurate information that is released to the public across the various platforms.

OFI #15 The timeliness and frequency of communications products could be improved.

SO-40: Initial messaging to the public was reactive rather than proactive in addressing the needs of the public. Half of public survey respondents (50%) did not know who to contact for assistance or for more information on the storm.³⁰ According to public survey respondents, there was also little to no information to educate the public before the storm on expected response activities and actions that the public could take to support the response and recovery (e.g., trimming trees along hydro lines on private property, high risk areas that people should be prepared to evacuate, etc.). Provincial messaging was not always accurate or consistent with what the public was experiencing; 28% of public survey respondents felt there was misalignment between messaging and what was happening in real-time.³¹ Some residents who completed the survey don't recall receiving any messaging from the province at all.

SO-41: Messaging was issued daily to the public; 60% of public survey respondents thought that the provincial updates issued by the Province were provided in a

³⁰ Based on 175 public survey respondents who answered Q6: Did you know who to contact for assistance or for more information on the storm.

³¹ Based on 174 public survey respondents who answered Q9: In was the messaging provided by the Province accurate and consistent with what you experienced?



regular and timely manner (40% did not feel informed).³² By contrast, 73% of agency survey respondents thought that in general, most information was shared in a timely manner with the public (only 7% thought otherwise).³³ Approximately 25% of public survey respondents who attended a reception centre thought that current and frequent information updates were available; however, 18% disagreed with the statement.³⁴

The media briefings and release of media products were conducted on an ad hoc basis. There was no regular schedule or deadlines established for the development of briefings or media releases; media representatives would often miss the briefings and the public did not know when to expect updates from the Province.

R OFI-15: It is recommended that messaging be issued in a timely manner and at regular intervals by following a set daily schedule with a standard agenda (e.g., provincial messaging could be issued twice daily from EMO at 10:00 and 16:00). Regularity of the releases could help manage public expectations. Media briefings should also be conducted at the same time and location every day to ensure optimal participation from media outlets. As part of the review and update process of the PEI Emergency Crisis Communications Plan, it is recommended that a single spokesperson be available to be the 'face' of the emergency rather than alternating representatives based on availability.

There is also a need to provide more community education on what is required to prepare for an emergency, including actions for which the public is responsible (e.g., ensuring trees are clear from hydro lines in advance).

OFI #16 Information and messaging by the Province did not always meet the needs of the public.

SO-42: The Province did not always provide a rationale for some response decisions to help manage expectations of the public. For example, many respondents from both surveys questioned why a State of Local Emergency (SOLE) or Provincial State of Emergency (PSOE) was not declared by the Province. While there was justification in the EMO's decision to decline offers of military assistance to aide in the response, members of the public who were significantly impacted by the storm

³² Based on 175 public survey respondents who answered Q7: In your opinion, were information updates issued by the Province provided in a regular and timely manner (i.e., did you feel like you were well informed on the situation)?

³³ Based on 73 agency survey respondents who answered Q18f: Rate your agreement: In general, most information that was shared in a timely manner with the public.

³⁴ Based on 44 public survey respondents who answered Q14c: Rate your agreement: Current and frequent information updates were available.



and continue to struggle with debris removal many months later, do not understand why the help was not accepted. When asked to comment, political officials were not able to provide a response. By not providing the public with a valid reason for these decisions, public confidence was affected.

SO-43: Messaging did not always contain the essential information that the public was looking for. Nearly 53% of public survey respondents who did leave their home during or after the storm, did not know where to go and what services would be available.³⁵ Residents living in unincorporated areas had little to no awareness of local reception centres and locations offering water, supplies, and other emergency services.

Awareness of available support services, including financial and health support, were not well known (see Table 8).³⁶ Approximately 31% of public survey respondents were aware of health agencies providing services, including mental health support. By contrast, 74% of agency survey respondents thought information concerning psycho-social support was shared with the public (e.g., helplines, reassurance, etc.) which indicates a discrepancy in perceived availability of essential services between members of the public and response agencies.³⁷

Table 8: Public Awareness

| Public messaging (public perception) | Agree | Disagree |
|--|-------|----------|
| | % | % |
| Felt well informed of duration of power outage in their area | 27.3 | 49.4 |
| Had good awareness of property damage/debris in area | 54.8 | 28.0 |
| Aware of most road closures affecting travel | 42.2 | 32.5 |
| Aware of open reception centres receiving residents in area | 45.7 | 32.5 |
| Aware of available social support services in their area | 40.0 | 38.2 |
| Aware of available financial support services | 26.4 | 43.1 |
| Aware of health agencies providing services (mental health) | 30.6 | 43.9 |

Similarly, 46% of public survey respondents were aware of open reception centres receiving residents in their area. By contrast, 74% of agency survey respondents agreed that information concerning sustained efforts was shared with the public

³⁵ Based on 38 respondents who answered Q12: When you made the decision to leave your home, did you know where to go and what services would be available?

³⁶ Table figures based on 175 public survey respondents who answered Q10 rating statements.

³⁷ Based on 73 agency survey respondents who answered Q18e: Information concerning psycho-social support was shared with the public.

(including open reception centres, support centres, power restoration timelines, etc.).³⁸ There were also discrepancies in perception of adequate information provided on road safety, closures, and debris removal. Approximately 55% of public survey respondents were aware of debris and damage in their area and 42% knew of road closures that affected travel. By contrast, 71% of agency survey respondents agreed that adequate information regarding ongoing response efforts were shared with the public, including debris removal, road closures and power outages.

As Figure 4 illustrates, there were marked differences in what was thought to be shared with the public by the Province versus the actual level of awareness of essential information that the public had received. While many members did have some awareness of the response activities, there were many who were not receiving the updates; and if they did, the information did not reflect their current situation or provide updates in the areas that were critical to them.

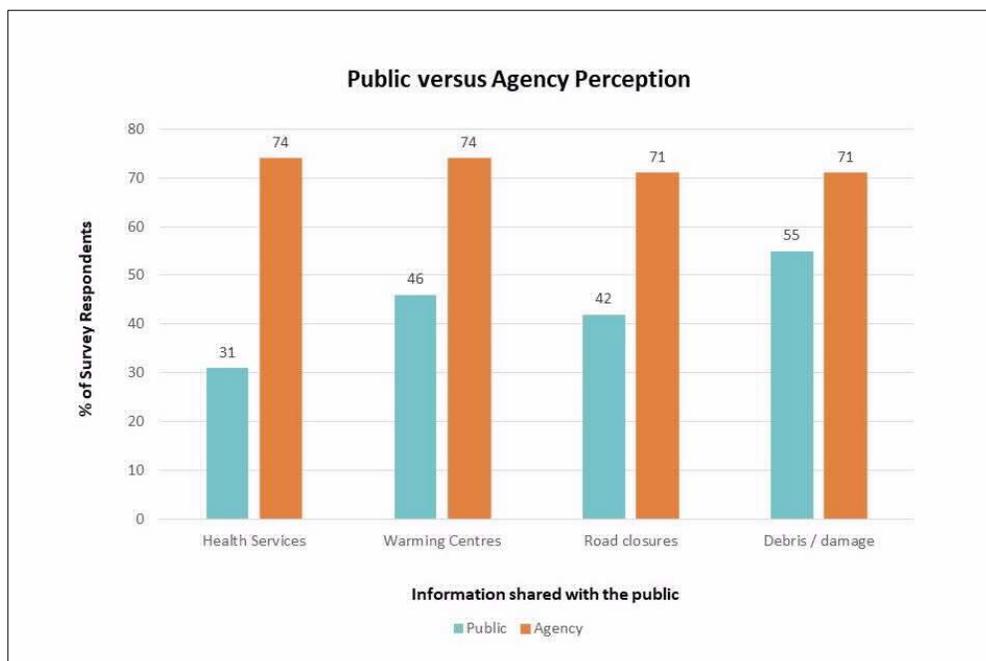


Figure 4: Public versus Agency Perception

R OFI-16: During any type of emergency, members of the public will always look to the authorities first for guidance and situational awareness. Including a rationale with decision making is an effective way to manage public expectations, reduce stress and anxiety, and build public confidence in the Province’s ability to respond.

³⁸ Based on 73 agency survey respondents who answered Q18d: Information concerning sustained efforts was shared with the public (e.g., reception centres, support centres, power restoration timelines, etc.).

Communications personnel should ensure that messages issued to the public are aligned with their expectations and provide a rationale for decision making on activities that impact affected residents. This would also ensure that public figures tasked with addressing the media will have the correct information readily available when discussing measures taken by the Province.

Although it can be difficult for the Province to determine if members of the public are able receive provincial messaging, particularly during a power outage, it is recommended that updates to the PEI Emergency Crisis Communications Plan include the proper checks and balances to gauge the effectiveness of the communications products. 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.

As the provincial website is the largest available and most stable communication platform for the Province, EMO should explore other opportunities to increase redundancy and resiliency in their web environment. ITSS may wish to consider migrating to a cloud-based email provider to ensure more resilient communications away from the existing network. Also, to move away from a reliance on land-based communications methods (e.g., '1-800' number), there may be an opportunity to transition to an electronic message-based format, or virtual environment, especially when landlines are compromised.

A-EMO: To ensure that messaging released by the media is accurate and meets the needs of the public, EMO is planning to work with media outlets to confirm what information should be shared during emergencies. This will include clarification of specific terminology related to the event (e.g., weather terms).

OFI #17 Residents did not have a single centralized source for all updated information relevant to the emergency.

SO-44: There was no single source containing updated public information that residents could go to (i.e., 'one stop shop' for information). Residents would typically look for weather forecasts, restoration times, road safety information, reception centre locations, support services, debris removal, food safety, financial assistance, and other important information across numerous sites. While this information was available at multiple locations, it was not always aligned. Some residents found it challenging to find specific updates relevant to their situation, especially during the power outage. It was noted that some didn't have enough power in their cell phones to contact multiple agencies.

R OFI-17: While it is beneficial to build in redundancy using multiple platforms and sources of information, it can create other challenges in ensuring robust and fulsome levels



of awareness for affected residents. To minimize the stress of having to seek out information from numerous sources, the Province and partner organizations may wish to consider building a single platform that amalgamates all relevant information related to the emergency into a single accessible source. There would be a requirement to maintain the timeliness of the information; however, this would provide the public with valuable information to make more informed decisions regarding their own situations.

OFI #18 **The effective and consistent use of Emergency Management spokespeople to address the public could be improved.**

SO-45: The PEI Emergency Crisis Communications Plan identifies possible spokespeople that could address the public; however, there was no consistency in the emergency management official who addressed the public or media daily with updates, instruction, and comfort. It was noted that the public needed a 'face' or 'voice' associated with the decisions that were made on behalf of the Province. While the Premiere did address the public on several occasions, there did not appear to be anyone in charge from the perception of the public. This may have hindered public confidence in the Province's ability to manage the response and recovery activities. In this case, there were public expectations for the Premier to have a greater public presence throughout the response.

R OFI-18: They are an essential component in how the Province relates to communities in crises. Moving forward, it is important that the Province quickly selects the most suitable representative from those identified in the Provincial Crisis Communications Plan (if possible, prior to events that have lead time such as Post Tropical Storm Dorian). Further clarification is required within the plan on the specific protocols to follow once that person has been identified. It is also important that this representative appears at regular intervals, remains consistent, is provided with essential information to relay to the public, and is knowledgeable in emergency management.

OFI #19 **Communication strategies that target vulnerable populations could be improved.**

SO-46: There is currently formalized strategy within the PEI Emergency Crisis Communications Plan for communicating with the elderly or vulnerable during an emergency. Many of the vulnerable were without power, do not own cell phones, or listen to public radio. Those who do listen to radio stations by local broadcasting agencies are limited to automated programs with no weekend staff to share information. While there was a heavy reliance on social media platforms to relay information to the general public, many senior residents do not have an



online presence or access to internet to obtain important information regarding what support was available (e.g., debris removal) and where to go to for assistance (e.g., reception centres).

R OFI-19: As part of the review and update process for the PEI Emergency Crisis Communications Plan, there is a need to develop a formal strategy that ensures that the vulnerable population can access emergency information. This could include information sheets distributed through organized wellness checks, designation of one radio station through which information is provided for the public or opening reception stations in advance of the storm for the elderly. In some cases, this responsibility falls with the municipality and this should be noted accordingly within the Plan.

4.4 Concept of Operations

Emergency planning involves a coordinated, co-operative process of matching urgent and essential needs with available resources. For the response to Post Tropical Storm Dorian, 71% of agency survey respondents thought that response operations were conducted effectively by their organization.³⁹ Despite the challenges created by the power outage, 62% of agency 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.⁴⁰

There were numerous reasons cited as to why the response was not considered effective by some organizations (see Table 9).⁴¹ Lack of training and experience was noted as the most prevalent area that impacted the effectiveness of response. Approximately 50% of public survey respondents also noted the Province and supporting agencies must improve in some areas before the next large-scale event occurs.⁴² Insufficient staffing, inadequate equipment, poor communication due to lack of power, and lack of training / experience have already been addressed. Lack of chain of command and poor communications due to a breakdown in procedures are addressed in this section. Observations in the preparation, response, and recovery phases are included in this assessment.

³⁹ Based on Q20: Please rate your agreement with the following statement: I felt that response operations were conducted effectively by my organization.

⁴⁰ Based on 71 agency survey respondents who answered Q23: 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.

⁴¹ Based on 31 agency survey respondents who answered Q21: From your experience, what contributed to ineffective response operations within your organization?

⁴² Based on 167 public survey respondents who answered Q16: 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?

Table 9: Response Factors

| Reasons for ineffective response operations | Response | |
|--|----------|----|
| | % | # |
| Insufficient staffing | 16.1 | 5 |
| Inadequate equipment | 9.6 | 3 |
| Lack of chain of command | 25.8 | 8 |
| Poor communication (due to power outage) | 41.9 | 13 |
| Poor communication (breakdown in procedures) | 12.9 | 4 |
| Lack of training / experience | 29.0 | 9 |

Findings Legend:

| | | | |
|---------------|-----------------------------|------------|------------------------|
| BP: | Best Practice | SO: | Supporting Observation |
| OFI: | Opportunity for Improvement | R: | Recommendation |
| A-EMO: | Actions Taken by EMO | | |

4.4.1 Preparation

Preparedness activities increase the Provinces ability to respond when a disaster occurs. In general, most agencies felt prepared and ready to respond once required; however, the scope and impact of the storm surpassed anything that most responders and residents had ever experienced. Most agencies agree that the key to the successful response is in direct relation to the preparation. The pre-storm briefings (including the pre-season briefing by the Canadian Hurricane Centre (CHC)) were very helpful in providing departments with the requisite information necessary to pre-plan response activities; this was noted as a best practice.

4.4.1.1 Concept of Operations: Preparation – Best Practices

BP #8 The briefing process on approaching storms to affected Provinces is a proactive approach to effective preparedness for EMO's.

SO-47: The CHC briefings to the province enabled potentially affected areas to ramp up operations in advance for optimal response. These briefings were conducted 3-5 days prior to provide information to the provinces who may be affected by an approaching storm. Information contained within these briefings included a hazard risk assessment that identified areas to monitor, potential impacts of the storm, onset timing, and computer modeling that provided a forecasted track that indicated the most likely areas of landfall.

R BP-8: EMO should continue to leverage these briefings as part of their preparation



activities. Information contained within these briefings is essential to optimal preparedness in the Province's ability to respond effectively.

4.4.2 Response

The primary focus of the response phase was to ensure the safety of the affected residents, establish restoration of critical services, remove debris from property and critical infrastructure, and meet the basic needs of the residents who were impacted by the storm. The following observations were made regarding coordination of resources and other operational considerations.

4.4.2.1 Coordination of Resources

Many respondents felt that there was an exceptional level of teamwork and collaboration achieved internally within their own departments, as well as externally with other agencies, branches and volunteer organizations involved in the response. Through effective collaboration and cooperation, numerous departments came together to support the operational requirements in a timely manner. Coordination of resources was noted as a best practice. There were no opportunities for improvement identified in this area.

4.4.2.2 Concept of Operations: Response – Best Practices

BP #9

Effective coordination and collective teamwork at all levels were a critical component to an effective response and recovery effort.

SO-48: Organizations and community members demonstrated extraordinary cooperation to help residents in need. There were numerous examples of coordination of activities between agencies to support the response:

- TIE worked closely with Island Waste regarding debris removal;
- PEI Forestry assisted Maritime Electric with chainsaw operations and debris clearing;
- Bell Aliant worked closely with Maritime Electric in the restoration of both power and telecommunications; and
- Samaritans Purse worked closely with Provincial departments to assist with debris cleanup.

It was also noted that the response at the community level was extraordinary. Both volunteers and local firefighters were critical resources to support the incident.

R BP-9: The Province should continue to encourage coordination and cooperation between departments, NGO's, and private organizations moving forward. There



may be opportunities to identify the working synergies between these organizations and develop more formal processes related to interoperability in the response and recovery phases.

4.4.2.3 *Operational Considerations*

In general, response operations were carried out effectively with damage assessments, debris removal, and the establishment of reception centres for affected residents being the primary activities undertaken in the early phase. It was noted that not all agencies had awareness of the proper chain of command which led to some issues in the field. Nearly 26% of agency survey respondents noted that issues related to chain of command negatively affected the response (e.g., information exchange was challenging, reporting requirements not followed).⁴³ Approximately 21% of agency survey respondents did not feel that there was a clear chain of command between their organization and other responding agencies, including EMO (i.e., understood the hierarchy of authority, how information was to be relayed, and how decisions were made).⁴⁴ Other issues provided by agency representatives included under-developed procedures, lack of awareness of PEOC procedures, lack of experience and separation between PEOC and field operations.

4.4.2.4 *Concept of Operations: Response – Opportunities for Improvement*

OFI #20 Coordination of some response activities could be improved.

SO-49: There are no clear protocols for managing large scale debris removal. There are different standards for debris storage that exist between the provincial and federal government, and it was not clear what processes should be followed. Many agencies were unaware of how to get rid of debris, where they could drop off the wood to be processed, and who was responsible to pay for cleanup operations.

SO-50: Provincial departments do not have an optimal understanding of available municipal infrastructure and capabilities. For example, for Maritime Electric to prioritize restoration of service to customers, they need to know what community facilities (e.g., reception centres) have backup generators that can provide support to residents so that their focus can shift to those areas that do not have power to help those in need. Office of the Fire Marshal and Social Services both noted that they did not have an accurate list of the reception centres that were opened (i.e., both were informed that some were open when they were actually closed and vice

⁴³ Based on 31 of agency survey respondents who answered Q21: From your experience, what contributed to ineffective response operations within your organization?

⁴⁴ Based on 71 agency survey respondents who answered Q22: Please rate your level of agreement with the following statement: There was a clear chain of command between my organization and other responding agencies (e.g. PEI EMO, Provincial Departments, NGOs, etc.).

versa). Although the list of facilities was published in the daily situation reports, there were inconsistencies noted when information flowed from various sources (e.g., directly from the municipalities versus listed in the situation report).

SO-51: Some organizations need to better understand the protocols to request assistance from federal agencies. Requests for federal assistance (RFA) needed for any organization are made by the Province; however, agencies were not aware of what to do when the offer of federal assistance is extended through informal measures that circumvent the inclusion of EMO. For example, Canadian Armed Forces (CAF) offered assistance through informal channels which caused confusion within EMO as they had not submitted a formal RFA to the federal government for military support. This had both operational and political impacts that resulted in additional workload to resolve, and distracted resources from regular emergency communications activities.

R OFI-20: There is a need for EMO and key partner organizations (e.g., TIE, Forestry, etc.) to develop a formal debris management plan that outlines a concept of operations for the transport and management of debris / rubble, including pre-designated sites and landfills to receive the collection of debris. Roles and responsibilities along with authorities should be clearly defined within this plan.

There is also a recognized need to create an inventory of municipal resources that can be distributed to all organizations involved in the response. While there are reliance's on specific stores / services in rural communities, these critical organizations / services should be identified at the municipal level and raised to the provincial level for distribution.

RFA processes need to be re-assessed and amended to reflect all possible scenarios that could occur around requests for assistance and offers of support. Agencies should also receive further education regarding RFA's that includes information sharing protocols and a needs assessment resulting in the requirement to request additional support.

OFI #21 There was no single authority on the ground to provide oversight and control of response activities.

SO-52: There was significant integration amongst responding agencies in the field; however, there was no oversight from a single authority to manage the incident on the ground. As the affected areas spanned the entire Province to varying degrees, it was not feasible at the time to have an Incident Command on the ground to oversee response activities. However, controlling field operations from the PEOC versus at the incident site(s) created challenges in command and control of response activities and information exchange. Situational awareness within the



PEOC was not always aligned with what was happening in the field (e.g., the extent of damage in some areas such as Summerside). Some public survey respondents who live in Summerside felt that decisions made by EMO were not aligned with the response requirements in the more impacted areas; rather, they reflected the conditions in Charlottetown.

SO-53: There was no single authority in the field to provide oversight, manage identified risks, and ensure overall worker safety (e.g., field safety officer(s)). This presented unique challenges with the integration of responders, field workers, volunteers, and members of the public engaged in similar activities. For example, while Forestry and Maritime Electric provide chainsaw training on the Island, the courses are not standardized and there were many workers, and members of the public, utilizing equipment with varying levels of experience. This caused frustration amongst some workers and increased the likelihood of an accident in the field.

R OFI-21: The Province should discuss the option of implementing at least one Incident Command Post (ICP) in the field to help manage the coordination of the response activities. The ICP represents the on-scene command that oversees operations at the tactical level. While the demographics and geographic layout of the Province could pose challenges, it is essential that some element of command and reporting be implemented in the field to oversee response activities. The most suitable agency or representative would be a member of the fire service as they trained in emergency response, including medical care. Implementing an ICP may help to create more of a common operating picture between the PEOC and the field and facilitate more effective decision making based on a unified and complete picture on the ground. This would also serve to reduce or eliminate the disconnect between the higher-level provincial response and 'boots on the ground' response. It was also noted that it would be beneficial to establish a provincial all-hazards response team. This entity could provide the missing linkage between the municipal, provincial and federal systems that are engaged during an emergency.

Organizations also saw the value in imposing mandatory standardized chainsaw safety training for all workers who may be required to assist with debris removal. It was noted by Forestry, TIE, and Samaritan's Purse that training should be standardized for Canadian compliance. The course should cover basic chain saw safety as it relates to tree trimming, disaster clean-up, forestry and more.

4.4.3 Early Recovery

Recovery involves those actions that were taken to return the affected communities to normal or near-normal conditions once the initial response phase had ended. Approximately 47% of agency survey respondents noted that the transition period from response activities to recovery activities



was clear within their service area.⁴⁵ While agencies have worked diligently through the ongoing recovery process, there are several areas that are not well understood.

4.4.3.1 *Concept of Operations: Recovery – Opportunities for Improvement*

OFI #22 When transitioning to recovery, some processes were not well understood or executed.

SO-54: Some organizations do not have a good understanding of the federal process around disaster relief and access to community funding and insurance. The aquaculture industry was significantly damaged from the storm and could result in a limited harvest and potential closure of plants in the future. Unlike agriculture, historically there is no federal insurance available for aquaculture as it is hard to assess the value of an underwater crop and even more challenging to conduct the damage assessment. Many questions remain as to what can be covered, thresholds for who can apply, and the size of the organization. While there is private insurance available, it is generally too expensive to afford.

The CRC accepted applications for disaster relief from within the aquaculture industry; however, it was noted that at the time there was a lack of understanding as to how to process the federal claims and what is eligible for coverage. While EMO did inquire, it was unclear what the communications process was to ensure that issues related to federal insurance coverage were resolved. While the deadline was extended for applications, this was not effectively communicated to some agencies in a timely manner. Despite efforts by all involved, information on access to federal compensation for damages remains unclear (at the time of this report) and does not provide for compensation to many industry members that were severely impacted.

SO-55: Some organizations (including several municipalities and First Nations communities) noted that they did not receive notification of the transition to recovery. While this information was included in the provincial situation reports, only departmental contacts on the email distribution list were advised of the transition. Notification of the transition to recovery was not always distributed effectively within departments. This information does not change activities for most organizations; however, for others, recovery does change the focus of operational tasks to financial assistance and locating resources that can support with cleanup and recovery of sites to a new state of normal. It was noted that from a communications perspective, knowledge of this transition affects messaging from the government.

⁴⁵ Based on 72 agency survey respondents who answered Q24: Was the transition period from response activities to recovery activities clear within your service area?

R OFI-22: Clarification is required to differentiate between the level of provincial and federal assistance that is available to certain sectors. Within the aquaculture industry, there is a requirement to have a clearly defined process for federal DFA following an incident. It should be noted that traditionally, this sector has not been considered in Disaster Financial Assistance Arrangement (DFAA) claims by the federal government. This matter was complicated further by the call of a federal election shortly after the storm which created challenges in obtaining federal guidance to deal with the enquiries from affected areas. It is essential that aquaculture farmers understand how damage assessments would be conducted and by who (i.e., the operator, Environment, or a third-party contractor), and what the potential impacts to the operation could be. In general, processes around disaster relief funding must be better defined for businesses and the public.

Within First Nations communities, it would be beneficial to have ISC send a base amount of funding to be held by band councils (e.g. MCPEI) that is eligible for immediate use by communities to support response operations.

When government departments are working together, it would be helpful to ensure that funding programs allow municipalities to be able to apply for funding for essential services such as a generator for a reception centre. Further discussions are required to determine what essential services should be covered for funding.

4.5 Business Continuity

The response to Post Tropical Storm Dorian was a prolonged event that challenged departmental capacity to staff all 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. Maintaining daily operations became a challenge for some groups as staff began to tire from the lengthy response effort. Some staff were required to work extensive overtime either as part of the response, or to ensure that day-to-day operations continued without interruption. Overall, business continuity was maintained with minimal impact on Provincial services available to residents.

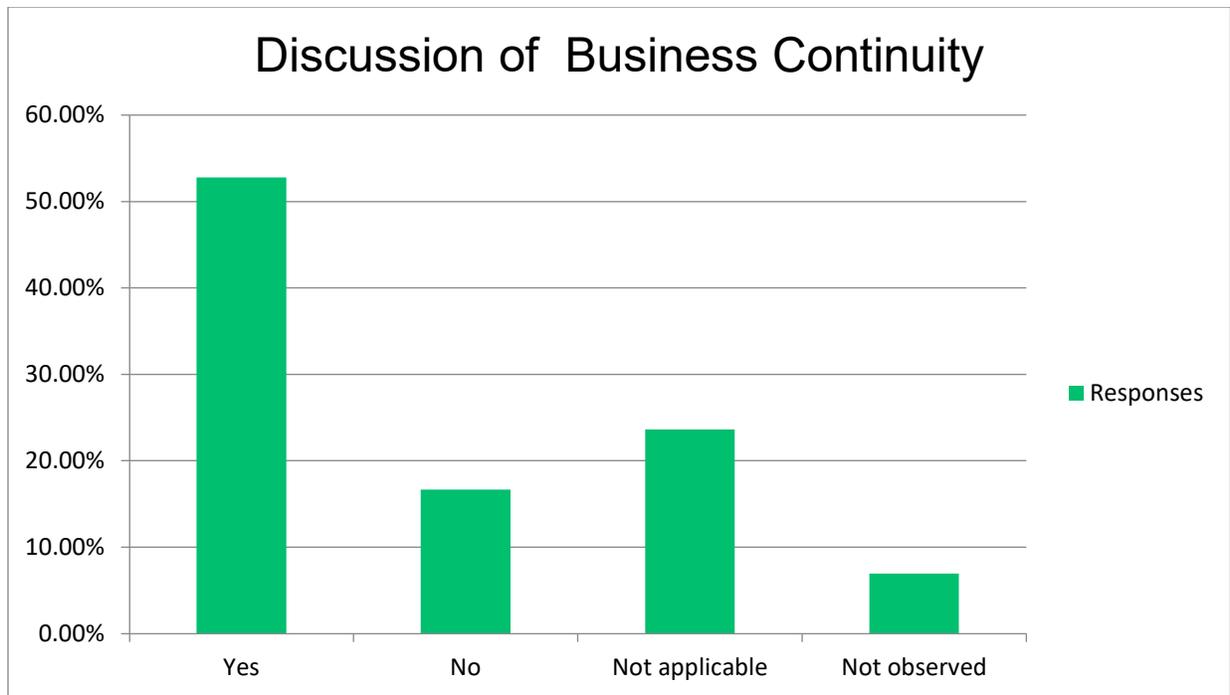


Figure 5: Discussion of Business Continuity

Approximately 53% of agency survey respondents discussed or considered business continuity within their organization during response operations (see Figure 2).⁴⁶ Some organizations were proactive in the activation of their BCP to minimize disruption in day-to-day operations. TIE activated their BCP before the storm made landfall. Approximately 65% of agency survey respondents felt that their service area had enough resources and / or equipment to maintain regular day-to-day operations throughout the situation.⁴⁷ Several organizations noted that they had no issues in backfilling positions to fulfill normal operations while the response was ongoing. Many municipalities noted that most services are provincial and had the requisite staff to fill regular functions that fell under the responsibility of the municipality. Where it was required, residents were notified of any change to regular services; however, these were not critical in nature.

⁴⁶ Based on 72 agency survey respondents who answered Q25: Was business continuity discussed / considered within your organization during response operations?

⁴⁷ Based on 71 agency survey respondents who answered Q26: Rate your agreement with the following statement: "I felt that my service area had sufficient resources and / or equipment to maintain regular day-to-day operations throughout the situation."

Findings are presented using the following references:

| | | | |
|---------------|-----------------------------|------------|------------------------|
| BP: | Best Practice | SO: | Supporting Observation |
| OFI: | Opportunity for Improvement | R: | Recommendation |
| A-EMO: | Actions Taken by EMO | | |

4.5.1.1 Business Continuity – Opportunities for Improvement

OFI #23 Some organizations don't have a well-defined Business Continuity Plan to ensure consistent services to residents during a prolonged event.

SO-56: Some departments did not have the processes or resources in place to effectively support the execution of a BCP. Within TIE, infrastructure repair tasks that are critical to conduct before winter (e.g., road patching, culvert maintenance) were not carried out due to lack of resources. EMO also stopped all training and cancelled all meetings with municipalities while in operations. It was noted that while regular provincial communications did not experience major interruptions; it was not sustainable had the emergency lasted any longer. There are no redundancies currently in place to allow IOs to focus on an incident and the messaging surrounding that without having to manage regular daily communications.

SO-57: Some departments didn't understand or differentiate between disaster recovery and business continuity. ITSS was tasked with restoring connections that were impacted by the storm; however, in some areas, the damage was significant, and a move was recommended. Some affected agencies expected ITSS to manage the relocation to ensure business continuity when the focus was still on disaster recovery for other departments.

R OFI-23: An investigation into business continuity should be performed by each provincial department. This would support emergency planning and would allow departments to identify what can be put on hold and what can be disrupted for various time periods depending on the length of the emergency. This would also identify the resource requirements to maintain day-to-day operations while in response operations. All department BCPs must be corporately aligned with the Provincial BCP.



4.6 Decision Centre Tools

Approximately 48% of agency survey respondents agreed the technology and applications used to support the response were sufficient.⁴⁸ The Province currently uses Sentinel as an Emergency Management tool; however, many agencies found this platform to be antiquated and users did not have confidence in the quality of information that it supported. When asked what additional technology, applications, or tools would have better supported their response activities, agency survey respondents noted electronic emergency response procedures as most prevalent, followed by social media management tools and an PEOC Common Operating Picture capability (see Table 10)⁴⁹

Table 10: Additional Technology and Tools

| Additional technology / tools | Response | |
|--|----------|----|
| | % | # |
| PEOC Common operating picture capability | 22.2 | 10 |
| Social Media management tools | 26.6 | 12 |
| Electronic emergency response procedures | 40.0 | 18 |
| Additional computing power | 22.2 | 10 |
| Computer-based ICS forms | 8.8 | 4 |
| Computer-based documentation capability | 17.7 | 8 |

Findings Legend:

| | | | |
|---------------|-----------------------------|------------|------------------------|
| BP: | Best Practice | SO: | Supporting Observation |
| OFI: | Opportunity for Improvement | R: | Recommendation |
| A-EMO: | Actions Taken by EMO | | |

4.6.1.1 Decision Centre Tools – Opportunities for Improvement

OFI #24 Organizations did not optimize the use of available tools from other departments for decision making or planning.

SO-58: There is no register or inventory of skills / capabilities across the provincial departments where support can be leveraged by EMO. For example, EMO does

⁴⁸ Based on 71 agency survey respondents that answered Q28: Please rate your agreement with the following statement: The technology and applications used to support response operations were sufficient.

⁴⁹ Based on 45 agency survey respondents who answered Q29: What additional technology / applications / tools would have better supported your response activities?

not have Geographic Information System (GIS) mapping capability; maps were not disseminated to agencies throughout the response. Forestry does have GIS capability; however, a request for service was not made by EMO, and an offer was not extended from Forestry. GIS capability (i.e., ArcGIS pro) is also available within MCPEI and Stratford, among others; however, there was no identified need for this at the time and the request from EMO was not made. It was noted by numerous agencies that situational awareness tools, including maps, would have been useful to provide information on reception centres, outages provided by Maritime Electric, damage assessment, and key issues within the region.

R OFI-24: Mapping capability is available throughout the Province. It is recommended that all available technology be compiled into a database for reference during an emergency. The Province should leverage this access in the future to ensure a common operating picture across all agencies.

OFI #25 Some organizations do not have access to more current tools or technology to increase situational awareness that enhance decision making.

SO-59: EMO has used the Sentinel System; an emergency management tool, for many years; however, training and capability for using this platform has been limited. During response operations, it was noted that the system could have been utilized more effectively but many view this platform as antiquated and inefficient. Information coming from the field into the PEOC typically came from email or phone and Sentinel was used as a backup system only.

It was also noted that some applications for reception shelters would be beneficial and help to support workers and volunteers (e.g., Red Cross First Aid App). Other agencies noted the benefits of adding an PEOC status board that included the level of damage in the field which would be helpful to support field operations and could facilitate better information flow to the public regarding open stores and shelters.

R OFI-25: EMO and its partner organizations should assess their current technology to ensure that it meets the information needs during an emergency. The Province should consider implementing an updated information sharing platform to optimize situational awareness and decision making.



5. SUMMARY OF FINDINGS

5.1 Summary of Best Practices

Table 11: Best Practice Findings

| Finding No. | Finding | Recommendation |
|-------------------------------|--|---|
| Resource Management | | |
| BP #1 | Organizations were better able to meet human resource requirements when pre-established processes were in place to proactively augment capacity. | Organizations should review their current processes to identify how to augment their staffing levels to support a prolonged response. |
| BP #2 | Organizations can increase effectiveness of staff members by addressing physical and mental stress in the workplace throughout the response. | Organizations should ensure that appropriate measures are in place to reduce staff fatigue. These measures should be included in departmental plans to formalize the process and ensure that the responsibilities for implementing these actions are assigned accordingly. |
| BP #3 | Organizations who took a more proactive approach to acquire equipment and supplies were well positioned to manage the challenges that resulted from the storm. | Agencies may want to develop standing offers with suppliers to facilitate a more efficient acquisition of required equipment and supplies. |
| Training and Exercises | | |
| BP #4 | Some organizations had the ability to provide just-in-time training to augment staffing and enhance response capabilities. | When possible, and when regular training is not available, agencies should consider implementing a just-in-time strategy in advance. This can include targeted e-learning, online videos, printed material, or related real-world information to meet immediate response needs. |



| Finding No. | Finding | Recommendation |
|-------------------------------|---|--|
| Information Management | | |
| BP #5 | Organizations that had redundant methods of communication during the power outage were able to acquire situational awareness more effectively between agencies. | Agencies should conduct a full assessment of their current communications to ensure that redundancy is built in during a power outage. There is a requirement to adopt an Omni-channel broadcast technology that allows all staff to control how they are notified and updated with essential information. |
| BP #6 | The Provincial briefings and Situation Reports provided excellent situational awareness to agencies that were on the distribution list. | The Province should continue to disseminate information to stakeholders through situation reporting and conference calls, leveraging available communication platforms. The Province should also review their distribution list to ensure that all stakeholders can receive information required for their own response. |
| BP #7 | While obtaining information was challenging at times, organizations did use effective mediums to communicate with members of the public who had access. | The Province should continue to use multiple avenues for public communications. Smaller communities should also continue to leverage personal relationships and a 'look out for each other' approach to ensure that all affected residents receive the information that they need. |
| Concept of Operations | | |
| BP #8 | The briefing process on approaching storms to affected Provinces is a proactive approach to effective preparedness for EMO's. | EMO should continue to leverage these briefings as part of their preparation activities. Information contained within these briefings is essential |
| BP #9 | Effective coordination and collective teamwork at all levels were a critical component to an effective response and recovery effort. | The Province should continue to encourage coordination and cooperation between departments, NGO's, and private organizations moving forward. There may be opportunities to identify the working synergies between these organizations and develop more formal processes related to interoperability in the response and recovery phases. |

5.2 Summary of Opportunities for Improvement

Table 12: Summary of Opportunities for Improvement

| Finding No. | Finding | Recommendation |
|----------------------------|--|--|
| Resource Management | | |
| OFI #1 | Some departments do not have the human resource capacity to support sustained operations for a prolonged event. | Developing and maintaining an inter-departmental emergency reserve or roster of qualified personnel is the most effective way to address human resource limitations. This roster can be maintained to include personnel from all departments, previously trained personnel, implementing cross training to fill various positions, adding communication personnel during an emergency, and ensuring there are dedicated scribes within the PEOC. |
| OFI #2 | Some departments were challenged at providing the appropriate mental and physical health support to staff throughout the response and recovery phases. | Agencies should consider what measures can be taken to ease the stress on workers as part of their emergency pre-planning (including comfort areas, provision of health services, etc.). EMO and its partner organizations should also ensure that an effective staff rotation schedule can be maintained for longer duration events. |
| OFI #3 | Procedures around staff recruitment and dispatch were complicated when workers were unionized. | Organizations who employ unionized workers should fully understand all regulations, roles, and policies in place if staff are to be introduced to new tasks in an emergency. |
| OFI #4 | There were some challenges in acquiring specialized equipment and supplies as the event progressed. | EMO should provide additional training to their partner organizations on how to request equipment necessary to carry out their role in the response. Pre-approved contracting service companies should be engaged in an emergency to support agencies in responding to the event. |



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| OFI #5 | Incompatible equipment created avoidable challenges that can slow the response and / or decision-making process. | Agencies have self-contained emergency server / IT systems that can be easily activated should the provincial server go down. Organizations who work in the PEOC should conduct regular checks for equipment and system compatibility and install IT upgrades if required. It is also recommended that EMO and its partner organizations assess the level of redundancy and resilience in the existing backup equipment and tools to ensure that replacements are readily available. Older equipment and hardware should be decommissioned accordingly. |
| Training and Exercise | | |
| OFI #6 | Roles and Responsibilities were not always well defined or understood within and between departments. | Agencies must fully understand their role in an integrated, multi-organization coordinated response. Additional training for DESO's is required to understand EMO response expectations and their role in the coordinated response structure. The province should also appoint a single POC for specific organizations. |
| OFI #7 | Some staff did not have access to various components of departmental plans that identify critical services. | Provincial agencies should ensure that all relevant plans are updated and readily available to staff throughout each phase of an emergency. |
| OFI #8 | Some staff require more practical training opportunities to better understand emergency management roles and responsibilities. | EMO and partner agencies to leverage all opportunities to participate in available training and exercise opportunities related to specific emergency management procedures. Senior management should endorse a more proactive approach within their staff to participate in structure training courses offered by EMO. |
| OFI #9 | Awareness of the emergency management training curriculum, particularly for staff transitioning to a new government, could be improved. | New government staff, especially senior management, should receive emergency management training in the first month of a new term as part of the onboarding process. Agencies should implement a consistent training schedule and identify |



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| | | <p>specific courses that must be completed as basic training for new hires. Organizations may wish to develop quick reference guides that provide new staff with an overview of the roles and responsibilities of various functions during an emergency. The training schedule should be incorporated into the professional development culture and implemented as part of a maintenance model.</p> |
| <p>Information Management</p> | | |
| <p>OFI #10</p> | <p>Some organizations were inconsistent or unaware of the reporting requirements which caused some delays in decision making and response activities.</p> | <p>EMO partner agencies must understand the importance of the reporting structure and the impacts that delays or absence of updates can have on overall decision making. Additional training on EMO information requirements should be provided.</p> |
| <p>OFI #11</p> | <p>Information exchange between the PEOC and some departments or agencies was not always optimal.</p> | <p>When possible, agencies should be prepared to send a representative to the PEOC if requested by the province or commit a resource to participate in the daily EMO update briefs. Health agencies should consider the development of a health portfolio with a dedicated PEOC that can amalgamate agency information into a common health operating picture. The Province should consider full inclusion of all agencies to participate in the update briefings and provide an 'opt in' or 'opt out' choice that would increase the likelihood that agencies are able to receive important information for their own activities.</p> |
| <p>OFI #12</p> | <p>Some documentation that was generated to relay information could be improved or better managed.</p> | <p>Further training should be provided by EMO on how the situation reports are currently compiled, the importance of participation in the briefings and regular reporting, and the role of DESO's in their own departmental planning processes outside of their day-to-day operational role. EMO should consider the development of a planning document that can</p> |



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| | | support the situation reports and provide some guidance to partner agencies in the planning of their own response activities. EMO should also investigate other options for record management that would have better uptake amongst the staff. |
| OFI #13 | Mechanisms to relay real-time information regarding restoration times for critical services could be improved. | There is a need to educate EMO and provincial partner organizations on restoration procedures, establishment of priorities, and realistic timeframes for the return of services based on damage assessments. There is also a need to confirm how Maritime Electric links into the PEOC and who their primary contact should be during an emergency. |
| OFI #14 | Organizations did not jointly coordinate and develop public communications products and messaging. | The PEI Emergency Communications Plan requires an update to ensure that it is aligned with the provincial plan and provides the required structure and guidance to effectively coordinate and develop messaging to the public during an emergency. The plan must be accepted, endorsed and followed by senior management to ensure consistency, continuity, and effectiveness. |
| OFI #15 | The timeliness and frequency of communications products could be improved. | Messaging should be issued in a timely manner and at regular intervals by following a set daily schedule with a standard agenda. As part of the review and update process of the PEI Emergency Crisis Communications Plan, it is recommended that a single spokesperson be available to be the 'face' of the emergency rather than alternating representatives based on availability. There is also a need to provide more community education on what is required to prepare for an emergency, |
| OFI #16 | Information and messaging by the Province did not always meet the needs of the public. | Messaging should include a rationale for decision making to manage public expectations, reduce stress and anxiety, and build public confidence in the Province's ability to respond. Updates to the PEI Emergency Crisis Communications Plan include the proper checks and balances to gauge the |



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| | | effectiveness of the communications products. EMO should explore other opportunities to increase redundancy and resiliency in their web environment. ITSS may wish to consider migrating to a cloud-based email provider to ensure more resilient communications away from the existing network. |
| OFI #17 | Residents did not have a single centralized source for all updated information relevant to the emergency. | The Province should consider building a single platform that amalgamates all relevant information related to the emergency into a single accessible source. |
| OFI #18 | The effective and consistent use of Emergency Management spokespeople to address the public could be improved. | The Province should quickly select the most suitable representative from those identified in the Provincial Crisis Communications Plan. Further clarification is required as to specific protocols to follow once that person has been identified. |
| OFI #19 | Communication strategies that target vulnerable populations could be improved. | As part of the review and update process for the PEI Emergency Crisis Communications Plan, there is a need to develop a formal strategy that ensures that the vulnerable population can access emergency information. |
| Concept of Operations | | |
| OFI #20 | Coordination of some response activities could be improved. | There is a need to develop a formal debris management plan that outlines a concept of operations for the transport and management of debris / rubble, including pre-designated sites and landfills to receive the collection of debris. There is also a recognized need to create an inventory of municipal resources that can be distributed to all organizations involved in the response. RFA processes need to be re-assessed and amended to reflect all possible scenarios that could occur around requests for assistance and offers of support. |
| OFI #21 | There was no single authority on the ground to provide oversight and control of response activities. | The Province should discuss the option of implementing at least one Incident Command Posts (ICPs) in the field to help manage the coordination of the response activities and |



| | | |
|------------------------------|--|---|
| | | provide a common operating picture. There should also be mandatory standardized chainsaw safety training for all workers who may be required to assist with debris removal. |
| OFI #22 | When transitioning to recovery, some processes were not well understood or executed. | Federal DFA processes must be clearly defined, including damage assessments within the aquaculture sector. Agencies who require notification that the Province has transitioned to recovery should ensure that the proper communication linkages are in place to receive that notification. |
| Business Continuity | | |
| OFI #23 | Some organizations don't have a well-defined Business Continuity Plan to ensure consistent services to residents during a prolonged event. | An investigation into business continuity should be performed for each department. All department BCPs must be corporately aligned with the Provincial BCP. |
| Decision Centre Tools | | |
| OFI #24 | Organizations did not optimize the use of available tools from other departments for decision making or planning. | It is recommended that all available technology be compiled into a database for reference during an emergency. The Province should leverage this access in the future to ensure a common operating picture across all agencies. |
| OFI #25 | Some organizations do not have access to more current tools or technology to increase situational awareness that enhance decision making. | All departments should assess their current technology to ensure that it meets the information needs during an emergency. The Province should consider implementing an updated information sharing platform to optimize situational awareness and decision making. |



6. CONCLUSION

The Province managed a well-coordinated response to Post Tropical Storm Dorian between September 7th to 15th, 2019. Two on-line surveys were developed and distributed to collect information on the response from both members of the public and response agencies. Results from the surveys were analyzed and used to inform the development of questions for the in-person interviews and focus groups conducted between March 9th to 13th. Qualitative and quantitative data were both considerations in the overall findings of the response and early recovery efforts to the storm.

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 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 to island residents 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 ICS training for staff to effectively carry out their roles.

The power outage significantly impacted communications in the early stages; however, agencies were innovative and relied on non-traditional methods to relay information. Information exchange between organizations was not optimal at times, in part, due to awareness of reporting requirements to EMO. Public communications was challenging and could be improved if organizations develop messaging and products in a joint and coordinated manner. It is essential that the Province develops a communications strategy to ensure that the vulnerable populations have access to critical information throughout each stage of response and recovery.

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 and commitment displayed by provincial staff, volunteers, private organizations, and residents was outstanding. By actioning the lessons learned identified within this report, the Province will continue to improve overall response and recovery efforts in similar operations.



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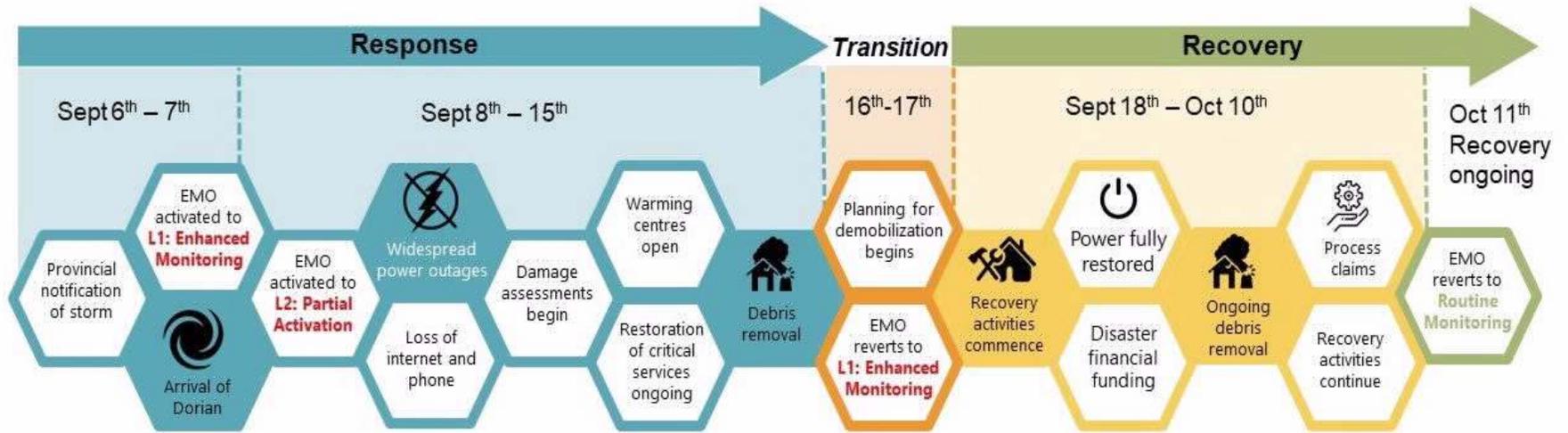
- [1] Justice and Public Safety, Prince Edward Island All Hazards Plan, June 2017
- [2] Justice and Public Safety, PEI Emergency Crisis Communications Plan, October 2017



ACRONYMS

| | |
|-------|--|
| AAR | After Action Review |
| CAO | Chief Administrative Officer |
| 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 |
| DFA | Disaster Financial Assistance |
| DND | Department of National Defence |
| EMS | Emergency Medical Service |
| EMO | Emergency Measures Organization |
| PEOC | Emergency Operations Centre |
| 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 |
| JPS | Justice and Public Safety |
| KF | Key Finding |
| LO | Liaison Officer |
| MCPEI | Mi'kmaq Confederacy of Prince Edward Island |
| NGO | Non-government organization |
| OFI | Opportunity for Improvement |
| OFM | Office of the Fire Marshall |
| PIO | Public Information Officer |
| POC | Point of Contact |
| PPE | Personal Protective Equipment |
| PSOE | Provincial State of Emergency |
| RCMP | Royal Canadian Mounted Police |
| RFA | Request for Assistance |
| SO | Supporting Observation |
| SOLE | State of Local Emergency |
| TIE | Transportation, Infrastructure and Environment |

ANNEX A. EVENT TIMELINE



Dorian By The Numbers

| | |
|-------------|-------------------------------|
| 62K | Customers lose power |
| 2232 | Customers lose phone service |
| 80% | Tree loss in Cavendish |
| 267 | Families served at Food Banks |

Response By The Numbers

| | |
|------------|-------------------------------------|
| 13 | Days of PEOC activation |
| 35 | Agencies reported daily to PEOC |
| 31 | Warming centres opened |
| 631 | Calls for debris removal assistance |

Figure 6: Event Timeline

ANNEX B. WEB SURVEY QUESTIONS

B.1 AGENCY SURVEY

Table 13: Agency Survey

| No. | Type | Questions | Answer |
|----------------------------|---------------------|---|--|
| Background | | | |
| 1a | Multiple Choice | What area of response and / or recovery were you associated with during Post Tropical Storm Dorian (select all that apply)? | A. Provincial Emergency Operations Centre B. Public Communications C. Transportation, Infrastructure (debris removal) D. Community and/or Social Services including reception centres E. Utilities, Energy, or Telecommunications F. Public Safety G. Health H. Environment / Agriculture/ Aquaculture I. Finance or Municipal Affairs Other: _____ |
| 1b | Open Ended | Comments | |
| Resource Management | | | |
| 2a | Rating (select one) | Please rate your agreement with the following statement. "My agency had adequate capability and capacity to meet staff levels needed for each of the following phases: A. Initial Operations (Sept 7-8) B. Sustained Operations (Sept 9-16) | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |



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| | | C. Recovery (Sept 17 and onward) | |
| 2b | Open Ended | Comments | |
| 3a | Multiple Choice (select one) | During the response to Post Tropical Storm Dorian, were you located at a location where the Incident Command System (ICS) structure was implemented (e.g., Emergency Operations Centre)? | A. Yes B. No (skip to Q5a) |
| 4a | Rating (select one) | Please rate your agreement with the following statement: "Overall, there were sufficient resources available to carry out ICS functions effectively". | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| 4b | Open Ended | Comments | |
| 5a | Multiple Choice (select one) | Please rate your agreement with the following statement: "My agency has plans and procedures in place to request and mobilize additional support staff if needed" | A. Yes B. No |
| 5b | Open Ended | Comments | |
| 6a | Rating (select one) | Please rate your agreement with the following statement: "My agency had adequate equipment (e.g., computers, personal protective equipment, vehicles, deployment kits, etc.)". | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| 6b | Open Ended | Comments | |
| Training and Exercise | | | |
| 7a | Multiple Choice (select one) | Rate your understanding of your role and assigned responsibilities during the response and recovery | A. None B. Very little |



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| | | efforts for Post Tropical Storm Dorian. | C. Some D. Average E. Above average F. Exceptional |
| 7b | Open Ended | Comments | |
| 8a | Multiple Choice (select one) | 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. | A. Yes B. No (please identify additional role) |
| 8b | Open Ended | Comments | |
| 9a | Rating (select one) | Please rate your agreement with the following statement: "I felt confident and comfortable in my role and responsibilities during operations". | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| 9b | Open Ended | Comments | |
| 10a | Rating (select one) | Please rate your agreement with the following statement: "I observed staff in other positions or agencies who did not appear to understand their role, or their agency's role, to effectively carry out their response function". | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| 10b | Open Ended | Comments | |
| 11a | Rating (select one) | Please rate your agreement with the following statement: "I feel as though prior training prepared me to fulfill my role during this situation." | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable |



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| | | | G. Not observed |
| 11b | Open Ended | Comments | |
| 12a | Rating (select one) | Have you participated in previous training or exercises focusing on emergency response/recovery to a widespread incident? | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| 12b | Checkbox (all that apply) | What emergency management-specific training have you taken? | A. Incident Command System 100 B. Incident Command System 200 C. Incident Command System 300 D. Emergency Operations Centre Management (PEOCM) E. Basic Emergency Management (BEM) F. Emergency Public Information (EPI) G. Simulated emergency exercises H. Department/Organization-specific emergency procedures I. Other: _____ |
| 12c | Open Ended | Comments | |
| 13a | Checkbox (all that apply) | What future training would help you to carry out your duties more effectively in another situation? Select all that apply. | A. Role / function-specific training B. ICS-specific training (e.g., Incident Command Post, departmental responsibilities, Emergency Operations Centre) C. Training on departmental/organizational emergency plans, procedures and processes D. Training on the Provincial plans, |



| | | | |
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| | | | <p>procedures and processes</p> <p>E. Simulated emergency exercises</p> <p>F. None</p> <p>G. Other (please explain): _____</p> |
| 13b | Open Ended | Comments | |
| Information Management | | | |
| 14a | Multiple Choice (select one) | Within your area, what level of situational awareness did you have during your time supporting emergency operations? (i.e., how well did you understand the current state of affairs? Did you feel 'in the loop' relative to understanding the developing situation?) | <p>A. None</p> <p>B. Very little</p> <p>C. Some</p> <p>D. Average</p> <p>E. Above average</p> <p>F. Exceptional</p> |
| 14b | Open Ended | Comments | |
| 15a | Rating (select one) | Please rate your agreement with the following statement: "I felt that information exchange between Provincial Departments and other responding agencies (e.g., municipal, NGO's, Utilities, Critical Infrastructure owners etc.) was effective". | <p>A. Strongly disagree</p> <p>B. Disagree</p> <p>C. Neutral</p> <p>D. Agree</p> <p>E. Strongly agree</p> <p>F. Not applicable</p> <p>G. Not observed</p> |
| 15b | Open Ended | | Comments |
| 16a | Rating (select one) | <p>Please rate your agreement with the following statements:</p> <p>A. Information was exchanged between agencies using common terminology</p> <p>B. Information flowed through the correct chain of command</p> <p>C. Information was consistent, concise and current</p> <p>D. Information was delivered at regular and expected intervals to my organization</p> | <p>A. Strongly disagree</p> <p>B. Disagree</p> <p>C. Neutral</p> <p>D. Agree</p> <p>E. Strongly agree</p> <p>F. Not applicable</p> <p>G. Not observed</p> |



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| 17a | Rating (select one) | Please rate your agreement with the following statement: "Documentation, such as Activity Logs or status boards, were appropriately developed and maintained at my location during operations". | <ul style="list-style-type: none"> A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| 17b | Open Ended | Comments | |
| Public Communications | | | |
| 18a | Rating (select one) | <p>Please rate your agreement with the following statements:</p> <ul style="list-style-type: none"> A. Warnings and preparedness messages to the public were sufficient during this response. B. Information concerning the severe weather and immediate danger was shared with the public before, during, and after the storm. C. Information concerning ongoing response efforts was shared with the public (e.g., debris removal, road closures, power outages, etc.). D. Information concerning sustained efforts was shared with the public (e.g., reception centres, support centres, power restoration timelines, etc.). E. Information concerning psycho-social support was shared with the public (e.g., helplines, reassurance, etc.). F. In general, most information that was shared in a timely manner with the public to | <ul style="list-style-type: none"> A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |



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| | | the public. G. All accessible platforms were effectively used to convey information to the public (e.g., radio, social media, community announcements, text messages etc.). | |
| 18b | Open Ended | Comments | |
| 19a | Rating (select one) | Please rate your agreement with the following statement: "I felt that the Province maintained public confidence throughout the response and recovery to Post tropical Storm Dorian" | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| 19b | Open Ended | Comments | |
| Concept of Operations | | | |
| 20a | Rating (select one) | Please rate your agreement with the following statement: "I felt that response operations were conducted effectively by my organization". | A. Strongly disagree B. Disagree C. Neutral (skip to Q22a) D. Agree (skip to Q22a) E. Strongly agree (skip to Q22a) F. Not applicable (skip to Q22a) |
| 21a | Multiple Choice (select one) | From your experience, what contributed to ineffective response operations within your organization?" | A. Insufficient staffing B. Inadequate equipment C. Lack of chain of command D. Poor communication (due to power outage) E. Poor communication (breakdown in procedures) F. Lack of training / experience G. Other _____ |



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| 21b | Open Ended | Comments | |
| 22a | Rating (select one) | Please rate your level of agreement with the following statement: "There was a clear chain of command between my organization and other responding agencies (e.g. PEI EMO, Provincial Departments, NGOs, etc.)" | A. Strongly disagree B. Disagree C. Neutral (skip to Q23a) D. Agree (skip to Q23a) E. Strongly agree (skip to Q23a) F. Not applicable (skip to Q23a) G. Not observed (skip to Q23a) |
| 22b | Checkbox (all that apply) | Why was the chain of command not well established during response operations? | A. Insufficient staffing B. Lack of understanding of chain of command C. Poor communication (due to power outage) D. Poor communication (breakdown in procedures) E. Other _____ |
| 22c | Open Ended | Comments | |
| 23a | Rating (select one) | "Please rate your level of agreement with the following statement: "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" | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| 23b | Open Ended | Comments | |
| 24a | Multiple Choice (select one) | Was the transition period from response activities to recovery activities clear within your service area? | A. Yes B. No C. Not applicable D. Not observed |
| 24b | Open Ended | Comments | |



| Business Continuity | | | |
|------------------------------|---------------------------------|---|--|
| 25a | Multiple Choice (select one) | Was business continuity discussed / considered within your organization during response operations? | A. Yes B. No C. Not applicable D. Not observed |
| 25b | Open Ended | Comments | |
| 26a | Rating (select one) | Please rate your agreement with the following statement: "I felt that my service area had sufficient resources and / or equipment to maintain regular day-to-day operations throughout the situation." | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| 26b | Open Ended | Comments | |
| Decision Making Tools | | | |
| 27a | Rating (select one) | Please rate your agreement with the following statement: "The use of daily situation reporting, and conference calls was an effective communication tool in supporting the management and dissemination of information" | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| 27b | Open Ended | Comments | |
| 28a | Rating (select one) | Please rate your agreement with the following statement: "The technology and applications (e.g., WebPEOC) used to support response operations were sufficient". | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| 28b | Open Ended | Comments | |



| | | | |
|-------------------|---------------------------|---|--|
| 29a | Checkbox (all that apply) | What additional technology / applications / tools would have better supported your response activities? | <p>A. PEOC common operating picture capability</p> <p>B. Social Media management tools</p> <p>C. Electronic emergency response procedures</p> <p>D. Additional computing power</p> <p>E. Computer-based ICS forms</p> <p>F. Computer-based documentation capability</p> <p>G. Other: _____</p> |
| Conclusion | | | |
| 30a | Open Ended (comment box) | What did you consider to be the most successful aspect(s) of the response and / or early recovery to post tropical storm Dorian? | |
| 31a | Open Ended (comment box) | What did you consider to be the least successful aspect(s) of the response and / or early recovery to post tropical storm Dorian? | |
| 32a | Open Ended (comment box) | Please provide any additional comments. | |



B.2 PUBLIC SURVEY

Table 14: Public Survey

| No. | Type | Questions | Answer |
|-------------------|---------------------------------|---|---|
| Background | | | |
| 1a | Multiple Choice (select one) | Which region were you located in when Post Tropical Storm arrived in PEI? | A. Charlottetown B. Queens County (other than Charlottetown) C. Prince County D. Kings County |
| 2a | Multiple Choice (select one) | How did you first learn that Post-Tropical Storm Dorian could have a possible impact to the Province? | A. Weather forecast (Environment Canada, Weather Network, etc.) B. Social Media (Facebook, Twitter, Instagram) C. News outlet (local or national) D. Media release from PEI EMO E. Weather conditions F. Conversations with others (phone, in person) G. Other: _____ |
| 2b | Open Ended | Comments | |
| 3a | Multiple Choice (select one) | Once notified, did you know what to do and how to prepare for the arrival of the storm? | A. Yes B. No C. Somewhat |
| 4a | Multiple Choice (select one) | Please rate your agreement with the following statement: "Overall, there were sufficient resources available to carry out ICS functions effectively". | A. Yes B. No (skip to Q5) |



| | | | |
|------------------------------------|----------------------------------|---|---|
| 4b | Multiple Choice (select one) | How long were you without power? | A. Less than 12 hours B. 12 – 24 hours C. 24 – 48 hours D. 48 – 72 hours E. Greater than 72 hours |
| Event Updates and Messaging | | | |
| 5a | Multiple Choice (select one) | Did you know who to contact for assistance or for more information on the storm? | A. Yes B. No C. Not sure |
| 6a | Multiple Choice (select one) | In your opinion, were information updates issued by the Province provided in a regular and timely manner (i.e., did you feel like you were well informed on the situation)? | A. Yes B. No |
| 7a | Checkbox (select all that apply) | What information source did you rely on the most to obtain information updates once the storm had passed? A. When you had power? B. When you did not have power? | A. Weather forecast (Environment Canada, Weather Network, etc.) B. Social Media (Facebook, Twitter, Instagram) C. News outlet (local or national) D. Media release from PEI EMO E. Weather conditions F. Maritime Electric G. Conversations with others (phone, in person) H. Other: _____ |
| 7b | Open Ended | Comments | |
| 8a | Multiple Choice (select one) | In your opinion, was the messaging provided by the Province accurate and consistent with what you | A. Yes B. No (please explain) |



| | | | |
|---------------------|---------------------------------|---|--|
| | | experienced? | |
| 8b | Open Ended | Comments | |
| 9a | Rating (select one) | <p>Please rate your agreement with the following statements related to public messaging:</p> <ul style="list-style-type: none"> A. I felt well informed on how long the power outage would last in my area. B. I felt that I had good awareness of the extent of property damage and debris in my area. C. I was aware of all or most of the road closures that affected travel in my area. D. I knew which reception centres were open and receiving residents in my area. E. I was very aware of all available social support services that were accessible to me in my area (e.g., reception centres, community support centres, etc.). F. I was aware of what financial support services, including insurance coverage, applied to me G. I knew which health agencies were providing services in my area (including mental health support) | <ul style="list-style-type: none"> A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| Storm Impact | | | |
| 10a | Multiple Choice (select one) | Did you have to leave your home due to the impacts from the storm (e.g., prolonged power outage, property damage, medical issues, etc.,)? | <ul style="list-style-type: none"> A. Yes B. No (skip to Q12) |
| 11a | Multiple Choice (select one) | When you made the decision to leave your home, did you know where to go and what services would be available? | <ul style="list-style-type: none"> A. Yes B. No |



| | | | |
|-----|---------------------------------|---|--|
| 12a | Multiple Choice (select one) | Did you go to a Reception Centre? | A. Yes B. No (skip to Q14) |
| 13a | Rating (select one) | Please rate your agreement with the following statements related to reception centres: A. The centre was adequately staffed with knowledgeable personnel. B. The centre provided all the services that I needed. C. Current and frequent information updates were available. | A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree F. Not applicable G. Not observed |
| 14a | Multiple Choice (select one) | Overall, I felt confident in the ability of the Province and supporting agencies to effectively respond and recovery to the Tropical Storm Dorian. | A. Yes B. No C. Other (please explain) |
| 15a | Multiple Choice (select one) | The Province and supporting agencies conducted a well-coordinated, efficient, and effective response to Post Tropical Storm Dorian. | A. Yes B. No C. Other (please explain) |
| 15b | Open Ended | Comments | |
| 16a | Multiple Choice (select one) | 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? | A. Yes B. No C. Other (please explain) |
| 16b | Open Ended | Comments | |
| 17a | Open Ended | Please provide any additional comments or feedback that you may have regarding the response to post-tropical storm Dorian | |