Emergency Solutions International

Evidence-Based Examination & Analysis of Incident Command Structures in Operations Centres

CSSP-2019-TI-2436

Deliverables 1-5

14 May 2021

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Document Control

The contents of this document are effective as of the latest date in the Revision History table below.

Revision History, Authorization, and Acceptance

Date	Role/Meeting/ Change	Version	Name(s)	Approval Signature
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Executive Summary

Project Preamble

As part of an ongoing philosophy surrounding continuous improvement, Public Safety Canada (PSC) regularly analyzes the effectiveness of its Government Operations Centre (GOC, 2020). The GOC, as never before, is proving to be a key hub for critical event information sharing and coordination of Federal response to events of national significance, oftentimes for simultaneous events. Responding to requests from a number of leaders from Emergency Operations Centres (EOCs)/Emergency Coordination Centres (ECC) or "Emergency Centres," interdependent with the GOC, PSC partnered with Defence Research and Development Canada (DRDC) Centre for Security Science (CSS) Canadian Safety and Security Program (CSSP) to begin an analysis of Emergency Centres interoperability and the use of the Incident Command System (ICS) principles, positions, and structure.

The high-level objectives of the *Evidence-based Examination and Analysis of Incident Command Structures in Operations Centres Project* (henceforth referred to as the "the Project") were to:

1. Evaluate concerns by Emergency Centre leaders about perceived inefficiencies in Formal Communication between organizations, and that organizational structure and operating principles may be ineffective or incongruent;
2. Survey, compare, and analyze the Emergency Management (EM) organizational structures, processes, and procedures implemented by Federal, Provincial, Territorial, Municipal, First Nations, and select private sector Emergency Operations Centres (EOC)/Emergency Coordination Centres (ECC);
3. Survey, compare, and analyze EM organizations against an Incident Command System (ICS) baseline to support improved coordination in a Whole of Government (WoG) response to all hazard events; and
4. Support the development of a "Community of Practice" (CoP) and common training standards through an Emergency Management environmental scan.

The Project was executed through a collaborative partnership between PSC, DRDC CSS, Public Service and Procurement Canada (PSPC), Calian Group Ltd., and Emergency Solutions International (ESI). This project has been managed through DRDC CSS in accordance with the Canadian Safety and Security Program (CSSP); it is well aligned with CSSP's mission to strengthen Canada's ability to prepare for, respond to, and recover from natural disasters or human-caused events. Incident Command structures are a key component to supporting emergency management response organizations in meeting these outcomes.

Background

The *Evidence-based Examination and Analysis of Incident Command Structures in Operations Centres Project* approach included key activities such as: a comprehensive documentation review; a series of interviews and information gathering sessions; a comparative analysis of various Incident Command structures and Emergency Centre practices; and a gap/deficiencies analysis.

Throughout the Project, over fifty (50) Emergency Centre leaders were engaged, from all levels of federal, provincial, First Nations, critical infrastructure, and municipal departments, as well as ICS Canada representatives. These leaders were interviewed and/or provided written responses to a standardized questionnaire used for information gathering. Key insights from the information gathering process indicated an overall theme between leaders: a broad-based enthusiasm for the Project, its objectives, and a desire to commit long-term resources in the future to improve interoperability amongst Canada's Emergency Centres. Further, the majority of leaders interviewed and surveyed expressed thanks to Public Safety Canada (former) Director, Karen Foss and her team, for leading the effort to solicit their engagement, involvement, and direct feedback on the current state and desired future vision of Emergency Centre operation.

> There is often difficulty envisioning how ICS can work to manage an incident at the territorial/provincial/community level when much of the material/training is focused on the site management of an incident. You really need to become part of the process to understand how it can be effective.
>
> - Northwest Territories Public Safety

In the absence of an overarching, standardized, nationally adopted approach to Emergency Management for Emergency Centres, response organizations across Canada, including at the Federal Level, are often utilizing a hybrid of the Incident Command System (ICS) Canada structures and principles.

It is recognized that the lack of a systemic approach has resulted in variances and perhaps divergence of practice, across and within jurisdictions, which may result in challenges regarding the national adoption of a 'cookie-cutter' set of Emergency Centre principles and organizational structure.

The Environmental Scan resulted in a number of key findings. First, it was evident that oftentimes personnel training to become members of their Emergency Centre team are surprised at how little or tangential the curricula of ICS 100-400 and the position-specific courses are to their roles. ICS Canada has noted that the curriculum was indeed created for roles within the Incident Command Post and down, not the Emergency Centre and up, but it is evident that a significant portion of the leaders interviewed are indeed applying the "fourteen principles" taught in the ICS curricula within the management of their Emergency Centres, as well as adopting aspects of the standardized ICS organizational structure. In other instances, a hybrid model is applied to accomplish principles such as maintaining Span of Control and Unity of Command. As it relates to the naming conventions of the EOCs or ECCs themselves, most interviewees have a sound rationale for their choice. Some

organizations choose one model, or the alternative based upon the risk scenarios that are unfolding within their community, while for others it is set out in regulation.

It is also recognized that a large portion of the participants in the study suggested that interoperability of independently effective systems is hindered by a lack of trust that non accredited personnel from other jurisdictions have the capabilities and competencies required to assist in managing an incident outside of their home-jurisdiction. Therefore, although flexibility may be required in the chosen model, the Emergency Centre training standard must be competency-based.

Key Findings

> **Problem Statement.**
>
> Major disasters are extreme events that effect communities across Canada, having social, economic, and personal well-being impacts. Typically, major events exceed the capabilities of different levels of government and a Whole of Government (WoG) response and coordination is required. Emergency Centres are key to coordinating the WoG response; however, comparing current emergency management organizational structures, processes and procedures against an incident command system (ICS) baseline reveals opportunities for improving efficacy and efficiency.
>
> - Evidence-based Examination and Analysis of Incident Command Structures in Operations Centres Project Team

Although the respondents had diverse levels of experience and risk scenarios, the range of responses and identified areas of refinement regarding standardization of these practices was surprisingly narrow. Leaders, particularly those from Emergency Centres who are activated frequently, for long durations, and/or involving complex events were passionate about the strategic standardization of training and technology to aid in creating a national Common Operating Picture (COP), as well as streamlined formal briefings or communication between organizations. Commonly highlighted responses indicated a need for a national leadership organization that is charged with continuous improvement for Emergency Centre Management. These leaders were less concerned with the specificity of doctrinal adherence, or that each Emergency Centre had to comply with strict terminology and organizational structure for example, but that interoperability could be set through a strategic approach, by defining a range of options which would be studied, trained to, and adopted through a national Community of Practice.

The interviews and questionnaires became a medium, or 'pressure relief valve' for organizations to clear the air officially, and share their practices, worries, and vision. According to those surveyed, at a high level, there is a lack of standardization or pan-Canadian guidance. The following five areas of refinement working toward a standardized model and training were offered:

1. Training/mentoring of personnel to core competencies and, of particular importance, establishing confidence in their knowledge, skills, and abilities;
2. Options for an Emergency Centre organizational structure that is flexible and interoperable with identified interdependent organizations;
3. Communication/liaison between Emergency Centres (Position and technology based);
4. Establishing an Emergency Centre Core Capability to be used as a benchmark for performance; and
5. A methodology for assessing and measuring the effectiveness and efficiency of Emergency Centres.

Standardized Model and Training

Generally, the participants were willing to adopt a collaborative tone in moving forward toward a strategic and standardized approach for the envisioned Emergency Centre capability. It was made abundantly clear that this work is a priority for them as leaders of their respective organizations. It was obvious as well, that they are passionate in their belief that standardization is essential to ensuring the effectiveness of their organizations and the collective community of practice.

> “There is currently no clear Canadian direction or standardization regarding EOC set up or titles and as such, no training to overcome these deficiencies.
>
> - Saskatoon EMO
>
> ”

It was identified that the desired curriculum, and the definition of core competencies, should allow for the delivery to differ, or be added to, to reflect that there may be cultural, regional, and/or risk scenario specificity. Similarly, there is the desire for the capability (within whatever model of options are adopted) to be able to have personnel trained to roles and develop competencies that can allow them to move between Emergency Centres. Thus, the measure of interoperability would be the ability of personnel to assist from one Emergency Centre to another, not solely communication effectiveness.

Technology as a Medium for Interoperability

Beyond the areas of standardization above, it was found that across Canada there is a varying degree of use of and adoption of technology to assist in Situational Awareness (SA) and a Common Operating Picture (COP). It was cited that the use of technology to assist those persons managing Emergency Centres in operating in a more standardized manner, or being more interoperable, was desired. The Canadian Nuclear Safety Commission (CNSC) for example, currently operates a COP platform and, while not complex, it effectively aids in ensuring that the numerous interdependent Emergency Centres, in a nuclear event, are sharing critical information in real-time. Participants cited the

administration of the Canadian Public Safety Operations Organization (CanOps, see Definitions) Multi-Agency Situational Awareness System (MASAS), as an example of the operationalization of a situational awareness technology. Further, the United States Federal Emergency Management Agency (FEMA) is reviewing "Unified Coordination" through the fusion of a wide range of technologies and data, to link their ICS-based Emergency Operation Centres.

Path Forward

The anticipated Project process (beginning in 2019), had to be altered by the emergence of the Global Pandemic, and resulted in not all Parties of Interest being consulted adequately. This said, given the large sample of interviews held and narrow range of the interview outcomes summarized above, there is an opportunity for a subsequent project to maintain the positive momentum and:

1. Allow all originally identified participants to contribute, and
2. Begin consultation with interested stakeholders to set up a Governance structure that would engage leader organizations identified in this document to provide tangible next steps to:
    - I. Define and form a Canadian Emergency Management Community of Practice
    - II. Establish a National Leadership Body,
    - III. Set initial guidelines and principles for the Community of Practice, based on input of participants, and
    - IV. Define notional requirements for technology to enhance information sharing, shared Situational Awareness (SA), and a Common Operating Picture (COP).

> "There should be a standardized Canadian Curriculum."
>
> - NRCan

1 Introduction

1.1 Background

Natural disasters, such as floods and wildfires, are increasing the need for improved Whole of Government (WoG) coordination as well as increasing demands for Federal support for standardization (PSC, Emergency Management Strategy for Canada, 2019). Public Safety Canada's Government Operations Centre (GOC) provides an all-hazards integrated federal emergency response to events (potential or actual, natural or human-induced, accidental or intentional) of national interest. Through effective 24/7 monitoring and reporting, national-level situational awareness, warning products and integrated risk assessments, as well as national-level planning, a Whole of Government response management is achieved. During periods of heightened response, the GOC is augmented by staff from other government departments/agencies and non-governmental organizations who physically work in the GOC or connect to it virtually"[1]. Key stakeholders in this project are represented through the Federal Operational Collaboration Working Group (FOCWG), which is responsible for enabling collaboration and the development of best practices amongst all federal Emergency Centres, and the GOC Modernization initiative, endorsed by a 20-member multi-departmental Deputy Minister committee, focused on developing and implementing a joint federal approach to Emergency Management training and capacity development, and building an integrated, effective and measurable approach to federal preparedness, response and recovery when events of national significance occur.

This project is well aligned to the Canadian Safety and Security Program's (CSSP's) mission to strengthen Canada's ability to prepare for, respond to, and recover from natural disasters as incident command structures are key in meeting these outcomes.

It is clear that through this project, the ultimate objective would be the definition of the genuine interoperability and/or standardization challenges or challenges that exist. Ideally, in the fullness of time, analysis of capability gaps as it relates to Emergency Centre interoperability would become a regular part of a continuous improvement cyclical and regimen between respective emergency management partners to ensure effective operations.

[1] Source Public Safety Canada assessed September 2019 https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/rspndngmrgnc-vnts/gvrnmnt-prtns-cntr-en.aspx

1.1.1 COVID-19

The onset of the Project, at a macro-level, a number of serious emergency incidents began to unfold, including the management of Canadian interests in relation to the shooting down of a Ukrainian passenger plane over Iran, and emerging evidence of threats associated with the COVID-19 infectious disease in China as early as December 2019. The Government Operations Centre, Ministries, Provinces and Territories were already activated and had been running at a high cadence for a number or weeks when Project activities such as interviews and information gathering were scheduled to commence. This presented a direct project impediment, as it was clear that by March there was going to be a limited opportunity to interview Regional Public Safety Canada Representatives, and Provincial/Territorial Leaders.

> "From my perspective, using ICS has allowed us to respond to the COVID-19 incident and implement public health orders very quickly and effectively."
>
> - Northwest Territories Public Safety

However, the execution of the Project in the context of the COVID-19 pandemic, is relevant to highlight for the purposes of this deliverable. The impact of the COVID-19 pandemic on the Project was threefold in terms of its impact on project activities and unexpected outcomes and insights gathered from analyzing interoperability between Emergency Centres across Canada.

The first unexpected outcome of the COVID-19 pandemic, which is beyond most exercise design parameters in relation to complexity, duration and requirement for interoperability – presented a tremendous opportunity in relation to the Project objectives, to examine interoperability, identify coordination deficiencies of the highest order, inform the GOC Exercise and Continuous Improvement Program, and re-energize a National Lessons Learned repository. The overall impediment of the COVID-19 pandemic enabled an unexpected outcome, which included tangential scenario-specific analysis of interoperability in a pandemic scenario. It is however recommended that following recovery, a more thorough analysis should be performed as this was outside of project scope.

Secondly, it was noted that as the participants were interviewed, capabilities such as virtual Emergency Centres, which had often times not been developed fully, were now being prioritized, developed, and operationalized in some jurisdictions.

Lastly, as a result of the nationwide, prolonged activations of Emergency Centres caused by the COVID-19 pandemic, participants demonstrated a heightened awareness and interest in learning how they interact with and respond with others.

Canada is at a critical inflection point, and uniquely positioned to advance the development of present an inter-agency Canadian Emergency Management Community of Practice that is guided by shared principles, standards, and practices. The chosen training standards must be presented in a non-threatening/non-intimidating way, that demonstrate how the system brings order to chaos, through clearly defined lanes with associated roles and responsibilities.

1.2 Purpose

Project Objectives

The purpose of the Project was to survey, compare/benchmark, and analyze the emergency management (EM) organizational structures, processes, and procedures implemented by federal, provincial, territorial, municipal and select private sector Emergency Centres, against an Incident Command System (ICS) baseline. This comparative analysis will support improved coordination in a Whole of Government (WoG) response to all hazard events. Lastly, the EM environmental scan will support the development of a participant-recommended community of practice and common training standards.

The interviews and questionnaires became a medium, or 'pressure relief valve' for organizations to clear the air officially, and share their practices, worries, and vision.

Final Deliverables

The purpose of this report is to provide a permanent record and summary of the observations, discussions, opportunities, and a Problem Statement evolving from the survey and environmental scan. The report provides Public Safety Canada with a record of the findings, insights, and proposed next steps.

The report will serve to discuss the successful accomplishment of the five (5) deliverables of the Project:

1. Report on key issues outlined during this investigatory phase;
2. Report on an investigation into which municipal, provincial and federal Emergency Centres were included as test points in the study;
3. Report detailing deficiencies in coordination as a result of various incident command structures and Emergency Centre practices for each of the test subject Emergency Centres. The report shall include recommendations to mitigate deficiencies, primarily using best practices from across the Emergency Management (EM) community;
4. Report on best practices for skills development and retention; and,
5. Documenting an Action Plan for EM stakeholders to optimize interagency coordination in response to all-hazard events, based on common standards and best practices.

Lastly, the intent of this report is to highlight and document the novel and unique considerations and methods as a result of the COVID-19 pandemic.

1.3 Scope

The scope of the analysis is limited to an environmental scan of Emergency Centres within Federal/Provincial/Territorial (FPT), and First Nations organizations/communities, select municipalities, and select Private Sector organizations identified at the onset of the Project.

The scope of this report is outlined below.

- Reporting on which Federal, Provincial, Municipal, and select private sector Emergency Centres were included as test points in the study, and the rationale for those selected for inclusion in the study.
- Reporting on interviews with Federal, Provincial, Territorial, First Nations, select Municipal, and select Private Sector Emergency Centres to understand their current application of the Incident Command System (ICS) or comparable incident command structures.
- Findings from the surveying, and comparative analysis of the Emergency Management (EM) organizational structure, processes and procedures by federal, provincial, territorial, select municipal and select private sector Emergency Centres against an ICS baseline.
- Detailing deficiencies in coordination as a result of various incident command structures and Emergency Centre practices for each of the test subject Emergency Centres, including recommendations to mitigate deficiencies, and primarily using best practices from across the EM community.
- A benchmark of the current-state in Canada against the United States Federal Emergency Management Agency (FEMA) efforts to establish a more effective and standardized Emergency Centre model and training (end-state).

1.3.1 Out of Scope

As per the PSC/DRDC Project Charter, the implementation of changes to the Incident Command System (ICS) in emergency operations centres, as well as training of First Responders, Emergency Operations Centre staff, and Government Operations Centre staff are out of scope for this report and project.

2 Project Approach & Methodology

The *Evidence-based Examination and Analysis of Incident Command Structures in Operations Centres Project* approach included a documentation review, interviews and information gathering, a comparative analysis of various Incident Command structures and Emergency Centre practices, and a gap/deficiencies analysis.

2.1 Documentation Review

In order to gain an understanding of the current state of Incident Command Structures in Emergency Centres, fifty-two (52) different documents were reviewed. These documents, found at the end of the report, included reports, plans, procedures and policies related to emergency management and business continuity.

2.2 Information Gathering and Interviews

Upon completion of documentation review, a survey questionnaire was developed (see *Appendix I*).

Following introduction and approval at the Federal Operational Collaboration Working Group (FOCWG) meeting on February 22, 2020, the project questionnaire was distributed to representatives of the twenty-seven (27) identified Federal Departments.

In addition to the questionnaire, a number of representatives from organizations recognized as Emergency Management practitioners, were scheduled for face-to-face/virtual interviews. The interviewee list was developed by Public Safety Canada (PSC) in collaboration with DRDC representatives. Organizations and representatives who participated in the study either by questionnaire and/or interview are outlined in Table 1.

Table 1: **Project Questionnaire and Interview Participants**.

Participation of Federal Level departments/organizations (identified by Public Safety Canada [PSC]/Government Operations Centre (GOC) representatives), Provinces/Territories, First Nations, Municipalities, Critical Infrastructure, ICS Canada, and Other Subject Mater Experts and their participation method: interview, questionnaire, or no response (-). A total of forty (40) departments/organizations participated in the study; those that did not participate are not included in the numbering.

Participants names highlighted in **red** were unable to respond at this time but indicated that they would like to respond in the future and are open to future involvement. It is also indicated whether interviews were conducted onsite (face-to-face) or virtually for each participant. **Those denoted in bold were identified as prioritized for participation by PSC/GOC representatives.**

Study Participants	Interview	Questionnaire
Federal		
Agriculture and Agri-Food Canada (AAFC)	-	-
Canada Economic Development for Quebec Regions (CED)	-	-
1. Canada Post Corporation (CPC)	N/A	**Amy Del Bosco** – Corporate Business Continuity Planning Advisor
Canada Revenue Agency (CRA)	-	-
Canadian Air Transport Security Authority (CATSA)	-	-
2. **Canadian Armed Forces (CAF) / Department of National Defense (DND)**	**James Pentland** – (virtual)	N/A
3. **Canadian Border Services Agency (CBSA)**	**Philip Whitehorne** – Chief of Operations (face-to-face)	N/A
Canadian Broadcasting Corporation (CBC)	-	-
4. **Canadian Coast Guard (CCG)**	**Robert Justice** – Manager, Office of Incident Management (virtual)	N/A

Study Participants	Interview	Questionnaire
5. **Canadian Food Inspection Agency (CFIA)**	**Mike Johnstone** – NEOC Manager (face-to-face)	N/A
Canadian National Railway (CNR)	-	-
Canadian Nuclear Safety Commission (CNSC)	-	-
Canadian Space Agency (CSA)	-	-
Canadian Security Intelligence Service (CSIS)	-	-
Communications Security Establishment (CSE)	-	-
Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)	-	-
Defense Research and Development Canada (DRDC)	-	-
Department of Canadian Heritage (DCH)	-	-
Department of Foreign Affairs, Trade and Development (DFATD)	-	-
Department of Justice (DOJ)	-	-
Employment and Social Development Canada (ESDC)	-	-
6. **Environment and Climate Change Canada (ECCC)**	**Mathieu Dussault** – Senior Manager (virtual) **Tanya Bryant** – Director, Environmental Emergencies (virtual) **Kimberley Cameron** – Manager, Preparedness and Response (virtual)	N/A

Study Participants	Interview	Questionnaire
7. **Fisheries and Oceans Canada (DFO)**	**Gail Jermyn –** Deputy Director, Security Operations (virtual)	N/A
Global Affairs Canada (GAC)	-	-
8. **Government Operations Centre (GOC)/Public Safety Canada (PSC)**	**Lilianne Walker** – (face-to-face) **Mr. Matt Godsoe** – Director of Resilience and Economic Integration Division (REID) (virtual)	N/A
9. Health Canada (HC)	N/A	**Dominique Nsengiyumva** – Chief, Nuclear Emergency Preparedness and Response Division
10. Immigration, Refugees and Citizenship Canada (IRCC)	N/A	**Chantal Gagnon** – Manager, Operational Readiness
11. Indigenous Services Canada (ISC)	N/A	**France Roussel** – Manager **Jake Granados** – Policy and Program Officer
12. Innovation, Science and Economic Development (ISED)	N/A	**Phil Geerts** – Emergency Operations Coordinator, Spectrum Management Operations Branch
Library and Archives Canada (LAC)	-	-
National Microbiology Lab (NML)	-	-
13. **Natural Resources Canada (NRCan)**	N/A	**Denis Carriere** – Chief, Emergency Management

Study Participants	Interview	Questionnaire
Parks Canada (PC)	-	-
Privy Council Office (PCO)	-	-
Public Health Agency of Canada (PHAC)	-	-
Public Services and Procurement Canada (PSPC)	-	-
14. **Royal Canadian Mounted Police (RCMP)**	**Steven Watts** (face-to-face) **Christine Farrar** – Corporal face-to-face)	N/A
Service Canada (SC)	-	-
Shared Services Canada (SSC)	-	-
15. **Transport Canada (TC)**	**Nora Johnson** – Director, Office of Incident Management (virtual)	**Valerie Lepage** – Manager, CANUTEC Emergency Operations Centre
Treasury Board Secretariat (TBS)	-	-
Regional Public Safety		
N/A	-	-
Provincial/Territorial		
British Columbia		
Emergency Management BC	-	-
Alberta		
16. Alberta Emergency Management Agency	**Steve Carr** – Acting Executive Director Provincial Operations (virtual)	N/A

Study Participants	Interview	Questionnaire
	Bob Ford – Manager, Regional Field Operations (virtual)	
Saskatchewan		
Saskatchewan Public Safety Agency **Jeanette Krayetski** – Manager, Intelligence Services	-	-
Manitoba		
17.Manitoba EMO		**Cailin Hodder** – Response Program Manager **Mike Gagne** – Director of Preparedness and Response
Ontario		
Ontario Ministry of the Solicitor General **Nina Diaz** – Program Development Manager	-	-
Ontario EMO **Douglas Browne** – Deputy Fire Marshal of Ontario	-	-
Ontario Office of the Fire Marshal (OFM) **Jon Pegg** – Fire Marshal	-	-
Quebec		
Directorate General of Civil Security and Fire Safety	-	-
New Brunswick		
18.New Brunswick EMO, Office of the Provincial Security Advisor (OPSA)	**Andrew Easton** – Executive Director (face-to-face)	N/A
New Brunswick OFM **Michael Lewis** – NB Fire Marshal	-	-
New Brunswick Emergency Measures Organization **Greg MacCallum** – Director	-	-

Study Participants	Interview	Questionnaire
Nova Scotia		
Nova Scotia's Emergency Management Office **Jason Mew** – Director of Provincial Operations	-	-
Prince Edward Island		
19. PEI EMO	**Tanya Mullally** – Provincial Emergency Management Coordinator (virtual)	N/A
Newfoundland and Labrador		
20. Newfoundland and Labrador Emergency Services	**Mitch Rumbolt** – Director (virtual)	N/A
Yukon		
Government of Yukon	-	-
Northwest Territories		
21. Government of the Northwest Territories, Municipal and Community Affairs	N/A	**Ivan Russell** – Director, Public Safety
Nunavut		
Nunavut Emergency Management	-	-
First Nations		
22. North Shore Micmac District Council (NSMDC)	**Bianca Langille** – Emergency Management Coordinator	N/A
23. Independent First Nations Alliance (IFNA)	**Nicholas Rhone** – Emergency Operations Manager	N/A
Nishnawbe Aski Nation **Wendy Caruk** – Senior Administrative Coordinator to the Grand Chief	-	-
Municipal		
24. City of Saskatoon EMO, Emergency Coordination Center	**Pamela Goulden McLeod** – Director (virtual) **Deb Davies** – EMO Coordinator (virtual) **Dana Leidl** – Administrative	**Deb Davies** – EMO Coordinator

Study Participants	Interview	Questionnaire
	Coordinator (virtual)	
25.City of Ottawa	**Pierre Poirier** – Chief of the Ottawa Paramedic Service. (former Manager of Security and Emergency Management (face-to-face) **Melissa Lavery** – Program Manager, Office of Emergency Management (face-to-face)	N/A
26.City of Toronto	**Denise Blinn** – Emergency Management Coordinator (face-to-face)	N/A
27.Cities of Moncton/Riverview/Dieppe	**Chief Conrad Landry** – Fire Chief (virtual)	N/A
28.City of Halifax	**Erica Fleck** – Assistance Chief (virtual)	N/A
29.City of Miramichi	**Mario Berthiaume** – Deputy Fire Chief (virtual)	N/A
County of Renfrew Paramedic Service **Michael Nolan** – Chief	-	-
Calgary Emergency Management Agency **Tom Sampson** – Chief (Declined participation)	-	-
Critical Infrastructure		
30.NB Power	**Roxane McCarthy** – Emergency Planning Specialist	**Roxane McCarthy** – Emergency Planning Specialist
31.Point Lepreau Nuclear Generating Station (PLNGS)	**Nick Reicker** – Manger Regulatory Affairs & Emergency Preparedness (face-to-face)	N/A
32.Saint John Energy	**Ryan Mitchell** – Vice President (face-to-face)	N/A

Study Participants	Interview	Questionnaire
33.Port Saint John	**Jim Quinn** – CEO (face-to-face) **Captain Chris Hall** – VP and Harbourmaster (face-to-face)	N/A
34.Irving Pulp and Paper	**Greg Fergus** – Safety Manager (face-to-face)	N/A
35.Saint John Airport	**Cindy Thorn** – Director of Operations (face-to-face)	N/A
36.Canaport LNG	**Sergio Carvana** – HSSE Manager (face-to-face)	N/A
37.Mosaic Potash Esterhazy, K1, K2, and K3 Mines	**Frank Falkevitch** – Emergency Response / Security Superintendent (virtual)	N/A
Bell Canada **Richard Morrissette**	**-**	-
Rogers **Dan Kuehl** – Field Manager	**-**	-
ICS Canada		
38.ICS Canada	**Sandy McKinnon** – Coordinator (face-to-face)	N/A
39.ICS Canada	**Tanya Mullally** – Committee Member (virtual)	N/A
Other Subject Matter Experts		
40.US Federal Emergency Management Agency	**Daniel C. McElhinney** – FEMA Region 1 Federal Preparedness Coordinator (Deputy Federal Coordinating Officer [FCO- COVID-19) (virtual) **Emily Martuscello** - FEMA Region 1 Continuous Improvement Advisor (Executive Officer to the FCO COVID-19) (virtual)	N/A

2.3 Study Participation

2.3.1 Federal Participation

Of the forty-two (42) Federal Departments identified in the Public Safety Canada email circulated Wednesday, January 22, 2020, 12:20 PM (EST), ten (10) participated in the study through an interview and seven (7) submitted a questionnaire **(Table 1)**. One (1) of the seven (7) questionnaires was from a Department that was also interviewed, their response is included in the interviews. Figure 2 is based on sixteen (16) total responding departments.

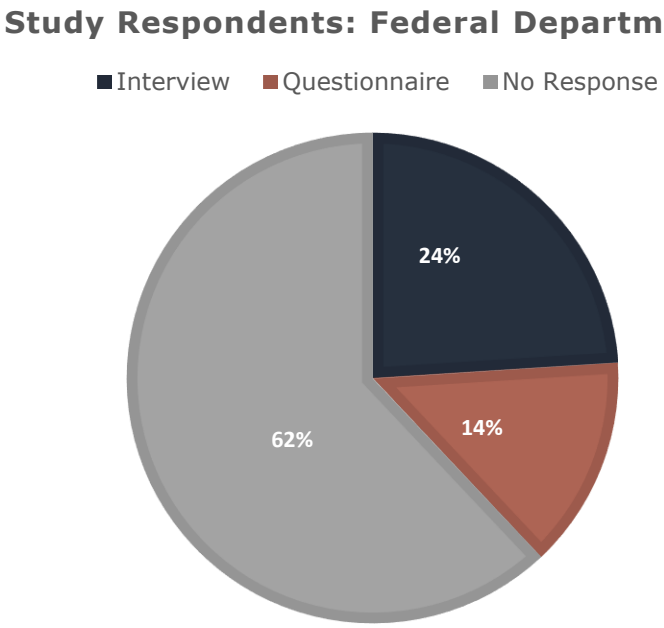


Figure 1: Federal Departments Study Respondents by interview, questionnaire, and no response.

Of the thirteen (13) Federal Departments identified in the Public Safety Canada email circulated Wednesday, January 22, 2020, 12:20 PM (EST) as being strongly desired for participation, nine (9) participated in the study through an interview and two (2) submitted a questionnaire **(Table 1, bolded Federal Participants)**. One (1) of the two (2) questionnaires was from a Department that was also interviewed, their response is included in the interviews. Figure 3 is based on ten (10) total responding departments.

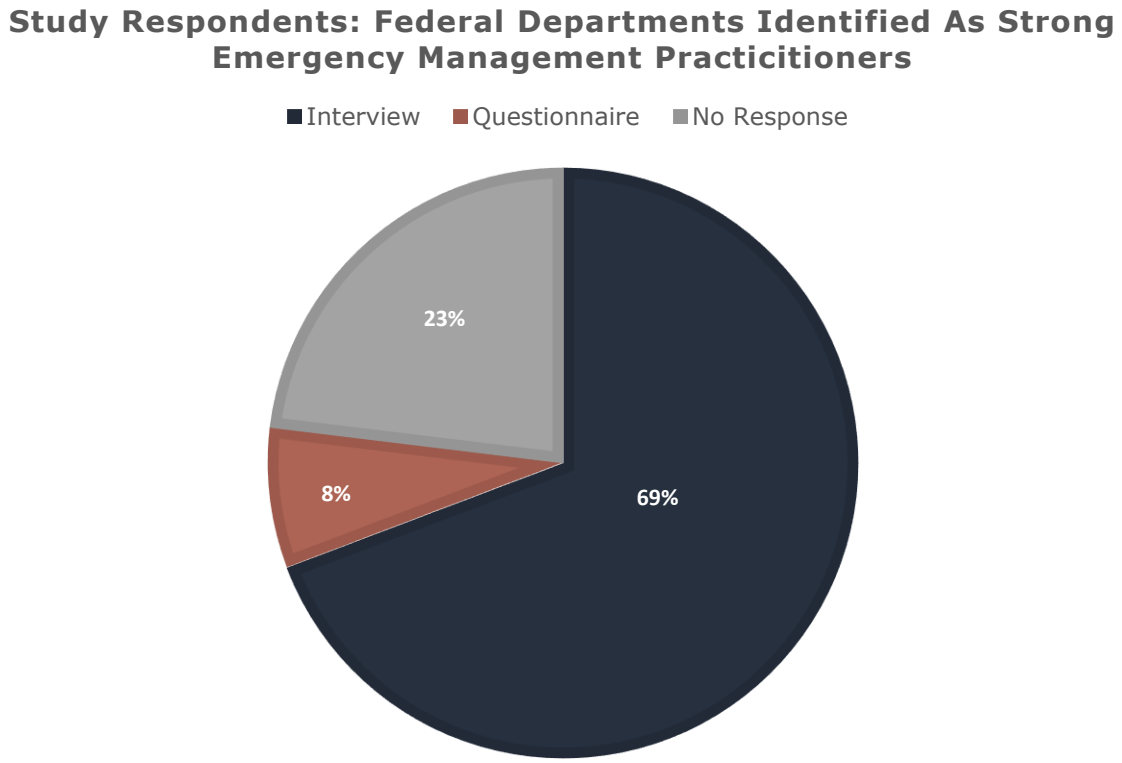


Figure 2: Prioritized Federal Departments Study Respondents by interview, questionnaire, and no response.

2.3.2 Provincial/Territorial Participation

Of the thirteen (13) Canadian Provinces and Territories, four (4) participated in the study through an interview and to (2) submitted a questionnaire **(Table 1)**.

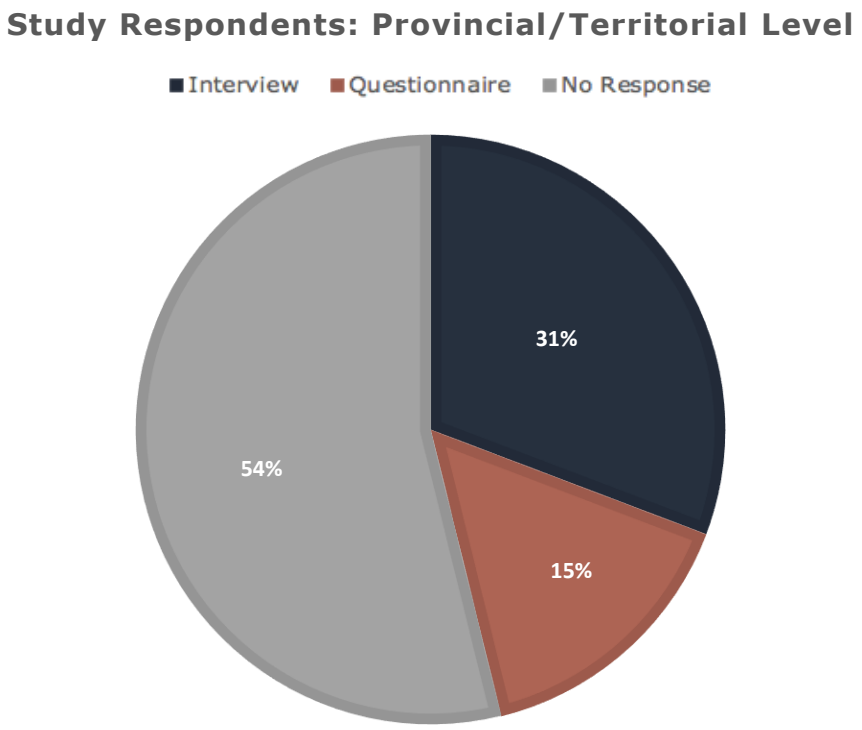


Figure 3: Provincial/Territorial Level Study Respondents by interview, questionnaire, and no response.

2.4 Representative Experiences across Canada and the United States

Across Canada, interviews went well beyond the "questionnaire" content, oftentimes doubling the time allotted to the interview, to passionately relay their "stories" of response challenges and vision for a standardized national system.

Within the interview process, there were a number of organizations and representatives who emerged as leaders in relation to the recommended refinement and standardization of a Canadian Emergency Centre model.

The following are examples of Municipal, Provincial/Territorial, Federal, First Nations, and US organizations who are:

- Passionate about prioritizing effort to change EOC interoperability;
- Take a moderate and collaborative approach to the use of ICS principles/structures; and,
- Feel strongly about the need to develop a standardized educational curriculum and mentoring process.

> "The 14 fundamental principles of ICS lead to greater and more effective collaboration and information sharing."
>
> - Saskatoon EMO

2.4.1 Halifax Regional Municipality

Within the Halifax Regional Municipality (HRM) EMO EOC, the organizational structure is task-tailored, but generally uses an Agency Control Model (see Figure 5) and Unified Command. ICS principles are used within the EOC to ensure a common lexicon of language between the Incident Command Post (ICP) and EOC (that occurs through the Operations Chief). Similarly, the ICS Forms are also used within both the ICP and the EOC to enable congruity. However, the ICS structure was found to not be useful within the EOC during COVID-19 due to the requirement for high level decision-making, resulting in the formation of the COVID-19 Task Force Working Group with representatives from various Business Units.

Departments of Transportation, Recreation, Parks, and Water have a Liaison within the HRM EMO EOC that provides "Formal Communication" back to their own organizational EOCs. Interoperability is practiced through regular exercises with the Port of Halifax and Halifax Stanfield International Airport, who also receive a daily Sit Rep from HRM EMO. Sit Reps from HRM EMO also go to the GOC, via the Provincial Coordination Centre (PCC). However, HRM EMO does not generally receive incoming information from the GOC/Federal Level. HRM representatives would prefer to liaise directly with Regional PSC Representatives to pass on and receive information, to enhance situational awareness and facilitate a common operating picture.

As there is no provincial EOC course in Nova Scotia, personnel within the HRM EMO EOC are required to have ICS training, to a minimum of I-100, Introduction to ICS. Incident Commanders must have a minimum of I-300 (Intermediate ICS, ICS for Expanding Incidents), and external agencies are recommended to certify through I-402 (ICS for Executives), to remind other agencies of their role and to establish a battle rhythm/ operational cycle for when they can expect updates.

2.4.2 City of Saskatoon

Leaders Pamela Goulden-McLeod, Deb Davies, and Dana Leidl, from Saskatoon EMO recognize that the ICS curriculum was designed for the tactical, Incident Command Post level. Across the country, there is a need for an all hazard, community-point-of-view curriculum/framework, with not such a heavy focus on fire/police. ECCs are activated for incidents beyond fire/police emergencies. A standardized, nationwide Event Management curriculum that allows students to see and "feel'" themselves in the scenarios is needed. Although designed with 1970s fire incidents in mind, ICS could be morphed and expanded upon to include a broader span of events and sample activities.

Saskatoon would be interested in being a leader in assisting with a national effort and a trial audience for a chosen curriculum, should there be a follow-on project.

> "Acceptance and the adoption of EOC principles developed at the federal level will likely to result in more buy in from agency administrations. [The] Canadian curriculum [should provide clear direction for personnel assigned to specific roles with clear expectations of those roles."
>
> - Saskatoon EMO

2.4.3 City of Toronto

The City of Toronto leverages a structure that combines the Incident Support Model (Figures 13 and 14) and ICS positions (Figure 16). Under the Authority of the EOC Director, communication is coordinated through positions, including the Deputy, Health and Safety, Situational Awareness, Planning, and Logistics. Operational positions/functions like Human Resources, EOC Support, Victim Services, and Science are added based upon the risk scenario. There is concern in Toronto that without a standardized curriculum, mentoring, core competencies, and centralized national leadership, staffing at all levels will be an increasing challenge.

Figure 4: Denise Blinn of the City of Toronto.

2.4.4 Province of Prince Edward Island

The Province of Prince Edward Island (PEI) EMO applies ICS principles and features when responding at incident sites. For this reason, they have overlaid ICS principles and features with Emergency Management principles within their Provincial EOC. The EOC operates under an ICS-like model, to align communications with the incident site (i.e., Planning ICP to Planning EOC). Within the EOC, PEI has chosen not to use the terms Planning "Chief" or Incident "Commander," and use the title EOC Manager. (The PEI EMO EOC Positional Checklists can be found within Appendix III.) For a long time, PEI and PSC held a joint EOC, but in July 2020, PSC moved to a smaller office space, resulting in the PEI EOC no longer being a Federal Coordination Centre.

Every morning at 0900h a Situational Report (Sit Rep) is received directly from the GOC (not through the Regional PSC Representative) but to the PEI EMO email address, listing events going on in the world. When jurisdictions have something significant to report, the GOC distributes "updates." Although there are 5 individuals that receive the PEI EMO emails, the 24/7 Duty Officer is the only one who actions anything that comes through the EMO email address, re-directing the task/information to the appropriate position, i.e., Planning, Operations, Logistics etc. Since Planning is the information conduit responsible for creating the PEI EMO Situational Report (distributed daily), they generally must be the most informed on the incoming Sit Rep from the GOC.

In comparison to the Province of New Brunswick, where the GOC is included in the Province's Sit Rep Distribution list, PEI submits their daily Sit Rep to their Regional PSC Representative. There is a feeling of doubt at the Provincial level on whether all of the information passed through the Regional PSC Representatives is forwarded to the GOC. PEI views the GOC as a single window approach for situational awareness. National normalization of procedures of the Chain of Command for ICS "Formal Communication" between Provinces/Territories, Regional PSC Representatives, and the GOC is recommended.

Based on risk scenarios, Federal organizations, not represented within the PEI EMO EOC, that are liaised with include, but are not limited to: Environment and Climate Change Canada, Parks Canada, RCMP, Transport Canada (ad hoc, situationally dependent). Within the PEI EMO EOC organizational structure, these Federal Representatives may fall under Planning as Technical Specialists, or they may form Unified Command depending on the incident (oil spill, Confederation Bridge collapse). Municipally, Charlottetown/ Summerside (or any other of the 63 Municipal EOCs) report into Operations at the Provincial EOC.

2.4.4.1 PEI Educational Requirements

Standard requirements PEI EMO prioritizes when selecting personnel for the EOC include: 1. Someone with Emergency Management experience (not necessarily emergency services personnel), and 2. An adaptable personality/skill set and big-picture thinking. The Basic Emergency Management Course, EOC Management Course (PEI Curriculum), and ICS to the I-300 level are required for EOC personnel. The Myers-Briggs Type Indicator has been used in Team Development to better understand the qualities and strengths of each individual forming the EOC Team.

2.4.5 Province of Alberta

There are concerns among Alberta leaders, given the seemingly contracting Emergency Management (EM) ecosystem in Canada. As a result of the closure of the EM College and the lack of funding for accreditation bodies such as ICS Canada, paired with the absence of an overarching, standardized, nationally adopted approach to Emergency Management, Alberta Emergency Management Agency (AEMA) has adopted the United States Department of Homeland Security Federal Emergency Management Agency (FEMA) National Incident Management System (NIMS) 2017 as the guidepost/baseline for their Emergency Management structure. AEMA is tailoring FEMA NIMS 2017 to create an Alberta doctrine,

called the Alberta Incident Management System, or "AIMS." AEMA leaders stated that they chose to use FEMA NIMS as their baseline because it was developed by an organization that has a large number of resources dedicated to continuous improvement, resulting in it being a refined model. Interviews with US Representatives by the project team confirm that there is ongoing continuous improvement and that the COVID-19 will result in a number of refinements (see *Section 2.3.9*).

AEMA values training and certification, and in the formation of their Regional Incident Management Teams (IMTs), members must undergo a week-long certification process, including 5 days in real time exercise simulations of an Incident Command Post (ICP). AEMA also supports and appreciates the Incident Command System (ICS) Canada curriculum and the gaps in EM that it has highlighted and attempted to fill, adopting and adapting pieces from it to fit their response needs. Post-incident assessments on the Alberta wildfires have heavily influenced the AEMA EOC/ECC/ICP Best Practices documentation.

Although AEMA uses the term "Incident Command Post" (defined by ICS Canada as "the field location at which the primary tactical-level, on scene Incident Command functions are performed") they recognize the flexibility in the curriculum as a guideline, and do not let it restrict their use of the term, as their ICP in the case of a wildfire, may be 30-40km away from the incident, and not actually 'on scene.' In charting a path forward, there is an opportunity to expand on curricula that exist rather than trying to make the tactical ICS curriculum fit a nationalized, standardized EOC/ECC curriculum.

AEMA utilizes the term ECC rather than EOC and is analyzing the use of "Emergency" vs. "Event," as it is not always an emergency that is being responded to by the ECC (i.e., Commonwealth Games). In the AIMS doctrine, AEMA will require municipalities to use the ICS structure at the ICP but will permit their choice of FEMA NIMS 2017 structures (Figures 3, 4, and 5) within their Emergency Centres.

AEMA values cross-jurisdictional and cross-Provincial/Territorial support, both in the form of training and mentoring as well as incident response assistance. This is demonstrated through their good working relationship with British Columbia and Manitoba, as well as one of the Regional Incident Management Teams (IMTs), in Lloydminster that straddles the provincial border between Alberta and Saskatchewan. Unfortunately, cross border relationships are not often enabled, largely due to financial restrictions. It is believed that a nationally funded Pan Canadian Operational Committee of Emergency Management practitioners (such as the Can Task Force Network), supported by a standardized national doctrine would help to fill this gap.

As it relates to Alberta, the linkage between municipal EOC/ECC/ICPs to the Provincial ECC is generally achieved through the twelve (12) Regional Field Officers. ISC, DND, PSC, and sometimes Health Canada are Federal Representatives that all sit in the Provincial ECC (PECC) at various times, but it is felt that they don't generally bring a lot of resources to the table unless a Request for Assistance (RFA) is made. There is not always a Regional PSC representative when the Provincial ECC is activated: at Level 1 (Routine Ops) and Level 2 incidents, generally a PSC representative is not present, but for Level 3 and 4 (highest level incident) they would be present. The Alberta PECC does not report directly to the GOC, they report through their Regional PSC representative. A means in which situational

awareness and a common operating picture between the PECC and the GOC could be enhanced is through the use of technology, specifically, Disaster LAN (DLAN). PSC Reps have access to Alberta's DLAN (ABDLAN). Within ABDLAN the PSC Reps would primarily be actioning a ticket sent to them, i.e., a request for information or support, or viewing ArcGIS information or an IAP that is posted.

The PSC Critical Infrastructure Assessment Team (CIAT) is viewed as a strength of PSC by AEMA. The Provincial Critical Infrastructure (CI) personnel were connected directly to the Federal/PSC CI representatives via the Provincial Planning Section (50% Planner, 50% CI). Liaison also occurs through the Critical Infrastructure Gateway, an online portal for CI stakeholders to share information with each other, and an example of a technology with the ability to support a common operating picture nationwide, specific to CI.

In 2021 it is a priority of AEMA to further refine their interoperability between their existing ICP and EOC. It is their intention to standardize a hybrid approach where the tactical ICP is expanded vertically and functional ICS positions would be staffed in what was previously an EOC/ECC. Alberta believes that there is merit to supporting incident objectives operationalized tactically by having General Staff positions like Planning, Logistics, and Finance physically staffed away from the ICP. Command and Operations Chief positions would report up to the "Situational Awareness Chief" (NIMS 2017) when an ECC is staffed to support the ICP. This proposed model is found by the authors to be very progressive and would likely solve a number of the problems identified in the vertical communication linkage from the tactical level up to an Emergency Coordination Centre rather than an Emergency Operations Centre.

Remarkably, across the country from Alberta, in Moncton, New Brunswick the same philosophy is being adopted, following a number of challenging incidents over the past few years. In Moncton, New Brunswick, there is currently an adopted practice which represents an astute delineation between the terms EOC and ECC. Moncton uses both terms and delineates their usage based upon the risk scenario that is emerging. When there is a tactical Incident Command Post, the supporting Emergency Centre is an Emergency Coordination Centre. (As is the case in TC legislation for airports.) Further, in Moncton when there is an incident, i.e., "Syrian Refugee Crisis (housing)" that is being led by the Emergency Centre (no ICP), it is deemed an Emergency Operations Centre.

To create national change and spread the best practices, SOREM and the Canadian Council of Emergency Management Organization (CCEMO) continue to be identified as two avenues for information sharing, if used as designed. Empowering ICS Canada (resource-wise and financially) or creating a 'Pan Canadian Operational Committee' were also thought to be conceivable pathways to a nationalized EOC/ECC curriculum.

2.4.6 Northwest Territories

Three years ago, the Northwest Territories (NWT) embarked upon integrating the Incident Command System as the operating system for their Territorial EOC. Their ideal level of training is I-300 for all staff and Positional training for all General Staff (Operations,

Planning, Logistics, and Finance). Throughout the complexities and duration of the COVID-19 response, filling positions with qualified individuals has become increasingly difficult. Training and the maintenance of trained staff is the "main issue" facing NWT Leadership.

Positive relationships exist with the Department of Environment and Natural Resources (DENR) and the Canadian Armed Forces (CAF). The DENR assists with staffing where necessary, and together with CAF supports NWT training and exercising, i.e., Operation Nanook, coordinated by Joint Task Force North (JTFN). In NWT, the Department of Health and Social Services does not use ICS to manage emergencies, at this time. This has been a challenge throughout the COVID-19 incident. One of main reasons that the leadership of the NWT believes there should be a standardized Canadian curriculum for Emergency Centres is that it would promote interoperability in the context of staffing "… a small jurisdiction that may call upon another jurisdiction for staff and other response support."

2.4.7 Transport Canada

2.4.7.1 Structure

Transport Canada (TC) leverages an ICS-like structure and the naming convention of Emergency Operations Centre or Emergency Coordination Centre, like other study participants, is dependent upon the response and if they are activated operationally or not. Generally, at the Regional level, "EOC" is used, while at the National level, where TC is coordinating a national response, "ECC" is utilized. The TC organizational chart is also 'fluid' in nature, as they apply the ICS principle of a "Modular Organization" structure that is built as required, by the risk scenario being responded to.

> "Principles of ICS can be applied to EOC with some refinements to implementation."
>
> - Transport Canada

2.4.7.2 Training

Training of personnel who may fill response roles is fundamental to TC. Currently, the Justice Institute of British Columbia's "EOC Essentials 101" is required for all Emergency Centre roles. Additionally, the Operations Section, Planning Section, and Logistics Section Chiefs are required to have position-specific training (EOC Level 3). A secondary result of this training is that the TC Executive remain in their lane, and their correspondence with the Emergency Centre occurs through Operations, thus minimizing Span of Control issues. In the ICS curriculum, this result is discussed within ICS 402, Incident Command System for Executives, a 2.5-hour course.

2.4.7.2 Future Vision/Governance

Regularly, Transport Canada manages several crises at once (i.e., Iranian plane crash, rail blockades, COVID-19), which has resulted in the emergence of several lessons learned. At

the forefront is the shortage of personnel resources. At the time of the interview, the Documentation Unit Leader, under the Planning Section Chief, was collecting the Lessons Learned to be integrated into future TC responses. There may be an opportunity to renew the use of the Continuous Improvement Working Group (CIWG) (formerly the Continuous Improvement for Federal Event Response [CIFER]) to generate a National Lessons Learned Repository.

TC has undertaken an agile build of a technology platform to leverage existing GIS National Geospatial Committee data, and have been receiving some collaboration from PSC, but it is felt that PSC may be resistant to the departure from the Operations Centre Interconnectivity Portal (OCIP). In addition to the adoption and utilization of a Situational Awareness technology, TC has considered a technology to perform Resource Management (i.e., Certification Query Capability in the form of a national databank of trained personnel).

Recognizing challenges faced by the Canadian Coast Guard (CCG) in their operationalization of ICS, it is understood that with regard to a standardized Emergency Centre curriculum it will take time to mobilize the cultural change and build capacity (i.e., Train-the Trainer). Nonetheless, it is felt by TC that, with some refinement, there is great benefit to standardizing ICS concepts within the EOC positions/functions, and they have presented this to their Directors General Emergency Response Committee (DG ERC) for support and endorsement. TC has proposed that the national adoption of the ICS principles and the development of a comprehensive Canadian Incident Management System (CIMS) would serve to mitigate many of the response challenges faced currently. The CIMS would provide clarification of roles and responsibilities, resulting in cohesion between all levels of government and non-governmental Emergency Centres.

A standardized curriculum could mitigate resource issues by providing surge capacity across the nation. The use of common terminology and processes through training to a standardized curriculum would result in improved interoperability and consistency in response to complex, multi-agency events, as well as cross border events with the US.

Findings from a TC multi-jurisdictional workshop underlined the need for a single incident management system to be used across all modes and programs that aligns with, and is supported by, a larger whole of community response framework. Although standardized, the curriculum should also be flexible and able to be adapted to each organization's lens.

It is recommended by TC that the long-term objective should be an interagency/interdepartmental Emergency Management Community of Practice (attached to the Treasury Board, to provide Policies that need to be met, like Human Resources and Finance), focusing on continuous training, exercising and improvement.

In addition to enabling Canada to be a leader and partner in the response community, a Canadian Incident Management System (CIMS) would:

- Provide a common, Pan-Canadian whole of community approach to working together to manage all threats and hazards and apply to all incidents regardless of cause, size, location or complexity;
- Outline a detailed comprehensive framework to facilitate coordination between all

response organizations (including all levels of government with public, private, and nongovernmental organizations) through multi agency coordination entities;

- Clarify the role of and linkages between Emergency Coordination Centres/Emergency Operations Centres and explain the relationship with Incident Command and senior policy leaders/groups;
- Connect and integrate new national level plans within a larger framework;
- Clarify the processes and terminology for qualifying, certifying, and credentialing incident personnel, building a foundation for the development of a national qualification system; and,
- Describe common functions and terminology for staff in Emergency Operations/Coordination Centres (EOC/ECC), while remaining flexible to allow for differing mandates, authorities, and resources of EOC/ECCs across Canada.

2.4.8 First Nations and Indigenous Services Canada

2.4.8.1 Methodology

Any strategy around the refinement of Emergency Centre interoperability must incorporate and include the current state procedure of First Nations communities and Indigenous Services Canada (ISC).

Through this process, ISC Ottawa were consulted and provided their summary of the communication process and perspectives of ICS integration in the form of the questionnaire. To replicate the process followed with Provinces/Territories down to the municipalities, two interviews were held with both the North Shore Micmac (Mi'kmaq) District Council (NSMDC; 7 Member Mi'kmaq First Nations) communities led through Eel Ground (Natoaganeg) First Nation, New Brunswick and the Independent First Nations Alliance (IFNA) Emergency Operations Department, led from Sioux Lookout, Ontario.

2.4.8.2 Formal Communication

Through these interviews, communication processes were charted in relation to what seems to be a unique process of reporting from the communities through the ISC Regional Representative at times to Regional Public Safety Canada Representatives, or directly to the GOC. At other times, dependent upon availability of ISC Ottawa Staff (off hours), the ISC Regional Representative may communicate directly with the GOC or hold information if appropriate to be forwarded by Ottawa ISC Staff once they are on-duty. It is key as well to mention that in the case of the New Brunswick and Ontario communities represented in this document, Provincial authority is not recognized.

2.4.8.3 Incident Command System and Training

At the Ottawa office, Incident Command System (ICS) is considered to be of limited utility. At the Regional Level, there is support for ICS, Emergency Operations Centre (EOC), and

Crisis Communication (Public Information Officer) training and certification. Currently, in the Mi'kmaq communities, there is an effort to certify community Leaders to ICS I-100 (Introduction to ICS), Band Chiefs to ICS I-402 (ICS for Executives), and there is a request for a First Nations-based EOC series of courses.

> "The ICS curriculum is not considered entirely appropriate, and there is a request that it be re-written to reflect areas of cultural significance such as language used, inclusion of First Nations persons in photos, and the incorporation of community Elders in relation to decision-making and support to the EOC when activated."
>
> - NSMDC Mi'kmaq Communities Members

Currently, the NSMDC has made an Emergency Management Assistance Program (EMAP) application to run a holistic pilot project to incorporate Community Risk Assessments (CRA), capability analysis, ICS, EOC, and PIO (refined), and the addition of technology to create a model where leading communities support other smaller communities in a time of crisis. The use of the ICS principles to manage the horizontal and vertical communication and decision-making is key.

As is the case with the formal communication in the previous section, the seven (7) New Brunswick communities do not recognize the New Brunswick Emergency Measures Organization (NBEMO) as the Provincial Authority Having Jurisdiction (AHJ) in relation to accreditation of the ICS curriculum. Further, these communities are interested in the curricula to be edited and refined to better reflect their culture, application, and use to ensure interoperability. Notwithstanding a need to adapt approaches to the specific needs of Aboriginal communities, the fourteen (14) principles with the ICS Canada training are supported as valid, at this point.

Lastly, with regard to the NSMDC Member Communities, it should be noted that the Fort Folly (one of the 7 Mi'kmaq communities) EOC is actually used, through Unified Command, by the neighbouring (non-native) Village of Dorchester. These types of trusted relationships exemplify best practices for the integration of First Nations communities with their interoperable co-responders.

2.4.8.4 Independent First Nations Alliance

The Independent First Nations Alliance (IFNA) is comprised of five First Nation communities; Whitesand, Lac Seul, Kitchenuhmaykoosib Inninuwug, Pikangikum, and Muskrat Dam. Each of these communities are autonomous entities with individual needs and aspirations, but through the IFNA they are interconnected through technical advisory and development support programs in their communities.

In the remote reserves IFNA supports, when a serious incident occurs, there is an abundance of assistance available, but little capacity on the ground to triage and receive the help.

Organic train-the-trainer EOC principles were developed by virtue of back-to-back incidents, such as the evacuation of Pikangikum due to threatening fire, and community reflections suggest that there would be merit and improved operational efficiency associated with having the Province of Ontario and PSC deploying a team in a support role to the FN communities. IFNA leadership believe that this face-to-face, on-site liaison in long duration crises would assist operationally and improve relationships among orders of government. For example, during the Pikangikum evacuation, evacuees fled to Saskatchewan, as Ontario could not mobilize fast enough to support the evacuation. A Planning-to-Planning, Operations-to-Operations, Logistics-to-Logistics model was naturally adopted with the Saskatchewan EMO PEOC. The Saskatchewan school, where the incident response was organized from, was broken into Branches, each with an Operations Chief. Operations Chiefs worked together through "Area Command" (ICS concept). IFNA has a unique role, simultaneously playing a Federal role with ISC for formal requests (i.e., financial approval for staffing, flights, food etc.), and a Provincial role with the tactical response. IFNA adds to the requesting communities' response organizational structures through Unified Command but does not take over authority.

Due to their ability to mobilize rapidly, IFNA has recently been awarded a drone technology project for response, but also for planning/prevention (i.e., thermal imaging of housing to determine which are running too hot to mitigate a fire starting).

Depending upon community capability in relation to risk scenario, IFNA may be an Assisting or Cooperating Agency, and they have recognized that further strategic planning needs to be completed to formalize ECC/EOC delineation of roles and responsibilities. Following several successful response missions in 2020, and their ability to fill both a strategic role (ECC), but also the tactical component (EOC/ICP) depending on the scenario and community, IFNA is now receiving calls from non-member First Nations communities looking for response assistance. As a result, IFNA has put a moratorium on responding to long term incidents outside of their own communities for the first quarter of 2021 to normalize response procedures and augment funding for sustainability.

Until now, IFNA has been operating under the Ontario-adopted Incident Management System (IMS) but as at the time of this report are now looking at converting to ICS. IFNA is also exploring an integrated EOC (Hub-model) for member communities, including a hanger (Logistical Staging Area and equipment cache), training classroom, and radio infrastructure, where FN Leads, Provincial Representative(s), GOC Representative(s), and PSC Representative(s) could coordinate a response. The postulated "Rapid Deployment First Nations Emergency Response Team" would also train, exercise, and deploy from this location. The intention is for the model to be replicable and supported by regulation to maintain sustainability (in contrast to the existing year-to-year funding model) integrated with other responder services, to provide support to communities.

As a next step, IFNA is looking toward a virtual, mobile EOC. Each response operation they have assisted with, power and communications has been lost, resulting in them now being

proactively planned for (digital radio, 2 vehicle radios (20km range), Command Post Radio, and a Garmin tracker).

IFNA supports Capability Based Planning ideology, Target Capabilities, and a National standardized course curriculum with a section for province/community/organization-specific flavour/customization. Further, IFNA values sustainability and succession planning through the active integration of and capacity building of youth in the communities.

2.4.9 US Federal Emergency Management Agency Region 1

Although a high-level objective of the Project was to analyze the Emergency Management (EM) process, organizational structures, and processes and procedures implemented by Federal, Provincial, Territorial, Municipal, and select private sector Emergency Operations Centres (EOC)/Emergency Coordination Centres (ECC) across Canada, it was encouraged by DRDC/CSSP representatives that an interview with neighbouring FEMA Region 1 representatives as a benchmark would be valuable. Through the lens of the COVID-19 response, FEMA Region 1 for example, is experiencing some similar interoperability, communication, and information sharing challenges amongst Emergency Centres, highlighted by a largely remote/virtual response. Representatives confirmed that the approaches they would discuss in the interviews were standardized and consistent throughout the other FEMA Regions.

Under the leadership, support, and funding of the US Federal Emergency Management Agency Emergency Operations Centres are predominantly organized and recognize the principles of the Incident Command System. Further, grant funding from the Federal level of government incorporates criteria including a Continuous Improvement Process (CIP) and the integration of a number of requirements including the operationalization of ICS.

Prior to COVID-19, FEMA Region 1 expressed having a poor relationship with the ten federally recognized Tribal Nations in Region 1, but COVID-19 provided the opportunity and necessity for this relationship to be fostered. The use of ICS provided a medium for these relationships. Liaison Officers were assigned to each Tribal Nation, a Bi-weekly call with the EM Teams of the Tribal Nations was set up, and a once-a-month a Leader-to-Leader call is held between the Federal Coordinating Officer, Federal Health Coordinating Officer, and the Tribal Chief. This regular liaison has facilitated the issues and concerns of the Tribes to be filtered to the other Federal Agencies. Within FEMA Region 1, ICS has been adopted by the Tribal Nations, as the acceptance of Preparedness Grants or Emergency Management Grants, come with the mutual requirement to adopt and utilize ICS principles and structures.

A notable concern with the Tribes is the ability to scale; the Tribal Chief may be the Health Officer, the Incident Commander, and the Community Centre Leader. Therefore, FEMA Region 1 supports where able (i.e., donated goods are provided to the Tribes, infrastructures are donated to the Tribes) to mitigate known constraints to ensure the Tribes are given the same attention and support that the remainder of the State enjoys, and to make certain that the unique needs, gaps, and limitations the Tribal Nations face are met and mitigated as able. This has resulted in a substantial amount of trust being built and

shaped a solid partnership.

FEMA has adopted a 'Crowd-Sourcing Unit' and a 'Team of Teams' concept/approach for the virtual component of response, with an overall objective of establishing decentralized command and a shared spirit of empowering people to act. FEMA recognizes the need to enlist as many partners as possible to accomplish as many tasks as possible, autonomously. This autonomous approach has enabled organizations to work collaboratively and in complement of one another's efforts; this has ensured effectiveness and efficiency of operations.

Presently, there is no strategy undertaken by FEMA to create a Common Operating Platform to be used nationwide at the Federal Level – for example, everything has been done over email communication to date. To alleviate hundreds (100s) of daily email communications, the Planning Section indexes important communications throughout the day and rolls them up into a briefing that is distributed daily. Additionally, with respect to the large volume of emails by virtue of remote response, an email naming convention protocol was established, i.e., the use of "SA (Situational Awareness) FA (For Action)" within the email subject line.

> "In the fullness of time, the vision would be for a technology that would create a fusion system, layering all Situational Awareness packages of Partners, creating a Common Operating Picture and minimizing the necessity for calls and emails. Artificial Intelligence (AI) would be layered to increase the effectiveness and year-over-year-development."
>
> - FEMA Region 1

The COVID-19 pandemic, while devastating and disastrous, can be recognized as an opportunity to innovate. Currently, FEMA is instituting a process, using disaster funds, to issue secure credentialing cards (PID or CAD cards) to the States and Tribes to have them authenticated. The amount of data sharing that had to occur under emergency authorization was incredible and overwhelming.

> A fusion site, that can bring in different data streams (qualitative, quantitative, geographical) to automate information sharing and a common operating picture is the desired end-state.
>
> - FEMA Region 1

The Unified Coordination Group (UCG) is made up of Federal Agencies and Departments, State and Tribal representatives, all with their own underlying governance, but they do tend to yield to the Federal Authority for joint decision-making, strategy, and information sharing. Working in parallel, but not under the same system. It is felt that there is still more training required on how this functions and supports participants in their ICS structures. ICS for responders at the tactical level, i.e., Incident Commander, is different than that for the responders in the EOC, i.e., EOC Manager.

Horizontal "Peer-to-Peer" meetings, i.e., Planning Chief-to-Planning Chief have been implemented to avoid the need for communications to go up the Chain of Command and back down. To answer, 'how do you merge different EOC/ECCs that have adopted ICS hybrids with different role naming conventions, i.e., Situational Awareness Chief vs Operations Chief?' - the meeting agenda with clear intent and objectives is distributed and if potential participants find it useful and that it aligns with their priorities, they join the meeting; participants tend to self-sort.

FEMA utilizes a National Qualification System that establishes the minimum training criteria and platform, as well as job descriptions for EOC positions and other (i.e., coroner).

> Once people are qualified to the minimum National Standard, mutual aid teams from anywhere in the country can plug-and-play with a known level of competency and ability across the nation.
>
> - FEMA Region 1

In 2021, to support mitigation of Lessons Learned through the COVID-19 pandemic and in follow-up to the FEMA Continuous Improvement Process (CIP), the National Integration Centre is seeking feedback on 25 identified "National Qualification System (NQS) Incident Management Team (IMT) job titles/positions, qualifications, and Position Task Books." This engagement process will conclude 7 January 2021. All EOC positions will be reviewed with a view toward more pertinent educational programs for EOC staff. The base NIMS Guidance that is being built upon is the November 2017 document, which includes three (3) options for the use of ICS structures in the EOC (see *Figures 2, 3, and 4*).

FEMA is a grant-making agency; as a result of the COVID-19 pandemic, they created the Alternate Resources Management Process to streamline the access to Federal funding by the States and Tribes, i.e., Personal Protective Equipment (PPE) for schools, Childcare Centres etc. to ensure the whole of the government is brought to bear.

FEMA supports the long-term strategic objective of alignment of the Canadian provinces with the FEMA Regions and are willing to provide their knowledge, lessons learned, and a standardization of EOC curriculum.

3 Findings

Based on the results of information gathering activities and the submissions of the participants, there was an emerging theme surrounding an urgency to standardize the operations, structures, and curriculum to support Emergency Centres with a view toward continuous programmatic improvement.

Problem statement: Major disasters are extreme events that effect communities across Canada, having social, economic, and personal well-being impacts. Typically, major events exceed the capabilities of different levels of government and a Whole of Government (WoG) response and coordination is required. Emergency Centres are key to coordinating the WoG response; however, comparing current emergency management organizational structures, processes and procedures against an incident command system (ICS) baseline reveals opportunities for improving efficacy and efficiency.

3.1 Governance

Currently, at the national level, there is an absence of an overarching Governance Body responsible for the development, training, certification, competency tracking, refinement, and continuous improvement of a standardized, nationally adopted Emergency Centre curriculum standard. This has resulted in response organizations across Canada, including at the Federal Level, using a differing variety of the Incident Command System (ICS) Canada structures and principles without an authoritative body to address possible

deficiencies, refinements, and ultimately interoperability. ICS Canada was clear that their mandate and curriculum is not set up to educate Emergency Centre leaders. Management of the ICS Canada Program does offer a model for consideration for future efforts to standardize an Emergency Centre Management Program, or CIMS as suggested by participants.

3.2 Organizational Structure

As a result of the nationwide long-term activations of EOC/ECCs caused by COVID-19, many findings have been brought to light regarding organizational structures.

"Across the country, organizations have adopted different approaches to managing their Emergency Centre organizational structure. It would seem that there is a flexibility and respect for the various Concept of Operations (CONOPs) utilized by other government departments or organizations. Identifying a system in which the CONOPs of the various levels (Fed, P/T, Municipal, CI) are integrated with, could also be a step in the right direction in order to achieve interoperability," (Foss (Director PSC), 2021).

The decision of AEMA to align with the US rather than their interprovincial and federal partners when it comes to organizational structure (options), has not caused any significant issues at the working level. This supports the idea that not having a common Incident Command structure is not necessarily an impediment, and that the Community of Practice's guidelines and principles should include various organizational structure options.

One of the key criteria within the questionnaire that went to stakeholders was around their current functional organizational structure. This report has taken the care to represent all those provided by the respondents. Generally, the organizational structures utilized fall into the following categories (described further in Sections 3.2.1-3.2.5):

1. Gold/Silver/Bronze Model (security-based and bolted onto Provincial ICS);
2. ICS-like EOC;
3. Incident Support Model;
4. Departmental EOC Structure;
5. ICS Canada (Command and General Staff); and/or,
6. A hybrid of the above.

Table 2: **Organizational Structures Utilized by Study Respondents**

Due to one (1) "N/A" input (ISC) regarding Organizational Structure, a total of thirty-six (36) data points were evaluated. The raw data table can be found in Appendix II.

	Organizational Structure			
Study Respondents	**ICS-like**	**ISM**	**Departmental**	**ICS**
Federal	7	0	2	5
Provincial/Territorial	4	0	0	2
First Nations	0	0	0	2
Municipal	2	0	1	3
Critical Infrastructure	1	1	0	6

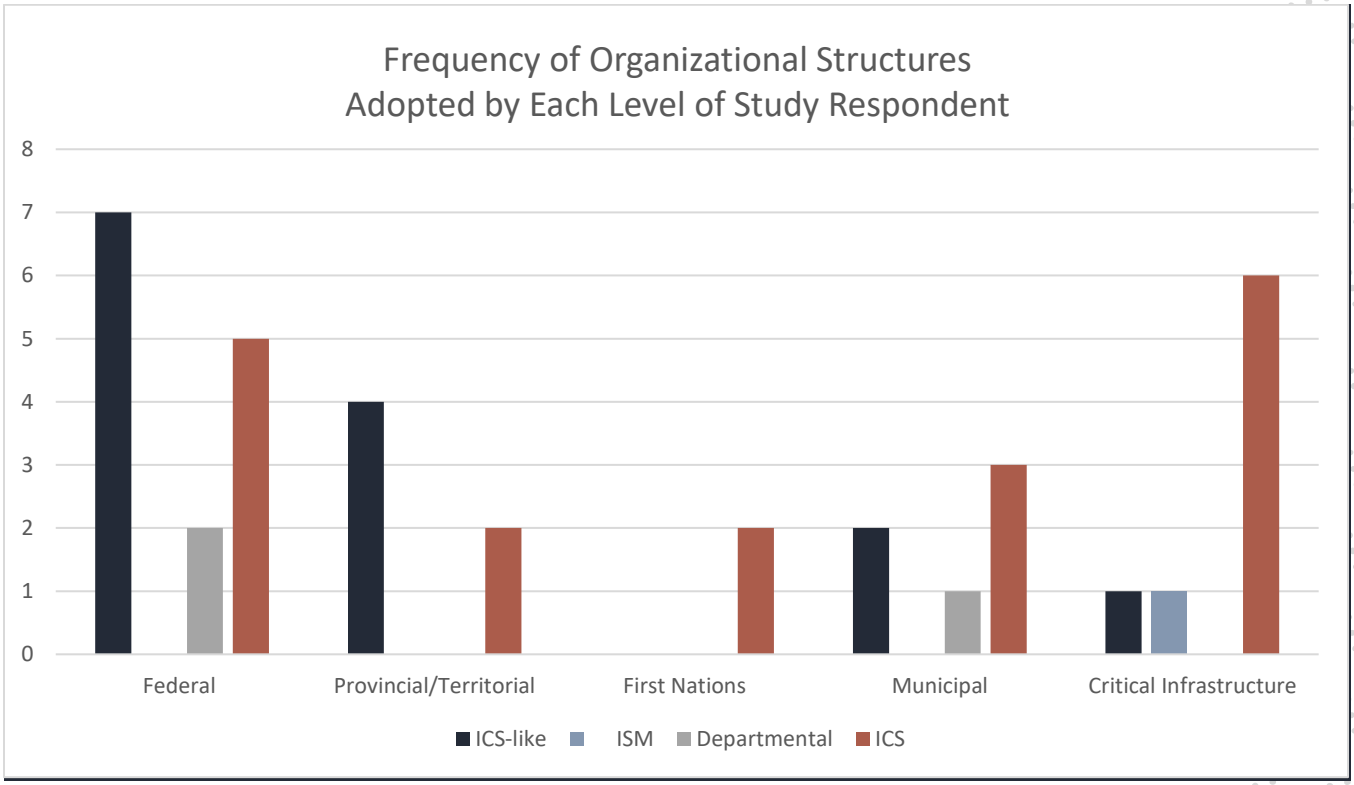


Figure 5: Frequency of Organizational Structures adopted by each level of Study Respondents.

The frequency of the ICS-like, ISM, Departmental, and ICS Organizational Structures utilized by Study Respondents at the Federal, Provincial/Territorial, First Nations,

Municipal, and Critical Infrastructure levels.

Departmental EOC Organization Structure and Agency Control Model (ACM) (a legacy organizational structure model) are used synonymously.

Due to one (1) "N/A" input (ISC) regarding Organizational Structure, a total of thirty-six (36) data points were evaluated. The raw data table can be found in Appendix II.

ICS Canada and Other Subject Matter Expert's data were not included in the data processing for Organization Structure.

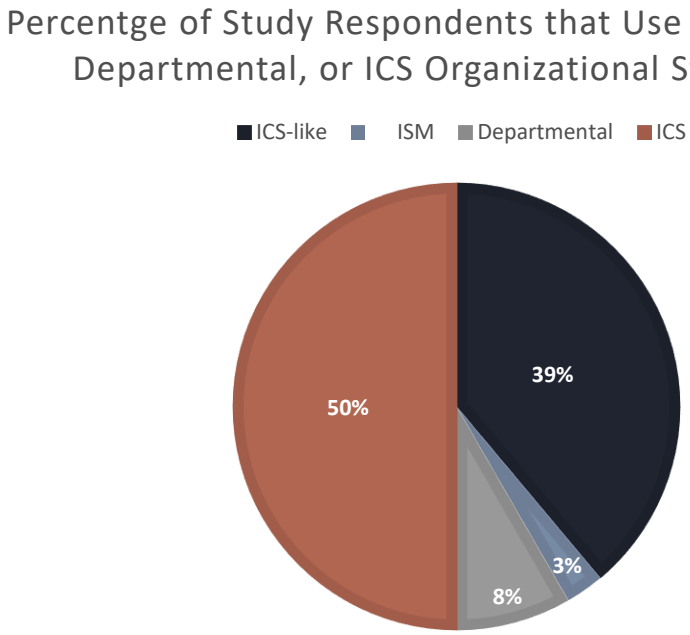


Figure 6: Percentage of Study Respondents (from all levels) that use the ICS-like, ISM, Departmental, or ICS Organizational Structures.

Departmental EOC Organization Structure and Agency Control Model (ACM) (a legacy organizational structure model) are used synonymously.

Due to one (1) "N/A" input (ISC) regarding Organizational Structure, a total of thirty-six (36) data points were evaluated. The raw data table can be found in Appendix II.

ICS Canada and Other Subject Matter Expert's data were not included in the data processing for Organization Structure.

From Figure 6 it can be deduced that 89% of Study Respondents are utilizing an ICS or ICS-like Organizational Structure within the Emergency Centre.

3.2.1 Gold/Silver/Bronze Model Organizational Structure

Participants indicated that the Bronze/Silver/Gold Model seems to work in some Security, Intelligence, and Law Enforcement (SILE)–only incidents, but that it will never replace the mandated ICS training.

Through the New Brunswick Office of the Provincial Security Advisor's (OPSA) use of this model (parallel to ICS used within NBEMO) Critical Security Events are organized to engage layers of "Rank" within Security and Intelligence Partners, as well as Provincial Staff.

ICS is active at the Bronze level and bolts the community incidents onto these security events through NBEMO. Within the ICS curriculum, it is recognized that "Intelligence" must be integrated, and options are provided, based upon the scenario, to connect to Operations, Planning, or the Incident Commander (IC). In New Brunswick, there is a carry-over from the Agency Control Model (ACM) that is manifested in technical specialist groups, i.e., Nuclear Technical Assessment Group (TAG), and Security/OPSA (Sit Room).

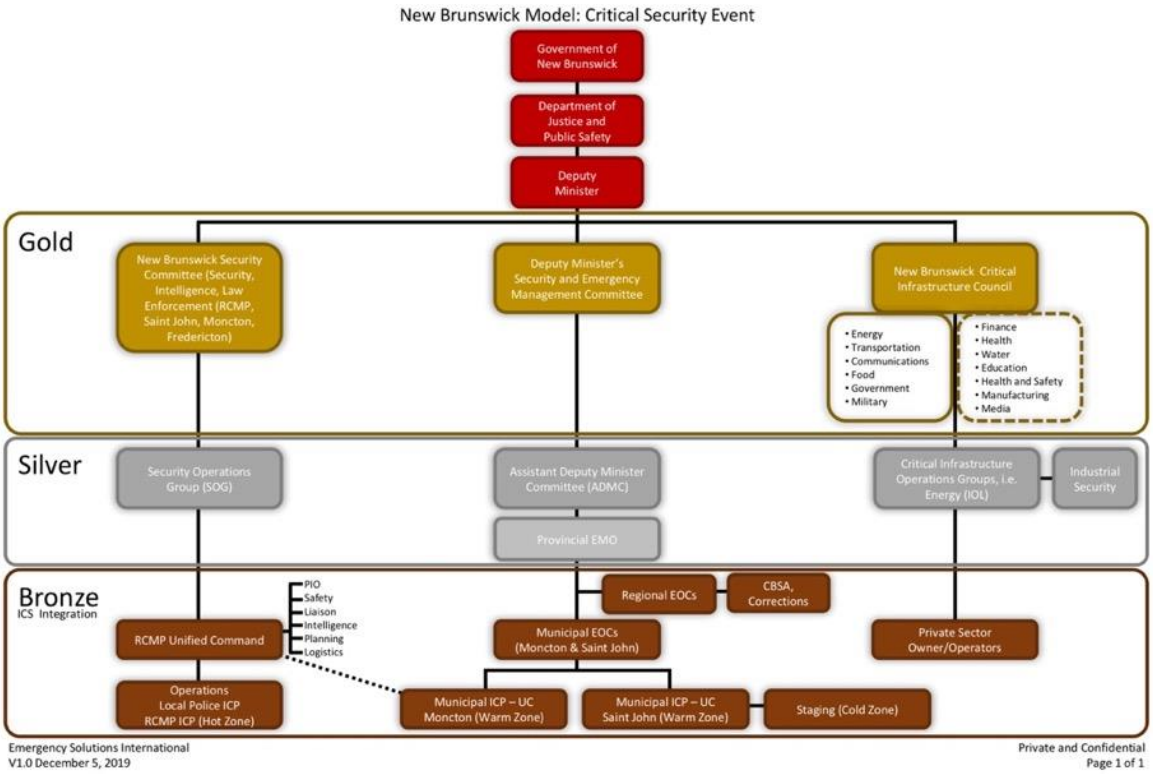


Figure 7: Example of a Gold/Silver/Bronze Organization Structure (ESI, 2019).

3.2.2 ICS-like Organizational Structures

"Many EOC leaders find that modifying ICS slightly provides many of the benefits of the standard ICS structure while accommodating the differences between Emergency Centres and Incident Command Posts (ICP). An ICS-like Emergency Centre structure generally reflects the standard ICS organization but with varying nuances and possible title changes to emphasize the coordination and support mission of Emergency Centres, as opposed to the tactical and logistics management role of on-scene responders. For example, Emergency Centres leaders often opt to adjust titles to differentiate between field and EOC functions/personnel by adding "Support" or "Coordination" to section titles Additionally, some Emergency Centre leaders opt to modify certain ICS processes or functions to better reflect the activities and responsibilities of Emergency Centre personnel" (NIMS 2017).

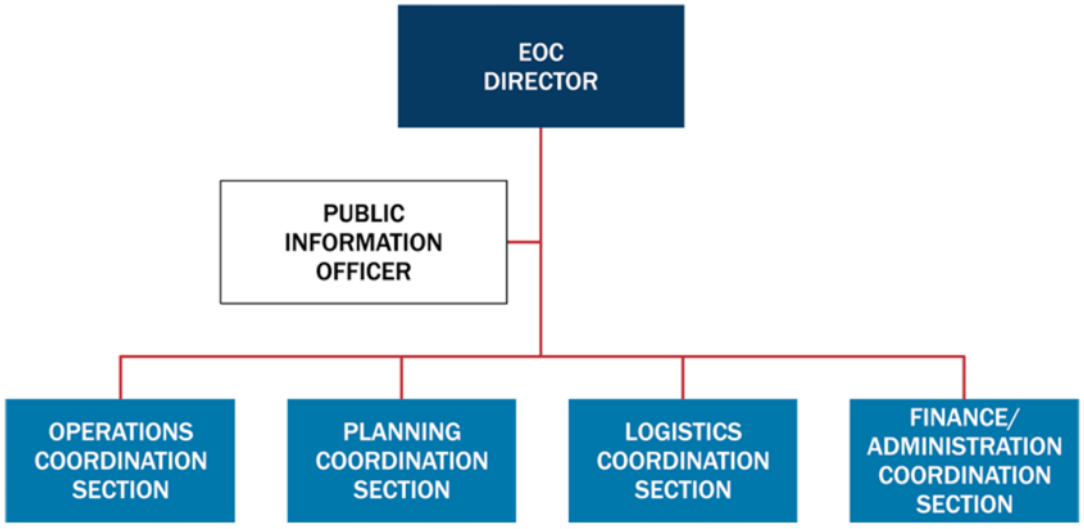
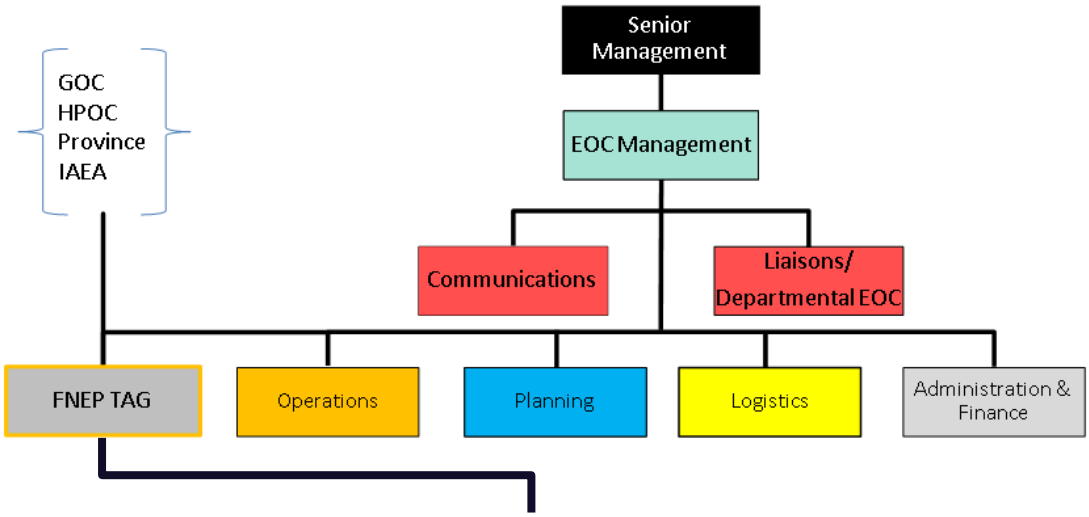


Figure 8: NIMS ICS-like EOC Organization Structure (NIMS, 2017).



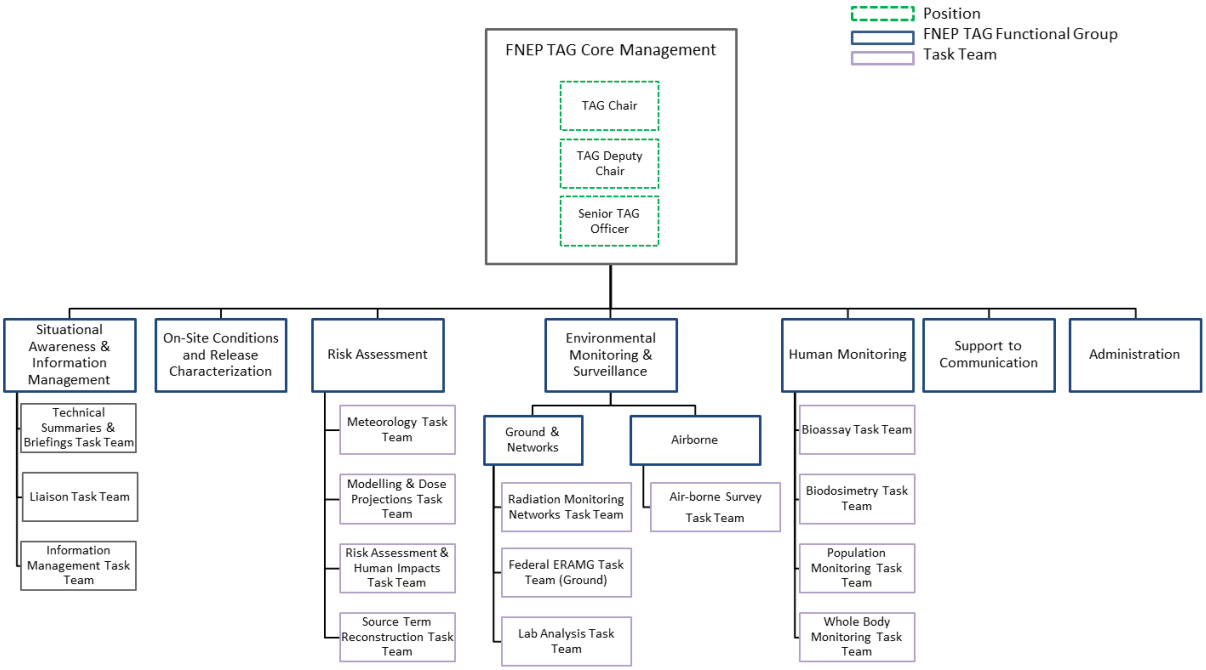


Figure 9: Health Canada Radiation Protection Bureau ICS-like organizational Chart, incorporating the Federal Nuclear Emergency Plan (FNEP) Technical Assessment Group (TAG) (Health Canada Questionnaire, 2020).

> “The Federal Nuclear Emergency Plan (FNEP) Technical Assessment Group (TAG) structure has been developed with ICS in mind.”
>
> - Health Canada

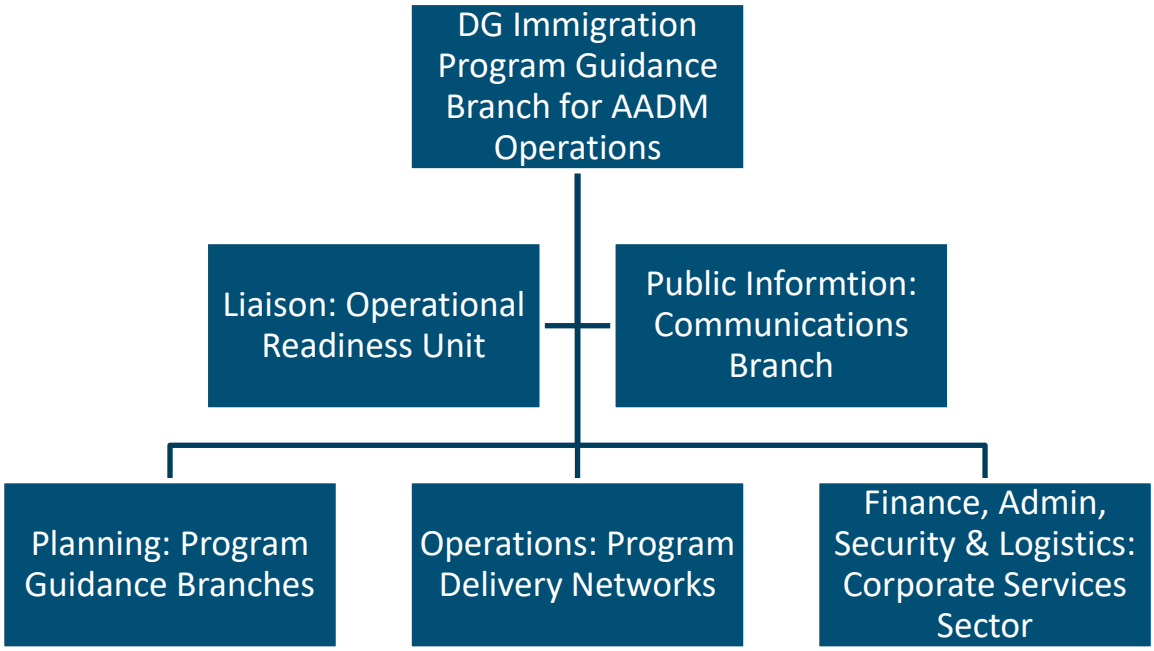


Figure 10: Immigration, Refugees, and Citizenship Canada (IRCC) ICS-like Organizational Chart (IRCC Questionnaire, 2020).

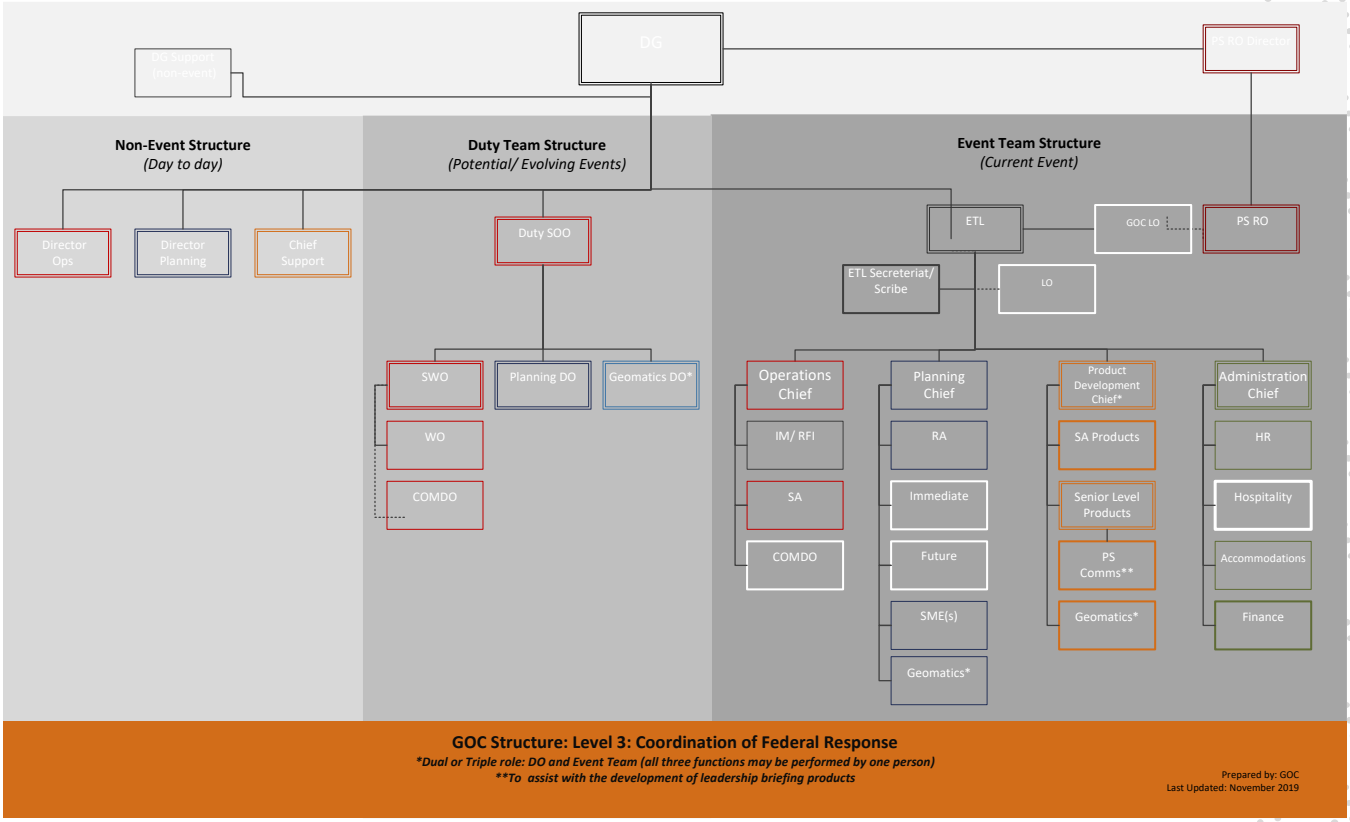


Figure 11: Government Operations Centre Concept of Operations Level 3) Coordination of Federal Response) ICS-like Organizational Chart (GOC CONOPS, 2019).

Figure 12: Ontario Incident Management System (IMS) ICS-like Organizational Chart Option 1: Site-Based EOC. The roles and responsibilities of the various sections are the same as the site. This may be useful when an EOC is coordinating and/or commanding incident response activities. It may be also useful for EOCs acting in support of incident response activities at the site (Ontario IMS 2.0, 2019).

3.2.3 Incident Support Model Organizational Structure

"The ISM is a variation of the ICS structure that separates the information management/situational awareness function from the ICS Planning Section and combines the functions of the ICS Operations and Logistics Sections and comptroller/purchasing functions from the ICS Administration/Finance Section. EOC staff in jurisdictions or organizations that use an ISM structure typically focus exclusively on support functions rather than operations or managing actual response/recovery efforts" (NIMS 2017).

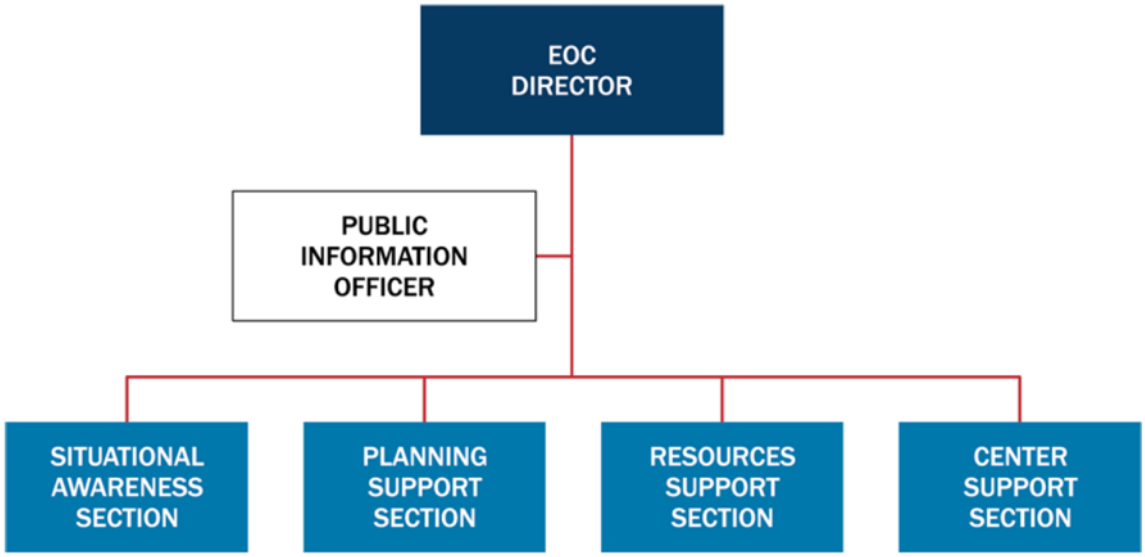


Figure 13: NIMS Incident Support Model EOC Organization Structure (NIMS, 2017).

Figure 14: Ontario Incident Management System (IMS) Incident Support Model Organizational Chart. Maintaining situational awareness is an important function of any EOC, whether as a branch within the Planning Section (in Figure 12) or as a dedicated section within an EOC. (Ontario IMS 2.0, 2019).

3.2.4 Departmental Organizational Structure

There was a period in Canada where this Emergency Centre model was offered as the "Agency Control Model." FEMA considers the "Departmental EOC Structure" as an option for partners, but it is rarely used.

"Jurisdictions or organizations may choose to retain the day-to-day relationships they have with the various departments and agencies that they also work with in responding to and recovering from incidents. These organizations or jurisdictions may configure the personnel who assemble in the EOC by the participants' departments, agencies, or organizations. Such departmentally structured EOCs typically require less training and emphasize coordination and equal footing for all departments and agencies. In this model, a single individual, either the jurisdiction or organization's emergency manager or another senior official, directly coordinates the jurisdiction's support agencies, nongovernmental organizations (NGO), and other partners. This model can also be organized using Emergency Support Functions (ESFs) instead of departments. Figure B-3 presents an example of a Departmental EOC structure" (NIMS 2017).

The ESF model in the US is refined, and oftentimes in documents like State Emergency Plans, is clearly contributed-to and signed-off on by interdependent organizations. This detailed approach aids in understanding which EOCs need to be highly interoperable and manages their connection processes wisely.

Figure 15: Example of a Departmental EOC Organization Structure (NIMS, 2017).

3.2.5 ICS Canada Organizational Structure

"The ICS organization is unique but easy to understand. There is no correlation between the ICS organization and the administrative structure of any single agency or jurisdiction. This is deliberate, because confusion over different position titles and organizational structures has been a significant stumbling block to effective incident management in the past. For example, someone who serves as a Chief every day may not hold that title when deployed under an ICS structure.

Depending upon the size and type of incident or event, it may be necessary for the Incident Commander to designate personnel to provide information, safety, and liaison services for the entire ICS organization. These personnel make up the Command Staff and consist of the Information Officer, the Safety Officer, and the Liaison Officer. The Command Staff report directly to the Incident Commander.

Expansion of the incident may also require the performance of the other functions. The people who perform the other four management functions are designated as the General Staff. The General Staff is made up of four Sections: Operations, Planning, Logistics and Finance/Administration" (ICS Canada, I-100 Student Reference Notes 2016).

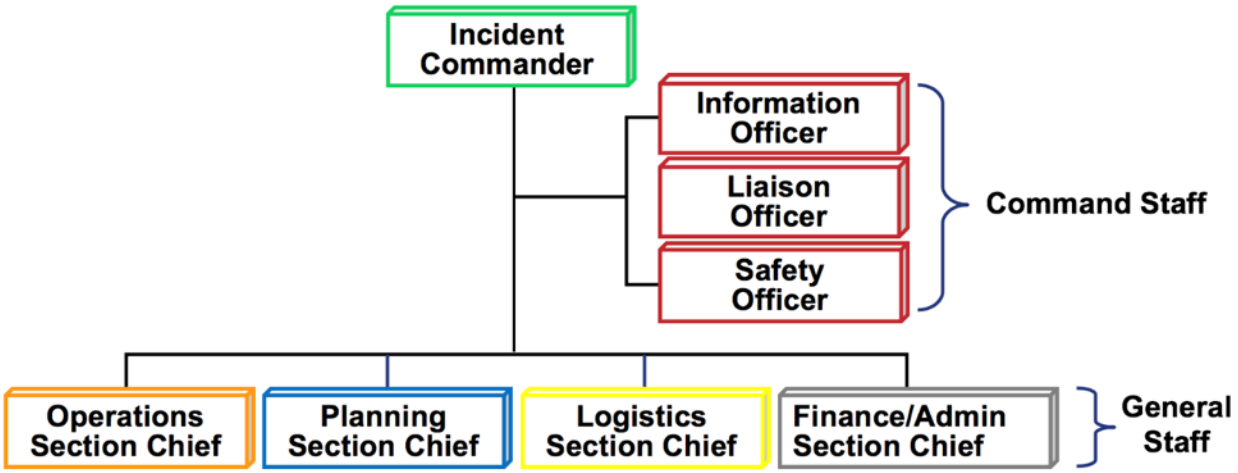


Figure 16: Incident Command System Canada Organization Structure (ICS Canada, 2016).

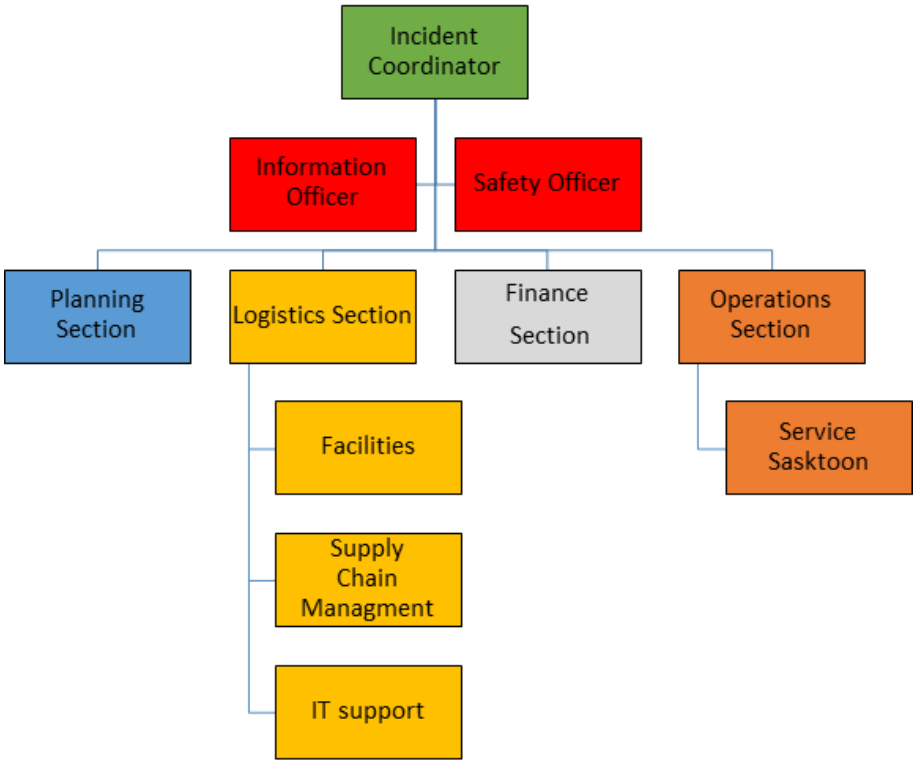


Figure 17: Saskatoon Incident Command System Canada Organization Structure (Saskatoon Questionnaire, 2020)

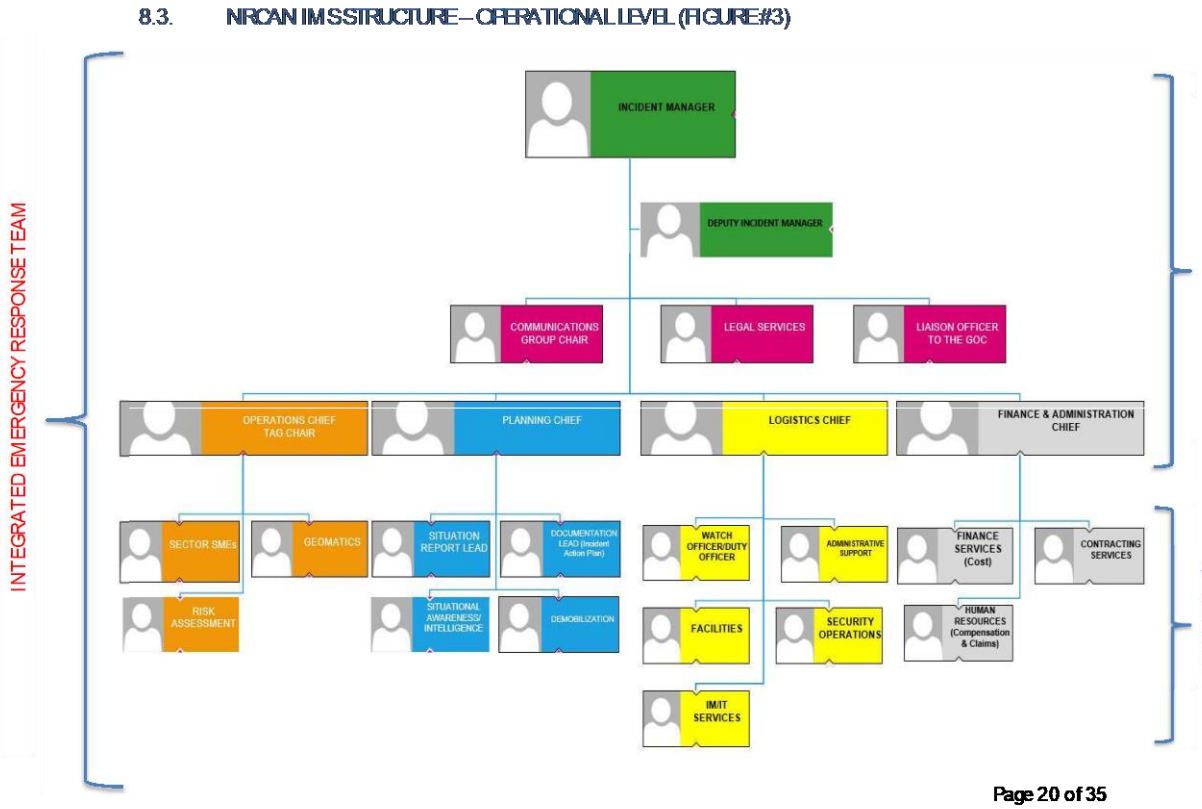


Figure 18: NRCAN Incident Command System Canada Organization Structure (NRCAN Questionnaire, 2020).

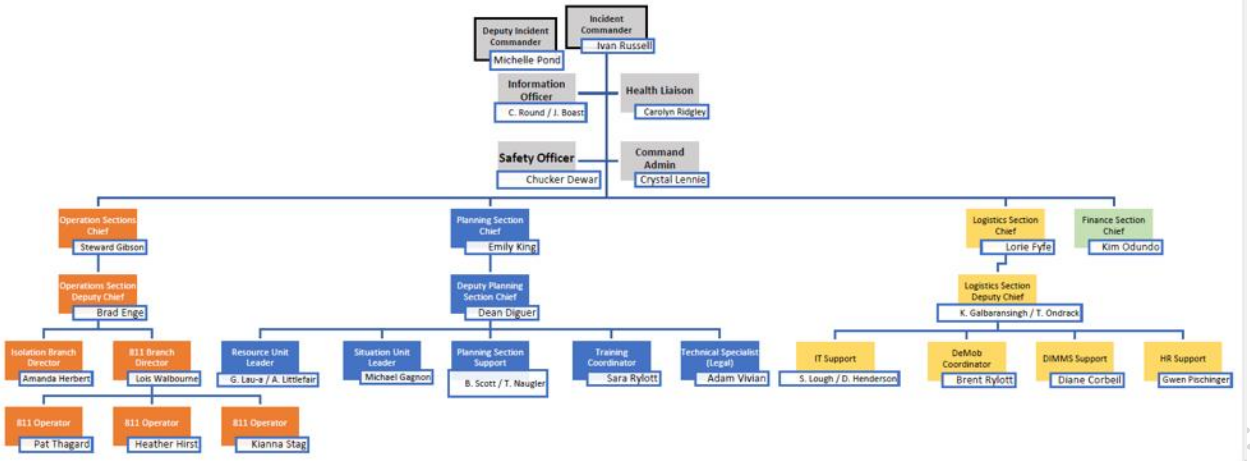


Figure 19: Northwest Territories Incident Command System Canada Organization Structure (Northwest Territories Questionnaire, 2020).

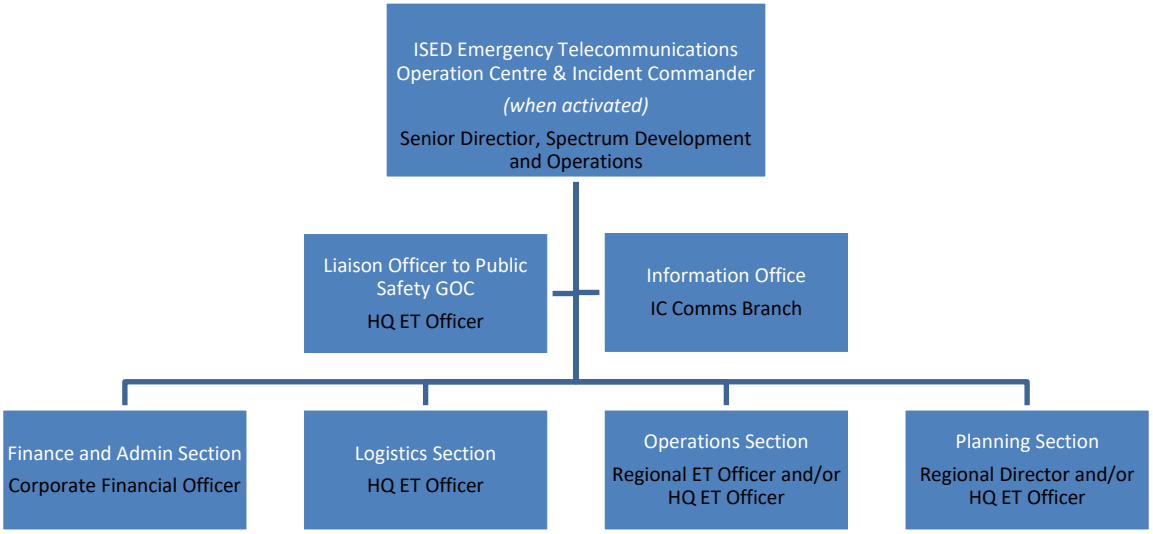


Figure 20: ISED Incident Command System Canada Organization Structure (ISED Questionnaire, 2020).

> "The ICS concept has been adopted by ISED to a great extent. There are limitations to a strict adoption to the ICS model as we do not have Command and Control over field assets at the location of a disaster. The telecommunications companies we partner with all have their own emergency plans and concepts of operation for which ISED plans must be flexible enough with which to be compatible and support."
>
> - Innovation, Science and Economic Development Canada

3.2.6 Impact of COVID-19 on Emergency Centre Organizational Structures

Some interviewees noted that the response to the COVID-19 pandemic was beyond anything they had ever experienced before in relation to duration and requirement for interoperability, required them to adjust their organizational structure. One chosen model adopted for organizational coordination was the UN's Cluster Approach. It may be argued that all emergencies are ultimately about people, and 'clusters' are groups of humanitarian organizations, in each of the main sectors of humanitarian action, i.e., water, health, shelter, and logistics. In those interviewed, many of these clusters formed Strike Teams under the traditional ICS Operations Chief. The US interviewees are taking action to refine their approach to how each Emergency Centre interacts and communicates with interdependent Emergency Centres and the community. The US findings at the end of COVID-19 will be valuable as they have started from much more standardized ICS-centric underpinnings.

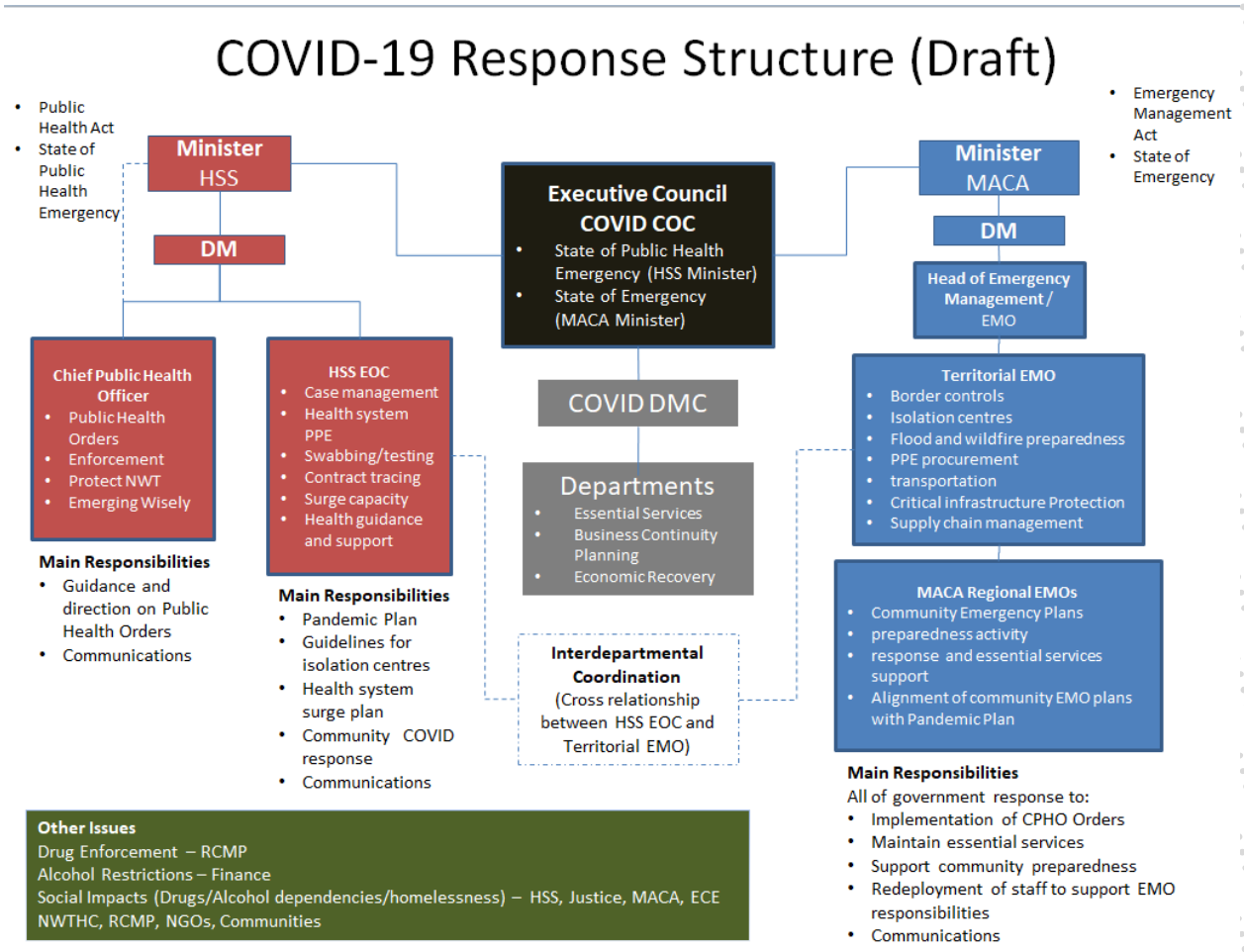


Figure 21: Government of Northwest Territories COVID Response Structure Draft (Northwest Territories Questionnaire, 2020).

3.3 Incident Command System Principles and Processes

A number of Incident Command System (ICS) principles and processes were charted by participants as holding utility within Emergency Centres. These included:

1. The Planning P;
2. Span of Control;
3. Unity of Command; and,
4. Common Terminology.

Table 3: Use (or not) of ICS-principles within the Emergency Centres of Study Respondents.

The use of ICS principles within the Emergency Centres of the Study Respondents does not always mean the Department/Organization is training to the ICS curriculum.

ICS Canada and Other Subject Matter Expert's data were not included in the data processing on the use of ICS principles in Emergency Centres.

The raw data table can be found in Appendix II.

	Use of ICS-principles within Emergency Centre	
Study Respondents	**Yes**	**No**
Federal	13	2
Provincial/Territorial	6	0
First Nations	2	0
Municipal	6	0
Critical Infrastructure	8	0

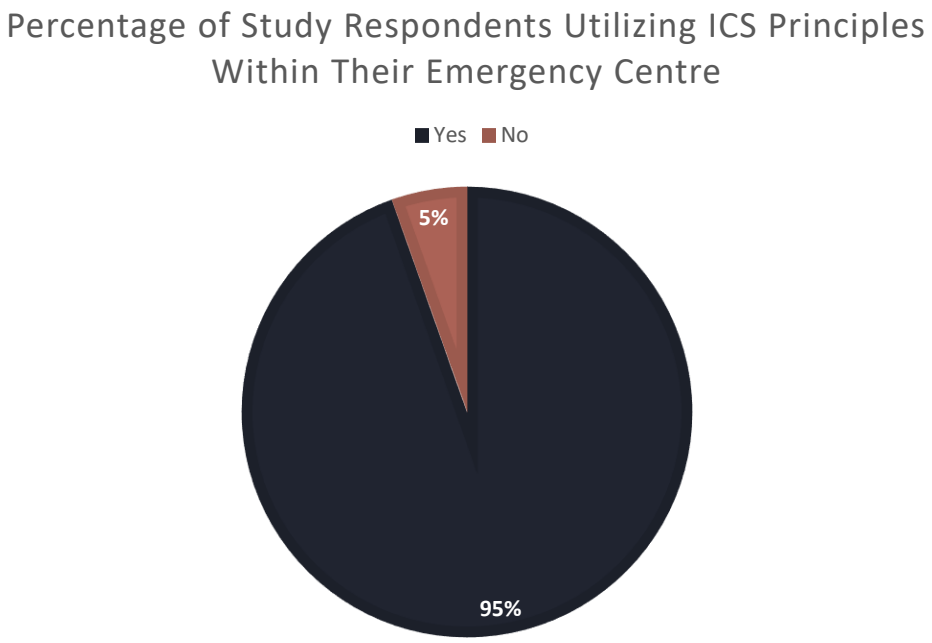


Figure 22: Percentage of Study Respondents Utilizing ICS Principles within their Emergency Centre.

ICS Canada and Other Subject Matter Expert's data were not included in the data processing on the use of ICS principles in Emergency Centres.

The raw data table can be found in Appendix II.

3.3.1 Planning P

The Planning Cycle, or "Planning 'P'" as it's generally referred to, establishes a continuum for Incident Action Planning (IAP) during both emergency and non-emergency operations.

The Planning P is found to be useful by some study participants, but often it is found that it is not useful when an incident hits a certain level of severity, complexity, and duration. The Canadian Coast Guard (CCG) who are well practiced in the Incident Command System don't see the Planning P applicable to the Emergency Centre level where there may not be the need for strategic level planning every day, whereas at the tactical level there is a need for the cyclical daily (operational cycle briefing) planning.

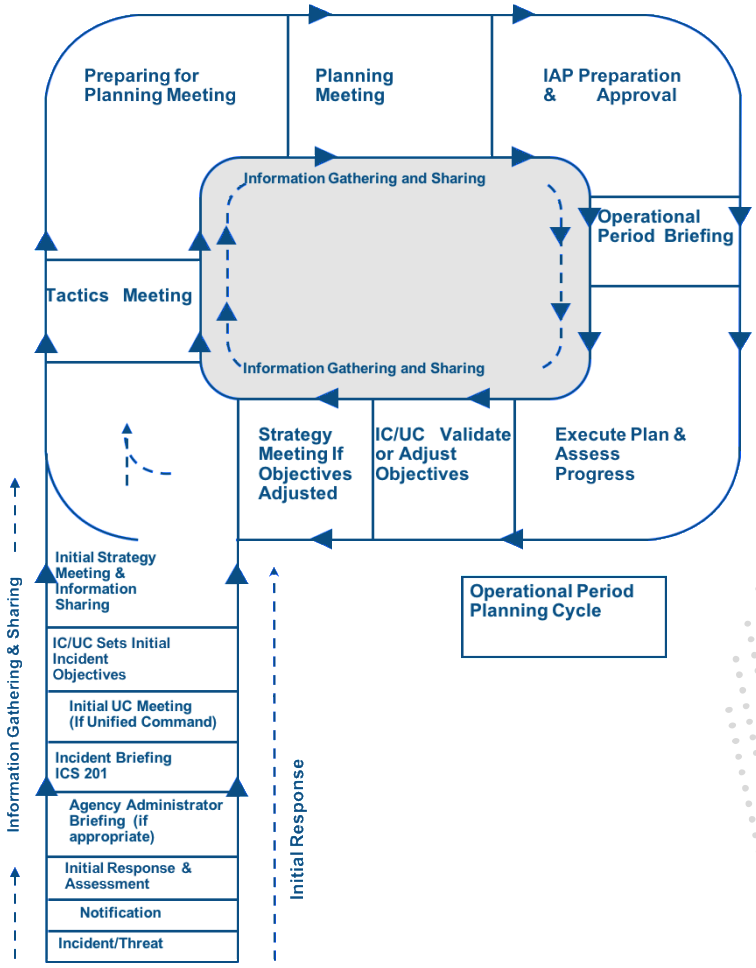


Figure 23: ICS Planning P.

Prince Edward Island has completed a considerable amount of work in developing the Planning P for use in their EOC. They find there is benefit to having a flexible structure of meeting and tasks that fit into an Operational Cycle, punctuated by an Operational Period Briefing (OPB). It is following the OPB interdependent where the community with other Emergency Centres or stakeholders is critical. Alignment of the timing of OPBs in multiple Emergency Centres is critical to ensure cadence or "battle rhythm." The timing of these OPBs in the nuclear context is an example of how this is accomplished.

Figure 24: Transfer of Information Following Operational Cycle Briefing (end of each Operational Cycle).

3.3.2 Span of Control

Span of Control is the number of resources for which a supervisor is responsible, usually expressed as the ratio of supervisors to individuals. An appropriate span of control is between 1:3 and 1:7, with optimal being 1:5 (ICS Canada). A breach of this principle has been cited in Emergency Centres as resulting in positions being overwhelmed.

3.3.3 Unity of Command

Unity of Command is a principle of management, stating that each individual involved in incident operations will be assigned to only one supervisor to whom they report at the scene of an incident (ICS Canada). A breach of this principle has been cited in Emergency Centres as resulting in positions being overwhelmed or presenting competing incident objectives.

3.3.4 Common Terminology

A key part of an effective multi-agency incident management system is for all communications to be in plain English and through the standardized curriculum cite a consistent, well-defined lexicon of language.

Common terminology helps to define:

- Organizational Functions: major functions and functional units with incident management responsibilities are named and defined. Terminology for the organizational elements involved is standard and consistent.
- Resource Descriptions: major resources (personnel, facilities, and equipment/supply items) are given common names and are "typed" or categorized by their capabilities. This helps to avoid confusion and enhance interoperability.

- Incident Facilities: Common Terminology is used to designate incident facilities.
- Position Titles: ICS management or supervisory positions are referred to by titles, such as Officer, Chief, Director, Supervisor, or Leader.
- Organizations may be descripted as "Assisting" or "Cooperating."

Recognizing that the first step to achieving interoperability is a common terminology, the GOC is developing its own CONOPS, which is basically a customized version of the ICS/IMS/CIMS. Common terminology coupled with a clear understanding of what types of information need to be shared and in what manner may ensure interoperability without imposing a specific structure on organizations. It was clear that study respondents were not concerned regarding interoperability, if an interdependent organization had chosen a slightly different organizational structure. This demonstration of flexibility is paralleled in the US guidance which provides options based upon organizational requirements.

3.4 Canadian Incident Management System

As discussed by a number of interviewees, and outlined in the Transport Canada presentation 12 December 2017, a pan-Canadian, Whole of Community approach to incident management is recommended. A Canadian Incident Management System (CIMS) would standardize and link Emergency Centres from the community (Critical Infrastructure, Municipal, or First Nations Emergency Centres) vertically through to the GOC, making use of Formal Communication processes, recognized liaison linkages, and possible technology with a view toward interoperability. Horizontal linkages at all levels would be refined and the principles of the Incident Command System would be applied where appropriate.

Unified Coordination Groups (UCG) could be set based upon the risk scenarios, event definition, and as demonstrated in the US, between organizations "like" Command and General Staff (i.e., Logistics in relation to the COVID-19 vaccine).

Proponents stressed flexibility for the path forward to develop options for Emergency Centre organizational structures, while achieving a common lexicon of language, common framework, and common principles. The US has successfully achieved such an approach and is, through the continuous improvement process, refining it now.

3.4.1 Emergency Centre Designation

As it relates to the naming conventions of the Emergency Operations Centre (EOCs) or Emergency Coordination Centre (ECCs) themselves, most interviewees have a sound rationale for their choice of terminology.

> "In general, at the Regional level, "EOC" is used, while at the National level, where TC is coordinating a national response, "ECC" is utilized.
>
> - Transport Canada"

For some participants, their naming convention is determined for them by virtue of legislation, regulation, and/or by-laws. This is the case for airports, where the Canadian Aviation Regulations (SOR/96-433) require airports designated under Subpart 3, to specify the location of their "emergency coordination centre" used to provide support to the on-scene controller within the Emergency Response Plan. Transport Canada defines an ECC as "a designated area to be used in supporting and coordinating emergency operations and whose location is specified under paragraph 302.203(1)(r)."

Others, such as the Cities of Moncton/Riverview/Dieppe have adopted an approach where the naming of the Emergency Centre is based on the risk scenario they are responding to, or whether their response includes the coordination of tactical operations. When there is a tactical Incident Command Post, the supporting Emergency Centre is an Emergency Coordination Centre. When the incident is being led by the Emergency Centre, it is deemed an Emergency Operations Centre. In British Columbia, if multiple Provincial Regional Emergency Operations Centres (PREOC) are active at the same time, the Provincial Emergency Coordination Centre (PECC) at Emergency Management BC (EMBC) headquarters in Victoria is activated to support them.

In the United States, the standard term is Emergency Operations Centre. For the purposes of this report, the general term, "Emergency Centre" has been used to reflect the current-state use of both terms in Canada.

Table 4: Emergency Centre Designation Utilized by Study Respondents.

Due to (2) "N/A" inputs regarding Emergency Centre type, a total of thirty-five (35) data points were evaluated.

ICS Canada and Other Subject Matter Experts data were not included in the data processing for Emergency Centre naming convention.

The raw data table can be found in Appendix II.

	Emergency Centre Designation	
Study Respondents	**Operations Centre**	**Coordination Centre**
Federal	10	3
Provincial/Territorial	4	2
First Nations	1	1
Municipal	4	2
Critical Infrastructure	7	1

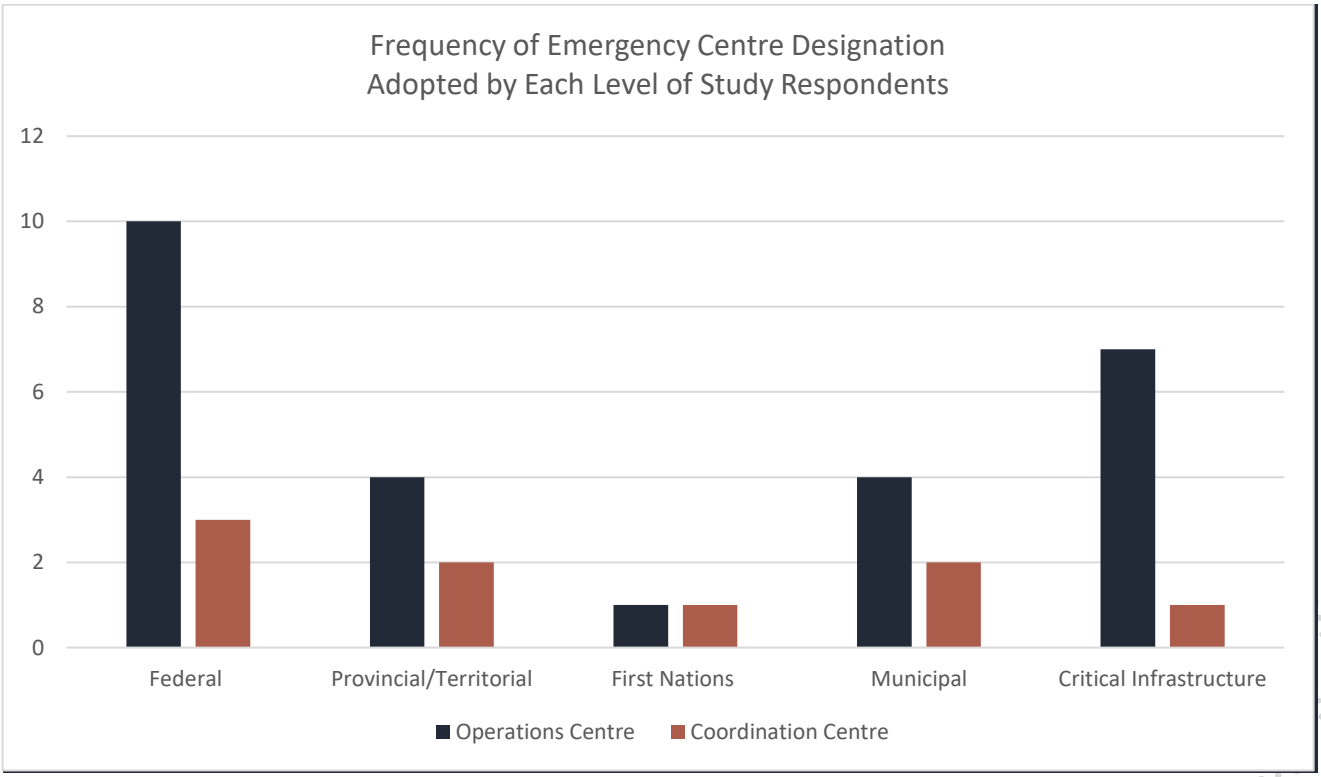


Figure 25: Frequency of Emergency Centre designation adopted by each level of Study Respondents.

The frequency of the naming conventions of "Emergency Operations Centre" and "Emergency Coordination Centre" utilized by Study Respondents at the Federal, Provincial/Territorial, First Nations, Municipal, and Critical Infrastructure levels.

For Federal Departments with National and Regional level operations, their National Level Emergency Centre Designation was utilized in the data processing.

Due to (2) "N/A" inputs regarding Emergency Centre type, a total of thirty-five (35) data points were evaluated.

ICS Canada and Other Subject Matter Experts data were not included in the data processing for Emergency Centre naming convention.

The raw data table can be found in Appendix II.

3.4.2 Coordinator vs. Command

Similar to the EOC and ECC naming convention, the use of Coordinator vs. Command varied amongst study participants but was generally backed with sound rationale. In the United States, the standardized term for the Emergency Operations Centre leaders, within FEMA curriculum and guidance documents, is EOC Manager. Other titles noted throughout the interviews and questionnaires included: Director, EOC Lead, Incident Manager, Incident Coordinator, Shift Supervisor. All agreed that this position, no matter the name, was more about being an effective and competent leader, and that the future curriculum must support this person and their ability to build a team of competent and confident Command and General Staff. No matter the name chosen for the role, a key objective for this position is to monitor and assure interoperability with interdependent Emergency Centres.

3.4.3 Emergency Centre Management as a Standardized Core Capability

> "Certification for a comprehensive evaluation of a process, system, product, event, or skill, typically measured against some existing norm or standard should be put in place by GOC/PSC."
>
> - Immigration, Refugees & Citizenship Canada

Emergency Centre Management is the capability to provide multi-agency coordination for incident management by activating and operating an Emergency Centre for a pre-planned or no-notice event. Emergency Centre Management includes Emergency Centre activation, notification, staffing, and deactivation; management, direction, control, and coordination of response and recovery activities; coordination of efforts with neighbouring governments at each level with non-government organizations (NGO's) and the private sector; coordination of efforts among federal, provincial, territorial, First Nations, and municipal governments, coordination of public information and warning; and maintenance of the information and communication necessary for coordinating response and recovery activities. In this evaluation interoperability and information sharing with the Public Safety Canada Government Operations Centre (GOC) is critical.

It was clear from participants surveyed and interviewed, that the communication process to and with PSC is not standardized or formalized as it relates to the Chain of Command with Regional PSC representatives. (See Appendix IV for a GOC Briefing as an example of a communication from PSC).

Further, beyond management and principles, there is not a Canadian Core or Target Capability for Emergency Centres to define what is the ideal state for the capability. With these types of benchmarks, there is no way for leaders to conduct Gap Analysis of their Emergency Centres.

3.5 Standardized Training, Exercising, and Credentialing

The loudest message provided by participants was that without a pan-Canadian training, exercising, and credentialing framework, they are forced to "freelance" and create a homegrown approach to Emergency Centre Management. A number of leaders were highly distressed by feeling that they were on their own and are woefully prepared to staff their Emergency Centres with qualified, credentialed staff.

There is a general feeling that there is a lack of leadership related to a pan-Canadian strategy for the education of those who work in Emergency Centres. In addition, a lack of connection to the Senior Officials Responsible for Emergency Management (SOREM) as it relates to making rapid progress was expressed.

Although there are ongoing exercises provided through the GOC Exercise and Continuous Improvement Program and Federal Exercise Working Group (FEWG) (i.e., Coastal Response 2022 that involves all levels of Government in multiple regions), it was felt by Study Respondents that there is very little cross-departmental, cross-Province/Territory, or cross-border joint training and exercising. For the study participants, this is believed to be largely due to the cost. It was noted that the Study Respondents did not mention a national exercise program, highlighting the complexities of lining up all of the necessary organizations (regional/municipal/provincial/CI/US) to practice and study interdependencies. This is charted as an area of improvement with the GOC and a component of strategic budgeting. There is a feeling that the lack of funding is eclipsed by the cost of the resultant inefficiencies.

Planning documents and Community Risk Assessments (CRA) could be linked vertically to better represent the grassroots levels of Emergency Management. Scenario-based tabletops would be included in the pan-Canadian Emergency Centre training curriculum. Ultimately, the community/critical infrastructure planning process would integrate at the Provincial/Territorial, Indigenous Services Canada (ISC), and Federal levels. Vertically integrated exercises in a standardized manner would be possible. Exercises would serve to permit practitioners the opportunity to practice their standardized processes acquired in the training. Common credentialing would enable ease of movement and support position-to-position between Emergency Centres.

Table 5: Support (or not) of a Canadian Emergency Management Community of Practice by Study Respondents.

Due to (2) "N/A" inputs regarding Emergency Centre type, a total of thirty-five (35) data points were evaluated.

ICS Canada and Other Subject Matter Experts data were not included in the data processing regarding support for a standardized Canadian curriculum.

The raw data table can be found in Appendix II.

	Support a Canadian Emergency Management Community of Practice	
Study Respondents	**Yes**	**No**
Federal	13	2
Provincial/Territorial	6	0
First Nations	2	0
Municipal	6	0
Critical Infrastructure	8	0

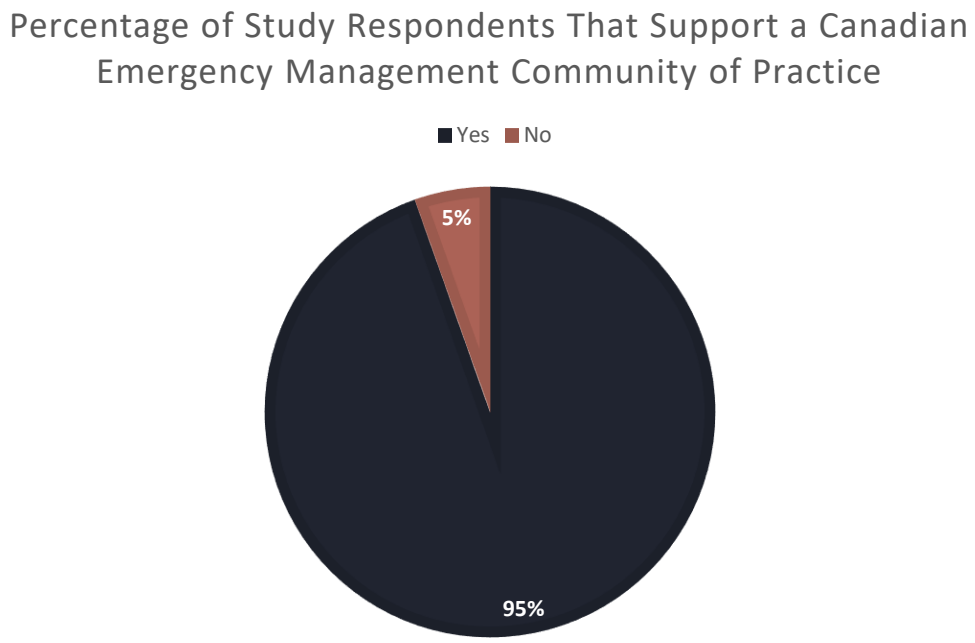


Figure 26: Percentage of Study Respondents That Support a Canadian Emergency Management Community of Practice.

ICS Canada and Other Subject Matter Experts data were not included in the data processing regarding support for a standardized Canadian curriculum.

The raw data table can be found in Appendix II.

3.6 Situational Awareness and Common Operating Picture

There is a perceived disconnect between the responders in the municipalities and collective situational awareness nationally. It has been identified through the interviewees that there is no standardization of the liaison between Provinces/Territories and the Regional PSC Representatives. At a high level there is the Federal Emergency Response Plan (FERP) that provides guidance for engagement with the Senior Officials Responsible for Emergency Management (SOREM) organization, but it doesn't go into the level of detail that would be useful to Provinces/Territories in their liaison with the Regional PSC Representatives. The GOC Daily Operational Brief is a national level 'roll up' document that is only provided to Federal Level representatives/departments.

It is up to the Regional PSC Representatives to decide what they share with the Provinces/Territories/Municipalities. It was noted that further distribution of the GOC Daily Operational Brief is not going to be considered at this time, but that the Municipalities/P/Ts could raise this issue through their own Chairs, to be addressed through SOREM.

In addition to the non-standardized chain of communication, it was found that across the country there is a varying degree of use of technology to assist in information sharing, situational awareness, and a common operating picture.

The GOC distributes "Operations Briefs" on a regular basis, and also operate a Webmap, via a link, that has been found by participants to provide value. The Emergency Management Webmaps, provided by the Government Operations Centre, have been designed to increase situational awareness for emergency managers at a strategic level. The data contained within each map was included to provide assistance in the analysis of infrastructure, demography, and incidents unique to each province or territory. This data has been sourced from authoritative sources (government or private sector stakeholders) and the majority of the information is accessed directly from their servers. These Webmaps are not intended to replace traditional incident management systems. They were created to provide management, planners and analysts access to rich geographic data that would normally only be accessible to geomatics professionals. Although thought to be valuable, an analysis on its usefulness at the provincial level and means to increase its relevance may be beneficial.

A Network Analysis completed by the Emergency Management Community of Practice that would result in a strategy to increase in information sharing in support of situational awareness: 1. relationships, 2. products to send out to partners/needed from partners, and 3. format of the product/data processing i.e., integrated geomatic information, to minimize the gap between the information being created and the sharing of that information to partners. Webmaps is an example of a Situational Awareness solution package, but it is clear there needs to be a more comprehensive strategy.

According to FEMA Region 1, Data Analytics is key to the development of comprehensive situational awareness. Data Analytics provide a format for transparent, fair, rigorous and repeatable tools when making decisions in a resource-constrained environment. Long term recovery brings in many partners and teams that may not be familiar to the Emergency Management/Public Safety organization; these new partners are crucial to

a comprehensive, resilient, and critical lifeline stabilization and economic growth of the communities. FEMA is analyzing not operating on a common platform, but instead creating a fusion system of all EOC User applications and overlaying Artificial Intelligence (AI) where possible.

3.6.1 Chain of Command/Communication

Throughout the interview and questionnaires, generally a common Chain of Command emerged. Figure 27 below outlines the Chain of Command and Unity of Command from the incident site to the Municipal Emergency Centre, up through to the Government Operations Centre for both non-First Nations Communities on the left, and First Nations Communities on the right. At times, Chain of Command means that there is an orderly line of authority, while Unity of Command means that every individual is accountable to only one designated Emergency Centre (ICS Canada). No Emergency Centre should be responsible to an Emergency Centre two levels higher in the Chain of Command. The diagram demonstrates the communication cadence, which emerges from the bottom up, with higher level Emergency Centres recognizing the need to support lower levels of Emergency Centres and minimize the amount of extraneous information they provide. Bold arrows going upward indicate a higher proportion of formal communication. Formal communication must be used when:

- Receiving and giving work assignments;
- Requesting support or additional resources; and
- Reporting progress of assigned tasks.

Narrow arrows coming down indicate giving work assignments, responses to requests for resources, information, or status reports that are relative to lower Emergency Centre decision-making or Incident Action Planning.

Within the First Nations context (New Brunswick and Ontario interviewed), it was found that the communication Chain of Command was not consistent.

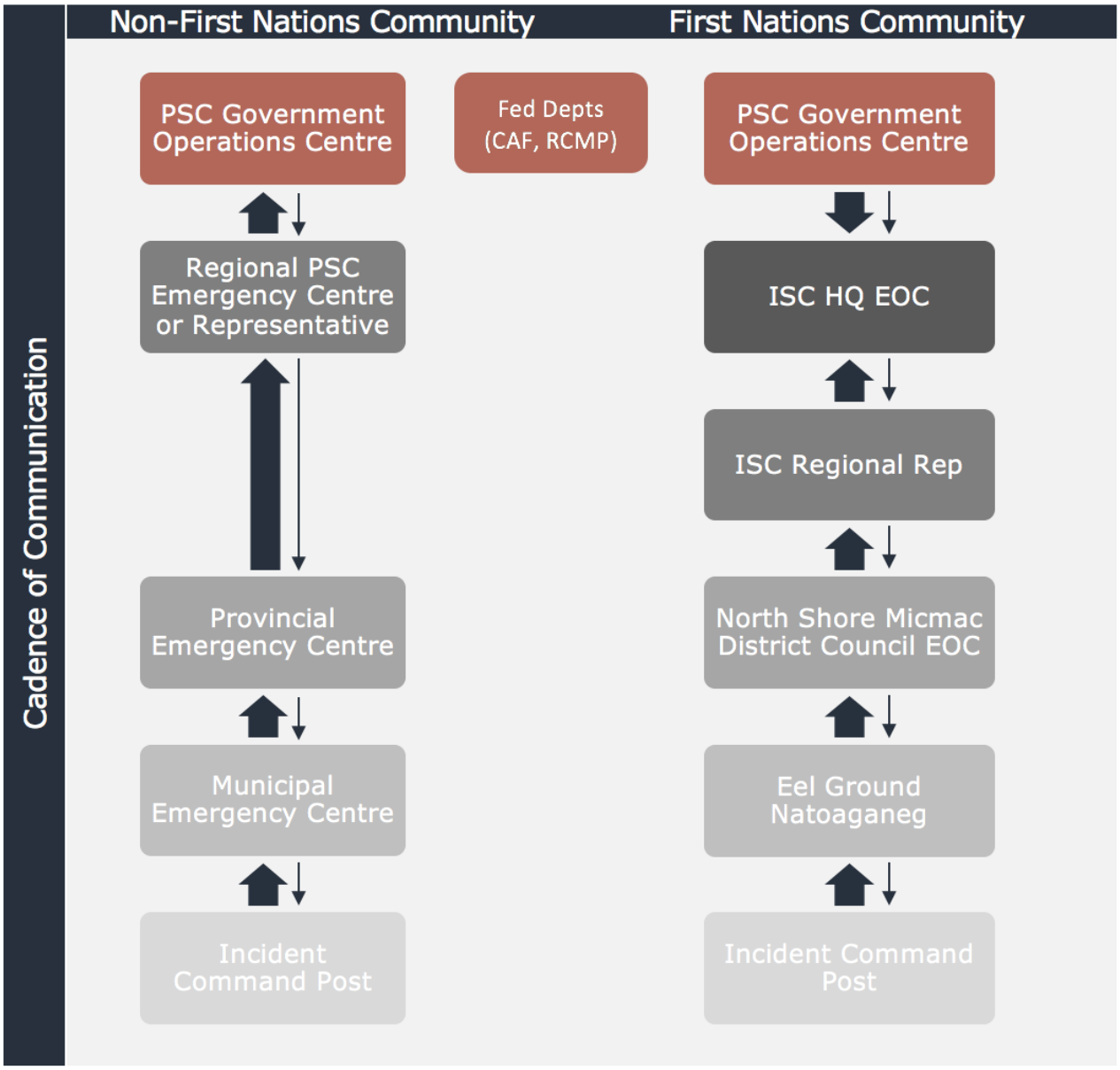


Figure 27: Chain of Command/communication from the incident site.

Ensuring Unity of Command up to the Municipal level and through to the GOC for non-First Nations Communities and First Nations Communities. Bold arrows going upward indicate a higher proportion of formal communication and benchmarking of completed objectives. Narrow arrows coming down indicate the lower proportion of communication limited to such formal communication of policy or Agency Control guidance, status reports, updates on resource requests etc.

3.7 Lessons Learned

A recurring theme throughout the interviews highlighted an opportunity nationwide to log Lessons Learned as part of the incident debriefing process. There may be an opportunity to re-energize and utilize the Continuous Improvement Working Group (CIWG) (formerly the Continuous Improvement for Federal Event Response [CIFER]), at all levels of Government.

Although participants were asked, and responded positively, if their regular incident management process for the COVID-19 Pandemic was yielding 'Lessons Learned', there has not been an opportunity for these busy professionals to provide the results to the Project Team. Alberta, in the midst of activations involving broad horizontal communication i.e., COVID-19, has identified that a position in the Emergency Centre, perhaps the "Planning Chief," would be required as part of their duties to monitor and mitigate any inefficiencies or ineffectiveness between Emergency Centres and chart that there is Lessons Learned to be utilized in future responses. This type of delineation of responsibility is an example of an area that could be standardized in a CIMS effort and connected to a 'National Lessons Learned' repository database.

FEMA Region 1 representatives highlight the importance of frequent communications amongst Emergency Centres at all levels (respecting the Chain of Command), to avoid duplication of effort and mixed signals to higher Command structures. FEMA Staff in all regions have dedicated staff to charting COVID-19 Lessons Learned and there is a vision to feed them back into the EOC curriculum and study for continuous improvement in 2021 and 2022.

In conversation with the Director of Operations for the Government Operations Centre at the time, Karen Foss, a National Lessons Learned repository is "out of scope," given their program mandate is to provide leadership in the creation of a collaborative approach to continuous improvement for only the federal community.

4 Recommendations

4.1 Short Term Recommendations

1. By virtue of the challenges posed by the COVID-19 response, a number of identified participants were unable to contribute. Therefore, it is recommended that the outreach and stakeholder engagement process of the project continue to broaden the current state analysis by allowing all available stakeholders originally identified before the COVID-19 incident to complete the process, i.e. Federal Departments: Privy Council Office, Global Affairs Canada, Parks Canada, National Microbiology Lab, Treasury Board; Provinces of British Columbia, Saskatchewan, Ontario, Quebec, and Nova Scotia; Territories of Nunavut and Yukon, Regional PSC Reps; and critical infrastructure such as Bell, Rogers, and Xplornet. Through these interviews, not only would detail for future vision be informed, but Emergency Management leaders emerge, which may be foundational to the setting of the national training standard.

4.1.1 Governance

2. Determination and formation of a national leadership organization charged with the establishment of a national Emergency Management Community of Practice which has a clear governance structure to support common standards and principles, which can be reflected in a training curriculum (CIMS if deemed appropriate) that is beneficial to the Emergency Management community. It is understood by the Study Respondents that the National leadership organization cannot produce training that meets 100% of the needs of the national Emergency Management community, but that it may be possible to derive common standards and practices that form a core curriculum for training. The national leadership organization responsibilities may include the review of Study Respondents' requirements for a successful Situational Awareness/Common Operating Picture technology, as well as a possible Lessons Learned repository. This Pan Canadian Organization of Emergency Management practitioners may also serve to fill any identified gaps in cross border relationships or processes.

4.2 Long Term Recommendations

4.2.1 Governance

1. To create national change, drive standardization and spread best practices, Senior Officials Responsible for Emergency Management (SOREM) and the Canadian Council of Emergency Management Organization (CCEMO) continue to be identified as two avenues for information sharing, if used as designed. Empowering a national leadership organization or creating Sub-Committee to one of these organizations (SOREM or CCEMO) is a conceivable route to a long-term nationalized, interagency/interdepartmental Emergency Management

Community of Practice focusing on continuous training and improvement. Similar to the way in which CanOps is the Secretariat for CCEMO, there may be an opportunity to analyze their involvement in the coordination of the development of a national standardized curriculum for Emergency Centres. Responsibilities of the Emergency Management Community of Practice may include:

- A methodology for assessing and measuring the effectiveness and efficiency of Emergency Centres is recommended. This may be accomplished by first creating an Emergency Centre Core Capability which would create a baseline for a Gap Analysis Process.
- In the fullness of time, a governance body must be dedicated to a philosophy and actioning of continuous improvement. Current processes/positions exist in the US model which may be utilized as reference points.
- The identification of a team of possible providers (i.e., Provincial/Territorial AHJs, Justice Institute or other Universities, ICS Canada, or Canada School of Public Service [CSPS] etc.) of a standardized Canadian Emergency Centre curriculum to refine existing programs and set a sustainable approach to mitigating current gaps.

4.2.2 Organizational Structure Development and Standardization

2. As part of the educational and standardization effort, providing a forum for organizational structure refinement is recommended. The Alberta model is an example of applying principles from options in the NIMS 2017 Guidance to accommodate their local requirements. For example, in this model, incident objectives are supported while General Staff positions like Planning, Logistics, and Finance physically staffed away from the ICP. Command and Operations Chief positions would report up to the NIMS 2017 Guidance position "Situational Awareness Chief" when an ECC is staffed to support the ICP (see Section 3.3.3, Figure 13). This proposed model is found by the authors to be very progressive and would likely solve a number of the problems identified in the vertical communication linkage from the tactical level up to an Emergency Coordination Centre rather than and Emergency Operations Centre. This was one clear vision for the future provided. With an active Pan-Canadian Body to review interoperability, organizational structures would be reviewed, refined, and adopted into operations and training programs.

3. Recognizing that governance and lines of communication are partially captured within the Federal Emergency Response Plan and that process mapping can be subject to frequent change throughout the response to an event, a flexible national guidance and proceduralization of the governance and lines of communication (vertically and horizontally) or process mapping for ICS "Formal Communication" between Provinces/Territories, First Nations, Regional PSC Representatives, and the GOC is recommended.

4.2.3 Canadian Incident Management System

It was identified that overall, a future curriculum, or the definition of core competencies, should allow for the delivery to differ or be added to, to reflect that there may be region and/or risk scenario specificity. Similarly, it seems as though there is the desire for the capability (within whatever model is adopted) to be able to have personnel trained to roles and develop competencies that can allow them to move horizontally and vertically within ECs. It is recommended that, in the long term, part of the training include practice and mentoring from partner jurisdiction ECs to increase interoperability.

Participants identified that a Canadian Incident Management System would provide a common, Pan-Canadian, whole-of-community approach to working together to manage all threats and hazards that would be applied to all incidents regardless of cause, size, location or complexity.

The Emergency Centre operating principles, curriculum, and identified structure options should be designed to incorporate and recognize the culture of, and application to, First Nations communities and Indigenous Services Canada.

4. The Community of Practice/Knowledge Centre should:
    - Outline a detailed comprehensive framework to facilitate coordination between all response organizations (including all levels of government with public, private, and nongovernmental organizations) through multi agency coordination entities;
    - Clarify the role of and linkages between Emergency Coordination Centres/Emergency Operations Centres and explain the relationship with Incident Command and senior policy leaders/groups;
    - Connect and integrate new national level plans within a larger framework;
    - Provide input and/or guidelines to the organizations adopting processes and terminology for qualifying, certifying, and credentialing incident personnel, building a foundation for the development of a National Qualification System (NQS);
    - Develop three streams of standards/best practices: 1. Operational (ICP) Level, 2. Emergency Centre Level; and 3. Strategic Level (Agency Control); and
    - Provide input to a standardized curriculum ensuring that training, credentialing, and certification line up with the three streams of standards/best practices above.

> Establishment of a National Community of Practice … and a functional community for EM [may improve effectiveness of the Emergency Centre]. A Canada School of Public Service, for lower-level courses [may be an option for providing a standardized curriculum].
>
> - Transport Canada, CANUTEC

4.2.4 Standardized Training, Exercising, and Credentialing

5. Study participants see the value in cross-jurisdictional, cross-Provincial/Territorial, and cross-border support, both in the form of training and mentoring as well as incident response assistance. It is believed that a federally funded Pan-Canadian Operational Committee of Emergency Management practitioners (such as the Can Task Force Network), supported by a standardized national doctrine would help to fill this gap. In addition to joint training amongst Canadian Emergency Centre leaders at all levels, Canadians and Americans should plan, train, and exercise together on both sides of the border to build this relationship and align efforts.

4.2.5 Situational Awareness and Common Operating Picture

6. In discussions with one of the provincial representatives, the idea of a 'Provincial Fusions Centre' (EOC/ECC) with a shared, secured link to selected parts of associated federal GOC decision support systems was tabled. Linkages to, and monitoring of, the respective Fusion Centres in a distributed manner, was discussed as a long-term goal and a means to move towards a national common operating picture across jurisdictions. This concept of a Fusion Centre Model for situational awareness and a common operating picture is also supported by the (US) Federal Emergency Management Agency (FEMA). While not yet operating on a common platform, FEMA is analyzing and exploring the considerations associated with creating a fusion system of all EOC User applications and leveraging Artificial Intelligence (AI) for improved decision support where possible.

7. Similar to the way in which CanOps administers the Multi-Agency Situational Awareness System (MASAS), there may be an opportunity to analyze their involvement in the operationalization of a situational awareness technology.

8. In addition to the adoption and utilization of a Situational Awareness technology, TC has considered a technology to perform Resource Management, i.e.,

Certification Query Capability in the form of a national databank of trained personnel. This "resource typing" tool would assist the nation in gaining an overall picture of trained personnel who may assist in an Emergency Centre.

9. Another route for the enhancement of Situational Awareness may be to emulate or expand upon the PSC OCIP, and the PSC Critical Infrastructure Assessment Team (CIAT) where, through the Critical Infrastructure Gateway, an online portal for CI stakeholders to share information with each other, the ability to support a common operating picture (specific to CI) nationwide is demonstrated.

10. There may be an opportunity to renew the use of the Continuous Improvement Working Group (CIWG) (formerly the Continuous Improvement for Federal Event Response [CIFER]) to generate a National Lessons Learned Repository.

5 Path Forward

The *Evidence-based Examination and Analysis of Incident Command Structures in Operations Centres Project* effectively engaged over fifty (50) professionals who expressed appreciation for the leadership of PSC in garnering their experiences and vision for future areas of refinement.

The surveys and interviews deduced that these leaders, who are charged with a tremendous amount of responsibility, are often challenged to efficiently staff and manage their centres internally and to communicate or coordinate effectively with other centres externally. Oftentimes personal, trusted relationships were utilized to work around the lack of structure between various horizontal or vertical communication linkages. Surveys and interviews revealed that the critical community or risk-based resource of a centralized Emergency Centre, that is interoperable with other interdependent Emergency Centres, must be standardized.

The overall challenge identified by participants, was that the absence of a Federal leader and national standard as it relates to an Emergency Centre Management System, creates inefficacy and homegrown, or worse, 'siloed' approaches at all levels. Further, the use of hybrid Incident Command System (ICS) Canada organizational structures and principles, meant for the Incident Command Post (ICP) rather than the Emergency Centre, results in ineffectiveness in relation to training, interoperability, the application of technology, and the ability to share resources.

There is a perception that the United States system, in some respects, is approximately five (5) years beyond our (Canadian) journey to standardize. Currently, there is a significant amount of effort and innovation being put into refining their system. US Federal Emergency Management Agency (FEMA) representatives were enthusiastic to connect with the project and stated that they would assist with an ongoing Canadian effort should the project continue in 2021/2022.

Given the responses of the fifty participant organizations to the Public Safety Canada (PSC) Defense Research and Development Canada (DRDC) study, it is clear that there is an urgency across all levels of Emergency Centre leadership to improve their operation, work toward a national standard, and appreciation for the opportunity to contribute.

As part of the transition strategy of the Project, further dissemination of this report to permit awareness of the problem definition and allow early uptake of recommendations, where organizations are able will be decided by Public Safety Canada (PSC). The desired long-term strategy would guide the creation of action plans for each Emergency Centre to consider implementation of recommendations in support of greater standardization across Emergency Centres in Canada.

There is a perception that Public Safety Canada and SOREM may be positioned to help create a standardized set of processes, procedures and policies to reflect the national interoperability related to Emergency Centre management. It is believed that a federally funded Pan-Canadian Operational Committee of Emergency Management practitioners

(similar to the arrangement for Canada Task Force Network), supported by a standardized national doctrine and capability would work to fill the standardization gap.

Transport Canada has proposed, and a number of leader organizations agree, that the national adoption of the ICS principles and the development of a comprehensive Canadian Incident Management System (CIMS) would serve to help mitigate many of the response challenges faced currently. The CIMS would provide clarification of roles and responsibilities, resulting in cohesion between all levels of government and non-governmental Emergency Centres.

The original Project process (beginning in 2019), altered by the emergence of the Global Pandemic, resulted in not all Parties of Interest being consulted adequately. This said, given the large sample of interviews held and narrow range of the interview outcomes summarized above, there is an opportunity for a subsequent project to maintain the positive momentum and:

1. Allow all originally identified participants to contribute, and
2. Begin consultation with interested stakeholders to set up a Governance structure that would engage leader organizations identified in this document to provide tangible next steps to:
    - I. Define and form a Canadian Emergency Management Community of Practice
    - II. Establish a National leadership Body,
    - III. Set initial guidelines and principles for the community of practice, based on input of participants, and
    - IV. Define requirements for technology to enhance information sharing, shared Situational Awareness (SA), and a Common Operating Picture (COP).

> “There should be a standardized Canadian Curriculum.”
>
> - NRCan

The Project has been a successful first step from the standpoint of providing a forum for the identification of shared pain-points, concerns, and challenges across Federal Departments, Provinces, Territories, First Nations, Municipalities, and Critical Infrastructure. The majority of participants/leaders, organizations, and individuals, referenced directly in this document, are willing to participate in future efforts related to the Project. Due to the criticality of the nature of the Project, participants have indicated interest in future involvement should there be Federal leadership and governance to continue work toward refinement, standardization, and interoperability through strategic planning and the formation of a Canadian Incident Management System or an alternative.

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Acronyms and Definitions

Acronyms

ABDLAN	Alberta Disaster LAN
AEMA	Alberta Emergency Management Agency
AHJ	Authority Having Jurisdiction
AI	Artificial Intelligence
AIMS	Alberta Incident Management System
CAF	Canadian Armed Forces
CANUTEC	Canadian Transport Emergency Centre
CBSA	Canada Border Services Agency
CCEMO	Canadian Council of Emergency Management Organization
CCG	Canadian Coast Guard
CFIA	Canadian Food Inspection Agency
CFICC	Canadian Forces Integrated Command Centre
CI	Critical Infrastructure
CIAT	Critical Infrastructure Assessment Team (PSC)
CIFER	Continuous Improvement for Federal Event Response
CIMS	Canadian Incident Management System
CIP	Continuous Improvement Process
CNSC	Canadian Nuclear Safety Commission
COP	Common Operating Picture
CoP	Community of Practice
CPG	Comprehensive Preparedness Guide
CRA	Community Risk Assessment
CSPS	Canadian School of Public Service
CSS	Centre for Security Science
CSSP	Canadian Safety and Security Program
DENR	Department of Environment and Natural Resources
DFO	Fisheries and Oceans Canada
DG	Dangerous Goods
DLAN	Disaster LAN
DND	Department of National Defence
DRDC	Defence Research and Development Canada
ECC	Emergency Coordination Centre
ECCC	Environment and Climate Change Canada
EM	Emergency Management
EMAP	Emergency Management Assistance Program
EMD	Emergency Management Directorate
EMO	Emergency Management Organization
EOC	Emergency Operations Centre
ERC	Emergency Response Committee
ESF	Emergency Support Function
ESI	Emergency Solutions International
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency (US)
FEWG	Federal Exercise Working Group
FNEP TAG	Federal Nuclear Emergency Plan Technical Assessment Group
FOCWG	Federal Operational Collaboration Working Group

FPT	Federal/Provincial/Territorial
GIS	Geographic Information System
GOC	Government Operations Centre
GOCMod	Government Operations Centre Modernization
HRM	Halifax Regional Municipality
IC	Incident Commander
ICP	Incident Command Post
ICS	Incident Command System
IFNA	Independent First Nations Alliance
IMT	Incident Management Team
IRCC	Immigration, Refugees and Citizenship Canada
ISC	Indigenous Services Canada
ISED	Innovation, Science and Economic Development Canada
JTFN	Joint Task Force North
MASAS	Multi-Agency Situational Awareness System
NAIT	Northern Alberta Institute of Technology
NBEMO	New Brunswick Emergency Measures Organization
NERS	National Emergency Response System
NGO	Non-Governmental Organizations
NIMS	National Incident Management System
NRCan	Natural Resources Canada
NSMDC	North Shore Micmac/Mi'kmaq District Council
NQS	National Qualification System
NWT	Northwest Territories
OCIP	Operations Centre Interconnectivity Portal
OFM	Office of the Fire Marshal
OGD	Other Government Departments/Agencies
OPB	Operational Period Briefing
OPSA	Office of the Provincial Security Advisor (New Brunswick)
PCC	Provincial Coordination Centre
PCO	Privy Council Office
PECC	Provincial Emergency Coordination Centre
PEI	Prince Edward Island
PIO	Public Information Officer
PLNGS	Point Lepreau Nuclear Generating Station
PPE	Personal Protective Equipment
PREOC	Provincial Regional Emergency Operations Centres
PSC	Public Safety Canada
PSPC	Public Service and Procurement Canada
PWGSC	Public Works Government Service Canada
RCMP	Royal Canadian Mounted Police
RFA	Request for Assistance
SA	Situational Awareness
SILE	Security, Intelligence, and Law Enforcement
SitRep	Situation Report
SOREM	Senior Officials Responsible for Emergency Management
TC	Transport Canada
UCG	Unified Coordination Group
WoG	Whole of Government

Definitions

CanOps

Canadian Public Safety Operations Organization. We are a unique Member-Based not-for-profit designed to bring dynamic and important programs, projects and/or services under our umbrella, to advance public safety across Canada in an effective, efficient and integrated manner.

Canada Task Force Network

The Canada Task Force Network is comprised of six nationally recognized Heavy Urban Search and Rescue (HUSAR) teams in Canada: Vancouver (CAN-TF1), Alberta (CAN-TF2), Toronto (CAN-TF3), and Manitoba (CAN-TF4) with teams in development in Halifax (CAN-TF5) Montreal (CAN-TF6).

Canada Task Force 2 (CAN-TF2), based in Alberta, is an 'all-hazards' Disaster Response Team with a diverse capacity to respond to a variety of large-scale events, emergencies or disasters and provide support to the local community.

The team is comprised of over 150 Rescue Specialists, Doctors, Paramedics, Structural Engineers, Communications Specialists, Canine & Technical Searchers, Logistics Specialists, and Command Staff, who volunteer their time to train and prepare so that they can respond as a highly specialized team, capable of handling a wide variety of demanding disaster and rescue situations.

CAN-TF2's mandate is to deploy with up to 75 specialized team members and related equipment within 4 hours of incident notification. Upon arrival, the team is capable of operating 24 hours a day for up to 14 days with the equipment and supplies to be fully self-sustaining if required.

Canadian Safety and Security Program (CSSP)

The Canadian Safety and Security Program (CSSP) is a federally-funded program led by Defence Research and Development Canada’s Centre for Security Science (DRDC CSS), in partnership with Public Safety Canada.

Common Operating Picture (COP)

Continuously updated overview of an incident compiled throughout an incident's life cycle from data shared between integrated systems for communication, information management, and intelligence and information sharing (FEMA).

Community of Practice (CoP)

A community of practice (CoP) is a group of people who share a common concern, a set of problems, or an interest in a topic and who come together to fulfill both individual and group goals.

Core Capability

Used by FEMA, Core Capabilities are utilized to conduct a systematic process engaging the whole community as appropriate in the development of executable strategic, operational, and/or community-based approaches to meet defined

objectives. Each core capability is tied to a capability target. (FEMA)

Defence Research and Development Canada (DRDC)

An agency of the Department of National Defence (DND), whose purpose is to provide the Canadian Armed Forces (CAF), other government departments, and public safety and national security communities with knowledge and technology.

Emergency Coordination Centre (ECC)

During an emergency response, the Emergency Coordination Centre (ECC) functions as a community's 'nerve centre', anticipating and supporting the needs of one or more incident sites, coordinating the efforts of multiple partners, and addressing the community's needs as a whole. (Alberta)

Emergency Centre

Short name for "Emergency Coordination Centre (ECC)/Emergency Operations Centre (EOC)."

Emergency Management (EM)

The prevention and mitigation of, preparedness for, response to and recovery from emergencies. (Public Safety Canada)

Emergency Operations Centre (EOC)

A designated facility established by an agency or jurisdiction to coordinate the overall agency or jurisdictional response and support to an emergency. (Public Safety Canada [PSC] National Emergency Response System [NERS])

Emergency Solutions International (ESI)

The primary mission of Emergency Solutions International (ESI) is to support partners from both the government and private sectors in their "All Hazard" based emergency planning, preparedness and risk assessment needs.

Emergency Support Function (ESF)

Emergency Support Functions (ESFs) provide the structure for coordinating Federal interagency support for a Federal response to an incident. They are a way to group functions that provide federal support to states and federal-to-federal support, both for Stafford Act declared disasters and emergencies and for non-Stafford Act incidents. ESFs include, but are not limited to, Transportation, Communications, Search and Rescue, and Public Safety and Security

Event

A planned, non-emergency activity, see "Incident." (ICS Canada)

Formal Communication

Formal communication must be used when:

- Receiving and giving work assignments.
- Requesting support or additional resources.
- Reporting progress of assigned tasks.

Other information concerning the incident or event can be passed horizontally or

vertically within the organization without restriction. This is known as informal communication. (ICS Canada)

Government Operations Centre (GOC)

The Government Operations Centre (GOC) provides an all-hazards integrated federal emergency response to events (potential or actual, natural or human-induced, accidental or intentional) of national interest. It provides 24/7 monitoring and reporting, national-level situational awareness, warning products and integrated risk assessments, as well as national-level planning and Whole of Government response management.

Government Operations Centre Modernization (GOC Mod)

The review of the Government Operations Centre (GOC), a directorate of Public Safety Canada, is part of ongoing efforts to review and to update the mechanisms that the federal government relies on to carry out a leadership role in emergency management in view of the increasing frequency, scope, complexity and impact of natural and man-made all-hazards events. The review was led by the Deputy Minister of Public Safety and conducted by an ad hoc committee of Deputy Ministers chaired by the Deputy Minister of Public Safety. The Deputy Ministers Committee was supported by an ADM level committee with a membership that mirrored that of the Committee of Deputy Ministers.

Incident

An occurrence or event, natural or man-made that requires a response to protect life or property. Incidents can, for example, include major disasters, emergencies, terrorist attacks, terrorist threats, civil unrest, wild land and urban fires, floods, hazardous materials spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tropical storms, tsunamis, war-related disasters, public health and medical emergencies, and other occurrences requiring an emergency response. (ICS Canada)

Incident Command Post (ICP)

The field location where the primary functions are performed. The ICP may be co-located with the incident base or other incident facilities. (ICS Canada)

Incident Command System/Structure (ICS)

The Incident Command System (ICS) is a standardized on-site emergency management system designed to enable effective and efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure (ICS Canada).

I-402: Incident Command System for Executives, introduces the Incident Command System (ICS) and provides the foundation for executive understanding and participation in the ICS. This course describes the history, features and principles, and organizational structure of the Incident Command System, including the relationship between the Incident Commander and Agency Executives. Course participants will be better prepared to function within an ICS

environment.

I-100: Introduction to the Incident Command System, introduces the Incident Command System (ICS) and provides the foundation for higher level ICS training. This course describes the history, features and principles, and organizational structure of the Incident Command System.

I-200: Basic ICS for Single Resources and Initial Action Incidents is designed to enable personnel to operate efficiently during an incident or event within the Incident Command System (ICS). ICS-200 provides training on and resources for personnel who are likely to assume a supervisory position within the ICS.

I-300: Intermediate ICS, ICS for Expanding Incidents, defines the unique qualities of ICS as an event or incident management system in an expanding situation. The course is designed to enable personnel to operate efficiently using the ICS in a supervisory role on expanding incidents. The course units and lessons provide a review of ICS fundamentals, assessing incidents and setting objectives, Unified Command, Resource Management, the planning process, demobilization, transfer and termination of command of an incident.

I-400: Advanced ICS, is designed to enable personnel to operate efficiently in the advanced application of the Incident Command System. This course provides training for personnel who are expected to perform in a management capacity in a complex incident environment.

Interested Parties Matrix

An interested party can be a stakeholder, person or organization that can affect, be affected by, or perceive itself to be affected by a decision or activity. (ISO 9001). The Interested Parties Matrix documents the needs and expectations of your interested parties, i.e., regular emails, scheduled updates, newsletters etc.

Interoperability

The ability of emergency personnel to communicate between jurisdictions, disciplines, and levels of government, using a variety of systems, as needed and as authorized (PSC). The ability of emergency management/response personnel to interact and work well together. In the context of technology, interoperability is also defined as the emergency communications system that should be the same or linked to the same system that the jurisdiction uses for nonemergency procedures and should effectively interface with national standards as they are developed. The system should allow the sharing of data with other jurisdictions and levels of government during planning and deployment. (ICS Canada)

Public Safety Canada (PSC)

Public Safety Canada was created in 2003 to ensure coordination across all federal departments and agencies responsible for national security and the safety of Canadians.

National Emergency Response System (NERS)

Public Safety Canada led the development of the National Emergency Response System (NERS) with provincial and territorial officials, which was approved by Federal/Provincial/Territorial Ministers in January 2011. The NERS enables coordinated efforts in responding to emergencies.

Senior Officials Responsible for Emergency Management (SOREM)

SOREM is a Federal/Provincial/Territorial (FPT) body that works to harmonize and improve emergency practices across the country. SOREM includes representatives from provincial and territorial Emergency Management Organizations and Public Safety Canada. SOREM is responsible for providing guidance and advice on how to enhance emergency management to the FPT Deputy Ministers Responsible for Emergency Management and to the standing forum of FPT Ministers Responsible for Emergency Management. SOREM is also responsible for providing direction, advice and support to committees and working groups and non-governmental organizations dealing with crisis and consequence management issues at a national level.

Situation Report

A document that often contains confirmed or verified information regarding the specific details relating to an incident. (ICS Canada)

Situational Awareness

Situational Awareness is the ability to identify, process, and comprehend the crit More simply, it is knowing what is going on around you. Situational Awareness r of information regarding actual incidents and developing hazards. A common c sharing Situational Awareness. (FEMA)

Appendix I – Survey Questionnaire

Public Safety Canada | Sécurité publique Canada

Emergency Solutions International Inc.

DRDC RDDC | Programme canadien de sécurité et de sûreté

Evidence-based Examination and Analysis of Incident Command Structures in Operations Centres
CSSP-2019-TI-2436

Background

A collaborative partnership is underway between Public Safety Canada (PSC), Defence Research and Development Canada Centre for Security Science (DRDC CSS), Public Works Government Service Canada (PWGSC), CALIAN Group Ltd., and Emergency Solutions International (ESI).

This project will establish evidence-based examination and analysis of Incident Command structures in Operations Centres as a project in accordance with the Canadian Safety and Security Program (CSSP) managed through DRDC CSS.

Objectives:

- Survey, compare, and analyze the Emergency Management (EM) process organizational structures, processes and procedures implemented by Federal, Provincial, Territorial, Municipal, and select private sector Emergency Operations Centres (EOC)/Emergency Command Centres (ECC);
- Survey, compare, and analyze EM organizations against an Incident Command System (ICS) baseline in order to support improved coordination in a Whole of Government (WoG) response to all hazard events.
- This EM environmental scan will support the development of a community of practice and common training standards.

This project is well aligned with to CSSP's mission to strengthen Canada's ability to prepare for, respond to and recover from natural disasters, as incident command structures are key in meeting those outcomes.

Your organization has been selected to complete the survey by the Project Management Team, and we thank you in advance for taking the 30 to 60 minutes to complete this valuable piece of the project.

Survey

Organization:	
Department:	
Representative Name:	
Representative Position:	
Representative EOC Role:	
Email Address:	Direct Phone:
Point of Contact if different from above:	
Email:	Direct Phone:

Instructions

The following Survey is anticipated to take approximately 30 to 60 minutes to complete.

Please respond to each statement or question as honestly and accurately as you can. Your thoughtful responses are important to the study. There are no correct or incorrect answers on this survey.

It is your choice on whether to complete this survey electronically or to print it out, handwrite, and scan your responses. The completed survey is requested to be returned to Mark Gillan at mark.gillan@esintl.ca by 6 February 2020.

1. Please provide an organizational chart (position based) for your present EOC structure.
2. What training/qualifications are:
a) required:
b) recommended:
c) envisioned for positions/functions within your EOC:
3. What interdependencies/procedure-based connections are there between your EOC and other EOCs?
4. What other organizations, not represented in your EOC, do you liaise with based upon your risk assessment scenarios?
5. What other organizations provide, or are provided, Assistance, Cooperation, or Emergency Support Functions by your EOC?
6. Which Position/Function within your EOC liaises with your Regional Public

Safety representative?
7. What concerns do you have with regard to interoperability between your EOC and your vertical liaison with higher level EOCs?
8. Does your EOC connect vertically down to an Incident Command Post? If so which Position/Function is responsible for this line of Formal Communication?
9. Please comment on your organization's present/envisioned use of ICS principles and organizational structure in relation to the management of your EOC?
10. What are the merits of standardized naming convention for EOC positions/functions? Are there any issues to standardization?
11. General comments on the organization's perspective regarding project strategic objectives.
12. What are the deficiencies of existing ICS concepts when applied to Emergency Operations Centres (EOC) and the Government Operations Centre (GOC)?
13. What are the merits of the existing ICS concepts when applied to Emergency Operations Centres (EOC) and the Government Operations Centre (GOC)?
14. How would the performance / effectiveness of your EOC and the GOC be improved with the application of ICS Principles?
15. Does your organization believe there should be a standardized Canadian Curriculum for personnel with EOC responsibilities?
16. What are the major issues with respect to implementing ICS concepts in your EOC or the GOC?
General Comments:

Public Safety Canada | Sécurité publique Canada | Emergency Solutions International Inc. | DRDC RDDC | Programme canadien de

Examen et analyse fondés sur les données probantes des structures de commandement en cas d'incident dans les centres d'opérations
PCSS-2019-TI-2436
Contexte

Un partenariat de collaboration est en cours entre Sécurité publique Canada (SPC), le Centre des sciences pour la sécurité de Recherche et développement pour la Défense Canada (CSS RDDC), Travaux publics et Services gouvernementaux Canada (TPSGC), CALIAN Group Ltd. et Emergency Solutions International (ESI).

Ce projet établira un examen et une analyse fondés sur des données probantes des structures de commandement en cas d'incident dans les centres d'opérations, conformément au Programme canadien de sécurité et de sûreté (PCSS) géré par l'intermédiaire du CSS RDDC.

Objectifs :

- Enquêter, comparer et analyser les structures, processus et procédures organisationnels du processus de gestion des urgences (GU) mis en œuvre par le gouvernement fédéral, les provinces, les territoires, les municipalités et certains centres d'opérations d'urgence (COU) ou Centres de commandement en cas d'urgence (CCU) du secteur privé;
- Enquêter, comparer et analyser les organismes de GU en fonction d'un niveau de référence du Système de commandement d'intervention (SCI) afin d'appuyer une meilleure coordination des interventions pangouvernementales en cas d'événement dangereux;
- Cette analyse de l'environnement de GU appuiera l'élaboration d'une communauté de pratiques et de normes communes de formation.

Ce projet s'harmonise bien avec la mission du PCSS de renforcer la capacité du Canada à se préparer aux catastrophes naturelles, d'y réagir et de se relever, car les structures de commandement en cas d'incident sont essentielles pour atteindre ces résultats.

Votre organisme a été choisi pour répondre au sondage par l'équipe de gestion de projet, et nous vous remercions à l'avance d'avoir pris les 30 à 60 minutes pour terminer cette importante partie du projet.

Sondage

Organisme :	
Ministère :	
Nom du représentant :	
Poste du représentant :	
Rôle du représentant du COU :	
Courriel :	Téléphone direct :
Point de contact si différent du point ci-dessus :	
Courriel :	Téléphone direct :

Directives

Le sondage suivant devrait prendre environ 30 à 60 minutes.

Veuillez répondre à chaque déclaration ou question de la façon la plus honnête et la plus précise possible. Vos réponses réfléchies sont importantes pour l'étude. Il n'y a pas de réponses correctes ou incorrectes à ce sondage.

Vous avez le choix entre remplir ce sondage par voie électronique ou l'imprimer, l'écrire à la main et numériser vos réponses. Le sondage rempli doit être retourné à Mark Gillan à l'adresse mark.gillan@esintl.ca d'ici le 6 février 2020.

1. Veuillez fournir un organigramme (basé sur le poste) pour votre structure actuelle du COU.
2. Quelles sont les formations/qualifications :
a) obligatoires :
b) recommandées :
c) envisagées pour les postes/fonctions au sein de votre COU :
3. Quelles sont les interdépendances et les connexions fondées sur les procédures entre votre COU et les autres COU?
4. Quels autres organismes, qui ne sont pas représentés dans votre COU, contactez-vous en fonction de vos scénarios d'évaluation des risques?
5. Quels autres organismes fournissent ou reçoivent des fonctions d'assistance, de coopération ou de soutien d'urgence par votre COU?
6. Quel poste ou fonction au sein de votre COU entretient des liens avec votre

représentant régional de la Sécurité publique?
7. Quelles sont vos préoccupations en ce qui concerne l'interopérabilité entre votre COU et votre liaison verticale avec les COU de niveau supérieur?
8. Votre COU se connecte-t-il verticalement à un poste de commandement en cas d'incident? Dans l'affirmative, quel poste ou fonction est responsable de cette ligne de communication officielle?
9. Veuillez commenter l'utilisation actuelle ou envisagée par votre organisme des principes et de la structure organisationnelle du SCI en ce qui concerne la gestion de votre COU.
10. Quels sont les avantages d'une convention de dénomination normalisée pour les postes ou fonctions du COU? Y a-t-il des problèmes à la normalisation?
11. Observations générales sur le point de vue de l'organisme concernant les objectifs stratégiques du projet.
12. Quelles sont les lacunes des concepts actuels du SCI lorsqu'ils s'appliquent aux centres d'opérations d'urgence (COU) et au Centre d'opérations du gouvernement (COG)?
13. Quels sont les avantages des concepts actuels du SCI lorsqu'ils s'appliquent aux centres d'opérations d'urgence (COU) et au Centre d'opérations du gouvernement (COG)?
14. Comment améliorer le rendement et l'efficacité de votre COU et du gouvernement du Canada en appliquant les principes du SCI?
15. Votre organisme croit-il qu'il devrait y avoir un programme d'études canadien normalisé pour le personnel ayant des responsabilités auprès du COU?
16. Quels sont les principaux enjeux liés à la mise en œuvre des concepts du SCI dans votre COU ou dans le COG?
Commentaires généraux :

Appendix II – Raw Data from Interview and Questionnaire Respondents

Table 6: Organizational Structure, Emergency Centre type, use of ICS principles, and support for an Emergency Management Community of Practice for each Study Respondent as at the time of the interviews and questionnaires, and the level of understanding of the participating representatives.

Study Respondents	Org. Structure	EOC/ECC	ICS principles (Y/N)	Support a standardized Canadian Curriculum
Federal				
1. Canada Post Corporation (CPC)	Departmental	EOC	N	N
2. **Canadian Armed Forces (CAF) / Department of National Defense (DND)**	ICS	N/A (Integrated Command Centre)	Y	Y
3. **Canadian Border Services Agency (CBSA)**	ICS-like	EOC (ROC/BOC)	Y	Y
4. **Canadian Coast Guard (CCG)**	ICS	National: ECC* Regional: EOC	Y	Y
5. **Canadian Food Inspection Agency (CFIA)**	ICS-like	EOC	Y	Y
6. **Environment and Climate Change Canada (ECCC)**	ICS-like	EOC	Y	Y
7. **Fisheries and Oceans Canada (DFO)**	Departmental	EOC	Y	Y
8. **Government Operations Centre (GOC)** / Public Safety Canada (PSC)	ICS-like	GOC	Y	Y
9. Health Canada (HC)	ICS-like	EOC	Y (/IMS)	Y

Study Respondents	Org. Structure	EOC/ECC	ICS principles (Y/N)	Supported standardized Canadian Curriculum
10. Immigration, Refugees and Citizenship Canada (IRCC)	ICS-like	ECC (Task Force, Operational Readiness Unit)	Y	Y
11. Indigenous Services Canada (ISC)	N/A	N/A	N	N
12. Innovation, Science and Economic Development (ISED)	ICS	EOC	Y	Y
13. **Natural Resources Canada (NRCan)**	ICS	EOC	Y (/IMS)	Y
14. **Royal Canadian Mounted Police (RCMP)**	ICS	OC	Y	Y
15. **Transport Canada (TC)**	ICS-like	National: ECC* Regional: EOC	Y	Y
Provincial/Territorial				
Alberta				
16. Alberta Emergency Management Agency	ICS-like	ECC	Y	Y
Manitoba				
17. Manitoba EMO	ICS-like	ECC	Y	Y
New Brunswick				
18. NBEMO (OPSA as a Technical Assessment Group)	ICS (G/S/B)	EOC (Situation Room)	Y	Y
Prince Edward Island				
19. PEI EMO	ICS-like	EOC	Y	Y
Newfoundland and Labrador				
20. Newfoundland and Labrador Emergency Services	ICS-like	EOC	Y	Y

Study Respondents	Org. Structure	EOC/ECC	ICS principles (Y/N)	Supported a standardized Canadian Curriculum
Northwest Territories				
21. Government of the Northwest Territories, Municipal and Community Affairs	ICS	EOC	Y	Y
First Nations				
22. North Shore Micmac District Council (NSMDC)	ICS	ECC	Y	Y
23. Independent First Nations Alliance (IFNA)	ICS	EOC	Y	Y
Municipal				
24. City of Saskatoon EMO	ICS	ECC	Y	Y
25. City of Ottawa	ICS-like (IMS)	EOC	Y (/IMS)	Y
26. City of Toronto	ICS-like	EOC	Y	Y
27. Cities of Moncton/Riverview/Dieppe	ICS	ECC (sometimes EOC)	Y	Y
28. City of Halifax	Departmental	EOC	Y	Y
29. City of Miramichi	ICS (with elements of ACM**)	EOC	Y	Y
Critical Infrastructure				
30. NB Power	ICS (adapted to meet needs and capture nuclear)	EOC	Y	Y
31. Point Lepreau Nuclear Generating Station (PLNGS)	ICS (adapted to meet needs and capture nuclear)	EOC	Y	Y

Study Respondents	Org. Structure	EOC/ECC	ICS principles (Y/N)	Support a standardized Canadian Curriculum
32. Saint John Energy	ICS-like	EOC	Y	Y
33. Port Saint John	ISM	EOC	Y	Y
34. Irving Pulp and Paper	ICS	EOC	Y	Y
35. Saint John Airport	ICS (with elements of ACM)	ECC	Y	Y
36. Canaport LNG	ICS	EOC	Y	Y
37. Mosaic Potash Esterhazy, K1, K2, and K3 Mines	ICS	EOC	Y	Y
ICS Canada ****				
38. ICS Canada Coordinator	ICS	EOC	Y	Y
39. ICS Canada Committee Member	ICS	EOC	Y	Y
Other Subject Matter Experts ****				
40. US Federal Emergency Management Agency	ICS	EOC	Y	N/A

* For Federal Departments with National and Regional level operations, their National Level Emergency Centre Designation was utilized in the data processing.

** Agency Control Model (ACM) (a legacy organizational structure model) and Departmental EOC Organization Structure are used synonymously.

*** ICS principles utilized does not always mean the Department/Organization is training to the ICS curriculum

**** ICS Canada and Other Subject Matter Experts data were not included in the data processing for Organization Structure, Emergency Centre naming convention, the use of ICS principles, or support for a standardized Canadian curriculum.

Appendix III – PEI EMO EOC Positional Checklists

Prince Edward Island
CANADA
Office of Public Safety

EOC ICS Guidance Checklist: EOC Manager

Reporting to Director of the Office of Public Safety (or designate)

Responsibilities:
The EOC Manager is responsible to supervise and coordinate, provide leadership and direction of EOC participants ensuring that they fulfill their assigned roles to return the community to normal as quickly as possible. Tasks may be delegated as required.
Tasks

Task	Initial
• Brief/consult with Director of the OPS (activation/deactivation/regular updates)	
• Determine activation level and staffing required. Consider recruiting additional staff from Public Safety Division to assist with logistics, phones & email.	
• Ensure ICS roles are assigned	
• Activate the EOC as per the EOC Activation Checklist	
• Open & maintain personal log	
• Review appropriate event checklists for planning factors	
• Ensure communications with site is established. Consider deploying a Site Liaison Officer.	
• Draft EOC Action Plan objectives and operational rhythm	
• Task Planning Section to conduct planning cycle meetings as required	
• Approve EOC Action Plan	
• Determine who needs to receive SITREPS: EOC Team, Public Safety Division staff, Municipalities, IEMG, BCP, Critical Infrastructure contacts, etc.	
• Provide oversight and leadership to the EOC Team	
• Consider requesting additional provincial support e.g. a toll-free information number or damage inquiry line for DFAA; and graphic design support for pictograms and public information flyers.	

• Consider requests for CCEMO, IEMG, and Federal assistance	
• Consider demobilization and recovery planning. Notify partners as required.	
• At the end of the event, turn in all documentation to the Planning Section	

Planning Cycle Checklist as per the EOC Planning P	Check
Info Sharing Meeting: The purpose is to gain and share information among the EOC Team. Planning Section Chief chairs. • The person with most awareness gives overall brief. • A map should be available and used. • Each person with important info for everyone to know gives a very short brief. • Other than the EOC Manager, questions are held until after the last speaker.	
Verify Objectives: EOC Manager, Planning and Operations Section Chiefs determine if the EOC Manager's initial objectives need to be amended based on any new info revealed during the meeting.	
Strategy and Tactics Meeting: Planning and Operations Section Chiefs along with EOC team members with a key role determine strategies (how) and tactics (who does what) to achieve objectives.	
Planning Meeting: Planning and Operations Section Chiefs present strategy and tactics to EOC Manager who approves, amends, or rejects them.	
EOC Action Plan Prep and Approval: Planning Section creates an EOC Action Plan. EOC Manager reviews and approves it.	
Operational Period Briefing: Operations Section Chief briefs the EOC Team on the EOC Action Plan. Photocopies may be made for distribution or a copy may be posted in the EOC. Operational period: begins once the briefing ends.	
Execute the Action plan: EOC Team works to achieve objectives: • Agency reps keep Section Chiefs updated • Section chiefs keep EOC Manager, Info Officer, and Planning Section updated • Agency Reps update agency boards with info • Planning section distributes situation reports	
Validate Objectives: EOC Manager determines if objectives are still valid, need to be amended, or are no longer valid.	
Process repeats itself for the next operational period.	

EOC ICS Guidance Checklist: EOC Liaison Officer

Reporting to EOC Manager

Responsibilities

The EOC Liaison Officer is responsible for acting as a point of contact/coordination for Agency Representatives.
Tasks

Task	Initial
• Open and maintain a personal log	
• Receive initial briefing from EOC Manager	
• Determine and employ an appropriate seating plan	
• Provide direction to agency reps reporting to EOC Including: ○ Supervising their sign in and issuing passes ○ Informing them of your seating plan and their reporting structure ○ Assisting them with obtaining their Agency Rep books and tent cards	
• Liaise with other agencies on behalf of the EOC Manager	
• Before leaving for the day: ○ Remind Agency Reps to turn in their personal logs ○ Supervise sign out of personnel and collect all EOC passes ○ Submit your personal log, sign out sheets and all documentation to the Planning Section	
• At the end of the event, turn in all documentation to the Planning Section	

EOC ICS Guidance Checklist: Information Officer

Reporting to EOC Manager

Responsibilities

The Information Officer is responsible for the Emergency Public Information Plan and may be responsible for directing an Emergency Public Information Team.

Tasks

Task	Initial
• Sign in and obtain security pass	
• Open and maintain a Personal log	
• Receive initial briefing	
• Determine need for Information assistants or emergency public information team	
• Review appropriate event checklists	
• Gain situational awareness of the event	
• Conduct media monitoring	
• Activate / provide leadership for the OPS Emergency Public Information Plan as required	
• Before leaving for the day: ○ Turn in personal log to Planning Section ○ Return EOC Pass and Sign out	
• At the end of the event, turn in all documentation to the Planning Section	

EOC ICS Guidance Checklist: Operations Section Chief

Reporting to EOC Manager

Responsibilities

The Operations Section focuses on the current operational period by liaising with and supporting the Incident Management Team in accordance with the Incident Action Plan.

Tasks

Task	Initial
• Open and maintain a personal log	
• Receive initial briefing	
• Review appropriate event checklists for planning factors	
• Provide direction to agency reps working in the Operations Section including: ○ Chain of command – communication flow ○ Status boards ○ Maintaining individual record of costs per agency/department	
• Develop strategies and tactics for the EOC Action Plan.	
• Deliver the Operational Period Briefing to the EOCT	
• Consider appointing a deputy or grouping agencies into task forces	
• Monitor and assist agency reps within the Operations Section with achieving their objectives	
• Keep the EOC Manager, Information Officer, and Planning Section informed on the progress of achieving objectives	
• Before leaving for the day: ○ Turn in personal log and other pertinent documentation to Planning Section ○ Return EOC pass and sign out	
• At the end of the event, turn in all documentation to the Planning Section	

EOC ICS Guidance Checklist: Planning Section Chief

Reporting to EOC Manager

Responsibilities

The Planning Section is responsible for facilitating the planning cycle for each operational period, and for managing and disseminating information. Any of the tasks below can be assigned to deputies as this position can often be very busy.

Tasks

Task	Check
• Receive initial briefing from EOC Manager	
• Prepare Planning Section Workspace/EOC Computer: ○ Open and maintain a main event log ○ Open and maintain an EOC phone log of important calls ○ Activate Emergency in Sentinel System ○ Monitor, direct, respond and action all emails from the EMO@gov.pe.ca account	
• During power/email outages consider alternate methods of communication such as Sentinel, phone, text, Eastlink email, etc.	
• Review appropriate event checklists for planning factors	
• Gain situational awareness of the incident's impact and response activities.	
• Confirm operational rhythm with EOC Manager i.e. schedule for meetings, agency reporting deadlines, SITREPS, Provincial Impact Map, EOC Action Plans, deactivation of EOC, etc.	
• Chair Planning Cycle Meetings and prepare EOC Action Plans (see below)	
• Create and distribute SITREPS, Provincial Impact Map, EOC Action Plans as per operational rhythm. Confirm with EOC Manager who is to receive them. EOC Team, Public Safety Division (Internal) staff, Municipalities, IEMG, BCP, Critical Infrastructure contacts, etc.	
• Print copies of EOCT and municipal contact lists for members on the EOCT. Ex. Municipal Affairs, Red Cross, Social Development & Housing, as well as copies for EMO to access quickly.	
• Maintain a documentation binder of sign in sheets, personal logs, phone logs, SITREPS, EOC Action Plans, important emails and other documents	
• Consider future planning needs for next operational period (including collecting information for Disaster Financial Assistance Arrangements) or demobilization	
• Before leaving for the day: ○ Replenish EOC forms as needed. ○ Sign out	
• As the EOC is preparing to deactivate: ○ Collect all forms and documents from participants for the	

documentation binder. ○ Make sure EOCT and Municipal Contact lists that were distributed to non-EMO staff are turned back in or shredded.	

Planning Cycle Checklist as per the EOC Planning P	Check
Info Sharing Meeting: The purpose is to gain and share information among the EOC Team. Planning Section Chief chairs. • The person with most awareness gives overall brief. • A map should be available and used. • Each person with important info for everyone to know gives a very short brief. • Other than the EOC Manager, questions are held until after the last speaker.	
Verify Objectives: EOC Manager, Planning and Operations Section Chiefs determine if the EOC Manager's initial objectives need to be amended based on any new info revealed during the meeting.	
Strategy and Tactics Meeting: Planning and Operations Section Chiefs along with EOC team members with a key role determine strategies (how) and tactics (who does what) to achieve objectives.	
Planning Meeting: Planning and Operations Section Chiefs present strategy and tactics to EOC Manager who approves, amends, or rejects them.	
EOC Action Plan Prep and Approval: Planning Section creates an EOC Action Plan. EOC Manager reviews and approves it.	
Operational Period Briefing: Operations Section Chief briefs the EOC Team on the EOC Action Plan. Photocopies may be made for distribution or a copy may be posted in the EOC. Operational period: begins once the briefing ends.	
Execute the Action plan: EOC Team works to achieve objectives: • Agency reps keep Section Chiefs updated • Section chiefs keep EOC Manager, Info Officer, and Planning Section updated • Agency Reps update agency boards with info • Planning section distributes situation reports	
Validate Objectives: EOC Manager determines if objectives are still valid, need to be amended, or are no longer valid.	
Process repeats itself for the next operational period.	

EOC ICS Guidance Checklist: Logistics Section Chief

Reporting to EOC Manager

Responsibilities

The Logistics Section is responsible for the following:

- The EOC facility (security, feeding, amenities, backup power, etc.)
- Telecommunications
- Information technology

Tasks

Task	Check
• Sign in	
• Open and maintain a Personal log	
• Receive initial briefing	
• Ensure feeding and accommodations arrangements are made as required	
• Ensure IT requirements are available and facilitate connectivity	
• Maintain office supplies and equipment needs for EOC	
• Ensure administrative needs are provided as required	
• Provide direction and support to telecommunications	
• Before leaving for the day: Sign out	
• At the end of the event, turn in Personal logs and all documentation to the Planning Section	

EOC ICS Guidance Checklist: Agency Representative

Responsibilities

Agency representative may include Provincial Department Emergency Service Officers (DESO), NGOs, Federal Government, private industry, and any other people requested to participate in the EOC. Their responsibility is to make decisions, coordinate and dedicate resources on behalf of their respective organization.

Tasks

Task	Check
• Sign in and obtain security pass	
• Obtain Agency rep binder, display agency tent card	
• Open and maintain a personal log	
• Participate in Information Sharing Meetings	
• Be prepared to advise others within your area of expertise	
• Execute strategies assigned to you in the EOC Action Plan	
• Request resources through your appropriate section to achieve your assignments, if required.	
• Share information: ○ For urgent info, announce it to the room ○ Keep your EOC Section Chief and your agency updated on progress ○ Info important to others can be displayed on a white board	
• Assist other EOC Team members as required.	
• Before leaving for the day: ○ Return EOC pass and sign out	
• At the end of the event, turn in all documentation to the Planning Section	

Appendix IV – GOC EVENT UPDATE

GOC COG
GOVERNMENT OPERATIONS CENTRE
CENTRE DES OPÉRATIONS DU GOUVERNEMENT

UNCLASSIFIED

Canada

Event Update As of 18:00 EST 24 February 2020

DISSEMINATION LEVEL: DL-1 (Domestic and Foreign EMO, CI Stakeholders, and EM Community)

EVENT

EVENT TITLE: 00360-20 COVID-19

LOCATION: National/International

OVERVIEW: The Health Portfolio Operations Centre (HPOC) remains activated at Level 3 - *Partial Escalation*, to further support effective coordination of federal, provincial and territorial preparedness and response to the emergence of novel coronavirus (COVID-19).

The Government Operations Centre posture remains at Level 3 – Coordination of Federal Response.

REGION (NATIONAL)

SITUATION UPDATE

- **Please note that this will be the final Event Update for this event unless significant changes occur.**
- As of **24 Feb**, **ten (10)** cases of COVID-19 infections have been confirmed in Canada and **one new presumptive positive case in BC.** (ON=**4**, BC=6**+1**)
- Travelers who remain in quarantine at CFB Trenton from Canada 2 (195 individuals) are expected to be released on 25 Feb. **The process is estimated to be completed by 10:30 EST. (source: PHAC)**
- All repatriated passengers **from the Diamond Princess** are now settled in their accommodations at the NAV Centre and will remain in quarantine for 14 days. (source: PHAC)
- **On 23 Feb the Health Portfolio Operations Center (HPOC) confirmed that the individual who tested positive for COVID-19 on 20 Feb flew on an Air Canada flight while symptomatic. The individual was on a 14 Feb flight from Tehran to Vancouver via Istanbul and Montreal. Air Canada advised staff who were on the flight to report any symptoms. On these flights, 12 foreign nationals from five (5) countries (Belgium, India, Bahamas, Iran and United Arab Emirates) were identified as sitting within a 2-metre radius of the symptomatic confirmed case. The respective countries were informed through an International Health Regulations (IHR) notification. (source: HPOC)**

CRITICAL INFRASTRUCTURE IMPACTS

- Nothing to report at this time.

RDIMS #3509607