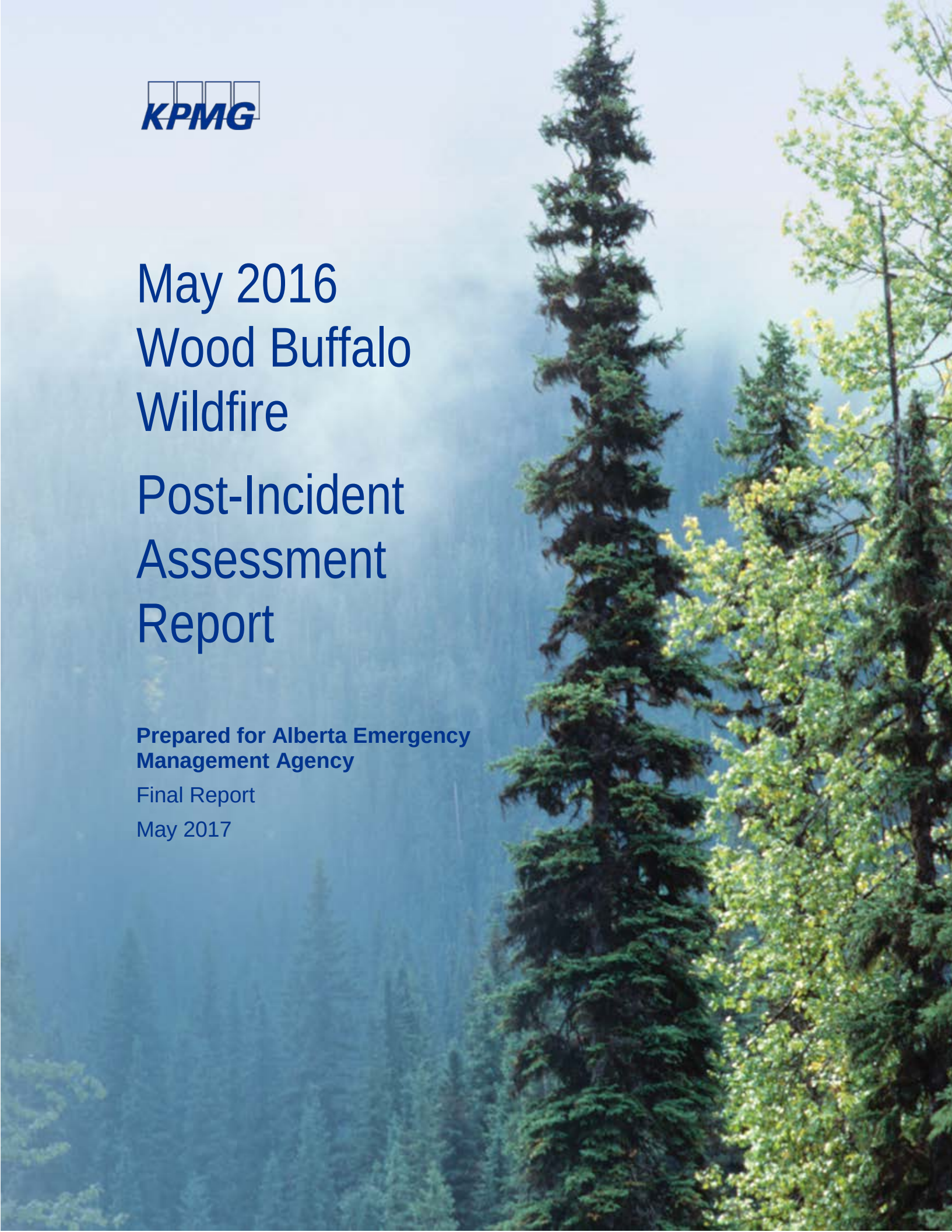

May 2016 Wood Buffalo Wildfire

Post-Incident Assessment Report

Prepared for Alberta Emergency Management Agency

Final Report

May 2017

Disclaimer

KPMG LLP (KPMG) has been engaged by the Alberta Emergency Management Agency (AEMA or the Client) to conduct a Review of the Government of Alberta's support to stakeholders, emergency social services, and community evacuations during the May 2016 Wood Buffalo Wildfire (also known as the Horse River Wildfire) pursuant to the terms of an engagement agreement with AEMA dated November 24, 2016 (the Engagement Agreement). KPMG neither warrants nor represents that the information contained in this Report is accurate, complete, sufficient or appropriate for use by any person or entity other than the Client or for any purpose other than set out in the Engagement Agreement. This Report may not be relied upon by any person or entity other than Client, and KPMG hereby expressly disclaims any and all responsibility or liability to any person or entity other than the Client in connection with their use of this Report.

KPMG's role in this Post-Incident Assessment was to: outline certain matters that came to our attention during engagement with stakeholders and document reviews; and offer our comments and recommendations for the AEMA's consideration. These comments, by their nature, largely relate to opportunities for change or enhancement and do not fully capture the many strong features of the AEMA's current activities and undertakings, nor those of the RMWB and participating stakeholders.

Our assessment approach consisted solely of inquiry, survey, observation, comparison and analysis of participant-provided information. KPMG relied on the completeness and accuracy of the information provided.

Through normal AEMA processes, the AEMA will be responsible for the:

- Assessment of observations and findings
- The decision to implement any recommendations, and
- Consideration of impacts that may result from the implementation of recommendations.

Implementation will require the AEMA to plan and evaluate any changes to make sure that satisfactory results are realized.

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Executive Summary

Acknowledgement

This report is based on the knowledge, experience and insights of those directly involved in, and impacted by, the May 2016 Wood Buffalo Wildfire. KPMG would like to thank all stakeholders who provided input into this report for their openness and commitment to continuous improvement. This Post-Incident Assessment stands as a testament to the countless individuals that demonstrated remarkable resourcefulness, compassion and resilience in response to this devastating event.

Introduction

In the past decade, Alberta has experienced several large-scale disasters that have impacted citizens across the Province. The severity and frequency of these disasters has placed increased pressure on provincial and municipal emergency management programs to perform at optimal levels.

Wildfires are, unfortunately, a common occurrence in Alberta's forest ecosystem and are actively managed through Alberta Agriculture and Forestry's wildfire management program. When wildfires enter the wildland-urban interface the potential risk to property and life is significant. This risk is compounded by the increasing encroachment of communities into wildland areas, resulting in the need for continued investment in wildfire prevention and preparedness programs.

In recent years, the wildfire season has started earlier and lasted longer than it has historically in Alberta. In 2016, the wildfire hazard conditions in Northern Alberta were severe, due to extremely dry conditions the previous summer, low moisture over the winter, and dry, warm conditions in the early spring.

Background to the May 2016 Wood Buffalo Wildfire

In the week leading up to May 1, 2016, the wildfire hazard conditions in and around the Regional Municipality of Wood Buffalo (the Region) reached unprecedented levels, representing the single, largest contributing factor to what would become one of the worst wildland-urban interface fires in Canadian history.

The May 2016 Wood Buffalo Wildfire (also known as the Horse River Wildfire or the Wildfire) was first spotted on the afternoon of May 1, at approximately two hectares in size and seven kilometres outside of the Urban Service Area of Fort McMurray. By May 3, the Wildfire had grown in size and high winds drove the fire into the community. As a result, almost 88,000 people were evacuated from the Region in a very short period of time.

Over the course of five weeks, the Wildfire impacted 589,000 hectares of land in and around the Region and 1,958 structures were lost or damaged. The Insurance Bureau of Canada estimates the

Wildfire to be the costliest insured natural disaster in Canadian history, the total financial and economic impact is currently estimated at almost $8.9 billion[1].

Whenever a system is tested against extreme conditions, an opportunity exists to capture what worked well and what could be improved for future events. To continuously enhance Alberta's public safety system, it is the Alberta Emergency Management Agency's (AEMA) policy and practice to conduct a formal Post-Incident Assessment after all major events. This particular Post-Incident Assessment focuses on the Government of Alberta's (or the Province) support to stakeholders, emergency social services, and community evacuations during the Wildfire and its aftermath.

As well, due to the delegation of authority that occurred from the Province to the Region during the Wildfire under section 19(5) of the *Emergency Management Act*, this Post-Incident Assessment also brings into scope aspects of the Region's emergency management protocols. Recommendations resulting from this Post-Incident Assessment are, therefore, intended to improve both provincial and municipal emergency management programs.

Successful Lessons Learned

This report is not about blame or liability. It is about (1) assessing whether continuous improvement resulted in the integration of lessons learned, and (2) identifying opportunities for improvement through post-incident analysis. The report is intended to assist the Province and its partners to be better prepared for future emergency events.

The Province successfully integrated lessons learned from past disasters into its preparedness for, response to and recovery from the 2016 hazard season. This process had a positive impact on the collective actions taken in the context of the Wildfire, and set the preconditions for success to address one of the most significant disasters in Canadian history. While not an exhaustive list of all successful actions taken in advance of and during the Wildfire, the following are worthy of note:

Formalized public safety governance (page 33)

Alberta's *Emergency Management Act* was amended in 2011 to support local authorities in establishing regional approaches to emergency management. In 2012, the Deputy Ministers' Public Safety Committee was formed to provide a strategic focus to public safety and emergency management by coordinating priorities across the Government of Alberta and making related recommendations to Cabinet.

Prevention programming (page 35)

The Province implemented a number of incentive-based prevention programs to empower local authorities to reduce disaster risk and prevent the impact of emergency events, such as wildfire.

Enhanced systems of support for local authorities (page 35)

The Province has continued to invest in and enhance the systems of support for emergency planning and preparation by Alberta's local authorities. This includes enhanced programs for regional collaboration and resource sharing in emergency planning, response, and recovery.

Enhanced emergency management training and exercises (page 36)

AEMA provides training to local authorities in emergency management and has expanded its training program over the last five years. Training resources are specifically designed to support Alberta's emergency management system and provide participants with a clear understanding of their role in all phases of an emergency.

Mandated provincial use of the Incident Command System model (page 38)

The Alberta Emergency Plan was updated to mandate the use of the Incident Command System (ICS) model by all participating provincial departments and agencies (i.e. incident sites, Emergency Operations Centres, and the Provincial Operations Centre or POC). The Plan encourages adoption and use of the ICS model by Alberta's communities and public safety system stakeholders.

Improved Provincial Operations Centre capacity and technology (page 39)

The AEMA implemented the POC Augmentation Program to: build capacity and depth across the Government of Alberta to support emergency events that require complex and extended POC operations; and implement a new incident management technology, Alberta DisasterLAN.

Formalized Incident Management Teams (page 40)

Since 2013, AEMA has studied the standards, qualifications, and training requirements for the creation of an All-Hazards Incident Management Team program in Alberta and formalized its relationship with the Strathcona County Incident Management Team and Canada Task Force 2. Both teams were leveraged during the Wildfire.

Launch of the Alberta First Responder Radio Communications System (page 41)

While the Alberta First Responder Radio Communications System (AFRRCS) was not planned to be officially launched until July 2016, the system and team were successfully deployed by the Province in May 2016 to support the Wildfire response.

Implementation of the Alberta Emergency Alert System (page 42)

The Alberta Emergency Alert system was upgraded in 2011 to address the changes in radio and television digital communications. The system was used to successfully alert tens of thousands of residents during the Wildfire.

Improved integration of provincial expertise for environmental and public health review prior to re-entry (page 42)

The Province demonstrated improved integration of its provincial expertise in environmental hazard testing and public health during the Wildfire. This was done in order to streamline testing, interpretation and communication of results to support re-entry.

Planning for re-entry and recovery (page 43)

The AEMA reinforced Alberta's emergency response system by formally incorporating a cross-ministry governance model through the Provincial / Ministerial Recovery Task Force. This resulted in the availability of additional Government of Alberta personnel to support recovery efforts during the aftermath of the Wildfire.

Lessons Identified and Recommendations

Lessons identified and recommendations captured in this report are intended to inform broader systemic opportunities to enhance and mature Alberta's emergency prevention, preparedness, response, stabilization and recovery programs. Specific recommendations take into consideration the extraordinary scale of this disaster and are intended to create repeatable and sustained performance, regardless of the size, scope, or complexity of an emergency event.

KPMG used a formal evaluation framework to conduct this Post-Incident Assessment. The framework is based on recognized emergency management, response, and recovery standards (additional details can be found on page 16). The formal evaluation framework, as shown on the following page, reflects an all hazards approach to emergency management and can be used for post-incident assessment at the program, phase, and process level.

There were a number of successful lessons identified that arose from the Wildfire, some of which include:

- The evacuation of the Urban Service Area of Fort McMurray was completed within a day, and many Registration Centres were set up in a timely manner across Alberta to support residents who needed a place to stay along with a variety of emergency social services.
- Firefighters were successful at protecting critical infrastructure in the Region and minimizing damage to the Urban Service Area, which meant that re-entry and recovery efforts could occur sooner.
- The Telephone Town Halls were launched as a mechanism to connect with the Region's residents while they were displaced from their community. The Telephone Town Halls, conceived by the Premier's Office and managed by the Public Affairs Bureau, provided a community forum for questions and answers, and the ability for the Province to get a better sense of what residents needed in terms of supports and information.
- A new tool, the Rapid Damage Assessments, was leveraged during the stabilization of the Region to complete damage assessments of all buildings within one week; this information was also provided to residents (through a dedicated website) to help them plan for their return.
- Albertans and Canadians rallied together to provide support and services to the Region, as well as donations totalling $319 million to the Canadian Red Cross.

Based on these lessons identified and others from this Post-Incident Assessment, the following themes emerged. The Province should strive to:

- Strengthen and continue investment in emergency prevention programs
- Improve public emergency awareness and preparedness
- Continue to support local authorities with the completeness and comprehensiveness of incident response and evacuation protocols
- Enhance the use of technology and analytics in emergency management processes, and
- Further operationalize the delivery of emergency social supports.

Specific recommendations resulting from the Post-Incident Assessment of the Wildfire include:

Prevention

1. Review the legislative framework for Emergency Management (page 45)

A thorough analysis of the *Emergency Management Act*, *Public Health Act*, *Environmental Protection and Enhancement Act,* and *Occupational Health and Safety Act* within the Alberta Emergency Management Framework should be completed to understand their interplay, and the implications to stakeholders, during an emergency.

2. Continue to invest in prevention programs (page 49)

The Province and local authorities should continue to invest in programs that enhance mitigation and preparedness activities, and have the most significant impact and a positive return on disaster response and recovery costs.

3. Standardize the format and processes for post-incident assessments (page 51)

A formal post-incident assessment process and guidelines for all organizations should be developed, along with a requirement for municipal-level reviews following major disasters.

4. Develop a Disaster Resiliency Strategy (page 53)

Alberta's guidelines for developing Disaster Resiliency Strategies should strive to build capacity within individuals, households, and businesses; consider the components of prevention, preparedness, and recovery as integrated and community-centred; and foster connections between communities to adapt to future disasters.

Preparedness

5. Enhance investment in public awareness and engagement initiatives for emergency preparedness (page 55)

Building on the experience from the Wildfire, the Province should continue to build Albertans' understanding of their role in emergency preparedness.

6. Clarify and document processes for legislative delegation of authority in the Alberta Emergency Plan (page 58)

The Alberta Emergency Plan should better address how delegation works, when enacted, between the Province, a local authority, and other stakeholders involved in a disaster response.

7. Scale the Hazard Identification Risk Assessment model to understand cumulative risk (page 60)

The Hazard Identification Risk Assessment model should be scaled to support local authorities and the Province consolidate information to improve awareness of cumulative risks, risk thresholds and potential for impact to critical infrastructure in a region or across the Province.

8. Create resource and asset management system capabilities (page 63)

The Province should invest in resource and asset management capabilities that allow tracking of personnel and resources as part of the Alberta DisasterLAN system.

9. Develop a Provincial Emergency Evacuation Framework and evacuation model to provide enhanced decision-making capabilities at the Provincial level (page 66)

The Provincial Emergency Evacuation Framework should describe evacuation planning processes and standards. Existing capabilities should be leveraged through a partnership between AEMA, Alberta Transportation and Alberta Agriculture and Forestry to develop wildfire evacuation modeling / simulation tools to provide enhanced decision-making capabilities to the Province and local authorities.

10. Build depth and capacity within local authorities to enable communities to support each other during emergencies (page 71)

The Province should continue to support local authorities in building various capacities and capabilities that can be tapped into during complex and sustained emergency situations. This should leverage work already underway on regional Incident Management Teams and Incident Support Teams.

11. Enhance internal communications interoperability with key stakeholders and the use of technology (page 75)

An Emergency Management Communications Interoperability Plan should be developed to address communications flow between all stakeholders during an emergency event. The plan should leverage existing work and technologies, and promote the effective use of the Information Officer role per ICS to facilitate internal communications.

12. Enhance existing public emergency communication approaches (page 79)

Public emergency communications approaches should be expanded to include accessible emergency communications, formal re-entry information practices, and outline how to leverage social media in emergencies.

13. Invest in and develop a state of the art Provincial Operations Centre facility (page 82)

To help the Province remain a leader in emergency response, a new POC facility should be built to enable collaboration among partners through space design and supporting technology.

Response

14. Mandate local authorities to adopt the Incident Command System during response (page 85)

The Province should build guidance and details around how ICS is expected to be applied in Alberta to make it easier for local authorities and other organizations to understand and use ICS.

15. Formalize criteria and operational processes for de-escalation of the Provincial Operations Centre (page 90)

The Alberta Emergency Plan should be modified to clearly outline the mechanisms, triggers, and / or decision supports that would allow the Province to de-escalate from Level 4 activation.

16. Empower and resource the Office of the Fire Commissioner (OFC) to coordinate and deploy municipal firefighters during a response (page 92)

The Office of the Fire Commissioner should be given the authority and appropriate resources to work with local authorities to create a Provincial inventory of municipal firefighters (including wildland-urban interface trained professionals) that can be deployed during an emergency. The role of the OFC should be addressed within the Alberta Emergency Plan to coordinate, deploy,

and demobilize municipal firefighters to support a provincially-declared State of Emergency, and local States of Emergency where needed.

17. Continue to operationalize the Provincial Emergency Social Services Framework (page 95)

Ongoing work on the Provincial Emergency Social Services (PESS) Framework should include the creation of a dedicated position, and co-location of PESS in the POC, leveraging common identity work underway within government, consideration for the development of a registration database, and the development of permanent and scalable provincial emergency social programs.

Stabilization

18. Build re-entry conditions and criteria into a guide that can be leveraged by local authorities (page 100)

The Province should document re-entry conditions and criteria and clearly communicate these to all stakeholders to lead to a more coordinated and collaborative approach to re-entry.

19. Expand the use of Rapid Damage Assessment technology and processes to local authorities during disaster events (page 104)

The use of Rapid Damage Assessments during the Wildfire was a positive practice that should continue; to enable this, supports to local authorities will be required.

Recovery

20. Develop recovery plans within the context of resiliency (page 106)

In conjunction with Recommendation #4, the Province should provide guidance on how recovery planning should incorporate aspects of disaster resiliency.

21. Enhance the use of the AEMA Recovery Branch (page 106)

The AEMA's Recovery Branch should continue to build upon its capacity and capability through dedicated staff, who have lived experiences, to support recovery work with local authorities and the Provincial Task Force as required.

The Government of Alberta's Response and Supports

While there are always lessons to be identified and learned, the Province's response to the Wildfire, and the supports provided, were aligned to achieving outcomes associated with Alberta's Emergency Plan. These outcomes are intended to: promote the safety of the public and reduce suffering; protect property and the environment; reduce economic and social losses; and enable recovery. The Province undertook preparations for the 2016 hazard season within the confines of available resources, and built on investment in prevention programs, improved field operations, training, and technology.

During the Wildfire, Provincial supports to the Region and its residents demonstrated increased maturity from past disasters, capitalizing on the experience of professionals that had staffed the Provincial Operations Centre in 2011 and 2013, during the Slave Lake Wildfire and the Alberta Floods, respectively. At the same time there were also a number of areas where, due to the complexity and sustained nature of this disaster, resources and supports were stretched. Overall, Alberta's Emergency Management Framework, the Alberta Emergency Plan and resources such as the Provincial Operations Centre, Incident Management Teams, Provincial Emergency Social Services, and the Provincial Recovery Task Force provided the necessary foundation for a sustained response to one of the most significant disasters in Canadian history.

Based on the successful lessons learned; the lessons identified and recommendations arising from the Wildfire, page 111 provides an overall summary of the Government of Alberta's response and supports relative to the objectives of this review.

Introduction to the Post-Incident Assessment

Alberta's Experience with Wildfire

Alberta has experienced several large-scale disasters in the past decade that have impacted citizens across the Province. The severity and frequency of these disasters has placed increased pressure on provincial and municipal emergency management programs to perform at optimal levels.

Wildfires are, unfortunately, a common occurrence in Alberta's forest ecosystem and are actively managed through Alberta Agriculture and Forestry's wildfire management program. When wildfires enter the wildland-urban interface the potential risk to property and life is significant. Since 1998, Alberta has dealt with numerous wildland-urban interface fires, including the 1998 Virginia Hills Wildfire, 2001 Chisholm Wildfire, and 2011 Slave Lake Wildfire.

In recent years, the wildfire season has started earlier and lasted longer than it has historically. In 2016, the wildfire hazard conditions in Northern Alberta were severe due to extremely dry conditions the previous summer, low moisture over the winter and dry, warm conditions in the early spring. In the week leading up to May 1, 2016 the wildfire hazard conditions in and around the Regional Municipality of Wood Buffalo (the Region) reached unprecedented levels, representing the single, largest contributing factor to what would become one of the worst wildland-urban interface fires in Canadian history.

The Regional Municipality of Wood Buffalo and the May 2016 Wildfire

The Region, including the Urban Service Area of Fort McMurray, is located in the northern boreal forest, where forest vegetation and the predominance of black spruce act as highly flammable fuel for wildfires.

The community profile of the Region is distinct in Alberta: it is comprised of the Fort McMurray Urban Service Area; nine hamlets, including five First Nations communities; and a strong industry presence in the nearby Athabasca Oil Sands. Syncrude, Suncor, Shell and Canadian Natural Resource Limited all have significant operations close to the municipality.

Based on 2015 census data, the Region is home to a traditional population of 81,948 and a shadow-population count of 43,084 (including major project accommodations, work camps and non-residential facilities). The Region has a primarily young and able-bodied demographic, with just over 60% of the population between the ages of 20 and 55.[2]

This younger demographic, an industry with a deep safety-oriented culture, and federal, provincial and municipal resources with experience in emergency management helped to shape the response to and recovery from the May 2016 Wood Buffalo Wildfire (the Wildfire).

Of the more than 1,500 wildfires that have occurred in Alberta during the last decade, several have occurred within the Region's surrounding area. The May 2016 Wildfire presented many of the risks facing Canada's local, provincial and federal emergency management organizations, including extreme wildfire conditions resulting from changing climate patterns, increased population growth in the wildland-urban interface, and constrained budgets to support robust emergency prevention and preparedness.

Local and provincial emergency management programs had never tested their plans, resources and protocols in the context of a wildland-urban interface fire of this size, scope, speed, complexity and ferocity.

While it is clear that planning for these types of situations is critical to the effective mobilization and coordination of resources, and the safe and timely evacuation of all persons-at-risk, it is also clear that responding agencies and the Region's residents were overwhelmed by the extreme behaviour of the Wildfire.

The Wildfire was first spotted on the afternoon of May 1 and was around two hectares in size. As noted, the Wildfire demonstrated extreme behaviour and, due to high winds, shifted toward the Region's communities on May 3. In total, almost 88,000 people were evacuated from the Region. While no loss of life occurred as a result of the Wildfire, during the evacuation two young lives were tragically lost on Highway 881 in a motor vehicle accident.

The Wildfire grew rapidly from 101,000 hectares on May 5 to over 589,000 hectares by June 10. At peak deployment there were 2,197 wildland firefighters, 700 structural and wildland-urban interface firefighters battling the blaze, 77 helicopters, 18 air tankers, and 269 pieces of heavy equipment. By the middle of June, the Wildfire was under control; but at the same time 17 other active wildfires were still burning across Alberta.

The Region lost 1,958 structures, according to a Rapid Damage Assessment completed on June 4. The assessment noted that the 1,935 structures destroyed or irreparably damaged were residential (some multi-family), while 23 were commercial or industrial spaces.[3]

The Insurance Bureau of Canada has reported that the Wildfire was by far the costliest insured natural disaster in Canadian history, at an estimated $3.6 billion in insured property damage.[4] Further estimates of the total impact of the wildfire (including reduced oil sands revenue, losses to public infrastructure and private property, impact on the environment, and to the physical and mental health of residents and first responders) are currently estimated at almost $8.9 billion[5].

Post-Incident Assessment of the Wildfire

Scope of the Post-Incident Assessment

To continuously enhance Alberta's public safety system, it is the Alberta Emergency Management Agency's (AEMA) policy and practice to conduct a formal Post Incident Assessment after all major events. This Post-Incident Assessment focuses on the Government of Alberta's support to stakeholders, emergency social services, and community evacuations during the Wildfire and its aftermath. The report is not about blame or liability. It is about lessons identified from this experience being used to assist the Province and its partners to be better prepared for future emergency events.

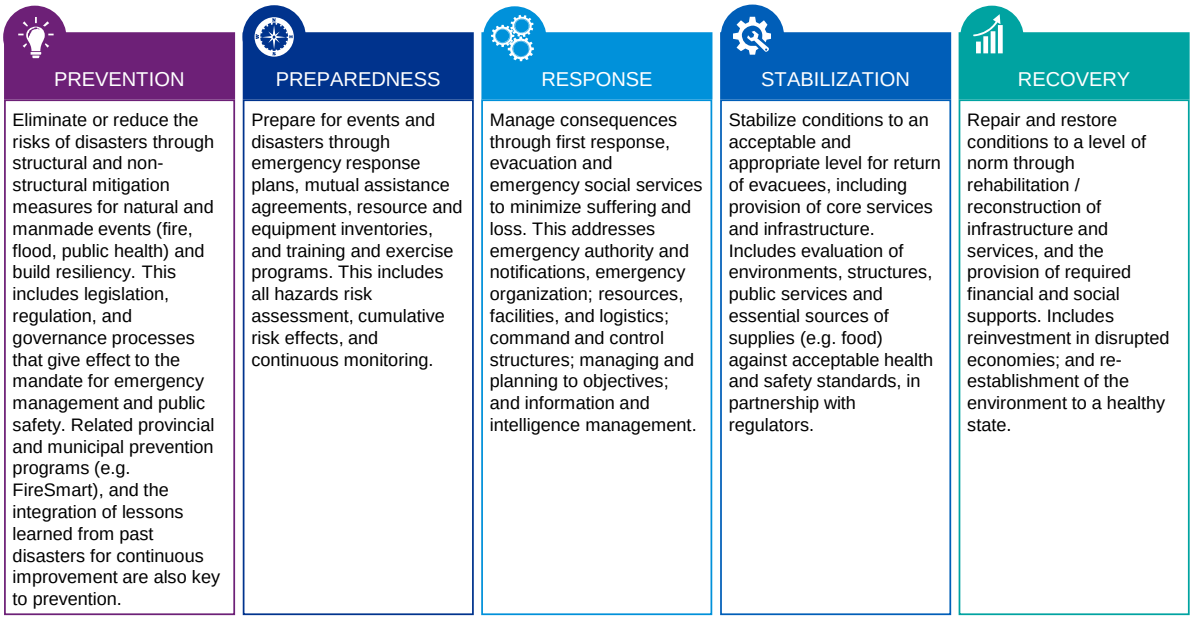
Previous Post Incident Assessments conducted by the AEMA have primarily focused on the Province's response to the event through its participating Departments and Agencies. However, due to the delegation of authority from the Province to the Region that occurred during the Wildfire, under section 19(5) of the *Emergency Management Act*, this Post-Incident Assessment also brings into scope aspects of the Region's protocols for emergency prevention, preparedness, response, stabilization, and recovery. The findings and related recommendations are, therefore, intended to improve both provincial and municipal emergency management protocols.

The objective of this Post-Incident Assessment was to review the timeliness, processes, efficiency, and effectiveness of:

- The Province's preparations and readiness leading up to the 2016 hazard season
- The evacuation of the Urban and Rural Services Areas of Fort McMurray by the Wood Buffalo Regional Emergency Operations Centre (REOC)
- Subsequent evacuations of the Region and impacted communities by the REOC and Provincial Operations Centre (POC) under the authority of the provincially-declared State of Emergency
- The Province's command and control of the incident through the POC and other emergency management governance structures
- The Province's support of the Region through the POC, Provincial Emergency Social Services (PESS), Emergency Coordination Centre, and provincial Wildfire Recovery Task Force during the response and recovery phases of the event
- The Province's provision of, and support to, emergency social services
- The Province's disaster response and recovery framework and actions and procedures in response to, and recovery from the Wildfire
- The Province's engagement and collaboration with key stakeholders during the incident
- Supports provided to the various community evacuations; and
- The Province's approach to crisis communications.

Approach to the Post-Incident Assessment

KPMG used a formal evaluation framework to conduct this Post-Incident Assessment. The framework is based on recognized emergency management, response, and recovery standards, including the International Organization for Standardisation (ISO) 22320:2011 (Societal security – Emergency Management – Requirements for Incident Response Standard), Incident Command System (Canada), the Alberta Emergency Management Framework, the Alberta Provincial Recovery Framework; An Emergency Management Framework for Canada, and the Provincial Emergency Social Services Framework. The formal evaluation framework reflects an all hazards approach to emergency management and can be used for post-incident assessment at the program, phase, and process level:



A mixed methods approach to conducting this Post-Incident Assessment was used. KPMG engaged with more than 260 individuals representing AEMA and its partners, who provided their input through interviews, focus groups, working sessions, an online session, and surveys. In addition, through a community research work stream, KPMG also gathered some of the lived experiences of the Region's residents, and those of nearby First Nation communities. Approximately 100 residents of the Region shared their perspectives and stories, and more than 5,300 responded to an online survey. Conversations were also held with the Fort McMurray First Nation and the Fort McKay First Nation.

Stakeholder engagement and community research supported the Post-Incident Assessment by building a collective understanding of events, including what happened and when, and capturing insight into what worked well and what could be improved.

Key observations were identified from these various methods of engagement, and further corroborated using data and records supplied by the Province and the Region. Additional details on the approach used for this Post-Incident Assessment are included in Appendix B.

A list of groups engaged during the Post-Incident Assessment can be found in Appendix C.

Format of the Post-Incident Assessment

The following sections of this report are based on the knowledge, experience, and insights of those involved in the Wildfire. KPMG would like to thank all of the stakeholders who provided input into this report for their openness and commitment to continuous improvement. The Post-Incident Assessment is a testament to the countless individuals that demonstrated remarkable resourcefulness, compassion, and resilience in response to this devastating event.

The following sections of this Post-Incident Assessment provide:

- *Background to the Wildfire* – a description of the major players involved in this event, including the Region, the AEMA and Provincial Operations Centre, and the Region's Emergency Operations Centre, as well as an overview of the Incident Command System
- *Timeline of Events for the Wildfire* – a description of the major activities and actions of the Government of Canada, the Government of Alberta, the Region and Industry partners
- *Successful Lessons Learned* – a description of how the Province has successfully integrated lessons learned from past disasters into its preparedness for, response to and recovery from each hazard season
- *Lessons Identified and Recommendations* – a description of the recommendations, and the supporting findings, context, and observations relating to provincial and municipal emergency management prevention, preparedness, response, stabilization, and recovery, and
- *The Government of Alberta's Response and Supports* – a summary of the successes, findings and recommendations from the Post-Incident Assessment linked to each of the key objectives for the review noted on page 15.

The Appendices provide further information on the approach to the Post-Incident Assessment, a timeline of events, relevant emergency management standards and framework, a summary of relevant information from other jurisdictions, and a glossary of terms.

Background to the Wildfire

This section of the Post-Incident Assessment provides an overview of Alberta's *Emergency Management Act*, and a description of the AEMA and its primary coordinating body during a disaster, the Provincial Operations Centre. A summary description of the Region is also provided to assist in understanding its unique community profile and emergency management capabilities. There is also a brief introduction to the Incident Command System, the leading practice of emergency management.

Provincial Emergency Management Capabilities

Alberta's Emergency Management Act

Federal and provincial legislation and regulations set out the authority and legal basis for emergency management and disasters in Canada, including describing the responsibilities and powers of each level of government in disaster response.

Alberta's *Emergency Management Act* provides the foundation for a graduated approach to emergency response in the Province. In the *Act,* a local authority means a municipality, as defined within the *Municipal Government Act*, the settlement council of a settlement under the *Metis Settlements Act*, and / or the band council of an Indian band where an agreement is entered into within the Government of Canada. Local authorities in Alberta are responsible for managing the first response to an emergency event, unless the Province assumes the lead role due to a provincially-declared State of Emergency.

There are defined circumstances under which the Government of Alberta has primary responsibility to respond to emergency events, including wildfire in the Forest Protection Area (Alberta Agriculture and Forestry), health-related emergencies (Alberta Health), and counter-terrorism incidents (Alberta Justice and Solicitor General).

In cases where a local authority declares a State of Local Emergency the *Act* enables the exercise of a broad range of powers within the local authorities' boundaries. Local authorities must assign accountability for emergency management to a local agency (often within the municipality's administrative organization), and promote the preparation and approval of emergency plans and programs.

Local authorities must designate a Director of Emergency Management to, among other things: prepare and coordinate emergency plans and programs, act as the Director of Emergency Operations on behalf of the local agency, and coordinate all emergency services and resources during an emergency event.

The *Act* allows the Province, through the AEMA, to declare a State of Emergency at any point it deems necessary. Once the Province declares a State of Emergency, the Province takes primary jurisdictional authority over the emergency event. As such, any State of Local Emergency that was called automatically terminates and the local authority ceases to be in charge of the emergency response.

In addition, upon the declaration of a State of Emergency by the Province, either the AEMA Managing Director or some other person appointed by the Province (pursuant to section 19(5) of the *Act*) is responsible for the coordination and implementation of emergency plans and programs. All persons and agencies involved in the implementation of such plans and programs are subject to the control and direction of the Managing Director or the appointed person, as the case may be.

The Alberta Emergency Management Agency

Alberta's emergency management capabilities have matured over the past decade through investment in emergency prevention, preparedness, response, stabilization, and recovery programs. These capabilities have been continuously tested through several major events, including the 2011 Slave Lake Wildfire and the 2013 Southern Alberta Floods. Throughout this period, the AEMA has provided leadership in the prevention, preparedness, response to, and stabilization and recovery from disasters impacting Albertans.

AEMA fulfills this mandate by leading the coordination, collaboration, and cooperation of organizations that deliver services and supports during emergencies. AEMA coordinates the Government of Alberta's support to municipalities where an emergency event exceeds the capabilities and / or capacity of a local response, or where significant threat to life and property exist.

AEMA may call upon the federal government to assist in the provision of specific resources for response and recovery, including engagement of the Canadian Armed Forces.

The Provincial Operations Centre

The AEMA operates the Provincial Operations Centre (POC), which serves as the central point for the collection, evaluation, and dissemination of information for single or multiple incidents throughout the Province. The POC is where Government of Alberta Departments come together to coordinate an "all of government" response to emergencies and disasters, allowing the entire Government to work in partnership with communities, industry, and non-governmental agencies.

The POC is staffed 24 hours a day, 7 days a week to monitor potential emergency situations. The POC is central to the Province's emergency management system, designed to protect the life and property of Albertans, and the environment during and subsequent to an emergency event. It maintains standard operating procedures, and follows the principles of the Incident Command System, to promote a timely, proactive, efficient, and effective response to provincial states of emergency.[6]

The POC has four escalating levels of activation that drive cross-governmental coordination, with activation at Level 4 being the highest and most serious. It is staffed with a core structure consistent with the Incident Command System organizational model. Consequence Management Officers from Government of Alberta Departments and agencies, and representatives from the Federal Government and other emergency management partners collaborate face-to-face in the POC during higher levels of emergency activation.

To facilitate liaison between the POC and the local authority during an incident, and to provide provincial subject matter expertise to the local Emergency Operations Centre, the AEMA deploys field officers to the local Emergency Operations Centre. These field officers are regionally based, and during routine operations assist local authorities with prevention and preparedness activities, thereby establishing relationships with local emergency management personnel before a critical response to an incident is required.

Regional Emergency Management Capabilities

Emergency Management in the Region

Most local authorities in Alberta have emergency management functions located within the municipal government's organization. This function is typically accountable for the preservation of life, property, and the environment through the development of emergency plans and programs.

The accountability for emergency management within the Region lies with its Regional Emergency Services Department. The Department provides emergency services to respond to and mitigate emergencies and is made up of several branches, including:

- Fire and Medical Operations – provides integrated emergency response service with cross trained staff qualified in firefighting / rescue and emergency medical response. This Branch works closely with Alberta Agriculture and Forestry to mitigate wildfire risk.
- Training and Recruitment – this Branch supports the Fire and Medical Operations Branch through the development and delivery of training related to emergency medical response, fire prevention, fire, rescue and special team response.
- Fire Prevention – this Branch delivers proactive fire safety education, pre-planning, inspections and investigations.
- Rural and Fleet – this Branch includes surrounding rural fire departments of Fort Chipewyan, Fort McKay, Anzac, Saprae Creek and Conklin who are staffed with approximately 90 paid on-call firefighters, trained in fire suppression, extrication and medical first response. The Fleet area provides care and maintenance for the Regional Emergency Services fleet.
- Emergency Management – this Branch is accountable for emergency planning and execution in the event of an incident. The Regional Emergency Operations Centre (REOC) is activated in

response to an emergency incident and is accountable for all response and recovery activities during a State of Local Emergency.

The Regional Emergency Operations Centre

The Region's REOC Manual sets out authority and responsibility during a State of Local Emergency. Under this, the Director of Emergency Management (Region DEM) is responsible for the oversight of all operational aspects of emergency management and is accountable for the activities of the REOC. The REOC Director manages the REOC on behalf of the Region's DEM.

The Incident Command System

The Government of Alberta has adopted the Incident Command System (ICS) as the command and control model to support effective and efficient response to emergency situations. The adoption of ICS is an accepted leading practice in emergency management, and is key to an overall understanding of this post incident assessment. ICS has three primary purposes during an emergency:

- To provide for the orderly and predictable division of labour,
- To provide for overall safety at the incident or event level, and
- To make sure that the work at the incident or event is performed efficiently and effectively.

ICS provides an integrated approach to coordinating facilities, equipment, personnel, procedures, and communications, all operating within a common organizational structure. ICS is a flexible system, in that it allows organizations to adopt only those aspects that are relevant to the incident at hand. ICS consists of the following principles and features:

- Common terminology: common terms to enable multiple organizations to work together across all incident management functions and disaster scenarios.
- Modular organization: a flexible organizational structure that can integrate various roles and responsibilities within the command structure, depending on the complexity of the disaster.
- Management by objective: the response organization functions and operates in accordance with clearly established incident objectives.
- Incident action planning: all response activities are guided by coordinated incident action plans that provide incident priorities, objectives, strategies, and tactics.
- Manageable span of control: supervisors are able to adequately supervise and coordinate their subordinates.

- Incident facilities and location: the right operational support facilities are established in the right area, including incident command posts, bases, camps, staging areas, mass casualty triage areas, point-of-distribution sites as required.
- Comprehensive resource management: provides a current, accurate picture of personnel, teams, equipment, supplies, facilities, and other resources that are assigned or available for allocation.
- Integrated communications: addresses use of a common communications plan and interoperable communications processes.
- Establishment and transfer of command: command should be established from the beginning of the incident, and the agency with primary jurisdictional authority over the incident designates the individual at the scene responsible for establishing command.
- Chain and unity of command: there is an orderly line of authority within the ranks of the response organization, and all individuals have a designated supervisor to whom they report at the scene of the incident.
- Unified command: allows organizations and agencies with different legal, geographic and functional authorities to work together without affecting individual agency authority, responsibility or accountability.
- Personnel accountability: accountability of resources at all jurisdictional levels and within individual functional areas, including adherence to check-in / check-out, incident action planning, unity of command, personal responsibility, and span of control.
- Dispatch / deployment: rules regarding resource deployment only when requested or when dispatched by an appropriate authority.
- Information and intelligence management: includes processes to gather, analyze, assess, share, and manage incident-related information and intelligence.

The proper application and use of ICS provides the necessary structures, processes and capabilities to guide a multi-agency response to all emergency incidents.[7]

Timeline of Events for the Wildfire

The following is a summary narrative of key events that occurred during and after the Wildfire. A State of Emergency was declared by the Province for the Region on May 4 and lasted until June 30.

Based on the scope of the Post-Incident Assessment, select events prior to and following these dates have been included for reference. Due to the scope and severity of this disaster, a significant number of parties actively participated in emergency response, stabilization and recovery. While not wholly represented on the timeline, KPMG acknowledges the invaluable contribution of other parties who united to provide the extensive support necessary to the Region and its residents.

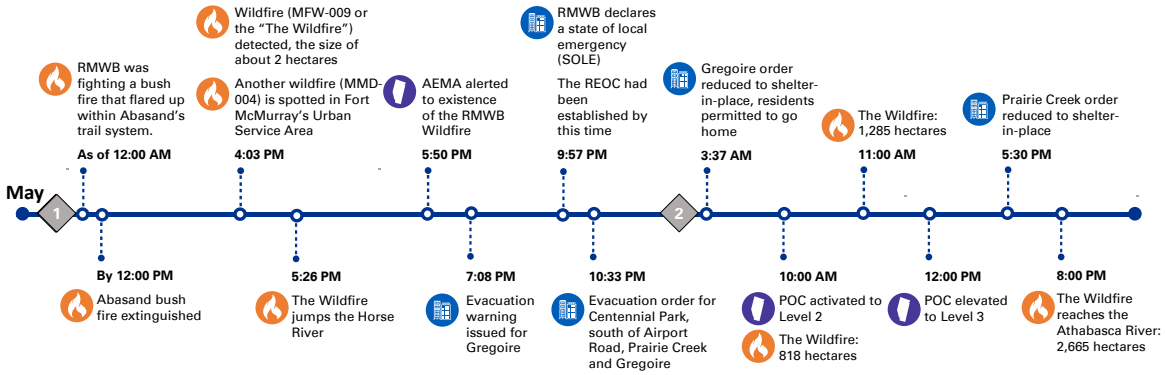
The legend below explains the icons used in the summary timeline of events on the following pages. A more detailed timeline of events is included in Appendix G of this report.

Wildfire update | RMWB / REOC | GoA / POC | Federal partners | Industry Partners | Other Partners

An Early Wildfire Season

Prior to the Slave Lake Wildfire, the start of the wildfire season in Alberta was April 1. The 2016 wildfire season officially started on March 1. The early start to the season was initiated by a Ministerial Order under the Alberta *Forest and Prairie Protection Act* following a very dry and mild winter.

Emergent Situation



A wildland-urban interface fire occurred on April 29 inside the Urban Service Area of Fort McMurray near Parson's Creek and Timberlea, requiring joint effort between Alberta Agriculture and Forestry and the Region's municipal firefighting crews.

At approximately 9:30 p.m., the Region announced that the fire was smoldering but under control, and posed no threat to the public. The fire was actively monitored throughout the night and

extinguished on April 30. Another bush fire sprung up within the Abasand trail system on April 30. That fire was extinguished by noon on May 1.

At approximately 4:00 pm on May 1, an Alberta Agriculture and Forestry air crew discovered a wildfire burning seven kilometres southwest of the Urban Service Area of Fort McMurray. At the time of its discovery, the Wildfire was about two hectares in size. While Alberta Agriculture and Forestry dispatched crews to the Wildfire, initial control efforts were unsuccessful. A hot and windy day had created high-risk, “crossover” conditions (i.e. when the temperature in degrees Celsius is more than the relative humidity, expressed as a percentage). The Wildfire moved eastward toward Prairie Creek, Beacon Hill and the MacKenzie Industrial Park. At 5:08 p.m. a voluntary evacuation notice was issued for the Gregoire community.

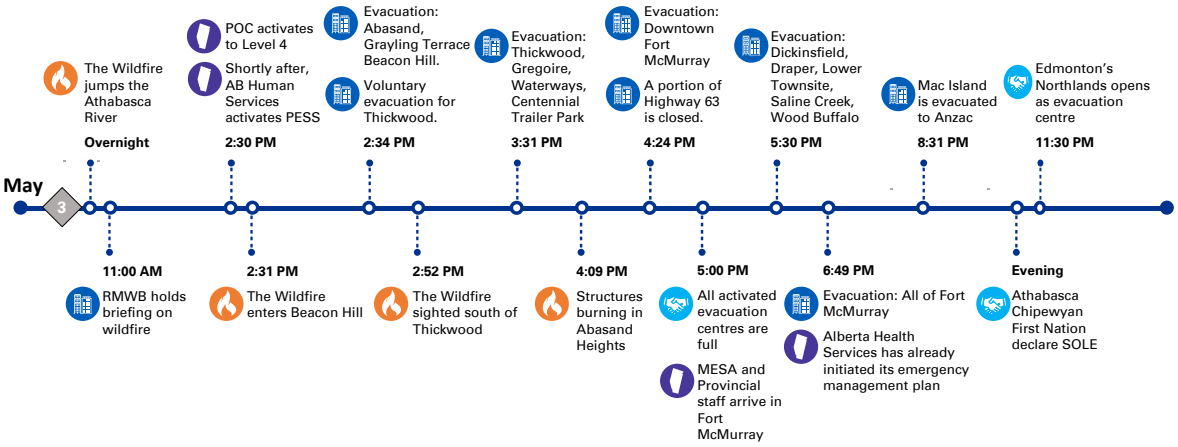
At 9:57 p.m. the Mayor of the Region declared a State of Local Emergency – the Region’s Emergency Operations Centre (REOC) had been activated by this time. As the Wildfire grew, a mandatory evacuation order was issued for the communities of Centennial Park south of Airport Road, and Gregoire.

Residents of Gregoire were allowed to return home under a shelter-in-place notice early in the morning of May 2. Officials and fire experts continued to monitor fire progression, while Alberta Agriculture and Forestry and the Region’s municipal firefighters worked to control the blaze.

By 10:00 a.m. that morning, the Provincial Operations Centre (POC) was activated to Level 2, and continued monitoring the situation in the Region along with more than 35 other wildfires burning across Alberta.

By noon, the POC elevated its operations to Level 3. By 10 p.m. on May 2, the Wildfire had grown to over 2,600 hectares and had reached the Athabasca River. With the Wildfire still primarily burning in the Forest Protection Area, Alberta Agriculture and Forestry continued to function as the lead agency for response.

Mandatory Evacuation



Overnight, May 2 to 3, the Wildfire had burned to the banks of the Athabasca River. With intense embers and sparks the Wildfire "jumped" the Athabasca River (approximately one kilometre in distance) sometime during the night, creating the need for an alternative assessment of the Wildfire including fuel load, weather, topography, fire behaviour, hazards and exposure of people and properties.

While the morning of May 3 appeared sunny and clear to residents of the Region, weather from the night before had kept the dense smoke from the Wildfire close to the ground. As the weather lifted mid-morning, the Wildfire intensified amid the 30 degree heat.

At 11:00 a.m., Alberta Agriculture and Forestry and the Region held a joint press conference, communicating to the public that fire conditions were extreme and that residents should be "prepared to act on short notice." However, to instill calm, residents were also told to "get on with their lives and take their kids to school."[8] So many residents did.

Late in the morning, the fire growth accelerated, with high winds pushing the Wildfire closer to the Urban Service Area of Fort McMurray; by 1:00 p.m. the Wildfire was 1.2 kilometres from the southwest. Around 12:00 p.m., pre-alerts for evacuation were prepared by the REOC. At approximately 1:15 p.m., the Wildfire suddenly crested the hills along the west side of Fort McMurray, becoming clearly visible to many in the community. The first mandatory evacuation notice was issued from the REOC for the communities of Abasand, Beacon Hill, and Grayling Terrace at 1:53 p.m. via the RMWB's Twitter and Facebook page; the Alberta Emergency Alert for the evacuation was posted at 2:34 p.m.

While the POC continued to monitor the situation in the Region, it was also assessing the cumulative risk of additional wildfires burning across the province. At 2:30 p.m., the POC activated to Level 4, signalling all Government of Alberta Departments and public safety partners to provide dedicated and sustained staff for full scale operations.

Shortly thereafter, Alberta Human Services (now Alberta Community and Social Services) activated the Provincial Emergency Support Services program to provide supports to affected residents from the Region.

The Major Event Support Apparatus (MESA) mobile command post and provincial staff, requested by the REOC, arrived in the Region around 5:00 p.m. The MESA is a self-contained, mobile communications platform that provides a sheltered place to work, as well as cellular or satellite based telephone and internet services.

Community evacuation notices came throughout the afternoon and evening via the Alberta Emergency Alert system, Twitter, and Facebook. Alberta Emergency Alert updates notified residents to evacuate to Macdonald Island Recreation Centre or Noralta Lodge, where Reception Centres were assembled.

The RCMP were also in full response, having called in all members to set up barriers, guide traffic flow, and provide door to door mandatory evacuation notifications.

Alberta Health Services was notified by the REOC of the evacuation notices and began initiation of their emergency management plan, working to evacuate the hospital. Ambulatory patients were provided direction on how to self-evacuate and those with more complex needs were evacuated by ambulance or helicopter. Municipal firefighters worked actively throughout the afternoon to protect the hospital.

As community evacuation notices came out of the REOC, school boards worked to bring in school buses, keep track of which communities and schools were under evacuation, and get children to safety. Where school buses were unable to get through traffic due to congestion, teachers transported children in their personal vehicles. Over the course of the day, children were evacuated to other schools, hotels, Anzac, and northern camps. The school boards tracked the location of every child, and reportedly could inform parents of their child's location and how to reach them, until all school children were successfully evacuated and reunited with their families.

At 6:49 p.m. a full evacuation notice was issued from the REOC for all of Fort McMurray. With only two routes out of the area, evacuees were directed north up Highway 63 towards the work camps or south toward Edmonton on the same highway.

The full evacuation caused traffic density to be high, and movement slow, particularly in the hardest hit neighbourhoods, such as Beacon Hill and Abasand. While there was significant traffic congestion, residents did their best to evacuate in an orderly manner. At 8:31 p.m. the Reception Centre at the Macdonald Island Recreation Centre was notified of evacuation and told to direct all evacuees to Anzac.

Later that evening the Athabasca Chipewyan First Nation also declared a State of Local Emergency as they worked to evacuate their members from the Region.

Communications between all parties became more difficult as the day progressed. The Wildfire severely damaged radio towers within the Region causing the entire communications network to go down.

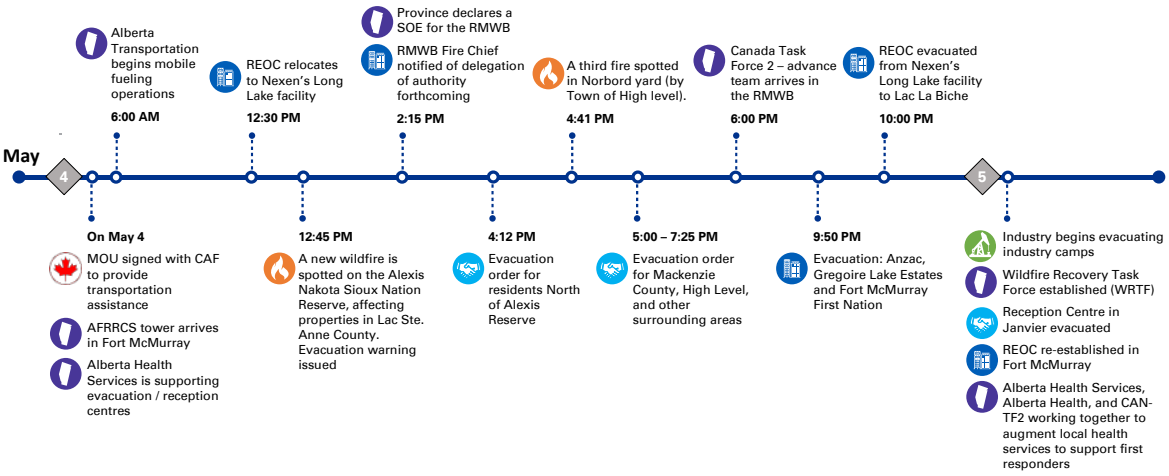
Municipalities, Industry and Indigenous communities along Highways 63 and 881 provided shelter, fuel, food, and water to tens of thousands of residents who had evacuated. These partners opened community centres, schools, and camp accommodations to shelter evacuees overnight; while members of the public offered to take the Region's residents into their homes.

Residents of nearby local communities filled trucks with water bottles and jerry cans and drove along the highway distributing them among stranded residents. Reception Centres opened in Edmonton the night of May 3 to shelter evacuees as they began to arrive.

Industry work camps along Highway 63, north of Fort McMurray, set up dedicated Reception Centres. Workers gave up their rooms to accommodate families, and food and water was distributed.

In total, almost 88,000 people were evacuated from the Region on May 3; almost 20,000 of these headed north of the Region, while 60,000 traveled south.

Sustained Response



Some evacuees spent the night of May 3 along the highway in their cars or campers, having run out of fuel. Early on May 4, Alberta Transportation and POC Logistics sent trucks with fuel up and down the highway to fill tanks.

The POC had deployed the Alberta First Responders Radio Communications System (AFRRCS), with the team arriving early on May 4 bringing a portal radio tower and hundreds of radio devices. The AFRRCS team created a dedicated, networked system for all emergency personnel and enabled the continued receipt of 911 calls.

In the early hours of May 4, the Industry work camp Reception Centres to the north were notified that Highway 63 had reopened, and convoys of residents drove south. Traffic continued south through the Region until the highway closed again around 6:00 a.m. because of the Wildfire's movement.

Although wildland, wildland-urban interface, and structural firefighters continued to battle the blaze, the wildfire continued to progress through the Region on May 4 threatening the REOC's location at Fire Hall No. 5. Around 12:30 p.m., the REOC evacuated to Nexen's Long Lake facility in order to maintain its emergency operations.

Additional wildfires across the Province continued to be identified on May 4, leading the Province to declare a provincial State of Emergency at 2:15 p.m. The State of Emergency allowed the Province, through the POC, to coordinate the use of resources at a provincial level and direct an appropriate response to all of the communities threatened by wildfire across Alberta. In order to provide continuity of response to the Wildfire, the AEMA Managing Director executed a request to delegate authority from the Province to the Region's Director of Emergency Management under section 19(5) of the *Emergency Management Act*.[9]

Earlier in the day the POC had requested assistance from the Canadian Armed Forces to provide additional air transport to the Region. The POC also directed that Canada Task Force 2, a disaster response team based in Calgary, be deployed to the Region in support of the REOC.

When Canada Task Force 2 arrived in the Region on May 4, the REOC was still operating out of Nexen's Long Lake facility. At approximately 10 p.m. that evening, and due to the progression of the Wildfire, the REOC was forced to relocate to Lac La Biche.

At approximately the same time, the communities of Anzac, Gregoire Lakes, and the Fort McMurray First Nation, including the Fort McMurray residents that were being sheltered in these communities, were evacuated south. These evacuations were not issued through the Alberta Emergency Alert as the evacuations happened suddenly due to the progression of the Wildfire.

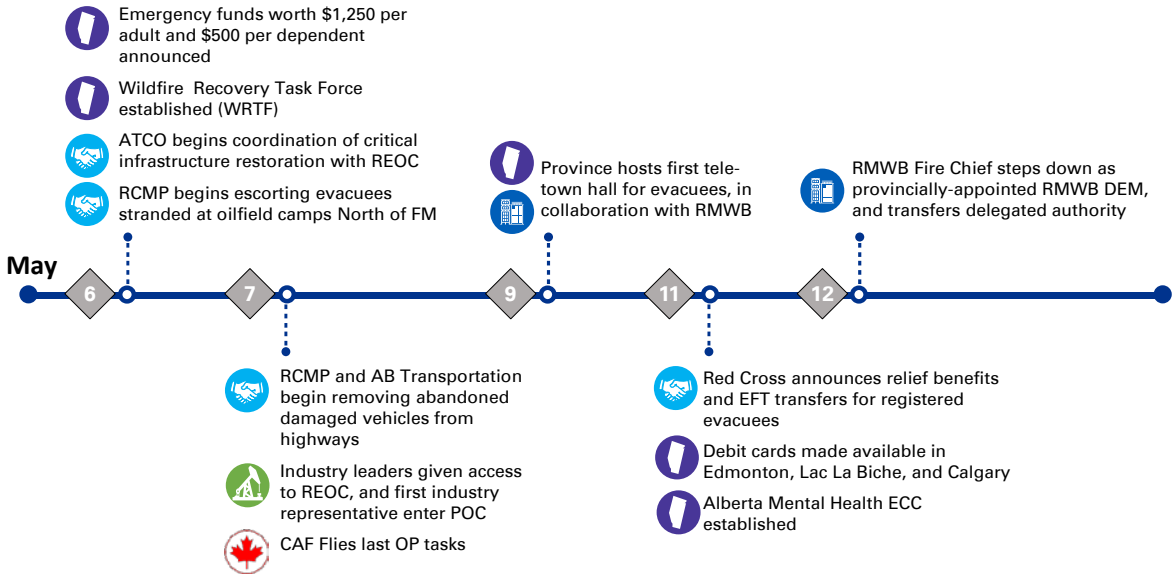
Most of the Region's residents used their personal vehicles to transport themselves, family, and friends to safety. Tragically, as residents continued to evacuate from the Region on May 4, a traffic accident claimed the lives of two individuals near the Heart Lake First Nation on Highway 881.

On May 5, the intermittent closures of Highways 63 and 881 continued due to Wildfire conditions. Remaining residents from the Region staying at industry camps were unable to drive south due to traffic control restrictions.

Industry worked together to coordinate and fund flights to Edmonton and Calgary for the Region's remaining residents who needed to be evacuated. The Province, in close coordination with the Canadian Armed Forces, the RCMP, and the Region also coordinated the ground evacuation of approximately 2,600 vehicles (8,000 residents) in escorted convoys south along Highway 63.

Industry also continued the full evacuation of their own personnel from specific sites throughout the day due to severe air quality risks.

Coordinated Supports



Reception centres across Alberta provided displaced residents with shelter and emergency social services. This was done alongside donations from across the country that provided the Region's evacuated residents with supports, goods, and accommodations. Monetary donations made to the Canadian Red Cross were matched by the Government of Canada and by the Province.

A provincial Wildfire Recovery Task Force (WRTF) was established on May 6 to begin planning for the medium- and long-term recovery and success of the Region. However, due to the effort required to manage the Wildfire, a mirroring task force at the Regional level could not be established at that time; the Region set up its own Wildfire Recovery Task Force on June 21.

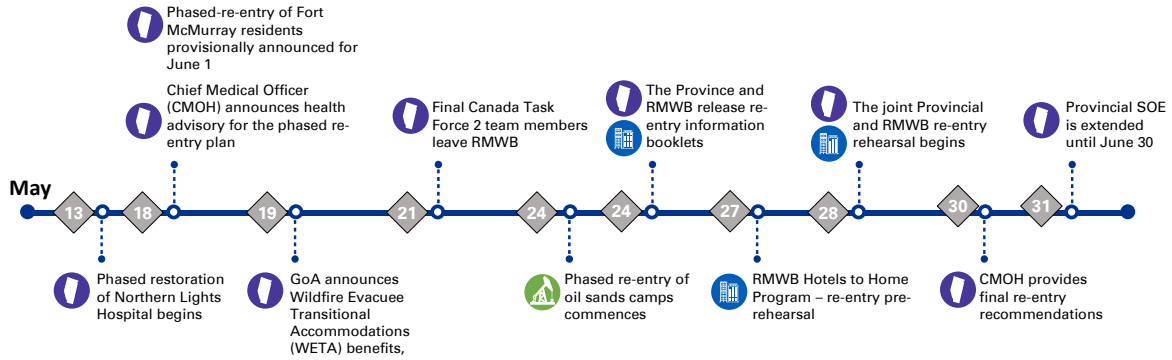
Following the evacuation, on May 7, the RCMP and Alberta Transportation began to remove the many abandoned vehicles that had been left along the side of highway 63 during the evacuation. They tracked the removal of the vehicles so that owners could locate their vehicle upon their return.

The Region and the Province began hosting Telephone Town Hall sessions on May 9, which brought together key stakeholders to provide information for residents while they were displaced from their community.

Residents were eligible for prepaid debit cards from the Province, through an emergency funds program launched on May 11, along with electronic fund transfers from the Canadian Red Cross. These were made available through a number of locations, including Reception Centres across

Alberta. Access to mental health supports was also provided to those affected residents who required them.

Re-Entry Preparation



The Province and the Region worked together to establish plans for re-entry and oversee the safety of residents.

A Rapid Damage Assessment process was launched to track the state of most buildings in the evacuated communities. Using satellite imagery, it enabled Safety Code Officers from various communities and disciplines to support the Region in assessing the scale and scope of the damage of each structure.

Within four days of deployment, areas most impacted by the Wildfire were assessed, and with additional resources being dispatched, the entire assessment of the Region was completed within seven days. Information was also posted online and allowed residents to begin making plans for their return.

The Province announced that June 1 was the date for a planned phased voluntary re-entry of residents. Work was then underway to make sure that the municipality was safe, and that critical services had been restored. The POC and the Region identified a set of re-entry conditions to be met to enable re-entry.

Milestones towards the achievement of these conditions were also determined, and progress was monitored on a daily basis to ensure that the re-entry plan to the Region was on track. The Province and Region worked with key service providers, such as Government of Alberta Departments, utility companies, and Alberta Health Services, to restore services.

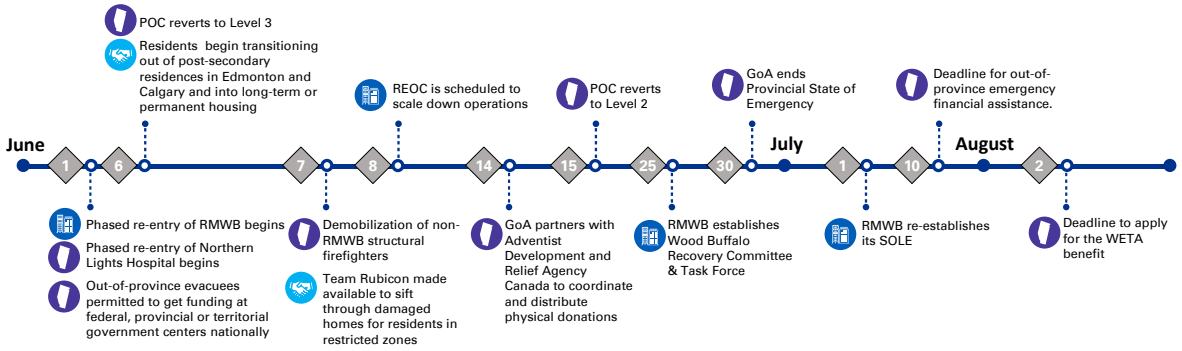
Together, the POC and the Region developed a phased voluntary re-entry plan, which assigned specific neighbourhoods to re-enter on days between June 1 and 4.

The re-entry booklet was a key tool used to inform residents about the re-entry process. The booklet was available online beginning May 24 and included relevant information to assist residents with their re-entry.

On May 28, the Province and the Region completed a mock exercise for re-entry to work out gaps or challenges in the planned activities and make sure that the re-entry was as smooth as possible.

On May 30, the Chief Medical Officer of Health released a health advisory, making the last minute decision to delay re-entry into certain communities (Abasand, Beacon Hill, and Waterways) due to concerns for the potential levels of toxin and ash; other communities were able to proceed with voluntary re-entry starting on June 1.

Re-Entry



Re-entry into the Region's communities began on June 1. Seven Information Centres were set up through the Region to support residents when they returned. Each of these Centres provided resources such as bottled water, cleaning kits, information about utilities, insurance, and housing, internet access, and public and mental health supports. To support the Indigenous peoples, Nistawoyou Native Friendship Centre opened an additional information centre a few days after initial re-entry. By June 15 more than 56,000 people had visited the Information Centres in the Region.[10] Due to concerns regarding the potential levels of toxin and ash, some communities delayed re-entry while additional testing was completed. To minimize the risk of ash movement by wind or cleanup activities, a tackifier was applied as an additional mitigation strategy to several neighbourhoods. Residents of Abasand and Beacon Hill re-entered their communities on August 31, while residents of Waterways returned home on October 24.

As re-entry continued in the Region, the POC de-escalated operations from Level 4 to Level 3 on June 6, and to Level 2 on June 16. The Province formally ended its State of Emergency on June 30.

A Drinking Water Quality Task Team was formed by Alberta Environment and Parks with participation from Alberta Health and the Office of the Chief Medical Officer of Health, Alberta Health Services, and Health Canada First Nations and Inuit Health Branch to establish conditions for

restoring potable water. At the same time, the Government of Alberta and the Wood Buffalo Environmental Association continued to monitor air and water quality in the Region and its communities. By July 15, most “boil water” advisories in the Region had been lifted.

With re-entry substantially complete, and with a view to the recovery needs of the Region, Council approved the creation of the Wood Buffalo Recovery Committee (Recovery Committee) on June 21. The Recovery Committee would provide policy and governance oversight to the community's recovery efforts. In addition to the Recovery Committee, the Wood Buffalo Recovery Task Force (Recovery Task Force), led by a Recovery Team Lead, was also initiated to coordinate the planning efforts of municipal staff toward longer-term recovery of the community.

Recovery

At the local level, the Recovery Committee, made up of three municipal councillors, six members of the public, and the Recovery Task Force, continued their efforts to plan for the recovery of the community.

As part of the ongoing supports to the community, “Here for You: Public Information Sessions” were launched on August 18. Sessions were held (and are still ongoing) to provide residents with information on a variety of topics relevant to their recovery, such as: interim housing, hazardous tree removal, permitting, and supports for small businesses.[11]

Most of the damage to the community was to private homes and businesses, with minimal damage to provincial and municipal infrastructure. While the Region led recovery efforts, the Province continued to support recovery through funding, and by leveraging relationships and partnerships to support local efforts.

The Government of Alberta estimates its response and recovery costs for the wildfire to be $743.3 million – this included $30.3 million to the Canadian Red Cross (in matching dollars), approximately $315 million to the Region for its disaster response and recovery costs, and $398 million in the Province’s disaster response and recovery costs.

Local recovery activities are ongoing and will continue over the next several years. The ultimate objective is to rebuild a safe and resilient community.

Successful Lessons Learned

The Province has conducted several Post-Incident Assessments in the past decade and successfully integrated lessons learned into preparedness for, response to and recovery from each hazard season. This cycle of continuous improvement had a positive impact on the collective actions taken in the context of the Wildfire, and set the preconditions for success to address one of the most significant disasters in Canadian history.

The Province and its partners in emergency response routinely conduct lessons learned processes, including in-progress reviews, after action reporting, debriefs, and post-incident assessments. Each of these processes focus on evaluating the incident through a systematic analysis of what happened, why it happened and what could be done differently to achieve improved outcomes.

As previously mentioned, the actions taken by the Province in the context of this Wildfire stand as evidence of the ever increasing maturity of emergency management in Alberta. While the scale and impact of the Wildfire created extreme circumstances that tested aspects of preparedness, response and recovery, the following lessons learned from previous events were successfully implemented by the Province:

Prevention

Prevention refers to activities taken by the Province and municipalities to eliminate or reduce the risks of disasters through structural and non-structural mitigation measures for natural and manmade events (fire, flood, public health) and build resiliency. This includes legislation, regulation, and governance processes that give effect to the mandate for emergency management and public safety. Related provincial and municipal prevention programs (e.g. FireSmart), and the integration of lessons learned from past disasters for continuous improvement are also key to prevention.

Public Safety Governance

Lesson Learned

Formalized Public Safety Governance

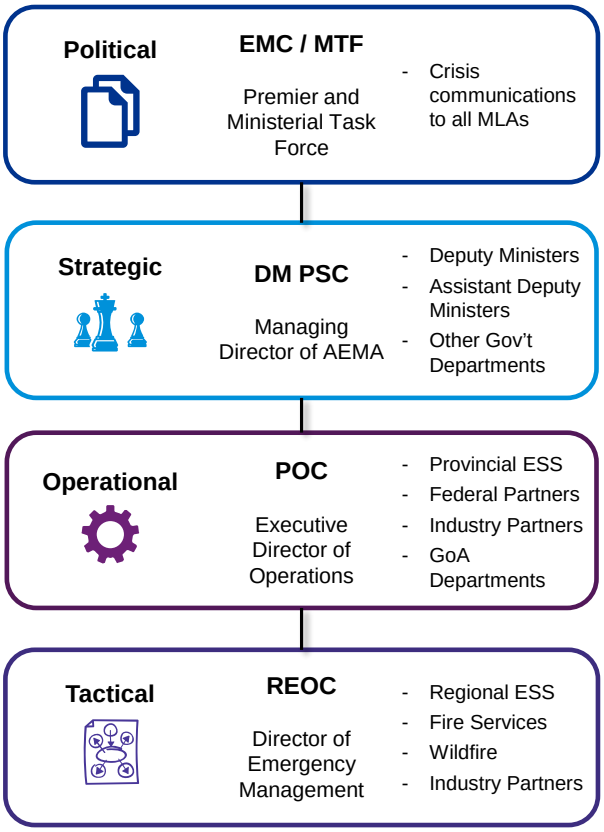
Alberta's *Emergency Management Act* was amended in 2010 to support local authorities in establishing regional approaches to emergency management. The amendment supported a number of strategies for communities to advance emergency management plans, including:

- Delegation of powers and duties under the *Act* to a Regional Services Commission
- Establishment and delegation of powers and duties under the Act to a Regional Emergency Management Committee.

Summer villages were also provided the ability to delegate powers to another local authority to provide leadership and support in the event of an emergency.

In 2011, public safety governance was further formalized through a working group that delivered a Public Safety Governance Implementation Plan. The Implementation Plan included the design of a standing public sector committee framework to promote ongoing collaboration of partners to emergency management, formalized engagement during activation of the POC and detailed description of the lines of public sector reporting and decision-making during emergency events.

As a result of this work, the Deputy Ministers' Public Safety Committee (Committee or DM PSC) was formed to provide a strategic focus to public safety and emergency management by coordinating priorities across the Government of Alberta and to make related recommendations to Cabinet. The Committee's terms include the provision of strategic direction and advice on a range of public safety issues including governance, risk assessments, collaboration, communications, identification of training requirements, and responses to and recovery from specific hazards or emergencies.



The Committee identifies lead ministries for emergency management initiatives. These lead ministries report back to the Committee on assigned initiatives, and may present options and recommendations to improve emergency management capabilities across Alberta. The Committee also provides strategic leadership during a POC activation at Level 4 by coordinating any required decisions through Cabinet.

At the outset of the response, the Premier and Minister of Municipal Affairs received detailed briefings regarding the status of the Wildfire. These briefings led to the Emergency Management Committee (EMC) becoming a full Committee of Cabinet on May 3. The EMC transitioned to the Ministerial Task Force (MTF), which was supported by the DM PSC.

This formal emergency management governance model, as detailed in the graphic on the previous page, enabled the effective transfer of information and decision making at the political and strategic levels.

Prevention Programs

Lesson Learned

Prevention programming

Empowering local authorities to reduce disaster risk through resources, incentives and decision-making responsibilities is the cornerstone of prevention programming. The Province implemented incentive-based programs to prevent the impact of disasters, such as wildfire.

The Alberta FireSmart Program is an example of such a program, and represents leading practice in fire prevention. Nine Canadian provinces and territories participate in this program that supports municipalities, industry, firefighters, and individuals to actively mitigate fire risk.

FireSmart provides numerous resources including guides, frameworks and assessments, several of which are jointly supported with the AEMA. The program provides local authorities with grant funding that may be used to reduce wildfire hazard within the surrounding communities of a Forest Protection Area. Grants can be used to address local program planning and development; vegetation management; public education; inter-agency cooperation and cross-training.

$800,000

in 2015 / 16 spent on the FireSmart Program

Preparedness

Preparedness refers to the activities taken by the province, municipalities, and other local authorities, to prepare for events and disasters through emergency response plans, mutual assistance agreements, resource and equipment inventories, and training and exercise programs. This includes all hazards risk assessments, the tracking of cumulative risk effects, and continuous monitoring.

Supports for Local Authorities

Lesson Learned

Enhanced systems of support for local authorities

Since the 2011 Slave Lake Wildfire, the Province has continually invested in and enhanced the systems of supports for emergency planning and preparation by Alberta's local authorities. This includes continuous investment in and improvement of the Emergency Management Preparedness Program and Community Emergency Preparedness Program.

The Province enhanced existing programs to establish guidelines for, as well as actively encourage municipal collaboration and resource sharing in emergency planning, response and recovery. These program enhancements included increased grant funding and resources for inter-municipal cooperation, and supporting mechanisms such as mutual aid agreements.

Overall, the Province has demonstrated continuous improvement by integrating multiple lessons learned from the Slave Lake Wildfire (2011) and the Southern Alberta Floods (2013) to support community emergency management programs, including:

- Enhanced Field Operations: AEMA doubled the size of its Field Operations Unit from 6 to 12 Regional Field Officers, and from 2 to 4 Field Officers for First Nation communities. Field Officers are critical to the success of emergency management as they are the day-to-day face of AEMA for over 400 communities across Alberta. Field Officers provide emergency management training, advice and response assistance to communities across seven municipal regions and three First Nation community regions.
- Enhancement to the Community Emergency Management Program: – This is a web-based emergency management planning support platform and application. It supports users in conducting a basic Hazard Identification and Risk Assessment that gauges the readiness of a community to meet identified hazards / risks, and assists in the development of an emergency plan through automated templates and processes. Approximately 50% of Alberta's communities are now using these.

There are **more than 200 communities and 44 Indigenous communities** actively using the Community Emergency Management Program.

- Enhanced Support for First Nation Communities: In recognition of the requirement to improve and enhance a range of direct and indirect supports to First Nation communities, the AEMA entered into an agreement in March of 2015 with Indigenous and Northern Affairs Canada to provide emergency management support to all First Nation communities in Alberta.

Emergency Management Training

Lesson Learned

Enhanced emergency management training and exercises

The AEMA provides training to local authorities in emergency management and has expanded its training program over the past five years. Training resources are specifically designed to support Alberta's emergency management system and provide participants with a clear understanding of their roles in all phases of an emergency.

Training programs assist local authorities to prevent and prepare for the impacts of an emergency, and enhance the understanding of response protocols such as the Incident Command System. Local authorities can take advantage of several options to obtain training, including online courses and resources; direct delivery through an AEMA Training Officer; or grant-funded training for municipalities to contract the services of pre-approved trainers.

The Province also invested in emergency management mock exercise programs that are critical to continuous improvement and quality assurance. These emergency management exercise programs:

- Promote the application of training in a mock-event situation and build critical relationships prior to an emergency event
- Identify skill and / or capability gaps
- Test decision-making protocols in complex and stressful situations, and
- Identify additional resourcing needs.

These exercises also provide the opportunity to practice new or revised standard operating procedures with an emphasis on the development of shared situational awareness and a common operating picture.

Specifically, the AEMA has undertaken the following steps to enhance emergency management training, community outreach and exercising opportunities for Alberta's local authorities:

- Increased frequency and quality of emergency management training*:* Training courses are routinely offered to communities by AEMA's Training and Field Operations Officers. The expansion of training was supported through the increase in Field Officers and the transfer of training delivery from the Public Safety Initiatives Branch to Field Operations.
- Developed and offered the Municipal Elected Officials Emergency Management Course: This course is specifically designed to assist municipal elected officials in understanding their role, accountabilities and authority during a range of emergency events and specifically in the event of a State of Local Emergency as compared to a provincially-declared State of Emergency.
- Increased use of technology to deliver emergency management training: The AEMA improved and increased its online emergency management course offerings to better support training demands that could not be met through in-person course delivery.
- Regional Community Outreach Program: This program brought together emergency management practitioners to discuss current trends in all phases of emergency management, provide updates on programs (provincially delivered and other programs), and share leading practices and lessons learned. Since 2015, AEMA has completed regional outreach across Alberta prior to the commencement of each hazard season.

- Enhanced the Government of Alberta Emergency Management Exercise (EMX) Program: The AEMA improved and broadened the scope and scale of its annual EMX series of exercises. The annual EMX was formalized as a progressive collective training program for the POC, to include participation from the Province, communities, Industry, non-governmental organizations, and other entities, such as Canada Task Force 2.

Response

Response refers to how the Province and municipalities manage the consequences of disasters through first response, evacuation and emergency social services to minimize suffering and loss. This addresses emergency authority and notifications, emergency organization; resources, facilities, and logistics; command and control structures; managing and planning to objectives; and information and intelligence management.

Provincial Use of Incident Command System

Lesson Learned

Mandated provincial use of the Incident Command System model

In 2016, the AEMA completed a review of, and revisions to, the Alberta Emergency Plan. The Plan identifies stakeholders to emergency management in Alberta, and delineates roles, responsibilities and authorities for Government of Alberta Departments.

The Plan now mandates the use of the Incident Command System (ICS) model by all participating provincial Departments and agencies (i.e. incident sites, Emergency Operations Centres, and the POC); and encourages adoption and use of ICS by Alberta's communities and public safety system stakeholders.

ICS is a 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 guides emergency response during an event to promote alignment of action against objectives:

- Chain of Command and Unity of Command: Chain of command refers to the orderly line of authority within the ranks of the incident management organization. Unity of command means that all individuals have a designated supervisor to whom they report at the scene of the incident.
- Unified Command: This enables organizations with different legal, geographic, and functional authorities and responsibilities to work together effectively without affecting individual authorities, responsibilities, or accountabilities.

- Dispatch / Deployment: Resources should respond only when requested or when dispatched by an appropriate authority through established resource management systems. Resources not requested must refrain from deployment to avoid overburdening the recipient and creating challenges.
- Management by Objectives: This is critical and is intended to be communicated throughout the entire ICS organization. Centralized, coordinated incident action planning guides all response activities through the use of Incident Action Plans.
- Incident Action Planning: An Incident Action Plan provides a concise, coherent means of capturing and communicating the overall incident priorities, objectives, strategies, and tactics in the context of both operational and support activities.
- Manageable Span of Control: Span of control is key to effective and efficient incident management. Supervisors must be able to adequately supervise and control their subordinates, as well as communicate with and manage all resources under their supervision; and
- Modular Organization: ICS organizational structure develops in a modular fashion based on the size and complexity of the incident, as well as the specifics of the hazard environment created by the incident.

Provincial Operations Centre Capacity and Technology

Lesson Learned

Improved Provincial Operations Centre capacity and technology

The AEMA implemented the Provincial Operations Centre (POC) Augmentation Program to build capacity and depth across the Government of Alberta to support emergency events that required complex and extended POC operations.

Through this program, the AEMA identified and trained over 75 non-AEMA provincial employees to fill a range of functional and supporting roles in the POC. This augmented capacity was critical to the sustained response required in the context of the Wildfire and one of the main contributing factors to a positive outcome.

The program also resulted in POC enhancements to improve cooperation, collaboration, and the building of shared situational awareness through the:

- Development of improved operating procedures: Standard operating procedures were further developed, including the Common Operating Picture Report, which was used successfully during the Wildfire.

- Expansion of the Provincial Duty Officers Program: This Program expanded the number of Provincial Duty Officers to better sustain 24 / 7 operations and to improve internal and external communications and information flow between participating stakeholders to an emergency.
- Implementation of Incident Management Software: The AEMA undertook a project to procure and implement an incident management software system known as Alberta DisasterLAN (AB DLAN), which was brought online in late 2015. A web-based application, AB DLAN supports incident management through a ticket-based program, with automated forms and reports, integrated into a geographic information system platform that supports the development of a common operating picture and enables the development of shared situational awareness.

Incident Management Teams

Lesson Learned

Formalized Incident Management Teams

Since 2013, AEMA has studied the standards, qualifications, and training requirements for the creation of an All-Hazards Incident Management Team (AHIMT) program in Alberta. The purpose of these teams is to improve regional and provincial incident management response capabilities by building on the existing skills, capabilities and resources of specially-trained organizations.

Incident Management Teams (IMT) are incident command organizations made up of appropriate personnel who can be deployed or activated as needed to support emergency operations. The Alberta Emergency Plan encourages communities to develop and train IMTs that employ ICS, and to use these teams to support one another through mutual aid agreements during emergency events.

IMTs can be formally certified, with formal notification, deployment, and operational procedures in place, while other IMTs can be formed at an incident or specific event. The level of training and experience of the members, along with formal response requirements and responsibilities, determine the level and type of an IMT that would be deployed.

In order to provide standing IMT capabilities for Alberta, the AEMA undertook the following activities:

- Formalized a relationship with Canada Task Force 2 (CAN-TF2): The Province provided grant funding to enable ongoing operations in Alberta for CAN-TF2. CAN-TF2 is an all-hazards disaster response team with a diverse capacity to respond to a variety of man-made and natural disasters. The team is composed of over 100 rescue specialists, doctors, paramedics, structural engineers, communications specialists, logistics specialists, and command staff. CAN-TF2's mandate is to respond with up to 70 specialized team members within 6 hours, via ground or air, and to operate 24 hours a day for up to 14 days with the specialized equipment to be fully self-sustaining.

- Formalized support for an IMT with Strathcona County: The Province provided grant funding for the development of IMT skillsets and capabilities, and worked closely with Strathcona County to enhance its IMT experience gained in the 2011 Slave Lake Wildfire. Strathcona County's IMT is specially trained and equipped to provide extended support, which includes professionals with wildland-urban interface fire training and experience.

Alberta First Responder Radio Communications System

Lesson Learned

Launch of the Alberta First Responder Radio Communications System

The Alberta First Responder Radio Communications System (AFRRCS) is a province-wide two-way radio network designed specifically to improve and integrate radio communication among first responders from different agencies. The digital radios are capable of holding multiple channels, which allows designated groups to be created within the network, as well as integration of multiple users on a single channel, all within a single system.

There are numerous advantages associated with AFRRCS as a leading technology solution for emergency communications including:

- Efficient and effective coordination of joint responses by first responder agencies using AFRRCS to emergency events
- Improved and integrated radio communication among first responders from different agencies (e.g. emergency medical services, fire and police)
- Reduced overall cost of radio system infrastructure and streamlined asset management capability, and
- More resilient radio communications during widespread and sustained emergency events.

While AFRRCS was not planned to be officially launched until July 2016, the system and team were successfully deployed by the Province in May 2016 to support the Wildfire response.

The deployment of AFRRCS proved extremely valuable as the Region dealt with power outages and damaged cell towers from May 3 onward.

The Canadian Telecom Emergency Preparedness Association also provided support to the primary telecommunications providers in the Urban Service Area of Fort McMurray as they initiated their own corporate emergency response plans.

*"Within 12 hours of arriving [we established] our communications footprint…**we were asked to provide support, so we did,** and became the only communications support organization available."*

- AFRRCS Stakeholder

AFRRCS was able to provide dedicated communications resiliency during and after this period, with mobile, functioning equipment and additional assets sent by Motorola. At one point over 250 AFRRCS radios were used to coordinate the actions of 32 fire response entities.

Alberta Emergency Alert System

Lesson Learned

Implementation of the Alberta Emergency Alert System

The Province has demonstrated leading practice in the implementation of the Alberta Emergency Alert system, a digital system that evolved from the Emergency Public Warning System. In 2011, the system was upgraded to address the changes in radio and television digital communications.

The Alberta Emergency Alert demonstrates significant cooperation between government and broadcast agencies to issue emergency warnings through radio and television, the internet, social media, really simple syndication (RSS) feeds, the Alberta Emergency Alert Mobile App, and roadway signage.

Generally, content released through the Alberta Emergency Alerts during the Wildfire were consistent in timing and messaging. At the beginning of the response, information focused on issuing updates about the progress of the Wildfire, evacuation notices for specific communities, and information on recommended destinations for evacuees. The use of the system proved invaluable, while additional recommendations in following sections of this report will serve to enhance the usefulness of Alberta Emergency Alerts in future emergency events.

Stabilization

Stabilization refers to how the Province and local authorities stabilize conditions following a disaster to an acceptable and appropriate level to enable the return of evacuees, including the provision of core services and infrastructure. This also includes the evaluation of environments, structures, public services and essential sources of supplies (e.g. food) against acceptable health and safety standards, in partnership with regulators.

Provincial Expertise for Re-Entry

Lesson Learned

Improved integration of provincial expertise for environmental and public health review prior to re-entry

The Province demonstrated improved integration of its provincial expertise in environmental hazard testing and public health during the Wildfire. This was done in order to streamline testing, interpretation, and the communication of results.

A Drinking Water Quality Task Team was formed by Alberta Environment and Parks with participation from Alberta Health and the Office of the Chief Medical Officer of Health, Alberta Health Services, and Health Canada's First Nations and Inuit Health Branch to establish conditions for restoring potable water.

Soil and air testing was organized by Alberta Health and Alberta Environment and Parks, in close collaboration with the Region.

Alberta Health Services Environmental Public Health staff worked to conduct approval inspections of food facilities (e.g. restaurants, gas stations or work camps), social care facilities such as childcare businesses, personal service facilities and swimming pools.

In collaboration with the Region, Environmental Public Health staff also conducted general overview inspections for homes identified as requiring inspection by the Region. These inspections involved a general overview of designated homes for water damage and general damage to building materials, including concerns associated with mold or pests.

Recovery

Recovery refers to how the Province, in support of a local authority, repairs and restores conditions to a level of norm through rehabilitation / reconstruction of infrastructure and services, and to the provision of required financial and social supports. Recovery includes reinvestment in disrupted economies and re-establishment of the environment to a healthy state.

Re-Entry and Recovery Planning

Lesson Learned

Planning for re-entry and recovery

The AEMA reinforced Alberta's emergency response system by formally incorporating a cross-ministry governance model, and by ensuring the availability of additional Government of Alberta personnel to support response and recovery efforts following the 2011 Slave Lake Wildfire and the 2013 Southern Alberta Floods.

The Alberta Emergency Plan sets out the guidance for recovery activities. While recovery is a local authority's responsibility, provincial assistance is available in the

"*The things we've* ***learned about recovery from past disasters*** *are informing what we are doing now.*"

- Government of Alberta Stakeholder

event of a severe or widespread disaster. Only local authorities can generate the necessary cooperation among all of the government agencies, community organizations, businesses, and residents that are needed for a successful collaboration around recovery.

While recovery activities may commence while a community is still involved in responding to an event, the majority of these activities will occur after the emergency or disaster event has stabilized or ended.

The Province typically has two functions for recovery efforts – a Recovery Branch within the AEMA and the setup of a temporary Recovery Task Force (this approach has been taken in each of the last three major disasters in Alberta). The Province established the Wood Buffalo Ministerial Recovery Task Force on May 6 to support planning for recovery.

The Ministerial Recovery Task Force was chaired by the Premier and co-chaired by the Minister of Municipal Affairs. Members also included Indigenous Relations, Health, Infrastructure, Transportation, Finance, Environment and Parks, Human Services, Seniors and Housing, and Agriculture and Forestry.

The Ministerial Recovery Task Force was focused on the safety and security of returning residents to the Region, to supporting the needs of the community and planning for the timely and safe re-entry of residents. A concurrent outcome of the Ministerial Recovery Task Force was to support the Region in the resumption of municipal, economic and business activities.

In Summary

Through the many actions taken by the Province prior to and during the Wildfire, the AEMA and its stakeholders have moved Alberta toward a whole community approach to emergency management. However, it must be noted that AEMA and provincial Departments can provide only a portion of emergency management capabilities. Collective emergency management skills and resources must also include local authorities, non-governmental organizations, the Federal Government, Industry, and individuals, families and communities.

Lessons Identified and Recommendations

Prevention

The following key themes related to prevention arose from the review: the legislative framework for emergency management, prevention investments, and the process for post-incident assessments. Each of these is explored below.

Legislative Framework

Recommendation

Recommendation #1

Review the legislative framework for Emergency Management

A thorough analysis of the *Emergency Management Act, Public Health Act, Environmental Protection and Enhancement Act*, and *Occupational Health and Safety Act* within the Alberta Emergency Management Framework should be completed to understand their interplay, and the implications to stakeholders, during an emergency.

If necessary, consideration can be given to whether legislation should be amended in order to provide this clarity. The legislative framework should be tested not only against emergency events that have been experienced in the province (e.g. wildfire) but other types of emergencies that could occur (e.g. industrial accidents, bioterrorism, etc.).

The Government of Alberta may wish to revisit the overall placement of the AEMA within the government's organizational structure. The Agency's broad public safety mandate should be well understood and appropriately executed in the event of a large-scale disaster requiring cross-jurisdictional coordination of law enforcement, other emergency responders, industry and entities such as the military.

Findings

While a good outcome was achieved in support of re-entry, the authority over re-entry decisions was not clear to all parties, particularly with respect to public and environmental health considerations.

Context

The *Emergency Management Act* provides the Minister of Municipal Affairs the ability to declare a State of Emergency in certain circumstances, and provides him or her with a broad array of powers and authorities. During a provincial State of Emergency, the Act is paramount over other legislation in the Province except for the *Alberta Bill of Rights* and the *Alberta Human Rights Act*.

The *Public Health Act* provides the Minister of Health the ability to declare a Public Health Emergency, and provides him or her with a broad array of powers and authorities, similar to those under the *Emergency Management Act*. The *Public Health Act* prevails over any other legislation in the case of any conflict, regardless of whether a Public Health Emergency has been declared or not.

The *Environmental Protection and Enhancement Act* provides the Minister of Environment and Parks with broad authority to protect and regulate air, land and water. The legislation provides the Minister certain authority over potable water across Alberta, including the ability to prohibit its use (e.g. drinking) or take action to protect / restore water quality to an acceptable level.

The *Occupational Health and Safety Act* provides the Minister of Labour the authority to enforce OHS laws, and establish minimum standards for safe and healthy practices in Alberta workplaces, including employer responsibility for providing personal protective clothing and equipment to workers assigned to perform emergency response and related activities.

Observations

The interplay of the *Emergency Management Act*, *Public Health Act*, and *Environmental Protection and Enhancement Act* was not always clear to all decision makers during the Wildfire, particularly with respect to re-entry activities. There were differing opinions regarding who had the legislative authority to make decisions regarding the appropriate health and safety thresholds for re-entry, particularly for water safety, air quality and other potential hazards to public health.

Alberta Environment and Parks played a number of roles including:

- Monitoring waterways / watercourses to determine how these were impacted by the Wildfire
- Collecting samples of ash to determine the hazard
- Assembling the air monitoring network
- Reviewing the drinking water treatment and distribution system
- Ensuring the wastewater system could handle influx of residents, and
- Handling municipal waste / debris removal.

Alberta Environment and Parks did have authority over the use of water and wastewater facilities and had the authority to prohibit the use of water from those facilities if, in their opinion, it would cause harm to life or human health. Relevant health hazard data was collected and submitted to Alberta Health for evaluation of health hazards by the Chief Medical Officer of Health.

Clarifications are also needed during a provincially-declared State of Emergency regarding employer obligations for Occupational Health and Safety when resources are deployed by the Province. For example, many firefighters were deployed from other municipalities, and personal protective equipment requirements may not have always been followed during the response and stabilization of

the Wildfire. A recent University of Alberta study identified that one in five firefighters who were deployed to the Region were facing lingering respiratory issues caused or made worse by the Wildfire.[12]

Jurisdictional Analysis

The Centers for Law and the Public's Health, a collaborative at John Hopkins and Georgetown Universities, have conducted practical research into the overlap of emergency acts and regulations. This research notes the conflicting laws and overlapping authorities that can arise due to the host of actors involved in the management of significant emergency incidents. Additional or extraordinary powers authorized through emergency statutes can create uncertainties on questions of authority, public health and environmental powers, and leadership. In particular, dual declarations of states of emergencies under multiple statutes can:

- Trigger distinct powers and responsibilities
- Lead to overlapping priorities through assignments of powers to different government agencies (e.g. public health agency vs. emergency management agency), and result in
- Widely divergent responses and decisions on key issues.

The research acknowledges that a proper and comprehensive legal interpretation of related emergency statutes is critical to disaster prevention and emergency preparedness. This analysis must support the ability of participating agencies to assess, in-real-time, the changing legal environment during states of emergencies, including the ability to:

- Assess and monitor changing legal norms
- Identify legal issues that may facilitate or impede responses as they arise
- Develop innovative, responsive legal solutions to reported barriers to response, and
- Explain legal conclusions through appropriate communication channels.

This type of legislative triage during a large-scale emergency is only possible if the factors governing triage are known and accepted by participating authorities.[13]

During development of the cross-jurisdictional analysis, it was noted that provincial / state emergency management authorities are not always associated with the municipal affairs function of government. Instead, a significant number are associated with line departments, while federally and in some other jurisdictions they are aligned to public safety functions. The table on the following page provides insight into some examples:

Jurisdiction	Emergency Management Authority	Function of Government
Alberta	Alberta Emergency Management Agency	Ministry of Municipal Affairs
Ontario	Emergency Management Ontario	Ministry of Community Safety & Correctional Services
British Columbia	Emergency Management British Columbia	Ministry of Transportation & Infrastructure
Manitoba	Manitoba Emergency Measures Organization	Department of Infrastructure
Saskatchewan	Saskatchewan Emergency Measures (Management) Organization	Ministry of Government Relations
Nova Scotia	Nova Scotia Emergency Management Office	Department of Municipal Affairs
California (US)	California Governor's Office of Emergency Services	Governor's Office – Office of Public Safety Communications
State of Victoria (Australia)	Emergency Management Victoria	Department of Justice and Regulation
Government of Canada (Federal)	Emergency Management Canada	Public Safety Canada

While provincial / state emergency management agencies provide support to local authorities during an incident, their mandate is not solely driven by the needs of these entities. The breadth of emergency management requirements in the face of events such as terrorism, industrial sabotage, industrial accidents and essential service failures (communications, power, water) requires a broad purview, beyond that of municipal affairs. In situations such as these, public safety becomes the overarching consideration, characterized by close coordination with law enforcement, fire and emergency services across multiple jurisdictions.

Prevention Investments

Recommendation

Recommendation #2

Continue to invest in prevention programs

A cost-avoidance business case approach should to be taken to quantify the estimated future savings from prevention and preparedness investments using statistical analysis and empirical research (based on community studies).

Cost avoidance methods and models for investment in prevention, mitigation, and preparedness programs should support all levels of government in evaluating options and prioritizing those with the most significant impact on risk reduction.

Findings

The total impact of the Wildfire is estimated by one source to be almost $8.9 billion,[14] a number that may grow as the longer term socio-economic and health impacts are realized. By comparison the estimated amount spent on prevention (as described below) in 2015 / 16 was $53 million, or 0.5% of the cost of the disaster.

Ongoing investment is needed by the Government of Alberta and municipalities to advance processes, technologies and resources for disaster prevention, preparedness and overall emergency management. Disaster prevention programs cannot be viewed as “discretionary” and must receive an appropriate proportion of investment relative to the impacts these programs are intended to mitigate.

Context

The Government of Alberta offers several prevention programs intended to support local governments in their emergency management and preparedness capacity and capability.

The largest wildfire prevention program is the **FireSmart Community Grant Program**, offered through Alberta Agriculture and Forestry, which provides municipalities with a level of support to identify and mitigate wildland-urban interface fire risks to their communities. The program provides resources, plans, advice, workshops, and grant funding, as well as certification for municipalities.

Additional disaster prevention support is also available, albeit to a smaller extent, through other grant programs. The **Emergency Management Preparedness Program** supports expanding and enhancing emergency management preparedness by training emergency management practitioners and developing local capacity. The **Fire Services and Emergency Preparedness Program** provides opportunities to increase the number of trained fire service and emergency management

practitioners. The **Municipal Wildfire Assistance Program** is intended to help reduce both the risk and loss associated with wildfires and is designed to assist municipalities with extraordinary costs for the suppression of wildfires.

In support of First Nation communities, Indigenous and Northern Affairs Canada provides funding to Alberta Agriculture and Forestry to ensure that those communities who are interested, are able to participate in FireSmart programming.

Observations

While exact figures are not consolidated and tracked by the Province on total prevention spending, in 2015 / 16 Alberta spent the following on a range of programs and functions involved in prevention activities.[15,16]

- $36.9 million on the Alberta Emergency Management Agency
- $15.3 million on public safety, through Alberta Municipal Affairs, which included $0.6 million on Fire Services and Emergency Preparedness, and
- $0.8 million on the FireSmart Community Grant Program, through Alberta Agriculture and Forestry.

The Region participated in FireSmart activities and received a total of $153,600 in grant funding in 2015 / 16.[17] Additional grant funding for FireSmart was accessed by the Region over the previous five years for two main purposes: vegetation management and training.

- *Vegetation management* activities help to decrease the amount of vegetation that can fuel a wildfire; activities in the Region may have included thinning and pruning, removal of volatile trees (e.g. spruce), planting fire-resistant trees (e.g. aspen), constructing fuel breaks, and general cleanup in and around the Region.
- *Training* provides cross-training opportunities between structural and wildland firefighters, who have traditionally not been trained in both.

Of the other prevention programs noted above, the Region accessed $9,500 in grant funding from the Fire Services and Emergency Preparedness Program in 2015 / 16.

Jurisdictional Analysis

The United Nations' Sendai Framework for Disaster Risk Reduction[18] notes that it is necessary to empower local authorities and local communities to reduce disaster risk through resources, incentives and decision-making responsibilities, as appropriate. This speaks to the ongoing importance of providing prevention programming at the local level.

Other jurisdictions have undertaken studies on the correlation between prevention investments and the reduction in disaster response and recovery costs. For example, the Australian Emergency

Management approach estimates that there is a 15% rate of return for dollars spent on disaster prevention. A similar study in the United States[19] found that, on average, for every $1 spent by the Federal Emergency Management Agency on hazard mitigation, there was potential for a $4 return in future benefits.

Post-Incident Assessments

Recommendation

Recommendation #3

Standardize the format and processes for post-incident assessments

A formal post-incident assessment process and guidelines for the Government of Alberta, local authorities, and supporting agencies and service providers should be developed. The guidelines should include a common framework for the reviews, and provide guidance on review timelines, stakeholder participation, and sufficiency of content.

A consistent post-incident assessment process will enable the collection of key recommendations from major disasters, distill any systemic issues or opportunities for improvement, and help to align actions and investments to improve emergency management systems.

Guidelines should also include a requirement for municipal-level reviews following a major disaster; these should follow a trauma-sensitive approach. Critical incident stress debriefs should be identified, and held as soon as possible, following established protocols, to support the mental health of local authority staff involved in traumatic events. Following that, operational debriefs should be held within a reasonable period of time following the incident's stabilization to identify lessons learned. This will help to inform improvements to municipal emergency preparedness and response.

Findings

There is no standard format for post-incident assessments across government agencies or local authorities that facilitate the identification and capture of systemic opportunities for changes. While the AEMA routinely conducts post-incident assessments following an event, and several Government of Alberta Departments conduct their own internal reviews, there is no requirement for a post-incident assessment to be conducted at the local authority level.

Context

A post-incident assessment is a formal review process that provides organizations with an opportunity to evaluate the design and operating effectiveness of emergency protocols after an event has occurred. Their primary purpose is to capture what worked well and to identify

opportunities for improvement. They may also provide participants with an opportunity to debrief and achieve some closure following traumatic events.

The Alberta Emergency Plan lays out requirements for AEMA to complete a post-incident assessment after any Level 3 and 4 activation of the POC occurs. Reviews were completed after each of the 2011 Slave Lake Wildfire and 2013 Southern Alberta Floods. This Post-Incident Assessment will further contribute to the continuous improvement of Alberta's emergency management system.

The AEMA also encourages Government of Alberta Departments and agencies involved in major events to conduct internal reviews following their involvement in leading or supporting emergency events.

"Everything happened so quickly, and **they made the best decisions they could** with the information they had"

- Resident

Observations

Following the Wildfire, several Government of Alberta Departments and other organizations (e.g. industry) completed formal post-incident assessments. While insightful, these reports were prepared using a variety of formats and frameworks, making it difficult and time consuming to identify common themes and align recommendations for further action.

During the period in which this report was finalized, the Region initiated a post incident assessment. When a workshop was held with members of the REOC during this review by the Province, several participants stated that it was their first opportunity to debrief about the Wildfire event in a formal setting. The Region has planned to complete its own lessons learned review by the summer of 2017.

Jurisdictional Analysis

Continuous improvement is a critical component of any disaster prevention approach.[20] The U.S. Fire Administration notes that learnings from past disasters should be addressed in a way that creates a shift in the behaviours and practices of organizations and individuals; this helps to make sure that they lead to desired outcomes, rather than a repeat of past mistakes.

The Canadian Emergency Management Planning Guide indicates that a formal review should be followed after every major event to identify lessons for future disasters.

Leading practice suggests that holding a debrief workshop is one way to review an event and produce a report in a reasonable timeframe.[21]

Specifically there are two types of debriefs that can occur after a disaster:[22]

- **Critical Incident Stress Debriefing** is a formalized method for supporting groups of people who have been through a crisis together, with a focus on mental health, and

- **Operational Debriefing** provides an opportunity to share lessons learned and record knowledge so it can be leveraged to prepare for future disaster scenarios.

Debrief processes should include representation from those directly involved in response and recovery activities and those that provide support. Debrief processes should be oriented toward providing an overall sense of meaning to participants and a degree of closure for those affected by the event.[23]

Disaster Resiliency Strategy

Recommendation

Recommendation #4

Develop a Disaster Resiliency Strategy

The growth of disaster risk means there is a need to strengthen disaster preparedness for response, take action in anticipation of events, and ensure capacities are in place for effective response and recovery at all levels. The recovery, rehabilitation and reconstruction phase is a critical opportunity to build back better, including through integrating disaster risk reduction into development measures.[24]

While Alberta's work on a resiliency strategy is underway, Alberta should develop guidelines to support local authorities in their creation of disaster resiliency strategies. These guidelines should strive to:

- Take advantage of disaster recovery funding to rebuild a community with disaster mitigation and prevention in mind
- Build capacity within individuals, households and businesses to prepare for, respond to and recover from disasters
- Increase collaboration in a way that considers how the components of prevention, preparedness and recovery are integrated and community-centred, and
- Foster connections between communities to adapt to future disasters.

Findings

Alberta does not currently have a disaster resiliency strategy in place. In an effort to build resilient communities and to protect Albertans, and their assets from the impact of disasters, the Province has initiated work to understand the linkages and opportunities between the Government of Alberta's strategic priorities, the United Nation's Sustainable Development Goals and other global agreements to define a disaster resiliency strategy.

Context

A disaster resiliency approach works to understand the relationships between the components within recovery and how actions can impact on or achieve outcomes in another part of recovery, and contribute to better mitigation and prevention of disasters.

A resilient community is one that possesses the physical, psychological, social and economic capacity to withstand, quickly adapt and successfully recover from a disaster. It is able to rebuild itself in a manner that will better mitigate and prevent disaster impacts.

Observations

In past few years, Alberta has dealt with a number of disasters, including three major events that have had a significant social and economic impact on the Province.

- The 2011 Slave Lake Wildfire had an estimated impact of $700 million[25]
- The 2013 Floods in Southern Alberta had an estimated impact of $6 billion[26], and
- The 2016 Wood Buffalo Wildfire had an estimated impact of $8.9 billion[27].

Resilience at its core is about how best to enable social and economic sustainability in the face of disasters. The impacts resulting from these major disasters in Alberta clearly demonstrate the need to prioritize disaster preparedness, disaster risk reduction, and disaster resilience, to better address these impacts, and ultimately reduce them.

Jurisdictional Analysis

The United Nations' Sendai Framework for Disaster Risk Reduction[28] outlines the need for ongoing supports and services to prevent and reduce exposure and vulnerability to disasters, increase future preparedness for response and recovery, and thus strengthen resilience. Four priorities are outlined for this including:

- Understand disaster risk. Knowledge of disaster risk in all dimensions can be leveraged for prevention and mitigation, and the development of appropriate preparedness for and response to disasters. This can be achieved through data collection, developing baselines, information sharing, and collaboration across all levels of government.
- Strengthen disaster risk governance to manage disaster risk. Plans, guidance, and coordination with relevant stakeholders is needed throughout an emergency management framework in order to reduce disaster risk and achieve sustainable development.
- Invest in disaster risk reduction for resilience. Investment in disaster risk prevention and reduction are essential to the overall resilience of people, and communities. Disaster reduction measures help to decrease the loss of life and assets, as well as ensuring effective recovery from a disaster. Resources need to be allocated to ensure disaster reduction strategies, policies,

and plans are in place across relevant sectors. This can be achieved at the local level through the promotion of disaster risk assessments into: land-use policy development and implementation; mapping and management of rural development planning; revisions to building codes and standards; and healthcare systems and programs.

- Enhance disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction. Disasters provide communities with the opportunity to "Build Back Better" if they properly plan for, and prepare for disaster risk reduction ahead of the disaster. Important to this is: the review and update of disaster preparedness plans periodically, considering the changing conditions and relevant stakeholders in emergency management; maintenance of investments in disaster forecasting, monitoring, and warning systems; promotion of resilience in new and existing critical infrastructure (across all sectors); continued promotion of public awareness for emergency preparedness; and preparing the workforce, including volunteers, to participate in emergency responses.

Preparedness

The following key themes related to preparedness arose from the review: public preparedness, delegation of authority, all hazard risk assessment, resource logistics, evacuation, depth and capacity for local authorities, communications, and the POC facility. Each of these is explored below.

Public Emergency Preparedness

Recommendation

Recommendation #5

Enhance investment in public awareness and engagement initiatives for emergency preparedness

The ongoing, public awareness initiative should work to build Albertans' understanding of their role in emergency preparedness, and their responsibility to be prepared to support themselves and those who rely on them, including children, adult dependents, and pets, on short notice. The initiative should leverage the experiences from the Wildfire to create a cultural change around the importance of emergency preparedness.

The initiative should also build knowledge among Albertans about where to access accurate and official information in an emergency. This should include building public awareness of the Alberta Emergency Alert program and application and how to register for alerts, social media accounts to follow, and how to use social media appropriately in a disaster.

The initiative should also investigate new and innovative approaches for engaging additional Government of Alberta Departments, and the public on an ongoing basis. This could include

engaging with Alberta Education to understand how best to develop emergency preparedness materials that could be incorporated into school curriculum, enhancing marketing and social media tools, and leveraging popular interest and technological tools, such as the concept of simulations of emergency scenarios.

Alberta's current emergency preparedness initiatives should continue, and could be enhanced by:

- Developing resources for parents and teachers to teach children about safety and coping in an emergency situation. Australia has developed the 'Triple Zero Kids Challenge' that teaches children about what happens when they call the Triple Zero by walking them through safety scenarios. This software is targeted to Kindergarten, Grade 1 and Grade 2 students.[29]
- Building additional emergency preparedness resources targeted to a variety of audiences. British Columbia has developed resources targeted to specific audiences, such as neighbourhoods, apartments, people with disabilities, seniors, small business, pets, tourism, and parents, including tips for talking to children about disasters.[30]

Findings

Given the frequency of disasters, Albertans may not be aware and engaged appropriately in preparedness initiatives and activities. As such, their general state of preparedness may not be sufficient to give Albertans the knowledge and confidence they need to appropriately respond to a disaster, to leave their homes, and to recover.

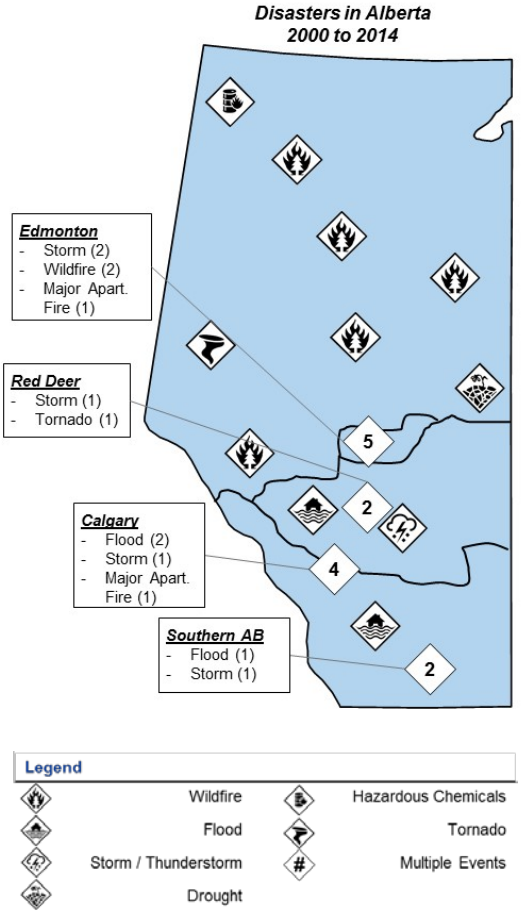
A recommendation on personal preparedness for an emergency was identified during the Slave Lake Wildfire review.

Context

AEMA provides a range of personal emergency preparedness information and resources on their website, including a template for a family emergency plan, emergency preparedness videos, 72-hour emergency kit lists, and information about preparing for specific types of disasters (e.g. flood or wildfire) based on regional risks. AEMA also participates in the annual federal Emergency Preparedness Week which focuses on a new theme each year.

Observations

Over the past 15 years, prior to the Wildfire, Alberta experienced 24 diverse disasters, both natural and caused by man, which impacted citizens across the Province. The map to the right identifies these disasters. Excluding the Wildfire, the total cost of these disasters was more than $4.6 billion.[31]



The severity and frequency of these disasters continues to highlight the importance of personal preparedness in an emergency situation. This emphasizes the importance of encouraging all Albertans, including individuals, communities, private and public sectors, and non-governmental organizations, to take responsibility and participate in emergency preparedness to become more resilient from disasters.

Following the Wildfire, many residents reported being unprepared for the evacuation. During the evacuation period, some residents had the opportunity to return home and pack necessities, valuables and personal items, but many left with only what they had at work or school.

Many of those who returned home had limited time to identify the items they would need most – such as purses, wallets, passports and other important documents, prescriptions, and phones.

Jurisdictional Analysis

The Canadian Emergency Management Framework states that prior to an emergency, communication objectives should focus on public education concerning emergency management to enhance awareness of hazards, risks and vulnerabilities.

At the same time, the United Nations' Sendai Framework for Disaster Risk Reduction also notes that the development of effective campaigns are important for public awareness and education to promote a culture of disaster prevention, resilience and responsible citizenship.

Delegation of Authority

Recommendation

Recommendation #6

Clarify and document processes for legislative delegation of authority in the Alberta Emergency Plan

When a State of Emergency is declared by the Province and a delegation of authority occurs, additional clarification and details regarding what this means is needed. These clarifications and details, at a minimum, should address:

- The authority, powers, responsibilities and accountabilities of the appointee
- The authorities, powers, responsibilities and accountabilities of the key government bodies and agencies, including the POC, Provincial Departments, and the local authority's Emergency Operations Centre / Emergency Coordination Centre
- The relationship between the appointee and key government bodies and agencies, including the POC, Provincial Departments, and the local authority's Emergency Operations Centre / Emergency Coordination Centre
- How the delegation of authority impacts command and management of the incident under a State of Emergency, per ICS
- How the appointee will be made aware of what the delegation of authority means, particularly within the context that the appointment will typically occur once a disaster has occurred, and
- How all stakeholders, including Incident Support Teams, Incident Management Teams, government agencies, the public, and the private sector will be made aware of what the delegation of authority entails and means for the incident as a whole.

The Province should also consider the possibility of partial delegation, where an appointed person, such as a local authority, gains a partial level of authority or control. This would allow the Province to retain control over its accountabilities, while also benefiting from someone in a local role during the command and / or management of the incident.

Some of these clarifications may require changes to the *Emergency Management Act* and / or relevant regulation(s), while others may only require additional guidance from the Province.

Findings

Based on the experience from the Wildfire, the *Emergency Management Act* does not provide clarity on what a delegation means for the Province, the appointed person, the POC, the local authority or its local Emergency Operations Centre.

During the Wildfire, the delegation of authority caused some confusion with respect to the chain and unity of command, supervision, and accountabilities. A key principle of the Incident Command System requires that command be clearly established from the beginning of an incident's operations.

Additional clarity on the overall process of delegation is needed. Clarifications and details regarding authority, responsibility, and accountability under delegated arrangements are needed in order to permit an appointed person to establish command and management of an incident.

Context

Alberta's *Emergency Management Act* sets out a graduated approach to legislative authority over emergency management in the Province. Under the *Act*, a local authority declares a State of Local Emergency which provides it with authority over the incident; under this it is able to exercise a range of powers described in the *Act*, within its jurisdiction.

A local authority is responsible for the direction and control over the emergency, until the Province declares a State of Emergency and assumes direction and control. Once a State of Emergency is declared, either the AEMA Managing Director or some other person appointed by the Province (pursuant to section 19(5) of the *Act*) becomes responsible for the coordination and implementation of plans, programs, and all staff and organizations involved.

Observations

Upon declaration of the State of Emergency by the Province during the Wildfire, AEMA determined that an appointment under the *Act* would be appropriate given the situation in the Region.

The Region's Director of Emergency Management (DEM) was appointed the Provincial Director of Emergency Management (Appointed DEM) pursuant to a Ministerial Order on May 6.

This appointment meant that the Appointed DEM was acting on behalf of the provincial response and all staff and organizations involved (including the REOC and POC) were subject to the Appointed DEM's control and direction.

However, there were limited communications to the Appointed DEM on what the appointment meant in terms of the scope of the role and the extent of available powers and resources. Other than the Ministerial Order, a brief email to the Appointed DEM, and a telephone call from Alberta Treasury Board and Finance regarding spending authorities, no additional information was available regarding the nature of the delegation.

The process by which the Region's DEM was elevated to the status of Appointed DEM did not clearly identify the new roles, responsibilities, and authorities of the delegated position, and as a result, a number of points of confusion arose. For example, there was a lack of clarity regarding the Appointed DEM's role in the command over the POC and other stakeholders. Some stakeholders noted that they believed the REOC was taking orders from the POC; this affected the ability to

initially establish command over the entire incident. Command and control structures were improved as the event progressed.

There was also a lack of clarity regarding roles and responsibilities for the POC and the REOC. As the POC's role changed from lead to support, many wondered who was actually in charge of what and when. The *Emergency Management Act* does not clearly define the role of the POC and a local Emergency Operations Centre (such as the REOC) when a delegation occurs to a local authority.

It should be noted that documentation relating to the delegation of authority to the Appointed DEM was done in accordance with applicable laws, policies and procedures.

Jurisdictional Analysis

Alberta's approach to emergency management is similar to many other provinces across the country, including Ontario. British Columbia's is unique in this regard. Its Emergency Response Management System uses provincially run Regional Emergency Operations Centres, instead of having a local authority run a local emergency operations centres when a State of Emergency is declared provincially. These Centres are scattered across British Columbia to serve broad regional areas.

All Hazard Risk Assessment

Recommendation

Recommendation #7

Scale the Hazard Identification Risk Assessment model to understand cumulative risk

Improvements to the Hazard Identification Risk Assessment model should:

- Clarify roles and responsibilities for taking an all hazards approach. This responsibility should be jointly shared by the Province and local authorities, with clear guidelines for how the Province will utilize local risk assessments.
- Continue to incentivize local authorities, and require that the Province annually assess cumulative risks utilizing compiled, historical information from provincial Departments (e.g. Alberta Agriculture and Forestry) and best available risk forecasting tools. The assessment should also consider:
    - Community risk thresholds and influencing factors, such as evacuation routes, populations with complex needs, and available local supports (e.g. industry, business, proximity to other municipalities, etc.), and

- Local incident management capacity – the capacity of a town is likely to be very different than that of a city, and should be a factor in determining risk thresholds.

- Maintain an all hazards risk perspective throughout the response, stabilization, and re-entry phases, and not just as a factor in planning. The way emergency organizations respond to a disaster and begin to rebuild also needs to anticipate changing environmental risks.
- Leverage best available cumulative hazard risk assessment technologies at the provincial level to support the local identification of hazard risk. This will require that analytic capabilities are appropriately resourced and funded to be successfully implemented.
- Improve the understanding of the cost / benefit to determine what investments should be made to mitigate key risks in the most cost effective manner.

Additionally, local authorities should prepare by compiling inventories of critical infrastructure within their boundaries – both in terms of infrastructure that is critical to the functioning of their community and region, and that could pose a safety risk to first responders (e.g. cell phone towers, pipelines, etc.). This information should then be provided to AEMA and compiled to create a shared provincial understanding of critical infrastructure to inform hazard risks and emergency response by the Province.

Findings

An understanding of the cumulative hazard risks was missing during the Wildfire. Currently, the responsibility for all hazard risks sits primarily with municipalities, however this creates a gap in the provincial understanding of all hazard risks.

As well, the current Hazard Identification Risk Assessment methodology in use by municipalities does not adequately consider the complex risks of the recent, large scale disasters experienced across Alberta.

While the Province is beginning its work to understand hazard risks through the Hazard Risk Advisory Committee, there is currently no approach to understand the cumulative risks and consider the complexities of the changing disaster context.

Context

The Alberta Emergency Plan outlines the need to compile a provincial risk and hazard assessment and hazard-specific consequence management plans.

At a municipal level, the Community Emergency Management Program, a software application that enables communities to assess their emergency preparedness and create emergency plans to respond to a disaster, provides municipalities with guidelines around completing a Hazard Identification Risk Assessment (HIRA), as part of their emergency planning.

HIRA is a process to identify and monitor the hazards that can have an impact on municipal operations or areas of responsibility. The risk assessment evaluates the likelihood of a hazard or combinations of hazards occurring, taking into account factors such as threat analysis, frequency, history, trends and probability.

Observations

To date no provincial risk and hazard assessment has been completed. The Province has been working to improve provincial hazard risk assessments since 2014, and has made progress over the past several years, including the roll out of the HIRA model to local authorities through the Community Emergency Management Program. Additional work is currently underway by the Province to improve the understanding of provincial hazards and risks, through the Hazard Risk Advisory Committee, with a targeted completion date of May 2018.

Several hazard-specific consequence management plans have been developed by the Province, including the Alberta Wildland-Urban Interface Fires Guide, Alberta Environment and Parks Flood Plan, Alberta Pandemic Influenza Plan, and Energy Resources Industry Emergency Support Plan. The use of discrete consequence management plans may contribute to a lack of understanding of the collective risk that a wildfire or other disaster may bring about.

It is important for the Province to develop an understanding of the cumulative hazard risks so that it can identify whether there is appropriate capacity to deal with the identified risks at local, regional and provincial levels. Currently, there are no mechanisms in place to gather and consolidate hazard risk assessments completed by local authorities to inform a cumulative view.

The Region developed a High Risk Vulnerability Assessment in March 2016, in line with the HIRA guidelines. This assessment outlined the risk of a wildland-urban interface fire and provided clear, actionable recommendations for the Region to improve its readiness.

The REOC may not have considered all risk aspects, as HIRA is not currently designed to address some of the gaps that were problematic during the Wildfire, including:

- Speed of changing conditions due to the extreme behaviour of the fire and shifting weather conditions
- Air quality challenges
- Complications of evacuating a municipality with limited access to highways
- Assessing the collective risk of multiple threats (e.g. wildfire and subsequent flooding), and
- Local capacity to address risks.

As part of the hazard risks assessment process, it is also important to understand the critical infrastructure that may be affected during a disaster. During the Wildfire, while there was a sufficient

understanding and documentation of critical infrastructure within the municipality, there was a gap in understanding of industry infrastructure within the Region, such as pipelines, communications towers, and transit lines, which required protection and / or may have been a risk to firefighters.

Jurisdictional Analysis

Public Safety Canada has published guidelines for conducting an All Hazards Risk Assessment. These guidelines outline a risk assessment process, provide a variety of risk assessment tools, and note the need to build an understanding of risks across bureaucratic, government, and jurisdictional boundaries.

The United Nations' Sendai Framework for Disaster Risk Reduction also notes the importance of strengthening disaster risk modelling, assessment, mapping, monitoring, and multi-hazard early warning systems, and carrying out an assessment of the technical, financial and administrative disaster risk management capacity to deal with the identified risks at the local level.

Resource Logistics and Asset Management

Recommendation

Recommendation #8

Create resource and asset management system capabilities

The province should invest in integrated resource and asset management capabilities as part of its Alberta DisasterLAN system that enables:

- Pre-loaded information on vendors and resource inventories that are available; inventories should include resources that are needed to stabilize a community, prepare for re-entry, and support recovery, not just resources to respond to the incident itself
- The management and tracking of deployed resources and people, and
- Communication from the POC to local Emergency Operations Centres and elsewhere regarding resource deployment and confirmation of receipt.

This system should be supported by clear, documented roles and responsibilities, processes, and communication guidelines to call for, deploy, receive, and demobilize resources appropriately. Demobilization guidelines should be developed to assist resources return to normal operations, including any health and mental wellness monitoring or support that is needed.

Currently, a financial module is being implemented in the Alberta DisasterLAN system, which would be complementary to this resource and asset management capability. Municipalities should also be able to access this system during a State of Emergency when they are working closely with the POC.

Findings

The level of resource coordination required to manage this event at both the provincial and municipal levels was unprecedented. Offers of support were overwhelming, and it was a challenge to identify the best resources, deploy them with appropriate communications, receive them, utilize and support them effectively, and demobilize them. It was also difficult to coordinate the logistics around supplies.

There is currently limited provincial capability to support resource and asset management, including coordination and tracking of what is sent to support a local response. While the Alberta DisasterLAN is used for resource requests and tracking, it is not currently robust enough to manage the end-to-end resource and asset management needs.

A provincial-level inventory of key organizational contacts that could be needed during an emergency would have helped to relieve some of the burden around resource identification and coordination.

A recommendation on resource logistics was identified during the Southern Alberta Floods review.

Context

There are a variety of resources, services, and assets (people) required to support effective and efficient management of an incident. Alberta Infrastructure manages the inventory of facilities, as well as the acquisition and provision of leases during an emergency. As outlined in the Alberta Emergency Plan, the Logistics Section of the POC coordinates the procurement of resources during a State of Emergency. These resources include: trained and equipped personnel, services, equipment, supplies and consumables, information, and specialist advice.

Once requested, resource management is best coordinated through a staging area. ICS describes staging areas as a temporary location for available resources, which has been established by the Operations Section Chief.

Regional staging areas allow for appropriate positioning, accounting, and deployment of resources, and may include access to food, shelter, sanitation services, and fuel. Under ICS, a Staging Area Manager is responsible for checking in incoming resources, dispatching resources, and requesting logistics support as necessary.

Observations

Given the complexity and intensity of the efforts to respond to the Wildfire and care for residents who were evacuated, the level of resource coordination required was unprecedented. The outpouring of offers of help from across Alberta, Canada, and even internationally, was massive. While this demonstrated an incredible level of support to the people of the Region, it also created significant challenges in how resources were managed and the logistics around how they were deployed.

There were issues with identifying the right resources, and managing the receipt, support, and de-mobilization of resources. There were also special considerations that needed to be made when out-of-province and international resources arrived to assist in the response, including differences in employment and occupational health and safety standards.

In response to the inundation of offers, the Region developed a form for those offering help and a tracking sheet. More than 3,000 offers of help were received, and as a result, managing the list and selection of resources required a significant level of effort. The REOC may not have been aware that the POC could have been leveraged to support them in managing the coordination of resources; this may have contributed to some delay in the provisions of key resources / supports to the frontline, and duplication of supply orders.

Examples of common resources that are needed during a disaster include basic necessities (e.g. food, water, and shelter), emergency social services, and equipment (e.g. construction). While the POC had a resource list, it was noted that this list was not comprehensive with contact details for various vendors. As a result, time was spent identifying additional resources that were needed, such as the coordination of shelter arrangement with post-secondary institutions. The REOC was also lacking a comprehensive, and up to date list of resource contacts based on what would be needed to support such a significant and prolonged disaster.

The early response lacked a coordinated staging process to receive and redistribute all resources and supplies, resulting in some inefficient and ineffective aspects of operations. Resources that arrived to assist in the response made a concerted effort to establish Macdonald Island Recreational Centre as a central staging area and check in point for the municipal firefighters. This staging area was not properly supplied with all needed supports during the first few days, including adequate food, showers/decontamination and cots.

Resources who were deployed to the REOC, including the Incident Management Team, additional municipal firefighters, Canada Task Force 2 (CAN-TF2), and Team Rubicon, reported that the REOC lacked capacity to efficiently receive and integrate resources into response efforts.

Responders were not always provided with timely access to adequate food, water, shelter, cots, clothing, personal protective equipment, or showering facilities. The REOC initiated requests for food and water for emergency responders, however based on documentation from the POC, there was a lack of coordination and a delay once these supplies were ready and notification was provided to the REOC. As well there was no consistent process to receive and redirect supplies and resources when they arrived, which was connected to the lack of staging processes in place.

Additional gaps included managing schedules to provide relief, access to appropriate mental health supports, and the enforcement of appropriate safety measures, such as decontamination and respiratory masks.

There was also a gap in medical resources from May 3 to 5 after the evacuation of the hospital to support those who remained in the Region. Additional EMS resources were requested by the Region's Fire and EMS service who were overwhelmed with fire suppression activities and forced to re-allocate resources. EMS support from Alberta Health Services arrived in the Region on May 3 to establish medical support, however, were forced to evacuate to a safe location, south of the Urban Service Area, shortly after arriving. The requested EMS support was then re-established on May 5.

CAN-TF2 established their field hospital by May 5 to provide medical support to the Region. Alberta Health Services, Alberta Health, and CAN-TF2 worked together to determine what health professionals and supplies could be sent to support CAN-TF2 in providing these augmented health services. This arrangement remained in place until the re-establishment of basic health services and an emergency / urgent care facility in preparation for re-entry.

There was also a lack of communication and coordination around who was eligible to enter the Region after it was evacuated. A lack of information about who was allowed in and when, and wait times and rejections at the checkpoints (staffed by the RCMP) were noted as a major frustration by those who arrived to provide resources and supports. This may have been due to the fact that the RCMP did not use the Alberta First Responder Radio Communications System.

Jurisdictional Analysis

As a leading practice, the U.S. Fire Administration recommends the use of a centralized resource ordering system. A single-point system is able to acquire resources, through established channels, from those offering support and can help to minimize lost or duplicated resource requests; this type of system could also be used to manage offers of support as well.

Evacuation

Recommendation

Recommendation #9

Develop a Provincial Emergency Evacuation Framework and evacuation model to provide enhanced decision-making capabilities at the Provincial level

The Provincial Emergency Evacuation Framework, developed as part of the Alberta Emergency Plan, should describe best practices for evacuation planning processes and standards, as well as an evacuation philosophy. The Framework could then be leveraged by local authorities through the existing Community Emergency Management Program as they develop their own emergency and evacuation plans.

In developing the Framework, the Province should consider the merits of providing greater authority to enforce evacuation orders; there is currently no explicitly stated authority in Alberta to compel an

individual to comply with a mandatory evacuation order. This would require legislative analysis, evaluation of the Canadian Charter of Rights and Freedoms, and consultation with appropriate stakeholders to draft and formalize any amendments to the *Emergency Management Act*. Additional consideration should be given to whether such measures would be consistent with the evacuation model(s) supported by the Framework.

This Framework should provide guidelines that encourage local authorities to develop their evacuation plans in cooperation with their local community service providers who would support the evacuation plan and processes when needed. This includes pre-identification of suitable shelter, transportation and traffic control measures, and strategies for the return of evacuees.

Existing analytic and modeling capabilities should be leveraged through a partnership between AEMA, Alberta Transportation, and Alberta Agriculture and Forestry, to develop wildfire evacuation modeling / simulation tools for use by local authorities who are required to make evacuation decisions.

While wildfire evacuation modeling / simulation tools should be the starting point, once these capabilities are established, the application could be extended to other disaster evacuation modeling, such as for floods or chemical spills.

Findings

Currently, there is no formal provincial framework for evacuation, and the Alberta Emergency Plan and the Community Emergency Management Program do not describe or provide guidance on mass evacuations for local authorities. Under the *Emergency Management Act* there is no explicit authority provided to compel an individual to comply with a mandatory evacuation order.

There are existing analytic and simulation modeling capabilities already in use by Alberta Agriculture and Forestry (e.g. Prometheus), and by Canadian Forest Service (e.g. Burn-P3). Prometheus simulates fire growth models based on weather and behaviour indices, while Burn-P3 builds on Prometheus' inputs, as well as fuels, topography, weather, and patterns of fire ignitions to provide fire probabilities, and burn probability maps. However, these capabilities do not specifically address evacuation modelling to support local authorities in understanding and addressing evacuation triggers due to wildfire, as part of their local Emergency Management Plans.

A recommendation on evacuations was identified during the Slave Lake Wildfire Review.

Context

In Alberta, it is the responsibility of a local authority to plan for, and make decisions regarding evacuation. Alberta's Community Emergency Management Program provides guidance to municipalities on key questions to be considered and decisions that need to be made when calling

an evacuation. It is the responsibility of each municipality to include evacuation, reception, and care considerations for evacuees in its local emergency management plan.

As recognized within the *Emergency Management Act*, First Nation Communities are considered a local authority and should have emergency plans that consider evacuation. It is under the authority of the Chief and Council of each community to call an evacuation order.

Observations

Almost 88,000 people were evacuated from the Region between May 3 and 4. The evacuation outcome was positive despite being the largest evacuation from a single municipality in Alberta's history, and one of the largest in Canada's. However, two lives were lost in a car accident during the evacuation, near the Heart Lake First Nation on Highway 881.

The Region's Emergency Management Plan includes an Evacuation Plan which defines a staged evacuation model to give residents sufficient time to prepare through an evacuation alert that highlights the nature of the hazard, and advises people to prepare to evacuate an affected area. The Evacuation Plan describes evacuation routes in the Region's Urban Service Area, as well as evacuation directions for portions of the rural communities and the neighboring Indigenous communities.

> "**It was chaos** trying to reach schools to pick up children. It was almost impossible to get from one end of the city to the other…"
>
> - Resident

The Region's Plan did not address mass evacuation. Prior to this Wildfire, it is unlikely that any municipality in Alberta, regardless of size, had considered or planned for a complete evacuation of their entire community.

The full scale evacuation of the Region began with the notification of mandatory evacuation for the communities of Abasand, Beacon Hills and Grayling Terrace on May 3 at 1:55 pm. This notification was delivered through the Region's social media accounts. Communication to the public about the evacuation continued through a variety of other channels such as the Alberta Emergency Alerts (initiated at 2:34 pm), which pushed out notifications through television, radio, its social media account, and its phone app. However, many residents noted learning about the evacuation from family and friends.

Residents also experienced mixed messaging regarding the evacuation. A press conference was held on May 3 at 11:00 am where residents were told to "get on with their lives, and take their kids to school" and advising that "[evacuation] is a long way off". This press conference also urged residents to "be prepared to act on short notice", and to be aware that "fire conditions are extreme" .[32] Later that same day a mandatory evacuation notice was released. These mixed messages may have undermined the urgency for preparedness, and potential danger that the wildfire presented to the community.

Official notifications, particularly the Alberta Emergency Alerts, directed evacuated communities to reception centres throughout the incident; however given the nature and complexity of the evacuation all residents may not have received this information directly.

Once the mandatory evacuation was called, there were a number of residents who stayed behind. This put municipal firefighters, first responders, and property at risk, as it created the need to redirect resources away from fighting the Wildfire to protect remaining residents from danger, as well as protect the community from potential looting.

24%

of residents responding to an online survey agreed that the evacuation was well organized

Ultimately, the success of the evacuation during the Wildfire was largely due to the young demographics of the community, and how the community rallied together to help one another evacuate safely. For example, those who did not have access to a vehicle were picked up by generous motorists who had available space, and those who were working shifts and were asleep when the evacuation was called were woken and informed by their neighbours. These acts speak to the sense of community present in the Region in the face of the Wildfire and the damage it caused.

Jurisdictional Analysis

Essential components of mass evacuation planning include the pre-event stage, early warning, evacuation decisions, evacuation directives, and full evacuation, including emergency shelter and relief. For example, California identifies the most critical elements for successful large-scale community evacuations as identifying trigger points for evacuation, preplanning evacuations, and establishing unified command with law enforcement officials.[33]

The Mass Evacuation in Natural Disasters Guide, sponsored by the United Nations High Commission for Refugees, states that evacuation planning is critical to:

- Effectively mobilize and coordinate capacity and resources
- Manage the safe and timely evacuation of all persons at risk
- Meet emergency needs for shelter and assistance, and

- Help evacuees and other affected people be able to recover from the disruption and risks created by their displacement as safely and quickly as possible.[34]

Leading research on wildfire evacuation triggers (i.e. geographic points that trigger an evacuation order when crossed by a wildfire) specifies a set of factors (e.g. wind, topography, fuel, and estimated evacuation time) that local authorities can use when monitoring the risk of a wildfire and determining when and whether to issue an evacuation order.[35] Further, modeling capabilities can be used to determine evacuation triggers and buffer areas, which assist in decisions to escalate evacuation notices from alerts to evacuation orders. These buffer areas are also important for evacuation routes, as they improve awareness for the impacts to evacuation should a fire cut off pre-designated routes.

California has developed and tested analytic models for wildfire evacuation triggers.[36] Australia also has evacuation modelling and simulation systems that models the behaviour of people and the timing of events to estimate the time required to successfully evacuate a community.[37] Each of these models has had good success in modeling the factors that affect wildfire behaviour and their impact on emergency management and evacuation planning.[38,39] Dynamic modeling of the approaching threat and subsequent evacuation triggers can ensure that an informed population is evacuated appropriately, given the situation (e.g. proximity to the threat, mobility issues, vulnerable population and exit routes).[40]

Australia's community preparedness approach also includes a provision for "Stay and Defend or Leave Early" options, which encourages property owners to decide well before a wildfire occurs whether they will choose to leave when a fire approaches or stay and actively defend their property.

This approach is highly dependent on how well structures, such as homes, are built to withstand and survive fires. Well prepared and actively defended houses are generally expected to survive the initial passage of bushfires. However, there is no building standard for the survival of a house when the fire is predicted to be catastrophic, and in such cases, the safest option is to leave early.[41]

Learnings from other jurisdictions have also identified innovative approaches to evacuation notifications. For example, California has an alert system that registers the Reverse 911 database with all landline phone numbers, and allows residents to pre-register their cell phone number, VoIP phone number and / or email address with local emergency authorities who can alert them of an evacuation order.[42] This system has been found to be an effective means of notification, and quicker than a door-to-door approach.[43]

The concept of mandatory evacuation and how it is enforced is also being explored in other jurisdictions. For example, in 2013, Manitoba amended its *Emergency Measures Act* to provide authority to police to apprehend any person who refuses to comply with an evacuation order issued under a declared state of emergency to promote their safety.

Local Authority Depth and Capacity

Recommendation

Recommendation #10

Build depth and capacity within local authorities to enable communities to support each other during emergencies

Local authorities across Alberta have various capacities and capabilities that should be tapped into during emergency situations. The Province's role is to help build this depth and capacity among local authorities through training and by leveraging work already underway on regional Incident Management Teams and Incident Support Teams.

As part of training, guidelines should be developed through the Alberta Emergency Plan and Community Emergency Management Program for the level and type of training required for certain roles and positions in emergency management.

Requirements should also be stated for any persons selected for emergency operations roles to maintain a certain level of proficiency, such as maintaining a minimum ICS level commensurate to the responsibilities and the participation in a certain number of exercises each year. Appropriate layers of backup should also be adequately trained to promote capacity throughout a disaster with a long duration.

Collective training exercises should also be formalized. These exercises would occur between municipal first responders, and involve additional stakeholders such as industry partners, Indigenous communities, and potential service providers (e.g. non-government organizations, school boards, etc.), within a region. This should also consider rotation exercises to make sure that several layers of backup resources are able to attend and be sufficiently prepared for a disaster.

AEMA should report on the completion of provincially-delivered emergency management and ICS training activities by local authority staff to the local Directors of Emergency Management, for awareness purposes. This should be done on an annual or bi-annual basis.

AEMA should also continue its development of Incident Management Team (IMT) and Incident Support Team (IST) and recovery capabilities. This includes continuing to leverage Alberta's existing Type 2 IMTs (i.e. Strathcona County, CAN-TF2), the development of regional Type 3 IMTs, and building a database of available AEMA personnel and supplies for IST deployment. In addition, the AEMA could also explore opportunities to collaborate more directly with emergency management authorities at the Federal level.

Regional IMTs would allow local authorities to support one another, and leverage that support through mutual aid agreements during emergency events. While the development of recovery capabilities could occur through the creation of regional Recovery Management Teams (RMT) which

could support local authorities in maintaining recovery procedures and coordinating the recovery and resumption of business as usual functions, processes and systems.

In building this depth and capacity, AEMA should:

- Outline the training, certification, and qualification requirements of IMT / IST / RMT members
- Provide education and awareness to municipalities (e.g. what does receiving an IMT / IST / RMT mean for the municipality), and
- Provide provincial training programs that allow municipalities to exercise requesting and working with IMTs / ISTs / RMTs.

Findings

The Alberta Emergency Plan does not require municipalities to provide emergency preparedness training to their staff. However, municipalities are encouraged and incented to provide training through the Emergency Management Preparedness Program, which provides access to grant funding for training. Consistent, provincially-led requirements could help to create a higher level of training and preparedness for emergency situations.

On the whole, not all staff in the REOC had an adequate understanding of ICS prior to the Wildfire. In addition, some of the individuals who staffed the REOC, including layers of backup, were not always the individuals who had participated in training opportunities prior to the event.

While significant progress has been made, as incidents become larger and more complex, additional depth and capacity is needed within, and to support, local authorities. Greater use of provincial Incident Management Teams (IMT) should be considered to address potential capacity gaps at the local authority level. In recognition of the need for more robust response support capabilities in the early stages of a disaster response, AEMA has begun to develop standard operating procedures for scalable cross-functional Incident Support Teams (IST). The AEMA formalized ISTs where field officers, planners and mobile command post are dispatched from the POC to support local authority response capabilities.

Formalization of the AEMA / provincial ISTs was a result of observations and experiences from the Wildfire. The standard operating procedures set conditions for the early deployment of a more capable and robust team of Field Operations personnel, with support as necessary and appropriate by other provincial Departments. The goal of an IST is to reinforce the response effort of local authorities and where the deployment of an IMT is deemed advisable, to support the integration of that IMT into the incident.

The deployment of CAN-TF2, the Strathcona County IMT and the provincial IST were successful actions taken by the Province to mitigate risk, augment local response capabilities and promote public safety during the Wildfire.

Immediately following the Wildfire, the AEMA requested grant funding for a pilot program to build on the AHIMT work undertaken in 2014 / 2015. This pilot project will see AEMA Field Operations partner with communities in the Northwest Region, centred on High Level, to build and deliver a progressive collective training program.

It is recognized that this pilot project will not deliver an ICS-compliant IMT in the short-term, but rather the immediate result will be a better trained Regional Emergency Coordination Centre Support Team.

Grant funds have been allocated for a second Regional Emergency Coordination Centre Support Team to be developed in Central Region, centred on Red Deer County. It is expected that this effort will be informed by the pilot project and will see program improvements.

A recommendation on training was identified during the Southern Alberta Floods review, while a recommendation regarding IMT capabilities was identified during the Slave Lake Review.

Context

Until 2012, emergency management training was provided and funded at the federal level. At that time, due to budget constraints, federal training programs were cut and the responsibility was transferred to the provincial and local levels.

AEMA provides a series of training courses for provincial staff, including Basic Emergency Management, a Basic Operators Course for the POC, and training on the incident management technology system, Alberta DisasterLAN. AEMA also manages an annual functional exercise for the POC and related stakeholders, referred to as EMX.

AEMA delivers a training program for staff of Alberta's municipalities to build an understanding of the applicable acts, regulations, roles, and responsibilities in the phases of emergency management, and beginner level offerings explaining ICS and emergency management. Courses are primarily available online, however some courses and workshops are offered in person.

The Community Emergency Management Program outlines some guidance around what should be included in local Emergency Management Plans regarding training.

The Alberta Emergency Plan encourages communities to develop and train IMTs that employ ICS, and to use these teams to support one another through mutual aid agreements during emergency events.

Observations

The training delivered by AEMA to provincial staff was widely considered by stakeholders who attended to be effective at preparing them to operate in their roles within the POC during the Wildfire.

The uptake of the online training courses delivered by AEMA to municipal staff increased by 20% during the 2015 / 16 year and it was reported that more than 60 staff from the Region enrolled in these training courses from the Province in 2015 / 16.

The Region's Emergency Plan indicates that "all REOC designated personnel" are required to train in ICS-100 and in a section-specific module. However, ICS-100 is a basic introduction to the ICS principles and may not be a sufficient level of training to prepare staff to fulfill their role in an emergency.

The Region delivers an Emergency Management Components training course to its staff; however this is a basic level course and may not be sufficient to prepare staff for a role in the REOC. The AEMA notes that every year a portion of students that begin their ICS-100 training module do not complete the training.

The Region also runs an annual emergency functional exercise for its staff. The 2016 Boreal Blast Exercise was held in February 2016; a formal debrief was completed following this exercise. Findings from this debrief, contained in the *RMWB Boreal Blast After Action Report,* strongly align with the observations identified in this Post-Incident Assessment regarding the operation of the REOC. However, as the report was issued on April 11, the action items could not have been reasonably completed by the Region in a timeframe that would have positively impacted the REOC's operations during the Wildfire.

Jurisdictional Analysis

Emergency Management British Columbia runs a provincial training program for emergency management courses. Course delivery is provided through the Justice Institute of British Columbia which provides applied education, training and research in emergency management, fire and safety, para-medicine, and law enforcement.

In California, the Governor's Office of Emergency Services manages the Standardized Emergency Management System, including the provision of emergency training. This includes an Emergency Operations Centre credentialing program, which documents professional qualifications, certifications, training and educational requirements that define basic criteria expected of emergency services personnel for effective Emergency Operations Centre management and operations. This training is not mandatory for local Emergency Operations Centres, however, it is mandatory for members of regional emergency bodies who are sent in to support an Emergency Operations Centre.

IMTs play a significant role in managing and responding to emergencies and disasters, and their deployment is becoming increasingly prevalent across the United States. There are five types of IMTs in emergency management, as outlined below based on guidance from the United States' Federal Emergency Management Agency (FEMA).[44]

Type	Level	Description
5	Local Village and Township	A pool of primarily fire officers of several departments trained to serve in Command and General Staff positions during the first 6 to 12 hours of a major incident
4	City, County or Fire District	Designated team of fire, EMS, and possibly law enforcement officers from a larger and generally more populated area, typically within a single jurisdiction; activated when necessary to manage a major or complex incident during the first 6 to 12 hours and possibly transition to Type 3 IMT
3	State or Metropolitan Area	Standing team of trained personnel from different departments, organizations, agencies, and jurisdictions within a State or urban area / region; support incident management at incidents that extend beyond one operational period
2	National and State	A Federally or State-certified team; less staffing and experience than Type 1 IMTs, typically used on smaller scale National or State incidents
1	National and State	A Federally or State-certified team; is the most robust IMT with the most experience; is fully equipped and self-contained

Integrated Internal Communications

Recommendation

Recommendation #11

Enhance internal communications interoperability with key stakeholders and the use of technology

An internal Emergency Management Communications Interoperability Plan should be developed that leverages work that Alberta began in 2013 in alignment with the *Communications Interoperability Strategy for Canada*. All relevant emergency response partners, including all levels of government, Indigenous communities, the RCMP and police, industry, service providers, etc., should be included in the development, and subsequent implementation, of the internal Interoperability Plan.

The Interoperability Plan should outline where key decisions are made, develop integrated standards of practice, and promote regular usage of consistent communications between partner organizations. This would also include:

- Identifying a more formal engagement approach with industry, as a key emergency management stakeholder. This formal approach should include single points of contact for information flows between the Province, local authorities and industry stakeholders

- Development of appropriate policies and processes for cell phone usage to keep communication channels open and reliable throughout the duration of the event, and
- Guidance to include both Internal and Public-facing Information Officer roles, as per the Incident Command System, to support information flows within organizations / stakeholders responding to a disaster, and the general public.

As appropriate, the Plan should also align with the Government of Alberta's Information and Technology 5-Year Strategic Plan 2017 – 2021.

As part of emergency response planning, the Province and local authorities should continue to leverage emergency communications technology, as appropriate. Considerations should include increasing the adoption of the Alberta First Responder Radio Communications System (AFRRCS) network and continuing to build on Alberta DisasterLAN's (AB DLAN) capabilities to streamline processes and improve information sharing.

Findings

The coordination between the many different levels of emergency response partners and stakeholders was a challenge at the start of the Wildfire response, particularly given the scope and intensity of the disaster.

However, as the response unfolded, the REOC developed a Wildfire Communications Strategy (dated May 10) and as a result the frequency, quality, and cohesiveness of their communications increased, which alleviated the uncertainty felt during the initial stages of the response.

An Information Officer role, as per the Incident Command System was in place, however this role was more focused on public facing communications as opposed to internal information flows between parties involved in the response.

The AB DLAN system was a successful tool used by the POC. Additional modules and improvements are underway to the system in preparation of its use during another incident. However, providing local authorities with direct access to AB DLAN when a State of Emergency is declared would help to better integrate and optimize provincial and local responses. This could be done by providing the local Director of Emergency Management with access during an event.

As well, the continued adoption of AFRRCS, with particular attention to its adoption and use by key stakeholders, will help to strengthen communications during disasters. While the investment in the system may be significant for some local authorities, there may be consideration in how the roll out could be completed provincially with access / licensing arrangements set up with local authorities.

Context

During an emergency, there is an overwhelming demand for information from government officials, stakeholders, and the general public. A coordinated approach when responding to a disaster is of

the utmost importance to promote the safety of the responders, facilitate information sharing, and promote efficiency in the response.

Common communications plans and interoperable communication processes are a key ICS principle. To promote situational awareness and connectivity between the operational and support units as well as external agencies involved, a communications plan should be in place that addresses equipment, systems, and protocols necessary to achieve integrated voice and data communications.

Maintaining communication during an emergency is critical to the success of the response. There are many technologies that are available to emergency responders and to those affected by disasters.

Observations

Standard operating procedures for communication between the POC, REOC, and external stakeholders included the Common Operating Picture Reports, Incident Action Plans, coordination calls, and joint planning meetings. There were also connection points between some emergency management staff at the POC and REOC. However, there were a lack of established information pathways to ensure clear communication between the different layers and roles internal to the REOC, and from the REOC to external stakeholders.

While some linkages were made between the POC, REOC and external stakeholder groups, better engagement of key external stakeholders at the right levels with the right information was needed, as stakeholders sometimes resorted to alternative means of gathering the information they desired (i.e. political channels, reliance on personal relationships).

For example, Industry leaders (e.g. Chief Executive Officers) required different information than their team members on the ground who were responding to the immediate needs. Industry hired an external contractor to conduct fire predictive modelling and to identify risks to its staff and operations.

In addition, communications between affected First Nation communities, the POC, and the REOC were reported to be challenging as these communities needed to be engaged in different ways. The Region's primary contact had been evacuated on May 3. The Federal Government's First Nation and Inuit Health Branch engaged with these communities during response and recovery.

During the Wildfire, there were also challenges with reaching the appropriate contact on landline phones assigned to a designated role. As such, there was increased reliance on cell phones. While cell tower traffic challenges were experienced over the course of the evacuation, once the community was evacuated there were no notable cell traffic challenges.

AB DLAN was a relatively new piece of software for AEMA during the Wildfire. As a result, not all stakeholders in the POC were fully trained or experienced in using the system. However, improvements were made throughout the disaster response to streamline onboarding processes.

While the POC leveraged AB DLAN, the REOC used a forms-based system which was reported to be time consuming. For example, memos created within the REOC were the method for internal information transfers and communications that required follow-up; however, there were no clear guidelines for how they were tracked, accounted for, or marked completed. This resulted in lost knowledge and time, with many resources working to gather a sufficient understanding of the situation and the work in progress.

There were also challenges due to a lack of consistent use of communication technology by first responders and emergency management staff. In order to combat communications breakdown for first responders, the Government of Alberta has invested in the development of AFRRCS, a robust, resilient radio technology solution. AFRRCS radios and technicians were deployed to assist with unified command of the frontline responders as they combatted the Wildfire. While AFRRCS was successful at helping municipal firefighters with integrated and interoperable communications, wildland firefighters were not connected to this system. Additionally, despite the offer to supply radios and create channels for RCMP and Sheriffs, these groups did not make use of the AFRRCS capabilities.

Jurisdictional Analysis

The *Communications Interoperability Strategy for Canada* provides a structure for the creation of policies, standards, and plans to improve responder communications capabilities in support of safety, operational, procurement and infrastructure efficiencies, and ultimately increased citizen safety and security. Standard operating procedures help to promote that all relevant emergency response partners understand which role is the right point of contact and how they can be reached, and can decrease confusion during a disaster.

Within the ICS structure, there is a defined Information Officer role, and this individual is responsible for assembling information, communicating that information to the public and media, and monitoring information being communicated through the community. ICS Canada describes this role as an interface with the public, media, and other agencies, however, there is also a strong need for information management internally. It was noted that while this role was initially intended as an internally facing role, over the years it has become increasingly externally facing. A balance and better coordination between both internal and external information management is needed to promote shared situational awareness across the entire disaster response.

Response agencies often rely on a hybrid of technology in their operational communications technology, which may include a combination of landline, wireless, and satellite communications.

During an emergency, reliance on cell towers can be risky as constraints can occur as a result of damage to the tower from the disaster, or more commonly from network congestion, as experienced during previous disasters such as the Boston Marathon and Parliament shootings (Ottawa).

Leading practice promotes the use of communications technology that utilizes voice and data networks and applications that are resilient to power loss, secure, are robust enough to survive common weather events and are accessible to required users in all locations. Emergency management needs to take into account approach and the use of multiple technologies, including personal wireless communications, and plan for it accordingly.[45]

Public Emergency Communications

Recommendation

Recommendation #12

Enhance existing public emergency communication approaches

The Province should consider the following improvements to its existing public emergency communications approaches (led by the Public Affairs Bureau and others):

- Expand emergency communications approaches to increase accessibility (e.g. for deaf or hard of hearing individuals)
- Formalize the use of Re-entry Information Booklets, used during the Wildfire, for delivering important information during re-entry, and
- Enhance its existing plans to leverage social media in emergency situations, including the development of guidelines for local authorities.

Findings

The Province's and Region's call lines were generally considered by residents to be helpful and useful. Telephone Town Hall sessions were considered to be an effective practice and created a sense of community even as residents were dispersed across Alberta and Canada.

While messages shared by official sources on Twitter and Facebook were informative and relatively frequent, official messages were issued in a context of social media chatter from around the world regarding the Wildfire, making it difficult for these official messages to stand out and be communicated. In addition, there was no overarching social media account for the Wildfire which may have resulted in missed opportunities to engage with affected residents and / or the public.

A recommendation on emergency communications was identified during the Slave Lake Wildfire review.

Context

In the Alberta Emergency Plan, the Public Affairs Bureau is tasked with supporting communication activities, and to provide clear, timely, reliable information to the public. As part of this a

Consequence Management Plan (*Procedures for Communications Support in Emergencies, Disasters, and other Crisis*) was developed following the 2013 Southern Alberta Floods. This Communications Plan outlines the roles, responsibilities and context of the Public Affairs Bureau in various levels of emergencies and includes specific provisions for wildfire emergencies, and pre-approved basic emergency communications content, such as a list of suggested content for a personal "go-bag" when evacuation is necessary.

Observations

Generally, communications to the Region's residents and the public occurred through the following streams:

- Government of Alberta news releases
- Alberta Emergency Alert notifications
- RMWB press conferences and news releases
- Government of Alberta Emergency Information Phone Line
- RMWB Pulse Call Line
- Telephone Town Halls, and
- Social media.

From a provincial perspective, the Public Affairs Bureau's Communications Plan during the Wildfire was well executed. The Province and the Premier issued daily briefings and regular updates throughout the entire event. The updates focused on progress of the Wildfire, accessing supports and services, and coordinating re-entry. Re-entry communications in particular were considered by residents to be effective and useful in preparing them for their return.

The Region's Emergency Management Plan included a Crisis Communications Plan that outlined the information that should be distributed to various parties, how to use Alberta Emergency Alerts, sample media releases, and communications checklists. While the REOC followed their Communications Plan, the complexity and scale of the disaster and the ongoing movement of the REOC itself (due to movement of the Wildfire) were unprecedented barriers to effective communications.

Generally, content released through the Alberta Emergency Alerts and the Region's communications channels were consistent in timing and messaging. At the beginning of the response, information focused on issuing updates about the progress of the Wildfire, evacuation notices for specific communities, and information on recommended destinations for evacuees. However, during the evacuations, messaging was not accessible to deaf persons; there was no use of sign language or captioning in television emergency announcements.

At the same time, between May 4 and 8 the Region issued limited updates on the progress of the Wildfire, due to the evacuation of the REOC itself. During this time, residents felt that they did not have the necessary information on the state of their community or the progress of the Wildfire.

There were two phone lines available to residents and the public to call in with questions – a provincial one and a Region-led one. The Region's Pulse Call Line offered residents information throughout the evacuation and re-entry, however the evacuation of the community and the movement of the REOC created significant operational challenges.

Telephone Town Halls were an innovative approach used during the Wildfire response. Sessions were held from May 9 to October 2 by the Region in partnership with the Government of Alberta, and the Canadian Red Cross, to provide updates to residents and answer questions in real time.

Social media was also a vital communications channel for both the public and government. Residents noted that radio and social media were their primary sources of information during the evacuation. Government of Alberta Department social media accounts provided a consistent voice from the Province, with activity concentrated on the @511Alberta, @YourAlberta and the Premier's Twitter accounts. While the Public Affairs Bureau's Communications Plan did not contemplate the use of a digital media team and social media, the Province put one in place to manage Facebook and Twitter during the Wildfire.

"The telephone town halls were **informative and questions were answered**. Local media did a great job of keeping residents up to date"

- Resident

The Region also had a very regular presence on Twitter and Facebook, providing frequent updates through its account and the Mayor's account, and was also able to successfully use YouTube to post video updates and press conferences for those unable to view the live feeds.

Affected residents directed a huge volume of questions to key accounts through social media, primarily about:

- Where and how to access supports and services
- The state of their homes and communities, and
- The impact of the re-entry plan on them.

The volume was overwhelming and it was difficult for administrators to manage and respond to this volume of information. For example, the REOC added two additional full time staff to assist in managing the Region's social media response.

Another innovative communications approach used during the Wildfire was related to re-entry. On May 23, Re-entry Information Booklets were distributed to residents through a variety of sources, including the Region's and Government of Alberta's websites and news outlets. The booklets

provided residents with information regarding the state of the community upon their return, as well as the risks to returning to a community that was not yet fully restored.

To provide all residents with access to the Re-entry Information Booklet when they arrived home, the REOC placed printed copies on the doorsteps of all homes, and made them available at designated Information Centres established throughout the community.

Jurisdictional Analysis

Social media use in emergency situations is also still in its infancy, however, best practices identified include planning for social media use before a disaster occurs, utilizing popular and relevant social media tools, and tailoring social media messages to their local audiences in a way that applies to them.

There is also increased awareness being given to the accessibility of emergency broadcasts through the Canadian Hearing Society. In partnership with the Broadcasting Accessibility Fund, an initiative has been launched to make alerting agencies and broadcasters aware of what is required to communicate effectively with individuals who are deaf or hard of hearing during an emergency, and make the broadcasts truly accessible to all impacted individuals.

Provincial Operations Centre Facility

Recommendation

Recommendation #13

Invest in and develop a state of the art Provincial Operations Centre facility

The 2017 Provincial Budget announced the investment of $125 million for modernizing the POC. To help promote Alberta as a leader in emergency response, the new facility must enable:

- Effective and open communication within the POC
- Timely, accurate and complete information sharing and transfer; both within the POC and externally with other organizations, agencies and stakeholder groups
- Improved and more frequent collaboration among individuals and diverse stakeholder groups
- Effective and efficient resource tracking and management and personnel accountability
- Effective command management, such that key roles are visible and accessible
- A modular organization that can quickly ramp up and ramp down, including instant ability to accommodate a large increase in the number of bodies in the POC, and
- The safety of all persons within the facility during the course of the entire disaster.

Findings

A new purpose-built facility would enable to the POC to overcome many of the challenges it encountered not only during the Wildfire, but also during Alberta's previous disasters.

Repurposing the current facility is not an adequate solution, as the current physical space is too small and past its useful life to accommodate the amount of space required. Additionally, the infrastructure does not have the capability or capacity to efficiently integrate all of the new technology and resources required to address emergency management situations.

In its 2002 Annual Report, the Auditor General of Alberta found that additional investment in the POC's capability was needed to meet the Province's needs in the event of a disaster. A recommendation to upgrade the POC facility was also identified during the Southern Alberta Floods review.

Context

The Alberta Emergency Management Agency operates the Province's POC, which serves as the central point for the collection, evaluation and dissemination of information for single or multiple incidents throughout the Province.

The POC is where Government of Alberta Departments and agencies come together to coordinate, face-to-face, a whole-of-government response to emergencies and disasters, allowing Government to work in partnership with communities, Industry and non-governmental organizations.

When the POC is activated at Level 4, all provincial Departments must staff it on a 24 hour basis, along with additional Provincial Duty Officers, all available AEMA staff, and others, as required.

Observations

Stakeholders reported that the POC's response and functioning to the Wildfire was significantly better when compared to previous disasters in Alberta. This was due to the experience of returning members to the POC, as well as the co-location of all Government of Alberta and key organizations who could share information and coordinate resources.

However, the Level 4 activation in the POC stretched the capacity of the facility to absorb additional persons and as a result challenges arose relating to: physical space, IT infrastructure & support, planning & communication tools, breakout rooms, and accommodations / work stations.

As the POC could not physically house all of the persons required to be present in it during the Wildfire response, it set up several trailers in the parking lot to act as annex facilities to accommodate its needs.

While an upgrade to the POC facilities is needed to continue to efficiently meet the needs of the Province in disaster response, the current facilities did not impede its response to the Wildfire, and can continue to be utilized in the interim while a new facility is purpose-built.

Jurisdictional Analysis

The Calgary Emergency Management Agency has one of the most modern emergency operations centres in the country, and is a model for emergency operations centres. Completed in 2012, the purpose-built facility includes two levels below ground that contain offices, an operations room and a data centre. These two levels have built in security. The facility has a Geographic Information System that involves the relay of maps with live information, such as from the city's traffic and police helicopter cameras, and displays maps with the embedded information.

The Emergency Operations Centre has built-in redundancies in order for it to operate, even if there are power outages; the structure is designed to be self-sustaining for up to 72 hours.

In 2014, Harris County, the third largest county in the United States which contains 34 cities, including Houston, opened its new state-of-the-art Emergency Operations Centre. Experiences with Hurricane Rita and Ike prompted the development of a facility that could house the numerous individuals needed to manage the response.

The expansion moved the facility from 24 available workstations, supporting the more than 500 responders, to 98 workstations. In addition, wall-to-wall LED displays were installed to allow responders to monitor various news outlets, weather tracking, and satellite feeds. The facility also gained 3,360 square feet of conference space that could be converted to support disaster responders when needed, while also being available for training, exercises, and drills when the Emergency Operations Centre was not activated. Other amenities include showers, and sleeping quarters.[46]

Response

The following key themes related to response arose from the review: the use of the Incident Command System, deactivation of the POC, the role of the Office of the Fire Commissioner, and Provincial Emergency Social Services. Each of these is explored below.

Incident Command System

Recommendation

Recommendation #14

Mandate local authorities to adopt the Incident Command System model during response

The Province should build guidance and details around how the Incident Command System (ICS) model is expected to be applied in Alberta to make it easier for local authorities and other organizations to understand and use the ICS model.

In addition, there are many training courses about ICS offered by AEMA that are already available. Local authorities should be encouraged to take full advantage of the courses available to them in order to be prepared to implement an Incident Command structure when responding to a disaster. As part of the adoption of the ICS model, the Province should also define additional guidance and details on the application of ICS in the Alberta context, and require municipalities to:

- Demonstrate that they have considered and planned for the long-term wellbeing of their local Emergency Operations staff and first responders, including adequate relief and replacement, the inclusion of additional resources where responsibilities become unmanageable, and the inclusion of Human Resource functions within the local EOC, and
- Identify all of the relevant stakeholders that would need to be involved in a disaster response, and work to identify and describe their roles during the disaster, when and if required.

Through AEMA's Incident Support Teams, the Province should also be able to assist municipalities to adopt the ICS model, and reinforce the use of it during the critical initial stages of an incident.

As part of the ongoing revisions / review of the *Emergency Management Act,* AEMA may wish to consider mandating that local authorities adopt the ICS model during emergency responses. In the interim, the adoption of the ICS model could be made a requirement under municipal grant funding programs, and / or progressively greater levels of funding could be made available based on the successful adoption of ICS by a local authority.

Findings

The description of the current ICS model in Alberta is not detailed enough to be practical for local authorities to adopt and operate consistently. At the same time, the AEMA only considers the adoption of ICS when prioritizing grants under its Emergency Management Preparedness Program, there are currently no province-wide prerequisites for the use of the ICS by local authorities.

The different approaches to management and command across organizations and the varying levels of understanding of ICS made it difficult to work together to achieve a proper chain of command and unity of command during the Wildfire.

Certain key positions, including the Region's Director of Emergency Management, the REOC Director and other roles had significant duties assigned that were difficult to manage given the extensive scope of the event.

As well, several key organizations and groups who could have helped to coordinate resources and exchange information did not have a formal and consistent presence in the POC and / or REOC from the time of activation until demobilization, even though some of the planning and operational documents for the POC and REOC identified these stakeholder groups as required, in certain circumstances.

Organizations missing from the REOC at various periods, particularly in the very early days of the event included: the RCMP, Emergency Social Services (ESS) organizations, Fort McMurray school districts, select representatives from the Province (such as Alberta Agriculture and Forestry), Indigenous communities, and the Zone Medical Officer of Health.

While some of these organizations were linked in over the course of the disaster, earlier involvement could have been beneficial to coordinated efforts. Given the complexity and size of the Wildfire, the creation and use of dedicated roles within the ICS structure may have been appropriate to address these issues.

A recommendation on fully implementing ICS was identified during the Slave Lake Wildfire Review.

Context

Pursuant to the Alberta Emergency Plan, the Government of Alberta adopted ICS as the model for incident management. ICS is a 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. In other provinces as well as at the Federal level, ICS represents a well-understood standard.

In Alberta, use of the ICS model is mandatory for all Government of Alberta organizations (e.g. incident sites, Emergency Operations Centres, the POC, Departments, and agencies). The ICS

model, while not mandatory, is strongly encouraged for first responders, municipalities, Indigenous communities, and industry.

Observations

It is important that during an emergency, each organization participating in the response, particularly the Province and the local authority, have not only adopted ICS, but are actually using and applying the same version of it.

During the Wildfire, the POC organized and operated in line with the ICS principles, including structure and management. By comparison, only some of the other organizations that participated in the response adopted ICS. Those that had adopted it may not have had an adequate understanding of the system.

The REOC Manual acknowledges ICS as the standard for incident management and some resources attempted to incorporate ICS principles and practices throughout the operation of the REOC. However, the REOC did not fully operate in alignment with the ICS model, as described in its Manual and summarized below.

Chain of Command and Unity of Command

Neither chain of command nor unity of command were well established in the early days of the Wildfire, although improvement occurred over time. There appeared to be more than one Incident Command Post, with both operating simultaneously during periods of the response. This led to confusion by responders about which Incident Command Post was being referred to and who the incident commander, operations chief, etc. were.

Part of the confusion may also have related to the fluctuating ICS organization, with individuals rotating in and out of a specific positions and the transfer of command, particularly during the earlier days of the Wildfire response. Some of the individuals who took on ICS roles did not have all of the necessary contact information they needed to stay in touch with those that were reporting to them.

Unified Command

Unified command should have been a key enabler for the response but was not successfully achieved during the first few days of the event. The Wildfire was initially within the jurisdiction of Alberta Agriculture and Forestry. Ultimately, the Wildfire made its way across the wildland-urban interface, toward and into the Region and the jurisdictional authority in responding to it was subsequently shared between Alberta Agriculture and Forestry and the Region. While the wildland and structural firefighters organized to respond to the Wildfire within their jurisdictions, there were challenges establishing unified command between the two groups. As an example, Alberta Agriculture and Forestry offered several times, between May 1 and 5, to provide resources to the REOC to form a unified command, however these resources were not integrated until May 5.

In addition, the Slave Lake Wildland-Urban Interface Team, which had the necessary training and specialized equipment, had arrived in the Region to assist, but was not appropriately leveraged and integrated into operations in a timely manner.

Dispatch and Deployment

Dispatch and deployment was a significant challenge from the onset of the Wildfire. The REOC was not always aware of who the external resources were, why they were deployed, who sent them, or what their intended role was. This caused conflicts and challenges. It also created challenges for the REOC to coordinate, integrate and find immediate roles for these groups, particularly because there was limited warning of their arrival and therefore limited time to plan.

For example, the arrival of some municipal firefighting teams took many in the REOC by surprise. In addition, when CAN-TF2 was deployed, the REOC was under evacuation at a Nexen facility, and was later evacuated to Lac La Biche after CAN-TF2 had set up in the Region. This resulted in integration challenges when the REOC was able to return to Fort McMurray on May 5, to find CAN-TF2 there.

Some resources deployed to the Region assisted with activities beyond their expected mandate and capacity. For example, CAN-TF2 deployed with resources to be self-sufficient for 14 days, however they stayed for 20 days, and took on additional emergency medical roles for external stakeholders.

Other municipalities who provided resources and support to the REOC noted a positive working relationship between them, the POC, and / or the REOC, however, some offers for support (e.g. staff, other resources) were not always accepted. As the Region received more than 3,000 offers of support, managing this was a complex undertaking that may have resulted in some offers of support not being required or not being addressed in a timely manner.

The relationship between the POC and the Canadian Armed Forces worked very well. A key component to this success was the level of engagement and strength of relationship between the two organizations prior to the incident, which helped the POC to be aware of what the Canadian Armed Forces could do and the conditions for deployment.

Of particular concern during this disaster, was the initial lack of coordination between organizations with ongoing air operations (i.e. the Region, Alberta Agriculture and Forestry, and the Canadian Armed Forces). Alberta Agriculture and Forestry had jurisdiction over the airspace for wildfire suppression, and while the aircraft under their control were following the relevant protocols, other aircrafts were operating in the airspace without the appropriate authorization. Without strict coordination, there are considerable safety concerns by having multiple independent entities in the same airspace, particularly when smoke creates reduced visibility. Later expansion of Alberta Agriculture and Forestry's responsibility over the airspace allowed for enhanced control and safety for all parties.

Management by Objectives and Incident Action Planning

The POC made consistent use of Incident Action Plans in a standard format, which helped to manage by objectives. There were at least 55 Incident Action Plans, which were used from May 2 to early June 2016.

Each Incident Action Plan set out objectives, tasks and assignments, and covered areas such as: evacuation, evacuee support, evacuee location, fire containment, providing support to the frontline, impact forecasts, air quality, re-entry planning, POC staffing and operations, and the provincial Wildfire Recovery Task Force. The REOC was unable to make consistent use of Incident Action Plans during the early days of the response. This may have been due to capacity issues and the constant movement of the REOC.

While the REOC Manual does contemplate the use of Incident Action Plans, a key insight from the RMWB's *After Action Report of Exercise Boreal BLAST* was that the use of Incident Action Plans by the REOC was not as efficient or effective as it could have been.

A number of observations noted that the Region may have been unable to transition quickly and efficiently from their normal municipal organizational structure to the modular organizational model associated with the ICS. This may have caused issues with clear roles, responsibilities and accountabilities during the event, and a shared understanding of decision-making authority.

Spans of Control and Modular Organization

Certain areas of the POC increased their capacity through the use of additional resources to create a more sustainable workload. For example, the Operations Section increased its number of resources from 4 to 12 over a short period of time.

The Region experienced capacity challenges. Key observations from the *RMWB After Action Report of Exercise Boreal BLAST* noted that:

- The REOC Operations Section Chief could not adequately fulfill the dual role of the Region's DEM and Incident Commander.
- There was a lack of role clarity for certain persons, functions and groups within the REOC.

The Region's DEM and Incident Commander roles were vested in one person after the delegation of authority under the *Emergency Management Act* occurred. The capacity of this person to fulfill both roles of responding to the emergency and managing the incident were significantly challenged.

While the Safety Officer position was clearly set out in the REOC manual, it appears that during the early days of the emergency, this position may have been missing from the REOC. As the response stabilized, the Safety Officer role was formalized, and documentation is available from May 14 onward.

There were concerns regarding accountability for occupational health and safety in the context of assigned and self-deployed personnel throughout response and stabilization, and associated long term effects to health and wellness (including the potential rising health and workers compensation coverage costs). A University of Alberta research project is currently planned to study the effects of the Wildfire, including tracking the respiratory and mental health of firefighters who were part of the response.[47]

There were also several challenges experienced with workloads and the relief and replacement of roles at the REOC. It was noted that once the Region's Human Resource group became involved later in the response, there was a greater ability to manage staffing, including activation and demobilization.

Jurisdictional Analysis

According to ICS Canada, British Columbia leads the way in terms of ICS implementation and adoption across provincial, municipal and non-government organizations. Other provinces have implemented ICS at the provincial level, and continue to promote its implementation among disaster response partners.[48]

In the United States, as a condition to receive Federal Preparedness grants and awards, US Federal Departments and agencies are required to adopt the National Incident Management System (NIMS), which leverages ICS.

Provincial Operations Centre De-escalation

Recommendation

Recommendation #15

Formalize criteria and operational processes for de-escalation of the Provincial Operations Centre

The Alberta Emergency Plan should be modified to clearly outline the mechanisms, triggers, and / or decision supports that would allow the Province to de-escalate from Level 4 activation. Documentation of these criteria would ensure that all emergency response stakeholders are satisfied that the Level 4 activation should remain.

A mechanism to reduce the POC activation level automatically, after a certain number of days, unless extended by the Managing Director of AEMA, could be implemented. This would require continual and consistent evaluation, much like the mechanism in the *Emergency Management Act* for a continued State of Local Emergency or a State of Emergency.

The active nature of this mechanism would provide more comfort to stakeholders in the POC as the continued activation at Level 4 would be better justified. The criteria for this should be based on the same conditions for the initial Level 4 activation.

Findings

While the Alberta Emergency Plan outlines POC escalation criteria, it does not identify a clear mechanism or criteria about when to reduce the POC's level of activation. During the Wildfire, the POC's activation at Level 4 was prolonged for a much longer period than past disasters.

While Level 4 events are rare, they do occur and require a significant amount of personnel, resources, and effort, and therefore should only remain in place so long as they are needed.

A recommendation regarding formalizing de-escalation protocols for the POC was identified during the Slave Lake Wildfire Review.

Context

The Province has defined and established multiple levels of activation / operation for the POC; each of the four levels depends on the conditions relating to an incident. The Alberta Emergency Plan sets out the conditions for the activation of each level. The activation of POC at Level 4 is the highest level, requiring mandatory full coordination across the Government of Alberta, including all lead, supporting and coordinating organizations. By comparison, the POC is consistently activated at a Level 1, which are considered to be routine operations.

Movement between Levels 1 and 2 are at the discretion of the senior AEMA staff member involved in the emergency. Movement between Levels 3 and 4 are at the discretion of the Lead Organization Deputy Minister and the Managing Director of AEMA. The following criteria are considered for a move between levels, but are not exhaustive:

- The incident has affected more than one jurisdiction, and requires provincial coordination
- The affected jurisdiction(s) cannot adequately respond to the situation and has formally requested provincial assistance
- The Lead Organization has requested the elevation in accordance with an existing hazard-specific plan
- A planned event requires elevation (i.e. a Royal visit), or
- A State of Emergency has been declared for a portion of, or the entire province.

Observations

The POC activation at Level 4 began on May 4 and lasted a total of 34 days. By comparison, during the 2013 Southern Alberta Floods, the POC was activated at Level 4 for 24 days.

The prolonged activation of the POC at Level 4 during the Wildfire resulted in the need for additional time and effort from representatives of each of the Government of Alberta's Departments. While activation was raised to Level 4 due to the nature of the Wildfire, the scale of the evacuation, and the complexity of the response, each of the Department representatives did not need to contribute to the same degree as the incident progressed over time; each Department's responsibilities depend on the nature of incident.

As such, a reduction to Level 3 earlier may have allowed the POC to retain the necessary Department representatives, which could have been sufficient to support the REOC and the ongoing response, while reducing the burden on those with less critical roles.

Jurisdictional Analysis

The British Columbia Emergency Management System includes demobilization as a specific activity in its response phase. The components of demobilization include reduction of staffing levels as the required services are reduced.[49] The operational guidelines that accompany the British Columbia system articulate a specific role for a Demobilization Unit Coordinator as part of an emergency operations centre, who sits within the Planning Section.[50] Responsibilities of the coordinator include developing a demobilization plan.

The Ontario Incident Management System is the framework for incident management in that Province. The Province of Ontario Emergency Response Plan governs emergencies in Ontario. While the plan does not speak to demobilization or deactivation, the demobilization and recovery officer is a key position within the planning section of an emergency operations centre.[51]

Office of the Fire Commissioner

Recommendation

Recommendation #16

Empower and resource the Office of the Fire Commissioner to coordinate and deploy municipal firefighters during a response

The Office of the Fire Commissioner should be given the authority and appropriate resources to work with local authorities to create a Provincial inventory of municipal firefighters (including wildland-urban interface trained professionals) that can be deployed during an emergency. The role of the OFC should be addressed within the Alberta Emergency Plan to coordinate, deploy, and demobilize municipal firefighters to support a provincially-declared State of Emergency, and local States of Emergency where needed.

As part of this, a protocol should be developed such that:

- When a State of Local Emergency is in effect, requested municipal firefighting resources should provide a courtesy call to the OFC to notify them that they are deploying, and
- When a State of Emergency is in effect, the OFC should be the sole coordinator and tracker of deployed municipal firefighting resources from Alberta, other provinces, or internationally.

The OFC must have strong, clearly established communication lines with the Logistics Section Chief within any local Emergency Operations Centre assembled to address a fire situation. Where applicable, the OFC must also work closely with the POC (i.e. be co-located within the POC for Level 3 and Level 4 activations), to create a well-supported and coordinated deployment of municipal firefighting resources. The OFC should also develop policies to address when interprovincial or international firefighting resources are deployed to Alberta.

The OFC should also develop a certification program to encourage, guide, track, and enforce wildland-urban interface firefighting training. Wildland-urban interface fires are complex and require more than urban- or wildfire-specific training. Cross-training between municipal fire departments and Alberta Agriculture and Forestry wildland firefighters promotes the effective use of equipment, communications, and training courses that are used to fight wildfires in the wildland-urban interface.

The OFC should track completion of training requirements, such as wildland-urban interface firefighting certifications, and use that information to inform deployment, so that the municipal firefighting forces are deployed with the relevant and necessary training for the situation. Municipalities at high risk of wildland-urban interface fires should also promote hiring policies that require wildland-urban interface certification.

Findings

The OFC does not currently have any authority to work with local authorities to create an inventory of municipal firefighting resources around the province or to coordinate, deploy, and demobilize municipal firefighting resources to support other municipalities. Alberta Agriculture and Forestry deploys wildland firefighters within Alberta, while individual municipalities deploy structural firefighters under mutual aid assistance agreements. Other interprovincial or international resources may be coordinated by either the POC or Alberta Agriculture and Forestry.

Currently the AEMA, the OFC, and Alberta Agriculture and Forestry have established a working group to look at a holistic approach to firefighting coordination during emergency situations. This includes the development of a provincial wildland-urban interface firefighting strategy.

Context

The OFC is responsible for the general oversight of the fire rescue, and search and rescue portion of Alberta's public safety system. Its activities include:

- Providing advice to Alberta's communities and organizations that deliver fire and emergency response and prevention services for citizens
- Coordinating training and certification standards for the province's fire rescue and search and rescue personnel
- Providing public safety education campaigns and materials aimed at encouraging Albertans and visitors to Alberta to act safely, and
- Collecting, analyzing and publishing fire and emergency response data generated by fire rescue departments and search and rescue teams.

Other activities within the OFC's mandate include advising municipalities on the delivery of their public safety education and providing technical inspection and fire investigation services to manage compliance with Alberta's building and fire codes. It is each municipality's responsibility to establish fire departments that deliver local fire protection and prevention services.

The structure of the Region is different from most municipalities in Alberta; ten communities and the surrounding rural area came together to form the local government. Given this context, responsibility for wildfire prevention has some added complexity, as it is shared between the Region and Alberta Agriculture and Forestry, as outlined in their Mutual Aid Fire Control Plan. Under this Plan, wildfire prevention within the Urban Service Area of Fort McMurray is the Region's responsibility, while prevention activities within the surrounding boreal forest and smaller communities are within the purview of Alberta Agriculture and Forestry.

Observations

Municipal firefighting teams were coordinated on an ad hoc basis by the POC. There are extensive considerations in coordinating and using teams of municipal firefighting resources to battle a fire, such as availability, cost, and appropriateness of training and equipment.

For example, large urban centres do not necessarily have all the appropriate equipment and training for wildland-urban interface firefighting. While the provincial OFC can be considered an appropriate choice to take on this role given their provincial-level view of municipal firefighting resources across the Province, they do not currently have plans or pre-delegated authority in place to coordinate organized and disciplined deployment of provincial firefighting resources.

The tracking of municipal firefighting resources in the Region was also challenging. There was no mechanism to track that when municipal firefighters completed a shift they took appropriate rest; it was noted that some municipal firefighters began another shift almost immediately. Documentation from the REOC did not identify where resources had been deployed to help track their movements.

Jurisdictional Analysis

British Columbia's Office of the Fire Commissioner plays a similar role to Alberta's OFC. However British Columbia's Office has made a move towards building an operational plan for the provincial coordination of resources when a State of Emergency is declared. Under this, a Provincial Fire Department can be created with control of it given to the Office of the Fire Commissioner.[52]

Provincial Emergency Social Services Framework

Recommendation

Recommendation #17

Continue to operationalize the Provincial Emergency Social Services Framework

As part of the operationalization of the Provincial Emergency Social Services (PESS) Framework, a Consequence Management Officer role should be created to better support the coordination of emergency support services. The POC and PESS should continue to collaborate on the identification of needs for emergency social supports based on common situational awareness, achieved through the co-location and integration of PESS, and the PESS Consequence Management Officer, into the POC's operations.

Work on operationalizing the PESS should also leverage the Government of Alberta's Citizen Registry to support the delivery of emergency social supports by the Province. Consideration should also be made to develop a provincial disaster registration system to better interface with existing Government of Alberta systems and to assist in information sharing on citizens and their needs between Departments. Given the frequency with which major disasters are occurring this may be a worthwhile investment to help streamline the delivery of emergency social services from the Province in the future.

Through PESS, the Province should also define and develop permanent, scalable emergency social programs and services for Albertans impacted by disasters. Particular attention should be given to the following areas where permanent, scalable emergency social programs are needed: emergency income assistance, employment supports, psychosocial supports, and interim and emergency housing. Additional consideration should also be given to providing appropriate cultural supports to Indigenous peoples, refugees, and newcomers. This includes language services, traditional foods, trauma-sensitive counselling, and maintenance of the family unit in reception centres or hotels.

Finally, PESS should strengthen and promote ongoing provincial and municipal supports and services for affected residents and first responders following a disaster – in alignment with longer term recovery needs and plans. There is a need to continue to build and promote the use of ongoing psychosocial supports, deliver trauma-informed care, and link affected residents with employment assistance and supports to reconnect to their workplaces. While Telehealth services were made

available throughout the event, there is an opportunity to improve the awareness of these available services, as well as offer additional services, such as physician specialist appointments, in the future. Options such as Telehealth enable access to necessary ongoing psychosocial and medical supports where there may be limited local capacity to meet demand or residents are geographically dispersed.

Findings

There will always be a continued need for emergency social services following a disaster, and the Province will need to continue to play a lead coordination role in this. Ongoing work to strengthen the PESS is needed to address the learnings identified from the Wildfire.

Emergency social supports are only intended to last for up to 72 hours post evacuation. During the Wildfire, this limit was significantly exceeded in order to meet the needs of affected residents who were displaced from their homes for one month or longer. This complexity highlights the need for intentional and upfront program design to better enable the integration of emergency social supports and the ability to be innovative as they are used and matured. It also highlights the need for transition to longer-term social services or supports for those that need them.

The PESS framework was developed and implemented in advance of the Wildfire, and was operationalized for the first time during the response. As a result there were several learnings from this. PESS required a staffing complement to help with the coordination and delivery of emergency social services; something that had not been established in its roll out. In addition, clearly defined, understood and accepted roles and responsibilities by all partners in an emergency social services system were needed to support a cohesive and coordinated response and the timely and efficient provision of emergency social services.

Lastly, there was and continues to be demand for psychosocial supports. Trauma has compounding and lasting effects, and research has demonstrated the need for earlier interventions in a variety of settings to reduce its impacts. For example, between May 10 and June 30, local addictions and mental health staff received 20,000 referrals; by comparison, pre-wildfire these same staff received about 1,200 referrals a year. While the Region identified and planned for the delivery of a Wood Buffalo Psychosocial Supports Framework over three years, a common theme identified by residents during the review was that while they have a strong need for mental health supports, they have had some difficulty in accessing them.

A recommendation for PESS was identified during the Southern Alberta Floods Review.

Context

Emergency social services are intended to be a part of the comprehensive emergency management processes already established. They work in alignment with Alberta's existing emergency management and public safety structures and plans.

The PESS Framework enables local authorities to ask the province for support if they believe they will exceed their capacity to meet the essential needs of people in their community.

The Framework was developed in response to a lesson learned from the Lesser Slave Lake Wildfires in 2011 that the Province and emergency social service partners should provide a coordinated approach to emergency social services delivery during a disaster.

Observations

The PESS and the Emergency Coordination Centre were fully enacted for the first time during the Wildfire – this was a complex and large scale disaster that tested both.

Among its many duties, the PESS Emergency Coordination Centre coordinated with multiple Reception Centres throughout the province, as well as post-secondary institutions hosting evacuees, and worked with the Department of National Defence to deliver supplies from Edmonton to CNRL, Suncor Firebag and Shell Albian Sands airstrips in the Fort McMurray area for the many first responders and firefighters working to extinguish the Wildfire.

While generally the PESS was able to effectively support the almost 88,000 residents who were affected by the Wildfires, there were some notable challenges with its rollout.

Providing a clear understanding of accountabilities and responsibilities for the PESS was difficult. This was largely due to the nature of the organizations involved, including a mix of Government of Alberta Departments, small and large non-governmental organizations, and post-secondary institutions who each had a range of capacities and capabilities. While these organizations had previously worked together, they had done so informally without definition regarding their roles when formally activated.

PESS was designed in consultation and collaboration with each of the partners and stakeholders who were involved in the delivery of emergency social services. It was finalized in January 2016 and as such, its roll out to partners and stakeholders may not have been robust enough to provide everyone with a broad understanding of what PESS was or how it would be used to inform and guide their work prior to the May 2016 Wildfire.

There was also limited understanding among the PESS' partners of the level of commitment that would be needed. Given the scale of the Wildfire and the number of residents that were affected, there were ongoing resourcing challenges across the partner organizations, including the lead Alberta Human Services (now Alberta Community and Social Services).

At the same time, while a Consequence Management Officer was in place for Alberta Human Services in the POC, there was no key Consequence Management Officer role for PESS. Instead the Alberta Human Services Consequence Management Officer played a dual role between coordinating the Department's response (i.e. make sure that affected staff, programs and clients

were addressed properly) and liaising with PESS for the broader needs of affected residents. This may have diluted the focus of both roles.

The Canadian Red Cross (Red Cross) was a key NGO partner that worked closely with the Government of Alberta on several fronts during the Wildfire. This included collecting and distributing financial donations, supporting Indigenous communities, supporting evacuation centres, and managing and sharing information and identifying opportunities to support the people and businesses affected by the wildfire.

As part of its role, the Red Cross collected approximately $319 million for wildfire relief from Albertans and Canadians, as well as matching funds from the Provincial and Federal government. One of the key learnings from this was that while the Red Cross was an effective fundraiser, it did not necessarily have all of the supporting infrastructure to disburse the funds to organizations and individuals who needed it to address their response and recovery needs.

In addition, while the Red Cross played a key role in not only staffing the Reception Centres for evacuees, they also managed the registration of evacuees to create a record of who may require emergency social services and related supports. This information was used to support financial and other social services delivered by the Province. As such, it was subject to validation and verification which sometimes led to additional effort being spent collecting new or the same information for an individual and / or their family.

Emergency Social Programs

When provincial emergency social supports are needed during disaster responses, they are often built from scratch based on the needs for each disaster. For example, during the Wildfire there was a delay between the evacuation (May 3), the announcement of emergency funds that would be made available for affected residents by the Province (May 6) and their distribution (starting on May 11).

This was largely due to the fact that policies had to be developed rapidly to accommodate this, along with supporting processes, forms and other tools to manage the delivery of the emergency program. While much of this was based on Alberta's existing income assistance programs, several policy decisions had to be made (e.g. decisions on whether to provide funds to only targeted vulnerable persons or to all residents, etc.)

60%

of residents responding to an online survey agreed that supports provided by the GOA were delivered in an effective manner

By comparison the Red Cross, in its efforts to use the donations that had been received, announced and delivered e-transfers to affected residents. This occurred within the same timeframe, and often at the same venues, as the delivery of the Province's emergency funds.

Residents were able to compare and contrast both programs and felt that the Red Cross's e-transfers were a more efficient means to meet their needs than the Province's debit card approach. This should also be contextualized by the fact that the Province's approach (e.g. information collected, verified, etc.) was designed to be more rigorous.

Emergency funds were not the only needs that residents had. With so many residents being displaced and businesses being temporarily closed in the Region, many evacuees were without work and / or employment insurance (EI) benefits during the temporary disruption to their jobs. There were some instances where individuals had to be laid off by their employers before EI benefits could be claimed; Alberta EI claims rose by more than 70% following the Wildfire.[53]

Many affected residents found refuge with friends and families across Alberta. Reception Centres were stood up across the province – consisting of post-secondary institutions, information centres, and community centres – and received tens of thousands of visits. At the same time, during the Wildfire evacuation, some Indigenous community members were unable to stay at Reception Centres as their community was not considered to be under a formal mandatory evacuation order from the Region (rather than their Indigenous community), and they were turned away by the centres. While other Indigenous community members who were not located in mandatory evacuation areas decided to self-evacuate for various reasons, including health concerns, were also unable to access supports at Reception Centres. While Reception Centres were intended as temporary options, the duration of the evacuation from the area caused challenges with finding suitable and sustainable housing options until re-entry occurred.

As well, within a month of the evacuation, more than 8,700 people contacted Alberta Health Services seeking psychosocial supports – an average of about 225 per day. Disaster mental health teams from Alberta Health Services, British Columbia and elsewhere were deployed to offer support.

Unlike previous disasters, when residents evacuated the Region during the Wildfire, they dispersed not only across Alberta, but also other parts of Canada. Some residents noted that there were challenges in accessing a range of supports and services if they were outside of Alberta after evacuation. Particularly, this related to psychosocial supports. While similar psychosocial supports may exist in other provinces, there are limitations to the effectiveness of practitioners who are unaware of, or have little context for how to address the specific trauma caused by the Wildfire.

Lastly, while a re-entry booklet was prepared and provided to residents as they resettled in the Region, it contained limited information regarding access to other resources, supports and service that may have been necessary to help residents with their longer term resiliency.

Jurisdictional Analysis

Other national and provincial jurisdictions have established frameworks, similar to Alberta's PESS, to guide the work of how emergency social services are delivered to those affected during emergencies.

Common citizen identity initiatives are underway around the globe; they enable a single identifier to substantiate, identify, and receive emergency social supports from government, etc. The Government of Alberta's Citizen Registry initiative is intended to provide enhanced abilities to use a common identifier, such as health care identifier, to validate and verify an Albertan's identity efficiently and effectively. In the future, use of this registry could be extended to identify and track evacuees during emergency situations, and provide the necessary emergency social services and supports.

The United Nations' Sendai Framework for Disaster Risk Reduction outlines the need for ongoing supports and services to prevent and reduce exposure and vulnerability to disasters, increase future preparedness for response and recovery, and thus strengthen resilience. It also identifies the need to enhance ongoing recovery plans to provide psychosocial supports and mental health services for all people in need.

Stabilization

The following key themes related to stabilization arose from the review: re-entry processes and the use of the rapid damage assessment tool. Each of these is explored below.

Re-entry Processes and Criteria

Recommendation

Recommendation #18

Build re-entry conditions and criteria into a guide that can be leveraged by local authorities

Documentation and clear communication of guidelines to all stakeholders will promote a coordinated and collaborative approach to re-entry. Re-entry guidelines should include:

- The conditions and risk thresholds that must be met for critical infrastructure and businesses
- The suggested prioritization and considerations for critical infrastructure, ancillary services to critical infrastructure, and non-critical services
- The outlined logistics protocols for resources needed in the community

- The prioritization criteria for resources deployed to the community to complete restoration activities, and
- Consideration of guidelines for social procurement policies.

Findings

During re-entry planning, each of the hazards that may impact a community must be strategically planned for and the associated risks and complexities must be understood. A community is a complex, dynamic system made up of several components – the interconnectedness of the system means challenges with one part can translate into problems in other parts. As such, it is important to take an integrated approach and analyze the cumulative hazard risks to the community.

Following the Wildfire evacuation, re-entry criteria and conditions established for the Region aligned with leading practices, such as those in the Ontario Mass Evacuation Plan.[54]

As no community in Alberta has experienced an emergency event of this duration, there may have been a lack of understanding of the time and manpower required to re-establish operations and basic levels of service. Having clearly defined criteria for the re-establishment of critical infrastructure and logistics protocols could have lessened the confusion experienced.

Communication about re-entry being voluntary was also not fully understood by many residents and employers in the region.

A recommendation to document re-entry guidelines was identified during the Slave Lake Wildfire Review.

Context

Re-entry processes and criteria outline the necessary steps that need to be taken to restore the community, take into consideration the needs of the community, and determine the conditions that must be met in order to permit the residents to re-enter a safe and habitable community.

Communities stage re-entry to make sure that critical services and businesses are restored to a safe level prior to allowing the return of the general population. A re-entry plan must outline the potential dangers that a resident may face if they are entering a potentially unsafe area.

To fully restore services, a coordinated approach is developed to bring the necessary resources and supplies into the community to assist with stabilization and restoration efforts. There are many additional considerations that must be taken into account, such as the potential for looting, controlling access to unsafe areas, and ongoing threats from an incident.

Observations

There are no formally documented re-entry criteria in Alberta. As such, during the Wildfire, the POC and REOC identified the following set of conditions that needed to be met to enable re-entry:

- Elimination of wildfire threats
- Restoration of critical infrastructure to a basic level of service
- Restoration of essential services to a basic level
- Securing of hazard areas, and
- Re-establishment of the local government.

Milestones towards the achievement of these conditions were also determined, and progress was monitored on a daily basis to make sure the re-entry plan for the Region was on track.

During the re-entry planning process, there was considerable deliberation over the prioritization and restoration of critical infrastructure and ancillary services within the community. Provincial and local leadership were eager to allow residents to return to their homes; however, the safety of the residents was of the utmost priority.

Criteria used for evaluating and determining risks and consequences for prioritized and non-prioritized services was unclear to many stakeholders. There was confusion, inconsistency, and some delay in identifying and prioritizing what critical services were (e.g. government, business, community, etc.) so that minimum service levels could be established to guide re-entry conditions. In addition, stakeholders were unclear about who was making these decisions – this lack of transparency and communication in the decision making process lead to concerns for the community at large.

Acceptable levels of risk were established and adjusted for critical infrastructure. For example the use of a boil water advisory was required, rather than drinkable water being available from the water treatment plant. However, it was not feasible or advisable to adjust or lower the risk thresholds for some ancillary services, such as childcare facilities, which required cleaning standards similar to healthcare facilities.

Restoration required the coordination of many organizations and resources throughout the community. The REOC was inundated with requests from contractors and companies wanting to re-enter the Region to assess their facilities. However, with limited accommodations available and the remoteness of the Region, it quickly became necessary to prioritize the re-entry of resources for restoration activities. The evaluation criteria for which resources were prioritized was unclear, as were the logistics of how to bring resources in and out of the community. Changing protocols lead to confusion in the field and misinformation for requirements when sending resources to assist.

The final stage of re-entry planning included conducting mock exercises for re-entry. These exercises helped to identify gaps in the plans and to make sure things were in place for when all residents would be permitted to re-enter the Region. In particular, the May 27 *Hotels to Homes Plan*

and the re-entry rehearsal which commenced on May 28 were perceived to be well executed and effective means of testing re-entry processes including the use of Information Centres.

Information Centres were established throughout the Region and provided returning residents with cleaning supplies and assistance with a variety of services (e.g. housing options, clean-up kits, utility information, financial support, insurance information and representatives, public and mental health support, etc.). The Information Centres were also a place to help rebuild a sense of community.

As early as May 23, Re-entry Information Booklets were distributed to residents through a variety of sources, including the Region and Government of Alberta websites and news outlets. While re-entry to the community was voluntary, this was not explicitly stated in the re-entry booklet. The booklets predominantly provided residents with information on how to remain safe through protective clothing and equipment (e.g. rubber boots, long sleeves, respiratory masks), and advised of the environmental conditions upon return (i.e. poor air quality, and boil water advisory).

> "*The* ***information for the phased re-entry was readily available*** *and easy to understand*"
>
> - Resident

In support of residents who had lost their homes to the Wildfire and were interested in recovering valuables or possessions from severely damaged homes, a team of volunteers from Team Rubicon were also available to assist.

Overall, residents expressed that the level of support provided to them upon re-entry exceeded their expectations, and that they were provided with more than they needed. However, many residents also indicated that they were required to report to their place of employment within a day of arriving home, which left them little time to look after their own homes (e.g. cleaning, washing clothing, etc.) and resettle their families. Despite re-entry being voluntary, some residents expressed that if they had not returned, they believed that they would have lost their jobs.

During re-entry, the Telephone Town Halls and the Region's Pulse Call Lines continued to operate and provide assistance and information to residents. Residents appreciated the consistent and official means of communication through the Telephone Town Halls.

In support of local recovery, the Region was also able to successfully contract many recovery services with locally owned companies or companies that employed Fort McMurray residents. This focus on local procurement for recovery efforts was well-received within the community.

Jurisdictional Analysis

The Ontario Mass Evacuation Plan[55] provides guidance to communities for re-entry and a set of conditions that must be met before an evacuated community may be permitted to return. These include whether:

- The threat that prompted the evacuation has been resolved or has subsided
- Access to the community is assured
- Infrastructure is safe to use (e.g. airport and roads between the airport and community).
- Safety hazards connected to the emergency have been eliminated, and
- Services have resumed and are sufficient to support returning evacuees – for example, power, water, sanitation, security, food and essential supplies, and medical services.

In cases of whole-community evacuations in Ontario, a phased re-entry often takes place, whereby a set of essential services such as grocery stores, gas stations and childcare are set up in advance of the return of the general population.

Rapid Damage Assessments

Recommendation

Recommendation #19

Expand the use of Rapid Damage Assessment technology and processes to local authorities during disaster events

Enhancements to the Rapid Damage Assessment technology and processes, based on the Wildfire experience, have already been identified to include:

- A mechanism to update assessment statuses, if needed
- Definitions of structure types and how to identify / count them (e.g. does a duplex count as one structure or two)
- Definitions of damages to provide all Safety Code Officers with the same criteria, and
- Consistent collection of data for each assessment.

In order to leverage this technology, geographic information system capabilities and mapping are needed for each local authority in Alberta prior to disaster events. Therefore, to enable this change, provincial support will be needed to ensure that the Rapid Damage Assessments are as successful for other local authorities as they were in the Region.

Findings

In addition to supporting residents, the information provided by the Rapid Damage Assessments was a critical input into re-entry planning for the Region. It allowed for the successful planning of the phased re-entry of communities, and coordinated restoration of services to those communities. These innovations should be formally established as practices for use in future disaster responses.

Context

Prior to re-entry, local authorities assess the extent of the damage to infrastructure and housing within their communities. Damage assessments enable local authorities to record the location and severity of damage to buildings as a result of a disaster (e.g. flood, wildfire, earthquake, etc.).

A damage assessment also provides an understanding of the scope of repairs or rebuilding that may be needed, so that appropriate planning can be completed to prepare for the re-entry of a community.

Damage assessments also capture information for residents, allowing them to understand the damage they may have experienced in their homes and / or businesses and begin to make appropriate plans for their re-entry.

Observations

Following the Wildfires, Rapid Damage Assessments were completed. These were considered by most stakeholders to be well executed and demonstrated the ability to leverage innovative technology for re-entry planning efforts. These assessments combined satellite images and mobile application technology to enable assessors to complete a building by building inspection and note the level of damage across the Region.

Within four days of deployment, areas most impacted by the Wildfire were assessed, and after additional resources being dispatched, the entire assessment of the region was completed within seven days.

The collaboration of the Safety Code Officers from multiple disciplines (i.e. building, electrical, gas, and plumbing) provided a thorough visual assessment of structures to quickly determine the safety of the property and the ability for the structures to be reoccupied upon re-entry.

The information collected during these Rapid Damage Assessments was also validated, and in conjunction with satellite imagery of properties before and after the Wildfire, were provided to residents via a website.

Through the website, residents were able to search their property and see the images and assessment status of their homes. Providing this vital information to residents quickly removed feelings of uncertainty and allowed them to make plans for their futures.

Jurisdictional Analysis

British Columbia’s Community Disaster Recovery Plan indicates that early completion of damage assessments help to inform recovery efforts, and can assist Recovery Coordinators as they provide an estimate of the extent and timeline for recovery services needed.

Recovery

The following key themes related to recovery arose from the review: resiliency in recovery planning, and capacity for recovery. These are explored below.

Resiliency in Recovery Planning

Recommendation

Recommendation #20

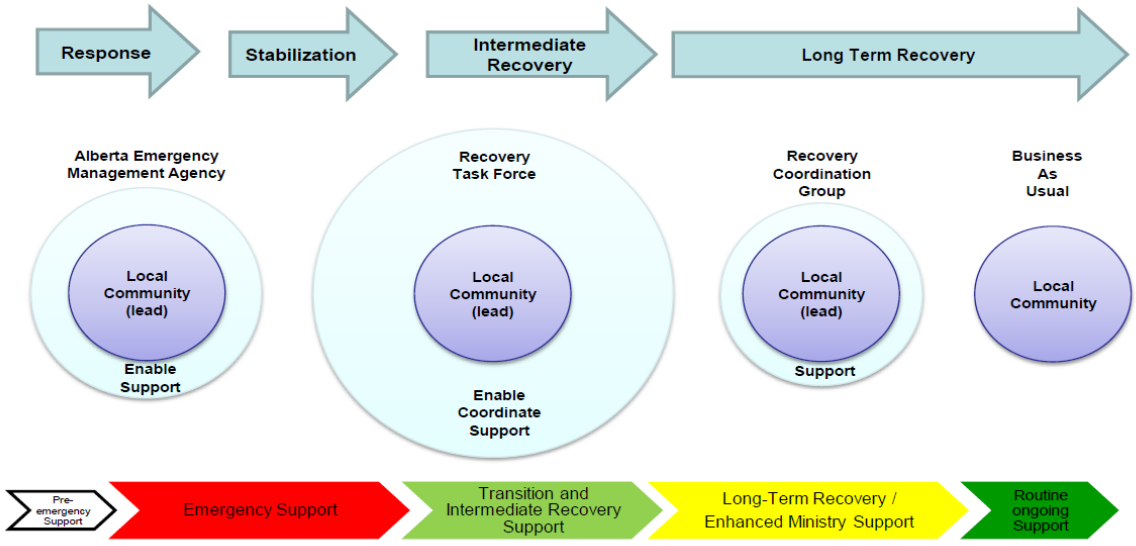
Develop recovery plans within the context of resiliency

Findings

In conjunction with Recommendation #4 (Develop a Disaster Resiliency Strategy), the Province should provide guidance on how recovery planning should incorporate aspects of disaster resiliency.

Context

Alberta established a Provincial Recovery Framework, as outlined in the Alberta Emergency Plan, following the 2013 Southern Alberta Floods, and as depicted below:



The Framework outlines four phases of recovery, ranging from Response through to Long Term Recovery, and focuses on the key pillars of:

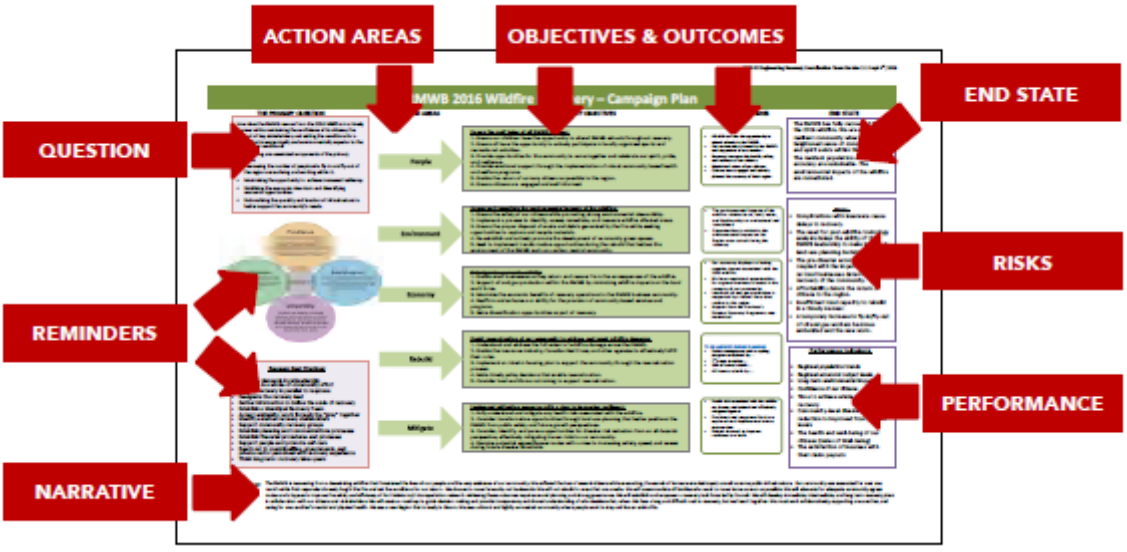
- People: ensuring the right resources are available to support the overall physical, mental and social well-being of Albertans

- Economy: encouraging job creation and economic diversification while building stronger relationships with industry and small businesses
- Reconstruction: encouraging innovative solutions and responsible development and involving local companies and workers wherever possible, and
- Environment: monitoring the long-term environmental impacts and mitigating risks, if required.

A Municipal Recovery toolkit was also developed and is focused on the Intermediate Recovery and Long Term Recovery phases. This toolkit was assembled as a resource to assist municipalities affected by disaster (e.g. the 2013 Southern Alberta Floods) with the information necessary to support their recovery goals as well as to provide resources to those communities to help develop and implement their long-term Municipal Recovery Action Plans.

Observations

Both the Province and the Region developed Recovery Plans to support the short-term and long-term needs of the Region. The Region's Recovery Plan was in alignment with, and in some cases exceeded, the provincial guidance provided through the Municipal Recovery Toolkit.



However, while statistics for the region are still sparse, it has been speculated that a number of individuals, households and small businesses did not return to the Region. For example the local public school board says attendance was down by 270 students, or about 4%, as of September 30, 2016 while attendance at local Catholic schools was down by 400 students, or about 6.5%.[56] However, some of this can be attributed to the previous and ongoing economic conditions in Alberta and the Region.

While a Provincial Recovery Framework exists it requires further development. The Framework currently addresses the priority issues in each pillar and phase of recovery, but only from the perspective of the Province's responsibilities. The Framework should also consider community disaster resiliency.

Jurisdictional Analysis

Leading practice research indicates the following factors encourage community disaster recovery:

- Fast, effective cleanup
- Timely access to capital for restoration of public infrastructure and private property
- Business restoration, and
- Restoring permanent housing, schools, hospitals and social services.

As a leading practice, Australia closely links relief and recovery efforts in its disaster policy and approach to emergency management at the national level. The Australian State of Victoria is leading the way in developing the concept of resilient recovery, which considers the whole system of relief and recovery and the ways diverse components within that system can be organized and empowered to deliver community recovery outcomes for a safer and more resilient future.

Capacity for Recovery

Recommendation

Recommendation #21

Enhance the use of the AEMA Recovery Branch

The AEMA's Recovery Branch should continue to build upon its capacity and capability through dedicated staff, who have lived experiences, to support recovery work with local authorities. Members from the Recovery Branch could also be used to form the core staffing complement for when a Provincial Task Force is required. Other AEMA resources need to be drawn on to support similar requirements during the use of a Task Force.

Findings

The continued wind-up and wind-down of a temporary Provincial Task Force may be unnecessary. Given the lead role that AEMA plays in coordinating emergency management efforts from prevention to recovery across the Government of Alberta, it may be more beneficial to build capacity for provincial recovery efforts in a more permanent state.

The continued development of the AEMA Recovery Branch may assist in eliminating the need for a provincial Recovery Task Force in the future. The role of the Recovery Branch can be better tailored to work more closely with local authorities on an ongoing basis (i.e. before a disaster occurs) based on AEMA's close working relationships with local authorities.

"No one could tell us for the longest time ***if we could rebuild or not****. Once the decision was made, it was a slow process."*

- Resident

Context

The Alberta Emergency Plan sets out the guidance for recovery activities. While recovery is a local authority's responsibility, provincial assistance may be available in the event of a severe or widespread disaster. This is because only local authorities can generate the necessary cooperation among all of the government agencies, community organizations, businesses, and residents that are needed for a successful collaboration around recovery.

While recovery activities may commence while a community is still involved in responding to an event, the majority of these activities will occur after the emergency or disaster event has stabilized or ended.

The Province typically has two levels of organization for its recovery efforts – a Recovery Branch within the AEMA and the setup of a temporary Recovery Task Force (this approach has been taken in each of the last three major disasters in Alberta).

Observations

As part of recovery, there is a critical need to begin recovery planning upfront while the response to the disaster is still ongoing. However, the intensity of the demands from the Wildfire placed on the Region's resources to manage the response, stabilize the community, and plan for re-entry meant that there was insufficient capacity to support local recovery activities upfront.

The Province established a Wildfire Recovery Task Force on May 6, while the Region established its own Recovery Task Force on June 21. This meant that much of the Province's planning for recovery occurred earlier and without the involvement of or coordination with the Region. While there were no concerns noted regarding this, there was a risk that the lack of coordination between provincial and local recovery efforts had unintended consequences on the broader recovery within the region.

Each time a provincial Recovery Task Force has been established, it has required the selection and setup of staff and processes (e.g. Action Requests, etc.), which adds unnecessary effort if this capacity already exists within the AEMA's Recovery Branch. The Task Force is often comprised of staff who are seconded from across Government for this; however, this creates a risk that not all staff have the benefit of lived recovery experiences.

At the same time, AEMA's Recovery Branch is still maturing – its focus in the past was largely on administering the Province's Disaster Recovery Program, which covers uninsurable losses; however it has begun to develop capabilities for broader recovery tasks.

Jurisdictional Analysis

As a leading practice, recovery is best staffed by individuals who have lived experiences given the nuances of recovery planning, coordination and execution. This includes the maturing and development of permanent recovery functions within provincial emergency management organizations.

British Columbia's Community Disaster Recovery Guide outlines that specified, trained individuals initially fill key functions in a recovery organization, while members of the local community assume these roles over time. Further, recovery is a joint effort that should be led by the local community, in coordination with all affected parties, and by empowering individuals, such as affected residents, to be actively involved in their own recovery.[57]

The Government of Alberta's Response and Supports

While there are always lessons to be identified and learned, the Province's response to the Wildfire, and the supports provided, were aligned to achieving outcomes associated with Alberta's Emergency Plan. These outcomes are intended to: promote the safety of the public and reduce suffering; protect property and the environment; reduce economic and social losses; and enable recovery. The Province undertook preparations for the 2016 hazard season within the confines of available resources, and built on investment in prevention programs, improved field operations, training, and technology.

During the Wildfire, Provincial supports to the Region and its residents demonstrated increased maturity from past disasters, capitalizing on the experience of professionals that had staffed the Provincial Operations Centre in 2011 and 2013, during the Slave Lake Wildfire and the Alberta Floods, respectively. At the same time there were also a number of areas where, due to the complexity and sustained nature of this disaster, resources and supports were stretched. Overall, Alberta's Emergency Management Framework, the Alberta Emergency Plan and resources such as the Provincial Operations Centre, Incident Management Teams, Provincial Emergency Social Services, and the Provincial Recovery Task Force provided the necessary foundation for a sustained response to one of the most significant disasters in Canadian history.

Based on the successful lessons learned; lessons identified and recommendations arising from the Wildfire, the following provides an overall summary of the review of the Government of Alberta's response relative to the key objectives. This summary does not represent the comprehensive findings and observations from the review; these are contained throughout the body of the report.

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
The Province's preparations and readiness leading up to the 2016 hazard season	The Province has completed significant work since 2011 to develop enhanced emergency management protocols and a strategic focus on public safety and emergency management across the Government of Alberta. AEMA's Emergency Management Exercise (EMX 16) that occurred prior to the hazard season simulated a large scale disaster and involved: all Government of Alberta Departments, many municipalities, an incident management team and a live deployment of Canada Task Force 2, as a provincial asset. The Province has continued to design systems of support for emergency planning and preparation by Alberta's local authorities. This included enhanced programs for regional collaboration and resource sharing in emergency planning, response and recovery. The Province made training in emergency management available to local authorities, and Government of Alberta Departments, to	Ongoing investment is needed by the Government of Alberta and municipalities to advance processes, technologies and resources for disaster prevention, preparedness and overall emergency management. Disaster prevention programs cannot be viewed as "discretionary" and must receive an appropriate proportion of investment relative to the impacts these programs are intended to mitigate. An understanding of the cumulative hazard risks was missing during the Wildfire. Currently, the responsibility for all hazard risks sits primarily with municipalities, however this creates a gap in the provincial understanding of all hazard risks. While significant progress has been made, as incidents become larger and more complex, additional depth and capacity is needed within and to support local authorities. Greater use of provincial Incident Management Teams (IMT) should be considered to address potential capacity gaps at the local authority level. In	Continue to invest in prevention programs (page 49) Scale the Hazard Identification Risk Assessment model to understand cumulative risk (page 60) Build depth and capacity within local authorities to enable communities to support each other during emergencies (page 71)

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
	support Alberta's emergency management system and provide participants with a clear understanding of their role in all phases of an emergency. The Province has also maintained investment in a number of disaster prevention programs offered by various Departments, such as FireSmart.	recognition of the need for more robust response support capabilities in the early stages of a disaster response, AEMA has begun to develop standard operating procedures for scalable cross-functional Incident Support Teams (IST). The AEMA formalized ISTs where field officers, planners and mobile command post are dispatched from the POC to support local authority response capabilities.	
The evacuation of the Urban and Rural Services Areas of Fort McMurray by the Wood Buffalo Regional Emergency Operations Centre (REOC)	N/A	The Region's Emergency Management Plan included an Evacuation Plan which defines a staged evacuation model to give residents sufficient time to prepare through an evacuation alert that highlights the nature of the hazard, and advises people to prepare to evacuate an affected area. The Evacuation Plan describes evacuation routes in the Region's urban service area, as well as evacuation directions for portions of the rural communities and the neighboring Indigenous communities. The Region's Plan did not address mass evacuations. Prior to this Wildfire, it is	Develop a Provincial Emergency Evacuation Framework and evacuation model to provide enhanced decision-making capabilities at the Provincial level (page 66)

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
		unlikely that any municipality in Alberta had considered or planned for a complete evacuation of their entire community. Communications surrounding evacuation readiness of the public may have benefited from a more cautious approach, one that could have been better informed by evacuation decision-support through analytic models.	
Subsequent evacuations of the Region and impacted communities by the REOC and Provincial Operations Centre (POC) under the authority of the provincially-declared State of Emergency	N/A	Evacuees who spent the night of May 3 along the highway in their vehicles, as a result of running out of fuel, were supported by Alberta Transportation and POC Logistics, which sent trucks with fuel up and down the highway to fill tanks. The Province, in close coordination with the Canadian Armed Forces, the RCMP and the Region also coordinated the ground evacuation of approximately 1,000 vehicles (8,000 residents) south along Highway 63, for those that had previously been evacuated north.	Develop a Provincial Emergency Evacuation Framework and evacuation model to provide enhanced decision-making capabilities at the Provincial level (page 66) Enhance investment in public awareness and engagement initiatives for emergency

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
		Given the frequency of disasters, Albertans may not be aware and engaged appropriately in preparedness initiatives and activities. As such, their general state of preparedness may not be sufficient to give Albertans the knowledge and confidence they need to appropriately respond to a disaster, to leave their homes, and to recover.	preparedness (page 49)
The Province's command and control of the incident through the POC and other emergency management governance structures	The Alberta Emergency Plan was updated in 2016 to mandate the use of the Incident Command System (ICS) by all participating provincial Departments and agencies (i.e. incident sites, Emergency Operations Centres, and the POC); and encourages adoption and use of ICS by Alberta's communities and public safety system stakeholders.	The different approaches to management and command across organizations and the varying levels of understanding of ICS made it difficult to work together to achieve a proper chain of command and unity of command during the Wildfire. Upon declaration of the State of Emergency by the Province during the Wildfire, AEMA determined that an appointment under the *Emergency Management Act* would be appropriate given the situation in the Region. The Region's Director of Emergency Management (DEM) was appointed the Provincial Director of	Clarify and document processes for legislative delegation of authority in the Alberta Emergency Plan (page 58) Create resource and asset management system capabilities (page 63) Mandate local authorities to adopt the Incident Command

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
		Emergency Management (Appointed DEM) pursuant to a Ministerial Order on May 6. This appointment meant that the Appointed DEM was acting on behalf of the provincial response and all staff and organizations involved (including the REOC and POC) were subject to the Appointed DEM's control and direction. However, there were limited communications to the Appointed DEM on what the appointment meant in terms of the scope of the role and the extent of available powers and resources. The process by which the Region's DEM was elevated to the status of Appointed DEM did not clearly identify the new roles, responsibilities, and authorities of the delegated position, and as a result, a number of points of confusion arose. As a result, at the start of the Province's support to the Wildfire response, the delegation of authority caused some confusion with respect to the chain and unity	System model during response (page 85)

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
		of command, supervision, and accountabilities. The level of resource coordination required to manage this event at both the provincial and municipal levels was unprecedented. Offers of support were overwhelming, and it was a challenge to identify the best resources, deploy them with appropriate communications, receive them, utilize and support them, and demobilize them. It was also difficult to coordinate the logistics around supplies. There is currently limited provincial capability to support resource and asset management, including coordination and tracking of what is sent to support a local response.	

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
The Province's support of the Region through the POC, Provincial Emergency Social Services (PESS), Emergency Coordination Centre, and provincial Wildfire Recovery Task Force during the response and recovery phases of the event	AEMA implemented a POC Augmentation Program to build capacity and depth across the Government of Alberta to support emergency events that require complex and extended POC operations, and implemented new incident management technology, Alberta DisasterLAN. The Province formalized a relationship with Canada Task Force 2 (CAN-TF2). It provided grant funding to enable ongoing operations in Alberta for CAN-TF2, based out of Calgary. CAN-TF2 is an all-hazards disaster response team with a diverse capacity to respond to a variety of man-made and natural disasters. The Province formalized support for an Incident Management Team (IMT) with Strathcona County. It provided grant funding for the development of IMT skillsets and capabilities, and worked closely with Strathcona County to enhance its IMT experience gained in the 2011 Slave Lake Wildfire.	During the Wildfire, the Province deployed Canada Task Force 2, the Strathcona County IMT, and the provincial Incident Support Team, in a timely and effective manner to mitigate risk, augment the local response capabilities and promote public safety during the Wildfire. The Province also supported communications between first responders during the Wildfire, through the Alberta First Responder Radio Communications System. The deployment of AFRRCS proved extremely valuable as the Region dealt with power outages and damaged cell towers from May 3 onward. The Office of the Fire Commissioner OFC does not currently have the capacity to work with local authorities to create an inventory of municipal firefighting resources around the province or to coordinate, deploy, and demobilize municipal firefighting resources to support other municipalities. Currently the AEMA and the OFC have established a working group to look at a holistic approach	Empower and resource the Office of the Fire Commissioner to coordinate and deploy municipal firefighters during a response (page 92) Continue to operationalize the Provincial Emergency Social Services Framework (page 95) Enhance the use of the AEMA Recovery Branch (page 108)

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
	The Province reinforced Alberta's emergency response system by formally incorporating a cross-ministry governance model, and by ensuring the availability of additional Government of Alberta personnel to support response and recovery efforts following the 2011 Slave Lake Wildfire and the 2013 Southern Alberta Floods.	to firefighting coordination during emergency situations. This includes the development of a provincial wildland-urban interface firefighting strategy. A formal Provincial Emergency Social Services (PESS) Framework was operationalized during the Wildfire for the first time. While generally the PESS helped to support the almost 88,000 residents who were affected by the Wildfire, there were some challenges with its rollout. Particularly its partners and stakeholders may not have had a robust understanding of what PESS was or how it would be used to inform and guide their work. This created some challenges in responding across the needs of all affected residents. The Province typically has two levels of organization for its recovery efforts – a Recovery Branch within the AEMA and the setup of a temporary Recovery Task Force (this approach has been taken in each of the last three major disasters in Alberta). The	

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
		Province established a Wildfire Recovery Task Force on May 6, while the Region established its own Recovery Task Force on June 21. This meant that much of the Province's planning for recovery occurred earlier and without the involvement of or coordination with the Region.	
The Province's provision of, and support to, emergency social services	The Province developed the PESS Framework to better guide and support the provision of emergency social services during a disaster.	Ongoing work to strengthen the PESS is needed to address several learnings identified from the Wildfire, including the roles and responsibilities of partners, the need for permanent and scalable emergency social programs, the need for longer-term supports, and dedicated resourcing to support PESS coordination. Emergency social supports are only intended to last for up to 72 hours post evacuation. During the Wildfire, this limit was significantly exceeded in order to meet the needs of affected residents who were displaced from their homes for one month or longer. For example, between May 10 and June 30, local addictions and mental health staff	Continue to operationalize the Provincial Emergency Social Services Framework (page 95)

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
		received 20,000 referrals; by comparison, pre-wildfire these same staff received about 1,200 referrals a year.	
The Province's disaster response and recovery framework and actions and procedures in response to, and recovery from the Wildfire	Alberta's *Emergency Management Act* was amended in 2011 to support local authorities in establishing regional approaches to emergency management. The amendment supported a number of approaches for communities to advance emergency management planning.	While the re-entry was effectively supported by the Province, the authority over re-entry decisions was not clear to all parties, particularly with respect to public and environmental health considerations, based on the existing emergency management legislative framework. A disaster resiliency approach works to understand the relationships between the components within recovery and how actions can impact on or achieve outcomes in another part of recovery, and contribute to better mitigation and prevention of disasters. Alberta's Provincial Recovery Framework, and supporting guidance to local authorities, does not currently contemplate this.	Review the legislative framework for Emergency Management (page 45) Develop a Disaster Resiliency Strategy (page 53)

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
The Province's engagement and collaboration with key stakeholders during the incident	The Province demonstrated improved integration of its provincial expertise in environmental hazard testing and public health during the Wildfire. This was done in order to streamline testing, interpretation, and the communication of results.	The coordination between the many different levels of emergency response partners and stakeholders was a challenge at the start of the Wildfire response, particularly given the scope and intensity of the disaster. Standard operating procedures for communication between the POC, the Region, and other external stakeholders included the Common Operating Picture Reports, Incident Action Plans, coordination calls, and joint planning meetings. However, better engagement of key external stakeholders at the right levels with the right information was needed, as stakeholders sometimes resorted to alternative means of gathering the information they desired. For example, Industry and Indigenous communities needed to be engaged in different ways than other stakeholder groups.	Enhance internal communications interoperability with key stakeholders and the use of technology (page 75)

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
Supports provided to the various community evacuations	N/A	Industry, municipalities, the Province, non-governmental organizations, the Canadian Red Cross and other groups, all worked together to provide an unprecedented level of support. Reception Centres across Alberta provided displaced residents with shelter and emergency social services. This was done alongside donations from across the country that provided the Region's evacuated residents with supports, goods, and accommodations. Monetary donations were also made to the Canadian Red Cross and matched by the Government of Canada and by the Province.	Continue to operationalize the Provincial Emergency Social Services Framework (page 95)
The Province's approach to crisis communications	The provincial Alberta Emergency Alert system was upgraded in 2011 address the changes in radio and television digital communications.	The Province's communications, led by the Public Affairs Bureau, during the emergency was guided by a formal Communications Plan that was executed during the Wildfire. Generally, content released through the Alberta Emergency Alerts during the Wildfire was consistent in timing and messaging. At the beginning of the response, information	Enhance existing public emergency communication approaches (page 79)

Objective	Successful Lessons Learned	Lessons Identified from the Wildfire	Recommendations
		focused on issuing updates about the progress of the Wildfire, evacuation notices for specific communities, and information on recommended destinations for evacuees. The Province issued daily briefings and regular updates throughout the entire event, which focused on the progress of the Wildfire, how to access supports and services, and the coordination of re-entry. Telephone Town Hall sessions were an innovative practice that created a sense of community even as residents were dispersed across Alberta and Canada. While social media, specifically Twitter and Facebook, was used to communicate, there was no overarching social media account for the Wildfire which may have resulted in missed opportunities to engage with affected residents and / or the public.	

Appendix A | Glossary of Terms

The following terms are used throughout the report:

All-Hazards – describes an incident, natural or manmade, that warrants action to protect life, property, environment, and public health or safety, and to minimize disruptions of government, social, or economic activities.

Business Continuity – activities performed by an organization to ensure that critical business functions will be available to stakeholders and the public should a disruption occur. The written version is a Business Continuity Plan.

Chain of Command – the orderly line of authority and responsibility along which directions and instructions are passed during an incident response.

Command – the act of directing, ordering, or controlling by virtue of explicit legislation, regulation, or delegated authority.

Communications – the process of transmission of information through verbal, written, or electronic means.

Consequence Management Officer – the staff member from a Government of Alberta Department or Federal Department who is assigned to the Provincial Operations Centre upon activation to coordinate and support their respective Department's response.

Coordination – the integration of multi-agency efforts and available capabilities, which may be interdependent, in order to achieve defined objectives.

Critical Infrastructure – assets, systems, and networks vital to a city. Their incapacitation or destruction would have a debilitating effect on the economy, environment, public health or safety, or any combination thereof. For example, power lines, medical centres, wastewater services.

Delegation of Authority – a statement provided to the appointed individual delegating authority and assigning responsibility. The delegation of authority can include objectives, priorities, expectations, constraints, and other considerations or guidelines, as needed.

Director of Emergency Management (DEM) – becomes the Director of Emergency Operations during an incident and is in charge of a local Emergency Operations Centre. The DEM provides overall Emergency Operations Centre management, establishes priorities, liaises with elected officials and approves public communications and information. As outlined in the Alberta *Emergency Management Act*.

Disaster – an event that results in serious harm to the safety, health or welfare of people or in widespread damage to property.

Dispatch – the ordered movement of a resource or resources to an assigned operational mission, or an administrative move from one location to another.

Emergency – an event that requires prompt coordination of action or special regulation of persons or property to protect the safety, health, or welfare of people or to limit damage to property.

Emergency Management – the management of emergencies concerning all-hazards, including all activities and risk management measures related to prevention, preparedness, response, stabilization, and recovery.

Emergency Operations Centre (EOC) – the physical location at which the coordination of information and resources to support incident management (on-scene operations) activities normally takes place.

Emergency Responder – the organization(s) required to plan and prepare a response to an emergency.

Emergency Social Services (ESS) – a planned emergency response program intended to meet the immediate and long-term survival and psychological needs of individuals impacted by an emergency or disaster.

Evacuation – the organized, phased, and supervised withdrawal, dispersal, or removal of individuals from dangerous or potentially dangerous areas, and their reception and care in safe areas.

Fort McMurray – the Urban Service Area of Fort McMurray, within the Regional Municipality of Wood Buffalo

Hazard – something that is potentially dangerous or harmful, often the root cause of an unwanted outcome.

Incident – an occurrence, natural or human induced (or caused) that requires an emergency response to protect life, property or the environment. Incidents can, for example, include major disasters, emergencies, wildland and urban fires, floods, etc.

Incident Action Plan – an oral or written plan containing general objectives reflecting the overall strategy for managing an incident. It may include the identification of operational resources and assignments. It may also include attachments that provide direction and important information for management of the incident during one or more operational periods.

Incident Command – the Incident Command System organizational element responsible for overall management of the incident and consisting of the Incident Commander (either single or unified command structure) and any assigned supporting staff.

Incident Command Post (ICP) – the field location where the primary functions are performed.

Incident Command System (ICS) – a standardized on-scene emergency management system specifically designed to provide an integrated organizational structure that reflects the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. ICS is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to aid in the management of resources during incidents. It is used for all kinds of emergencies and is applicable to small as well as large and complex incidents. ICS is used by various jurisdictions and functional agencies, both public and private, to organize field-level incident management operations.

Incident Management – the broad spectrum of activities and organizations providing effective and efficient operations, coordination, and support applied at all levels of government, utilizing both governmental and nongovernmental resources to plan for, respond to, and recover from an incident, regardless of cause, size, or complexity.

Incident Management Team (IMT) – contains personnel who are deployed to assist with the management of an incident. The level of training and experience of the IMT members, coupled with the identified formal response requirements and responsibilities of the IMT, are factors in determining “type” or level of IMT.

Indigenous Community – the various Indigenous peoples of Canada. This report refers primarily to Fort McKay First Nation, Fort McMurray First Nation, Mikisew Cree First Nation, and Athabasca Chipewyan First Nation communities and their members.

Information Management – the collection and management of information from one or more sources and the distribution of that information to one or more audiences.

Interim Accommodation – the phase of housing assistance that covers the gap between immediate sheltering and the return of disaster victims to permanent housing (generally up to 18 months).

Interoperability – ability of systems, personnel, and equipment to provide and receive functionality, data, information and / or services to and from other systems, personnel, and equipment, between both public and private agencies, departments, and other organizations, in a manner enabling them to operate effectively together. Allows emergency management / response personnel and their affiliated organizations to communicate within and across agencies and jurisdictions via voice, data, or video-on-demand, in real time, when needed, and when authorized.

Lead Agency – the organization assigned by legislation, regulation, policy or plans to lead in the emergency management of an incident.

Local Authority – includes the Council and Administration of the Regional Municipality of Wood Buffalo, Chief and Council of Indigenous Communities within the Regional Municipality of Wood

Buffalo that had entered into an agreement with the Government of Canada in which it is agreed that the band council is a local authority for the purposes of *Emergency Management Act*.

Logistics – the process and procedure for providing resources and other services to support incident management.

Municipality – a city, town, village, summer village, municipal district or special area that includes the area comprising an Indian reserve where an agreement is entered into with the Government of Canada in which it is agreed that the band council is a local authority for the purposes of *Emergency Management Act*.

Municipal Emergency Plan (MEP) – the master document which outlines the policy, operations, and roles and responsibilities for the corporation and the Agency Members when the MEP is activated.

Mutual Aid Agreement – written or oral agreement between and among agencies / organizations and / or jurisdictions that provides a mechanism to quickly obtain emergency assistance in the form of personnel, equipment, materials, and other associated services. The primary objective is to facilitate rapid, short-term deployment of emergency support prior to, during, and / or after an incident.

Protocol – a set of established guidelines for actions (which may be designated by individuals, teams, functions, or capabilities) under various specified conditions.

Recovery Plan – a plan developed to restore an affected area or community.

Re-entry – the systematic return of individuals back to the emergency-affected area based on direction of local authorities.

Resident – a person who resides within the Regional Municipality of Wood Buffalo.

Resources – all the assets, people, skills, information, technology, premises, and supplies and information that an organization has to have available to use, when needed, in order to operate and meets its objectives.

Situational Awareness – being aware and keeping track of what is happening provincially, federally and internationally. This can be achieved through sharing information on events and agency / stakeholder actions.

Unified Command (UC) – an Incident Command System application used when more than one agency has incident jurisdiction or when incidents cross political jurisdictions. Agencies work together through the designated members of the Unified Command, often the senior persons from agencies and / or disciplines participating in the UC, to establish a common set of objectives and strategies and a single Incident Action Plan.

Appendix B | Project Methodology

The process of conducting a Post-Incident Assessment of the Regional Municipality of Wood Buffalo Wildfire (the Wildfire) disaster is complex given the range of experiences, organizations, actions, and practices that are relevant. A multi-faceted approach was required, as no single method would have be sufficient to achieve a thorough and nuanced understanding of what occurred in preparation for the disaster, as well as what occurred during the response, stabilization, and recovery from the Wildfire.

As part of the development of observations, findings and recommendations, KPMG was engaged to undertake an inclusive process to discuss the timelines, processes, and overall efficiency and effectiveness of the response, and to learn what can be better done to address the needs arising from future disasters.

This involved three methods of information gathering to complete the Post-Incident Assessment:

- **Data Collection:** The purpose of this activity was to gather evidence of what planning and protocols were in place prior to the wildfire, as well as to gather information on the supports delivered and decisions made during the response and recovery. These were used to determine what worked well, what challenges were experienced, and what opportunities exist for improvement.

  For this review, key data sources included: existing processes / protocols, the Disaster Response and Recovery Framework, social media, meeting minutes, etc.

- **Stakeholder Engagement and Community Research:** The purpose of this activity was to gather perspectives and experiences on what worked well during the response and recovery, what challenges were experienced, and what opportunities exist for improvement. It also gave stakeholders an opportunity to be heard.

  A range of stakeholders were directly involved, including community leaders, government representatives, first responders, community organizations, business and industry, and residents. (A full list of stakeholders who participated can be found in Appendix C.

- **Cross Jurisdictional Analysis:** The purpose of this activity was to identify leading practices and lessons learned from other jurisdictions to determine what others have done in disaster response and recovery and identify best practices that can be leveraged in the Alberta context.

Given the complex, challenging and sensitive nature of this post-incident assessment, it was important to give careful consideration to how different stakeholders were approached. In addition, it was important that the overall engagement plan was separated into two streams: (1) stakeholder engagement and (2) community research, with a variety of dedicated techniques that were used to capture their input into the review process.

Stakeholder Engagement

We engaged AEMA's partners in the disaster response and recovery through:

- Interviews with 1 to 3 stakeholders to gather a specific perspective
- Focus groups with 5 to 10 stakeholders to gather multiple perspectives
- Working sessions with 5 to 15 stakeholders to extract shared experiences
- Online session to reach a broad audience around targeted topics
- Online survey

Community Research

We gathered the lived experience of residents of the RMWB area through:

- Casual in-person discussions with residents in common gathering places such as coffee shops, shopping malls, etc.
- Online survey

Stakeholder engagement and community research supported the post-incident review by:

- Creating the right opportunities for involvement by each stakeholder group to build a collective understanding of the Wildfire response
- Creating a clear understanding of what happened, when it happened, who was involved, and what was communicated during the Wildfire response
- Helping to inform the development of improvements, including those to the Province's emergency management frameworks and recovery frameworks, and
- Providing input into recommended actions to better respond to the next disaster when it occurs.

Background information and interview guides were prepared and distributed prior to each interview, focus group, or working session, and included key questions relevant to the stakeholder participant(s). Topics for discussion included prevention, preparedness, response, stabilization, recovery, communication, decision making, roles and responsibilities, and relationships. Each session also focused on identifying successes, opportunities for improvement, and challenges faced during the response.

Stakeholder engagement and community research activities began in January 2017 and concluded with the issuance of this report. This including several sessions that were held in the Regional Municipality of Wood Buffalo with several stakeholder groups, First Nation communities, and affected residents.

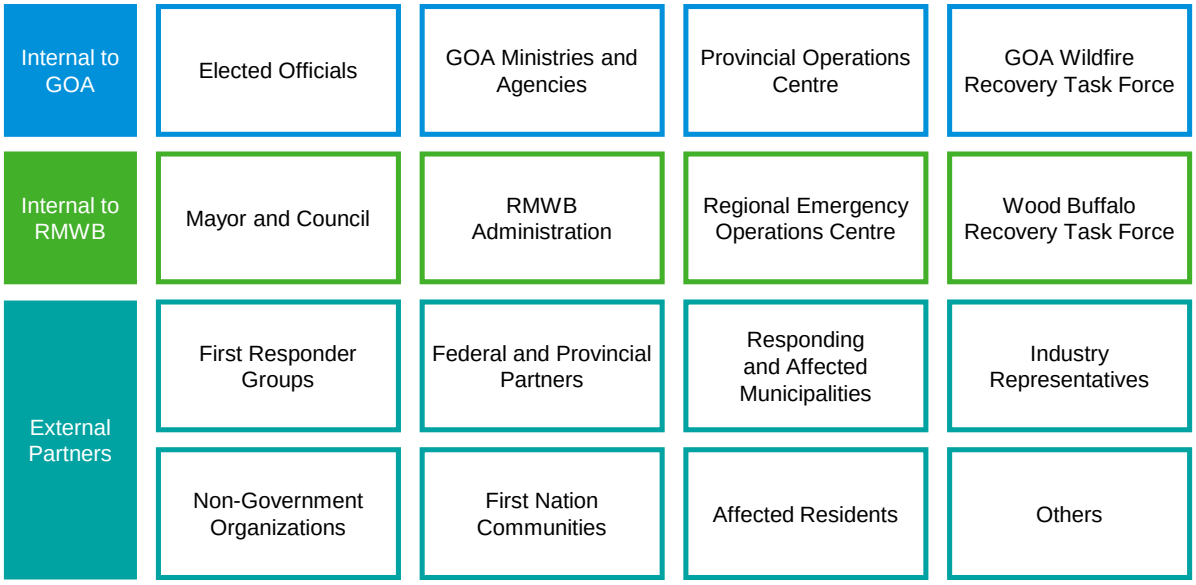
To develop this report, a team of subject matter experts and KPMG professionals reviewed all of the information that was collected during the stakeholder engagement and community research sessions, and validated the findings against documentation provided by the Government of Alberta and the Regional Municipality of Wood Buffalo.

A thorough analysis of the findings allowed for identification of key themes, and opportunities for improvement which became the recommendations discussed through the report.

Appendix C | Key Stakeholders

During the Post-Incident Assessment of the May 2016 Wood Buffalo Wildfire, KPMG engaged with more than 260 individuals representing AEMA and its partners, approximately 5,400 residents, and 2 First Nation communities.

These stakeholders, as described below, had a role in the Wildfire response and recovery efforts, and were categorized under the perspective through which they were engaged for this review. As a result, some stakeholders may belong to more than a single group.



Stakeholders Internal to Government of Alberta

- **Elected Officials** – this group included the Premier, Leader of the Opposition, MLAs, and select Ministers that were involved during the Wildfire response.
- **Government of Alberta Departments and Agencies** – Several Deputy Ministers and key representatives across the 20 Departments of the Government of Alberta, and key government agencies, including Alberta Health Services.
- **Provincial Operations Centre** (POC) – POC leadership and Departmental representatives that were involved in the coordination of the cross-government response, and provided support to local / municipal governments as needed.
- **Provincial Wildfire Recovery Task Force** – staff seconded to the Task Force who participated in recovery planning, coordination, and execution, in support of the Region.

Stakeholders Internal to the Region

- **Mayor and Council** includes elected officials representing the Regional Municipality of Wood Buffalo.
- **Regional Administration** includes the Chief Administrative Officer, and Directors of Municipal Departments in the Region.
- **Regional Emergency Operations Centre** – staff and representatives from emergency management agencies, municipal departments, and social services providers who coordinated the Region's response to the Wildfire.
- **Wood Buffalo Recovery Task Force** –municipal staff who played a role in the recovery efforts of the Regions.

External Partners

- **First Responder Groups** – this group included individuals from municipal fire departments across Alberta, RCMP, and CAN-TF2.
- **Federal and Provincial Partners** – this included several federal entities such as the Government Operations Centre, Public Safety Canada, First Nation and Inuit Health Branch, etc., as well as other provincial partners.
- **Responding and Affected Municipalities** – this included the nine (9) major municipalities in Alberta, as well as the corridor of municipalities who were impacted by the evacuation as residents traveled north and south along Highway 63.
- **Industry Representatives** – this included key oil and gas representatives, utility representatives, and retail organizations.
- **Non-Government Organizations** (NGO) – This included representatives from the Canadian Red Cross and several NGOs who provided supports and services to evacuees and first responders throughout the response to the Wildfire.
- **First Nation Communities** – this included two First Nation communities impacted by the Wildfire.
- **Affected Residents** – This included residents affected by the Wildfire disaster.
- **Others** – This included any additional organizations that provided services to evacuees (e.g. post-secondary institutions), or how they were impacted by the Wildfire (e.g. Regional Municipality of Wood Buffalo Chamber of Commerce).

Appendix D | Case Studies

Lesser Slave Lake Wildfire | May 2011

Context

Area burned:	4700 hectares
Number of people evacuated:	15,000
Number of homes destroyed:	730
Fatalities:	1 helicopter pilot
Estimated cost of damage:	$750 million
Emergency management authority:	Town of Slave Lake

The wildfires that threatened the Lesser Slave Lake region in May of 2011 resulted in the largest disaster in the history of Alberta until that time. The fire forced the complete evacuation of the town of Slave Lake and the surrounding area – the largest such displacement in the province's history until this past year. Roughly a quarter of the Town of Slave Lake was destroyed, leaving 732 residents homeless. No casualties were reported among the town's population, but a pilot was killed when his helicopter crashed while he was battling the fires around the community. Insurable damage was estimated at $750 million, making it the second costliest insured disaster in the country's history at the time.

Lessons Learned

Prevention and Preparedness

Prior to the Lesser Slave Lake Wildfire, Alberta had experienced very few large disasters in its history, and none that required the evacuation of so many people. The general state of preparedness prior to the Lesser Slave Lake regional wildfires reflected this; the plans, systems and resources in place to cope with emergencies were more appropriate to the smaller events that were typical of Alberta's past experience. Alberta's systems for emergency management were challenged to adapt to this larger disaster than had ever been experienced before, particularly since this emergency situation involved multiple communities and all levels of government.

Response

The Lesser Slave Lake disaster stretched governments and communities to coordinate the incredible range of expertise and resources required to effectively respond.

Emergency Command – A number of the coordination challenges experienced were due to the fact that Alberta had not fully implemented the Incident Command System, a leading practice recognized across North America that enables clear roles, responsibilities and terminology for coordinated incident response, wherein all participants know who they should be reporting to and communicating with. While this model had been adopted by the Province of Alberta, and included in the Alberta

Emergency Management Plan, at the time of the disaster it had not yet been formally implemented, and training related to this new command structure was not complete.

Evacuation – The evacuation was successful by the most important measure: no civilian lives were lost during the evacuation. This was achieved in large part due to good judgement and quick decision making, as no plans were available at local or provincial levels to accommodate the need to evacuate so many residents. Most were not well-prepared or trained for the possibility of evacuation, from individual residents to governments to first responders. The local community was not equipped with sufficient infrastructure or supplies for optimal coordination of a local emergency response, let alone a large-scale evacuation. In addition, the process for deciding to evacuate, issuing the order and executing it were not fully clear to everyone involved.

Emergency Communication –The review of the response to the Lesser Slave Lake wildfire reflected that although the speed and scale of the wildfires limited the opportunity for warning residents, the systems for advance warning and notification of residents were nevertheless insufficient. The Public Affairs Bureau did an admirable job of delivering crisis communications during the Lesser Slave Lake disaster, but provincial and local officials struggled to communicate in a timely and coordinated manner due to the sheer volume of information, tasks and demands that they were struggling with. Better preparation would have helped streamline emergency communications.

Emergency Social Services – Municipalities were individually responsible for supporting evacuees according to their available plans and resources, but many of the required services were provincial in nature. The Government of Alberta did not have predetermined policies, procedures or plans to coordinate this component of Disaster Social Services across both ministries and municipalities. As a result, health and human services were initially provided to residents and responders more or less independently by different ministries, municipalities, and organizations. Under the leadership of the Task Force, the province established and funded a Regional Recovery Coordination Group to coordinate support services after the evacuation period, which included a resource responsible for long-term social recovery.

Stabilization and Recovery

Alberta had not previously needed to deploy disaster recovery support of the magnitude that was required following the Lesser Slave Lake regional wildfires. Consequently, many of the processes to transition from emergency response to recovery had to be built from scratch and some were seen to have been more efficient than others. Although there were several notable successes in the recovery efforts, the need to be better prepared for disaster recovery was highlighted.

Source: Lesser Slave Lake Regional Urban Interface Wildfire – Lessons Learned Report. Produced by KPMG for the Alberta Emergency Management Agency, 2012. Accessed February 25, 2017 at: http://www.aema.alberta.ca/documents/0426-Lessons-Learned-Final-Report.pdf

Southern Alberta Floods | June 2013

Context

Number of people evacuated:	125,000
Number of homes destroyed:	14,500
Fatalities:	5 civilians
Estimated cost of damage:	$5 billion
Emergency management authority:	Alberta Emergency Management Agency, an agency of the Ministry of Municipal Affairs

The 2013 Southern Alberta floods were the worst flooding event in the province's history, and one of the largest natural disasters in Canadian history. The speed of onset, sheer scope and magnitude of the flood, and the tremendous resulting damage tested Alberta's emergency management system to a degree never before encountered, and rarely seen globally. Over 30 communities declared Local States of Emergency, and for the first time, a provincially declared State of Emergency for the Town of High River was called. With more than 125,000 persons evacuated, the flood caused Canada's largest evacuation in more than 60 years.

Lessons Learned

Prevention and Preparedness

The review of the provincial response to the Southern Alberta floods found that the level of preparedness varied in different contexts. In situations where an established framework, structure, and / or plan was in place, and people were aware of the details and appropriately trained, the overall outcomes were good. For example, the Public Safety Governance framework, developed in response to the 2011 Slave Lake wildfire, identified clear roles and responsibilities within the Government of Alberta, and helped set the conditions for success. However, when these elements were absent, execution was a challenge and placed additional burden on individuals.

Response

The response to the 2013 floods highlighted the extensive emergency management skills, capability and capacity within Alberta's provincial Ministries, municipalities, NGOs, Federal partners and industry. However, harnessing and coordinating the Province's emergency management capability and capacity required provincial frameworks, structures and plans to be in place to provide the mandated coordination, policy direction, leadership, plan, consultation and assistance. Overall AEMA and the Government of Alberta were successful in executing their responsibilities, but a greater effort was found to be required to foster and maintain the areas of strength and address opportunities for improvement with the frameworks, structures and plans.

Emergency Command – In addition, the review highlighted the value of using the Incident Command System during the 2013 floods, and the need to improve and adapt this system to meet the needs of the Government of Alberta.

Evacuation – Over 125,000 people in numerous municipalities across the flooded area were evacuated in Canada's largest evacuation in 60 years. The Province's support of public alerts regarding the evacuation orders was found to be effective. The Alberta Emergency Alert (AEA) system functioned as intended, and was widely adopted across the numerous affected municipalities. Some opportunities for improving the AEA in an effort to reach more individuals through as many means as possible were identified.

Emergency Communication – Communications to the public was found to be effective overall, but Public Affairs Bureau staff required improved crisis communications training, integration with elected officials and continued participation in all POC training. Communications within the Government of Alberta were found to be effective despite the volume of incoming information, the challenge of synthesising and analyzing this information, and the outdated incident management system in the POC. Communications between the Government of Alberta and municipalities and First Nations were greatly facilitated by the presence of Field Officers in these communities.

Emergency Social Services – The lack of a formalized and comprehensive emergency social services framework was one of the most significant gaps in overall response and recovery. Coordinating and delivering emergency social services in large scale disasters is inherently complex and there are numerous resources and specialists that need to be coordinated. The absence of a provincial framework resulted in coordination and communication issues, lack of clarity regarding roles and responsibilities and challenges with delivery. Although challenges were eventually overcome through the outstanding efforts of the individuals and groups involved, the disaster identified an urgent need to develop and implement a provincial emergency social services framework.

Stabilization and Recovery

In the early days of the flood, the provincial government created the Ministerial Task Force and Flood Recovery Task Force to oversee recovery efforts, following the task force model developed during the 2011 Slave Lake fire. These models clearly worked and helped enable an efficient recovery effort, and aligned with leading practices for providing sustained recovery efforts.

On the other hand, the province's Disaster Recovery Program was found to have limitations in its ability to meet the needs and expectations created by the scope and magnitude of the 2013 floods. A separate review of the DRP identified a number of areas for redesign, which were completed following the flood.

Source: Review and Analysis of the Government of Alberta's Response to and Recovery from 2013 Floods. Produced by MNP for the Alberta Emergency Management Agency, 2015. Accessed February 25, 2017 at: http://www.aema.alberta.ca/documents/2013-flood-response-report.pdf

BC Wildfires | Summer 2003

Context

Area burned:	265,000 hectares
Number of people evacuated:	45,000
Number of homes destroyed:	334
Fatalities:	3 aerial firefighters
Estimated cost of damage:	$700 million
Emergency management authority:	Emergency Management BC, an agency of the Ministry of Public Safety and Solicitor General

The 2003 fire season was one of the most catastrophic in British Columbia's recorded history. Due to an extended drought in the southern half of the province, forest firefighters faced conditions never previously seen in Canada. Lightning strikes, human carelessness, and arson all contributed to igniting nearly 2,500 fires involving more than 10,000 firefighters and support personnel, and burning more than 265,000 hectares. The Okanagan Mountain Park fire was the most significant urban interface wildfire that summer, primarily affecting the communities of Naramata and Kelowna. It caused the largest evacuation in BC history, involving more than 45,000 people. Tragically, two air tanker crew members and a helicopter pilot lost their lives fighting the blaze.

Lessons Learned

Prevention and Preparedness

At the time of the 2003 wildfires, municipalities and regional districts in BC were not required to have emergency plans in place, nor were they monitored for quality. This left large areas of the province with no emergency plan in place. The wildfire review identified the need for mandatory, standardized municipal and regional emergency plans that address the hazard, risk and impact of interface wildfires, including subdivision building standards, codes, regulations, and prevention and hazard reduction efforts such as fuel elimination strategies, land use management and zoning policies.

Response

Emergency Command – The British Columbia Emergency Response Management System (BCERMS) had adopted much of the Incident Command System (ICS) used in other jurisdictions, including the United States and Ontario. However, there was a lack of standardization and implementation of training across provincial, municipal and regional agencies and between jurisdictions. Following the wildfire, it was recommended for the ICS to be universally adopted by all

provincial and local government agencies, and for BCERMS to ensure that all personnel within the ICS system, regardless of their organization of origin, be trained through a single, standardized province-wide approach.

Evacuation – During the summer of 2003, the Office of the Fire Commissioner issued 122 Evacuation Alerts and 66 Evacuation Orders. The fact that no civilian lives were lost during the evacuations is a testimony to the overall success of the evacuation procedures. However, criticisms of the evacuations related to the overly bureaucratic and complex process by which evacuation decisions were made, the late timing of evacuation notifications, and the slowness of the evacuation process.

Emergency Communication – During the initial interface fires, there was a lack of understanding about the role of the media and the assistance they could provide in helping to inform the public. Some provincial and local officials tried to limit the media's access to fire areas for their own safety, and as a result, some media coverage was inaccurate. During later fires, officials shifted to a more open approach to media relations, providing the public and the media with the latest available information in a timely, forthright and accurate manner. This highlighted the need for a crisis communications strategy that enabled the timely delivery of accurate information to the public.

With respect to inter-agency communications, there was at times a significant gap in communications among the numerous agencies involved in the disaster response. The improvement in media communications over the course of the fires suggests there are some lessons to be learned. In particular, the public must receive timely and accurate information right from the beginning of the emergency.

Emergency Social Services – More evacuees sought assistance from the province through Emergency Social Services (ESS) Reception Centres during Firestorm 2003 than for any other disaster in British Columbia's history. While the review heard many comments applauding the efforts of the people responsible for running the evacuation centres, it also found problems with the overly complicated registration process and inequitable distribution of benefits.

Stabilization and Recovery

Just as the numerous affected communities varied in their level of preparedness, they also varied in their ability to recover. The review found that local emergency plans – and the associated recovery plans – varied greatly from community to community.

Further, there was no central agency responsible for coordinating the recovery efforts of the numerous NGOs involved, resulting in overlap and duplication of efforts.

Source: Firestorm 2003 Provincial Review. Produced by the British Columbia Firestorm 2003 Provincial Review Team for Premier Gordon Campbell, 2004. Accessed February 25, 2017 at http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/wildfire-management/governance/bcws_firestormreport_2003.pdf

California Wildfires | Fall 2007

Context

California's 2007 wildfire season included over 9,000 separate wildfires, 30 of which were part of the Fall 2007 Firestorm that burned approximately 210,000 hectares in seven counties between Santa Barbara and the US – Mexico border. The wildfires killed a total of seven people; 160 others were injured, including at least 124 firefighters. The fires forced approximately 0.5 million people to evacuate from their homes, becoming the largest evacuation in California's history.

Area burned:	210,000 hectares
Number of people evacuated:	500,000
Number of homes destroyed:	2180
Fatalities:	7
Emergency management authority:	California Office of Emergency Services

The 2007 wildfires were an opportunity for California's emergency response community to enact lessons learned from the 2003 Firestorm, which were the largest set of wildfires in California's history.

Lessons Learned

Prevention and Preparedness

Pre-planning evacuations and trigger points for their implementation, pre-staging resources and equipment, and utilizing unified command with law enforcement during initial attack were instrumental in the rapid response to the fires and the safe evacuation of thousands of people.

Response

The review of California's response to the 2007 wildfires identified the following lessons learned:

Emergency Command:

- Communication and coordination responsibilities among Incident Command Teams, Area Command Teams (ACTs), Multi-Agency Coordinating (MAC) Groups, and Emergency Operations Centres (EOCs) should be made clear and widely shared.
- Assigning roles and responsibilities among area command, jurisdictional agencies, and emergency services is best accomplished through the use of Delegations of Authority. Letters of

delegation to ACTs and IMTs by the agency administration with jurisdiction worked well to establish and communicate authority and should be utilized in the future.

- Individual initiative guidelines for firefighters who may be 'curbside waiting to be dispatched' while homes within their sight are becoming compromised should be addressed.
- The continuing support for differing work-shift schedules between federal, state and county agencies disrupts safe and effective staffing for field operations.

Evacuation and Emergency Social Services:

- The Reverse 911 system (where residents pre-register their phone number with local emergency authorities who alert them of an evacuation order) was noted as being very effective for notifying residents of evacuations. The system was much quicker than the standard door-to-door approach.
- When evacuations were conducted by zip code, efforts were also made to ensure that evacuation centres were set up by zip code, ensuring that the residents retained a sense of community and mutual support while they waited to return home.
- A Disaster Relief Centre was hugely beneficial to evacuees and considered a success. It featured about 50 different agencies and booths offering evacuees "one-stop shopping" for services such as a new driver's license, social security card, IRS information, animal control, and U.S. Post Office services.
- The evacuation, transportation, and care of special needs medical patients requires early notification of hospital staff. Medical patients must be taken to skilled nursing facilities under memorandums of understanding. An unresolved issue with payment for such services remains at the core of caring for this special class of evacuees.
- Re-entry plans were most successful when they were preceded by the facilitation of information flow among all of the organizations, agencies and utilities that would be impacted. Planning sessions included county road departments, local fire authorities, law enforcement, and gas, water and electric utility representatives.

Emergency Communication:

- A patch conducted at the system level was found to be capable of connecting 800 MHz systems to VHF systems, thus enabling fireline communications over a wide geographic area. The patch, however, had limited capabilities and required approval from all levels of government before it could be installed.
- Radio frequency translation equipment was available and had been purchased by several local government entities in southern California. However, a common communications plan was also

required before the equipment went into use because turning it on without one may have obliterated the current communications systems.

- Prepositioning communications equipment as teams are being prepositioned may disperse a high ramp-up demand on National Interagency Fire Center communications personnel and enable quicker installment of incident command communications.
- Pre-designated Incident Command Post locations with phone pedestals installed would support quicker incident communications capabilities.
- Obtaining the use of enough frequencies to maintain effective incident communications continues to be a challenge. One respondent recommended that a statewide frequency coordinator be utilized to resolve at least some issues involving frequency assignments.

Source: Southern California Fires 2007: What we learned, how we worked. Produced by the Wildland Fire Lessons Learned Center, no date. Accessed February 25, 2017 at: http://www.npstc.org/resourceCD/Operations_2007_SoCal_Fires_Lesson_Learned.pdf

Victoria (Australia) Bushfires | December 2015 to January 2016

Context

Area burned:	2500 hectares
Number of people evacuated:	16,000
Number of homes destroyed:	116
Fatalities:	0
Emergency management authority:	Emergency Management Victoria, an entity of the Department of Justice and Regulation

On December 19, 2015, two bushfires were ignited by lightning strikes in Victoria's Barwon Otway area, known for its Great Ocean Road and beach vacation destinations. Between December 19 and January 21 – the height of the summer tourist season – the bushfire that became known as the Wye River–Jamieson Track fire burned 2500 hectares and destroyed 116 houses in the communities of Wye River and Separation Creek.

Although far from Victoria's 2009 bushfires in scale of destruction, the Wye River–Jamieson Track bushfires are instructive for being the first event since the introduction of Victoria's new evacuation policy, which built on the lessons learned in 2009.

Lessons Learned

Prevention and Preparedness

Incident planning was an important aspect of managing the Wye River – Jamieson Track fire. Throughout the incident, the Incident Controller, supported by the Incident Management Team, undertook a range of planning activities such as:

- Incident shift plans to provide a framework for daily activities, in the context of anticipated circumstances.
- Options analyses to help consider and decide upon major alternative approaches and control strategies to manage the incident.
- Preparedness plans for actions to limit the potential negative consequences of the incident.
- Contingency plans to ensure that operating plans, inter-agency arrangements, and resources were ready for activation upon occurrence of a pre-defined trigger event.
- Intelligence used to inform such planning includes weather forecasts, reports from ground crews or observers, aerial intelligence and infrared images, predictive modelling of fire or smoke behaviour, resource availability including crews, vehicles and aircraft, and geographic and population information.

The operational standards and procedures for emergency management incident action planning are based on the Australasian Inter-Service Incident Management System (AIIMS), the *Victoria Bushfire Handbook 2015* and Joint Standard Operating Procedures. The *Victorian Bushfire Handbook 2015* provides additional operational guidance around management structures used by fire agencies for bushfire preparedness, readiness and response in Victoria.

Response

Emergency Command – Effective response and maintaining the safety of communities relied on agencies and organizations at state, regional and incident level working collaboratively within the State's emergency management arrangements. Command, control and coordination were key aspects of the emergency management arrangements that provided for an effective all-agencies approach to incident management. These roles applied to both response to the emergency incident and to maintaining community safety.

Evacuation and Emergency Communication – Engagement with the community commenced when the fire started on 19 December. A plan for the broader Barwon South-West Region was in place as well as the fire-specific communication activities.

Information and warnings during the period December 19–25 were constructed and issued in accordance with protocol. Information and warnings were issued through multi-modal media and

communication channels to reach as many people as possible. These included Victoria's primary emergency website *VicEmergency* (which aggregates information from relevant agencies and publishes it on the site and through social media), the FireReady smartphone application, voice and text messaging issued by the Emergency Alert system, a toll-free telephone information line, emergency broadcasters with relevant Memorandums of Understanding, community alert sirens, roadside signage, and person-to-person (i.e., door-knocking). This was a key factor in having well prepared communities who responded and took action that resulted in the preservation of life.

Evacuation and traffic management planning was completed and ready to implement. The communities affected by the fire were continually informed by the Incident Management Team of the risk presented by the fire, the changing control strategy, and the likelihood of an evacuation taking place.

At the time the evacuation was approved by the Incident Controller, Victoria Police were immediately able to use the package of documents prepared for the evacuation and the traffic management plans. These included the relevant Joint Standard Operating Procedures, maps, housing lists and vulnerable persons register. All houses in the evacuation areas were door-knocked, and most residents chose to safely evacuate. The evacuation was noted by key contributors as being successful, without incident, and orderly. One contributor observed that 'the community knew what to do'.

Provision was made for persons identified by their local government area as being vulnerable to be considered during evacuation. Incident management teams had previously engaged with the tourism sector to address issues of visitors without local knowledge or English-language capability. The role of Victoria Police, in its successful collaboration with local government and supporting agencies in the evacuation planning and implementation, was noted with approval.

Source: Review of the initial response to the 2015 Wye River – Jamieson Track fire. Produced by the State of Victoria Inspector General for Emergency Management, 2015. Accessed February 25, 2017 at:
http://www.igem.vic.gov.au/home/reports+and+publications/reports/report+review+of+the+initial+response+to+the+2015+wye+river+jamieson+track+fire

Overview of Evacuations

The following table provides a high-level overview of the evacuation experiences of the case study emergency events reviewed for this Post-Incident Assessment, along with the Wildfire. As noted in the preceding section of this report, evacuations in the context of emergency events can have very unique characteristics, making comparison difficult. Factors that must be used in assessing risk and preparing for an evacuation include:[58]

- Hazard source and type such as wildfire or flood
- Social and demographic factors such as population density, population location in the community and population age stratification
- Major exit routes including highways and arterial roads, and adequacy of transportation
- Weather (e.g. wind), geography and terrain
- Time of day of the incident; and
- Propensity of citizen action and behaviour.

The case studies presented below highlight the various factors that must be considered during evacuation planning and execution. Remarks are provided for the reader's consideration:

Disaster & Number of Evacuees	Evacuation Notices	Remarks
Wood Buffalo Wildfire 88,000	Started mid-afternoon May 3rd, 2016 and continued through May 4th.	The Regional Municipality of Wood Buffalo has a mid-level population density, a young demographic and is surrounded by a population engrained with a safety culture. There are limited evacuation routes out of densely populated communities, and out of the Region at large (one major highway north and south). Some evacuees sent North were eventually evacuated South to relocate to designated urban receptions centres.
Lesser Slave Lake Wildfire 15,000	May 14, 2011 at 10:30 p.m. evacuation orders are issued for surrounding communities. May 15 at 9:30 p.m. full	Broad demographics and a rural community setting gave this fire a unique character. More than a single exit route provided options for residents to evacuate the area. As was the case in the Wood Buffalo fire, the fire encroached close to the wildland-urban interface with risky weather

Disaster & Number of Evacuees	Evacuation Notices	Remarks
	evacuation of the Town of Slave Lake is ordered.	conditions predicted earlier in the day, while mandatory evacuation did not occur until evening.
Southern Alberta Floods 125,000	29 Original alerts were issued at various times on June 20th, 2013	The Alberta Emergency Alert system functioned as intended, and was utilized by many affected municipalities. The impact of the floods to roads and evacuation routes presented some issues, as did the scope of affected communities, geography and population density.
BC Wildfires 45,000	Alerts started midday, with the latest alert coming at 1:00 a.m. on July 19th, 2009.	There were criticisms of the evacuations related to the overly bureaucratic and complex process by which evacuation decisions were made, the late timing of the notifications, and slowness of the evacuation process.
California Wildfires 500,000	There were many alerts issued over the course of several days	Pre-incident planning, early trigger points for implementation and establishing unified command with law enforcement officials were the most critical elements for contributing to success in evacuations. The Reverse 911 system was also noted as being very effective to for notifications.
Victoria Bushfires 16,000	Started before noon, and all communities had evacuation orders by around 4 p.m. on Dec 25th, 2015	Engagement with the community started on Dec 19th, when the fire started. Many communication channels were employed to reach as many people as possible, and evacuation and traffic management planning was completed in advance of evacuation to mitigate traffic congestion and transportation risks.

Appendix E | Jurisdictional Information

An Emergency Management Framework for Canada

Public Safety Canada maintains an Emergency Management Framework for Canada (the Framework). The Framework was developed through collaboration between the federal, provincial and territorial governments to establish a common approach to emergency management initiatives.

The Framework identifies four interdependent emergency management components: Prevention and Mitigation, Preparedness, Response, and Recovery and emphasizes the importance of taking a comprehensive approach to all of the components.

The Framework lays out guiding principles for emergency management across Canada:

- Responsibility
- Comprehensive
- Partnerships
- Coherence of Action
- Risk-based
- All-Hazards
- Resilience
- Clear Communications
- Continuous Improvement
- Ethical

The framework also documents a governance structure for the overall governance of emergency management in Canada, which is supported by specific working groups, and instruments that support coordination, including the National Strategy for Critical Infrastructure and Action Plan, and the National Emergency Response System.

Source: The Emergency Management Framework for Canada via the Public Safety Canada Website. Accessed on March 21, 2017 at: https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/mrgnc-mngmnt-frmwrk/index-en.aspx

Sendai Framework for Disaster Risk Reduction

The United Nations Sendai Framework for Disaster Risk Reduction (Sendai Framework) Framework is a 15-year, voluntary, non-binding agreement which recognizes that the State has the primary role to reduce disaster risk but that responsibility should be shared with other stakeholders including local government, the private sector and other stakeholders. It aims to achieve the following outcome: *The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.*

The Framework identifies four priorities for action and considerations for implementation of each:

Priority 1. Understanding disaster risk

Disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be used for risk assessment, prevention, mitigation, preparedness and response.

Priority 2. Strengthening disaster risk governance to manage disaster risk

Disaster risk governance at the national, regional and global levels is very important for prevention, mitigation, preparedness, response, recovery, and rehabilitation. It fosters collaboration and partnership.

Priority 3. Investing in disaster risk reduction for resilience

Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment.

Priority 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction

The growth of disaster risk means there is a need to strengthen disaster preparedness for response, take action in anticipation of events, and ensure capacities are in place for effective response and recovery at all levels. The recovery, rehabilitation and reconstruction phase is a critical opportunity to build back better, including through integrating disaster risk reduction into development measures.

Source: The United Nations Office for Disaster Risk Reduction website and the Sendai Framework for Disaster Risk Reduction. Accessed on March 21, 2017 at:
http://www.unisdr.org/we/inform/publications/43291
http://www.unisdr.org/files/43291_sendaiframeworkfordrren.pdf

Incident Command System

The following is a summary of the Incident Command System (ICS), all of which is sourced from the Incident Command System Operational Description document available on ICS Canada's website.[59]

The ICS is a standardized approach to incident management. ICS has three primary purposes:

- To provide for the orderly and predictable division of labour
- To provide for the overall safety at the incident or event
- To ensure that the work at the incident or event is performed efficiently and effectively

ICS is designed to enable the effective and efficient management of incidents by providing an integrated approach to coordinating facilities, equipment, personnel, procedures, and communications, all operating within a common organizational structure. ICS is a very flexible system, in that it allows response organizations to adopt only those aspects that are relevant to the incident at hand.

Principles and Features

ICS consists of 14 principles and features:

- *Common terminology*: common terms to enable multiple organizations to work together across all incident management functions and disaster scenarios.
- *Modular organization*: the response organization to expand and contract, integrating various components of ICS and roles and responsibilities within the command structure, throughout the life cycle and depending on the complexity of the disaster.
- *Management by objectives*: the response organization functions and operates in accordance will clearly established incident objectives.
- *Incident action planning*: all response activities are guided by coordinated incident action plans that provide incident priorities, objectives, strategies and tactics.
- *Manageable span of control*: supervisors are able to adequately supervise and coordinate their subordinates.
- *Incident facilities and location***:** the right operational support facilities are established in the right area, including incident command posts, bases, camps, staging arias, mass casualty triage areas, point-of-distribution sites, and others as required.
- *Comprehensive resource management*: an accurate and up-to-date picture of resources utilization is critical – resources that should be included include personnel, teams, equipment, supplies, and facilities available or potentially available for assignment or allocation.
- *Integrated communications***:** development and use of a common communications plan and interoperable communications processes and architectures.
- *Establishment and transfer of command*: command should be established from the beginning of the incident, and the agency with primary jurisdictional authority over the incident designates the individual at the scene responsible for establishing command.
- *Chain and unity of command*: there is an orderly line of authority within the ranks of the response organization, and all individuals have a designated supervisor to whom they report at the scene of the incident.

- *Unified command*: allows organizations and agencies with different legal, geographic and functional authorities and work together without affecting individual agency, authority, responsibility or accountability.
- *Personnel accountability*: accountability of resources at all jurisdictional levels and within individual functional areas – adherence to check-in/check-out, incident action planning, unity of command, personal responsibility, span of control, resources racking are all principles of personnel accountability.
- *Dispatch / deployment*: resources should respond only when requested or when dispatched by an appropriate authority.
- *Information and intelligence management*: process to gather, analyze, assess, share, and management incident-related information and intelligence.

ICS also provides additional guidance on incident command, which is responsible for the overall management of the incident, which involves incident command, general staff, functional sections, and incident management teams.

Incident Command

Incident command has two aspects. First, **command** occurs either through a single incident commander (IC) or, if multiple jurisdictions are involved in the incident, unified command (UC). Second, **command staff** report to the IC/US, and consist of the following:

- *Liaison Officer*: the incident command's point of contact for representatives of other governmental departments and agencies, NGOs, and/or private sector to provide input into incident-related matters, including organizational policies and incident-related matters. Representatives from assisting or cooperating organizations should coordinate through the Liaison Officer.
- *Safety Officer*: monitors incident operations and advices incident command on all matters relating to operational safety, including the health and safety of first responders. The Safety Officer is responsible for developing the Incident Safety Plan, and has emergency authority to stop and/or prevent unsafe acts during incident operations.
- *Information Officer*: responsible for interacting with the public and media and handling all incident-related information requests from other agencies.

General Staff and Functional Sections

The General Staff are responsible for the functional sections of incident command, as set out below. The Sections Chiefs may require one or more deputies:

- *Operations Section*: responsible for all tactical activities focused on reducing the immediate hazard, saving lives and property, establishing situational control, and restoring normal operations.
- *Planning Section*: collects, evaluates and disseminates incident situation information and intelligence to incident command and management personnel, and prepares reports, situational information, maintains resource status, and prepares IAPs, based on input from tom the operations section.
- *Logistics Section*: responsible for all service support requirements for facilitating effective and efficient incident management, including requesting resources from external partners.
- *Finance and Administration*: established when activities require on-scene or incident-specific finance and other administrative support, including personnel time, vendor contracts, compensation and claims and cost analysis for incident.
- *Intelligence and Investigative Function*: responsible for a system for the collection, analysis, and sharing of information developed from intelligence/investigation activities. This function can be embedded in other sections within the organizational structures, while other times, it can be added as an additional functional area.

Incident Management Teams (IMTs)

An IMT is a self-contained incident command organization, consisting of all of the incident command roles and functions discussed above.

Appendix F | Recommendations from Past Reviews

The following outlines the recommendations from the previous two reviews completed following major disasters in 2011 and 2013 in Alberta – *Slave Lake Lessons Learned Report* and the *Review and Analysis of the Government of Alberta's Response to and Recovery from the 2013 Floods*.

The table below identifies the:

- **Recommendation from the report** – "Slave Lake" denotes a recommendation from the *Slave Lake Lessons Learned Report* and "Floods" denotes a recommendation from the *Review and Analysis of the Government of Alberta's Response to and Recovery from the 2013 Floods*.
- Status of its implementation
  - **Red** denotes that the recommendation has not yet been implemented
  - **Amber** denotes that the recommendation was partially implemented, and
  - **Green** denotes that the recommendation was fully implemented.
- **Findings** that support the status assessment.

Previous Recommendation	Status	Findings
Prevention		
Build on the successes and experience of addressing the Lesser Slave Lake regional wildfires to ensure that emergency preparedness, response and recovery systems across the province are consistent with a set of shared principles. (Slave Lake)		The Alberta Emergency Plan sets out five strategic objectives for public safety governance across all emergency management levels. Additional work remains to strengthen the emergency management across all stakeholders.
Preparedness		
Enhance the system of supports for emergency planning and preparation by local communities. (Slave Lake)		Implementation of the Emergency Management Preparedness Program and Community Emergency Preparedness Program (and a dedicated Program for First Nation communities).

Previous Recommendation	Status	Findings
Reinforce Alberta's emergency response system by formally incorporating a Task Force or similar cross-ministry governance model, and by ensuring the availability of additional ministry personnel to support response and recovery efforts following large scale disasters. (Slave Lake)		Implementation of the Region's Wildfire Recovery Task Force.
Strengthen the Government of Alberta's role in quality assurance for emergency management. (Slave Lake)		Ongoing planning initiatives (CEMP, Indigenous programs, and AEMP) will contribute to overall quality.
Build on existing programs that enable regional collaboration by establishing formal expectations for, as well as more actively encouraging, municipal collaboration and resource sharing in emergency planning, response and recovery. (Slave Lake)		Enhanced programs, resources, and initiatives for inter-municipal cooperation, including around emergency management have been implemented. However not all regions have taken advantage of these opportunities.
Work with local communities to improve the preparedness of individual Albertans commensurate with the risk of an emergency. (Slave Lake)		AEMA provides information about individual emergency preparedness and participates in annual Emergency Preparedness Week activities. While ongoing efforts are being made to prepare Albertans, it is unclear whether the level of engagement with local communities has improved.
Improve provincial capability and infrastructure to manage personal information during an emergency. (Slave Lake)		Registration was provided by the Red Cross; however no formal system exists to manage personal information within the Government of Alberta during an emergency.

Previous Recommendation	Status	Findings
Improve local and provincial preparedness for the possibility of evacuation, building on the experience gained from coordinating the evacuation of much of the Lesser Slave Lake region. (Slave Lake)		Limited guidance is provided to municipalities through the CEMP program.
Develop an Emergency Management Staff Wellness Program. (Floods)		Several changes, such as the POC Augmentation Program, counselling services provided by Departments to Consequence Management Officers, and the development of standard operating procedures have begun to address this.
Complete the update to the Alberta Emergency Plan. (Floods)		The Alberta Emergency Plan updated in 2015.
Maintain existing frameworks, structures and plans, and implement identified improvements. (Floods)		The Alberta Emergency Plan updated in 2015.
Ensure training, awareness and exercises are a top priority and continue to develop, enhance and fund these activities. (Floods)		The Province has established a number of training programs for emergency management.
Continue to enhance and develop the Field Officer Program. (Floods)		AEMA has doubled the number of Field Officers across Alberta, including in First Nation communities.
Support and facilitate regionalization of emergency management in Alberta. (Floods)		Grant funding and supports are available to municipalities to support inter-municipal emergency planning.

Previous Recommendation	Status	Findings
Support and focus emergency management capacity building in First Nations. (Floods)		Significant progress has been made in First Nation community capacity around emergency response, based on the formal agreement with Indigenous and Northern Affairs Canada on March 2015.
Address staffing and staff capacity challenges through training and select hiring for key positions. (Floods)		Improvements were made to POC staffing using the POC Augmentation Program.
Pre-qualify vendors and create a standing offer / vendor of record list for contracted emergency management response and recovery services. (Floods)		Some lists were available, but they were not robust to include all resources needed in an emergency.
Response		
Ensure that Incident Management Teams are available to quickly deploy so that local governments have access to qualified incident management where needed and requested. (Slave Lake)		The Province is in the process of developing IMT / IST capabilities. The Province is in the process of working with regions to develop regionally focused All-Hazards IMTs in Alberta (Level 3).
Fully implement the Incident Command System so that emergency response roles and mandates are firmly established within a single, clear chain of command. (Slave Lake)		Mandatory use of ICS was implemented at the POC and within the Government of Alberta.
		While encouraged, there is currently no requirement for local authorities to implement ICS
Build provincial and local capacity, competencies and strategies for crisis communications. (Slave Lake)		The Public Affairs Bureau developed an updated Emergency Response Consequence Management Plan and developed several resources.

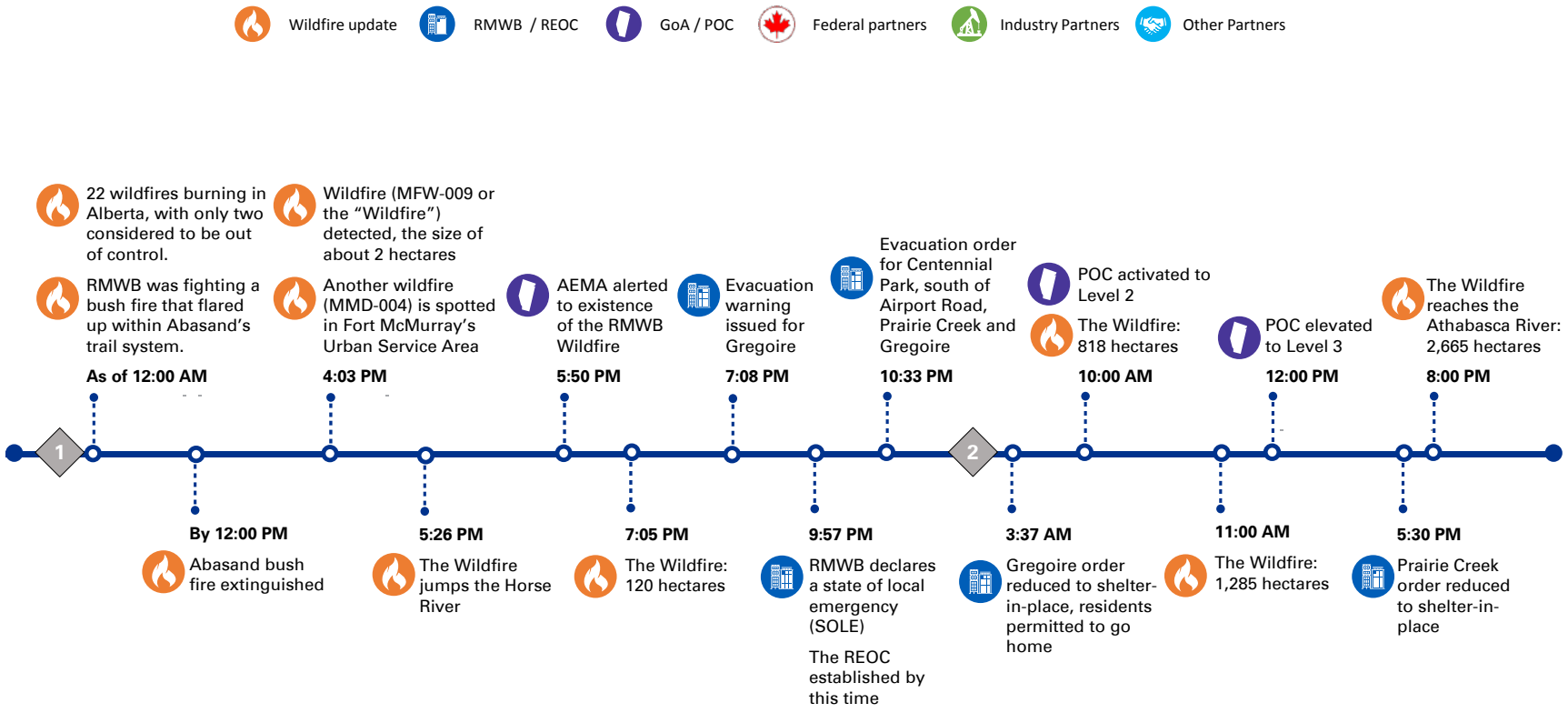
Previous Recommendation	Status	Findings
Improve integration of provincial expertise in environmental hazard testing and public health, in order to streamline testing, interpretation and communication of results following a wildfire. (Slave Lake)		During the Wildfire, a Drinking Water Quality Task Team was formed by Alberta Environment and Parks with participation from Alberta Health and the Office of the Chief Medical Officer of Health, Alberta Health Services, and Health Canada's First Nations and Inuit Health Branch to establish conditions for restoring potable water.
Develop an approach for the Government of Alberta to coordinate delivery across ministries of those Disaster Social Services that are delivered provincially. (Slave Lake)		A PESS Framework was developed, however additional work is needed to support understanding of roles, responsibilities and accountabilities under the Framework.
Build on the Lesser Slave Lake regional wildfires experience by formalizing policy, improving processes and building capacity to ensure timely distribution of funds, effective financial management and demonstration of accountability during future emergency response efforts. (Slave Lake)		Some resources that responded during the Wildfire took many months to receive reimbursement of their expenses. There were no clear guidelines on what the Province was responsible to pay for during the response, e.g. evacuation costs, etc.
Develop and implement a provincial Emergency Social Services framework. (Floods)		PESS framework was developed, but is not yet fully operationalized.
Develop a new, state of the art, Provincial Operations Centre (POC) facility. (Floods)		An investment was announced in Budget 2017 for a POC facility.
Continue to refine and improve Government of Alberta Business Continuity Program. (Floods)		The Government of Alberta Business Continuity Program was implemented in 2014, and further changes have been drafted and are awaiting approval.

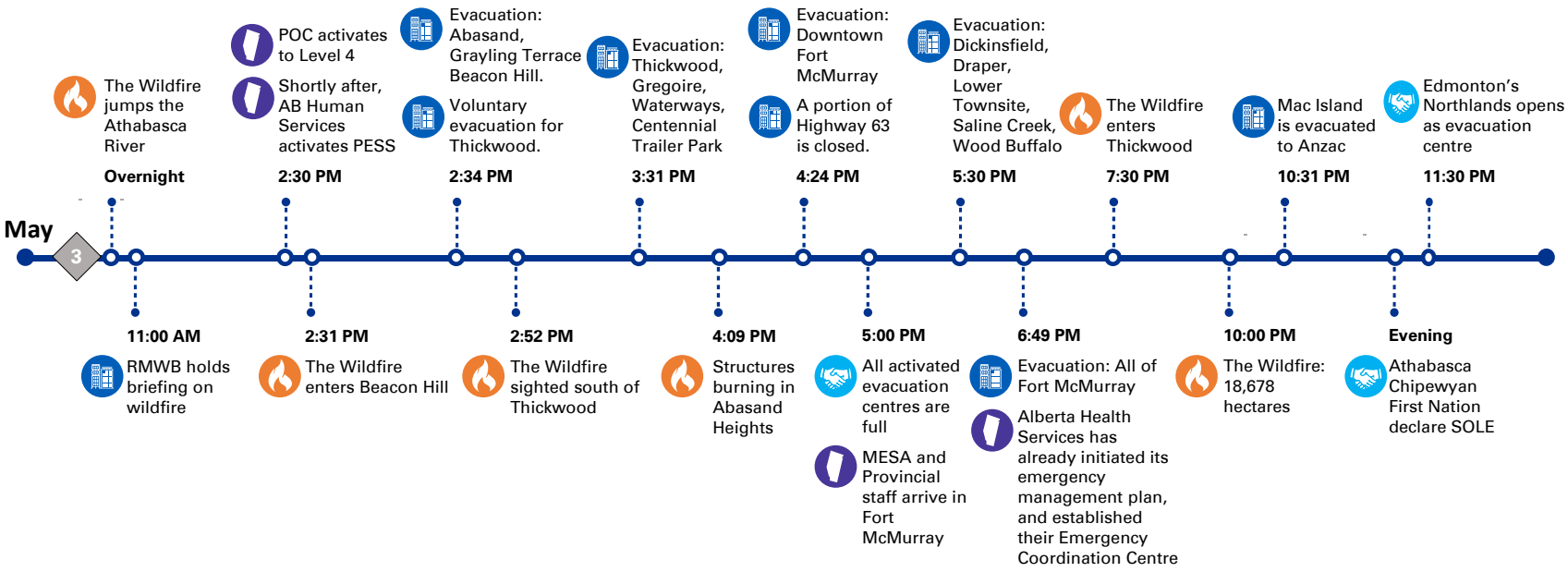
Previous Recommendation	Status	Findings
Improve communications and information passage within the Government of Alberta, to municipalities, and to the public. (Floods)		The Public Affairs Bureau developed an updated Emergency Response Consequence Management Plan. The POC also provided the Premier with a daily briefing, and at least daily updates were provided to the public from the Province.
Complete work on previously identified areas for improvement. (Floods)		Some of the recommendations have been addressed and some have not.
Document procedures that were developed and effectively used during the 2013 floods and action items identified in the numerous after action reviews completed to date. (Floods)		The Alberta Emergency Plan and the POC's standard operating procedures were updated following the Southern Alberta Floods. Several other standard operating procedures are under development.
Stabilization		
Create guidelines to help plan and execute re-entry following an evacuation, building on the successes of the re-entry after the Lesser Slave Lake regional wildfires. (Slave Lake)		They used appropriate criteria, but did not appear to have established guidelines in place prior to the outbreak of this event.
Recovery		
Clarify the Government of Alberta's overall disaster recovery philosophy and specific role with respect to housing and stimulating the local economy following a disaster. (Slave Lake)		Through the Recovery Framework and Emergency Management Plan, the Province clarified its intended focus for recovery.

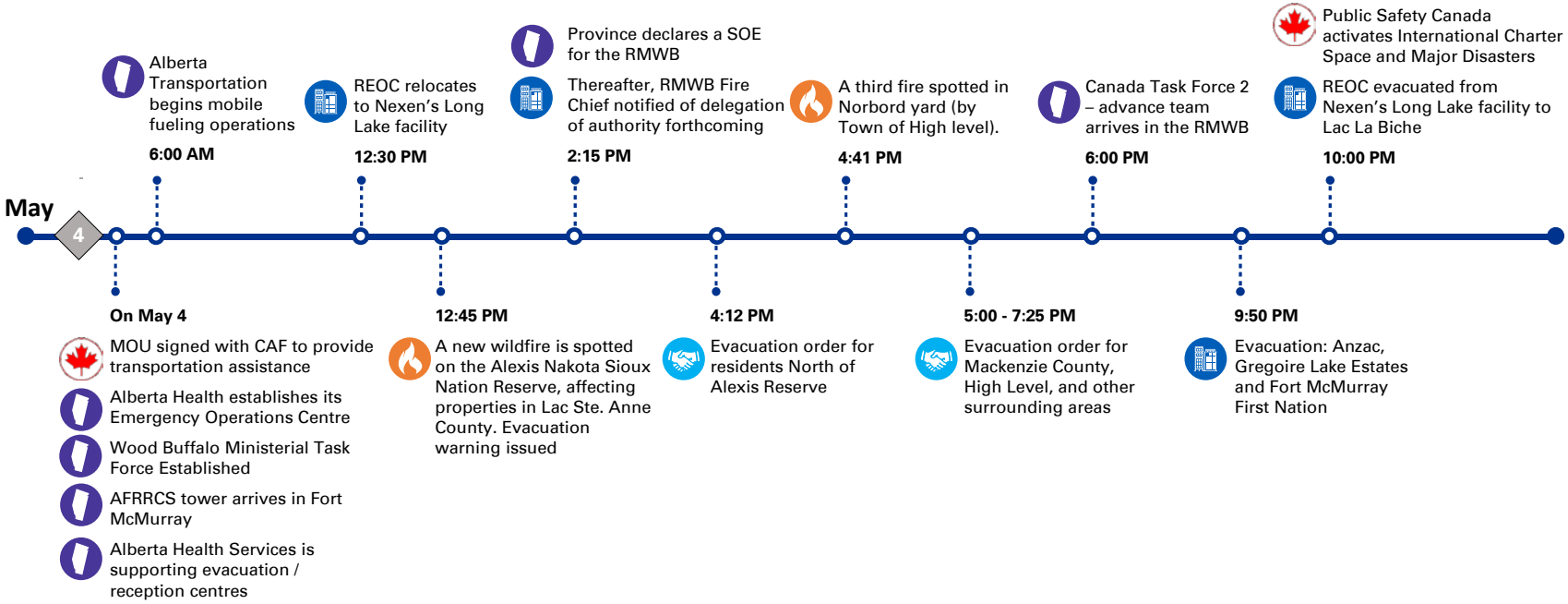
Previous Recommendation	Status	Findings
Formalize a provincial approach to support disaster recovery planning, building on the success of the shared planning process used after the Lesser Slave Lake regional wildfires including the regional Tri-Council model. (Slave Lake)		Progress has been made since Slave Lake through the cooperation between the Province and local governments and each other's role in recovery.
Develop a comprehensive and coordinated approach for funding of disaster recovery plans that coordinates streams of funding that are essential to restore an affected community, including government funds, the insurance industry, and donations. (Slave Lake)		Disaster Recovery Program improvements have been made, however, stakeholder feedback indicated there is still room for improvement on understanding of what constitutes eligible expenses and how these can be reimbursed.
Develop and implement a province-wide approach to managing donations following a disaster. (Slave Lake)		Management of physical donations was partially successful during the Wildfire response, but may not have followed a province-wide approach. Financial donations were well handled through the Red Cross.
Complete the redesign and implement changes to the Disaster Recovery Program		Improvements are ongoing to the Disaster Recovery Program.

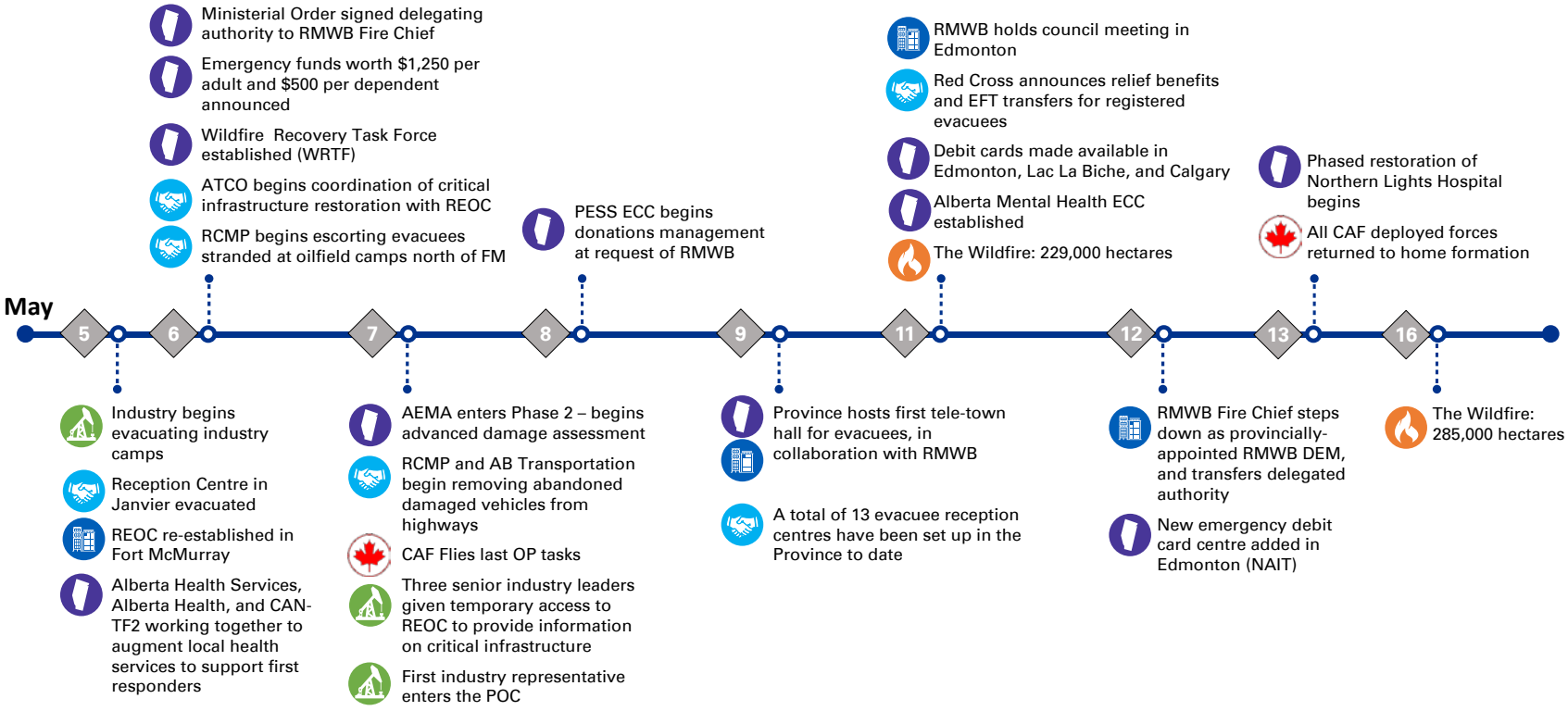
Appendix G | Detailed Timeline of Key Events

The following provides a timeline of key events leading up to, during and after the Wildfire entered the region. Each event on the timeline is tagged with an icon according to the following legend:




May
3
Overnight
The Wildfire jumps the Athabasca River
11:00 AM
RMWB holds briefing on wildfire
2:30 PM
POC activates to Level 4
Shortly after, AB Human Services activates PESS
2:31 PM
The Wildfire enters Beacon Hill
2:34 PM
Evacuation: Abasand, Grayling Terrace Beacon Hill.
Voluntary evacuation for Thickwood.
2:52 PM
The Wildfire sighted south of Thickwood
3:31 PM
Evacuation: Thickwood, Gregoire, Waterways, Centennial Trailer Park
4:09 PM
Structures burning in Abasand Heights
4:24 PM
Evacuation: Downtown Fort McMurray
A portion of Highway 63 is closed.
5:00 PM
All activated evacuation centres are full
MESA and Provincial staff arrive in Fort McMurray
5:30 PM
Evacuation: Dickinsfield, Draper, Lower Townsite, Saline Creek, Wood Buffalo
6:49 PM
Evacuation: All of Fort McMurray
Alberta Health Services has already initiated its emergency management plan, and established their Emergency Coordination Centre
7:30 PM
The Wildfire enters Thickwood
10:00 PM
The Wildfire: 18,678 hectares
10:31 PM
Mac Island is evacuated to Anzac
Evening
Athabasca Chipewyan First Nation declare SOLE
11:30 PM
Edmonton's Northlands opens as evacuation centre


May
4
On May 4
MOU signed with CAF to provide transportation assistance
Alberta Health establishes its Emergency Operations Centre
Wood Buffalo Ministerial Task Force Established
AFRRCS tower arrives in Fort McMurray
Alberta Health Services is supporting evacuation / reception centres
6:00 AM
Alberta Transportation begins mobile fueling operations
12:30 PM
REOC relocates to Nexen's Long Lake facility
12:45 PM
A new wildfire is spotted on the Alexis Nakota Sioux Nation Reserve, affecting properties in Lac Ste. Anne County. Evacuation warning issued
2:15 PM
Province declares a SOE for the RMWB
Thereafter, RMWB Fire Chief notified of delegation of authority forthcoming
4:12 PM
Evacuation order for residents North of Alexis Reserve
4:41 PM
A third fire spotted in Norbord yard (by Town of High level).
5:00 - 7:25 PM
Evacuation order for Mackenzie County, High Level, and other surrounding areas
6:00 PM
Canada Task Force 2 – advance team arrives in the RMWB
9:50 PM
Evacuation: Anzac, Gregoire Lake Estates and Fort McMurray First Nation
10:00 PM
Public Safety Canada activates International Charter Space and Major Disasters
REOC evacuated from Nexen's Long Lake facility to Lac La Biche


May
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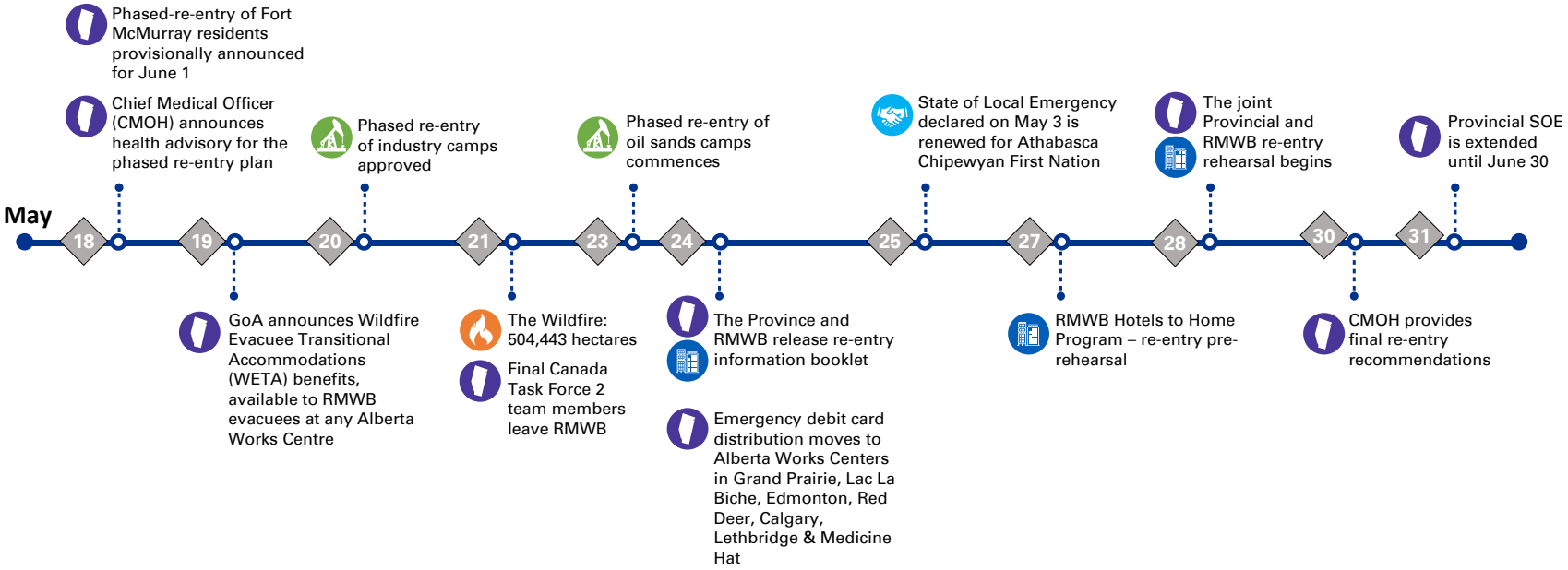
16
Industry begins evacuating industry camps
Reception Centre in Janvier evacuated
REOC re-established in Fort McMurray
Alberta Health Services, Alberta Health, and CAN-TF2 working together to augment local health services to support first responders
Ministerial Order signed delegating authority to RMWB Fire Chief
Emergency funds worth $1,250 per adult and $500 per dependent announced
Wildfire Recovery Task Force established (WRTF)
ATCO begins coordination of critical infrastructure restoration with REOC
RCMP begins escorting evacuees stranded at oilfield camps north of FM
AEMA enters Phase 2 – begins advanced damage assessment
RCMP and AB Transportation begin removing abandoned damaged vehicles from highways
CAF Flies last OP tasks
Three senior industry leaders given temporary access to REOC to provide information on critical infrastructure
First industry representative enters the POC
PESS ECC begins donations management at request of RMWB
Province hosts first tele-town hall for evacuees, in collaboration with RMWB
A total of 13 evacuee reception centres have been set up in the Province to date
RMWB holds council meeting in Edmonton
Red Cross announces relief benefits and EFT transfers for registered evacuees
Debit cards made available in Edmonton, Lac La Biche, and Calgary
Alberta Mental Health ECC established
The Wildfire: 229,000 hectares
RMWB Fire Chief steps down as provincially-appointed RMWB DEM, and transfers delegated authority
New emergency debit card centre added in Edmonton (NAIT)
Phased restoration of Northern Lights Hospital begins
All CAF deployed forces returned to home formation
The Wildfire: 285,000 hectares


May
18
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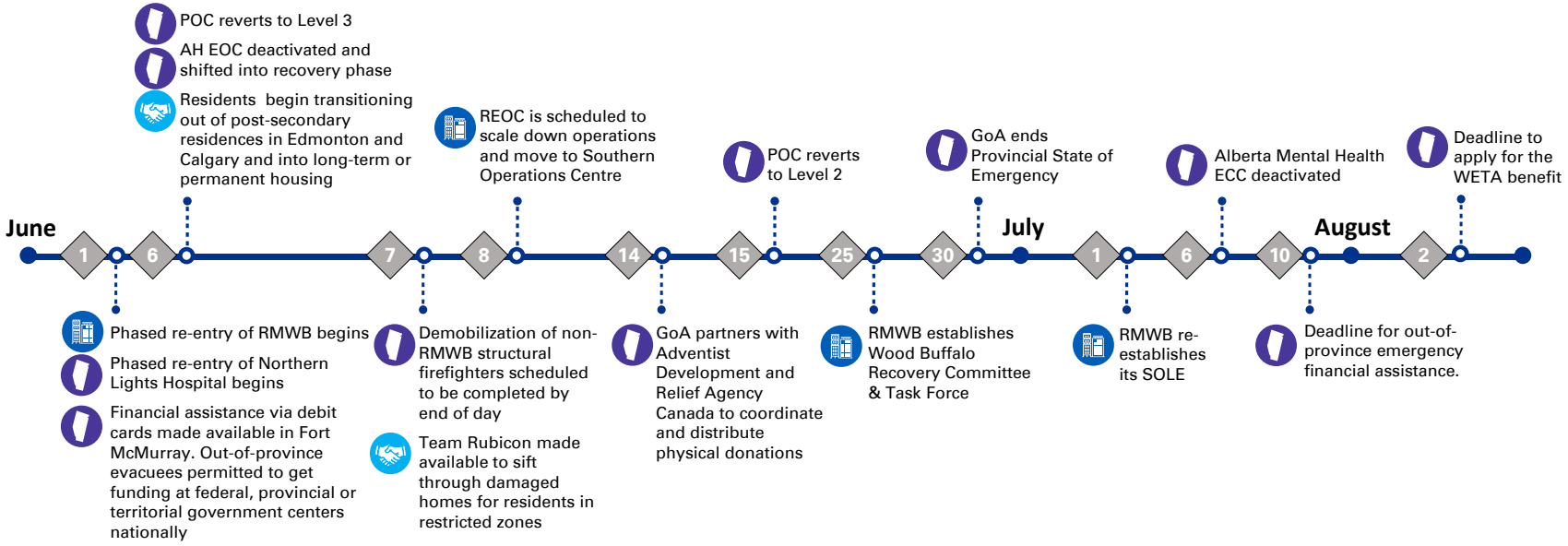
31
Phased-re-entry of Fort McMurray residents provisionally announced for June 1
Chief Medical Officer (CMOH) announces health advisory for the phased re-entry plan
Phased re-entry of industry camps approved
Phased re-entry of oil sands camps commences
State of Local Emergency declared on May 3 is renewed for Athabasca Chipewyan First Nation
The joint Provincial and RMWB re-entry rehearsal begins
Provincial SOE is extended until June 30
GoA announces Wildfire Evacuee Transitional Accommodations (WETA) benefits, available to RMWB evacuees at any Alberta Works Centre
The Wildfire: 504,443 hectares
Final Canada Task Force 2 team members leave RMWB
The Province and RMWB release re-entry information booklet
Emergency debit card distribution moves to Alberta Works Centers in Grand Prairie, Lac La Biche, Edmonton, Red Deer, Calgary, Lethbridge & Medicine Hat
RMWB Hotels to Home Program – re-entry pre-rehearsal
CMOH provides final re-entry recommendations


June
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July
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August
2
POC reverts to Level 3
AH EOC deactivated and shifted into recovery phase
Residents begin transitioning out of post-secondary residences in Edmonton and Calgary and into long-term or permanent housing
REOC is scheduled to scale down operations and move to Southern Operations Centre
POC reverts to Level 2
GoA ends Provincial State of Emergency
Alberta Mental Health ECC deactivated
Deadline to apply for the WETA benefit
Phased re-entry of RMWB begins
Phased re-entry of Northern Lights Hospital begins
Financial assistance via debit cards made available in Fort McMurray. Out-of-province evacuees permitted to get funding at federal, provincial or territorial government centers nationally
Demobilization of non-RMWB structural firefighters scheduled to be completed by end of day
Team Rubicon made available to sift through damaged homes for residents in restricted zones
GoA partners with Adventist Development and Relief Agency Canada to coordinate and distribute physical donations
RMWB establishes Wood Buffalo Recovery Committee & Task Force
RMWB re-establishes its SOLE
Deadline for out-of-province emergency financial assistance.

Appendix H | Endnote References

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