2023 Wildfire Report

May 2024

BRITISH COLUMBIA ENERGY REGULATOR

Contents

Cover: North Peace fire complex, May 2023.

BCER Vision, Mission and Values

Vision

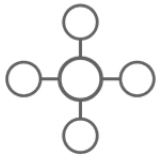
A resilient energy future where B.C.'s energy resource activities are safe, environmentally leading and socially responsible.

Mission

We regulate the life cycle of energy resource activities in B.C., from site planning to restoration, ensuring activities are undertaken in a manner that:

Protects public safety and the environment

Supports reconciliation with Indigenous peoples and the transition to low-carbon energy



Conserves energy resources

Fosters a sound economy and social well-being

Values

Respect is our commitment to listen, accept and value diverse perspectives.

Integrity is our commitment to the principles of fairness, trust and accountability.

Transparency is our commitment to be open and provide clear information on decisions, operations and actions.

Innovation is our commitment to learn, adapt, act and grow.

Responsiveness is our commitment to listening and timely and meaningful action.

About the BC Energy Regulator (BCER)

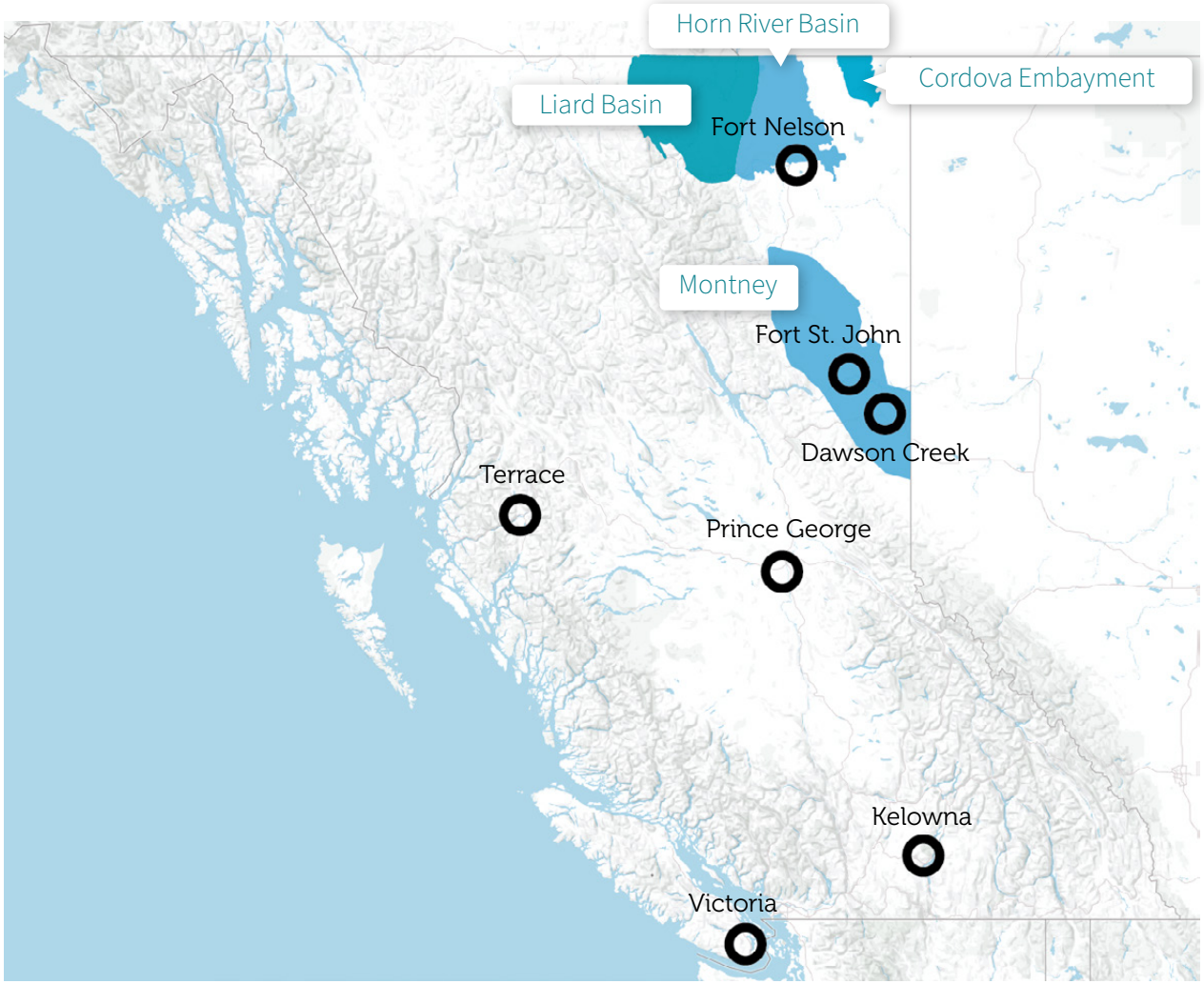
The British Columbia Energy Regulator oversees the full life cycle of energy resource activities in B.C., from site planning to restoration. We ensure activities are undertaken in a manner that protects public safety and the environment, supports reconciliation with Indigenous peoples, conserves energy resources and fosters a sound economy and social well-being. Our role includes the management of natural gas, hydrogen, ammonia, methanol, oil and aspects of geothermal resources, with an expanded role in carbon capture and storage (CCS).

We regulate energy resources through the Energy Resource Activities Act (ERAA) and other associated laws related to heritage conservation, roads, land and water use, forestry, and other natural resources. We work closely with land owners, rights holders, local government, industry, academia and other regulators to gather skills, knowledge and multiple perspectives to evolve our regulatory model.

We respect Indigenous values and seek learning opportunities as we co-develop new processes that we put into practice in all facets of our business and decision-making. We are focused on advancing reconciliation and building trust and apply this in our work with First Nations and Indigenous communities as partners in building B.C.'s energy resource future.

We currently have over 280 employees operating out of seven locations: Fort Nelson, Fort St. John, Dawson Creek, Terrace, Prince George, Kelowna and Victoria. The largest number of employees are in the Fort St. John office.

BC Energy Regulator Office Locations Throughout B.C.



We acknowledge and respect the many First Nations, each with unique cultures, languages, legal traditions and relationships to the land and water, on whose territories the British Columbia Energy Regulator's work spans.

About This Report

This report summarizes learnings from a post-season wildfire roundtable hosted by the BC Energy Regulatory (BCER) on Nov. 2, 2023. The goal of this gathering was to understand the impacts of the 2023 fire season on participants, to look at key actions undertaken and to identify best practices and opportunities for improvement.

We are grateful for the opportunity to hold our discussions on the traditional territories of the **Treaty 8 Nations** and acknowledge the devastating impacts the fires had on many Indigenous communities across the province, particularly in northeastern British Columbia.

We also want to acknowledge the valuable contributions to the roundtable from the **BC Wildfire Service**, **Peace River Regional District**, **Northern Rockies Regional Municipality**, the **Ministry of Emergency Management and Climate Readiness**, **Energy Safety Canada**, members of the **Aboriginal Liaison Program** and the many industry participants. The 2023 wildfire season created significant challenges to every group participating in the roundtable and the open dialogue and contributions of each participant are the foundation for this report.

Additional insights were drawn from ongoing collaborations with industry, wildfire services in both B.C. and Alberta, the **Canadian Interagency Firefighting Coordination Centre**, **Firesmart Canada** and **Firesmart BC** to review, update and add to the Firesmart guide for Industry.

- Peter Dalton, Director, Security and Emergency Management, BC Energy Regulator

> BCER (formerly the BC Oil and Gas Commission) has been working with industry and provincial agencies in response to wildfires and other natural disasters for almost 10 years. Our organization is committed to continually examining and improving the safety of those who work in, with, and near the energy resource sector and of the operations that permit holders manage.

Evidence of wildfire at an energy resource activity site in the Fort Nelson area.

Aftermath of the 2022 Battleship fire, June 2023 (Conan Drummond).

Executive Summary

The 2023 wildfire season tested agencies, authorities, companies and individuals across the province. No part of British Columbia was spared from fire impacts, from smoke to evacuations. The BC Energy Regulator (BCER) was also impacted, with staff in multiple offices directly affected by one or more of the fires, one office location was under evacuation alert and field activities were limited by multiple road closures and evacuation orders.

Throughout these challenges, BCER and other agencies maintained a high level of engagement, with multiple coordination calls, rapid exchange of contacts and other information, direct support with links to resources and widespread commitment to review and improve, where possible, for the 2024 fire season. Some of the best practices and recommendations captured in this report should be helpful in response to any significant and sustained incident response that involves multiple stakeholders and we are grateful to each of the participants for their contributions.

The goal of this document is to consider our collective response to the 2023 wildfires, impacts to our organizations, the various stakeholders we engaged with, the tools and processes we used, and where opportunities for improvement, sharing of best practices or other types of collaboration may exist.

Four topic areas were identified for discussion within the November 2023 roundtable event:

1. **Geographic Information System (GIS) Tools and Systems**
2. **Evacuation & Entry Protocols / Processes**
3. **Communications**
4. **Resilience/Preparedness**

A fifth topic, **safety**, emerged from the various discussions and has been acknowledged with its own specific section.

While not directly part of the roundtable efforts, one essential lesson learned from the 2023 wildfires was the importance of collaboration and communication between emergency management and business continuity. For both agencies and industry, the threat of evacuation from normal places of business demonstrated the importance of having processes in place to continue essential activities. In some cases, critical dependencies were tested, and gaps identified, such as the loss of electrical utilities for an extended period and overloading of phone services leading to disrupted communications.

In addition to business continuity, the importance of personal readiness was underscored, as many of the people from the roundtable discussions were personally impacted by evacuation alerts and orders.

Key Recommendations in Brief

Recommendations arising from the Wildfire Roundtable can have several agencies and organizations with a responsibility or specific need. The group(s) identified as primary point of contact for recommendations can be found at the end of this report. Additional information and more specific recommendations are available later in this document.

1. **Geographic Information Systems**

   Critical need to improve information sharing, simplify or better identify which mapping coordinate system is in use, and ensure reliability of the services.

2. **Evacuation and Re-entry Processes**

   Improved process needed to ensure requests for access to critical infrastructure can be prioritized, better tracking of persons entering and exiting an evacuation zone, faster response to requests to allow for early morning access.

3. **Communications**

   Pre-fire season sharing of critical contacts across agencies and companies, including creation of multiple contacts and contact methods, check-in procedures for persons in evacuation order areas and better reporting process for site evacuations.

4. **Resilience/Preparedness**

   Improvements to emergency plans to include wildfires, staff evacuation procedures, improvements to site fire resilience (Firesmart), including structural protection.

5. **Safety**

   A stronger focus on pre-season training, refreshing awareness of tools and procedures was emphasized as an important contributor to the overall safety of both the responder community and those who work in proximity to seasonal and industry risks.

2023 BC Wildfire Season by the Numbers

2,245

Number of fires across British Columbia, about one third of the national total of 7,131.

17

Production Areas Impacted - Aiken, Altares, Beaton, Beg, Birley, Boundary Lake, Bubbles, Conroy, Jedney, Kobes, Laprise, Nig, Noel, North Pine, Rose Prairie, Stoddart, and Tommy Lakes.

64

Energy Companies Contacted - 62 provincially, 2 federally regulated companies contacted with initial notification of wildfires in proximity to their assets.

2.84 M+

Hectares burned, with almost 2.3 million in the Prince George (northeast) region, with the single largest fire to impact the province since 1950.

May 25, 2023

First of five progressively more restrictive **water suspension** notices issued by the BC Energy Regulator.

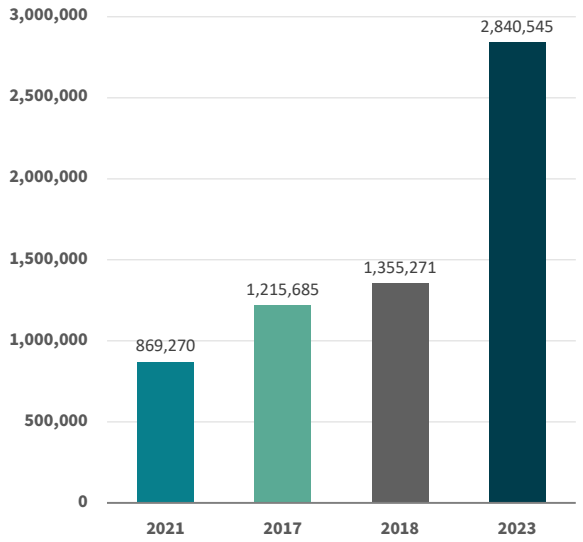
July 2023

Federal interagency fire centre notes the country has already **surpassed the previous record for hectares burned**, 7.6 million hectares.

100+

The number of over-wintering **"Zombie" fires** across the province.

Hectares burned in BC (top 4 years)



1. Geographic Information System Tools & Systems

Without any doubt, the availability of good mapping resources were essential to the protection of people and property.

All of the participating agencies had in-house GIS capabilities that contributed to overall situational awareness and each willingly shared information whenever asked.

The most significant challenge to spatial data sharing was the wide variety of formats in which information was available and the difficulties incorporating these formats across agencies into systems commonly used by each participant.

In addition to the Wildfire Service's own system (example shown above, for tactical use), site level information was expressed in at least six different geographic coordinate systems, as PDF documents with a variety of spatial reference points including street names; or integrated into mapping tools that made it challenging to glean information held by other agencies and companies.

Overall, there was good awareness of the BC Wildfire information available through their wildfire website pages, on the mobile app and (to a lesser degree) as a data stream that other GIS systems could import.

While GIS systems supported by government were commonly seen as accurate and helpful, some public domain systems created a number of challenges and potential safety issues. In one specific instance, Google Maps reacted to an evacuation order and highway closure by offering routing information via a road not suitable for most general public vehicles. There was no clear way to address this challenge and no available contact information to Google technicians or other means of adjusting the recommended routing.

The BCER's All Hazards Map enables users to identify energy resource activity infrastructure in British Columbia that are within a specified distance from a fire point, perimeter or user defined location.

The Common Operating Picture (COP) developed and supported by the Ministry of Emergency Management and Climate Readiness (EMCR) was also noted, though it was less familiar within the industry participants, and seen as more complex to use. It did bring together fire and community-based information in a common view which was seen as very useful.

The essential GIS qualities noted and valued by participants were:

- Speed (of both loading, and updates) and accuracy of information.
- Ease of use and accessibility.
- Certainty around which spatial system was being used in a particular mapping product or when being relayed verbally.
- Identifying and exploiting opportunities for GIS data sharing between agencies, industry and other response partners.
- Other points noted were the value of adding specific information to mapping services / data, such as the locations of water storage, approved areas for pipeline crossings and hazardous materials locations and status.

North Peace fire complex, May 2023.

2. Evacuation & Entry Protocols/Processes

Wildfires created many evacuation alerts and orders during 2023, impacting areas across the province, affecting residents, businesses and critical infrastructure operations. Because these alerts and orders are managed by each local authority, the tools used to communicate where and when orders are being issued, modified or rescinded, are varied. In some cases, accessing a specific location required permissions from more than one authority, creating challenges to timely approvals.

Granting access to areas at risk is a complex process, a balance of needs and threats, understanding the purpose of each request, and categorizing which activities are essential for continuity of critical services and which are to support routine business activities. Local and wildfire service authorities did not always have this information provided by industry and the access processes developed by authorities varied widely and did not consistently guide industry to submit it.

The volume of requests being processed created significant challenges for both the authority and subject experts they typically consult with prior to issuing or denying an application. In one case, a company was submitting up to 30 individual access requests daily, with each proposed access needing a review of the route, destination and anticipated fire behaviour.

Time of day is one of the more important considerations, with early mornings generally having less intense fire activity and creating limited windows of opportunity to access areas within an evacuation zone.

Weather conditions also make providing access permissions far in advance, or for multiple days, challenging. For example, winds may increase the hazards at one location while diminishing them at another or forecasts don't reflect the actual situation on the ground.

Processing an access request was often easier on larger fires, as Wildfire Service generally had an incident management team (IMT) in place with additional resources that could provide a timely review.

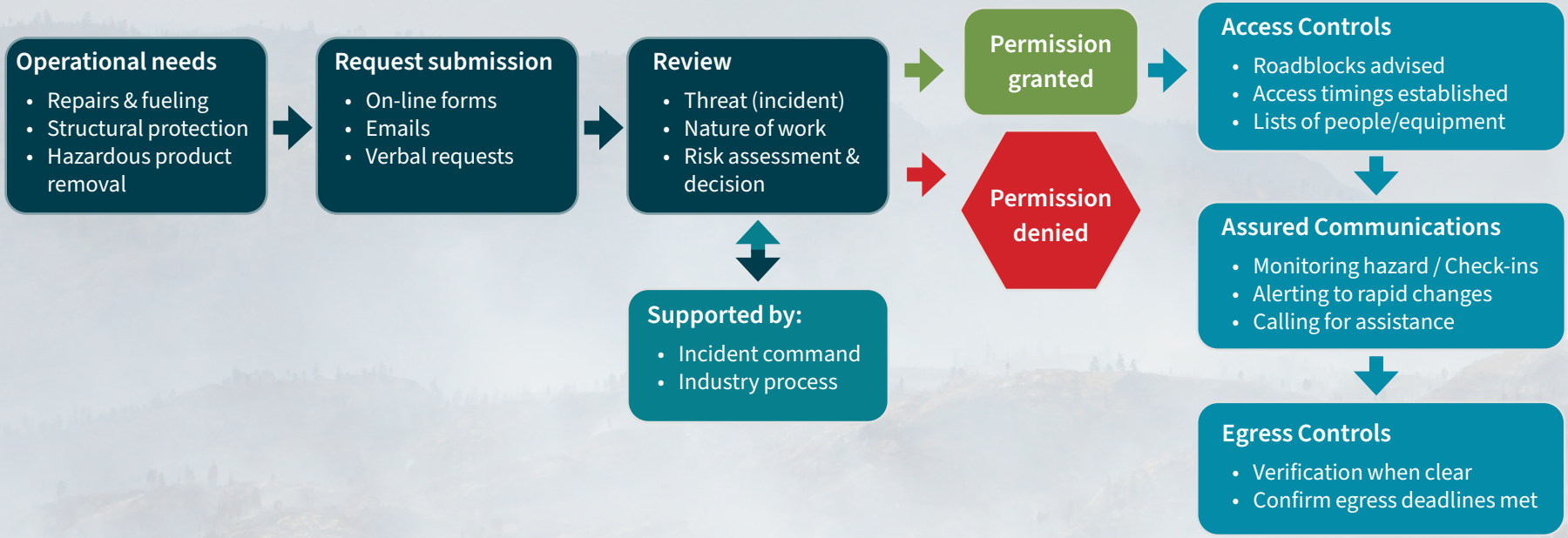
Stoddart Creek wildfire, May 2023.

Also varied are the procedures for requesting access to areas under an order which most critical infrastructure operators must do to keep essential functions going or to modify wildfire protections being employed. An example of a typical access request process is shown below and is not intended to reflect the actions of any specific authority.

There were several issues that crossed between entry and communications challenges:

- The process to provide access control points with a list of authorized personnel permitted to cross into an evacuation order area did not always occur.
- Staff and contractors who were seeking access to sites did not always have a clear understanding of conditions within the access permit or others had obtained the permit on their behalf but did not fully share the information.

Figure 1. Example of a typical access request process



Technology to support area access

The Peace River Regional District (PRRD) created a web submission tool for requesting access permissions, providing a simple and effective process to initiate the process and continues to create online tools to improve awareness around evacuation areas.

A drawback of the current tool is that it does not appear to work if there is no "911 address," leaving many industry operations to determine where their specific sites are in relation to the order and alert boundaries. Options to address this gap are noted in the GIS section.

Given fire behaviour is most extreme in the late afternoon, and mapping of fire perimeters may not be available when access requests are arriving for consideration, there can be increased, and sometimes unacceptable, risks to granting permissions without more information.

A number of participants noted the access process used in Alberta is more streamlined, and slow processing created challenges to early morning access as crews waited to hear if a permit had been granted.

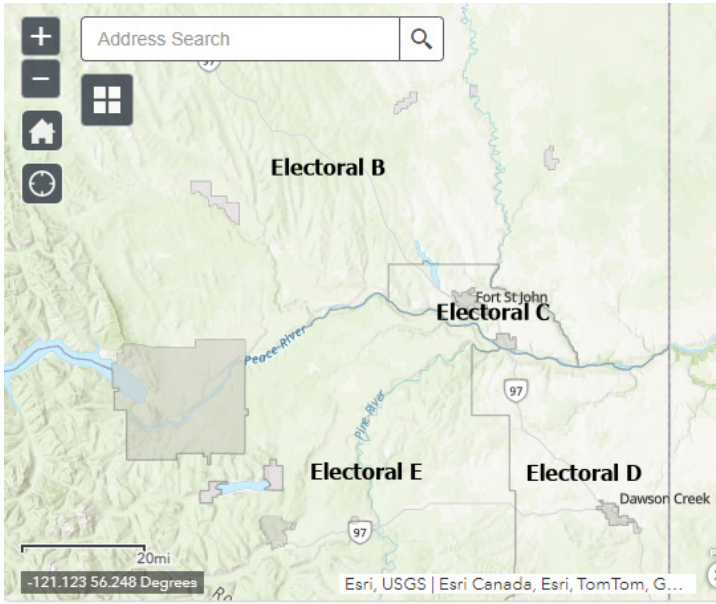
Access rationales for sites can fall into several categories:

- **Safety** – Included in this category would be actions to shut in operations, remove on-site flammable or hazardous materials, or to activate structural protection.
- **Operations (unstaffed site)** – This would include routine checks and minor maintenance needed to keep a site operational. It could include provision of fuel (e.g., diesel generators) or normal hauling of fluids from battery sites.
- **Operations (existing staffed sites, normal activities)** – This could include overnight operations when fire risks are typically lower and staff safety less likely to be jeopardized, or a 24/7 operation.
- **Operations (new construction, drilling / completions or work-over activities)** – These are higher risk activities, typically have a larger number of people on site from both company and contractors and considerable vehicle traffic may be present.

PRRD's Online Evacuation Map Tool allows users to input their address to see if they are in an order or alert area.

When granting access to an evacuation order area, the local authority is assuming a level of liability for the safety of those individuals. Accurate tracking of total numbers and areas of work, availability of good communications and alternate evacuation routes are essential to the decision-making process.

When access is granted, clarity around what can be done within a permit and any specific requirements to enhance safety, such as timed check-ins with field operations within an evacuation zone, are options to enhance the safety of those entering an evacuation zone.



3. Communications

One of the most consistent challenges in any incident is communications, and there are a number of critical processes that are both essential and require the support of multiple organizations.

Roadblocks to effective communications that were identified include:

- Inaccurate or outdated contact information for initial alerting
- Primary (and often only) contact not available at time of an incident
- Area poorly served by cellular service, no simple process for authority issuing evacuation order to use road radio system

Critical agencies, infrastructure operators and others have each developed their lists of "essential contacts," who are those persons representing key first calls to start the alerting process. Invariably, some of these contacts are unavailable when a significant incident occurs, creating delays and increasing workloads for the calling agency at the point where both time and staffing are in short supply.

A number of options were identified to help meet this challenge including:

- Creating / managing a central or regional contact sheet prior to seasonal hazard periods to verify information. Some regional districts have already created these sheets, but the final product is not routinely shared.
- Creating an organizational emergency contact email group, ensuring multiple persons within key organizations had prompt situational awareness of an incident, and could begin any necessary response activities. While email is not an "intrusive" form of communications like a phone call, and might not be noticed as quickly, it does enable prompt and wide distribution of essential information with minimal staff support needed to initiate.
- Technology (such as an auto-dialler system) could be used to improve speed of call-outs; however this is similar to systems used by "spam callers" and could be intercepted by some call blocking systems. Having the number circulated as part of seasonal preparations, and added to the "accepted" list of callers would be necessary.
- Ability to access forestry radio repeaters to broadcast urgent warnings[1]
- Larger incidents, both in duration and areas affected, create challenges to some agencies and infrastructure operators. Maintaining a presence on regional coordination calls was often problematic, with multiple and often overlapping times competing for the same staff. Core emergency management professionals were often responsible for province-wide operations, and struggled to participate in all calls.

[1] In addition to radio access, some means of creating a channel priority, similar to marine channel 16 (emergency broadcast) where any transmission is prioritized on any radio within range of the broadcast would ensure field operators could hear the warning.

The duration of some coordination calls became challenging as the season progressed, with significantly more depth and technical analysis provided than the average listener required. With the weather section of these calls being common across almost all of the province, staff listening in on several calls heard the same information multiple times while waiting for the region-specific information to begin.

Some of the presentation materials and supporting data presented on coordination calls has value to the wider audience, enabling them to brief internally and improve situational awareness within their own organizations. During the 2023 wildfire coordination calls, information sharing of this sort did take place from time to time within the TEAMS call chat function, however if someone was unable to be on a particular call, awareness of available information was limited.

A BC Wildfire Service Incident Management Team operating out of the BCER's Fort St. John office during the 2023 wildfire season.

4. Resilience/Preparedness and Safety

The BCER has adopted an all-hazards model consistent with provincial emergency management legislation. As a result, while most industry plans are capable of meeting the basic challenges of natural disaster events, not all plans address these risks as completely and capably as those risks, such as product spills, that are more commonly associated with industry activities.

BC Wildfire crews often have a very basic understanding of the risks associated with energy sector activities and rely on often very outdated information. The near-exclusive focus on hydrogen sulphide dangers has created some misperceptions that should be addressed in pre-season training.

Wildfire crew members don't commonly carry any sort of gas monitoring device and rely almost solely on scent. While aviation resources generally don't fly directly over an energy site, on at least one occasion, a pilot conducting bucketing operations near an energy site, noted strong fumes entering his aircraft and felt ill.

Wildfire crews from other jurisdictions are even more challenged, often lacking any familiarity with energy operations. During the 2023 fire season, several companies provided on-the-fly training to these fire crews and by July, a concise training package that could be delivered remotely, had been developed by industry associations.

North Peace fire complex, May 2023.

Summary

Across all participants, there was widespread acknowledgement of the collaboration and support across agencies and industry, but also the need to improve the flow, and quality of information available prior to and during fire season. Such changes were seen as supporting better decisions around access to evacuation zones, greater safety for industry and wildfire crews, and faster response times to critical questions such as line crossings and when to enact site shut-ins.

Indigenous participants provided valuable input on the need to consider and incorporate traditional knowledge into pre-season planning, as well as operational decisions. Concern was expressed around the impacts to wildlife following the scale of 2023 fires, and how that would challenge Indigenous communities that have reliance on hunting and trapping activities. Balancing these concerns with items like prescribed burns and Firesmart processes for fuels management around permit sites will require ongoing discussions to develop a common vision that best addresses these diverse needs and interests.

Improving fire resilience at some sites would require forest fuels management beyond the areas permitted by BCER for industry use. Permissions to conduct fuels management activities may require permissions from other agencies, and with linkages to cumulative impacts, a need to reflect both Indigenous interests and wildlife needs on an already fire-disturbed ecosystem.

Early preparedness activities are already underway, including discussions coming out of the roundtable between permit holders and Western Canada Spill Services to establish structural protection equipment caches, and collaboration between BC Energy Regulator, Canada Energy Regulator, Alberta Emergency Management Agency, BC Wildfire, Forest Service, the Canadian Interagency Forest Fire Centre (CIFFC) and Northern Health Authority (BC) to add to the Firesmart guide for industry.

Permit holders are interested in knowing more about water storage and access for firefighting use, and Wildfire Service are interested in knowing where any such storage may be in place. During the past fire season, mapping of all permitted fresh water storage locations was made available to fire crews in British Columbia.

One of the key findings common to all participants is the value of exchanging information, of planning and preparation actions well outside of any ongoing threats. Both EMCR and BCER were acknowledged for their efforts to build resilience across the landscape.

A BC Wildfire Service Incident Management Team operating out of the BCER's Fort St. John office during the 2023 wildfire season.

Recommendations and Stakeholders

1. Geographic Information Systems

- Create centralized repository for mapping resources.
- Ensure all mapping products are clear on which coordinate system is being used.
- Consider options for including spatial data when making access requests.
- Improve accessibility to GIS data and consider offering more flexible formats, similar to the BC Wildfire Service approach, where spatial information has been made available in streaming format that can be imported into most web mapping service (WMS) capable platforms or as a KML file (Google Earth) that most GIS programs can use.
- Provide suitable / necessary disclaimers, so limits on the way data can be applied, is clearly understood. Examples of this include potential gaps in pipeline location information across agencies, date the information was created or last verified, etc.

2. Evacuation and Re-entry Processes

- Improved process needed to ensure requests for access to critical infrastructure can be prioritized for approvals consideration and the nature of any hazards associated with the entry are well defined. **supported by**
- Improve tracking of persons entering and exiting an evacuation zone, ensuring access permit conditions are being met, and there is awareness of where persons are working in the event of an incident escalation threatening safety. **with cross-agency support**
- Permit-holder led system to prioritize requests based on impacts to operations – this would help to put each submission into a list for "top-down" consideration, ensuring critical situations were addressed first.
- Potential for improvement by inclusion of GIS data – possibly as a KML file – that could be used to quickly establish proposed work location, fire proximity and access / egress options). **-led,**
- Enable GIS-based sharing of evacuation order and alert data in a format that can be imported into other mapping systems.
- Improve communications between the granting agency(ies) and front line access control points.
- Improve the process for companies within newly declared evacuation order areas to confirm the status of their sites (evacuated, evacuation still in progress, etc.). Lack of such notice can create a draw upon regional resources, such as SAR volunteers, and may place these volunteers at risk, or divert them from other urgent actions.

Legend

- All
- Industry
- Min. of Emergency Management & Climate Readiness
- BC Energy Regulator
- Local Authority(ies)
- Regional Districts
- BC Wildfire Service
- Ministry of Forests

3. Communications

- Pre-fire season, gather and share lists of critical contacts across agencies and companies including creation of multiple contacts and contact methods.
- Continue to host pre-season and incident-specific coordination calls. Whenever possible, look for ways to deconflict calls with other EMCR regions. -led,
- To the greatest extent possible, copies of presentations or links to supporting data discussed on calls should be made available. -led,
- Consider timed check-in procedures for persons in evacuation order areas, particularly in sections where communications are known to be poor. This could be an access permit condition for higher risk areas or more extreme fire behaviours.
- The weather portion of many calls has become overly complex and lengthy, a simpler and more concise version that incorporates the expert opinion of the presenter would meet the needs of most call participants.

4. Resilience/Preparedness

- Improvements should be made to emergency plans to include wildfires, with pre-set decision points for minimizing on-site hazards, shutting down sites, and staff evacuations.
- Early season actions to support site fire resilience (Firesmart) including structural protection.
- Deployment drills for setting up structural protection.
- Review of tools and information sources available across industry and agencies.
- Hold pre-season briefing calls to highlight expected challenges. -led,

5. Safety

- Develop and deliver effective training to wildfire crews on risks they could encounter – pre-season for BCWS staff, and condensed / on the fly version for out-of-area crews. Collaboration with Canadian Interagency Forest Fire Centre (CIFFC) and Alberta wildfire service through industry associations to provide training in a consistent manner.
- Clear explanations on the hazards of pipeline crossings, heavy equipment working in proximity to rights-of-way, and how to confirm where and when equipment can be used safely. **and regulatory agencies, for inclusion in Firesmart guide.**
- Simple process for tracking hazardous products locations, volumes and product types. This will help prioritize response efforts, and ensure fire crews have appropriate situational awareness.
- Clear process to allow for permit holders to increase fire buffers, especially around older sites where activities are often built up to the edge of permits. Include support for managing woody debris resulting from Firesmart buffering activities.

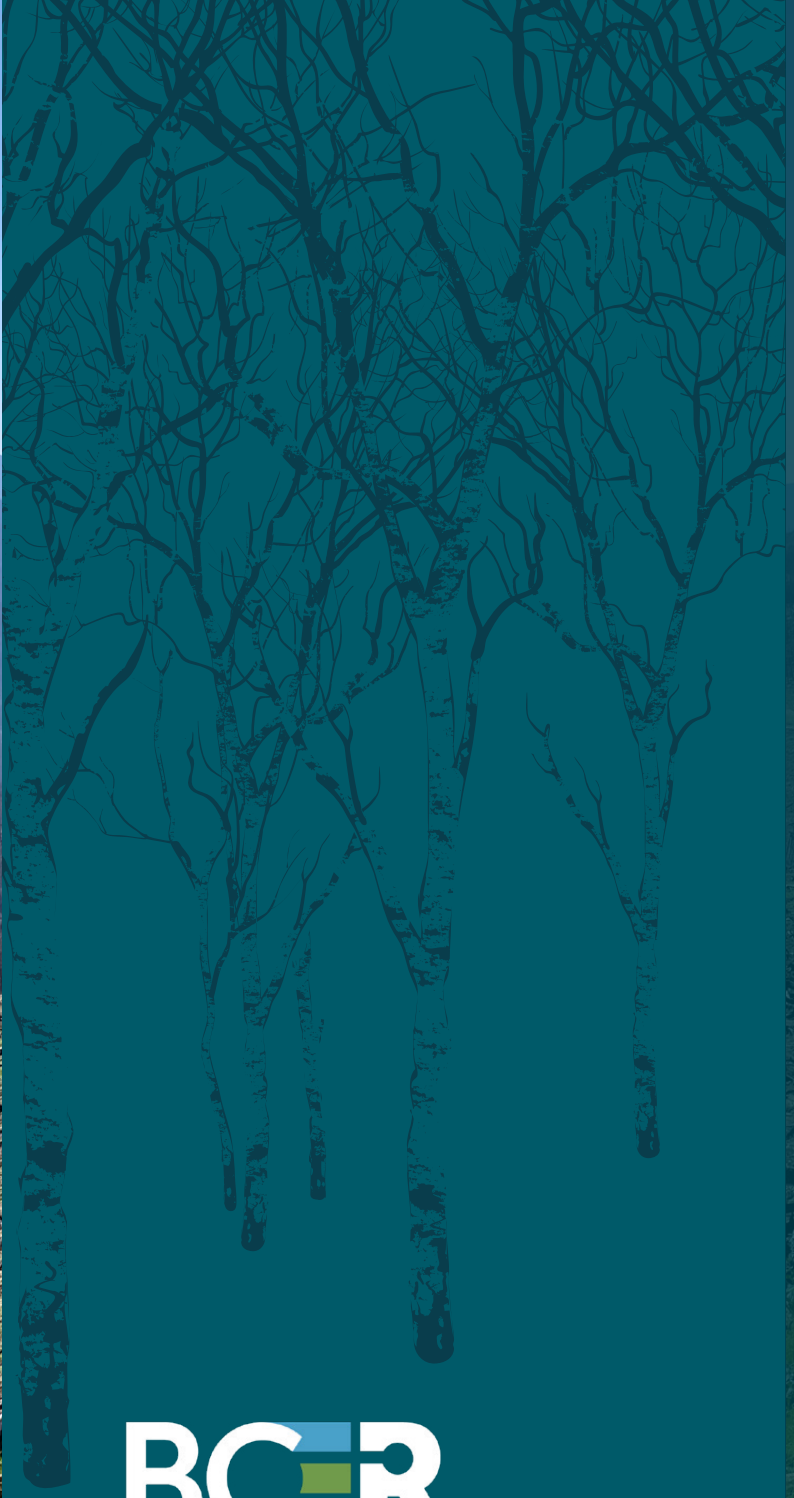
Final Words

While it may be challenging to address all of the observations and recommendations developed through the Wildfire Roundtable in the near term, participants each recognized the value in meeting and identifying ways in which we could collectively improve our safety, preparedness and resilience.

Each recommendation addressed, in whole or in part, will contribute to that overall objective, and we, the participants, appreciate all that we each can do to help mitigate these risks.

Additional Resources

- BC Energy Regulator All-Hazards Mapping Tool
  https://www.bc-er.ca/data-reports/data-tools/
- BC Wildfire Service
  https://www2.gov.bc.ca/gov/content/safety/wildfire-status
- Firesmart Guide for Industry (note – updates in progress)
  https://firesmartcanada.ca/wp-content/uploads/2022/01/Firesmart_Guidebook_Final_April2008.pdf
- Fire Perimeters - BC Government Streaming Data, import into your own mapping systems
  https://catalogue.data.gov.bc.ca/dataset/cdfc2d7b-c046-4bf0-90ac-4897232619e1
- Fire Points - BC Government Streaming Data, import into your own mapping systems
  https://catalogue.data.gov.bc.ca/dataset/2790e3f7-6395-4230-8545-04efb5a18800
- Natural Resources Canada Fire Weather Map
  https://cwfis.cfs.nrcan.gc.ca/maps/fw
- Alberta Wildfire Dashboard
  https://www.arcgis.com/apps/dashboards/3ffcc2d0ef3e4e0999b0cf8b636defa3
- Canadian Interagency Forest Fire Centre
  https://www.ciffc.ca/



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