Yukon

Jurisdictional Scan: Public Emergency Communications

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Executive Summary

This jurisdictional scan examines how five Canadian jurisdictions – British Columbia (BC), Alberta, New Brunswick, Nova Scotia, and Northwest Territories (NWT) – manage public emergency communications, providing insights to inform Yukon's approach. **Key findings** highlight the critical importance of integrated information platforms, multi-channel communication strategies (combining digital and traditional media), clear governance and messaging policies, and tailored solutions for remote connectivity challenges.

All jurisdictions emphasize a **multi-platform approach** to reach diverse audiences: from advanced interactive maps and mobile apps in larger provinces, to centralized "one-stop" information hubs and radio broadcasts in smaller or more remote regions.

Primary challenges observed include connectivity limitations in rural/remote areas, information silos between agencies, risk of public alert fatigue, and the need for clear, consistent messaging during fast-moving crises.

High-level **recommendations for Yukon** include developing a centralized emergency information portal, investing in system integration and cloud infrastructure for reliability, strengthening policy frameworks (e.g. clear alert criteria and plain-language standards), and maintaining robust traditional communication methods for remote communities. These recommendations are tailored to Yukon's context of a small population spread across vast, low-bandwidth areas, aiming to enhance both the technical **platforms** and the strategic **coordination** of emergency communications. A summary of the research methodology is provided, followed by detailed cross-jurisdictional analysis (communication platforms, notification systems, mapping tools, and multi-hazard coordination models) and Yukon-specific recommendations.

Deeper technical details and jurisdiction-specific profiles are available in the appendices for reference.

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Introduction

Effective public emergency communication is vital for protecting residents during wildfires, floods, extreme weather and other crises. The Government of Yukon is embarking on a Public Emergency Communications project to improve how emergency information is delivered to the public. Given Yukon's unique context – a **small population (~45,000) spread over a large territory with many remote communities and limited connectivity** – it is crucial to learn from other jurisdictions while tailoring solutions to local needs.

This report provides a structured analysis of emergency communication approaches in five Canadian jurisdictions (BC, Alberta, New Brunswick, Nova Scotia, and NWT) selected for their relevance to Yukon's situation (e.g. similar hazard profiles, remote regions, or innovative practices). By comparing their communication platforms, notification systems, mapping tools, and multi-hazard coordination models, the report distills key insights and challenges that inform **actionable recommendations** for Yukon.

Methodology

The findings in this report were developed through a combination of **desk research** and **stakeholder interviews**:

Desk Research:

We reviewed public documentation, official websites, emergency alert systems, and published policies of each jurisdiction. Digital platforms (emergency information websites, alert applications, mapping dashboards) were analyzed for features and performance. We also examined reports and media coverage of major emergencies to understand communication workflows.

Stakeholder Interviews:

Targeted interviews were conducted with emergency management officials and technical leads in select jurisdictions to gain first-hand insights. These included, for example, an Alberta Emergency Alert team lead and a BC Wildfire Service representative, among others (see Appendix B for a list of interviews). The interviews provided qualitative context on challenges, best practices, and lessons learned that are

not evident from documentation alone.

Comparative Analysis:

Information from research and interviews was synthesized into a comparative framework. We identified common themes, unique innovations, and recurring challenges across jurisdictions. A **jurisdiction comparison table** was compiled to systematically compare communication channels, tools, and strategies (see Appendix A for the detailed table).

This mixed-method approach ensured a well-rounded understanding. All data was cross-validated between sources where possible. The analysis emphasizes **practical insights** that can guide Yukon's project, rather than exhaustive technical details for each jurisdiction – those detailed findings are referenced in appendices for further review as needed.

Cross-Jurisdictional Key Findings

Despite differing scales and regional contexts, the jurisdictions studied share several **key findings** relevant to improving public emergency communications:

Integration is Essential:

Jurisdictions that **integrate multiple information sources into a central hub or coordinated system** provide clearer, more accessible updates to the public. For example, British Columbia's EmergencyInfoBC portal and connected systems (wildfire dashboard, DriveBC roads data) function as a unified ecosystem, while NWT's Public Safety page consolidates alerts from various departments into one "one-stop shop" site. Integration reduces confusion and ensures consistent messaging across agencies.

Multi-Channel Delivery:

No single communication channel reaches all citizens. **All jurisdictions use a multi-channel approach** to maximize coverage. This includes official websites and alert feeds, social media platforms, mobile apps, email/SMS subscriptions, traditional media (radio, TV), and on-the-ground methods (e.g. door-knocking, community bulletin boards). A blended strategy is critical, especially for remote or low-bandwidth communities. For instance, NWT simultaneously uses Facebook, local radio, door-to-door campaigns,

and the **Alertable** notification app to ensure messages penetrate all areas. New Brunswick exemplifies this approach with their structured **PACE framework** (Primary, Alternate, Contingent, Emergency), ensuring redundancy across broadcast intrusive alerts, social media, direct media communication, and emergency systems like ham radio networks. This systematic approach to layered communications helps ensure messages reach rural communities even when primary channels fail.

Clear Standards and Terminology:

Consistent, plain-language messaging and well-defined alert criteria are vital to maintain public trust. Alberta in particular highlighted a "**loudspeaker not bulletin board**" philosophy – only issuing critical alerts for immediate life-threatening situations that require action, to avoid alert fatigue. Terminology like "evacuation alert" vs "evacuation order" must be used carefully and explained clearly; Alberta found confusing terms hampered public response until they standardized on action-oriented language. All jurisdictions stressed the importance of **clear, concise instructions** in emergency notifications. BC and Alberta deploy field information officers to relay news in person and use telephone hotlines for updates during major events. The **continued use of traditional channels** (radio, call centres, signage) alongside modern tools is a common theme to ensure no community is left behind by technology.

Data and System Integration Improves Responsiveness:

More advanced integrations – such as **API connections between data systems** – significantly enhance the **timeliness and accuracy** of public information. BC demonstrated this with their wildfire dashboard automatically pulling in road closures (DriveBC) and campsite closures (DataBC) in real time. In contrast, less integrated systems (as seen in some other jurisdictions) require manual updates and can lag behind events. **Sharing data across agencies** (e.g. wildfire, flood, transportation) through connected platforms or centralized situation rooms helps paint a complete picture for both officials and the public. GeoBC's evolution from 3 to 20 specialized GIS staff over a decade demonstrates the growing recognition of integration's importance. Their focus on building **common operating pictures** that combine evacuation, hazard, and support service information creates unified situational awareness, though their experience shows that even advanced jurisdictions struggle with lag times between local and provincial systems.

Preparedness and Education:

Proactive public education and preparedness tools amplify the effectiveness of

emergency communications. BC's **PreparedBC** program offers comprehensive preparedness resources and even interactive planning tools for families. NWT runs annual **"Be Ready" campaigns** with community competitions to sustain engagement in non-emergency times. Nova Scotia includes translations of alerts in Mi'kmaq for inclusivity. These efforts build a more informed public that is ready to respond when an emergency message arrives.

Continuous Improvement Culture:

Leading jurisdictions practice an iterative, **continuous improvement approach** to their communication systems. BC, for instance, employs user analytics and feedback to make regular incremental upgrades rather than large infrequent overhauls. Yukon itself has a similar practice of conducting end-of-season debriefs between wildfire, flood, and emergency teams to capture lessons and update procedures annually. This cycle of review and refinement ensures systems keep pace with emerging needs and technologies.

These cross-cutting insights demonstrate that while technology and tools vary, **the fundamentals of effective emergency communication remain consistent**: provide timely, accurate information through as many accessible channels as necessary, coordinate behind the scenes to speak with one voice, and never lose sight of the real-world limitations of the audience (from connectivity to language and trust). The subsequent sections detail the comparative findings by topic area and outline the main challenges observed, before presenting recommendations for Yukon.

Primary Challenges Identified

Throughout the scan, several **primary challenges** emerged that frequently hinder public emergency communications across the jurisdictions studied:

Connectivity and Infrastructure Gaps:

Perhaps the most prevalent challenge is technological infrastructure in remote areas. Both Yukon and NWT struggle with limited internet bandwidth and cellular coverage in many communities. Even in provinces like Nova Scotia, major storms can knock out power and networks, forcing reliance on radio and generators. Ensuring **redundant methods** (e.g. radio, satellite phones, or HF radio systems) is critical, but maintaining

those systems and training for their use is an ongoing challenge.

Silos and Fragmented Information:

Many regions initially developed separate platforms for different hazards or departments, leading to silos. For example, Yukon currently has distinct websites for wildfire status, flood mapping, highway conditions, and emergency updates. Alberta noted the **drawbacks of decentralized alerting**, where municipalities issuing their own alerts led to inconsistent practices. Nova Scotia's experience showed difficulties in stitching together information from 911 centres, provincial departments, and utility companies due to incompatible systems. Breaking down these silos to present a **unified public message** remains a significant challenge.

Alert Fatigue and Public Trust:

With increasing frequency of emergencies, the volume of alerts and updates can overwhelm the public. **Alert fatigue** – where people become desensitized and start ignoring messages – is a real concern. Alberta explicitly mitigates this by reserving emergency alerts for only the most critical events. Others face pressure to push out frequent updates on social media, which can blur the line between essential alerts and informational posts. Balancing timely updates with **message prioritization** is an ongoing struggle, as is combating misinformation and rumors that spread in parallel to official channels.

Resource Constraints:

Smaller jurisdictions and those with vast geographies face limitations in human and financial resources to manage communications. NWT, with only ~45,000 residents across 33 communities, does not have dedicated staff for every channel or advanced GIS specialists in every department. Training local authorities, acquiring modern platforms, and hiring digital expertise can be difficult to justify with limited budgets. Yukon experiences **seasonal staff turnover** (e.g. wildfire crews and coordinators) which complicates continuity. All jurisdictions emphasized that any system implemented must be sustainable within their resource capacity.

Rapidly Evolving Incidents:

Emergencies like fast-moving wildfires or flash floods pose a challenge in keeping public information **up-to-the-minute**. Even with good systems, there can be lags in approving and disseminating updates. Nova Scotia addressed this by only releasing public map updates at scheduled intervals to avoid confusion, but that trades some

timeliness for clarity. BC invested in automation (data feeds and APIs) to reduce manual delays. The challenge is finding the right **operational workflow** so that officials can verify information quickly and push it out without undue delay or bottlenecks.

Local Autonomy vs Central Coordination:

Especially in provinces with strong municipal governments (e.g. Nova Scotia's municipalities, Alberta's local authorities), determining the boundary between local and central communication roles is a challenge. Nova Scotia operates a **decentralized model** where local Emergency Management Coordinators lead initially, which can lead to variations in messaging until the province steps in for larger incidents. The trick is achieving a **coordinated approach** that respects local knowledge and autonomy while providing province/territory-wide consistency. NWT seems to manage this via regional EM coordinators funneling information up to a central hub. Yukon similarly must balance community-level leadership (e.g. First Nations and municipalities) with territory-wide messaging.

These challenges inform the subsequent recommendations. **Addressing connectivity limitations, integrating information flows, establishing clear protocols, and building capacity** are recurring needs to enhance public emergency communications. In the next section, we provide a detailed comparison of how each jurisdiction's platforms and systems operate, which further illustrates how they confront these challenges in practice.

Details Comparative Analysis of Emergency Communication Approaches

To understand how each jurisdiction approaches public emergency communications, this section compares their **communication platforms**, **notification systems**, **mapping tools**, and **multi-hazard coordination models**.

Communication Platforms and Websites

The primary platforms used to disseminate emergency information vary in complexity:

- **British Columbia** operates a suite of well-integrated platforms. **EmergencyInfoBC** serves as the central hub for all provincial emergencies, from flooding to wildfires. During the 2021 atmospheric river floods, this site received

over 2.3 million visits in 72 hours, demonstrating its role as the go-to source. BC also maintains hazard-specific platforms like the **BC Wildfire Service Dashboard** (interactive map) and **DriveBC** for road closures, which are cross-linked. This integration means a user can navigate from a tweet or alert to a detailed map showing an evacuation zone, and further to road closure details, all within the government's information ecosystem.

- **Alberta** similarly has a provincial emergency page on Alberta.ca, but its standout platform is the **Alberta Emergency Alert (AEA)** system – which includes a public website, a dedicated mobile app, and integration with TV/radio broadcasts. When an alert is issued (often by local authorities through the provincial system), it is immediately published on the AEA site/app and broadcast via the national Alert Ready system. Alberta also provides online dashboards for specific needs (e.g. wildfire status, 511 road conditions), but these are not yet unified into one interface. The jurisdictional scan noted Alberta's desire to eventually achieve more integration between these siloed systems, learning from BC's example.

- **New Brunswick** employs an **authority-based approach** rather than platform-centric organization. Their Emergency Measures Organization website serves as an information hub, but their system is organized primarily around clear delineation of authority between NBEMO (for broadcast intrusive alerts), RCMP (for specific categories like AMBER alerts), and Environment Canada (for weather alerts). The province's communications department manages both emergency and non-emergency digital content, using templates for different scenarios to speed response time. Their well-defined criteria for emergency communications—based on imminent life threats, property damage risks, and environmental concerns—provides a clear framework for when to utilize different communication channels.

- **Nova Scotia**'s public-facing platform is relatively simple at present. The provincial website's **"Emergency Alerts" page** lists current advisories and emergency notices (often linking to detailed press releases). Nova Scotia does not have a rich interactive hub for all emergencies; instead, detailed information is disseminated through **news media and social media**, and during major events, through regular press conferences by officials. One notable platform is **511 Nova Scotia**, which the province uses for road-related alerts (allowing the public to

subscribe to route-specific text notifications). The scan found that Nova Scotia is actively working on developing a more centralized digital platform ("one-stop shop") to compile information from various agencies, moving away from the current mix of emails, standalone maps, and PDFs .

- **Northwest Territories** has embraced a **single centralized portal** approach. The GNWT **Public Safety Portal** (hosted on the Department of Municipal and Community Affairs site) acts as the unified source for all emergency updates. During an emergency, all relevant departments (wildfire, municipal affairs, health, etc.) funnel their updates to this portal, where a territorial communications team standardizes the messages. Given NWT's limited staff, having one website to maintain ensures focus and consistency. Outside of emergency times, this portal also provides preparedness information (e.g. the **"Be Ready" preparedness campaign resources**). The **simplicity** of one main site has been effective in NWT's context, where the audience is small and spread out – people know to tune their radios to CBC and check the GNWT Public Safety page for official information when something happens.

For Yukon, these examples show a spectrum from multi-platform ecosystems (BC) to one-stop shops (NWT). Yukon currently has a more *BC-like model* (multiple hazard-specific sites) but may benefit from consolidating the user experience so that the public has a clear single destination online for any emergency. At minimum, **better integration and cross-linking** between Yukon's existing platforms (Yukon.ca emergency updates, Wildfire Hub, Flood Atlas, 511 Yukon) could approximate a one-stop feel without rebuilding everything. BC's success with heavy web traffic also underscores the need for **robust hosting infrastructure** – an area where BC's move to cloud hosting (AWS) paid off by keeping sites running during surges. Yukon may consider extending this approach to all emergency platforms, building on their existing cloud-based mapping infrastructure.

Public Alerting and Notification Systems

All jurisdictions leverage the national **Alert Ready** system for broadcasting emergency alerts over wireless devices and broadcast media, but they complement it with various other notification systems:

- **Alert Ready (Wireless Public Alerts):**
  In all five jurisdictions, critical, life-threatening emergencies trigger Alert Ready

messages that go to every compatible cell phone, TV, and radio in the affected area. Each province/territory has a governance framework for this – Alberta and NWT use it under the branding "Alberta Emergency Alert" and "NWT Alert" respectively, Nova Scotia under "NS Alert", etc. Nova Scotia recently reported a 98% success rate in reaching cell phones during a test alert in January 2025, indicating strong coverage. Yukon likewise participates in Alert Ready (administered through Yukon EMO). The key challenge with Alert Ready in Yukon and NWT is that it **does not reach older 3G networks** or satellite phones, which many remote residents rely on. This gap reinforces the need for parallel traditional notifications.

- **Mobile Apps and Subscription Services:**
  Alberta stands out for developing its own **mobile app** (Alberta Emergency Alert app) which anyone can install for real-time push notifications. This app also allows users to read detailed instructions and share alerts. NWT did not build a proprietary app but adopted the **Alertable platform**, a third-party mass notification service – residents can download the Alertable app or opt in via text/email to receive NWT's alerts. Nova Scotia has not implemented a province-wide app; however, some municipalities independently use apps like Voyent Alert or Alertable to reach local citizens. BC, interestingly, relies on its **Wildfire app** (for fire-related notifications) and otherwise uses Alert Ready for critical alerts; BC has no single all-hazard app aside from encouraging the public to follow Emergency Info BC on social channels. For Yukon, leveraging an existing **mass notification app** (like Alertable) might be an efficient way to provide opt-in alerts on personal devices without building an app from scratch, especially to cover non-critical updates which Alert Ready is not used for.

- **Email and SMS subscriptions:**
  Simpler than apps, some jurisdictions offer email lists or text message sign-ups. Alberta provides RSS feeds and had explored email subscriptions for alerts. Nova Scotia's 511 service allows SMS subscriptions for road alerts. NWT's Alertable system can send SMS for those who sign up. Yukon currently does not have a broad subscription service for emergency notices (aside from weather alerts via third parties and road closures via Yukon 511). Establishing an **email/SMS bulletin** service could help reach users who prefer direct messages (as opposed to checking websites), and this could be integrated with Yukon.ca's

existing communications.

- **Social Media and Media Broadcasting:**
  Social media remains a **ubiquitous notification channel** across all jurisdictions. Alberta and BC have dedicated Twitter (X) and Facebook accounts for emergency management that push out quick updates and links. Nova Scotia's EMO and the RCMP (which often leads on public safety messaging) use social platforms to amplify evacuation notices and safety information. NWT found that **Facebook outranks other platforms** in their region in terms of reach and engagement – likely due to the demographics and the platform's relative efficiency on slower networks. Each government also leverages local radio and TV; for instance, BC and Alberta will send officials to give live updates which are broadcast on radio/TV and then summarized online. In small communities, the **local radio station** or community cable channel is sometimes the first to relay an emergency message after the authorities call them. Yukon's strategy should continue to include these outlets. **Community Facebook groups and local influencers** (like First Nation administrators, hamlet mayors) are important force-multipliers for Yukon; cultivating those networks to redistribute official info can greatly expand reach, as seen in NWT's practices.

- **Innovative Methods:**
  A few unique notification methods were noted. BC's deployment of **field information officers** to physically post notices and answer questions in evacuation zones is a practice born of necessity during large wildfire events. It exemplifies that high-tech solutions alone are not enough – sometimes a **printed poster on a community centre** or a **knock on the door** is the only way to reach people. NWT similarly uses community fire trucks with loudspeakers and door-to-door canvassing in extreme situations. Another innovation: Nova Scotia's use of **volunteer call teams** (from the Nova Scotia Guard or Red Cross) to phone vulnerable residents during an emergency was noted as a way to personalize the notification for those who might not understand a mass message. New Brunswick's implementation of the **PACE framework** ensures multiple redundant communication paths. When primary channels fail, they have systematic fallbacks from broadcast alerts to social media to direct media communication, and finally to emergency systems like ham radio networks and air raid sirens. All these methods underline the importance of **redundancy** in

emergency notification – each channel has its limitations, so employing many ensures overlap and that critical messages get through one way or another.

Mapping and Visualization Tools

The use of maps and visual tools to convey emergency information differs significantly by jurisdiction, often correlating with resource levels and philosophy on information sharing:

- **British Columbia** has made interactive mapping a **cornerstone** of its public communication. The **BC Wildfire Dashboard** is a highly interactive online map displaying all active wildfires with icons that users can click for details (size, status, response, etc.). Crucially, during evacuations, this dashboard also shows **evacuation alert and order perimeters** as polygons, so citizens can visually understand if their property is affected. This visual clarity likely contributes to public compliance. The wildfire map integrates other layers via API – for example, highway closures from DriveBC are shown, which is extremely useful if one is planning an evacuation route. BC also has **EmergencyMapBC**, an ArcGIS-based public map interface that can be used to display flood zones, earthquakes, or other hazard data as needed (this was used during the 2021 floods to show inundation areas). The success of BC's mapping led to very high engagement – the BC Wildfire app recorded over **1 million clicks on evacuation information** and over 200,000 clicks on fire bans in one season. Such volume indicates the public values these visual tools. However, GeoBC noted significant challenges with information lag times of 2-3 hours between local evacuation orders and provincial map updates, creating public confusion during rapidly evolving situations. They're working to implement direct ArcGIS integration to reduce these delays—an important consideration for any jurisdiction implementing similar systems.

- **Alberta** provides mapping primarily for wildfires and some flooding, but not in one unified place. The **Alberta Wildfire Status Dashboard** (similar to BC's, built on ArcGIS) shows fire locations and statuses across the province. For floods, Alberta has published static flood inundation maps and an interactive river conditions map run by the Environment department, but these are separate and not tied into the emergency alert site. Alberta's emergency alert website itself displays a text list of alerts with a basic provincial map highlighting regions

under alert, but it is not a detailed GIS. Recognizing the gap, Alberta's team noted the need for **standardized mapping capabilities and integration** as a lesson learned. This suggests that if Yukon pursues integrated mapping, it would be aligning with an identified best practice. Alberta's 511 system offers a map for road conditions, and some municipalities have local maps for hazards, but again, the public currently must check multiple sources for a full picture.

- **New Brunswick** maintains **specialized internal dashboards** for different emergency types. Their suite includes a general emergency management dashboard, plus specific dashboards for hurricanes, forest fires, river monitoring (floods), and their nuclear station. These dashboards are primarily for internal use rather than public-facing, which represents a different philosophy than BC's highly public approach. Each government department maintains its own GIS team dedicated to specific needs, while Service New Brunswick provides centralized data catalog services. This separation between internal operational visualization and public information represents a deliberate choice that may be worth considering in Yukon's context.

- **Nova Scotia** takes a **cautious approach** to public mapping. Internally, they use sophisticated GIS tools (ArcGIS Online, field data collection via Survey123) to track incidents. But externally, rather than live interactive maps, Nova Scotia EMO provides **static maps** at scheduled intervals – for example, a morning and evening PDF map of an ongoing wildfire or flood is shared with media and posted online. The rationale, as gathered from their staff, is to maintain **control over the message and avoid confusing the public** with constantly changing data or technical map layers. Essentially, they prioritize clear storytelling over real-time detail. This is an interesting contrast to BC. Nova Scotia is also working on **integrated flood mapping** with municipalities (using LiDAR to predict flood zones), which is a proactive planning tool. As they develop a one-stop info system, we expect Nova Scotia may include more user-friendly maps, but for now their public-facing maps remain simple.

- **Northwest Territories** has very limited public mapping, mainly due to the aforementioned connectivity and resource issues. The primary use of mapping is via **NWT Alert (Alertable)**, which provides a bare-bones map showing the geographic area of any alerts in effect. For instance, if a community is evacuated

due to wildfire, the alert description is complemented by a shaded area on a map of NWT on the Alertable app/website. Beyond that, NWT focuses on textual and verbal information. The **Forest Management Division** in NWT does use GIS for wildfire tracking, but those are internal tools and any maps shared publicly (e.g. fire location maps) are typically static images distributed to local authorities. The territory has found that investing in complex public-facing mapping is not worthwhile if many users cannot access it easily. Instead, they emphasize **clear descriptions** (e.g. "the fire is 10 km west of Highway 3 at mile marker 250, moving east") which can be conveyed by radio or simple web pages. This approach resonates with Yukon's need to serve users on slow connections; sometimes a written or spoken message is more universally accessible than a detailed map that requires high bandwidth.

For Yukon, these comparisons suggest a hybrid approach might be best. Yukon's Wildfire and Flood sites already use maps (and Yukoners with good internet appreciate those), but we should consider offering **low-bandwidth alternatives** or summaries for each map. Perhaps Yukon could mimic Nova Scotia's idea: provide **daily snapshot maps** during an incident alongside the live map, giving users the choice based on their connectivity. And like BC, Yukon should strive to integrate data – for example, showing road closures on the wildfire map or vice versa, to give one coherent view of a situation. Additionally, ensuring **mapping tools are optimized for cloud or scalable performance** will be important if usage spikes (Yukon saw very high traffic during the 2022 fires on its sites, which could strain servers).

Multi-Hazard Coordination and Information Integration

Coordinating communications in a multi-agency, multi-hazard emergency (e.g. concurrent wildfires and floods, or a long-duration event requiring many partners) is a complex task. The scan revealed different models:

- **British Columbia** employs a **central coordination hub** (the PECC) and has embedded Information Officers in incident management teams. This ensures that whether an incident is led by the Wildfire Service, a local authority, or another agency, the information flows up to the provincial level for dissemination. A concrete practice is BC's use of an **Information Officer role** who can inject important public information into the system even if data isn't fully synchronized yet (such as manually adding an evacuation order to the public dashboard before the GIS polygon is formally processed). This flexibility –

essentially a temporary manual override for the greater good – was noted as a strength in BC's approach, ensuring speed over bureaucratic perfection. BC also underlined the value of **cross-training and trust**: different ministries share data with the central system (via APIs and shared databases) because they have clear agreements in place. The "source of truth" may be distributed (e.g. wildfire data from BCWS, road data from Ministry of Transport), but through integration they present it as one authoritative voice.

- **Alberta** has a more **decentralized execution** but with strong guidance and policy from the centre. In Alberta, municipalities and regional authorities are often the ones initiating evacuations or alerts, but they do so using the Alberta Emergency Alert system under provincial criteria. The province provides a 24/7 Provincial Operations Centre that not only coordinates responses but also offers a **support desk for communication** – local officials can call in for help wording an alert or deciding if criteria are met. This ensures consistency. Alberta's use of the **Incident Command System (ICS)** is standard, and they've had to reinforce adherence to it after events showed some fragmentation. One key point Alberta raised is the **importance of a solid policy framework** with clear decision-making criteria. Alberta's approach emphasizes objective standards for when to issue alerts, using a neutral validation process through their provincial operations centre. This structured approach helps ensure consistent application of alert criteria regardless of external factors. Yukon could benefit from similar clear protocols in their alert decision framework.

- **New Brunswic**k's approach to concurrent emergencies leverages **advanced geofencing capabilities** within their alert system. When multiple hazards affect different regions simultaneously, they can create separate geofenced alerts targeted to specific areas, allowing for tailored messaging without causing unnecessary alarm in unaffected regions. For Yukon, this precise geographic targeting capability could help address the challenge of managing notifications across the territory's widely dispersed communities.

- **Nova Scotia**'s coordination structure starts local and scales up. Each municipality has an emergency coordinator, and they deal with localized events (often with little provincial involvement apart from advice). When larger events occur (such as the notable 2022 wildfire and hurricane in the same season), the province

activates a **Provincial Coordination Centre (PCC)**. Nova Scotia's innovation of **Regional Emergency Operations Centres** is essentially a way to cluster resources – multiple neighbouring municipalities join a regional EOC to respond collectively. This model could be relevant for Yukon if, say, several adjacent communities (a First Nation and a municipal village) are jointly threatened – a regional EOC approach can pool their limited staff. Nova Scotia also stood up the **Nova Scotia Guard** as a volunteer supplement for coordination, which helped fill logistical roles during simultaneous events. Communication-wise, Nova Scotia found that during their overlapping emergencies, having a single repository for information was lacking; they literally were using group emails and printouts which proved inefficient. This is driving their effort to create a centralized info system (likely similar to NWT's one-stop portal concept). The lesson here is that **information management needs to be as coordinated as operations management** – Yukon should plan for tools or processes that let different departments (Environment, Wildland Fire, Highways, Health, etc.) contribute to one common operating picture for communications.

- **Northwest Territories** functions with a **small central team and empowered regional leads**. The EMO in Yellowknife coordinates territory-wide strategy, but much of the implementation relies on regional emergency management coordinators and local community governments. Regular communication between these levels is key. NWT's experience during the severe wildfire season of 2023 (where they had 12 simultaneous evacuation events) showed that **frequent leadership communication** is crucial – the government held daily press briefings and conference calls with all community leaders to ensure everyone had the same information. This helped avoid siloed messages. Also, because resources are thin, they place a premium on **practical communication tactics** over formal documentation – for example, if a community Facebook page run by a mayor can reach people faster, EMO will directly feed that mayor the info to post, rather than insist all messaging come only from the capital. The trust in local conduits is a cornerstone of NWT's model, and Yukon similarly can leverage its local networks (many Yukon communities likely prefer hearing from their mayor or First Nation chief, even if the info originates from YG EMO).

In summary, effective multi-hazard coordination for communications seems to boil down to **centralizing information flows** (if not command) and **building strong communication protocols among agencies** before emergencies occur. Yukon has an

advantage in being a smaller jurisdiction where key players know each other; formalizing a **Joint Information System (JIS)** for Yukon – as hinted in Yukon's own EMO practices – could ensure that during a complex incident, all communications staff from relevant departments collaborate, either physically or virtually, to issue unified updates.

Notable Practices and Innovations

During the scan, some notable unique practices emerged, which are worth highlighting as they could inspire Yukon's approach:

- **BC's User-Centric Iteration:**
  BC attributed much of its platform success to an **iterative, user-centered development process** – making continuous small improvements based on user feedback and analytics, rather than trying to design a perfect system upfront. This agile approach allowed them to adapt their tools quickly as new needs emerged (for example, adding a new data layer to the wildfire dashboard or tweaking the interface for clarity). *Implication for Yukon:* Start with a solid but simple platform and continuously refine it with feedback from Yukoners, rather than waiting for a big-bang "ideal" solution. This also manages resource constraints by spreading development over time.

- **Alberta's Alert Governance:**
  The idea of a **24/7 support desk for alert issuers** and strict alert criteria ("loudspeaker not bulletin board") stands out as a governance innovation. It has improved the quality of alerts and public trust in Alberta. *Implication for Yukon:* While Yukon has fewer entities issuing alerts (mostly the Yukon EMO itself, and perhaps some municipalities), establishing clear criteria for when to issue an alert vs an advisory, and possibly having a second set of eyes (another official) review messages, can ensure consistency. Yukon might not need a full 24/7 centre due to scale, but having an on-call duty officer to assist or approve emergency alerts could be a scaled version of this.

- **New Brunswick's Systematic Improvement Cycle:**
  The province conducts **structured after-action reviews** following each incident, focusing on streamlining processes while maintaining necessary controls. Their commitment to continuous improvement rather than adhering to past practices has enhanced their emergency communications effectiveness over time. For

Yukon, this systematic approach to learning could be particularly valuable given the territory's seasonal staff turnover, helping to capture institutional knowledge and refine processes incrementally.

- **Nova Scotia's Information Release Strategy:**
  By deliberately **throttling public map updates** and focusing on succinct situation reports, Nova Scotia tries to reduce public confusion. While this runs counter to the instinct to provide real-time data, it is a conscious strategy to manage the narrative and prevent panic from raw data. *Implication for Yukon:* In a scenario where data is rapidly changing but not verified, Yukon might opt to communicate in timed briefs (e.g. morning/evening updates) to ensure accuracy. However, given Yukon's smaller audience, a mix of real-time alerts with periodic comprehensive summaries might work best. Yukon can take from NS the idea that **more data is not always better** for the public – clarity and usefulness matter more.

- **NWT's Community Engagement:**
  NWT's success heavily relies on **engagement with local community channels** – working closely with community governments, local radio (like Cabin Radio), and even providing content that local leaders can share. They also translate key messages into Indigenous languages where needed. *Implication for Yukon:* Yukon could formalize partnerships or protocols with First Nation governments and municipalities so that during emergencies, there's an established pipeline: YG provides information, and the community leadership helps disseminate it in the local context (and language, if necessary, given Yukon's indigenous language groups). This ensures cultural and regional relevance of communications and trust.

- **GeoBC's Accessibility Approach**:
  British Columbia has developed a **dual-faceted accessibility strategy** for emergency communications, incorporating both technical standards (colorblind-friendly design) and content approaches (Grade 4 reading level, multiple languages including French, Chinese, and Punjabi). This comprehensive approach ensures information reaches diverse populations with different needs and abilities. For Yukon, this model could inform efforts to make emergency

communications accessible to all residents, including incorporating First Nations languages and addressing varying levels of digital literacy across communities.

Each of these practices addresses certain challenges and could be adapted to Yukon's context as part of the recommendations.

Recommendations for Yukon's Emergency Communications

Drawing on the analysis above, this section provides **high-level recommendations** for Yukon to enhance its public emergency communications. The recommendations are split into **strategic** (governance, policy, and coordination) and **technical** (platforms, tools, and infrastructure) categories, though they are interrelated. They aim to capitalize on the successful approaches observed elsewhere, while addressing Yukon's identified challenges such as connectivity gaps, platform fragmentation, and resource limitations.

Strategic Recommendations

1. **Establish a Central "One-Stop" Information Hub:**
   Develop a unified Yukon Emergency Information Portal that serves as the authoritative source during any emergency. This could be an upgraded section of Yukon.ca or a new portal that aggregates content from Wildland Fire, Environment (flood info), Highways (511), and Yukon EMO. A central hub would mirror NWT's and BC's approach, reducing the need for the public to navigate multiple sites. Local jurisdictions (municipalities and First Nations) should be partners in this, knowing they can point their residents to the Yukon hub for verified information while still maintaining local channels for community-specific details.

2. **Implement a Joint Information System (JIS) and Clear Roles:**
   Formalize a Joint Information System within Yukon's emergency response framework. This means that during multi-department emergencies, communications representatives from all involved agencies (Protective Services, Wildland Fire, Highways, Health, etc.) collaborate and coordinate messages. Regular inter-agency drills or meetings should include a communications component to practice this flow. Clearly outline **who approves and issues alerts**

vs updates, to avoid delays or confusion. Alberta's model of a support desk and Alberta's emphasis on consistent criteria suggests Yukon should define its alerting thresholds and perhaps designate a small **24/7 on-call communications team** during high-risk seasons to vet and send out public alerts promptly.

3. **Adopt a "Multi-Channel, No Person Left Behind" Strategy:**
   Craft a communications strategy that enumerates all channels (website, SMS, social media, Alert Ready, radio, etc.) Yukon will employ, and for each major community, ensure at least **3 redundant methods** of reaching people. For example, for isolated communities: (a) Alert Ready broadcast (though 3G issue noted), (b) local FM radio announcement, (c) satellite phone tree via community leaders, and (d) a chartered aircraft drop of flyers if needed for prolonged events. This kind of multi-channel commitment, as seen in NWT's approach, ensures redundancy. Document these plans so that when an incident occurs, there is no ambiguity about how to get the word out in each region. Additionally, continue to **strengthen relationships with local media and community leaders** – perhaps via annual workshops or info sessions – so that trust and familiarity are in place before a crisis.

4. **Enhance Public Education and Preparedness Outreach:**
   Leverage off-season months (September–February, as Yukon EMO currently does) to run public education campaigns similar to NWT's "Be Ready" or BC's "PreparedBC". This could include distributing emergency guide booklets, holding community preparedness fairs, and using social media to quiz or challenge the public on readiness (with small incentives). Educated citizens are more likely to heed warnings and less likely to panic. Incorporate Yukon-specific content (e.g. how to deal with highway closures or being trapped between communities). Also, include **Indigenous language materials** for communities where English may not be the first language, following Nova Scotia's example of bilingual alerting. This builds inclusivity and trust in the system.

5. **Policy Framework for Alerting and Information Release:**
   Develop a clear policy document (or protocol handbook) for emergency communications. This should define what constitutes an emergency alert vs. an advisory vs. routine public info. It should include **plain language guidelines** – for instance, use "Leave now" instead of "Order to evacuate", or "Prepare to

evacuate" instead of "Evacuation alert", to make required actions instantly clear. The policy should address how to avoid alert fatigue (perhaps limit use of the Alert Ready system to truly critical events in line with national standards) and how to coordinate communications during overlapping incidents. By codifying these, Yukon can ensure consistency regardless of staff turnover, echoing Alberta's stress on a strong foundational policy. Regularly update this policy with lessons learned (e.g. after each season's debrief, adjust the language or process as needed).

6. **Continuous Improvement and User Feedback Loop:**
   Establish a mechanism to collect feedback on communications effectiveness after emergencies. This can be through online surveys of the public, debrief interviews with community leaders, and analytics review (e.g. which pages were most visited, where did users drop off, etc.). Yukon already does inter-departmental debriefs; adding the public's perspective will enrich those. Use the findings to make incremental improvements to communication processes and platforms each year. This approach aligns with New Brunswick's systematic after-action review process, which has helped them refine their communications approaches after each incident while maintaining necessary controls. This echoes BC's iterative approach to refining their systems based on real-world use.

Technical Recommendations

1. **Integrate and Modernize Digital Platforms:**
   Invest in **integrating Yukon's existing digital platforms** (Yukon.ca emergency updates, Wildfire Hub, Flood Atlas, 511 Yukon). In practical terms, this could mean creating a common landing page that pulls in data from all these sources and presents them in a unified interface or at least provides one-click access to each with a consistent look and feel. Consider developing API connections between systems – for instance, if a new wildfire evacuation is issued in the Wildfire Hub, it could automatically post a summary on the Yukon.ca updates page and send a notification to a Yukon emergency app (should one exist). Alberta and BC's experiences show that such **data-sharing via APIs** is feasible and greatly improves timeliness. Modernizing may also involve upgrading back-end systems to ensure compatibility (for example, ensure the flood mapping system can talk to the main alerting system). Technical teams should assess

where manual work can be reduced by system integration.

2. **Cloud Infrastructure and Scalability:**
   Migrate critical web services (especially the Yukon emergency information portal and any map services) to scalable cloud infrastructure. BC's move to AWS cloud was explicitly noted as key to handling traffic surges during emergencies. Yukon can work with its IT department or external partners to ensure that in an emergency, if tens of thousands of people (including those outside Yukon seeking info) hit the website simultaneously, it will not crash. Cloud hosting with auto-scaling, content delivery networks (CDNs) for static content, and redundancy across regions can achieve this. Additionally, explore creating a lightweight, **low-bandwidth version** of the site (text-only, few images) that can be automatically served to users on slow connections – similar to how Yukon.ca/emergencies is already designed to be minimalistic. This will cater to the 40% of Yukon communities with connectivity challenges.

3. **Adopt/Develop a Yukon Mobile Alert App or Leverage Existing Ones:**
   Given the increasing expectations for smartphone accessibility, Yukon should provide some form of **mobile app or notification service**. The quickest path could be to join (or informally promote) the **Alertable platform** (as NWT did) so that Yukon alerts are available in that app which many Canadians already use. Alternatively, Yukon could develop a simple app that mirrors the content of the emergency portal and pushes notifications for new alerts and updates. This app should also be capable of offline caching (so that once downloaded, key info like emergency contact numbers and guides are available without connectivity). It's understood that not everyone will use an app, but it serves as one more channel, and especially younger residents or those traveling might rely on it. Ensure any chosen solution is **integrated with the main systems** (so that posting an update on the website triggers the app notification, etc., to avoid double entry).

4. **Enhance Mapping Tools with Multi-Hazard Layers and Offline Maps:**
   Yukon's Wildfire Hub and Flood Atlas are valuable; build on them by adding more layers and linking them. For example, integrate highway closure information from 511 into the Wildfire map during fire season (BC's example shows users appreciate seeing everything in one place). Develop the ability to quickly publish an *evacuation polygon* on these maps when an order/alert is

issued, something BC and Alberta have streamlined. For floods, ensure the Flood Atlas can show areas under evacuation or high risk. Also, create **printable map outputs** (PDFs) that can be shared on social media or downloaded – Nova Scotia's approach of static maps could be emulated by having a "Download Map" button that generates a simplified current map of the incident, which can then be sent via email or printed for community bulletin boards. This bridges the gap between interactive GIS and low-tech dissemination. On the back-end, consider using the same GIS database for all hazards (Yukon could have an internal common operating picture map that different departments update, and from which various public maps draw selective data).

5. **Expand Offline and Traditional Communication Tools:**
   Technically, Yukon should enhance tools for offline use. This includes maintaining things like **satellite phones or radio systems** for communities completely offline, procuring **portable radio transmitters** that can be deployed to broadcast information in a localized area if needed (some provinces have mobile emergency broadcast equipment for remote locales), and ensuring the government's **1-800 emergency information line** is up-to-date with recorded messages during crises (BC uses such phone lines with success in rural areas). Additionally, explore **cell broadcast** capabilities beyond Alert Ready – e.g. local SMS blasting if possible via telecom providers for communities with cellular but not LTE. While these are not "digital" in the modern sense, they are technical solutions that extend the reach of communications.

6. **Monitoring and Analytics Tools:**
   Deploy analytics on all digital channels (website analytics, social media monitoring, etc.) to gather data during emergencies. This can provide real-time feedback – e.g., if a particular page is getting thousands of hits, maybe that info should be featured more prominently. Likewise, monitor social media chatter via simple dashboards or even just by following hashtags to catch misinformation early and correct it with official info. Tools or scripts that aggregate mentions of "Yukon fire" or "Yukon emergency" could alert the comms team to trending concerns. Over time, these analytics will highlight how people are accessing info (mobile vs desktop, which external sites refer them, etc.), guiding further improvements.

By implementing these strategic and technical recommendations, Yukon can build a **robust, responsive, and inclusive emergency communication system**. The goal is to ensure that whether a wildfire threatens a small community, a flood risks a major highway, or an earthquake causes territory-wide impacts, **every resident and stakeholder – regardless of location or connectivity – can receive timely, clear information and instructions.** Moreover, Yukon's agencies will be able to operate in a coordinated fashion, backed by the right tools and policies, to deliver one cohesive message when it matters most.

Conclusion

This jurisdictional scan underscored that successful public emergency communications rely on both **smart use of technology** and **strong inter-agency coordination**. Yukon faces a challenging set of conditions (vast distances, patchy communications infrastructure, and multiple hazards often occurring in the same season), but it also benefits from a close-knit population and the experiences of other regions to draw upon. British Columbia's highly integrated platforms, Alberta's disciplined alerting protocols, Nova Scotia's community-focused strategies, and Northwest Territories' pragmatic multi-channel approach each offer valuable lessons. By investing in an integrated information hub, maintaining multi-channel outreach (from cutting-edge apps to traditional radio), and enacting clear governance for emergency messaging, Yukon can significantly enhance its public emergency communications.

The recommendations provided aim to ensure Yukon's residents are well-informed and safe when emergencies arise, and that the Yukon government can efficiently manage and disseminate critical information. As this is an initial analysis, it is intended to spur discussion and refinement. Feedback from Yukon stakeholders – including community leaders, technical staff, and the public – will be important to iterate on these findings. With continued collaboration and refinement, Yukon's emergency communication system can become both resilient and responsive, saving lives and reducing harm when the next crisis strikes.

Appendices

The following appendices contain detailed supporting materials for this jurisdictional scan. These materials are available internally to Government of Yukon staff but have not all been published publicly due to their draft nature and inclusion of sensitive operational information. If you'd like to view these materials, please contact emo.yukon@yukon.ca to request access.

Appendix A: Jurisdiction Comparison Table

This detailed table provides a side-by-side comparison of emergency communication approaches across all the provinces and territories in Canada studied. The table includes:

- Overview (population, size, emergency types, lead emergency agency)
- Communication Channels
- Mapping & Visualization Systems
- Integration & Multi-hazard approaches

Jurisdiction Comparison Table

Appendix B: Interview Notes and Key Takeaways

Detailed notes from interviews with emergency management officials and technical leads, including:

- British Columbia – GeoBC (information integration and geospatial data management)
- British Columbia – Wildfire Service (public information during wildfire events)
- Alberta – Alberta Emergency Alert and Provincial Operations Centre
- Nova Scotia – Department of Natural Resources and Renewables (forest protection/wildfire communications)
- New Brunswick – Emergency Measures Organization (NBEMO) and Geomatics team
- Northwest Territories – Emergency Management Organization

These notes contain key operational insights, technical specifications, and reflections on each jurisdiction's emergency communication successes and challenges.

Appendix C: Detailed Jurisdictional Analyses

In-depth profiles of each jurisdiction's emergency communications approach:

- British Columbia
- Alberta
- Nova Scotia
- New Brunswick
- Northwest Territories

These analyses provide more detail than could be included in the main report while preserving the cross-jurisdictional focus of the primary recommendations.