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GENERATIVE AI FOR WILDFIRE REPORT

ENGINEERING REPORT

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I OVERVIEW

This engineering report delivers a comprehensive **Generative AI for Wildfire State-of-the-Art Report** as part of the OGC Disaster Pilot 2024 Phase 2. This deliverable builds on Xentity's expertise and contributions to Phase 1 (D-123) for advancing the integration of Generative AI (GenAI) technologies into wildfire risk, hazard, and insurance workflows. Phase 1 provided a U.S. data focus across all wildfire use cases and went deeper into broader GenAI governance, capabilities and technology approaches in LLM, RAG, NLP integration, GANs, and AI Agent integration.

I.A. Use Cases and Functionalities

This report outlines **key GenAI-driven use cases** relevant to wildfire resilience, response, and risk assessment. This report centers on leveraging Generative AI (GenAI) to strengthen wildfire insurance and preparedness efforts in Canada, addressing social impact, operational efficiency, and business resilience. Specifically, the use case focus, and needed data focuses on Helping People and Business Management as it relates to Wildland Fire Insurance Stakeholders.

I.B. Data Sources and FAIR Evaluation

Phase 2 includes an inventory of over **200 Canadian wildfire-related data sources** categorized in data subject areas of Wildland Fire National Strategy & Management, National Base Data Layer Information, and Risk Indicators, Analysis, and Assessment which would be needed for GenAI Training data.

I.C. OGC Compliance and Interoperability

This report relies on the Phase 1 report basis which aligns with OGC best practices, ensuring cross-agency data integration and AI model transparency including references to OGC APIs and Data Standards, Metadata and Traceability, and AI Model Governance.

II EXECUTIVE SUMMARY

III KEYWORDS

The following are keywords to be used by search engines and document catalogues.

open science, workflows, Earth observation, reusability, portability, transparency, OGC, Open Geospatial Consortium, Wildland Fire, Insurance, Canada, Artificial Intelligence, Generative AI, GenAI, LLM, RAG, AI Agent, GAN

IV CONTRIBUTORS

All questions regarding this document should be directed either to the editor or to the contributors.

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V FUTURE OUTLOOK

This report focuses on By focusing on Phase 2 priorities, combined with Phase 1 inputs, which provides a forward-looking roadmap for GenAI adoption in wildfire resilience and risk management including consideration of the following:

- **Key Wildland Fire Business Objectives for Canadian Insurance Sector:** Insurers lack granular, AI-driven wildfire risk assessment tools . Current models would benefit to leverage high-resolution geospatial and ecosystems datasets for social impact and business management. Develop GenAI-powered wildfire risk models that integrate

geospatial, fuels, topography, weather, historical fire data, and predictive analytics for improved underwriting and risk-based insurance pricing.

- **Data Needs:** Generative AI requires domain-specific, structured, and unstructured wildfire datasets to enhance predictive accuracy. Over 200 Canadian wildfire-related datasets were identified, categorized, and assessed for AI readiness. Establish continuous training and labeled data improvement lifecycle to refine AI models, ensuring real-time API integrations where necessary.
- **Mapping Use Cases to Dataset Readiness and Priority:** Data gaps in Canadian wildfire analytics exist , particularly in structure materials/fuels, fuel moisture levels, and community vulnerability metrics . Prioritize high-impact AI use cases (e.g., Community Risk & Resilience Assessment, Grant & Funding Strategy Development, and Asset Risk Reduction & Loss Prevention) by expanding integration with national datasets and real-time wildfire data sources.
- **Gen AI WF Capabilities to Support Use Cases:** AI language models (LLMs) struggle with contextual wildfire decision-making without enhanced domain adaptation, retrieval-augmented generation (RAG), and multi-modal AI . Implement RAG and knowledge graph-based AI architectures to improve wildfire intelligence extraction, risk communication, and operational decision-making .
- **GenAI Roadmap Recommendations for Wildfire Insurance:** Regulatory frameworks and AI governance policies are not well established for Generative AI in wildfire insurance and risk assessment. Align AI model development with OGC interoperability standards to ensure data provenance, auditability, and regulatory compliance. Adopt OGC Training Data Markup Language (TDML-AI) to ensure traceability, validation, and ethical AI deployment in wildfire analytics.
- **Findings on Stakeholder Engagement:** AI adoption in wildfire management is hindered by organizational awareness, data silos and in cases cultural resistance. Establish cross-sector collaboration between wildfire agencies, insurance companies, and AI developers to accelerate GenAI adoption. AI pilot projects are essential for proving the effectiveness of wildfire AI applications. Conduct targeted AI prototype testing (e.g., Wildland Fire Customer Awareness tool, Predictive Risk Dashboard, and Claims Automation System) with measurable success metrics.

VALUE PROPOSITION

By harnessing GenAI's capabilities, both public and private sector stakeholders can augment wildfire management and insurance processes, ultimately enhancing community resilience, economic stability, and effective disaster preparedness in the face of escalating wildfire risks.

1 INTRODUCTION

1 INTRODUCTION

The Wildland Fire (WF) community depends on robust data insights and advanced tools to bolster planning and operational decisions—augmented rather than replaced by the experiential knowledge of stakeholders. This report centers on **leveraging Generative AI (GenAI) to strengthen wildfire insurance and preparedness efforts in Canada**, addressing social impact, operational efficiency, and business resilience. Specifically, the use case focus, and needed data focuses on Helping People and Business Management as it relates to Wildland Fire Insurance Stakeholders. The report also identifies over 200 Canadian datasets in data subject areas of Wildland Fire National Strategy & Management, National Base Data Layer Information, Risk Indicators, Analysis, and Assessment, and Wildland Fire Incident Command Structure Data which would be needed for GenAI Training data.

1.1. Objectives — Report Outputs

GenAI's Transformative Potential though still maturing, GenAI's **human-in-the-loop** approach can radically scale data processing and deliver faster, more accurate insights. This resulting report, outlines, how state-of-the-art GenAI technologies elevate wildfire insurance through:

- **Data Mapping** – Identifying critical WF datasets in Canada and assessing coverage gaps.
- **Stakeholder Assessment** – Pinpointing key processes and organizations poised to benefit from GenAI.
- **Use Case Prioritization** – Targeting high-value areas such as predictive analytics, planning, and automation.
- **Use Case Readiness Evaluation** – Gauging data readiness and aligning with GenAI-driven solutions including Use to Information Class Matrix to understand data readiness.
- **Actionable Recommendations** – Offering guidance on stakeholder collaboration, governance, and strategic investments including GenAI Roadmap and and potential Capabilities and Prototypes to guide GenAI adoption in wildfire insurance.

A summary of the activities leading to this report is included in Appendix A.C.

2

CORE DATA NEEDS TO SUPPORT WILDLAND FIRE GEN AI

2 CORE DATA NEEDS TO SUPPORT WILDLAND FIRE GEN AI

To support such capabilities, GenAI relies on pre-trained well-tuned models augmented with additional domain contextual data updated with real-time API data where needed for highly changing emergency scenarios with a well-defined continuous training and labeled data Improvement lifecycle. Data to be considered will be unstructured documents, tabular datasets, knowledge graphs embedding with Entity Resolution , and raster collections. The following captures the information classes of data types and analysis of over 200 sources in Canada including systems, documents, models, datasets, and policy guidance. Each discovered dataset is mapped to a primary information class, data readiness and value to GenAI score for consideration. The discovered data source lists are in Appendix A.A Data Reference Model and Source Inputs.[1]

Table 1 — Table Data Sources Count by Wildland Fire Data Reference Model Information Classes

DATA SUBJECT AREA	*INFORMATION CLASS*	*EXAMPLE ELEMENTS*	DATA SOURCE COUNT
Wildland Fire National Strategy & Manageme	*STRATEGIC GUIDANCE*	*Principles, Policies, Performance Measures, Disaster Declarations*	41
	STRATEGIC RESOURCES — PERSONNEL	*Budget, Human Resource Mgmt, Strategic & Workforce planning/ readiness (Certifications/Qualifications, Availability, Dates), Prevention Workload Analysis, Performance Evaluations*	0
	STRATEGIC RESOURCES — ASSETS	*Asset allocation & planning, Budget, Asset Mgmt*	2
	PLANNING INDICATORS	*Regional/National Plans, Budget, Natural Resource Management, Strategic , Active Incidents, Seasonal Outlooks, Interagency Initial Attack Assessment, Fire Statistics*	16
	INFORMATION MANAGEMENT	*Knowledge management, Records management, Resource Ordering Controls (Apparatus, Air, Organization. Person)*	5
National Base Data Layer Informatior	*TOPOGRAPHIC*	*Elevation (NED/#DEP), Hydrographic (NHD, 3DHP, AGRAM), Transportation, Structures, Boundaries, Names, Land Cover, Imagery, Grids (NG, PLSS, etc.)*	12

[1]Of note, for the Data Subject Area “Wildland Fire Incident Command Structure Data”, there are no publicly available resources for Government or Insurance Incident Command or Operations.

DATA SUBJECT AREA	INFORMATION CLASS	EXAMPLE ELEMENTS	DATA SOURCE COUNT
	MAPS/REPORTS	Multiple Base maps, Historical Topos, Incident GISS (PMS-936), FS Catalog (Avenza), NWCG Readiness, IAPs	40
	FOREST/GRASSLAND PLANS	Fire Management, Invasive Species, Lands and Realty Management, Natural Resources, Private Land, Recreation Management, Sustainability / Climate, Urban Forests, Fire Program Analysis, Budget Alternatives, FireWise	0
	REMOTE SENSING	Incident, IR, Fire Detection, Vegetation, Fuel, Disturbance, Drone Imagery, Video, Aircraft, GPS (Resource/Flight), Ignition (Haines), Weather Stations, Stream Gauges, Atmospheric (Wind, Aerial Moisture,Thermal,Cloud Cover,)	5
National Base Data Layer Information	LAND ANALYTIC PRODUCTS	Land Cover/Disturbance Change, Species Monitoring, Climate Models, Habitat Activities, Ecological Models, Soil Models, Fuel Models, Rainfall accumulation	13
	FIRE ANALYTIC PRODUCTS	Fuel Treatments, Fire Suppression, Fire Management Plans, Active Fire Management, Fuels and Post-fire Report, BAER, Monitoring Trends in Burn Severity, Plume Models, IR	16
	DISPATCH	Centers, Coverage, Jurisdiction	0
	FIRE EXTENT & INTENSITY	Suppression Response, Fuels, ignition, Weather, Topography, Burn Probability	9
Risk Indicators, Analysis, and Assessment	POPULATED AREAS	Low Density, High Density, Residential Areas, Disaster Potential (Quakes, Slides, Flood, etc.)	30
	AIR QUALITY	Non-Attainment Areas, Class 1 Areas, Environmental Science, Atmospheric	10
	WEATHER	Lightning, ForeCasts, Current	18
	RECREATION INFRASTRUCTURE	Trails, Ski Areas, Sites, Campgrounds, Cultural Resources	2
	ENERGY INFRASTRUCTURE	Power Lines, Power Plants, Power Farms, Cell Towers, O&G Pipelines, Fuel Storage	2
	SPECIES & WATER PROTECTION	Endangered Species, Habitat, Wildlife, Watersheds (AFRAM), Critical Habitat	3
	FIRE SCIENCE ANALYTICS	Response Capacity, Fuel Treatments, Prevention Programs, Exposure Reduction, Specialty Models (Predictive, Fire Effects, Public Health, Smoke Estimation, Plume,,etc.), Forest/Grassland Plans, Contingency planning, Health and safety,	3

DATA SUBJECT AREA	INFORMATION CLASS	EXAMPLE ELEMENTS	DATA SOURCE COUNT
	FIRE RISK ASSESSMENTS	*Fire Behavior Models, Spatial Value Patterns, Loss/Benefit Functions, Fire Ecology, Landscape Risk Assessment, Management Options, Goals, NEPA, Risk Management Strategy*	6
Wildland Fire Incident Command Structure Data	*COMMAND - STRATEGIC*	*Performance, Program evaluation, Standard, Resource Planning, Evacuation, Situation Analysis/Reports, Alerts*	0
	PLANNING	*Controls and oversight, Assessment, Conservation (Life, Property), Fire Extent & Intensity, Staging/PIO Plans, Fuels, Weather, Fire Behavior, Ignition*	0
	PLANNING — GISS (PMS-910,938, 936)	*Geospatial, Location, Remote sensing and imagery, IR, Field Collection, Incident Markups*	0
	LOGISTICS — PERSONNEL	*Personnel/Apparatus Request/Fulfillment, (Certifications/ Qualifications, Availability, Dates), Prevention Workfload Analysis, Assignment*	0
	LOGISTICS — ASSET/ GENERAL	*Assets (Air, Apparatus, Equipment, Radio), Fixed asset (Aviation, Obstructions, JFOs, Shelters, Interagency Cache, Weather Stations, Dispatch, Staging), Land, Personal property and equipment, Resource Availability/Location/Status, CAD, Real-Time Location*	0
	OPERATIONS	*Incident, Occurrence, Resource Location, Response, BAER, Supp. Repair, Navigation Routes, Prescribed Event Plans, Safety Reporting*	0
	FINANCE	*Account, Collection and receipt, EFFPay, AP/AR, Billing*	0
	ADMINISTRATION	*Acquisition and procurement, Resource Orders, ICS Reports, Staging*	0

Data Gap Commentary: National Structures data including construction, size, materials, and proximity to ecosystem fuels.

3

KEY WILDLAND FIRE BUSINESS OBJECTIVES FOR CANADIAN INSURANCE SECTOR

3 KEY WILDLAND FIRE BUSINESS OBJECTIVES FOR CANADIAN INSURANCE SECTOR

Given the objectives, the following use cases have been grouped by ***Helping People*** (Social Impact and Community Engagement) and ***Insurance Business Management*** (Risk, Claims, Pricing, and Research).

3.1. Use Cases — Helping People (Social Impact and Community Engagement)

Wildfire preparedness in Canada can be significantly enhanced by **high-priority** use cases like **Community Risk & Resilience Assessment** and **Grant & Funding Strategy Development**, which enable data-driven funding strategies for wildfire mitigation and target the most at-risk communities. **Predictive Neighborhood Risk Modeling** and **Resilience & Adaptation Measure Support**, each rated **medium**, help municipalities identify vulnerable neighborhoods and optimize long-term adaptation efforts. While **Community Wildfire Protection Plans (CWPP) Support**, **Evacuation Planning & Optimization**, and **Community Engagement & Outreach** are labeled **low** to **medium** in priority, they remain critical in building broad community awareness and improving overall wildfire readiness.

Table 2 — Table Use Cases — Helping People (Social Impact and Community Engagement)

USE CASE	SUMMARY	BENEFITS	GENAI VALUE	NEED
1. Community Risk & Resilience Assessment	Generative AI can be used to assess community wildfire risk levels based on local data (e.g. , historical fire data, topography, weather patterns, infrastructure). AI-powered tools can highlight high-risk neighborhoods or areas with limited resilience, providing municipalities and governments with targeted insights for resilience-building initiatives. It is important to clarify which areas should be analyzed and the underlying reasons for selecting those specific data points (i.e., where to look and why).	Improved understanding of vulnerable areas; better prioritization for mitigation and adaptation funding (e.g., grants). Additionally, explaining when these assessments should occur can further justify the approach.	High	High
2. Grant & Funding Strategy Development	Develop AI models to assist municipalities and governments in creating more targeted grant funding guidelines. By analyzing past projects, hazard data, and community needs, Generative AI can help structure more effective funding programs for wildfire mitigation, community	Streamlined, data-driven grant guidelines that align with real-world risk factors and community needs. This approach can help inform the	High	Medium

USE CASE	SUMMARY	BENEFITS	GENAI VALUE	NEED
	preparedness, and recovery. Although this process occurs infrequently and is often managed by internal staff, incorporating AI can support incentive programs—such as Fire Smart—to better define and inform grant and funding strategies, positioning the organization as a key ally.	organization's own programs and provide guidance on both building and receiving grant funding.		
3. Community Wildfire Protection Plans (CWPP) Support	Use AI to process historical wildfire data and create actionable inputs for developing or updating CWPPs. AI can analyze fuel loads, local infrastructure, and evacuation routes to provide municipalities with real-time recommendations and planning tools. If AI helps to build capacity for reaching more citizens nationwide—and if there is a genuine knowledge gap—this can enhance current practices. Such improvements may also benefit related initiatives like Fire Smart, ultimately generating a large societal impact.	More effective, data-driven CWPPs that are personalized to specific community needs. Leveraging GenAI in this context could significantly extend reach and capacity, provided it addresses an identified gap.	Low	Medium
4. Predictive Neighborhood Risk Modeling	AI can process local vegetation, weather patterns, and community assets to predict wildfire risk on a neighborhood level. Predictive risk computer vision models can identify vulnerable infrastructure such as homes, power lines, and emergency routes. While this approach may lean more on traditional ML methods, it provides a solid foundation for targeting specific areas, enhancing local relationships and capacity.	Provides municipalities with granular insights into at-risk areas, enabling better resource allocation for mitigation efforts (e.g., creating fire breaks or retrofitting homes). This foundation can help prioritize interventions even if full ownership of the model lies elsewhere.	Medium	High
5. Evacuation Planning & Optimization	GenAI models can simulate multiple wildfire scenarios to predict the best evacuation routes, timing, and shelter locations for specific communities. It factors in weather data, real-time fire location, infrastructure, and population density.	Better preparedness and safety for communities during fire events by creating efficient, adaptable evacuation plans. Note: While beneficial for government or emergency management teams, this may have less direct value for insurance companies that are not responsible for managing evacuations.	Low	Low
6. Resilience & Adaptation	Generative AI can assist municipalities in assessing and planning for climate resilience	Helps municipalities create actionable	Medium	Medium

USE CASE	SUMMARY	BENEFITS	GENAI VALUE	NEED
Measure Support	by modeling the long-term impacts of wildfire and evaluating the effectiveness of various mitigation measures like fire breaks or vegetation management. However, integrating expert insights to target region-specific knowledge may offer superior value, connecting Canadians to the right resources rapidly.	adaptation plans based on solid predictive data, driving efficient use of resources for wildfire prevention and recovery. Leveraging regional expertise can ensure that the information is accurate and promptly available, potentially generating high impact in a short time frame.		
7. Community Engagement & Outreach	AI-driven tools can help municipalities create tailored public education campaigns about wildfire risk and mitigation efforts. By analyzing demographic and local data, Generative AI can recommend the best messaging strategies and communication channels for specific communities.	Increased community awareness and preparedness for wildfire risk. Given that there is already a partner providing these services, AI-driven tools here might serve more as a complementary resource.	Medium	Low

This effort also assessed the following, while not considering a sufficient priority to review.

- **Interactive Learning Modules -** AI can create interactive, multimedia-rich learning experiences that engage students through videos, quizzes, simulations, and gamified content. By generating dynamic lessons that adapt to student input, AI makes learning more engaging and ensures students can actively participate in their educational journey. _Most entities doing such and perceived AI will not add more value.
- **Scenario Simulation -** Generative AI can create different scenarios based on various economic factors (e.g., demographic changes, environmental factors, climate change, interest rates, demand changes, global events). This helps understand potential outcomes and prepare for uncertainty by planning ahead for multiple contingencies. _Noted as not a priority for AI, yet in general good practices for looking at different scenarios is always good.

3.2. Use Cases – Insurance Business Management (Risk, Claims, Pricing, and Research)

In the insurance domain, **Loss Analysis for Portfolio Management** stands out as a **high-priority** area, offering significant potential to reduce aggregate risk. **Asset Risk Reduction**

& Loss Prevention, **Claim Efficiency & Automation**, **Predictive Risk & Pricing Models**, and **Enhanced Marketing & Outreach to Municipalities**—all rated **medium**—can streamline damage assessments, refine underwriting, and bolster policyholder engagement. Lower-priority activities such as **Evacuation Risk & Insurance Liability Modeling**, **Neighborhood Risk Analysis for Insurance Pricing**, **Automated Disaster Response Cost Estimation**, **Post-Event Remediation & Insurance Recovery**, and **Insurance-Wide Data & Research Sharing** may receive fewer immediate resources but still hold value as longer-term initiatives for improving sector-wide resilience.

Table 3 — Table Use Cases — Insurance Business Management (Risk, Claims, Pricing, and Research)

USE CASE	SUMMARY	BENEFITS	GENAI VALUE	NEED
1. Asset Risk Reduction & Loss Prevention	Using AI to evaluate the risk of loss or damage to insured properties based on environmental, topographic, and wildfire data. Insurance companies can offer targeted risk reduction advice to policyholders, such as home retrofits or vegetation management strategies.	Reduction in asset loss through better-informed risk prevention actions; improved policyholder relations through proactive support.	Medium	High
2. Claim Efficiency & Automation	Generative AI can streamline and automate claims processing by extracting and analyzing key data from incident reports, photos, and video submitted by policyholders. It can also automate the assessment of damage severity based on remote sensing data (e.g., satellite imagery).	Faster claims processing and reduced administrative costs; improved accuracy in claims settlement.	Medium	Medium
3. Evacuation Risk & Insurance Liability Modeling	AI can model evacuation patterns during fire events and assess insurance liability based on the scale of evacuation (e.g., number of households impacted). This modeling can help adjust coverage or pricing models based on the severity of potential risks.	More accurate liability assessments for insurers, supporting better coverage options for clients.	Low	Low
4. Predictive Risk & Pricing Models	AI can refine pricing models by incorporating predictive analytics based on a wide range of variables (e.g., climate trends, fire risk, local hazards). By analyzing historical trends, AI can predict future wildfire risk in a specific area and adjust premiums accordingly.	More accurate premiums, improving profitability while ensuring fair pricing for policyholders.	Medium	Medium
5. Neighborhood Risk Analysis for Insurance Pricing	By analyzing geospatial data, historical fire incidents, and current vegetation/land use conditions, AI can help insurers assess neighborhood-specific wildfire risk. This approach can also evaluate proximity to other	Improved pricing accuracy and fairness based on localized risk assessments. (Note: While similar analyses can sometimes be performed	Low	Medium

USE CASE	SUMMARY	BENEFITS	GENAI VALUE	NEED
	sources of risk beyond wildfires, providing a broader risk perspective.	without AI, integrating AI may add further precision.)		
6. Automated Disaster Response Cost Estimation	Generative AI can estimate the total financial impact of a wildfire disaster by analyzing satellite data, fire progression, asset value, and insured property data. It could generate predictive reports that help adjust reserves and financial models for insurers.	Better financial forecasting and more accurate disaster response planning for insurers. (Caution: This application occurs infrequently, has low stakeholder demand, and is somewhat outside the company's core focus.)	Low	Low
7. Enhanced Marketing & Outreach to Municipalities	AI can help insurance companies develop targeted marketing campaigns for municipalities, offering tailored insurance products that focus on wildfire risk and resilience measures. AI can also help with creating educational content for municipalities to better understand their insurance needs. This solution emphasizes the use of region-specific language and even automates drafting communications—such as letters—for government and municipal outreach.	Strengthened relationships between insurers and municipalities, improving market share and awareness of available services.	Medium	Medium
8. Post-Event Remediation & Insurance Recovery	After a wildfire event, AI can assist in assessing environmental damage and providing remediation strategies that insurance companies can use to help affected communities recover. This can also include creating new insurance products that cover environmental restoration or mitigation.	Expedited recovery for affected communities; new opportunities for insurers to offer recovery-focused services. (However, foundational challenges need to be addressed before fully capitalizing on this solution.)	Low	Low
9. Loss Analysis for Portfolio Management	Insurance companies can use AI to analyze losses across their entire portfolio, detecting patterns in wildfire risk and claim frequency. This can help optimize portfolio risk and provide insights into which geographic areas or property types require more careful underwriting.	Better portfolio management, risk reduction, and more informed decision-making for reinsurance or underwriting strategies. (While the insights are valuable, converting them into actionable strategies may be challenging.)	High	Low
10. Data-Driven Research for Catastrophic Event Pricing	Generative AI can process large datasets from government sources (e.g., weather patterns, historical fire data, fuel conditions) and private sources (e.g., claims data, asset protection measures) to help insurance	More accurate, data-driven forecasting that enhances insurance product development, pricing models, and disaster readiness. (Success in this area hinges on	Medium	High

USE CASE	SUMMARY	BENEFITS	GENAI VALUE	NEED
	companies forecast the frequency and severity of catastrophic wildfire events.	obtaining more and higher-quality data, with careful attention to data sources and cross-referencing.)		
11. Insurance-Wide Data & Research Sharing	AI can support collaboration between insurers and public agencies by creating shared datasets and predictive models that improve the overall understanding of wildfire risks. This may include establishing open data platforms that integrate private and public sources to guide industry-wide strategies.	Better industry collaboration, research capabilities, and policy development for more effective wildfire insurance solutions.	Low	Medium

This effort also assessed the following, while not considering a sufficient priority to review.

- **Credit Scoring and Underwriting** — Traditional credit scoring models often rely on a limited set of criteria, but AI can incorporate a wider array of factors, including social data, transaction history, and more. By generating more comprehensive risk profiles, AI can help lenders offer more precise and personalized loan terms. _Did not feel applicable or ready enough.
- **Predictive Analytics for Customer Needs** — By understanding customer behavior and transaction patterns, AI can predict when a customer might need an insurance policy, allowing insurance institutions to proactively offer products and services at the right time, enhancing customer satisfaction and loyalty. Business. _Did not feel priority enough for digital engagement use.
- **Resource Allocation** — AI can optimize resource allocation by forecasting future demand for products or services. By analyzing sales data, market trends, and external factors, AI can help businesses determine the most efficient use of resources, e.g. staffing levels, materials supply chain. _May be helpful for staffing & supply chain issues.
- **Predictive Case Outcome Models -** AI can analyze historical case outcomes, judge behavior, and legal arguments to provide predictions on the potential success of a case. This helps legal professionals assess the risks and rewards of proceeding with litigation, leading to more informed decision-making and efficient case management. _Did not feel as much a priority for Wildland Fire as it would be for floods.
- **Predictive Risk Assessment -** Generative AI helps financial institutions assess and predict risks more accurately. By analyzing historical data and market trends, AI can generate models to forecast economic downturns, investment risks, or credit defaults. This allows businesses and investors to adjust strategies and minimize potential losses. _Given hard to predict patterns of conflagration, hard to predict for loss.
- **AI-Generated Training Simulations** — For more complex or technical subjects, AI can generate realistic simulations to provide hands-on learning experiences. AI can create virtual labs, practice scenarios, and role-playing exercises where students can apply their

knowledge in a controlled, safe environment. Business. _Possibly for business training, yet not sure high enough priority to consider a focus.

4

MAPPING USE CASES TO DATASET READINESS AND PRIORITY

4 MAPPING USE CASES TO DATASET READINESS AND PRIORITY

With the use cases and required datasets now established, **Appendix A.B** provides a detailed view of how each use case aligns with the data classes defined in the Data Reference Model (DRM).

Each information class has been evaluated for its availability of datasets and mapped in supporting GenAI-driven wildfire insurance applications. As well, each information class has been analyzed as to its demand by use cases to support GenAI data training needs. This mapping approach ensures that development efforts focus first on the most critical datasets for training and integrating GenAI, thereby maximizing impact and efficiency. The following chart and table shows Dataset Count vs. Use Case Priority. This prioritization would drive early investment and prototype efforts.

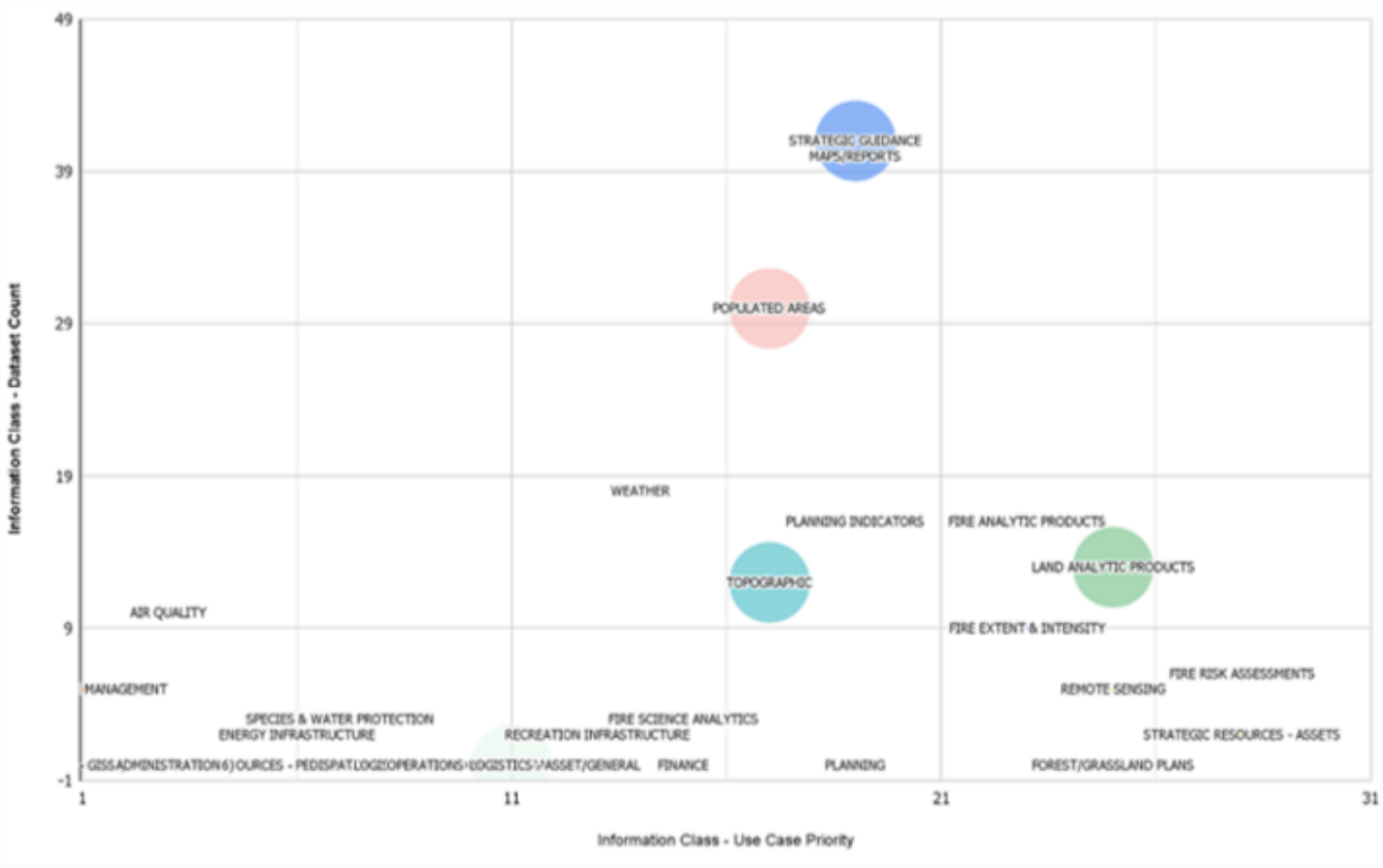

Figure 1 — Figure Data Availability within DRM Information Classes by Use Case Demand

Table 4 — Table Data Availability within DRM Information Classes by Use Case Demand

DATA PRIORITY	INFORMATION CLASS
Data with High Availability and High Use Case Demand	MAPS/REPORTS POPULATED AREAS STRATEGIC GUIDANCE
Data with Low Availability and High Use Case Demand	FIRE ANALYTIC PRODUCTS FIRE EXTENT & INTENSITY FIRE RISK ASSESSMENTS FOREST/GRASSLAND PLANS LAND ANALYTIC PRODUCTS PLANNING PLANNING INDICATORS REMOTE SENSING STRATEGIC RESOURCES — ASSETS TOPOGRAPHIC
Data with Low Availability and Low Use Case Demand	ADMINISTRATION AIR QUALITY COMMAND — STRATEGIC DISPATCH ENERGY INFRASTRUCTURE FINANCE FIRE SCIENCE ANALYTICS INFORMATION MANAGEMENT LOGISTICS — ASSET/GENERAL LOGISTICS — PERSONNEL OPERATIONS PLANNING — GISS (PMS-910,938, 936) RECREATION INFRASTRUCTURE SPECIES & WATER PROTECTION STRATEGIC RESOURCES — PERSONNEL WEATHER

5

GEN AI WILDLAND FIRE CAPABILITIES TO SUPPORT USE CASES

5 GEN AI WILDLAND FIRE CAPABILITIES TO SUPPORT USE CASES

Wildland Fire Management could benefit from GenAI tools where productivity and speed of response can enhance rapid quality information to support decision making with accurate fast results.

Table 5 — Table Critical Success Factors to Implementing GenAI Capabilities

CRITICAL SUCCESS FACTOR	DESCRIPTION
Balanced Approach	Ensure equal focus on supporting individuals, municipalities, and businesses throughout the disaster lifecycle.
Improved Resilience	Equip communities and insurers with data-driven insights to reduce wildfire impacts.
Actionable Outcomes	Provide scalable solutions that enhance preparedness and risk reduction while optimizing claims efficiency.
Stakeholder Alignment	Foster collaboration with NRCan, municipal governments, and private data providers for better data-sharing practices.

The following framework highlights the GenAI capabilities required to support both Wildland Fire Management and insurance business operations, emphasizing their alignment to actionable use cases and benefits. This focused breakdown of the GenAI Capabilities required to support the described use cases for Wildland Fire Management and Insurance Business Management. Each capability is aligned to key needs across domains, summarizing its purpose and value. Note in the Phase 1 of this project, further discussion was included on Wildland Fire Geospatial GenAI capabilities.

Supporting Social Impact and Community Engagement

Table 6 — Table Capabilities — Supporting Social Impact and Community Engagement

CAPABILITY	DESCRIPTION	VALUE
Geospatial Data Analysis	Analyze spatial datasets (e.g., topography, vegetation, fire history) to model risk and generate neighborhood-level insights.	Granular understanding of risks; better resource allocation for resilience initiatives.
Scenario Simulation & Optimization	Generate simulations for wildfire scenarios to predict evacuation routes, fire spread, and mitigation effectiveness.	Supports community safety planning with adaptable, data-driven evacuation strategies.
Risk Assessment Modeling	Process weather, climate, and fuel load data to create dynamic wildfire risk assessments.	Provides municipalities with actionable insights to prioritize and fund resilience efforts.

CAPABILITY	DESCRIPTION	VALUE
Grant Optimization Algorithms	Analyze community needs and historical funding data to optimize grant guidelines and applications.	Streamlines funding processes to address high-priority resilience projects.
Multilingual Communication Tools	Generate culturally relevant and demographically tailored outreach materials.	Enhances public awareness and engagement in diverse communities.
Climate Adaptation Analytics	Model long-term impacts of climate change on wildfire risks and evaluate adaptation strategies.	Guides municipalities in creating evidence-based plans for climate resilience.

Enhancing Insurance Business Management

Table 7 — Table Capabilities — Enhancing Insurance Business Management

CAPABILITY	DESCRIPTION	VALUE
Automated Claims Processing	Use natural language processing (NLP) and computer vision to extract and analyze claims data from images, reports, and videos.	Accelerates claims settlements; improves accuracy and reduces operational costs.
Predictive Pricing Models	Leverage historical claims and geospatial data to create dynamic, location-based pricing models.	Enhances premium accuracy while balancing profitability and fairness.
Liability Assessment Tools	Simulate wildfire events and evacuation patterns to model insurance liabilities.	Provides insurers with accurate risk projections to inform coverage adjustments.
Portfolio Risk Analysis	Analyze wildfire loss data across portfolios to detect patterns and identify high-risk geographies.	Optimizes risk management and improves reinsurance decisions.
Post-Event Damage Analysis	Use satellite and drone imagery with AI to assess environmental damage after wildfires.	Expedites recovery strategies for insurers and affected communities.
Collaboration Frameworks	Develop shared AI models and datasets for insurers and public agencies to analyze wildfire trends and risks collaboratively.	Facilitates industry-wide improvements in risk understanding and product development.

Cross-Domain Capabilities Supporting All Use Cases

Table 8 — Table Capabilities — Cross-Domain Capabilities Supporting All Use Cases

CAPABILITY	DESCRIPTION	VALUE
Advanced Data Integration	Aggregate public (e.g., weather, fire history) and private (e.g., claims, demographics) datasets for comprehensive modeling.	Provides a unified view of risk and response needs across stakeholders.

CAPABILITY	DESCRIPTION	VALUE
Interactive Visualization Tools	Generate interactive dashboards and heat maps for wildfire risk, insurance trends, or evacuation plans.	Enhances decision-making with user-friendly visual insights.
Real-Time Decision Support	Deploy AI models for real-time wildfire tracking and evacuation planning based on live environmental data.	Improves speed and accuracy of emergency response.
Natural Language Generation (NLG)	Create tailored reports, educational content, and grant applications based on data inputs.	Simplifies complex analyses into accessible, actionable documents for non-technical users.
Adaptive Learning Systems	Develop dynamic learning modules for staff training on claims processes or emergency planning.	Builds workforce capabilities and ensures up-to-date knowledge in critical areas.
Scenario-Based Contingency Planning	Simulate multiple disaster scenarios and generate contingency plans for varied stakeholders.	Prepares communities, insurers, and governments for diverse outcomes with robust strategies.

5.1. Potential Prototypes for GenAI in Wildfire Insurance

Below is a set of potential GenAI prototypes designed to address critical challenges in wildfire insurance, from community awareness and risk assessment to claims processing and post-event recovery. Each prototype highlights a specific need, illustrating how GenAI technology can streamline processes, enhance situational awareness, and ultimately improve outcomes for both insurers and the communities they serve.

Table 9 — Table Potential Prototypes for GenAI in Wildfire Insurance

PROTOTYPE NAME	DESCRIPTION	EXPECTED OUTCOME
Wildland Fire Customer Awareness Tool	A similar effort to the US initiative Wildfire Risk to help raise awareness and improve community engagement in wildfire preparedness. This could be a joint effort with FireSmart Canada and leverage data from studies such as: • Mapping Wildfire Hazard and Vulnerability in Canadian Communities • Wildfire-Ready: Practical Guidance for Strengthening Resilience	**Web-based AI-driven tool** that provides localized wildfire risk assessment and outreach. It helps answer key questions. • **Where are homes at risk of wildfire?** • **How likely is a wildfire in this area?** • **Which actions reduce risk the most?** • **Who is most at risk?** • **What are the most relevant property/local actions?** This project could be tied to pilot home resilience programs, such as Intact Financial Corporation's Wildfire Defense System.

PROTOTYPE NAME	DESCRIPTION	EXPECTED OUTCOME
Predictive Risk Dashboard	AI-powered tool for assessing wildfire risk at granular levels (e.g. , neighborhoods, properties).	Enables insurers and municipalities to prioritize risk mitigation efforts and make data-driven decisions.
Claims Automation System	Uses Generative AI to analyze incident data, photos, and videos to streamline claims processing.	Faster claims settlements with improved accuracy and reduced administrative overhead.
Dynamic Evacuation Planner	AI tool that simulates evacuation scenarios and optimizes routes based on real-time fire and weather data.	Improved community safety and better preparedness during wildfire events.
Wildfire Resilience Planner	Assesses potential long-term impacts of wildfires and suggests adaptation measures for municipalities.	Actionable recommendations for firebreaks, retrofits, and vegetation management strategies.
Insurance Pricing Model Optimizer	Refines pricing models using predictive analytics based on geospatial, historical, and climate data.	Fairer, more accurate premiums that reflect localized wildfire risks.
Post-Wildfire Recovery Assistant	AI system for assessing environmental damage and generating remediation plans post-wildfire.	Faster recovery and better resource allocation for impacted areas.
Data Integration Platform	Centralized platform for aggregating public and private datasets to support wildfire-related GenAI models.	Streamlined access to comprehensive data sources, improving AI model accuracy and decision-making capabilities.

As part of this effort, stakeholder interviews included Natural Resources Canada (NRCan) who is in the early stages of integrating Generative AI into its geospatial services. Currently, efforts such as the alpha-stage GenAI tool on geo.ca aim to enhance catalog search by automatically identifying geospatial web services, though detailed methodologies remain in development. NRCan executives have expressed strong interest in exploring GenAI's potential through strategic collaborations with organizations like OGC and US agencies, while maintaining a risk-averse approach that demands high-quality, authoritative responses. Internally, GenAI is being experimented with for code automation, content creation, and even as part of a Discrete Global Grid Systems (DGGS) based chatbot initiative to increase geospatial accessibility for expert users. Although the agency's emergency geomatics team is actively advancing remote sensing and web mapping capabilities for disaster response, they remain cautious about broader LLM applications in generating geographic data, preferring tried-and-tested AI modeling techniques that reinforce proven, data-driven approaches.

Given NRCan's commitment to advancing its early-stage AI initiatives, collaborating and partnering with NRCan in future prototypes could significantly enhance dataset integration and yield higher-quality GenAI outputs. By working together on prototypes—such as a Wildland Fire Customer Awareness tool, a Predictive Risk Dashboard, a Claims Automation System, or a Data

Integration Platform—stakeholders can harness NRCan's extensive geospatial data expertise to streamline processes and improve outcomes in wildfire insurance. These joint efforts would support the development of innovative tools that not only address critical challenges across community awareness, risk assessment, and disaster response but also ensure that the solutions remain authoritative and aligned with the rigorous standards required by government agencies.

6

OUTLOOK

6 OUTLOOK

6.1. GenAI Roadmap Recommendations for in Wildfire Insurance

Below is a four-phase roadmap outlining the key activities and deliverables necessary to effectively integrate Generative AI (GenAI) into wildfire insurance workflows. Each phase focuses on specific action steps—from building foundational elements and defining use cases, through piloting and refining prototypes, to fully operationalizing AI solutions and expanding their reach. This structured approach ensures that all stakeholders—insurers, municipalities, regulators, and data providers—collaborate to harness GenAI's capabilities while maintaining rigorous governance and ethical standards.

Table 10 — Table Roadmap Activities for Implementating GenAI

PHASE	KEY ACTIVITIES	DELIVERABLES
Phase 1: Foundation Building		
Stakeholder Identification	Map stakeholders across insurers, municipalities, and data providers to define needs and collaboration points. Consider expanding across disaster management such as floods beyond wildland fire to share in cross-collaborative efforts.	Stakeholder map, engagement framework, and collaboration plan.
Data Inventory & Gaps Analysis	Audit available public and private datasets; identify coverage gaps, especially beyond North America.	Dataset inventory, gap analysis report, and prioritization matrix for data sources.
Governance Framework Development	Define policies for data sharing, AI ethics, transparency, and compliance with insurance regulations.	Governance framework document aligned with legal and ethical considerations.
Phase 2: Use Case Development		
Use Case Prioritization	Identify and prioritize wildfire insurance use cases (e.g., risk assessment, claim automation, predictive modeling).	Use case catalog ranked by impact, feasibility, and ROI.
Technology Assessment	Evaluate existing AI tools, including LLMs, RAG, and GAN, for their applicability to high-priority use cases.	GenAI solution matrix with technology alignment to specific use cases.

PHASE	KEY ACTIVITIES	DELIVERABLES
Proof-of-Concept (PoC) Design	Develop PoC plans for key use cases, focusing on actionable outcomes like risk modeling or claims optimization.	PoC proposals with resource, timeline, and evaluation metrics.
Phase 3: Pilot Implementation		
Prototype Development	Create prototypes for prioritized use cases, such as predictive neighborhood risk modeling or claims automation.	Functional prototypes demonstrating AI capabilities in real-world scenarios.
Dataset Integration	Build pipelines for integrating public/private datasets into AI models while addressing gaps identified in Phase 1.	Integrated data platform enabling GenAI model deployment.
Pilot Testing & Iteration	Conduct pilots with stakeholder feedback to refine solutions and address usability or performance issues.	Pilot results, stakeholder feedback reports, and iterative model improvements.
Phase 4: Scaling & Optimization		
Operationalization	Deploy validated solutions across broader organizational processes (e.g., underwriting, risk assessment).	Full-scale implementation plans and training modules for end-users.
Continuous Improvement	Implement monitoring systems to track AI performance, ensure compliance, and incorporate advancements in AI.	Performance dashboards, compliance checks, and periodic technology updates.
Ecosystem Expansion	Establish partnerships with additional stakeholders (e.g., municipalities, reinsurers) to enhance data and solution reach.	Partnership agreements and expanded stakeholder networks for broader adoption.

Such a roadmap should consider the recommendations from https://zenodo.org/records/12721058[Phase 1 (D-123): Advancing the integration of Generative AI (GenAI) technologies into wildfire risk, hazard, and insurance workflows] on recommendations in areas of Mission Stakeholders, Mission Governance, Data, Technology Solutions, and Wildland Fire Enterprise Management. Also, review for further investment insights on the Technology components needs to support Gen AI, key considerations for GenAI model development, and challenges in leveraging Gen AI

7

SECURITY, PRIVACY AND ETHICAL CONSIDERATIONS

7 SECURITY, PRIVACY AND ETHICAL CONSIDERATIONS

Data and concepts cited in this engineering report considers open data sources only. This deliverable builds on Xentity's expertise and contributions to Phase 1 (D-123) advancing the integration of Generative AI (GenAI) technologies into wildfire risk; hazard; and insurance workflows. Phase 1 provided a U.S. data focus across all wildfire use cases and went deeper into broader GenAI governance, capabilities and technology approaches in LLM, RAG, NLP integration, GANs, and AI Agent integration

8

APPENDIX A.A: WILDLAND FIRE DATA REFERENCE MODEL AND SOURCE INPUTS

8 APPENDIX A.A: WILDLAND FIRE DATA REFERENCE MODEL AND SOURCE INPUTS

The following captures an example data needs and reference model after reviewing US National Data requirements standards within and outside the fire community.

8.1. Apps/Systems

Table 11 — Table Apps/Systems List

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Manitoba — Fire View	https://www.gov.mb.ca/sd/fire/Fire-Maps/fireview/fireview.html	L	L	PLANNING INDICATORS
Communication and Transportation	https://natural-resources.canada.ca/maps-tools-and-publications/maps/atlas-canada/communications-and-transportation/26095	L	L	ENERGY INFRASTRUCTURE
Energy and Economy	https://natural-resources.canada.ca/maps-tools-and-publications/maps/atlas-canada/energy-and-economy/26097	M	M	ENERGY INFRASTRUCTURE
Canada Deforestation	https://www.globalforestwatch.org/dashboards/country/CAN/?category=fires	M	L	LAND ANALYTIC PRODUCTS
Radar and Lidar	https://frg.berkeley.edu/radar-and-lidar-observations-of-wildfire-plume-dynamics/	L	L	WEATHER
CGDI Foundation	https://natural-resources.canada.ca/earth-sciences/geomatics/canadas-spatial-data-infrastructure/8904#t1	H	H	INFORMATION MANAGEMENT
Operational Policies	https://natural-resources.canada.ca/earth-sciences/geomatics/canadas-spatial-data-infrastructure/8904#t2	H	H	INFORMATION MANAGEMENT
Geomatics Environment	https://natural-resources.canada.ca/earth-sciences/geomatics/canadas-spatial-data-infrastructure/8904#t3	H	H	INFORMATION MANAGEMENT
Geospatial Web Services	https://natural-resources.canada.ca/earth-sciences/geomatics/canadas-spatial-data-infrastructure/8904#t4	H	H	PLANNING INDICATORS

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Publications Data Base	https://ostrnrcan-dostrncan.canada.ca/browse/subject?scope=45538ec0-c247-4f18-b907-e38e23f4c025&value=Forest%20Fires	H	H	STRATEGIC GUIDANCE
Ontario	https://www.ontario.ca/page/forest-fires	H	H	STRATEGIC GUIDANCE
Download data in CSV format from the National Forestry Database.	http://nfdp.ccfm.org/en/download.php	H	H	STRATEGIC GUIDANCE
Fire Research	https://www.canadawildfire.org/research	H	H	LAND ANALYTIC PRODUCTS
Publications	https://natural-resources.canada.ca/maps-tools-and-publications/publications/1138	H	H	MAPS/REPORTS
Google Earth	https://fsapps.nwcg.gov/googleearth.php	M	L	MAPS/REPORTS
OGC web map services (WMS) and web feature services (WFS) for MODIS fire-related products.	https://fsapps.nwcg.gov/afm/wms.php	L	L	MAPS/REPORTS
wildfire stats	https://www.statcan.gc.ca/search/results/site-search?q=wildfire&fq=stclac:2&sort=score%20desc&rows=25&page=1	H	H	MAPS/REPORTS
Esri Canada	https://climate.esri.ca/pages/wildfire	H	M	MAPS/REPORTS
Canada Wildfires	https://satlib.cira.colostate.edu/event/western-canada-wildfires/	H	M	MAPS/REPORTS
Early warning portal	https://gfmc.online/fwf/fwf.html	H	H	PLANNING INDICATORS
Climate and Enviorment	https://natural-resources.canada.ca/maps-tools-and-publications/maps/atlas-canada/climate-and-environment/26082	L	L	PLANNING INDICATORS
People and Places	https://natural-resources.canada.ca/maps-tools-and-publications/maps/atlas-canada/people-and-places/26101	M	M	POPULATED AREAS
Subjects	https://www150.statcan.gc.ca/n1/en/subjects?MM=1	H	H	POPULATED AREAS

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Satellite imagery, elevation data, and air photos	https://natural-resources.canada.ca/maps-tools-and-publications/satellite-imagery-elevation-data-and-air-photos/10782	H	H	TOPOGRAPHIC
Land and Water	https://natural-resources.canada.ca/maps-tools-and-publications/maps/atlas-canada/land-and-water/26099	M	M	SPECIES & WATER PROTECTION
BC	https://www2.gov.bc.ca/gov/content/safety/wildfire-status/wildfire-situation	M	M	STRATEGIC GUIDANCE
BC	https://governmentofbc.maps.arcgis.com/apps/opsdashboard/index.html/f0ac328d88c74d07aa2ee385abe2a41b#	M	M	STRATEGIC GUIDANCE
SDI Catalogue	https://catalogue.arctic-sdi.org/geonetwork/srv/search?keyword=forest%20fire	M	M	STRATEGIC GUIDANCE
Fire Smart	https://firesmartcanada.ca/	H	M	STRATEGIC GUIDANCE
Resources	https://firesmartcanada.ca/resources/	H	M	STRATEGIC GUIDANCE
About	https://firesmartcanada.ca/about-firesmart/	H	M	STRATEGIC GUIDANCE
NASA — Elevation at 30 meters	https://lpdaac.usgs.gov/products/nasadem_hgtv001/	H	H	TOPOGRAPHIC

8.2. Data Sources

Table 12 — Table Data Sources List

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Nitrogen Dioxide NO2 — 72h Hourly Maps at Ground Level — 12 UTC	https://weather.gc.ca/firework/firework_anim_e.html?type=no2&utc=12	L	M	AIR QUALITY
Ozone O3 — 72h Hourly Maps at	https://weather.gc.ca/firework/firework_anim_e.html?type=o3&utc=12	L	M	AIR QUALITY

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Ground Level — 12 UTC				
Wildfire Smoke Fine Particulate Matter PM2.5 — 72h Hourly Maps at Ground Level — 12 UTC	https://weather.gc.ca/firework/firework_anim_e.html?type=pa&utc=12	L	M	AIR QUALITY
Total Fine Particulate Matter PM2.5 — 72h Hourly Maps at Ground Level - 12 UTC	https://weather.gc.ca/firework/firework_anim_e.html?type=pt&utc=12	L	M	AIR QUALITY
Emissions and Firemet downloadable data	https://firesmoke.ca/data/	H	H	AIR QUALITY
WF Facts (reference Content	https://www.canadawildfire.org/wildfirefacts	L	H	PLANNING INDICATORS
BC Wildfire Fire Perimeters — Historical	https://app.geo.ca/map?rvKey=22c7cb44-1463-48f7-8e47-88857f207702	M	H	FIRE ANALYTIC PRODUCTS
High resolution forest change for Canada (Change Year) 1985-2011	https://app.geo.ca/map?rvKey=5a316fdc-3237-4ace-831e-67b4ca26a248	M	H	LAND ANALYTIC PRODUCTS
Fire Monitoring, Mapping, and Modeling (Fire M3)	https://cwfis.cfs.nrcan.gc.ca/background/summary/fm3	M	M	FIRE ANALYTIC PRODUCTS
National Burned Area Composite	https://cwfis.cfs.nrcan.gc.ca/downloads/nbac/	H	H	FIRE ANALYTIC PRODUCTS
National Burned Area Composite — Most Recent Burn	https://cwfis.cfs.nrcan.gc.ca/downloads/nbac/nbac_mrb_1972to2023_tif.zip	H	M	FIRE ANALYTIC PRODUCTS
NBAC Summary	https://cwfis.cfs.nrcan.gc.ca/downloads/nbac/nbac_summarystats_1972_2023_20240530.xlsx	H	H	FIRE ANALYTIC PRODUCTS
Canadian Wildland Fire Information System	https://cwfis.cfs.nrcan.gc.ca/ha/nfdb?type=nbac&year=9999	M	H	FIRE ANALYTIC PRODUCTS
Fire Behavior	https://cwfis.cfs.nrcan.gc.ca/maps/fb	H	H	FIRE ANALYTIC PRODUCTS

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
A curated list of wildland fire resources across Canada.	https://github.com/ubc-lib-geo/awesome-wildfire	H	H	FIRE ANALYTIC PRODUCTS
Alberta	https://wildfire.alberta.ca/wildfire-status/fire-weather/default.aspx	L	L	FIRE ANALYTIC PRODUCTS
NOAA — Daily reanalysis composites	https://psl.noaa.gov/data/composites/day/	M	M	FIRE ANALYTIC PRODUCTS
NOAA — Monthly reanalysis composites	https://psl.noaa.gov/cgi-bin/data/composites/printpage.pl	M	M	FIRE ANALYTIC PRODUCTS
Canada Landsat Burned Severity product 1985-2015 (CanLaBS)	https://app.geo.ca/result/en/canada-landsat-burned-severity-product-1985-2015-(canlabs)?id=b1f61b7e-4ba6-4244-bc79-c1174f2f92cd&lang=en	M	H	FIRE EXTENT & INTENSITY
Fire Behavior Normals	https://cwfis.cfs.nrcan.gc.ca/ha/fbnormals	H	H	FIRE EXTENT & INTENSITY
FireSmoke Canada	https://firesmoke.ca/	L	M	AIR QUALITY
Drough Monitor	https://agriculture.canada.ca/en/agricultural-production/weather/canadian-drought-monitor	M	M	WEATHER
Geo AI Initiative — GeoAI — GeoBase Series	https://app.geo.ca/result/en/geoai---geobase-series?id=74738ff5-5367-5958-9aee-98fffdcd1876&lang=en	H	H	FIRE RISK ASSESSMENTS
Interactive Map	https://cwfis.cfs.nrcan.gc.ca/interactive-map	H	H	FIRE RISK ASSESSMENTS
Temporal Series of Dynamic Surface Water Maps of Canada	https://datacube.services.geo.ca/en/viewer/eo4ce/dsw/index.html	M	M	SPECIES & WATER PROTECTION
Meteorological Suvery of Canada (MSC) Open Data	https://eccc-msc.github.io/open-data/msc-data/nwp_geps/readme_geps_en/	M	H	WEATHER
Geo AI Initiative — Product Specifications	https://ftp.maps.canada.ca/pub/nrcan_rncan/vector/geobase_geoai_geoia/Doc/GeoAI	H	H	FIRE RISK ASSESSMENTS
Geo AI Initiative	https://geo.ca/initiatives/geobase/geoai/	M	M	FIRE RISK ASSESSMENTS
Geo AI Initiative — Data Index	https://geo.ca/initiatives/geobase/geoai/data-index-map/	M	M	FIRE RISK ASSESSMENTS

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Incident-based fire statistics, by type of fire incident and type of structure	https://open.canada.ca/data/en/dataset/3927c4ed-3539-4f7b-875f-ab40da81cd6a	M	M	PLANNING INDICATORS
Topographic humidity index from LiDAR	https://open.canada.ca/data/en/dataset/c979c259-3553-4473-816a-ef14a36c5a05	M	M	PLANNING INDICATORS
Incident-based fire statistics, by source of ignition and act or omission	https://open.canada.ca/data/en/dataset/a4ddfb17-c29c-47ae-b0d8-38c6da3a775e	M	M	PLANNING INDICATORS
NASA — Global temperature anomalies/trends	https://data.giss.nasa.gov/gistemp/maps/	H	M	WEATHER
AAFC — Canadian Drought Monitor	https://agriculture.canada.ca/atlas/data_donnees/canadianDroughtMonitor	M	M	WEATHER
Historical Climate Data Search	https://climate.weather.gc.ca/historical_data/search_historic_data_e.html	M	H	WEATHER
Canada National Fire Database	https://cwfis.cfs.nrcan.gc.ca/ha/nfdb	H	H	PLANNING INDICATORS
Burn P3 Model	https://www.canadawildfire.org/burn-p3-english	L	H	FIRE SCIENCE ANALYTICS
Mapping Canadian wildland fire interface areas	https://www.canadawildfire.org/mapping-wui	L	H	FIRE SCIENCE ANALYTICS
Fire extent and severity and estimates of carbon emissions from fires	https://daac.ornl.gov/cgi-bin/theme_dataset_lister.pl?theme_id=8	M	M	FIRE EXTENT & INTENSITY
Land Cover	https://app.geo.ca/result/en/canadian-land-cover,-circa-2000-(vector)---geobase-series,-1996-2005?id=97126362-5a85-4fe0-9dc2-915464cfdbb7&lang=en	H	H	LAND ANALYTIC PRODUCTS
National Burned Area Composite 1972-2023	https://cwfis.cfs.nrcan.gc.ca/geoserver/wms	H	H	FIRE EXTENT & INTENSITY
Canada National Burned Area Composite (NBAC)	https://gee-community-catalog.org/projects/nbac/	H	H	FIRE EXTENT & INTENSITY

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Saskatchewan	https://www.saskatchewan.ca/residents/environment-public-health-and-safety/wildfire-in-saskatchewan	M	H	STRATEGIC GUIDANCE
Research across Canadian universities using National Fire Information Database.	http://nfidcanada.ca/project-status/	H	H	STRATEGIC GUIDANCE
Stats	https://www.statcan.gc.ca/en/start	H	H	STRATEGIC GUIDANCE
Data	https://www150.statcan.gc.ca/n1/en/type/data?MM=1	H	H	STRATEGIC GUIDANCE
Canadian National Fire DataBase (CNFDB)	https://regclim.coas.oregonstate.edu/FireStarts/cnfdb_02.html	M	H	FIRE EXTENT & INTENSITY
Land Cover of Canada — Cartographic Product Collection	https://app.geo.ca/result/en/land-cover-of-canada---cartographic-product-collection?id=11990a35-912e-4002-b197-d57dd88836d7&lang=en	M	H	LAND ANALYTIC PRODUCTS
FBP Fuel Types	https://cwfis.cfs.nrcan.gc.ca/background/maps/fbpft	L	M	LAND ANALYTIC PRODUCTS
Land Cover of Canada — Cartographic Product Collection	https://datacube.services.geo.ca/en/viewer/landcover/index.html	M	H	LAND ANALYTIC PRODUCTS
Yukon	https://arcg.is/KC8bO	M	M	LAND ANALYTIC PRODUCTS
Elevation	https://app.geo.ca/map?rvKey=7f245e4d-76c2-4caa-951a-45d1d2051333	M	M	TOPOGRAPHIC
Digital Surface Model	https://app.geo.ca/result/en/canadian-digital-surface-model,-2000?id=768570f8-5761-498a-bd6a-315eb6cc023d&lang=en	H	M	TOPOGRAPHIC
CWFIS Datamart	https://cwfis.cfs.nrcan.gc.ca/datamart	L	M	MAPS/REPORTS
CWFIS Datamart	https://cwfis.cfs.nrcan.gc.ca/datamart/metadata/nbac	M	M	MAPS/REPORTS
Maps	https://natural-resources.canada.ca/maps-tools-and-publications/maps/22020	H	H	MAPS/REPORTS

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Tools	https://natural-resources.canada.ca/maps-tools-and-publications/tools/22028	L	H	MAPS/REPORTS
Geospatial Web Services	https://natural-resources.canada.ca/science-and-data/science-and-research/geomatics/canadas-spatial-data-infrastructure/geospatial-web-services/19359	H	M	MAPS/REPORTS
Historical wildfire data dictionary : 2006 to 2023	https://open.alberta.ca/dataset/a221e7a0-4f46-4be7-9c5a-e29de9a3447e/resource/1b635b8b-a937-4be4-857e-8aeef77365d2/download/fp-historical-wildfire-data-dictionary-2006-2023.pdf	H	H	MAPS/REPORTS
Historical wildfire data : 2006 to 2023	https://open.alberta.ca/dataset/a221e7a0-4f46-4be7-9c5a-e29de9a3447e/resource/80480824-0c50-456c-9723-f9d4fc136141/download/fp-historical-wildfire-data-2006-2023.xlsx	H	H	MAPS/REPORTS
Wildfire maps and data — Stats	https://www.alberta.ca/wildfire-maps-and-data#jumplinks-0	M	H	MAPS/REPORTS
Wildfire maps and data — Maps	https://www.alberta.ca/wildfire-maps-and-data#jumplinks-1	H	H	MAPS/REPORTS
Wildfire maps and data — Wildfire Data	https://www.alberta.ca/wildfire-maps-and-data#jumplinks-2	H	H	MAPS/REPORTS
Canadian Wildland Fire Information System	https://cwfis.cfs.nrcan.gc.ca/home	M	M	MAPS/REPORTS
Yukon	https://emrlibrary.gov.yk.ca/maps/fire-history-atlas/html/main/Download.html	H	H	MAPS/REPORTS
Interactive map browser of global active fire detections archive from MODIS and VIIRS.	https://firms.modaps.eosdis.nasa.gov/map/d:2020-09-24..2020-09-25;@0.0,0.0,3z[#https://firms.modaps.eosdis.nasa.gov/map/#d:2020-09-24..2020-09-25;@0.0,0.0,3z]	H	M	MAPS/REPORTS
Hourly smoke forecasts from wildland fires and downloadable data.	https://firesmoke.ca/forecasts/current/	H	M	MAPS/REPORTS
Fire and smoke map for Canada and the U. S.	https://fire.airnow.gov/	H	M	AIR QUALITY
Fire perimeters, multiple satellite	https://caltopo.com/	H	M	MAPS/REPORTS

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
infrared data, and wind plot.				
Interactive Map	https://cwfis.cfs.nrcan.gc.ca/interactive-map	H	M	MAPS/REPORTS
Forest fire perimeters	https://cwfis.cfs.nrcan.gc.ca/ha/nfdb	H	M	MAPS/REPORTS
Visualize fires and thermal anomalies data.	https://worldview.earthdata.nasa.gov/?v=-260.0062190517805,-134.34633982454613	H	M	MAPS/REPORTS
Satellite data from GOES 16, GOES 17, and Himawari.	https://www.weathernerds.org/satellite/	H	L	MAPS/REPORTS
Global and regional data from College of DuPage via interactive application	https://weather.cod.edu/satrad/	M	M	MAPS/REPORTS
Web application to explore GOES-16 and Himawari-8 satellite imagery.	https://rammb-slider.cira.colostate.edu/?sat=goes-16	M	M	MAPS/REPORTS
Satellite imagery animation	https://www.ssec.wisc.edu/data/geo/#/animation?satellite=goes-16-17-comp&end_datetime=latest&n_images=48&coverage=mollweide&channel=14&image_quality=gif&anim_method=javascript[#https://www.ssec.wisc.edu/data/geo/#/animation?satellite=goes-16-17-comp&end_datetime=latest&n_images=48&coverage=mollweide&channel=14&image_quality=gif&anim_method=javascript#]	M	M	MAPS/REPORTS
ArcGIS Open Data site for the National Interagency Fire Center	https://data-nifc.opendata.arcgis.com/	M	M	MAPS/REPORTS
Satellite Mapping Automated Reanalysis Tool for Fire Incident Reconciliation	https://firesmoke.ca/smartfire/	M	M	MAPS/REPORTS
The Canadian Fire Spread Dataset	https://www.nature.com/articles/s41597-024-03436-4	M	H	MAPS/REPORTS

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Summary of Data	https://www.researchgate.net/figure/Summary-of-currently-available-fire-data-in-Canada_tbl1_329003994	H	H	MAPS/REPORTS
Polygon Map	https://www.arcgis.com/apps/mapviewer/index.html?layers=5f4bc695a75d4fabae42f79f61da5b42	H	H	MAPS/REPORTS
GIS Resources	https://libguides.ucalgary.ca/c.php?g=255401&p=1705359	H	H	MAPS/REPORTS
NRCan — National Fire Database fire polygon data	https://cwfis.cfs.nrcan.gc.ca/datamart/download/nfdbpoly	M	M	MAPS/REPORTS
Forest Fires	http://nfdp.ccfm.org/en/data/fires.php	H	H	MAPS/REPORTS
Monthly and Seasonal Firecasts	https://cwfis.cfs.nrcan.gc.ca/maps/forecasts	H	M	PLANNING INDICATORS
Fire Danger	https://cwfis.cfs.nrcan.gc.ca/maps/fw	H	H	PLANNING INDICATORS
Census Subdivision Digital Boundary Files — 2014	https://open.canada.ca/data/en/dataset/005fbf4c-cc83-407d-89e2-8ae053ebf68f	M	M	POPULATED AREAS
Province and Territory Digital Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/35ee219c-a3b0-448b-a952-3e195cb40b70	M	M	POPULATED AREAS
Census Tract Cartographic Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/3c10c922-3eb4-48ba-b00f-a95c09ca3ee0	M	M	POPULATED AREAS
Federal Electoral District Digital Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/48f10fb9-78a2-43a9-92ab-354c28d30674	M	M	POPULATED AREAS
Economic Region Digital Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/4b91dadf-f774-46e8-8a33-35a4f4f887a1	M	M	POPULATED AREAS
Census Division Digital Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/515dbfa9-9069-4877-8fe8-177edaa4ca76	M	M	POPULATED AREAS
Census Subdivision Cartographic	https://open.canada.ca/data/en/dataset/59956438-2753-482b-965c-8512a79631f1	M	M	POPULATED AREAS

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Boundary Files — 2011 Census				
Dissemination Area Cartographic Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/5a439136-6250-4028-a217-8d2744f09e09	M	M	POPULATED AREAS
Population Ecumene Census Division Cartographic Boundary File — 2011 Census	https://open.canada.ca/data/en/dataset/5be03a46-8504-40a7-a96c-af195bae0428	M	M	POPULATED AREAS
Economic Region Cartographic Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/6269bee7-ff47-48b1-95a5-e5fc622636a2	M	M	POPULATED AREAS
Federal Electoral District Cartographic Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/69abc973-412b-4150-bd2f-3131186c4ee4	M	M	POPULATED AREAS
Census Consolidated Subdivision Cartographic Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/6b5ad0b8-f419-45f7-b2c7-e1102b3dced8	M	M	POPULATED AREAS
Census Metropolitan Area and Census Agglomeration Digital Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/72d2e2c0-1d13-489c-af34-93821109f7ed	M	M	POPULATED AREAS
Dissemination Block Cartographic Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/7441acba-ced5-4748-8fca-8a8a4dd2ddff	M	M	POPULATED AREAS
Designated Place Digital Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/75307e34-ef6a-42f8-88b3-18c721935703	M	M	POPULATED AREAS
Census Tract Digital Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/7dccb506-f372-4928-b485-1c6a22b2cc96	M	M	POPULATED AREAS
Census Metropolitan Area and Census	https://open.canada.ca/data/en/dataset/821ef476-d554-4bb4-bc32-bc916640fc9d	M	M	POPULATED AREAS

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Agglomeration Cartographic Boundary Files — 2011 Census				
Census Consolidated Subdivision Digital Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/a0127cff-71e8-41c5-82fd-9d8f1dc868b1	M	M	POPULATED AREAS
Province and Territory Cartographic Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/bab06e04-e6d0-41f1-a595-6cff4d71bedf	M	M	POPULATED AREAS
Dissemination Area Digital Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/bfb7eb03-0ac6-47bc-a40d-750e1311e3ae	M	M	POPULATED AREAS
Census Division Cartographic Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/cc2f27e3-b20f-4472-8a65-13bb7556a658	M	M	POPULATED AREAS
Dissemination Block Digital Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/d5d187d0-25aa-47b6-b729-26e8a0166683	M	M	POPULATED AREAS
Designated Place Cartographic Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/e1f5053f-958a-462f-bbe1-66c14f315731	M	M	POPULATED AREAS
Census Subdivision Digital Boundary Files — 2015	https://open.canada.ca/data/en/dataset/e5d97c5d-a08a-4b0b-9cc7-2153660f7c29	M	M	POPULATED AREAS
Population Centre Cartographic Boundary Files — 2011 Census	https://open.canada.ca/data/en/dataset/e7be7474-5573-4f44-a914-bc7f7ea1320d	M	M	POPULATED AREAS
Columbia U. — Population of the world	https://beta.sedac.ciesin.columbia.edu/data/set/gpw-v4-population-density/data-download	M	M	POPULATED AREAS
NRCan — CanVec Manmade Structures	http://ftp.geogratis.gc.ca/pub/nrcan_rncan/vector/canvec/shp/ManMade/	M	H	POPULATED AREAS
Canada trails	https://open.canada.ca/data/en/dataset/64a90e8d-5bc0-4027-8645-b5881b4068d4	L	L	RECREATION INFRASTRUCTURE

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Roads	https://app.geo.ca/result?id=3d282116-e556-400c-9306-ca1a3cada77f&lang=en	H	M	RECREATION INFRASTRUCTURE
High Resolution Digital Elevation Model (HRDEM) — CanElevation Series	https://app.geo.ca/result/en/high-resolution-digital-elevation-model-(hrdem)---canelevation-series?id=957782bf-847c-4644-a757-e383c0057995&lang=en	M	H	TOPOGRAPHIC
Current Conditions	https://cwfis.cfs.nrcan.gc.ca/maps/fm3?type=fwih	M	M	REMOTE SENSING
M3 Hotspots	https://cwfis.cfs.nrcan.gc.ca/maps/fm3?type=tri	H	H	PLANNING INDICATORS
Earth Observation Data Cube Platform	https://datacube.services.geo.ca/en/index.html	M	M	REMOTE SENSING
National Air Photo Library (NAPL)	https://natural-resources.canada.ca/maps-tools-and-publications/satellite-imagery-elevation-data-and-air-photos/air-photos/22030	M	M	REMOTE SENSING
RCM CEOS Analysis Ready Data (Satellite STAC Collection)	https://registry.opendata.aws/rcm-ceos-ard/	M	M	REMOTE SENSING
Earth Observation Data Management System	https://www.eodms-sgdot.nrcan-rncan.gc.ca/index-en.html	M	M	REMOTE SENSING
Vegetation Parameters Time Series	https://datacube.services.geo.ca/en/viewer/eo4ce/vegetation/index.html	M	M	SPECIES & WATER PROTECTION
Probability of the annual minimum snow and ice (MSI) presence over Canada	https://open.canada.ca/data/en/dataset/808b84a1-6356-4103-a8e9-db46d5c20fcf	M	M	LAND ANALYTIC PRODUCTS
Geodetic reference systems in Canada	https://natural-resources.canada.ca/maps-tools-and-publications/geodetic-reference-systems/18766	H	H	STRATEGIC GUIDANCE
Alberta	https://wildfire.alberta.ca/resources/historical-data/default.aspx	M	M	STRATEGIC GUIDANCE
A geospatial dataset providing first-order indicators of wildfire risks to water supply in Canada and Alaska	https://www.sciencedirect.com/science/article/pii/S2352340920300652	M	H	STRATEGIC GUIDANCE

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
High-Resolution 3D Data (Elevation, LiDAR)	https://datacube.services.geo.ca/en/viewer/elevation/index.html	M	M	TOPOGRAPHIC
Road Network Files — 2015	https://open.canada.ca/data/en/dataset/8e089409-8b6e-40a9-a837-51fcb2736b2c	M	M	TOPOGRAPHIC
Road Network and Geographic Attribute File — 2006 Census	https://open.canada.ca/data/en/dataset/d14af522-9f66-41ae-9a48-81a23b818f94	M	M	TOPOGRAPHIC
USGS — Topography	https://topotools.cr.usgs.gov/gmted_viewer/viewer.htm	H	H	TOPOGRAPHIC
Fire Weather Normals	https://cwfis.cfs.nrcan.gc.ca/ha	M	H	WEATHER
Annotated list of useful fire and weather websites	https://73c61686-1630-4745-842c-cf3169c8dadc.filesusr.com/ugd/90df79_bd193b3491c94e1188f49ccfdd1aa536.pdf	H	H	WEATHER
Lightning Density Data	https://open.canada.ca/data/en/dataset/75dfb8cb-9efc-4c15-bcb5-7562f89517ce	M	M	WEATHER
NRCan — Fire Weather Index and its components	https://cwfis.cfs.nrcan.gc.ca/downloads/fwi_obs/	H	H	WEATHER
NRCan — Forest Fuels	ftp://ftp.nofc.cfs.nrcan.gc.ca/pub/fire/cwfis/data/fuels/	H	H	FIRE ANALYTIC PRODUCTS
NRCan — Vegetation concentration and mass	http://tree.pfc.forestry.ca/	H	H	FIRE ANALYTIC PRODUCTS
NRCan — Road segments	ftp://ftp.nofc.cfs.nrcan.gc.ca/pub/fire/cwfis/data/base_data	H	M	TOPOGRAPHIC
NRCan — Canadian Lightning Detection Network	ftp://ftp.nofc.cfs.nrcan.gc.ca/pub/fire/CLDN/	H	M	WEATHER

8.3. Models

Table 13 — Table Models List

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Northwest Territories	https://www.enr.gov.nt.ca/en/easymap	H	M	FIRE ANALYTIC PRODUCTS
Spatial fire simulation model	https://www.canadawildfire.org/burn-p3-english	H	H	FIRE ANALYTIC PRODUCTS
An R package for the Canadian Forest Fire Danger Rating System.	https://www.canadawildfire.org/cffdrs-r-package	H	H	FIRE ANALYTIC PRODUCTS
Tracking Canada's Extreme 2023 Fire Season	https://earthobservatory.nasa.gov/images/151985/tracking-canadas-extreme-2023-fire-season	M	L	FIRE EXTENT & INTENSITY
Historical Climate Data (Extraction)	https://climate-change.canada.ca/climate-data/downscaled-data[#https://climate-change.canada.ca/climate-data/downscaled-data#]	M	H	WEATHER
CMIP5 statistically downscaled climate scenarios	https://climate-scenarios.canada.ca/?page=statistical-downscaling	M	H	WEATHER
Climate Data of Canada	https://climatedata.ca/variable/	M	H	WEATHER
Predicting Fuel Characteristics of Black Spruce Stands Using Airborne Laser Scanning (ALS) in the Province of Alberta, Canada	https://www.canadawildfire.org/_files/ugd/90df79_ff529c1f6ec84b4daec5ba598077d52c.pdf	L	H	LAND ANALYTIC PRODUCTS
BC	https://worldview.earthdata.nasa.gov/	M	M	LAND ANALYTIC PRODUCTS
GeoAI	https://geo.ca/initiatives/geobase/geoai/	H	H	LAND ANALYTIC PRODUCTS
Fire Weather	https://cwfis.cfs.nrcan.gc.ca/maps/fw?type=fwi	L	M	WEATHER
Early Warning	https://gfmc.online/gwfews/index-12.html	M	L	PLANNING INDICATORS
Canadian Forest Fire Weather Index (FWI) System	https://cwfis.cfs.nrcan.gc.ca/background/summary/fwi	L	M	WEATHER

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Climate Projections — Fire Weather Index (FWI)	https://climatedata.ca/long-term-fire-weather-projections/	M	M	WEATHER
Weather	https://cwfis.cfs.nrcan.gc.ca/maps/wx	L	L	WEATHER

8.4. Fire Programs

Table 14 — Table Fire Programs List

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
FireSmart	https://www.alberta.ca/firesmart#jumplinks-0	L	L	STRATEGIC RESOURCES — ASSETS
Alberta Wildfire Status Dashboard	https://www.arcgis.com/apps/dashboards/3ffcc2d0ef3e4e0999b0cf8b636defa3	H	M	MAPS/REPORTS
Geo AI Initiative — Background	https://natural-resources.canada.ca/simply-science/revolutionizing-emergency-preparedness-on-demand-mapping/26092	L	L	STRATEGIC GUIDANCE
Fact Sheets	https://www.ccfm.org/?s=&post_type%5B%5D=factsheets	L	H	STRATEGIC GUIDANCE
New Brunswick	https://www2.gnb.ca/content/gnb/en/news/public_alerts/forest_fire_watch.html	M	M	STRATEGIC GUIDANCE
Canadian Wildland Fire Prevention and Mitigation Strategy	https://www.ccfm.org/wp-content/uploads/2024/06/CWFPM-Strategy-EN-2024-06-05-FINAL-_V09.pdf	H	H	STRATEGIC GUIDANCE

8.5. Strategic Plan/Information

Table 15 — Table Strategic Plan/Information List

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
State of the Science on Wildland Fire Emissions	https://www.firelab.org/node/921	L	L	AIR QUALITY
Daily, Weekly, Seasonal, and Interannual Variability of CO2, CO and CH4 Emissions from Biomass Burning in North America and their Impact on Atmospheric Chemical Composition	https://www.firelab.org/node/973	L	L	AIR QUALITY
Canadian Wildland Fire Prevention and Mitigation Strategy	https://www.ccfm.org/wp-content/uploads/2024/06/CWFPM-Strategy-EN-2024-06-05-FINAL-_V09.pdf	H	H	FIRE RISK ASSESSMENTS
Survey of Municipal Land Use Planning for Wildfire Risk Mitigation in Alberta	https://firesmartalberta.ca/wp-content/uploads/2023/09/Gatti_2021_Alberta-survey-planning-wildfire-mitigation-Alberta.pdf	L	H	FIRE SCIENCE ANALYTICS
National guide for wildland-urban-interface fires: guidance on hazard and exposure assessment, property protection, community resilience and emergency planning to minimize the impact of wildland-urban interface fires	https://nrc-publications.canada.ca/eng/view/ft/?id=3a0b337f-f980-418f-8ad8-6045d1abc3b3	L	H	STRATEGIC RESOURCES — ASSETS
Burn severity and fire history in the northwestern Canadian boreal forest: drivers and ecological outcomes	https://www.canadawildfire.org/_files/ugd/90df79_02a3abc35c054274b6a348cc45c7407c	L	H	FIRE EXTENT & INTENSITY

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Geospatial Standards and Operational Policies	https://natural-resources.canada.ca/earth-sciences/geomatics/canadas-spatial-data-infrastructure/8902	L	H	INFORMATION MANAGEMENT
Knowledge Centre	https://www.ccfm.org/knowledge-centre/	H	H	STRATEGIC GUIDANCE
Bark Beetle Outbreaks in Lodgepole Pine	https://www.firelab.org/project/bark-beetle-outbreaks-lodgepole-pine	L	L	LAND ANALYTIC PRODUCTS
Mapping wildfire hazard, vulnerability, and risk to Canadian communities	https://www.sciencedirect.com/science/article/pii/S221242092300701X	M	H	MAPS/REPORTS
Mapping wildfire hazard, vulnerability, and risk to Canadian communities	https://www.sciencedirect.com/science/article/pii/S221242092300701X	H	H	MAPS/REPORTS
Air Quality	https://weather.gc.ca/airquality/pages/index_e.html	L	L	AIR QUALITY
Transitioning from Rhetoric to Action: Integrating Physical Climate Change and Extreme Weather Risk into Institutional Investing	https://www.intactcentreclimateadaptation.ca/integrating-physical-climate-change-risk-into-institutional-investing/	M	H	PLANNING INDICATORS
Irreversible Extreme Heat: Protecting Canadians and Communities from a Lethal Future	https://www.intactcentreclimateadaptation.ca/irreversible-extreme-heat-protecting-canadians-and-communities-from-a-lethal-future/	M	H	PLANNING INDICATORS
FSC_Construction Checklist_FINAL.pdf	https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2022/02/FSC_ConstructionChecklist_FINAL.pdf	H	M	PLANNING INDICATORS
Canadian Wildland Fire Strategy: A 10-year Review and Renewed Call to Action	https://cfs.nrcan.gc.ca/pubwarehouse/pdfs/37108.pdf	L	H	STRATEGIC GUIDANCE
National Wildland Fire Situation Report	https://cwfis.cfs.nrcan.gc.ca/report	L	H	STRATEGIC GUIDANCE

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
Geoscience: Tools and Data	https://natural-resources.canada.ca/earth-sciences/earth-sciences-resources/earth-sciences-tools-applications/10790	M	H	STRATEGIC GUIDANCE
Canadian Wildland Fire Strategy: A Vision for an Innovative and Integrated Approach to Managing the Risks	https://ostrnrcan-dostrncan.canada.ca/entities/publication/ecf75ce5-72f8-4a7b-9cc0-13e5deeb5b45	L	H	STRATEGIC GUIDANCE
Fuels Management-How to Measure Success: Conference Proceedings	https://research.fs.usda.gov/treesearch/24476	L	H	STRATEGIC GUIDANCE
A Shared Vision for Canada's Forests: Toward 2030	https://www.ccfm.org/wp-content/uploads/2020/08/A-Shared-Vision-for-Canada's-Forests-Toward-2030.pdf	L	H	STRATEGIC GUIDANCE
Governance Model for Canadian Wildland Fire Management Cooperation	https://www.ccfm.org/wp-content/uploads/2020/08/Governance-Model-for-Canadian-Wildland-Fire-Management-Cooperation-Including-the-Wildland-Fire-Management-Working-Group-WFMWG-of-the-Canadian-Council-of-Forest.pdf	L	H	STRATEGIC GUIDANCE
PAN-CANADIAN FRAMEWORK ON CLEAN GROWTH AND CLIMATE CHANGE Forest Ministerial Progress Report	https://www.ccfm.org/wp-content/uploads/2021/07/PCF_Progress_Report_2020_EN.pdf	L	H	STRATEGIC GUIDANCE
CCFM WFMG — Action Plan 2021–2026	https://www.ccfm.org/wp-content/uploads/2021/07/WFMWG_Action_Plan_2021-2026_en.pdf	L	H	STRATEGIC GUIDANCE
Canadian Dialogue on Wildland Fire and Forest Resilience What We Hea	https://www.ccfm.org/wp-content/uploads/2022/06/CanadianDialogueOnWildlandFireAndForestResilier EN_2022-06-14.pdf	L	H	STRATEGIC GUIDANCE
Canadian Wildland Fire Prevention and Mitigation Strategy	https://www.ccfm.org/wp-content/uploads/2024/06/CWFPM-Strategy-EN-2024-06-05-FINAL-_V09.pdf	L	H	STRATEGIC GUIDANCE
Wildfire-Ready: Practical Guidance	https://www.intactcentreclimateadaptation.ca/wildfire-ready-practical-guidance-to-	H	H	STRATEGIC GUIDANCE

NAME	LINK/ENDPOINT	USEFUL PRIORIT (L, M, H)	GENAI VALUE PRIORIT (L,M,H)	INFORMATION CLASS
to Strengthen the Resilience of Canadian Homes and Communities	strengthen-the-resilience-of-canadian-homes-and-communities/			
Home-heat-pretection-final	https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2023/05/IntactCentre-Three_steps-Home_Heat_Protection.pdf	M	H	STRATEGIC GUIDANCE
Working-with-Nature-at-Home-final-Jun28-2023	https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2023/11/IntactCentre-Working_with_Nature_at_Home.pdf	H	H	STRATEGIC GUIDANCE
Firesmart-home-final-rev	https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2023/12/IntactCentre_3-steps-to-a-cost-effective-FireSmart-Home-QR.pdf	H	H	STRATEGIC GUIDANCE
Wildfire-ready-community-final-rev-2	https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2023/12/IntactCentre_Wildfire-ready-community.pdf	H	H	STRATEGIC GUIDANCE
Reports	https://www.ccfm.org/?s=&meta_query%5B%5D=report_file	M	H	MAPS/REPORTS
Canada Wildfire	https://www.canadawildfire.org/	M	M	STRATEGIC GUIDANCE
CIFFC	https://www.ciffc.ca/	M	H	STRATEGIC GUIDANCE
Fuels Management-How to Measure Success: Conference Proceedings	https://research.fs.usda.gov/treesearch/24476	H	H	STRATEGIC GUIDANCE
Human Settlement in Canada	https://opendrr.github.io/downloads/en/	H	H	STRATEGIC GUIDANCE
Automatically Extracted Buildings	https://app.geo.ca/map?rvKey=7a5cda52-c7df-427f-9ced-26f19a8a64d6	H	H	POPULATED AREAS
High Resolution Digital Elevation Model (HRDEM)	https://app.geo.ca/map?rvKey=957782bf-847c-4644-a757-e383c0057995	L	M	TOPOGRAPHIC
High Resolution Digital Elevation Model Mosaic (HRDEM Mosiac)	https://app.geo.ca/map?rvKey=0fe65119-e96e-4a57-8bfe-9d9245fba06b	H	H	TOPOGRAPHIC
Lidar Point Clouds Product	https://app.geo.ca/map?rvKey=7069387e-9986-4297-9f55-0288e9676947	L	L	INFORMATION MANAGEMENT

9

APPENDIX A.B: DETAIL FOR MAPPING USE CASES TO DATASET READINESS AND PRIORITY

9 APPENDIX A.B: DETAIL FOR MAPPING USE CASES TO DATASET READINESS AND PRIORITY

9.1. UC to DRM Mapping — Helping People (Social Impact and Community Engagement)

Table 16 — Table UC to DRM Mapping — Helping People (Social Impact and Community Engagement)

USE CASES / DATA CLASSES	1. COMMUNI RISK & RESILIENCE ASSESSMEI	2. GRANT & FUNDING STRATEGY DEVELOPM	3. COMMUNI WILDFIRE PROTECTIC PLANS (CWPP) SUPPORT	4. PREDICTIVI NEIGHBOR RISK MODELING	5. EVACUATIC PLANNING & OPTIMIZAT	6. RESILIENCE & ADAPTATIC MEASURE SUPPORT	7. COMMUNIT ENGAGEME & OUTREACH
STRATEGIC GUIDANCE	Medium	High	High	Medium	Medium	High	Low
STRATEGIC RESOURCES — PERSONNEL	Low	Medium	Medium	Low	Medium	Low	Low
STRATEGIC RESOURCES — ASSETS	High	High	High	High	High	High	Medium
PLANNING INDICATORS	High	High	High	High	High	High	Medium
INFORMATION MANAGEMENT	Low	Low	Low	Low	Low	Low	Low
TOPOGRAPHIC	High	Medium	High	High	Medium	Medium	High
MAPS/REPORTS	High	High	High	High	High	High	Low
FOREST/GRASSLAND PLANS	High	High	High	High	Medium	High	Medium
REMOTE SENSING	High	High	High	High	Medium	High	Medium

USE CASES / DATA CLASSES	1. COMMUNI RISK & RESILIENCE ASSESSME	2. GRANT & FUNDING STRATEGY DEVELOPM	3. COMMUNI WILDFIRE PROTECTIC PLANS (CWPP) SUPPORT	4. PREDICTIVI NEIGHBOR RISK MODELING	5. EVACUATIC PLANNING & OPTIMIZAT	6. RESILIENCE & ADAPTATIC MEASURE SUPPORT	7. COMMUNIT ENGAGEME & OUTREACH
LAND ANALYTIC PRODUCTS	High	High	High	High	Medium	High	Medium
FIRE ANALYTIC PRODUCTS	High	High	High	High	Medium	High	Medium
DISPATCH	Medium	Low	Medium	Medium	Medium	Low	Low
FIRE EXTENT & INTENSITY	High	High	High	High	Medium	High	Medium
POPULATED AREAS	High	High	High	High	High	Medium	Medium
AIR QUALITY	Low	Medium	Low	Low	Low	Medium	Medium
WEATHER	High	Medium	Medium	High	Medium	High	Medium
RECREATION INFRASTRUCTURE	High	Medium	Medium	Medium	High	Medium	Medium
ENERGY INFRASTRUCTURE	High	Low	Medium	Low	Low	Medium	Low
SPECIES & WATER PROTECTION	Low	Medium	High	Low	Low	Medium	Low
FIRE SCIENCE ANALYTICS	High	High	Medium	High	Medium	High	Low
FIRE RISK ASSESSMENTS	High	High	High	High	High	High	Medium
COMMAND — STRATEGIC	Medium	Medium	High	Medium	Medium	Medium	Low
PLANNING	High	High	High	High	High	High	Medium
PLANNING — GISS (PMS-910,938, 936)	Low	Low	Medium	Low	Low	Low	Low
LOGISTICS — PERSONNEL	Low	Low	Medium	Low	Medium	Low	Low
LOGISTICS — ASSET/ GENERAL	Medium	Medium	Medium	Low	Medium	Medium	Low
OPERATIONS	Medium	Low	High	Medium	Medium	Low	Low

USE CASES / DATA CLASSES	1. COMMUNI RISK & RESILIENCE ASSESSMEI	2. GRANT & FUNDING STRATEGY DEVELOPM	3. COMMUNI WILDFIRE PROTECTIC PLANS (CWPP) SUPPORT	4. PREDICTIVI NEIGHBOR RISK MODELING	5. EVACUATIC PLANNING & OPTIMIZAT	6. RESILIENCE & ADAPTATIC MEASURE SUPPORT	7. COMMUNIT ENGAGEME & OUTREACH
FINANCE	Medium	High	High	High	Low	Medium	Low
ADMINISTRATION	Low	Low	Low	Low	Low	Low	Low

9.2. UC to DRM Mapping — Insurance Business Management (Risk, Claims, Pricing, and Research)

Table 17 — Table UC to DRM Mapping — Insurance Business Management (Risk, Claims, Pricing, and Research)

USE CASES / DATA CLASSES	1. ASSET RISK REDU & LOSS PREVI	2. CLAIM EFFICIE & AUTON	3. EVACU RISK & INSURA LIABILI MODEI	4. PREDI RISK & PRICII MODE	5. NEIGH RISK ANAL FOR INSUF PRICII	6. AUTO DISAS RESPC COST ESTIM	7. ENHAN MARKET & OUTREA TO MUNICI	8. POST-EVENT REMEDI & INSURA RECOVE	9. LOSS ANALYS FOR PORTFC MANAG	10. DATA-DRIVEN RESEAR FOR CATAST EVENT PRICING	11. INSURA WIDE DATA & RESEAR SHARIN
STRATEGIC GUIDANCE	High	Mediun	High	High	Mediu	High	High	High	Medium	High	Medium
STRATEGIC RESOURCES — PERSONNEL	Mediu	Low	Low	Low	Low	Mediu	Medium	Medium	Low	Low	Low
STRATEGIC RESOURCES — ASSETS	High	High	High	High	High	High	Medium	High	Medium	High	High
PLANNING INDICATORS	High	Low	High	Mediu	Mediu	High	Medium	High	Medium	Medium	Medium
INFORMATION MANAGEMENT	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
TOPOGRAPHIC	Mediu	Mediun	High	High	High	Mediu	Medium	Medium	Medium	High	Medium
MAPS/REPORTS	High	Mediun	High	High	High	Mediu	Medium	Medium	Medium	Medium	Medium

USE CASES / DATA CLASSES	1. ASSET RISK REDU & LOSS PREVI	2. CLAIM EFFICIE & AUTON	3. EVACU RISK & INSURA LIABILI MODEI	4. PREDI RISK & PRICI MODE	5. NEIGH RISK ANAL FOR INSUF PRICI	6. AUTO DISAS RESPO COST ESTIM	7. ENHAN MARKET & OUTREA TO MUNICI	8. POST-EVENT REMEDI & INSURA RECOVE	9. LOSS ANALYS FOR PORTFO MANAG	10. DATA-DRIVEN RESEAR FOR CATAST EVENT PRICING	11. INSURA WIDE DATA & RESEAR SHARIN
FOREST/GRASSLAND PLANS	High	Low	High	High	High	High	Medium	High	Medium	High	High
REMOTE SENSING	High	Low	Mediun	High	High	High	Medium	High	High	High	High
LAND ANALYTIC PRODUCTS	High	Low	High	High	High	High	Medium	High	Medium	High	High
FIRE ANALYTIC PRODUCTS	High	Low	Mediun	High	High	High	Low	High	High	High	High
DISPATCH	Mediu	Low	Low	Mediu	High	Low	Low	Medium	Medium	Medium	Low
FIRE ANALYTIC PRODUCTS	High	Low	Mediun	High	High	High	Low	High	High	High	High
POPULATED AREAS	High	Low	High	Low	High	High	Medium	Medium	Medium	High	Medium
AIR QUALITY	Low	Low	Mediun	Mediu	Low	Low	Low	Low	Low	Low	Low
WEATHER	High	Low	High	High	Mediu	Low	Medium	Medium	Low	Medium	High
RECREATION INFRASTRUCTURE	Low	Mediun	Mediun	Low	Mediu	Low	Medium	Medium	Medium	Medium	Medium
ENERGY INFRASTRUCTURE	Mediu	Low	Low	Mediu	Low	Mediu	Low	Medium	Low	Low	Low
SPECIES & WATER PROTECTION	Mediu	Low	Low	Mediu	Mediu	Mediu	Low	High	Low	Medium	Low
FIRE SCIENCE ANALYTICS	High	Low	Mediun	High	Mediu	Mediu	Low	Medium	High	High	High
FIRE RISK ASSESSMENTS	High	Mediun	Mediun	High	High	High	High	High	High	High	High
COMMAND — STRATEGIC	Mediu	Low	Mediun	Low	Mediu	Low	Medium	Medium	Low	Low	Medium
PLANNING	High	Low	High	Mediu	Mediu	High	Medium	High	Medium	Medium	Medium
PLANNING — GISS (PMS-910,938, 936)	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Medium

USE CASES / DATA CLASSES	1. ASSET RISK REDU & LOSS PREVI	2. CLAIM EFFICIE & AUTON	3. EVACU RISK & INSURA LIABILI MODEI	4. PREDI RISK & PRICI MODE	5. NEIGH RISK ANAL FOR INSUF PRICI	6. AUTO DISAS RESPO COST ESTIM	7. ENHAN MARKET & OUTREA TO MUNICI	8. POST-EVENT REMEDI & INSURA RECOVE	9. LOSS ANALYS FOR PORTFC MANAG	10. DATA-DRIVEN RESEAR FOR CATAST EVENT PRICING	11. INSURA WIDE DATA & RESEAR SHARIN
LOGISTICS — PERSONNEL	Mediu	Mediun	Mediun	Mediu	Mediu	High	Medium	Low	Low	Medium	Medium
LOGISTICS — ASSET/ GENERAL	High	Mediun	High	Low	Mediu	High	Low	Medium	Low	Medium	Low
DISPATCH	Mediu	Low	Low	Mediu	High	Low	Low	Medium	Medium	Medium	Low
FINANCE	High	High	Low	High	High	High	Medium	Medium	High	High	Low
ADMINISTRATION	Low	High	Low	Low	Low	Mediu	Medium	Low	Medium	Low	Low

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APPENDIX A.C: REPORT METHODOLOGY SUMMARY

10 APPENDIX A.C: REPORT METHODOLOGY SUMMARY

Data Mapping – Identifying critical WF datasets in Canada and assessing coverage gaps.

- The Data Reference Model (DRM) leveraged for categorizing data was used from the Phase 1 (D-123) report which was created from input over 2 years from U.S. efforts which was tested with ~60 data sources mapping, considered input from US National Wildfire Coordinating Group (NWCG) Data Standards
- The DRM and target purpose was reviewed by the sponsor ensuring the focus is on Wildland Fire insurance in Canada while expanding off the Phase 1 (D-123) Wildland Fire GenAI report which had a U.S. and broad Wildland Fire focus.
- Over 200 datasets (structured and unstructured, individual and collections) were identified by Wildland Fire Geospatial Subject Matter Experts (GeoSMEs) after desk audits uncovered 40 potential data sources of sites, catalogs, research papers, research paper references.
- Data source results were captured as app/systems, datasets, fire program web sites, models, solution efforts to watch, and strategic plan info (structured and unstructured.
- Datasets were mapped to the DRM information class with an initial nominal value on Usefulness Priority (Low, Medium, High) and GenAI Value Priority (L,M,H) as well as the likely primary use (such as Risk Reduction, Claims, or Mapping)
- This was then summarized in the Core Data Needs section

Stakeholder Assessment – Pinpointing key processes and organizations poised to benefit from GenAI.

- Interviews were conducted to uncover use case categories where the sponsor to focus upon
- Further analysis uncovered top 5-10 use case for both categories capturing the functions and benefits

Use Case Prioritization – Targeting high-value areas such as predictive analytics, planning, and automation.

- Iteratively with stakeholders, the use cases identified where priorities as GenAI Value (L,M,H) Stakeholder Need (L,M,H) with stakeholders representing both use case categories with further refinement on summary and benefits.

Use Case Readiness Evaluation – Gauging data readiness and aligning with GenAI-driven solutions including Use to Information Class Matrix to understand data readiness.

- The Use cases were mapped to information class to GenAI need for data in that information class. Time restriction to the project limited identification of specific training dataset needs

Actionable Recommendations – Offering guidance on stakeholder collaboration, governance, and strategic investments including GenAI Roadmap and and potential Capabilities and Prototypes to guide GenAI adoption in wildfire insurance

- Through the interviews, potential prototypes of High Need and Higher data availability were presented for future investment
- Phase 1 (D-123) is cited for recommendations on how best to advance and consider its overall key considerations for such a GenAI investment.

BIBLIOGRAPHY

BIBLIOGRAPHY

Links included inline in the report. Data Sources are captured in Appendix A.A Data Sources

A

ANNEX A (NORMATIVE) ABBREVIATIONS/ACRONYMS

A ANNEX A (NORMATIVE) ABBREVIATIONS/ACRONYMS

Table A.1 — Table Abbreviations/Acronyms

ABBREVIATION	DEFINITION
AI	Artificial Intelligence
API	Application Programming Interface
ARD	Analysis Ready Data
CWPP	Community Wildfire Protection Plans
DGGS	Discrete Global Grid Systems
DRM	Data Reference Model
GenAI	Generative Artificial Intelligence
LLM	Large Language Model
NLP	Natural Language Processing
NWCG	National Wildfire Coordinating Group
OGC	Open Geospatial Consortium
RAG	Retrieval-Augmented Generation
UC	Use Case
US	United States
WF	Wildland Fire

B

ANNEX B (NORMATIVE) ANNEX TITLE

B ANNEX B (NORMATIVE) ANNEX TITLE