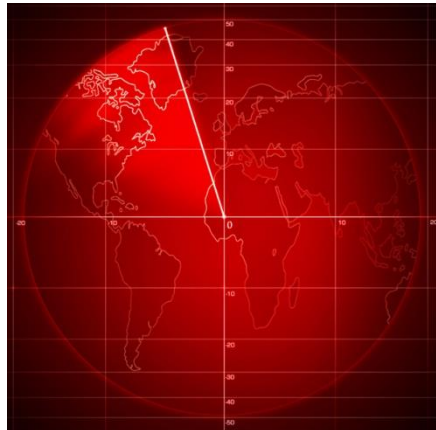




GOVERNMENT OPERATIONS CENTRE

CENTRE DES OPÉRATIONS DU GOUVERNEMENT



Developing the Canadian All-Hazards Symbology For Emergency Management

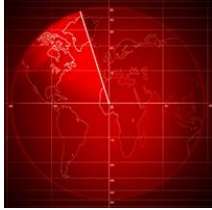
DATE: June 28, 2016
RDIMS No.: 1761980



Government
of Canada

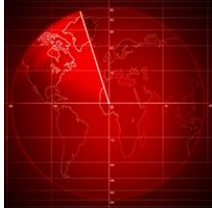
Gouvernement
du Canada

Canada 



- Role of the GOC and GOC Geomatics
- Background on our symbology use
- Development of CAHS – the *Canadian All-Hazards Symbology*
- Taxonomy / Structure
- New symbols developed for CAHS
- Use in event mapping
- Next steps





GOC role

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

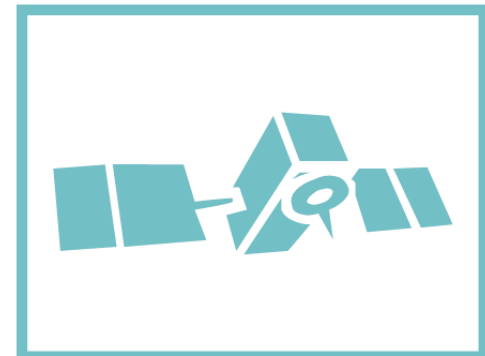
GOC Geomatics role

To enhance the GOC capabilities in providing strategic coordination and advice on managing current and upcoming events that have the potential to impact national interests through the provision of geomatics products and information.

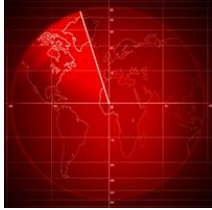


GOVERNMENT OPERATIONS CENTRE

CENTRE DES OPÉRATIONS DU GOUVERNEMENT



Background

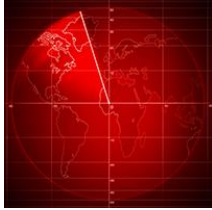


GOVERNMENT OPERATIONS CENTRE

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- Issue:
 - Insufficient emergency management symbology suitable for our role
 - Symbology that was available was:
 - Limited in numbers
 - Inconsistent styles and formats
 - Not customizable
- In 2011, GOC Geomatics identified a requirement for a new set of map symbology. It needed to:
 - Incorporate new events not represented in other available symbol sets
 - Be easily implemented in desktop mapping applications
 - Be useable by online interactive web maps
 - Comply with ESRI copyright on existing symbology



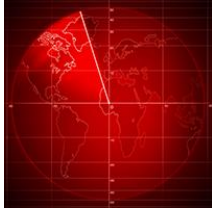


1. Identification of the requirement
 - Consulting with partners in emergency management
 - What were they using?
 - Did it suit their needs?
 - Would they use something else if it was available?
2. Establish a taxonomy / structure
 - Use existing taxonomy
 - Expand based on requirements (GOC and other departments)
 - Seek feedback from partners
3. Identify symbols
 - that require re-design (copyright or improvement)
 - that require new design



-Development of the CAHS

Canadian All-Hazards Symbology



GOVERNMENT OPERATIONS CENTRE

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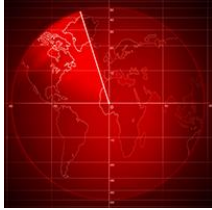
Representation of incidents & infrastructures in similar sets

	<u>Marine Incident</u>	<u>Nautical Accident</u>	<u>Nautical Hijacking</u>	<u>Harbour Facility</u>	<u>Harbour Facility Disruption</u>
US Homeland Security Working Group				(None)	(None)
Emergency Mapping Symbology					(None)
Canadian All-Hazards Symbology					



Development of the CAHS

Canadian All-Hazards Symbology



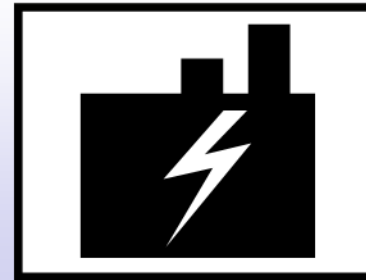
GOVERNMENT OPERATIONS CENTRE

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4. Design symbols

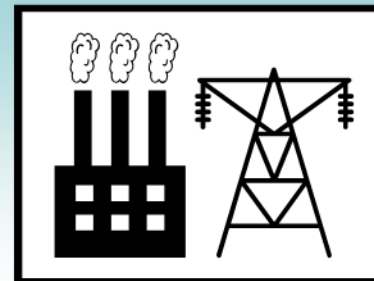
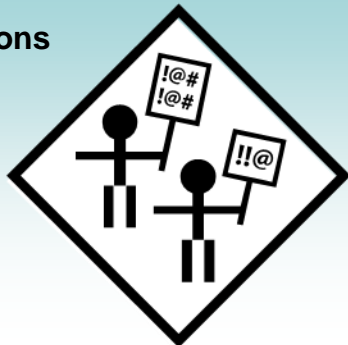
- Use the existing symbology as inspiration for an alternate design

CAHS Incidents



CAHS Infrastructure

ESRI ERS Operations

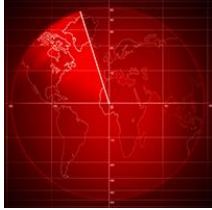


ESRI ERS Infrastructure



Development of the CAHS

Canadian All-Hazards Symbology

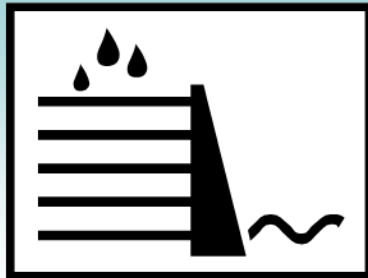
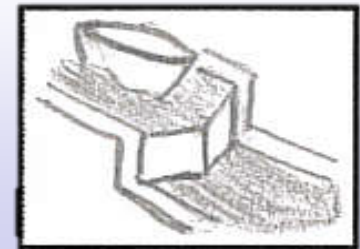
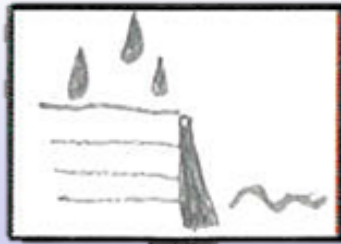


GOVERNMENT OPERATIONS CENTRE

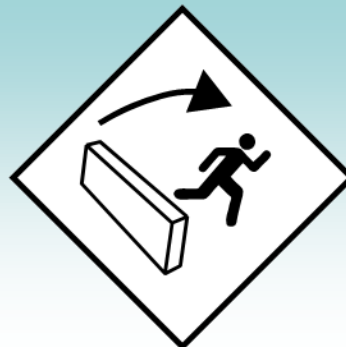
UNCLASSIFIED

4. Design symbols

- Develop new hand-drawn symbols



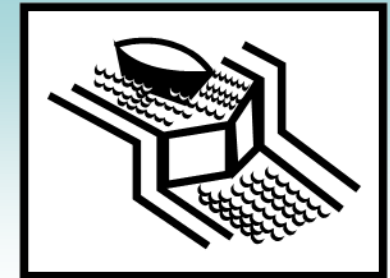
Reservoir



illegal Migration

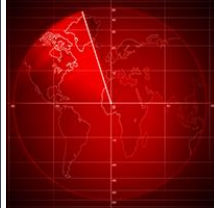


Ice Jam



Locks

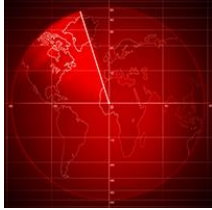




4. Design symbols

- Methodology

- For each graphic, other symbology was referred for inspiration
- Hand designs were drawn and submitted for review
- Digital versions were created using **Adobe illustrator**
- PNG raster images saved
- EPS vector files were then imported into **Fontographer**
- Final collections saved as True Type Font
 - cahs_incidents.TTF
 - cahs_infrastructure.TTF
 - cahs_operations.TTF



4. Design symbols

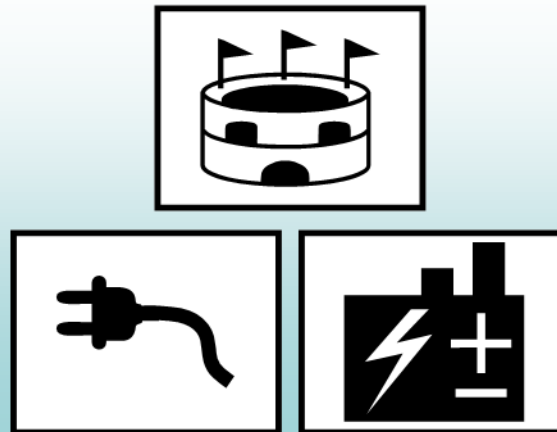
- Result

- Vector symbols ready for desktop mapping use
- Raster symbols ready for web use

185 symbols



106 symbols

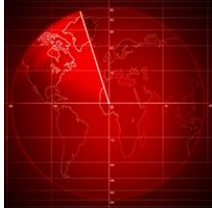


57 symbols



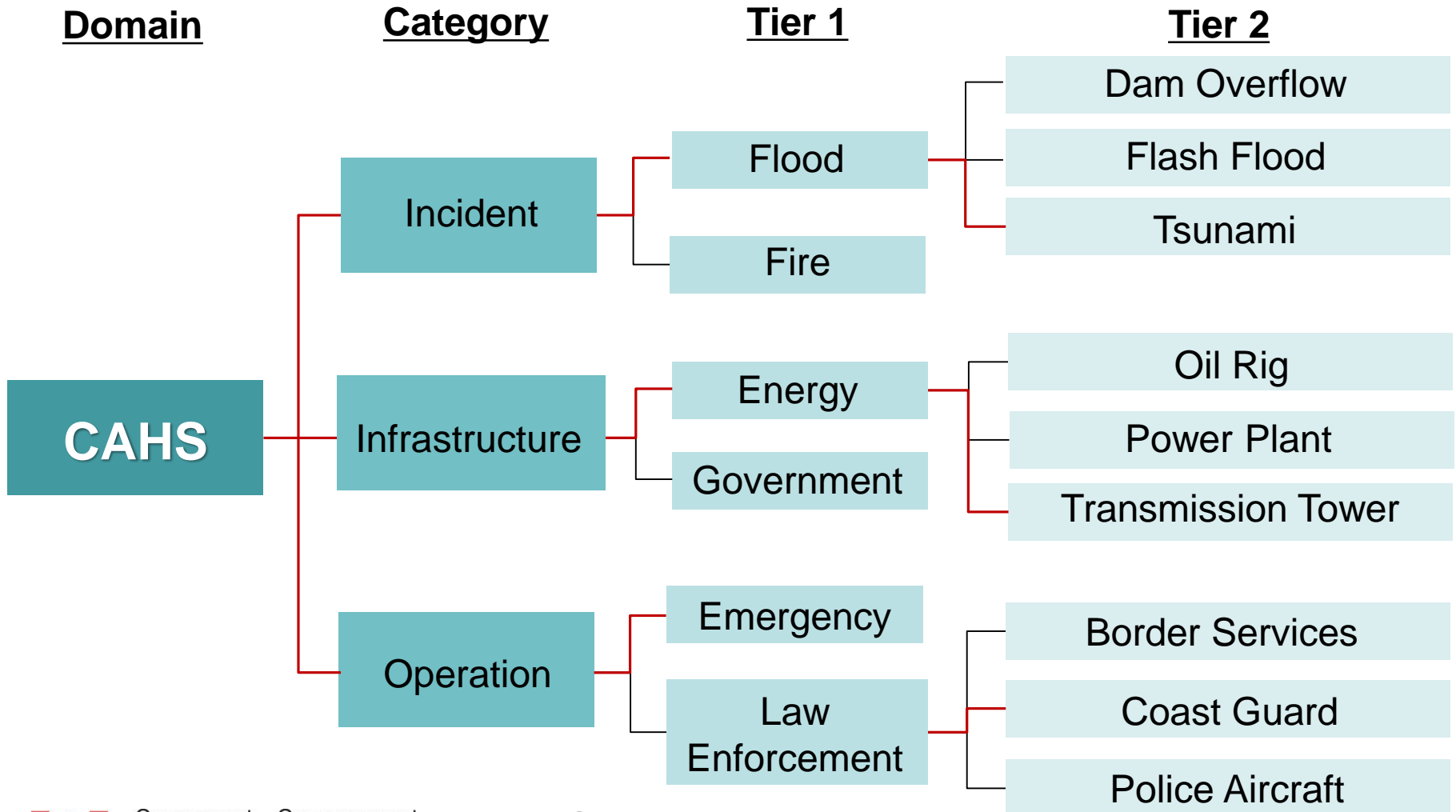
Total = 348

Taxonomy / Structure

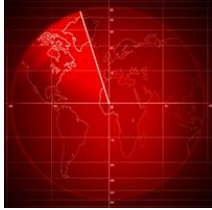


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New Features

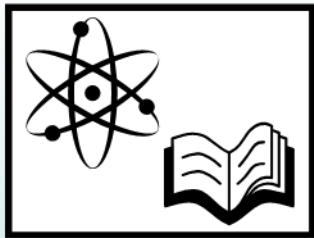


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Examples of features not represented in other available symbology sets

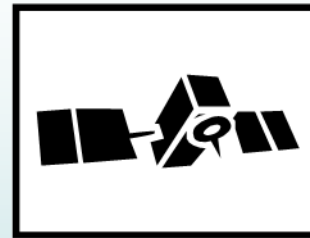
Nuclear Research Facility



Cyber Incident



Satellite



Rocket Launch



Human-to-human Transmission



Vector-borne Disease



Airborne Disease



Death of Federal Representative



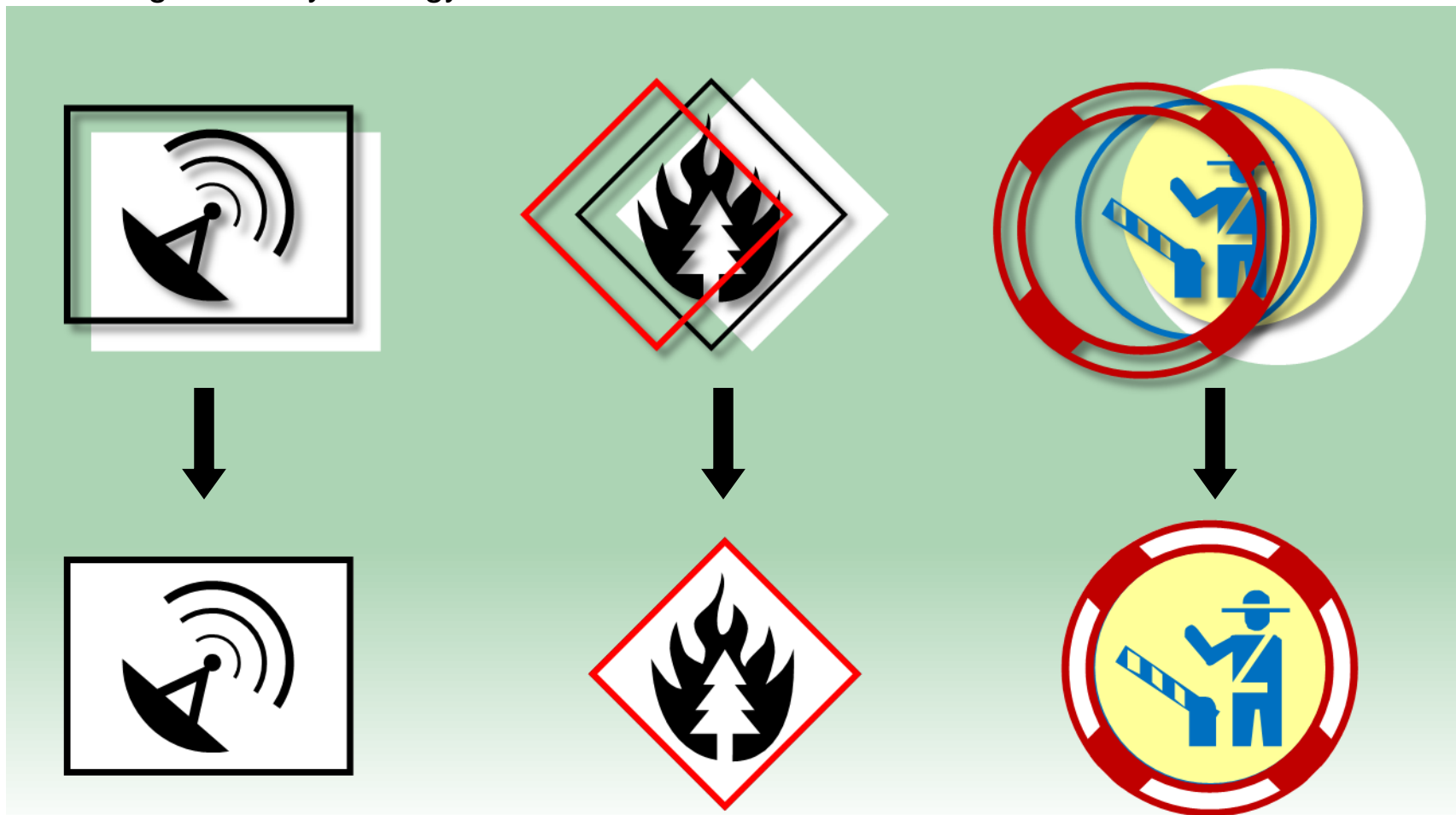
Use in event mapping



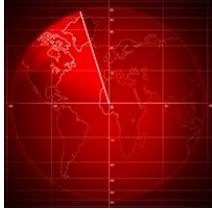
GOVERNMENT OPERATIONS CENTRE

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Customizing CAHS symbology



Use in event mapping



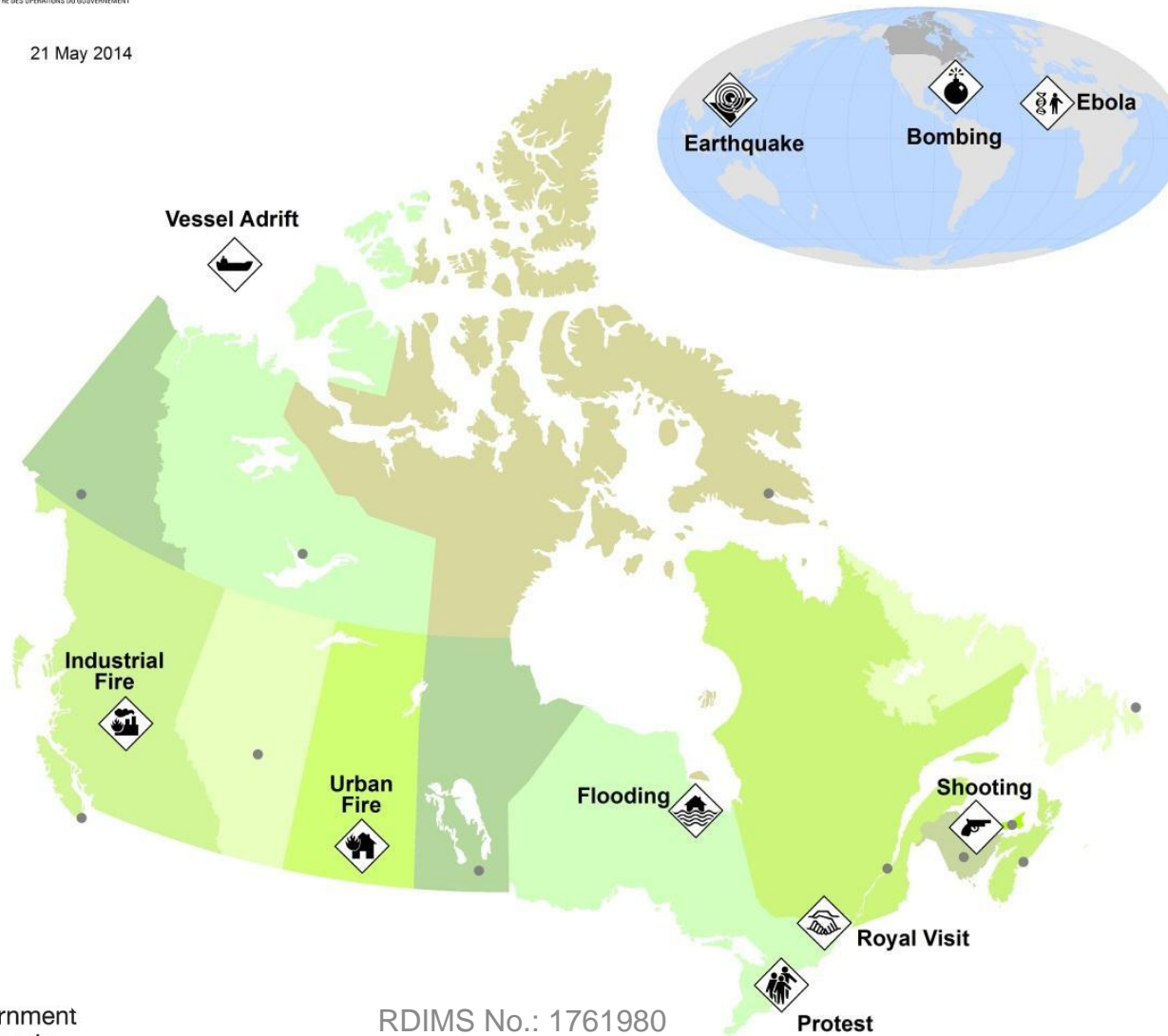
GOC COG
GOVERNMENT OPERATIONS CENTRE
CENTRE DES OPERATIONS DU GOUVERNEMENT

EVENTS, INCIDENTS and ITEMS OF INTEREST

GOVERNMENT OPERATIONS CENTRE

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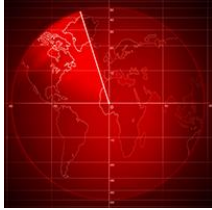
21 May 2014



Government of Canada

RDIMS No.: 1761980

Use in event mapping



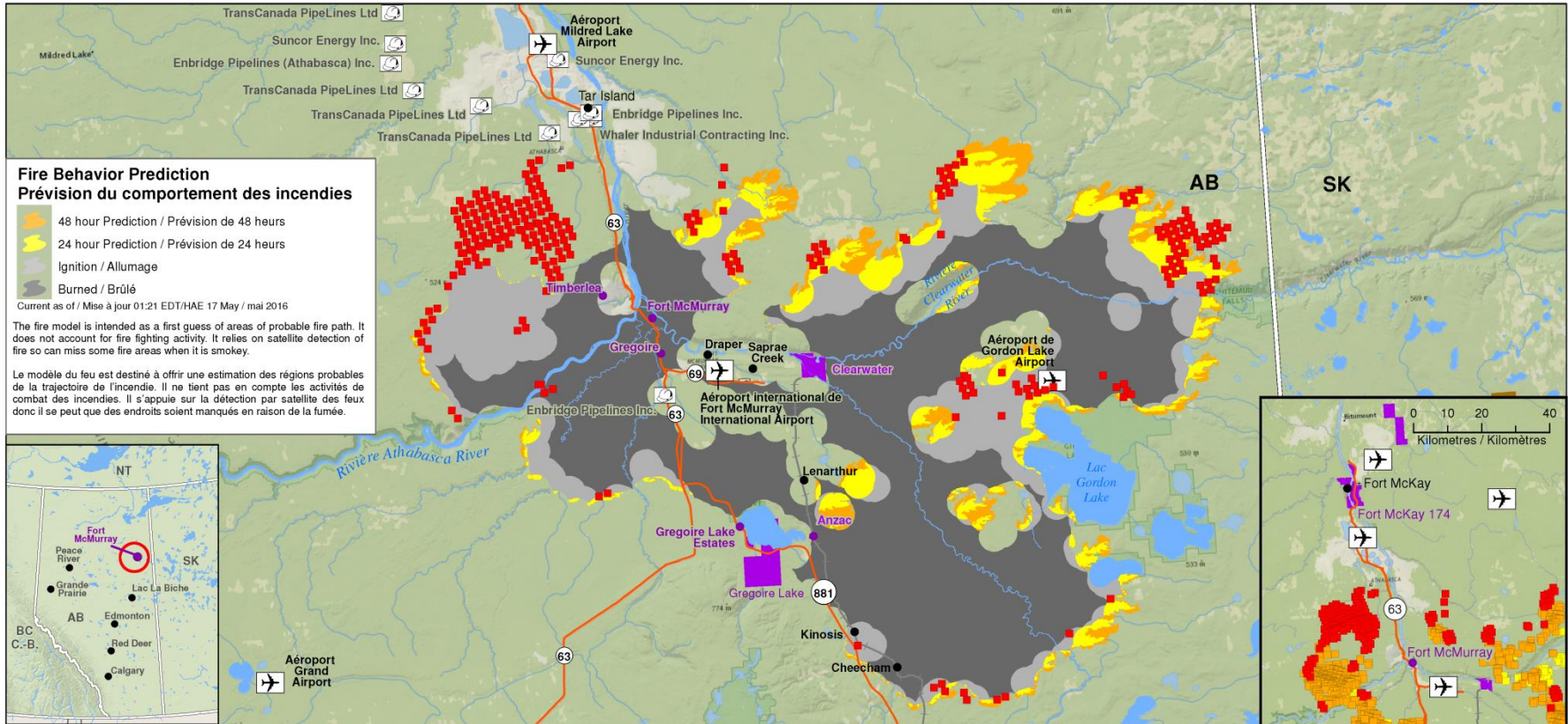
GOVERNMENT OPERATIONS CENTRE



AB Fire Behavior Prediction Prévision du comportement des incendies en AB Fort McMurray ST-01931-16

Current as of / Mise à jour
17 May / mai 2016
08:00 EDT/HAE

UNCLASSIFIED / NON CLASSIFIÉ



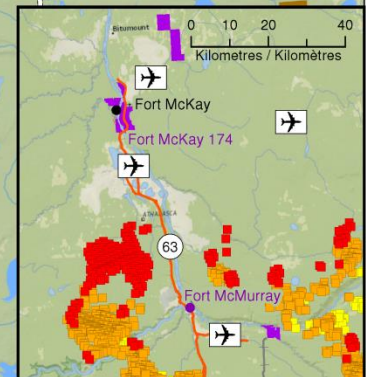
Fire Behavior Prediction Prévision du comportement des incendies

- 48 hour Prediction / Prévision de 48 heures
- 24 hour Prediction / Prévision de 24 heures
- Ignition / Allumage
- Burned / Brûlé

Current as of / Mise à jour 01:21 EDT/HAE 17 May / mai 2016

The fire model is intended as a first guess of areas of probable fire path. It does not account for fire fighting activity. It relies on satellite detection of fire so can miss some fire areas when it is smoky.

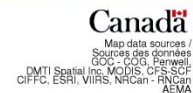
Le modèle du feu est destiné à offrir une estimation des régions probables de la trajectoire de l'incendie. Il ne tient pas en compte les activités de combat des incendies. Il s'appuie sur la détection par satellite des feux donc il se peut que des endroits soient manqués en raison de la fumée.



- Fire detections over the last 24 hours
Incendies détectés au cours des 24 derniers jours
- Affected Community / Communauté affectée
- Community / Ville

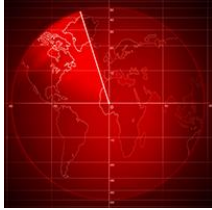
- Affected First Nations Reserve
Réserve de Première Nation affectée
- First Nations reserve
Réserve de Premières nations

- Petroleum Work Camps
Camps de travail pétroliers
- Airport /
- Highway /
- Railway / Voie ferrée



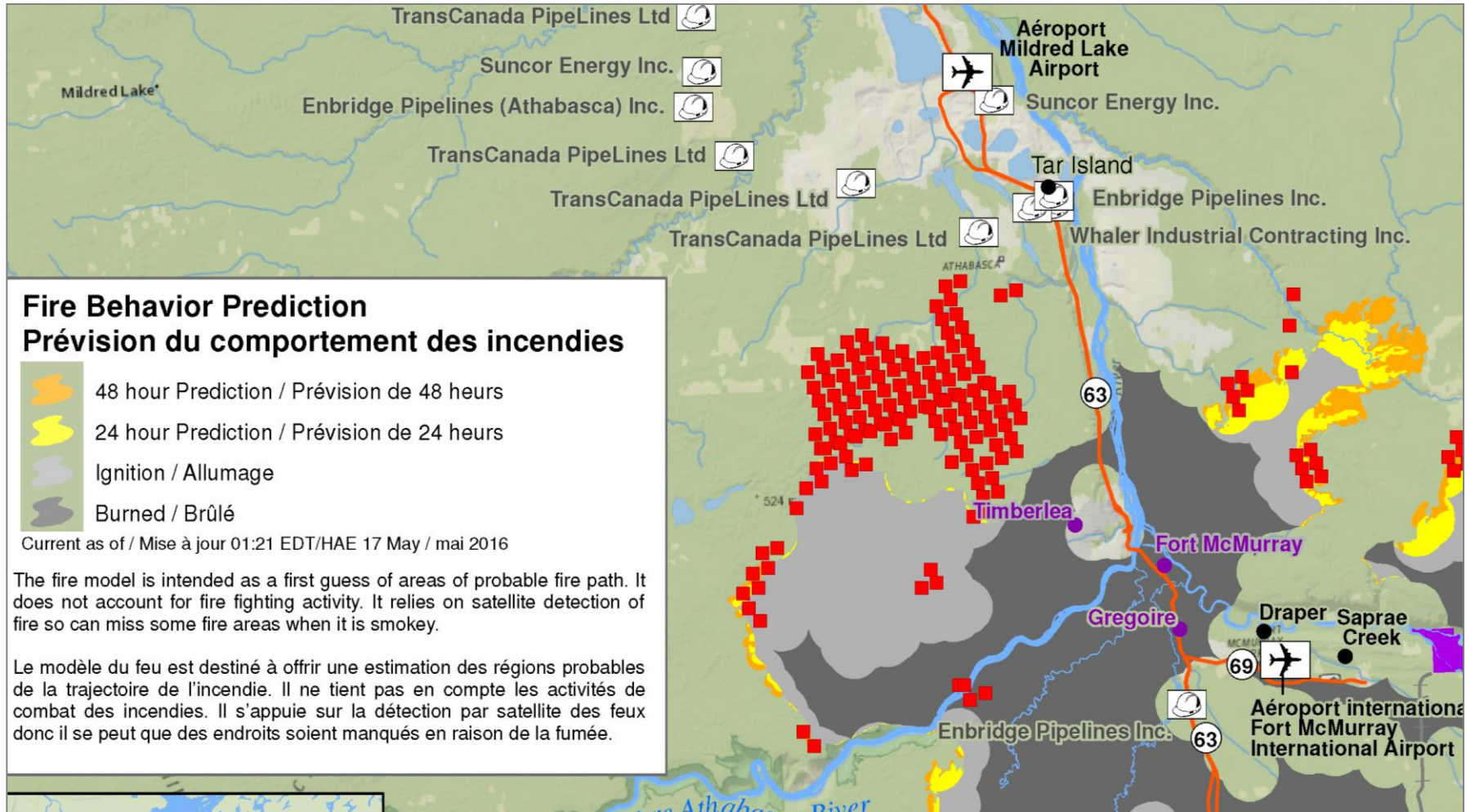
A hotspot is a satellite image pixel with infrared intensities typical of burning vegetation. Almost all hotspots indicate forest fires; however, not all fires can be identified from satellite images, usually because of cloud cover. The fires are detected using data from the MODIS instrument, on board NASA's Aqua and Terra satellites, provided by the FIRMS project. For more information, please visit: <http://earthdata.nasa.gov/firms>.
Un point chaud est un pixel d'imagerie satellite ayant une intensité de rayonnement infrarouge typiquement associée à des végétaux qui brûlent. Presque tous les points chauds indiquent des feux de forêt; cependant, il est impossible de repérer tous les incendies par imagerie satellite, notamment en raison de la couverture nuageuse. Les incendies sont détectés grâce à des données provenant de l'instrument MODIS (qui se trouve sur les satellites Aqua et Terra de la NASA) et fournies par le projet FIRMS. Pour de plus amples renseignements, rendez-vous sur <http://earthdata.nasa.gov/firms>.

Use in event mapping

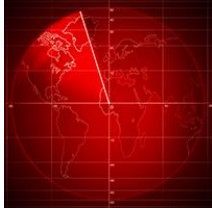


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Next Steps



GOVERNMENT OPERATIONS CENTRE

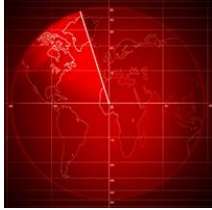
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- Current usage:
 - OCIP (Operations Centres Interconnectivity Portal)
 - GOC Geomatics products:
 - Maps for GOC Daily Brief & Situation Reports

- Issues for coming months:
 - Maintenance
 - New symbols required
 - Distribution
 - Permanent host required
 - Currently available at: http://216.254.169.195/CAHS_SCTR/



Canadian All-Hazards Symbology – Questions?



GOVERNMENT OPERATIONS CENTRE

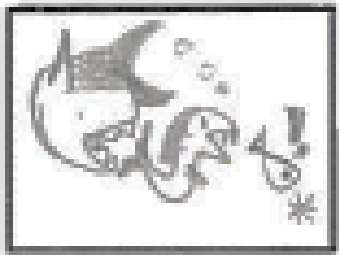
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Cameron Bouchard
Technical Lead – Geomatics
Government Operations Centre
Ottawa, Canada



Cameron.Bouchard@canada.ca



GOC  **COG**

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Gouvernement du Canada

RDIMS No.: 1761980