



# Emergency Mapping Symbology

GeoConnections

## Emergency Mapping Symbology, Version 1.0

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with participation from emergency management organizations across Canada*

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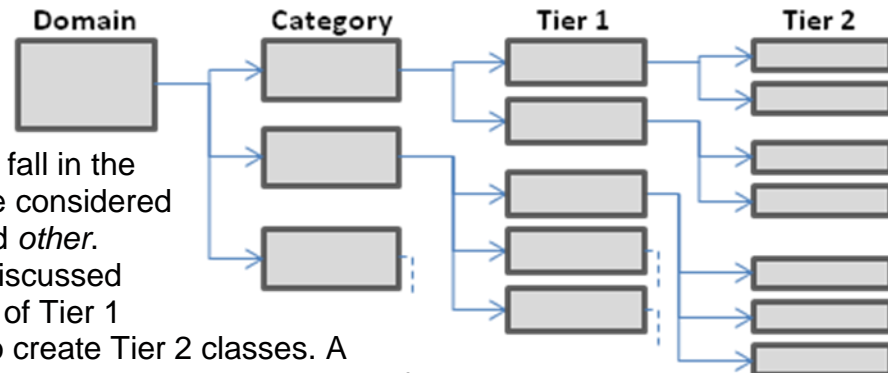
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# 1 – Understanding EMS

The Emergency Mapping Symbology (EMS) is designed to be used in both single and multi-agency emergency mapping applications to facilitate interoperability and situational awareness. The user community consists of federal, provincial, regional and local organizations involved in the management of major events, disasters, and other incidents where emergency help and security are needed. From a command and control perspective, which includes the military and many civilian organizations, such occurrences are referred to as *incidents*. Some civilian agencies though have preferred the term *event* instead. As used by EMS, the terms *incident* and *event* are interchangeable. In addition to incidents, an understanding of the overall picture describing an emergency requires knowledge of *infrastructures* and *operations*. These terms are widely accepted, and consequently are used in EMS as well.

A symbology includes a set of symbols, but as important, it includes a classification of the entities under consideration. A four level, hierarchical taxonomy is used here. At the highest level, all entities fall in the EMS domain. *Incident*, *infrastructure* and *operation* are considered as categories within that domain, as are *aggregate* and *other*. Other domains may exist with other categories, as is discussed later. Each category is subdivided further to form a set of Tier 1 classes; each of these in turn is broken down further to create Tier 2 classes. A diagram showing the structure of the classification is shown on the right. The classification can also be represented in text by a simple dot notation:

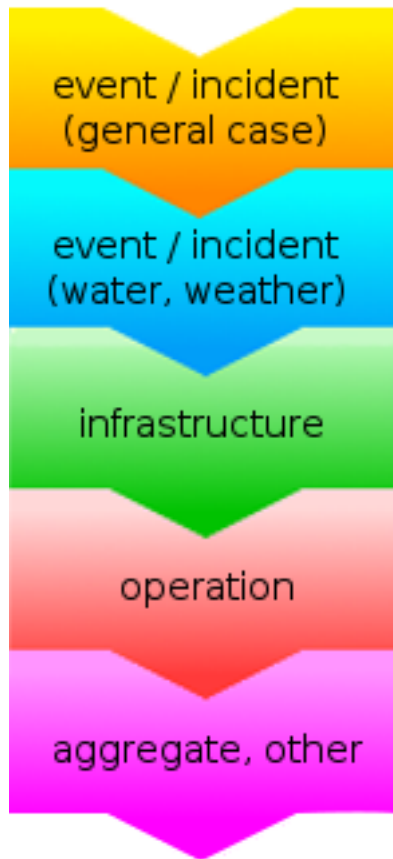






- Tier 1 entity: **domain.category.tier1**
- Tier 2 entity: **domain.category.tier1.tier2**

Examples of these are: *ems.incident.dangerousAnimal* for Tier 1 and *ems.operations.emergencyMedical.hospital* for Tier 2.


The categories are considered as abstract notions and thus do not have symbols in their own right. However, symbols are available for all Tier 1 and Tier 2 entities. Tier 1 symbols are all unique. Most but not Tier 2 symbols are as well. Duplicates or Tier 1 symbols were used in Tier 2 where it was not deemed practical to derive a distinct, connotative symbol. This issue may be revisited in the future.


The symbols are coloured according to a colour scheme that indicates the domain, as shown on the left. One of the primary objectives in the design of the symbols is to be highly connotative. For this reason, those incidents that involve water or weather phenomena follow a blue sub-scheme instead of or in addition to the yellow/orange one used more generally for



incidents. Thus, *ems.incident.fire* is symbolized as , whereas *ems.incident.ice* and *ems.incident.meteorological* are represented as  and , respectively. In some cases, the colours used in a symbol differ from what has often been used elsewhere, as with *ems.operations.emergency*, . More typically, an emergency operations location is symbolized by a golden triangle; the red sub-scheme is used here to be compliant with other operations symbols.

Some of the symbols have limited use of colours outside of their appropriate sub-scheme, where such colour helps convey the symbol's meaning more effectively. This is

the case with the symbol for *ems.incident.geophysical*, , where the blue and green imply water and land on the globe. Similarly, the red diamond at the centre of

*ems.infrastructure.significantSite*, , is intended to emphasize the idea that something important is located there, at the centre of the four arrows.

The choice of colours and the use of gradient fills are designed to make the symbols pop out more strongly in the viewer's visual field. This is particularly important given the range of backgrounds that they may appear against. On the other hand, because the symbols are all geometrically unique, no confusion should occur for the colour blind or if the symbols are viewed in low light or printed in black and white.

The symbols are available as .png files in three different sizes for operational use, 32 pixels – maximum dimension, 48 pixels – maximum dimension, and 64 pixels – maximum dimension. For example, *ems.infrastructure.communicationsAndIT.png* is provided as shown on the right. The symbols could be made available in a smaller size as well, but readability much below 32 pixels becomes a limiting factor. These three sizes all can be used directly in Google Maps






and Google Earth without further adjustment. For those wishing to add a shadow for a three dimensional effect, it is certainly possible, as is shown on the left for *ems.incident.civil.civilRiot*. The shadows for the symbols are not provided here, but it is practical to generate them automatically if desired.

As shown on the colour bar on the previous page, symbols are also available for aggregates and others. An aggregate occurs where two or more entities are located in such close proximity that showing them would lead to visual clutter. Such an aggregate may be composed of any combination and any number (greater than one) of

entities. The most general form of this symbol is *ems.aggregate.aggregate*, , with more specific versions also available. Various techniques can be deployed in an application to provide greater detail. These are discussed

elsewhere. The notion of *other* is also included. As used here, *ems.other.other*, , implies that a symbol is not yet available for the entity in question.

To make the symbols easier to read when printed in black and white, a version is also being provided with a white border. The white bordered symbols were created by adding a thin white buffer around the existing symbols. The white border helps minimize confusion that can occur if map detail (such as roads) abuts directly against the symbol or if the background shades of gray are similar to those in the symbol. The addition of the white buffer has led to an increase in size of the symbols from 32, 48 and 64 pixels, maximum dimension, to 38, 54 and 70 pixels, respectively. The original sizes were not retained, because to do so would have decreased the legibility at the smallest size in particular. Shown against a neutral background, an example of *ems.incident.missingPerson* with the added white buffer is given on the right. Next to it is a black and white reproduction comparable to the output from a black and white printer.



## 2 – EMS Design Principles

The EMS taxonomy and symbol set follows specific underlying principles. These points, provided in the two subsections below, serve as a further explanation of the material in Section 1 above.

## 2.1 – Taxonomy

1. Emergency mapping entities of interest can be referred to as EMS entities or simply entities. All EMS entities should be defined in the same classification.
2. EMS entities should include incidents, infrastructures, and operations. A clear distinction between incidents and events seems to have little value, so the two terms should be treated as equivalent.
3. A single, multi-tiered, tree-like structure should be used to represent the classification of all entities. The semantics of the resulting hierarchical taxonomy are easier to understand and easier to design systems around, compared to alternatives in which an entity may belong to more than one class at any given level in the hierarchy.
4. The classes defined at each level should be based on the physical characteristics and capabilities of the included entities. It is sufficient for an EMS taxonomy only to be easy to understand and to appear reasonable. Unlike a taxonomy of plant species for example, an attempt to develop a fundamental EMS classification based on scientific theory is neither realistic nor necessary.
5. Other considerations may be of interest for a given class, such as which organization has the responsibility to broadcast an alert, or the degree of severity or probability of occurrence that must be considered to exist before an incident is considered to constitute a real or potential emergency. These and other characteristics should be treated as class attributes; they should not be used to define the class structure of the taxonomy.
6. The EMS taxonomy should be represented by a dot notation representing the taxonomic hierarchy, as with the example *ems.operations.military.groundVehicle*, corresponding to *domain.category.tier1.tier2*. Although this approach is formal, it helps users remember both the types of entities and their corresponding symbols.
7. The taxonomy should be extensible to allow for the creation of complementary domains, the inclusion of additional tiers, or other Tier 1 and 2 classes, as deemed necessary. For example, if a large number of admin events or test messages are pertinent, an *admin* or *testMessage* domain could be added, with various types defined under each, as opposed to putting everything under the *ems* domain. Looking at the more detailed end of the spectrum, if it were of interest to distinguish different kinds of military ground vehicles, a Tier 3 could be defined that might include *ems.operations.military.groundVehicle.tank*.

## **2.2 – Symbol Design**

1. Symbols should be designed to visually pop out from the field of view, regardless of the map or imagery background. This is in line with icons as used on Google Maps and is widely seen as required to meet the expectations of untrained users in particular. Thus the EMS symbols use bright colours and make extensive use of colour gradients. Such a use of colour probably lessens the time a user spends understanding the situation as represented on the map.
2. Symbols should be distinguishable by shape alone, to minimize potential problems for use in low light, by the colour blind, or with grey scale renditions.
3. The symbols should be simple, but not too simple, as they must also be connotative. This is in line with the design of many cartoon characters.
4. The EMS taxonomy should influence the appearance of the symbols, with symbols in the same category having similar colouration. Thus the primary categories – incidents, infrastructures, operations, aggregates – are shown with different colour sub-schemes.
5. Water and weather related symbols or portions of symbols should specifically make use of shades of blue, to aid understanding. In the symbol for a flood, a house is shown in shades of yellow/orange, whereas the water in the symbol is shown in shades of blue.
6. Common elements in different symbols should have the same design. For example, where a typical person is part of the symbol, the representation of the person should be the same, regardless of where the symbol falls in the taxonomy.
7. A minimum size of 32 pixels in maximum dimension appears practical for EMS symbols. Smaller symbols can become difficult to see. Also, the detail in the symbols, which is necessary to distinguish them, can become obscured at smaller size.
8. Ideally the symbols should be continuously scalable and composed in a format that supports that, such as SVG. Given the nature of their design however, this objective may be deemed impractical. Instead three different fixed scales in PNG format should be provided (32, 48 and 64 pixels, maximum dimension). A much larger version (400 pixels) should also be made available; symbols in this symbol set can be modified and reduced to specific sizes using programs such as PhotoShop or GIMP. The use of a raster representation as described is recommended.



## 3 – Guidelines for Use

### 3.1 – Information Provision

The EMS taxonomy and symbols are intended to be information-rich, connotative and appropriate for emergency mapping applications. By themselves, they may not contain all of the information that might be of interest operationally.

1. An agency may wish to highlight the degree of severity of incidents displayed on a map.
2. Distinctions between alerts, warnings, and actual events may need to be made.
3. In some multi-agency situations, it may be desired to indicate the particular agency with the authority to respond.
4. Users may want to know who issued an alert for a given incident.
5. It may be of interest to distinguish an event (e.g., a fire) that is considered to be under control from one that has not yet reached that stage.
6. Probabilities associated with the occurrence of a severe event may need to be displayed graphically on a map.
7. A detailed description of the EMS entity may be highly pertinent to emergency response, and thus the question of how best to convey it must be addressed.

In all such cases, the EMS symbols should be just a part of the overall information content available to the user. The additional content may be provided in various ways. Some options include the following:

1. Use of a mouse-over effect, a mouse click, or a screen touch to generate an information box pop-up,
2. Reduction in the symbol transparency or degree of colour saturation, effectively dimming it – or use of a grey scale version of the symbol – to indicate a less critical state,
3. Addition of annotation, accent characters, dots, etc. adjacent to the symbol on a given side or corner,
4. Decoration of the border of the symbol with different patterns,
5. Use of different symbol sizes,
6. Use of symbol blinking or other animation techniques, although this would need to be designed carefully to ensure that the effect was not irritating to users.

### **3.2 – Linear and Areal Entities**

EMS as currently defined provides a taxonomy and symbol set emphasizing entities that can be represented geometrically as a point. Some linear and areal entities are included in EMS because they were present in the sources from which EMS was derived. Examples include *emergencyRoute* and *flood*. An emergency route or a flood could be depicted on a map using a number of symbols placed along the route or throughout the flooded area. This same approach could be taken with other linear and areal entities that are not currently part of EMS. However, in some cases this may be satisfactory, but in other cases it may not be.

An examination of current web mapping conventions unfortunately is not particularly instructive in terms of understanding how best to represent linear and areal entities. Google Maps, Microsoft's Bing maps, and Open Street Maps, among others are in broad use globally. Streets, highways, railways, lakes, wide rivers and the like are rendered very effectively by them. However, many other types of linear and areal features are not. Instead the photo or satellite view is used to provide additional detail. Consequently, hints regarding the best way to represent linear and areal features of specific interest to emergency mapping are not suggested from an examination of these sites.

On a more positive note, web (and local application) interfaces provide a large number of styling options, in both static and dynamic contexts. Colour and transparency are easily controlled, although typically line patterns are not. If multiple areal events are partially or entirely coincident, display options become more complicated. The rendering options and ways of controlling them by the user should be considered in a separate development focusing on standardized approaches that will support the provision of a Common Operational Picture.

## 4 – Legal Notice

The Emergency Mapping Symbology is copyright © Department of Natural Resources Canada, 2010, It is free to use, share, modify, and extend without restriction, according to the *Licence Agreement For Unrestricted Use Of Emergency Mapping Symbology* (see Appendix). Applications making use of EMS should have a statement of attribution, mentioning GeoConnections and the Government of Canada.

## 5 – Acknowledgements

This work was undertaken by Refractions Research under a contract with GeoConnections. The Canadian Association for Public Alerting and Notification, the Department of National Defence, and Defence Research and Development Canada provided considerable input, as did the Royal Canadian Mounted Police, Public Safety Canada, Health Canada, and a number of provincial and municipal emergency management organizations. A number of software companies also contributed directly, including: Black Coral, EmerGeo Solutions, ESRI Canada, PCI Geomatics, SAR Technology, and Telus Geomatics (a division of Telus Communications). Previous work by the United States Department of Homeland Security was critical to the EMS development, and discussions with DHS personnel were quite helpful.

The process of developing EMS taxonomy was heavily influenced by three principal published sources: (i) MIL-STD 2525C and ANSI INCITS 415-2006, from which it was derived, (ii) CAP-CP, the Canadian Profile of the Common Alerting Protocol, and (iii) the NIDM (the Canadian National Infrastructure Data Model), which was developed from the (US – Canada) Cross-Border Infrastructure Plan. The dot notation for representing the taxonomy is comparable to that used in MIL-STD 2525C. Definitions in EMS, which follow in the next two sections of this document, were taken primarily from 2525C, Wikipedia and Environment Canada; in some cases they were developed by Refractions or by stakeholders.

Where available, symbols were derived from the Homeland Security Working Group Emergency Symbology Reference, which served as the basis for the ANSI INCITS 415-2006 standard. Other symbol designs came from non-copyright sources or were developed by Refractions. The colours, colour gradients, borders, and sizes were chosen by Refractions after considerable consultation and informal testing against a variety of map and imagery backgrounds. Many additions and modifications were made at the request of stakeholders.

We would like to acknowledge the following organizations who participated in the discussions, web questionnaire, and focus groups associated with the development of the symbology. These are listed in alphabetical order below:

Black Coral Inc.	GeoConnections
CAE Professional Services Ltd.	Health Canada
Canadian Association for Public Alerting	Homeland Security Working Group (U.S.)
Canadian General Standards Board	Joint Emergency Liaison Committee, Metro Vancouver
City of Edmonton	Medical Transportation Coordination Centre, Manitoba
City of Sudbury	MykRoss Consulting Ltd.
City of Toronto	Natural Resources Canada
City of Vancouver	PCI Geomatics Inc.
Defence Research & Development Canada	Provincial Emergency Program, British Columbia
Department of Homeland Security (U.S.)	Public Safety Canada
Department of National Defence (Canada)	Refractions Research Inc.
Emergency Communications 911, British Columbia	Royal Canadian Mounted Police
Emergency Management Ontario	SAR Technology Inc.
Emergency Management, British Columbia	Telus Communications Inc.
Emergency Measures Organization, Manitoba	United States Coast Guard
Emergency Measures Organization, New Brunswick	University of Toronto
EmerGeo Solutions Inc.	University of Windsor
ESRI Canada, Ltd.	Waterloo Region
GeoBC, British Columbia	

# Emergency Mapping Symbolology






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*Version 1.0*

**Tier 1**






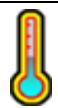

# Emergency Mapping Symbology, v1.0

Tier 1	Hierarchy	Symbol
<p><b><i>Events/Incidents</i></b>            (colours: dominantly shades of yellow/orange + shades of blue to connote water and weather)</p>		
<p><i>Definition:</i> A natural or human induced occurrence considered to represent an impact or potential impact to the safety or security of people or property. The term “event” is synonymous with “incident.”</p>		
<b>Air Quality</b>	ems.incident.airQuality	
<p><i>Definition:</i> An elevated particulate count in the atmosphere which adversely affects visibility or health.</p>		
<b>Animal Health</b>	ems.incident.animalHealth	
<p><i>Definition:</i> An incident affecting the health of wild or domesticated animal populations.</p>		
<b>Aviation</b>	ems.incident.aviation	
<p><i>Definition:</i> An incident involving aircraft resulting in damage, bodily injury, death, or the disruption of transportation service.</p>		

<b>Civil</b>	ems.incident.civil	
<i>Definition:</i> Human activities resulting in the disrupting of services or requiring varying levels of support, law enforcement or attention.		
<b>Crime</b>	ems.incident.crime	
<i>Definition:</i> An unlawful pursuit or action in which an individual participates.		
<b>Dangerous Animal</b>	ems.incident.dangerousAnimal	
<i>Definition:</i> A dangerous or threatening animal, wild or domesticated.		
<b>Fire</b>	ems.incident.fire	
<i>Definition:</i> The destructive act of something burning; caused either by electrical or technological malfunction, lightning, arson, human error or human negligence.		
<b>Flood</b>	ems.incident.flood	
<i>Definition:</i> A relatively high stream flow that overtops the stream banks in any part of its course, covering land that is not normally under water or when water overflows the natural or artificial confines of a stream or other body of water, or accumulates by drainage over low-lying areas.		
<b>Geophysical</b>	ems.incident.geophysical	
<i>Definition:</i> An event or incident resulting from a geophysical process.		

<b>Hazardous Material</b>	ems.incident.hazardousMaterial	
<i>Definition:</i> An incident involving a hazardous material (chemical, biological, radiological, explosive, poisonous gas or other).		
<b>Health</b>	ems.incident.health	
<i>Definition:</i> An incident affecting human health.		
<b>Ice</b>	ems.incident.ice	
<i>Definition:</i> An event involving surficial or marine ice.		
<b>Marine</b>	ems.incident.marine	
<i>Definition:</i> An incident involving a boat, ship or navigable waterway.		
<b>Meteorological</b>	ems.incident.meteorological	
<i>Definition:</i> Any disturbed state of an astronomical body's atmosphere, especially affecting its surface, and strongly implying severe weather. It may be marked by strong wind, thunder and lightning (a thunderstorm), heavy precipitation, such as ice (ice storm), or wind transporting some substance through the atmosphere (as in a dust storm, snowstorm, hailstorm, etc).		
<b>Missing Person</b>	ems.incident.missingPerson	
<i>Definition:</i> A missing or un-located person.		



<b>Plant Health</b>	ems.incident.plantHealth	
<i>Definition:</i> An incident affecting wild or cultivated vegetation.		
<b>Public Service</b>	ems.incident.publicService	
<i>Definition:</i> An incident or event involving public services or facilities.		
<b>Railway</b>	ems.incident.railway	
<i>Definition:</i> An incident involving train resulting in damage, bodily injury, death, or the disruption of transportation service.		
<b>Rescue</b>	ems.incident.rescue	
<i>Definition:</i> An incident that requires an organized rescue effort.		
<b>Roadway</b>	ems.incident.roadway	
<i>Definition:</i> An event involving a wheeled or tracked vehicle resulting in damage, bodily injury, death, or the disruption of transportation service.		
<b>Temperature</b>	ems.incident.temperature	
<i>Definition:</i> An event related to extremes in temperature.		
<b>Wind</b>	ems.incident.wind	
<i>Definition:</i> An event related to dangerous and damaging winds.		

# Infrastructures

(colours: dominantly shades of green)

*Definition:* A facility or other constructed element of an underlying, physical framework deemed critical to the operations of a city, country, or area. Such facilities that include emergency management personnel and are designed to provide emergency care fall under the EMS category *Operations*.

## Communications & IT Infrastructure

ems.infrastructure.communicationsAndIT



*Definition:* The electronic systems used in transmitting messages, as by telegraph, cable, telephone, radio, television or computer.

## Education Infrastructure

ems.infrastructure.education



*Definition:* A building or collection of buildings or places that provides knowledge.

## Energy Infrastructure

ems.infrastructure.energy



*Definition:* Includes infrastructure to support electrical power, natural gas, oil production and utility transmission systems.

## Finance Infrastructure

ems.infrastructure.finance














*Definition:* The management of money and other assets and their protection.






## Food Infrastructure

ems.infrastructure.food



<i>Definition:</i> Production and retail services of foodstuffs.		
<b>General Utility</b>	ems.infrastructure.generalUtility	
<i>Definition:</i> An infrastructure component owned or operated by a public or private utility. Specific water, electric, and gas utilities, and similar organizations, can be defined as Tier 2 entities under General Utility.		
<b>Government Infrastructure</b>	ems.infrastructure.government	
<i>Definition:</i> The location where executive, legislative and-or judicial activities take place in the service of the government.		
<b>Manufacturing Infrastructure</b>	ems.infrastructure.manufacturing	
<i>Definition:</i> An industrial site used for the commercial production and selling of manufactured goods.		
<b>Military Infrastructure</b>	ems.infrastructure.military	
<i>Definition:</i> Property directly owned and operated by and/or for the military that shelters military equipment and personnel, and facilitates training and operations.		
<b>Public Site</b>	ems.infrastructure.publicSite	
<i>Definition:</i> Unrestricted buildings or sites open to the public.		
<b>Safety Infrastructure</b>	ems.infrastructure.safety	
<i>Definition:</i> A facility or structure used to provide safety to workers or the general public.		

<b>Significant Site</b>	ems.infrastructure.significantSite	
<i>Definition:</i> A site or location of significant cultural, historical or environmental importance.		
<b>Special Care Infrastructure</b>	ems.infrastructure.specialCare	
<i>Definition:</i> A facility used for people who have specific needs, such as those associated with children, the elderly or those with disabilities. Examples include (but are not limited to) child day care facilities, geriatric long term care facilities, and group homes for people with disabilities.		
<b>Transportation Infrastructure</b>	ems.infrastructure.transportation	
<i>Definition:</i> Infrastructure, means of transport, and equipment necessary for the movement of passengers and-or goods.		
<b>Water Infrastructure</b>	ems.infrastructure.water	
<i>Definition:</i> The storage, disinfection, filtration and provision of drinking water to the consumer/community by means of pipelines, pumps, water towers, wells and other appurtenances.		
<b>Operations</b> (colours: dominantly shades of pink/red)		
<i>Definition:</i> A facility, device or arbitrary location where actions are being undertaken to monitor, mitigate or control real or potential emergency incidents.		
<b>Emergency Operation</b>	ems.operations.emergency	

<i>Definition:</i> Those actions taken during the emergency period to protect life and property, care for the people affected, and temporarily restore essential community services.		
<b>Emergency Fire Operation</b>	ems.operations.emergencyFire	
<i>Definition:</i> Primarily to put out hazardous fires that threaten civilian populations and property, to rescue people from car accidents, collapsed and burning buildings and other such situations.		
<b>Emergency Medical Operation</b>	ems.operations.emergencyMedical	
<i>Definition:</i> Urgent and unexpected medicinal treatment and/or transport during serious situations which require demands of immediate action.		
<b>Law Enforcement Operation</b>	ems.operations.lawEnforcement	
<i>Definition:</i> A coordinated operation of insuring obedience to the laws.		
<b>Military Operation</b>	ems.operations.military	
<i>Definition:</i> Coordinated military actions of a state in response to a developing situation. These actions are designed as a military plan to resolve the situation in the state's favour. Operations may be of combat or non-combat types, and are referred to by a code name for the purpose of security.		
<b>Sensor Operation</b>	ems.operations.sensor	
<i>Definition:</i> A device that receives and responds to a signal or stimulus.		

## Aggregate, Other (colour: purple)

*Aggregate* and *Other* are two separate EMS categories. They are placed together because in both cases, the classes to which the entities belong are either not explicitly represented or not known.

*Definition - Aggregate:* Two or more incidents, infrastructures and/or operations in close proximity that are represented by a single symbol because the particular scale at which the map is being viewed is insufficient to provide greater detail.

*Definition – Other:* An incident, infrastructure or operation that does not belong to any of the currently specified EMS classes. As different classes of *Other* are not recognized in the current version of EMS, only one Tier 2 class exists, *ems.other.other*.

### Aggregate

`ems.aggregate.aggregate`



*Definition:* An aggregate with the number of entities in the aggregate left unspecified.

### Aggregate of Two

`ems.aggregate.two`



*Definition:* An aggregate with two entities in close proximity.

### Aggregate of Three

`ems.aggregate.three`










*Definition:* An aggregate with three entities in close proximity.

### Aggregate of Four

`ems.aggregate.four`



<i>Definition: An aggregate with four entities in close proximity.</i>		
<b>Aggregate of Five</b>	ems.aggregate.five	
<i>Definition: An aggregate with five entities in close proximity.</i>		
<b>Aggregate of Six</b>	ems.aggregate.six	
<i>Definition: An aggregate with six entities in close proximity.</i>		
<b>Aggregate of Seven</b>	ems.aggregate.seven	
<i>Definition: An aggregate with seven entities in close proximity.</i>		
<b>Aggregate of Eight</b>	ems.aggregate.eight	
<i>Definition: An aggregate with eight entities in close proximity.</i>		
<b>Aggregate of Nine</b>	ems.aggregate.nine	
<i>Definition: An aggregate with nine entities in close proximity.</i>		
<b>Aggregate of More than Nine</b>	ems.aggregate.moreThanNine	
<i>Definition: An aggregate with more than nine entities in close proximity.</i>		

<b>Other</b>	ems.other.other	
<i>Definition:</i> An incident, infrastructure or operation that does not belong to any of the currently specified EMS classes.		





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*Version 1.0*






### Tiers 1 and 2








# Emergency Mapping Symbology, v1.0

Tier 1 and Tier 2	Hierarchy	Symbol
<b>Events/Incidents</b> (colours: dominantly shades of yellow/orange + shades of blue to connote water and weather)		
<b>Air Quality</b>	ems.incident.airQuality	
<b>Animal Health</b>	ems.incident.animalHealth	
<b>Animal Die Off</b>	ems.incident.animalHealth.animalDieOff	
<i>Definition:</i> An abnormally high rate of animal mortality affecting wild or domesticated animal populations.		
<b>Animal Disease</b>	ems.incident.animalHealth.animalDisease	
<i>Definition:</i> A diagnosed disease affecting the health of wild or domesticated animal populations.		
<b>Animal Feed</b>	ems.incident.animalHealth.animalFeed	
<i>Definition:</i> An issue affecting animal feed or supply.		








<b>Aviation</b>	ems.incident.aviation	
<b>Aircraft Crash</b>	ems.incident.aviation.aircraftCrash	
<i>Definition:</i> A sudden, unexpected event involving aircraft resulting in fuselage damage, bodily injury, death and/or the disruption of transportation service; prompting emergency landing procedures or uncontrolled impact with the ground.		
<b>Aircraft Hijacking</b>	ems.incident.aviation.aircraftHijacking	
<i>Definition:</i> The unexpected, unlawful and forceful seizure of control aboard an aircraft by an individual or group of individuals resulting in passenger and crew endangerment, injury or death, and/or the redirection of flight destination.		
<b>Airport Closure</b>	ems.incident.aviation.airportClosure	
<i>Definition:</i> A closure of an airport or helicopter landing site.		
<b>Airspace Closure</b>	ems.incident.aviation.airspaceClosure	
<i>Definition:</i> A closure of a jurisdiction's airspace to air traffic.		
<b>Notice to Airmen</b>	ems.incident.aviation.noticeToAirmen	
<i>Definition:</i> A Notice to Airmen (NOTAM) is created and transmitted by a government agency under guidelines specified by Annex 15: Aeronautical Information Services of the Convention on International Civil Aviation. A NOTAM is filed with an aviation authority to alert aircraft pilots of any hazards en route or at a specific location.		

	<b>Space Debris</b>	ems.incident.aviation.spaceDebris	
<i>Definition:</i> Are objects in orbit around Earth that were created by humans but no longer serve any useful purpose; as used here they have reentered earth's orbit and crashed into Earth's surface.			
	<b>Civil</b>	ems.incident.civil	
	<b>Civil Demonstration</b>	ems.incident.civil.civilDemonstration	
<i>Definition:</i> A public display of group feelings toward a person or cause.			
	<b>Civil Displaced Population</b>	ems.incident.civil.civilDisplacedPopulation	
<i>Definition:</i> Persons or groups of person who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, violations of human rights, or natural or human-made disasters.			
	<b>Civil Emergency</b>	ems.incident.civil.civilEmergency	
<i>Definition:</i> An emergency that disrupts normal civilian activities.			
	<b>Civil Rioting</b>	ems.incident.civil.civilRioting	









	<i>Definition:</i> A public disturbance involving (1) an act or acts of violence by one or more persons part of an assemblage of three or more persons, which act or acts shall constitute a clear and present danger of, or shall result in, damage or injury to the property of any other person or to the person of any other individual or (2) a threat or threats of the commission of an act or acts of violence by one or more persons part of an assemblage of three or more persons having, individually or collectively, the ability of immediate execution of such threat or threats, where the performance of the threatened act or acts of violence would constitute a clear and present danger of, or would result in, damage or injury to the property of any other person or to the person of any other individual.	
<b>Dignitary Visit</b>	ems.incident.civil.dignitaryVisit	
	<i>Definition:</i> A visit by an important or influential person, or one of high rank or position.	
<b>Public Event</b>	ems.incident.civil.publicEvent	
	<i>Definition:</i> An event where a large gathering of people is expected.	
<b>Volunteer Request</b>	ems.incident.civil.volunteerRequest	
	<i>Definition:</i> The specific location for which support for volunteers has been requested. The location refers to the location of the emergency event or an associated muster station for volunteers.	
<b>Crime</b>	ems.incident.crime	
<b>Bomb</b>	ems.incident.crime.bomb	
	<i>Definition:</i> An explosive device fused to detonate under specific conditions.	







<b>Bomb Explosion</b>	ems.incident.crime.bombExplosion	
<i>Definition:</i> A violent outburst resulting from detonation of a chemical or nuclear explosive or from the loss of a high pressure vessel's integrity.		
<b>Bomb Threat</b>	ems.incident.crime.bombThreat	
<i>Definition:</i> A warning of the possible presence of a bomb or expression of the intention to detonate a bomb.		
<b>Dangerous Person</b>	ems.incident.crime.dangerousPerson	
<i>Definition:</i> A person considered dangerous or threatening to others.		
<b>Drugs</b>	ems.incident.crime.drugs	
<i>Definition:</i> A crime committed involving illicit drugs.		
<b>Home Crime</b>	ems.incident.crime.homeCrime	
<i>Definition:</i> A crime committed in a residential property.		
<b>Illegal Immigrant</b>	ems.incident.crime.illegalImmigrant	
<i>Definition:</i> The movement of people across national borders in a way that violates the immigration laws of the destination country		
<b>Industrial Crime</b>	ems.incident.crime.industrialCrime	


<i>Definition: A crime committed in an industrial property.</i>		
<b>Looting</b>	ems.incident.crime.looting	
<i>Definition: Burglary committed within an affected area during an emergency.</i>		
<b>Poisoning</b>	ems.incident.crime.poisoning	
<i>Definition: Use of a poisonous substance to injure or kill.</i>		
<b>Retail Crime</b>	ems.incident.crime.retailCrime	
<i>Definition: A crime committed in a commercial or retail property.</i>		
<b>Shooting</b>	ems.incident.crime.shooting	
<i>Definition: Use of a firearm to kill or injure or to damage property.</i>		
<b>Stowaway</b>	ems.incident.crime.stowaway	
<i>Definition: A person who secretly boards a vehicle, such as an aircraft, bus, ship or train, to travel without paying and without being detected.</i>		
<b>Terrorism</b>	ems.incident.crime.terrorism	
<i>Definition: The systematic use of terror especially as a means of coercion.</i>		



	<b>Vehicle Crime</b>	ems.incident.crime.vehicleCrime	
<i>Definition:</i> A crime committed in or against a vehicle.			
	<b>Dangerous Animal</b>	ems.incident.dangerousAnimal	
	<b>Fire</b>	ems.incident.fire	
	<b>Forest Fire</b>	ems.incident.fire.forestFire	
<i>Definition:</i> An uncontrolled fire in a forested area.			
	<b>Hot Spot</b>	ems.incident.fire.hotSpot	
<i>Definition:</i> An area of intensified fire activity and increased heat or a particularly active part of a fire.			
	<b>Industrial Fire</b>	ems.incident.fire.industrialFire	
<i>Definition:</i> An uncontrolled fire in an industrial building or complex.			
	<b>Smoke</b>	ems.incident.fire.smoke	
<i>Definition:</i> The visible products of combustion rising above the fire.			
















	<b>Urban Fire</b>	ems.incident.fire.urbanFire	
<i>Definition:</i> An uncontrolled fire in an urban area affecting residential or commercial properties.			
	<b>Wild Fire</b>	ems.incident.fire.wildFire	
<i>Definition:</i> An uncontrolled fire in a non-urban area.			
	<b>Flood</b>	ems.incident.flood	
	<b>Dam Overflow</b>	ems.incident.flood.damOverflow	
<i>Definition:</i> An overflowing or failure of a dam or reservoir.			
	<b>Flash Flood</b>	ems.incident.flood.flashFlood	
<i>Definition:</i> A rapid flooding of geomorphic low-lying areas - washes, rivers, dry lakes and basins.			
	<b>High Water</b>	ems.incident.flood.highWater	
<i>Definition:</i> The location of high tide on a coastal area or the highest stage of a river.			
	<b>Overland Flow Flood</b>	ems.incident.flood.overlandFlowFlood	
<i>Definition:</i> This event type is specified in CAP-CP, but its definition is not provided.			
	<b>Storm Surge</b>	ems.incident.flood.stormSurge	








	<i>Definition:</i> The difference between the actual water level under influence of a meteorological disturbance (storm tide) and the level which would have been attained in the absence of the meteorological disturbance (i.e. astronomical tide).		
	<b>Tsunami</b>	ems.incident.flood.tsunami	
	<i>Definition:</i> A great sea wave produced by an earthquake, underwater landslide, volcanic eruption or other massive displacement of water, characterized by high speed of propagation, long wavelength, long period, and low observable amplitude on the open ocean.		
	<b>Geophysical</b>	ems.incident.geophysical	
	<b>Avalanche</b>	ems.incident.geophysical.avalanche	
	<i>Definition:</i> A large mass of snow, ice, soil, or rock, or mixtures of these materials, falling, sliding, or flowing very rapidly under the force of gravity.		
	<b>Earthquake</b>	ems.incident.geophysical.earthquake	
	<i>Definition:</i> A sudden release of energy in the Earth's crust that creates seismic waves.		
	<b>Lahar</b>	ems.incident.geophysical.lahar	
	<i>Definition:</i> A type of mudflow or landslide composed of pyroclastic material and water that flows down from a volcano, typically along a river valley.		
	<b>Landslide</b>	ems.incident.geophysical.landslide	






	<i>Definition:</i> A general term for a wide variety of processes and landforms involving the down slope movement under the force of gravity of masses of soil and rock material.	
<b>Magnetic Storm</b>	ems.incident.geophysical.magneticStorm	
	<i>Definition:</i> A temporary disturbance of the Earth's magnetosphere caused by a disturbance in space weather. Associated with solar coronal mass ejections (CME), coronal holes, or solar flares, a geomagnetic storm is caused by a solar wind shock wave which typically strikes the Earth's magnetic field 24 to 36 hours after the event.	
<b>Meteorite</b>	ems.incident.geophysical.meteorite	
	<i>Definition:</i> A portion of a meteoroid or asteroid that survives its passage through the atmosphere and impact with the ground without being destroyed.	
<b>Pyroclastic Flow</b>	ems.incident.geophysical.pyroclasticFlow	
	<i>Definition:</i> A common and devastating result of certain explosive volcanic eruptions. The flows are fast-moving currents of hot gas and rock (collectively known as tephra), which travel away from the volcano at speeds generally as great as 700 km/h (450 mi/h).	
<b>Pyroclastic Surge</b>	ems.incident.geophysical.pyroclasticSurge	
	<i>Definition:</i> A fluidized mass of turbulent gas and rock fragments which is ejected during some volcanic eruptions. It is similar to a pyroclastic flow but contains a much higher proportion of gas to rock, which makes it more turbulent and allows it to rise over ridges and hills rather than always travel downhill as pyroclastic flows do. Pyroclastic surges are much faster moving than pyroclastic flows, and can reach speeds of 1050 km/h.	
<b>Volcanic Ash Cloud</b>	ems.incident.geophysical.volcanicAshCloud	

	<i>Definition:</i> A cloud of volcanic ash consists of small tephra, which are bits of pulverized rock and glass created by volcanic eruptions,[1] less than 2 millimetres (0.079 in) in diameter.	
<b>Volcanic Event</b>	ems.incident.geophysical.volcanicEvent	
	<i>Definition:</i> The ejection of volcanic materials (lava, pyroclasts, and volcanic gases) from a vent or fissure in the Earth's crust.	
<b>Hazardous Material</b>	ems.incident.hazardousMaterial	
<b>Biological Hazard</b>	ems.incident.hazardousMaterial.biologicalHazard	
	<i>Definition:</i> Uncontrolled or potentially dangerous presence of a poisonous substance that is a specific product of the metabolic activities of a living organism and is usually very unstable and can easily be transferred between organisms.	
<b>Chemical Hazard</b>	ems.incident.hazardousMaterial.chemicalHazard	
	<i>Definition:</i> A chemical substance, which is intended for use in military operations to kill, resulting in psychological disorientation, serious injury, incapacitation or death.	
<b>Explosive Hazard</b>	ems.incident.hazardousMaterial.explosiveHazard	
	<i>Definition:</i> Uncontrolled or potentially dangerous presence of any substance or article, including a device, which is designed to function by explosion (i.e., an extremely rapid release of gas and heat) or which, by chemical reaction within itself, is able to function in a similar manner even if not designed to function by explosion.	
<b>Falling Object Hazard</b>	ems.incident.hazardousMaterial.fallingObjectHazard	







	<i>Definition:</i> A situation where an unstable object poses a threat to persons or property below.	
<b>Poisonous Gas Hazard</b>	ems.incident.hazardousMaterial.poisonousGas	
	<i>Definition:</i> Uncontrolled or potentially dangerous presence of a gas which affords a hazard to human health.	
<b>Radiological Hazard</b>	ems.incident.hazardousMaterial.radiological Hazard	
	<i>Definition:</i> Uncontrolled or potentially dangerous presence of any material of sufficient concentration or activity to damage the environment or human health.	
<b>Health</b>	ems.incident.health	
<b>Infectious Disease</b>	ems.incident.health.infectiousDisease	
	<i>Definition:</i> Is a clinically evident illness resulting from the presence of pathogenic microbial agents, including pathogenic viruses, pathogenic bacteria, fungi, protozoa, multicellular parasites, and aberrant proteins known as prions. These pathogens are able to cause disease in animals and/or plants. Infectious pathologies are also called communicable diseases or transmissible diseases due to their potential of transmission from one person or species to another by a replicating agent (as opposed to a toxin).	
<b>Infestation</b>	ems.incident.health.infestation	
	<i>Definition:</i> The state of being invaded or overrun by pests (insects, spiders, etc.)	
<b>Ice</b>	ems.incident.ice	





<b>Ice Pressure</b>	ems.incident.ice.icePressure	
<i>Definition:</i> Is an ice formation typically found on large frozen lakes or sea ice during the winter. In the most basic sense, a pressure ridge is a long crack in the ice that occurs because of repeated heating and cooling on the surface of the lake.		
<b>Iceberg</b>	ems.incident.ice.iceberg	
<i>Definition:</i> A large piece of ice from freshwater that has broken off from a snow-formed glacier or ice shelf and is floating in open water.		
<b>Rapid Closing of Coastal Leads</b>	ems.incident.ice.rapidCloseLead	
<i>Definition:</i> This event type is specified in CAP-CP, but its definition is not provided.		
<b>Special Ice</b>	ems.incident.ice.specialIce	
<i>Definition:</i> This event type is specified in CAP-CP, but its definition is not provided.		
<b>Marine</b>	ems.incident.marine	
<b>Marine Security</b>	ems.incident.marine.marineSecurity	
<i>Definition:</i> An incident of unspecified type affecting the security of marine operations or infrastructures.		
<b>Nautical Hijacking</b>	ems.incident.marine.nauticalHijacking	
<i>Definition:</i> The unexpected, unlawful and forceful seizure of control aboard a boat or ship by an individual or group of individuals resulting in passenger and crew endangerment, injury or death, and/or the redirection of destination.		




	<b>Nautical Accident</b>	ems.incident.marine.nauticalAccident	
<i>Definition:</i> A sudden, unexpected event involving a boat or ship resulting in vessel submerging, damage, bodily injury, death and/or the disruption of transportation service.			
	<b>Port Closure</b>	ems.incident.marine.portClosure	
<i>Definition:</i> A closure of facilities for loading and unloading ships and other vessels.			
	<b>Special Marine</b>	ems.incident.marine.specialMarine	
<i>Definition:</i> This event type is specified in CAP-CP, but its definition is not provided.			
	<b>Meteorological</b>	ems.incident.meteorological	
	<b>Blizzard</b>	ems.incident.meteorological.blizzard	
<i>Definition:</i> A severe storm condition characterized by low temperatures, strong winds, and heavy snow. By definition, the difference between blizzard and a snowstorm is the strength of the wind.			
	<b>Blowing Snow</b>	ems.incident.meteorological.blowingSnow	
<i>Definition:</i> Snow lifted from the surface by the wind, at a height of 8 feet (2 meters) or more, that will reduce visibility. Blowing snow can come from falling snow or snow that already accumulated on the ground but is picked up and blown about by strong winds.			
	<b>Dust Storm</b>	ems.incident.meteorological.dustStorm	








	<i>Definition:</i> A meteorological phenomenon common in arid and semi-arid regions. Dust storms arise when a gust front blows loose sand and dust from a dry surface. Particles are transported by saltation and suspension, causing soil erosion from one place and deposition in another.	
<b>Fog</b>	ems.incident.meteorological.fog	
	<i>Definition:</i> Suspension of very small, usually microscopic water droplets in the air, generally reducing the horizontal visibility at the Earth's surface to less than 1 km.	
<b>Freezing Drizzle</b>	ems.incident.meteorological.freezingDrizzle	
	<i>Definition:</i> Is drizzle that freezes on contact with the ground or an object at or near the surface.	
<b>Freezing Rain</b>	ems.incident.meteorological.freezingRain	
	<i>Definition:</i> Is the name given to rain that falls when surface temperatures are below freezing. The raindrops become supercooled while passing through a sub-freezing layer of air, many hundred feet (or meters), just above the surface, and then freeze upon impact with any object they encounter.	
<b>Freezing Spray</b>	ems.incident.meteorological.freezingSpray	
	<i>Definition:</i> An accumulation of freezing water droplets on a vessel at a rate of less than 2 centimeters (cm) per hour caused by some appropriate combination of cold water, wind, cold air temperature, and vessel movement.	
<b>Hail</b>	ems.incident.meteorological.hail	
	<i>Definition:</i> A form of solid precipitation which consists of balls or irregular lumps of ice, that are individually called hail stones. Hail stones on Earth consist mostly of water ice and measure between 5 and 150 millimeters in diameter, with the larger stones coming from severe thunderstorms.	












	<b>Hurricane</b>	ems.incident.meteorological.hurricane	
<i>Definition:</i> Name given to a warm core tropical cyclone with maximum surface winds of 64 knots (118 km/h) or greater in the North Atlantic, the Caribbean, the Gulf of Mexico and in the Eastern North Pacific Ocean.			
	<b>Rain Fall</b>	ems.incident.meteorological.rainFall	
<i>Definition:</i> Liquid precipitation, as opposed to other kinds of precipitation such as snow, hail and sleet.			
	<b>Snow Fall</b>	ems.incident.meteorological.snowFall	
<i>Definition:</i> Precipitation within the Earth's atmosphere in the form of crystalline water ice, consisting of a multitude of snowflakes that fall from clouds.			
	<b>Snow Squall</b>	ems.incident.meteorological.snowSquall	
<i>Definition:</i> A sudden moderately heavy snow fall with blowing snow and strong, gusty surface winds. It is often referred to as a whiteout and is similar to a blizzard but is localized in time or in space and snow accumulations may or may not be significant.			
	<b>Squall</b>	ems.incident.meteorological.squall	
<i>Definition:</i> Atmospheric phenomenon characterizes by an abrupt and large increase of wind speed with a duration of the order of minutes which diminishes suddenly. It is often accompanied by showers or thundershowers.			
	<b>Thunderstorm</b>	ems.incident.meteorological.thunderstorm	






	<i>Definition:</i> A form of weather characterized by the presence of lightning and its acoustic effect on the Earth's atmosphere known as thunder. The meteorologically-assigned cloud type associated with the thunderstorm is the cumulonimbus. Thunderstorms are usually accompanied by strong winds, heavy rain and sometimes snow, hail, or no precipitation at all.	
<b>Tornado</b>	ems.incident.meteorological.tornado	
	<i>Definition:</i> A violent, dangerous, rotating column of air which is in contact with both the surface of the earth and a cumulonimbus cloud or, in rare cases, the base of a cumulus cloud. The most intense of all atmospheric phenomena, tornadoes come in many shapes and sizes but are typically in the form of a visible condensation funnel, whose narrow end touches the earth and is often encircled by a cloud of debris and dust.	
<b>Tropical Storm</b>	ems.incident.meteorological.tropicalStorm	
	<i>Definition:</i> A storm system characterized by a large low-pressure centre and numerous thunderstorms that produce strong winds and heavy rain but not reaching the intensity to classify as a hurricane with winds of 34 - 63 knots or 62 - 88 km/h.	
<b>Waterspout</b>	ems.incident.meteorological.waterspout	
	<i>Definition:</i> A phenomenon consisting of an often violent whirlwind revealed by the presence of a cloud column or inverted cloud cone (funnel cloud), protruding from the base of a cumulonimbus, and of a bush composed of water droplets raised from the surface of the sea. Its behaviour is characterized by a tendency to dissipate upon reaching shore.	
<b>Winter Storm</b>	ems.incident.meteorological.winterStorm	
	<i>Definition:</i> An event in which the dominant varieties of precipitation are forms that only occur at cold temperatures, such as snow or sleet, or a rainstorm where ground temperatures are cold enough to allow ice to form.	






<b>Missing Person</b>	ems.incident.missingPerson	
<b>Amber Alert</b>	ems.incident.missingPerson.amberAlert	
<i>Definition: A child abduction bulletin or notice.</i>		
<b>Missing Vulnerable Person</b>	ems.incident.missingPerson.missingVulnerablePerson	
<i>Definition: A missing, vulnerable person who might be in danger because of a medical condition.</i>		
<b>Silver Alert</b>	ems.incident.missingPerson.silverAlert	
<i>Definition: A public notification system to broadcast information about missing persons - especially seniors with Alzheimer's Disease, dementia or other mental disabilities - in order to aid in their return.</i>		
<b>Plant Health</b>	ems.incident.plantHealth	
<b>Infectious Plant Disease</b>	ems.incident.plantHealth.plantInfectiousDisease	
<i>Definition: A known disease affecting wild or cultivated vegetation.</i>		
<b>Public Service</b>	ems.incident.publicService	

	<b>Emergency Support Facility</b>	ems.incident.publicService.emergencySupport Facility	
<i>Definition:</i> An incident or event involving publicly available support facilities.			
	<b>Emergency Support Service</b>	ems.incident.publicService.emergencySupport Service	
<i>Definition:</i> An incident or event involving publicly available support services.			
	<b>School Closure</b>	ems.incident.publicService.schoolClosure	
<i>Definition:</i> A closure of a school.			
	<b>School Lockdown</b>	ems.incident.publicService.schoolLockdown	
<i>Definition:</i> A lockdown of a school.			
	<b>Transit</b>	ems.incident.publicService.transit	
<i>Definition:</i> An incident or event involving public transit.			
	<b>Railway</b>	ems.incident.railway	
	<b>Train Accident</b>	ems.incident.railway.trainAccident	
<i>Definition:</i> A sudden, unexpected event involving a wheeled or tracked vehicle resulting in derailment, damage, bodily injury, death and/or the disruption of transportation service.			

	<b>Train Hijacking</b>	ems.incident.railway.trainHijacking	
<i>Definition:</i> The unexpected, unlawful and forceful seizure of control aboard a wheeled or tracked vehicle by an individual or group of individuals resulting in passenger and crew endangerment, injury or death, and/or the redirection of destination.			
	<b>Rescue</b>	ems.incident.rescue	
	<b>Roadway</b>	ems.incident.roadway	
	<b>Bridge Closure</b>	ems.incident.roadway.bridgeClosure	
<i>Definition:</i> A closure of a bridge due to natural or man-made causes.			
	<b>Hazardous Road Conditions</b>	ems.incident.roadway.hazardousRoadConditions	
<i>Definition:</i> A natural or man-made event that causes roadways to become hazardous.			
	<b>Motor Vehicle Accident</b>	ems.incident.roadway.motorVehicleAccident	
<i>Definition:</i> A sudden, unexpected event involving a vehicle resulting in damage, bodily injury, death and/or the disruption of transportation service.			
	<b>Motor Vehicle Hijacking</b>	ems.incident.roadway.motorVehicleHijacking	
<i>Definition:</i> The unexpected, unlawful and forceful seizure of control aboard a vehicle by an individual or group of individuals resulting in passenger and crew endangerment, injury or death, and/or the redirection of destination.			

	<b>Roadway Closure</b>	ems.incident.roadway.roadwayClosure	
<i>Definition:</i> A closure of a roadway due to natural or man-made causes.			
	<b>Roadway Delay</b>	ems.incident.roadway.roadwayDelay	
<i>Definition:</i> A delay causing the normal flow of traffic to be reduced.			
	<b>Roadway Usage Condition</b>	ems.incident.roadway.roadwayUsageCondition	
<i>Definition:</i> A significant change in the usage of a roadway brought about by a change in traffic flow, road conditions, or other causes.			
	<b>Traffic Report</b>	ems.incident.roadway.trafficReport	
<i>Definition:</i> A report on the condition of traffic.			
	<b>Temperature</b>	ems.incident.temperature	
	<b>Arctic Outflow</b>	ems.incident.temperature.articOutflow	
<i>Definition:</i> Frigid arctic air bursts out from the interior mainland, spilling out through the mountain gaps and rushing through fjords, to chill coastal areas with bitter gale-force winds.			
	<b>Cold Wave</b>	ems.incident.temperature.coldWave	







	<i>Definition:</i> A rapid fall in temperature within a 24 hour period requiring substantially increased protection to agriculture, industry, commerce, and social activities. The precise criterion for a cold wave is determined by the rate at which the temperature falls, and the minimum to which it falls. This minimum temperature is dependent on the geographical region and time of year.	
<b>Flash Freeze</b>	ems.incident.temperature.flashFreeze	
	<i>Definition:</i> When significant ice is expected to form rapidly on road surfaces over much of a region because of a combination of weather conditions. Such conditions typically include temperatures which are expected to fall quickly from above 0°C to well below freezing while precipitation is occurring.	
<b>Frost</b>	ems.incident.temperature.frost	
	<i>Definition:</i> The solid deposition of water vapor from saturated air. It is formed when solid surfaces are cooled to below the dew point of the adjacent air.	
<b>Heat Wave</b>	ems.incident.temperature.heatWave	
	<i>Definition:</i> A prolonged period of excessively hot weather.	
<b>High Heat and Humidity</b>	ems.incident.temperature.highHeatAndHumidity	
	<i>Definition:</i> A prolonged period of excessively hot weather, which is accompanied by high humidity.	
<b>Wind Chill</b>	ems.incident.temperature.windChill	








	<i>Definition:</i> The apparent temperature felt on exposed skin due to wind. The degree of this phenomenon depends on both air temperature and wind speed. The wind chill temperature (often popularly called the wind chill factor) is always lower than the air temperature for values where the wind chill formula is valid.	
<b>Wind</b>	ems.incident.wind	
<b>Strong Wind</b>	ems.incident.wind.strongWind	
	<i>Definition:</i> Wind with a speed between 39 – 61 km/h (21 - 33 knots). Beaufort scale wind force 6 or 7. The term is typically used in a marine context.	
<b>Gale Wind</b>	ems.incident.wind.galeWind	
	<i>Definition:</i> Wind with a speed between 62 – 88 km/h (34 - 47 knots). Beaufort scale wind force 8 or 9. The term is typically used in a marine context.	
<b>Storm Force Wind</b>	ems.incident.wind.stormForceWind	
	<i>Definition:</i> Wind with a wind speed between 89 – 117 km/h (48 - 63 knots). Beaufort scale wind force 10 or 11. The term is typically used in a marine context.	
<b>Hurricane Force Wind</b>	ems.incident.wind.hurricaneForceWind	
	<i>Definition:</i> Wind with a speed of 118 km/h (64 knots) or greater. Beaufort scale wind force 12. The term is typically used in a marine context.	

















# Infrastructures

(colours: dominantly shades of green)








<b>Communications &amp; IT Infrastructure</b>		ems.infrastructure.communicationsAndIT	
	<b>Communications Facility</b>	ems.infrastructure.communicationsAndIT.teleCommunicationFacility	
<i>Definition:</i> Any facility housing telecommunications equipment, studios, control rooms, or personnel.			
	<b>Communications Tower</b>	ems.infrastructure.communicationsAndIT.communicationTower	
<i>Definition:</i> A structure typically higher than its diameter and high relative to its surroundings to which telecommunications antennae are affixed.			
	<b>Satellite Ground Station</b>	ems.infrastructure.communicationsAndIT.satelliteGroundStation	
<i>Definition:</i> A facility used to telecommunicate with satellites—chiefly communications satellites. Other earth stations communicate with manned space stations or unmanned space probes.			
	<b>TV &amp; Radio Broadcast Facility</b>	ems.infrastructure.communicationsAndIT.tvAndRadioBroadcastFacility	
<i>Definition:</i> A facility housing equipment used to transmit commercial radio or television.			
	<b>Post Office</b>	ems.infrastructure.communicationsAndIT.postOffice	

	<i>Definition:</i> A facility authorized by a postal system for the posting, receipt, sorting, handling, transmission or delivery of mail.	
<b>Education Infrastructure</b>	ems.infrastructure.education	
<b>School</b>	ems.infrastructure.education.school	
	<i>Definition:</i> A building or collection of buildings comprising a primary, middle or high school.	
<b>College or University</b>	ems.infrastructure.education.collegeUniversity	
	<i>Definition:</i> A building or collection of buildings that comprise a college or university.	
<b>Energy Infrastructure</b>	ems.infrastructure.energy	
<b>Energy Distribution Control Centre</b>	ems.infrastructure.energy.energyDistributionControlCenter	
	<i>Definition:</i> An industrial plant or facility monitoring electrical grid activity.	
<b>Gas Processing Plant</b>	ems.infrastructure.energy.gasProcessingPlant	
	<i>Definition:</i> An industrial plant equipped with special equipment used to process natural gas.	
<b>Gas Storage</b>	ems.infrastructure.energy.gasStorage	
	<i>Definition:</i> A building or place that provides and distributes natural gas.	








<b>Nuclear Power Plant</b>	ems.infrastructure.energy.nuclearPowerPlant	
<i>Definition:</i> A power plant producing electricity from controlled (i.e., non-explosive) nuclear reactions.		
<b>Nuclear Research</b>	ems.infrastructure.energy.nuclearResearch	
<i>Definition:</i> The location where research into nuclear energy is conducted and is likely to contain radioactive materials.		
<b>Oil Well</b>	ems.intrastructure.energy.oilWell	
<i>Definition:</i> A general term for any boring through the earth's surface that is designed to find and produce petroleum oil hydrocarbons.		
<b>Petroleum Storage</b>	ems.infrastructure.energy.petroleumStorage	
<i>Definition:</i> A building or place that provides and distributes petroleum gas.		
<b>Power Plant</b>	ems.infrastructure.energy.powerPlant	
<i>Definition:</i> Also referred to as a generating station, power plant, or powerhouse) is an industrial facility for the generation of electric power.		
<b>Pumping Station</b>	ems.infrastructure.energy.pumpingStation	
<i>Definition:</i> Facilities including pumps and equipment for pumping fluids from one place to another.		
<b>Refinery</b>	ems.infrastructure.energy.refinery	

	<i>Definition:</i> A production facility composed of a group of chemical engineering unit processes and unit operations refining certain materials or converting raw material into products of value.	
<b>Substation</b>	ems.infrastructure.energy.substation	
	<i>Definition:</i> A subsidiary station of an electricity generation, transmission and distribution system where voltage is transformed from high to low or the reverse using transformers.	
<b>Transmission Tower</b>	ems.infrastructure.energy.transmissionTower	
	<i>Definition:</i> A transmission tower serving as a component of an electrical transmission line.	
<b>Finance Infrastructure</b>	ems.infrastructure.finance	
<b>Financial Institution</b>	ems.infrastructure.financial.financialInstitution	
	<i>Definition:</i> An institution that provides financial services for its clients or members.	
<b>Food Infrastructure</b>	ems.infrastructure.food	
<b>Food Beverage Facility</b>	ems.infrastructure.food.foodBeverageFacility	
	<i>Definition:</i> A facility dedicated to the storage and distribution of food stuffs and/or beverages.	
<b>General Utility</b>	ems.infrastructure.generalUtility	
	<i>Definition:</i> An infrastructure component owned or operated by a public or private utility.	








<b>Government Infrastructure</b>	ems.infrastructure.government	
<b>Courthouse</b>	ems.infrastructure.government.courtHouse	
<i>Definition:</i> A building that is home to a local court of law and often the regional county government as well, although this is not the case in some larger cities.		
<b>Critical Contractor Facility</b>	ems.infrastructure.government.criticalContractorFacility	
<i>Definition:</i> A building or collection of buildings used by non-government organizations that are of regional or national significance.		
<b>Government Facility</b>	ems.infrastructure.government.governmentFacility	
<i>Definition:</i> A building or collection of buildings used to carry out government activities.		
<b>Manufacturing Infrastructure</b>	ems.infrastructure.manufacturing	
<b>Chemical Facility</b>	ems.infrastructure.manufacturing.chemicalFacility	
<i>Definition:</i> An industrial site where chemical substances and-or compounds are produced.		
<b>Manufacturing Facility</b>	ems.infrastructure.manufacturing.manufacturingFacility	
<i>Definition:</i> An industrial site where commercial goods are produced.		







<b>Military Infrastructure</b>	ems.infrastructure.military	
<b>Military Base</b>	ems.infrastructure.military.militaryBase	
<i>Definition:</i> The largest type of military facility, directly owned and operated by and/or for the military or one of its branches that shelters military equipment and personnel, and facilitates training and operations.		
<b>Military Station</b>	ems.infrastructure.military.militaryStation	
<i>Definition:</i> Similar to a military base, but typically smaller in size and with less overall responsibility.		
<b>Military Site</b>	ems.infrastructure.military.militarySite	
<i>Definition:</i> The smallest of the three military infrastructures: military base, military station, and military site. Typically established for a very specific purpose.		
<b>Public Site</b>	ems.infrastructure.publicSite	
<b>Public Venue</b>	ems.infrastructure.publicSite.publicVenue	
<i>Definition:</i> An unrestricted place or places and events for a large gathering of people.		
<b>Religious Institution</b>	ems.infrastructure.publicSite.religiousInstitution	
<i>Definition:</i> Any place of worship where religious services are held or prayers said by congregation loyal to a belief.		







	<b>Shopping Mall</b>	ems.infrastructure.publicSite.shoppingMall	
<i>Definition:</i> One or more buildings forming a complex of shops representing merchandisers, with interconnecting walkways enabling visitors to easily walk from unit to unit, along with a parking area – a modern, indoor version of the traditional marketplace.			
	<b>Tourist Attraction</b>	ems.infrastructure.publicSite.touristAttraction	
<i>Definition:</i> A place of interest where tourists visit, typically for its inherent or exhibited cultural value, historical significance, natural or built beauty, or amusement opportunities.			
<b>Safety Infrastructure</b>	ems.infrastructure.safety		
	<b>Contaminated Site</b>	ems.infrastructure.safety.contaminatedSite	
<i>Definition:</i> A location that has been contaminated by hazardous waste and poses a risk to human health and-or the environment.			
	<b>Emergency Route</b>	ems.infrastructure.safety.emergencyRoute	
<i>Definition:</i> A network of pre-identified municipal and provincial roads that can best move emergency services and supplies to where they are needed in the event of a major disaster or other emergency.			
	<b>Hazardous Materials Facility</b>	ems.infrastructure.safety.hazardousMaterialsFacility	
<i>Definition:</i> A facility where hazardous chemicals and-or substances are produced and stored under regulated conditions.			







	<b>Nuclear Waste Facility</b>	ems.infrastructure.safety.nuclearWasteFacility	
<i>Definition:</i> A facility where nuclear waste materials are stored.			
	<b>Significant Site</b>	ems.infrastructure.significantSite	
	<b>Indigenous Site</b>	ems.infrastructure.significantSite.indigenousSite	
<i>Definition:</i> A site of cultural importance to the descendants of the original inhabitants of North America.			
	<b>Landmark</b>	ems.infrastructure.significantSite.landmark	
<i>Definition:</i> A geographic feature, building, monument or anything easily recognizable that can be used as an aid in navigation.			
	<b>National Symbol</b>	ems.infrastructure.significantSite.nationalSymbol	
<i>Definition:</i> A symbol of any entity considering itself and manifesting itself to the world as a national community.			
	<b>Significant Fauna</b>	ems.infrastructure.significantSite.significantFauna	
<i>Definition:</i> The location of threatened, endangered or otherwise significant fauna.			
	<b>Significant Flora</b>	ems.infrastructure.significantSite.significantFlora	
<i>Definition:</i> The location of threatened, endangered or otherwise significant flora.			

















<b>Special Care Infrastructure</b>	ems.infrastructure.specialCare	
<b>Adult Day Care</b>	ems.infrastructure.specialCare.adultDayCare	
<i>Definition:</i> A non-residential facility that provides supervision and assisted living services to adults, typically during the daylight hours.		
<b>Child Day Care</b>	ems.infrastructure.specialCare.childDayCare	
<i>Definition:</i> A service involving care for other people's children.		
<b>Elder Care</b>	ems.infrastructure.specialCare.elderCare	
<i>Definition:</i> A nursing home or a residential assisted living facility in which full-time care is provided for chronically ill, disabled, and elderly.		
<b>Transportation Infrastructure</b>	ems.infrastructure.transportation	
<b>Heliport</b>	ems.infrastructure.transportation.heliport	
<i>Definition:</i> A site within a landing zone that contains one or more points for helicopters to land. The site may or may not be temporary and may or may not include buildings and other infrastructure elements.		
<b>Heliport Facility</b>	ems.infrastructure.transportation.heliportFacility	
<i>Definition:</i> A small airport suitable only for use by helicopters. It typically includes buildings and equipment specific to operating a heliport, including a shelter or terminal for passengers and/or goods to be transported.		







<b>Air Navigational Aid</b>	ems.infrastructure.transportation.airNavigationAid	
<i>Definition:</i> A facility operated by appropriate authority to promote the safe, orderly and expeditious flow of air traffic.		
<b>Aircraft Surface Area</b>	ems.infrastructure.transportation.aircraftSurfaceArea	
<i>Definition:</i> An area of land or other hard surface, excluding water, that is used or intended to be used for the landing and takeoff of aircraft, and includes its buildings and facilities, if any. An airport is considered to belong to this class.		
<b>Bridge</b>	ems.infrastructure.transportation.bridge	
<i>Definition:</i> A structure built over a gap to connect and maintain transportation flow between either sides of the gap.		
<b>Bus Station</b>	ems.infrastructure.transportation.busStation	
<i>Definition:</i> A terminal that serves bus passengers.		
<b>Ferry Terminal</b>	ems.infrastructure.transportation.ferryTerminal	
<i>Definition:</i> The location of a vehicle-carrying and commuter boat line terminus.		
<b>Jetty Facility</b>	ems.infrastructure.transportation.jettyFacility	
<i>Definition:</i> A facility involving any of a variety of structures used in river, dock, and maritime works which are generally carried out in pairs from river banks, or in continuation of river channels at their outlets into deep water; or out into docks, and outside their entrances; or for forming basins along the sea-coast for ports in tideless seas.		







	<b>Harbour Facility</b>	ems.infrastructure.transportation.harbourFacility	
<i>Definition:</i> A facility where ships, boats, and barges can seek shelter from stormy weather, or access services required to operate or maintain vessels.			
	<b>Lock</b>	ems.infrastructure.transportation.lock	
<i>Definition:</i> An enclosed part of a canal or river equipped with gates for raising or lowering the level of water so that boats and other vessels may pass.			
	<b>Nautical Navigational Aid</b>	ems.infrastructure.transportation.nauticalNavigationalAid	
<i>Definition:</i> Any sort of marker which aids the traveler in navigation; the term is most commonly used to refer to nautical or aviation travel. Common types of such aids include lighthouses, buoys, fog signals, and day beacons.			
	<b>Navigable Waterway</b>	ems.infrastructure.transportation.navigableWaterway	
<i>Definition:</i> Any navigable body of water including rivers, lakes, seas, oceans, and canals.			
	<b>Port</b>	ems.infrastructure.transportation.port	
<i>Definition:</i> A location on a waterway with facilities for loading and unloading ships and other vessels.			
	<b>Railway Facility</b>	ems.infrastructure.transportation.railwayFacility	
<i>Definition:</i> A depot where tracked transport vehicles or trains load and-or unload passengers or goods.			

<b>Railway Yard</b>	ems.infrastructure.transportation.railwayYard	
<i>Definition:</i> A complex series of railroad tracks for storing, sorting, or loading/unloading, railroad cars and/or locomotives.		
<b>Ship Anchorage</b>	ems.infrastructure.transportation.shipAnchorage	
<i>Definition:</i> A location suitable for securely anchoring ships and other vessels.		
<b>Small Craft Facility</b>	ems.infrastructure.transportation.smallCraftFacility	
<i>Definition:</i> A facility where smaller, usually personal watercraft, can access services required to operate or maintain vessels.		
<b>Tunnel</b>	ems.infrastructure.transportation.tunnel	
<i>Definition:</i> An underground passageway used to connect and maintain transportation flow between a physical or human-built obstruction.		
<b>Transit Station Air Rail</b>	ems.infrastructure.transportation.transitio nAirRail	
<i>Definition:</i> The colocation of transportation types: Air, Rail.		
<b>Transit Station Air Water</b>	ems.infrastructure.transportation.transitio nAirWater	
<i>Definition:</i> The colocation of transportation types: Air, Water.		


	<b>Transit Station Air Water Rail</b>	ems.infrastructure.transportation.transitio nAirWaterRail	
<i>Definition:</i> The colocation of transportation types: Air, Water, Rail.			
	<b>Transit Station Road Air</b>	ems.infrastructure.transportation.transitio nRoadAir	
<i>Definition:</i> The colocation of transportation types: Road, Air.			
	<b>Transit Station Road Air Rail</b>	ems.infrastructure.transportation.transitio nRoadAirRail	
<i>Definition:</i> The colocation of transportation types: Road, Air, Rail.			
	<b>Transit Station Road Air Water</b>	ems.infrastructure.transportation.transitio nRoadAirWater	
<i>Definition:</i> The colocation of transportation types: Road, Air, Water.			
	<b>Transit Station Road Air Water Rail</b>	ems.infrastructure.transportation.transitio nRoadAirWaterRail	
<i>Definition:</i> The colocation of transportation types: Road, Air, Water, Rail.			
	<b>Transit Station Road Rail</b>	ems.infrastructure.transportation.transitio nRoadRail	
<i>Definition:</i> The colocation of transportation types: Road, Rail.			
	<b>Transit Station Road Water</b>	ems.infrastructure.transportation.transitio nRoadWater	









	<i>Definition:</i> The colocation of transportation types: Road, Water.	
<b>Transit Station Road Water Rail</b>	ems.infrastructure.transportation.transitio nRoadWaterRail	
	<i>Definition:</i> The colocation of transportation types: Road,Water, Rail.	
<b>Transit Station Water Rail</b>	ems.infrastructure.transportation.transitio nWaterRail	
	<i>Definition:</i> The colocation of transportation types: Water, Rail.	
<b>Water Infrastructure</b>	ems.infrastructure.water	
<b>Dam</b>	ems.infrastructure.water.dam	
	<i>Definition:</i> A barrier that impounds water or underground streams. Dams generally serve the primary purpose of retaining water, while other structures such as floodgates or levees (also known as dikes) are used to manage or prevent water flow into specific land regions.	
<b>Public Water Supply Intake</b>	ems.infrastructure.water.publicWaterSupplyI ntake	
	<i>Definition:</i> The location where public drinking water is drawn from.	
<b>Sewage Treatment Facility</b>	ems.infrastructure.water.sewageTreatmentFac ility	
	<i>Definition:</i> A facility to remove contaminants from wastewater and household sewage, both runoff (effluents) and domestic. It includes physical, chemical, and biological processes to remove physical, chemical and biological contaminants.	
<b>Water Distribution Facility</b>	ems.infrastructure.water.waterDistributionF acility	







	<i>Definition:</i> A facility dedicated to the monitoring and operations of the public water distribution network.	
<b>Water Storage - Reservoir</b>	ems.infrastructure.water.waterStorageReservoir	
	<i>Definition:</i> An artificial lake used to store water. Reservoirs are often created by building a reinforced dam, usually out of concrete, earth, rock, or a mixture across a river or stream.	
<b>Water Storage - Tank</b>	ems.infrastructure.water.waterStorageTank	
	<i>Definition:</i> A liquid storage containers, these tanks are usually storing water for human consumption.	
<b>Water Storage - Tower</b>	ems.infrastructure.water.waterStorageTower	
	<i>Definition:</i> Elevated liquid storage containers, these tanks or towers are usually storing water for human consumption.	
<b>Water Treatment Facility</b>	ems.infrastructure.water.waterTreatmentFacility	
	<i>Definition:</i> A facility whose processes used to make water more acceptable for a desired end-use. These can include use as drinking water, industrial processes, medical and many other uses.	
<b>Operations</b> (colours: dominantly shades of pink/red)		
<b>Emergency Operation</b>	ems.operations.emergency	
<b>Amphibex</b>	ems.operations.emergency.amphibex	








	<i>Definition:</i> An aquatic excavator used to break up ice jams or dredge aquatic environments.	
<b>Bus</b>	ems.operations.emergency.bus	
	<i>Definition:</i> A large motor vehicle, having a long body, equipped with seats or benches for passengers, usually operating as part of a scheduled service.	
<b>Emergency Checkpoint</b>	ems.operations.emergency.emergencyCheckpoint	
	<i>Definition:</i> A point at which an inspection or investigation is performed.	
<b>Emergency Evacuation Point</b>	ems.operations.emergency.emergencyEvacuationPoint	
	<i>Definition:</i> A designated place where displaced persons or victims of war or disaster are assembled and/or evacuated from.	
<b>Emergency Food Distribution Centre</b>	ems.operations.emergency.emergencyFoodDistributionCenter	
	<i>Definition:</i> A place where food is distributed to displaced persons or victims of war or disaster.	
<b>Emergency Incident Command Centre</b>	ems.operations.emergency.emergencyIncidentCommandCenter	
	<i>Definition:</i> The physical location from which an incident commander manages an incident.	
<b>Emergency Operations Centre</b>	ems.operations.emergency.emergencyOperationsCenter	
	<i>Definition:</i> The physical location where an organization comes together during an emergency to coordinate response and recovery actions and resources and make management decisions.	















<b>Emergency Public Information Centre</b>	ems.operations.emergency.emergencyPublicInformationCenter	
<i>Definition:</i> The physical location where the public can go to for information related to the active emergency.		
<b>Emergency Shelter</b>	ems.operations.emergency.emergencyShelter	
<i>Definition:</i> A designated emergency / relief shelter.		
<b>Emergency Staging Area</b>	ems.operations.emergency.emergencyStagingArea	
<i>Definition:</i> A designated place where emergency management forces, equipment, and supplies are assembled prior to engagement in operations.		
<b>Emergency Team</b>	ems.operations.emergency.emergencyTeam	
<i>Definition:</i> The location of an emergency management team.		
<b>Emergency Water Distribution Centre</b>	ems.operations.emergency.emergencyWaterDistributionCenter	
<i>Definition:</i> A place where potable water is distributed to displaced persons or victims of war or disaster.		
<b>Ferry</b>	ems.operations.emergency.ferry	
<i>Definition:</i> A form of transportation, usually a boat, but sometimes a ship, used to carry (or ferry) primarily passengers, and sometimes vehicles and cargo as well, across a body of water.		
<b>Sandbag</b>	ems.operations.emergency.sandbag	
<i>Definition:</i> A location where sandbags are being filled or placed.		





<b>Emergency Fire Operation</b>	ems.operations.emergencyFire	
<b>Fire Hydrant</b>	ems.operations.emergencyFire.fireHydrant	
<i>Definition:</i> A discharge pipe with a valve and spout from which water may be drawn from a water main in sufficient volume and at sufficient pressure for firefighting purposes.		
<b>Fire Station</b>	ems.operations.emergencyFire.fireStation	
<i>Definition:</i> A facility housing fire-fighting equipment and/or personnel.		
<b>Fire Suppression Operation</b>	ems.operations.emergencyFire.fireSuppresion Operation	
<i>Definition:</i> A coordinated response to suppress and extinguish a destructive fire.		
<b>Fire Truck</b>	ems.operations.emergencyFire.fireTruck	
<i>Definition:</i> A vehicle designed to assist in fighting fires by transporting firefighters to the scene and providing them with access to the fire, water or other equipment.		
<b>Other Water Supply Location</b>	ems.operations.emergencyFire.otherWaterSupp lyLocation	
<i>Definition:</i> Any source of water other than a fire hydrant that is sufficient for the purpose of fire fighting.		
<b>Emergency Medical Operation</b>	ems.operations.emergencyMedical	
<b>Ambulance</b>	ems.operations.emergencyMedical.ambulance	

	<i>Definition:</i> A vehicle for taking sick or wounded people to and from a hospital.	
<b>Blood Supply</b>	ems.operations.emergencyMedical.bloodSupply	
	<i>Definition:</i> A cache or bank of blood or blood components, gathered as a result of blood donation, stored and preserved for later use in blood transfusions.	
<b>Decontamination Point</b>	ems.operations.emergencyMedical.decontaminationPoint	
	<i>Definition:</i> The location where the cleansing to remove contamination, or the possibility (or fear) of contamination takes place. Decontamination is sometimes abbreviated as "decon", "dcon", or "decontam".	
<b>EMT Station Location</b>	ems.operations.emergencyMedical.emtStationLocation	
	<i>Definition:</i> The location of an emergency medical team.	
<b>Health Facility</b>	ems.operations.emergencyMedical.healthFacility	
	<i>Definition:</i> A facility operated by a public institution which is dedicated to promotion of health and prevention of disease at the community, country, state, or national level.	
<b>Hospital</b>	ems.operations.emergencyMedical.hospital	
	<i>Definition:</i> An institution where the sick or injured are given medical or surgical care.	
<b>Hospital Ship</b>	ems.operations.emergencyMedical.hospitalShip	
	<i>Definition:</i> A ship where the sick or injured are given medical or surgical care.	

	<b>Medical Evacuation Helicopter Station</b>	ems.operations.emergencyMedical.medicalEvacuationHelicopterStation	
<i>Definition:</i> An emergency helicopter landing pad, utilized to transport severely injured persons.			
	<b>Medical Facilities Out Patient</b>	ems.operations.emergencyMedical.medicalFacilitiesOutPatient	
<i>Definition:</i> A facility providing medical treatment to patients whose sickness or injury does not require hospitalization.			
	<b>Morgue</b>	ems.operations.emergencyMedical.morgue	
<i>Definition:</i> A place where the bodies of persons found dead are kept until identified and claimed by relatives or released for burial			
	<b>Pharmacy</b>	ems.operations.emergencyMedical.pharmacy	
<i>Definition:</i> A place where medicines are compounded or dispensed.			
	<b>Triage</b>	ems.operations.emergencyMedical.triage	
<i>Definition:</i> A place where sorting and allocation of treatment to patients (especially victims of war or disaster) is performed according to a system of priorities designed to maximize the number of survivors.			
	<b>Law Enforcement Operation</b>	ems.operations.lawEnforcement	
	<b>Border Patrol</b>	ems.operations.lawEnforcement.borderPatrol	

	<i>Definition:</i> A national security agency that performs border control, i.e., enforces the security of the country's national borders.	
<b>Coast Guard</b>	ems.operations.lawEnforcement.coastGuard	
	<i>Definition:</i> A national organization responsible for various services at sea.	
<b>Police Car</b>	ems.operations.lawEnforcement.policeCar	
	<i>Definition:</i> A vehicle used by police, to assist with their duties in patrolling and responding to incidents.	
<b>Police Station</b>	ems.operations.lawEnforcement.policeStation	
	<i>Definition:</i> A building which serves to accommodate police officers and other members of staff. These buildings often contain offices and accommodation for personnel and vehicles, along with locker rooms, temporary holding cells and interview/interrogation rooms.	
<b>Prison</b>	ems.operations.lawEnforcement.prison	
	<i>Definition:</i> A place in which people are physically confined and, usually, deprived of a range of personal freedoms.	
<b>Military Operation</b>	ems.operations.military	
<b>Ground Vehicle</b>	ems.operations.military.groundVehicle	
	<i>Definition:</i> A military wheeled or tracked land based vehicle.	

	<b>Vessel</b>	ems.operations.military.vessel	
<i>Definition:</i> A military ship or vessel.			
	<b>Aircraft</b>	ems.operations.military.aircraft	
<i>Definition:</i> A military fixed wing aircraft.			
	<b>Helicopter</b>	ems.operations.military.helicopter	
<i>Definition:</i> A military helicopter.			
	<b>Unit</b>	ems.operations.military.unit	
<i>Definition:</i> A homogeneous military organization, either combat, combat support or non-combat in capability, that includes service personnel predominantly from a single Arm of Service, or a Branch of Service, and its administrative and command functions are integrated (self-contained).			
	<b>Sensor Operation</b>	ems.operations.sensor	
	<b>Biological Sensor</b>	ems.operations.sensor.biologicalSensor	
<i>Definition:</i> A device designed to respond to the presence of one or more biological substances and to transmit a resulting impulse.			

	<b>Chemical Sensor</b>	<code>ems.operations.sensor.chemicalSensor</code>	
<i>Definition:</i> A device designed to respond to the presence of one or more chemicals and to transmit a resulting impulse.			
	<b>Intrusion Sensor</b>	<code>ems.operations.sensor.intrusionSensor</code>	
<i>Definition:</i> A device designed to respond to physical penetration of, or attempts to physically penetrate, a protected area or spatial volume and to transmit a resulting impulse.			
	<b>Nuclear Sensor</b>	<code>ems.operations.sensor.nuclearSensor</code>	
<i>Definition:</i> A device designed to respond to one or more decay product(s) of one or more radioactive nuclides and to transmit a resulting impulse.			
	<b>Radiological Sensor</b>	<code>ems.operations.sensor.radiologicalSensor</code>	
<i>Definition:</i> A device designed to respond to one or more decay product(s) of one or more radioactive nuclides and to transmit a resulting impulse.			

# APPENDIX

## LICENCE AGREEMENT FOR UNRESTRICTED USE OF EMERGENCY MAPPING SYMBOLOGY

This is a legal agreement between you ("Licensee") and Her Majesty the Queen in Right of Canada ("Canada"), as represented by the Minister of Natural Resources Canada. **BY ACCESSING, DOWNLOADING, PRINTING OR USING THE EMERGENCY MAPPING SYMBOLOGY, INFORMATION AND MATERIALS BEING PROVIDED WITH, OR ACCESSIBLE PURSUANT TO THIS AGREEMENT, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS AGREEMENT.** IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, YOU MUST IMMEDIATELY DISPOSE OF THE EMERGENCY MAPPING SYMBOLOGY, INFORMATION, MATERIALS AND ANY DERIVED PRODUCTS.

- I. **WHEREAS** Canada is the owner of the Emergency Mapping Symbology (the "Data") accessible pursuant to the terms and conditions of this Agreement;
- II. **AND WHEREAS** the Licensee wishes to obtain certain rights to the Data, on terms and conditions herein contained;
- III. **AND WHEREAS** Canada represents that it has full authority to grant the rights desired by the Licensee on the terms and conditions herein contained;
- IV. **AND WHEREAS** the parties hereto are desirous of entering into a licence agreement on the basis herein set forth.

**NOW, THEREFORE**, in consideration of the covenants contained in this Agreement, the parties agree as follows:

### 1.0 DEFINITIONS

1. **Canada's Data** means any and all Data, the Intellectual Property Rights of which vest with Canada.
2. **Data** means any digital data, meta-data, or documentation subject to the terms and conditions of this Agreement.
3. **Derivative Products** means any product, system, sub-system, device, component, material or software that incorporates or uses any part of the Data.
4. **Intellectual Property Rights** means any intellectual property right recognised by law, including any intellectual property right protected through legislation, such as that governing, but not limited to, copyright and patents.

### 2.0 LICENCE GRANT

1. Subject to this Agreement, Canada hereby grants to the Licensee a non-exclusive, fully paid, royalty-free right and licence to exercise all Intellectual Property Rights in the Data. This includes the right to use, incorporate, sublicense (with further right of sublicensing), modify, improve, further develop, and distribute the Data; and to manufacture and / or distribute Derivative Products.



2. The Intellectual Property Rights arising from any modification, improvement, development or translation of the Data, or from the manufacture of Derivative Products, effected by or for the Licensee, shall vest in the Licensee or in such person as the Licensee shall decide.

### **3.0 PROTECTION AND ACKNOWLEDGEMENT OF SOURCE**

1. Use of the Data shall not be construed as an endorsement by Canada of any Derivative Products. The Licensee shall identify the source of the Data, in the following manner, where any of the Data are redistributed, or contained within Derivative Products:

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### **4.0 WARRANTY, LIABILITY, INDEMNITY**

1. Canada makes no representation or warranty of any kind with respect to the accuracy, usefulness, novelty, validity, scope, completeness or currency of the Data and expressly disclaims any implied warranty of merchantability or fitness for a particular purpose of the Data. Canada does not ensure or warrant compatibility with past, current or future versions of any browser to access the site's Data.
2. The Licensee shall have no recourse against Canada, whether by way of any suit or action, for any loss, liability, damage or cost that the Licensee may suffer or incur at any time, by reason of the Licensee's possession or use of the Data.
3. The Licensee shall indemnify Canada and its officers, employees, agents and contractors from all claims alleging loss, costs, expenses, damages or injuries (including injuries resulting in death) arising out of the Licensee's possession or use of the Data.
4. The Licensee shall license all persons or parties who obtain Data or Derivative Products from the Licensee the right to use the Data or Derivative Products by way of a license agreement, and that agreement shall impose upon these persons or parties the same terms and conditions as those contained in section 4.0 of this Agreement.
5. 4.4 The Licensee's liability to indemnify Canada under this Agreement shall not affect or prejudice Canada from exercising any other rights under law.

### **5.0 TERM**

1. This Agreement is effective as of the date and time of acceptance (Eastern Time) and shall remain in effect for a period of one (1) year, subject to subsection 5.2 and section 6.0 below.
2. At the end of the first term, this Agreement shall automatically be extended for successive one (1) year terms, subject to section 6.0 below.

### **6.0 TERMINATION**

1. Notwithstanding section 5.0, this Agreement shall terminate:
  - i. **automatically and without notice**, if the Licensee commits or permits a breach of any of its covenants or obligations under this Agreement;

- ii. **upon written notice** of termination by the Licensee at any time, and such termination shall take effect thirty (30) days after the receipt by Canada of such notice; or
  - iii. **upon mutual agreement** of the parties.
2. Upon the termination for whatever reason of this Agreement, the Licensee's obligations under section 4.0 shall survive; and the Licensee's rights under section 2.0 shall immediately cease.
  3. Upon the termination for whatever reason of this Agreement, the Licensee shall delete or destroy all Data acquired under this Agreement immediately or within a reasonable timeframe where the Data is required to complete orders of Derivative Products made before the termination date of this Agreement.

## **7.0 GENERAL**

### **1. Applicable Law**

This Agreement shall be construed and enforced in accordance with, and the rights of the parties shall be governed by, the laws of Ontario and Canada as applicable. The parties hereto attorn to the jurisdiction of the Superior Court of the Province of Ontario.

### **2. Entire Agreement**

This Agreement constitutes the entire agreement between the parties with respect to its subject matter. This Agreement may only be amended in writing, signed by both parties, which expressly states the intention to amend this Agreement.

### **3. Dispute Resolution**

If a dispute arises concerning this Agreement, the parties shall attempt to resolve the matter by negotiation.