



# Aboriginal Disaster Resilience Planning Guide Resources

## *Community Mapping*

Overview  
Why Create a Map?  
How to Map  
Types of Maps  
What to Map  
Developing a Community Map  
Identifying Community Boundaries  
Establishing Zones  
Mapping Symbols  
Mapping Resources

## Overview

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When undertaking the mapping component of a Disaster Resilience Plan, it is essential to understand why mapping is important, how to map, and what to map. This document provides a variety of mapping techniques, symbols and resources that can help your community to create a map for disaster planning.

## Why Create a Map?

The first thing that everyone should ask themselves before starting a mapping exercise is why they want to create a map? Creating a map can be an extremely important piece of planning for disasters and developing resilience but it is important to ask why you are creating the map before investing time and energy into the process.

## How to Map

If you elect to create a map are you clear about how to map? Be sure to understand the basic components of mapping, including incorporating a scale, orientation and a legend. It is also important to understand different methods for mapping and the most appropriate method for your project. Finally, understanding the different types of maps that might be useful, including thematic, resource-based, and composite maps can help guide the project in the right direction.

## What to Map

There are different approaches to mapping. Specifically, you may want to consider mapping: a) transportation networks; b) critical infrastructure; c) geographical information; d) ecological zones; e) boundaries; f) community sites; g) land-use specifics; and h) sites of past hazardous events or disasters. This section provides a list of common mapping symbols.

## Developing a Community Map

When developing a community map it is important to ask three questions: (1) does a community map already exist?; (2) how do we create the community map?; and (3) who needs to be involved in creating the community map?

## Identifying Community Boundaries

Approaches to establishing community borders can vary and are not always cut and dry. The types of boundaries your community wants to include may vary dramatically from another community. One community may want to establish borders that use local rivers and mountains as a guide delineating the community's outermost boundaries, while another community may want to use predefined political boundaries to create their community borders. There is no right or wrong answer when identifying community boundaries but it is important that the boundaries are clear.

## Establishing Zones

Further subdividing your community into zones can make your Disaster Resilience Plan easier to create and understand. For example, having a high-risk zone, a medium risk zone and a low risk zone can help individuals understand their immediate vulnerability and create plans for those in high risk areas. Be sure to also consider how each zone can impact another.

## Mapping Symbols

You may want to consider using common mapping symbols to illustrate particular features including: a) transportation features, b) human made features; c) natural features; d) elevation; e) geological characteristics; f) land cover features (i.e. wooded area vs. grasslands); g) recreational features; h) agricultural and industrial activity; i) buildings; and others.

## Mapping Resources

There are a variety of pre-existing mapping resources at your disposal. This section helps you get the most out of what is already out there, providing a summary of useful websites and organizations devoted to mapping.

## Why Create a Map?

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There are many reasons why an individual or a community may want to create a map. Maps, like images, can convey a great deal of information without using words. Creating a map in a disaster-planning context can be an important exercise to build understanding of community disaster resources, awareness of previous disasters and resilience to future disasters. Maps can also be very effective ways of visually explaining a disaster plan in communities that have low literacy skills. It is important to understand why creating a map is the right step for your community before committing the time, energy and resources required to create a community map.

## How to Map

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There are three elements that every good map must have. They are: (1) scale, (2) orientation, and (3) a legend. It is also helpful to know that mapping has a set of standard colours that are used to map features.

### Scale

One of the most basic elements when creating a map is to provide a sense of scale. It is important to be able to discern the rough distance between geographical features, key infrastructure and other elements being mapped. Without scale it is impossible to know if the hospital is five kilometres away from the school or five hundred kilometres away.

There are many ways to illustrate scale. However, the most common method is using a scale bar. This provides a ratio for how many map centimetres are equal to the corresponding real distance in kilometres. The ratio can be used with many different methods of measurement including inches and miles. The type of measurement is unimportant but what matters is that a sense of scale is provided and is clear.

For many mapping projects it can be difficult to develop an exact scale. In these cases, it is acceptable to have a rough scale. It is more important that a sense of scale is provided, rather than an exact scale. When using an approximate distance for scale be sure to clearly indicate that the scale is an estimation and is not exact.

### Orientation

In addition to having a scale it is always important to orient your map as to where North is. Even if a scale is provided, without a clear idea of how the map is oriented it is impossible to know if the hospital is five kilometres to the North, South, East or West of the school. The most common method to illustrate orientation is using a compass. A compass does not need to be fancy and can be as simple as a line with an arrow indicating North.



### Legend

A final component that all good maps have is a legend. A legend provides vital information about what is being mapped. Without a legend it can be very difficult to understand the story that the map is trying to tell. For example, if the map has a clear scale and orientation but does not have a legend it may be impossible to tell which building is the hospital or school.

### Standard Colours for Mapping

Mapping has a set of standard colours that are used to map features. For the most part, these are intuitive. For example, you would not make land blue and water green. The following standardized colours are provided by Natural Resources Canada and have been adapted for this resource.

**BLACK** depicts cultural features, such as buildings, railways, pipelines and power-transmission lines. It is also used to show certain symbols, routes, geographical names, labels, boundaries and border and surround information.

**RED** depicts paved roads and streets, highway-route names and numbers, interchange numbers and certain symbols. A lighter shade of red is used to show international-boundary screens and built-up areas.

**ORANGE** depicts unpaved roads, streets and highway-route numbers on unpaved highways.

**BROWN** depicts relief features, such as contour lines, contour elevations, spot elevations and landforms, such as sand and moraines.

**BLUE** depicts natural hydrographic features, such as lakes, rivers, streams, falls, rapids and wetlands; as well as human-made features, such as reservoirs, dugouts, swimming pools, conduits, water wells, ditches and canals. A lighter shade of blue depicts open-water areas.

**GREEN** depicts vegetation, such as wooded areas, orchards, vineyards and hopfields, and is used as the primary colour for the image panel in the map surround.

**GREY** is used on the back of the map where the different symbols, lists of labels and abbreviations, notes and product information is printed.

**PURPLE** can be used to show updated information added over the original printed map.

## Types of Maps

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**Physical Maps:** Physical maps show the landscape of an area. They are often very colourful, where water is in blue, and elevations (the height of the land) are in different colours with low lying lands in green and high mountain peaks in brown.

**Topographic Maps:** Topographic maps are similar to physical maps but they include contour lines to show the exact elevation of an area. The closer the contour lines are to each other, the steeper the land. Contours are usually labeled in metres or feet above sea level.

**Thematic Maps:** Thematic maps are used to portray information related to a particular theme. These maps use gradations or different colours to depict information of a landscape. For example, a land-use map may have parks in green, commercial areas in orange, industrial areas in pink etc. A thematic map showing population density among neighborhoods may show areas of low density in pale green and areas of high density in dark green. These maps are highly versatile and can provide information related to a wide variety of themes.

**Inventory or Resource Maps:** Inventory or resource maps are similar to thematic maps but use pictures or symbols to show the location of various activities or resources. For example a resource or inventory map may use a symbol such as a small fish to indicate a fishing area or a maple leaf to indicate a sugar bush.

**Charts:** Charts are used for marine and boating purposes. A nautical chart tells you the depth of the water at high and low tides so that you don't run your boat aground. Charts also warn you of rocks, locations of buoys, lighthouses, shoals, etc.

**Transit Maps:** Transit maps typically show the roads and other transportation infrastructure. They also can show the routes of buses, trains, subways, medical van routes, accessible transportation routes, school bus routes, etc.

**Composite Maps:** Composite maps take a variety of types of maps and integrate them into a single map. For example a composite map may include a resource and transit map overlaying a thematic map. These maps can provide a lot of detail about a particular area but it is important not to overcrowd them with information.

## What to Map

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The following items give a set of examples of things that could be useful to include in a map.

### Transportation Networks

- Highways
- Roads
- Winter roads
- Hiking trails
- Snow mobile trails
- Railroads
- Airports
- Bridges
- Ports
- Docks
- Ferry routes
- Migration routes
- Medical Van routes
- School Bus routes

### Critical Infrastructure

- Major pipelines
- Major hydro transmission lines
- Substations
- Communication towers (e.g., cell phone)
- Major telephone trunk lines
- Major cable lines
- Major water mains
- Sewage treatment plants
- Sewage lagoons
- Dams
- Breakwaters
- Landfill sites
- Water treatment plants

### Geographical Information

- Rivers
- Creeks
- Lakes
- Mountains
- Glaciers
- Marshes and swamps
- Beaches
- Oceanfront
- Parks
- Flood plains

## Ecological Zones

- Salmon spawning grounds
- Caribou calving areas
- Areas with endangered species (plants or animals)
- Areas of unique biodiversity
- Protected areas (Ceremonial sites, burial grounds)
- Traditional Territory (Aboriginal or Treaty boundaries)
- Berry patches
- Sugar bush
- Medicinal plants
- Hunting grounds

## Boundaries

- Community boundaries
- Reserve boundaries
- Geographical boundaries
- Treaty land
- Traditional territory
- Provincial or Territorial boundaries
- Private or Crown land
- School zones
- Fire zones

## Community Sites

- Community hall
- Administration Buildings
- Cultural Sites (powwow grounds, long houses)
- Community Centre
- Fire Hall
- Medical clinic
- Ambulance station
- Police station
- Schools
- Faith-based buildings
- Ceremonial site
- Heritage sites
- Cemeteries
- Sports centres (ice rinks, curling, swimming pools)

## Land-Use

- Commercial areas
- Industrial areas
- Residential areas (single family and multi-family dwellings)
- Recreational areas (hockey rinks, fishing grounds, hunting grounds)

## Sites of Past Hazardous Events or Disasters

Any place that has been subjected to past hazards should be mapped. This can include areas that have been prone to flood or fire in the past.

## Developing a Community Map

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When developing a community map it is important to ask three questions:

1. Does your community have an existing map?
2. How to create the community map?
3. Who needs to be involved in creating the map?

### Does Your Community Have an Existing Map?

One of the first things you should find out is if your community has an existing map. Many Aboriginal communities have a community band map. It may or may not be tailored to disaster planning but it could provide a starting point to understand the area and how others have represented the community.

Good places to look for a community map include:

- Online (see mapping resources)
- Local museums or historical societies
- Libraries
- Tourist centres
- Government archives
- Tribal or grand councils
- First Nation resources

### How to Create the Community Map?

When creating a community map you need to decide as a group the medium you want to use to create the map. Perhaps it will be a more traditional, paper based map, or perhaps you will create an electronic map using geographical information system (GIS) software. No matter how you create the map, it is important to keep in mind, cost, what types of resources your community has access to (e.g., computers, internet) and the how best to distribute the community map.

### Geographical Information System (GIS) Mapping

If your community has access GIS software and a person who can manipulate GIS data, using GIS could be a great way to create a community map. Using GIS software, users can add in various layers of information, boundaries, and colours (e.g., roads, parks) to your maps and provide you with state of the art mapping. If you don't have access to GIS map data please refer to the "Resources" section of this document that provides Internet websites with a variety of GIS-based maps available for download.

### Internet-Based Mapping

There are a variety of Internet-based mapping interfaces that can be used to create interactive, customizable community maps. Internet-based mapping can be a very powerful tool to create a community map, which community members can access online, customize and even add features to. These interfaces can range dramatically in cost and capabilities. For some examples of Internet-based mapping interfaces please consult the "Resources" section.

### Paper-Based Mapping

Perhaps your community doesn't have access to GIS software or many of the members of the community do not have access to Internet connections. Perhaps your community lacks the mapping or computer expertise required to create these types of maps. Another option is to create a paper-based map. This is the most traditional method to make maps and can be quite powerful in its own right. Paper-based mapping usually brings a lot of people to the table and requires little mapping expertise.

## Use of Mylar

As you build your Community Profile you will want to map a number of different items. Some of these will be particular buildings or sites such a community hall, a fire hall or school. Sometimes you will want to map specific zones – for example, areas subject to landslides, flooding or seasonal closure. In other cases you may wish to map highways or important infrastructure like water treatment plants and hydro transmission lines. All of the information is important but if you put it all onto one map, the map may become very cluttered.

You could make several different maps, putting some basic information on each map and then adding specific items or zones on specific maps. However, this requires a lot of work to re-create the map over and over. Another solution is to purchase Mylar sheets or rolls.

Mylar is clear polyester film that you can roll over your basic map and using felt pens you can draw over the map the items you wish to put onto one map. When you have enough items on the Mylar, you simply pull out another sheet and add additional items. If you like, you can also overlap the Mylar sheets to show a number of items and their relationship to each other. Mylar comes in different lengths and thickness. It can usually be obtained at a local arts and crafts store or it can be ordered online from sites like eBay or Amazon.

## Who Needs to be Involved?

After determining if your community has an existing map or deciding on how your community is going to create a new map, the next step in developing a community map is determining who needs to be involved in the mapping process. Certain people may need to be at the table, while others are important to include in the process. For example, if you are creating a GIS-based map you will need people who are well versed in GIS software, while it is important to involve a variety of stakeholders to emphasize different perspectives and experiences. These can include Elders, municipal planners, government officials, members of the public and youth. The people that need to be involved in the mapping process will be different for every community but it is important to identify who should be involved in developing the community map and make sure they are at the table.

## Identifying Community Borders

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When creating a community map it is important to identify the boundaries of your community. Community boundaries do not have to be identical across the board; in fact one community may use electoral district areas to delineate the community boundaries while another may use key geographical areas such as rivers, creeks, or mountains. Some communities may wish to take a regional approach and include neighboring small communities in their planning. Others may want to include traditional territory or Treaty land. There is no right or wrong answer, but what your community must do is identify its outer perimeter.

Examples of potential boundaries:

- |   |  |
|---|--|
| <input type="checkbox"/> Treaty Boundaries        | <input type="checkbox"/> School District Areas   |
| <input type="checkbox"/> Reserve Lands            | <input type="checkbox"/> Fire Protection Areas   |
| <input type="checkbox"/> Municipal Boundaries     | <input type="checkbox"/> Health Services Areas   |
| <input type="checkbox"/> Regional Boundaries      | <input type="checkbox"/> Search and Rescue Areas |
| <input type="checkbox"/> Electoral District Areas | <input type="checkbox"/> Geographic Boundaries   |
| <input type="checkbox"/> Census Tract Areas       | <input type="checkbox"/> Traditional Territory   |
| <input type="checkbox"/> Other _____              | <input type="checkbox"/> Other _____             |

Once you determine the various boundaries your community wants to include, draw them on your map. Many of these boundaries may overlap. Look for the outermost boundaries and the innermost boundaries. Consider who the boundaries include and who they leave out. Decide where the outer boundary of your community lies and ink in this boundary. Try not to draw through individual properties. Make sure that there is nothing outside of this boundary that would be important to your community.

## Establishing Zones

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After determining your community boundaries take a step back from looking at the map and think about where it is that people live, work and play. Then look to see if there are any major roads, railways, rivers or mountains or hilltops that divide these areas. You should also think about how people in the community think of themselves. For example, do the people south of the highway relate to those north of the highway? Are there parts of the community that are occupied year-round and parts occupied by week-enders and/or summer residents? These are the types of questions you should consider. Dividing the community into zones is also helpful when considering hazards because it enables you to identify the areas that may be more likely to experience hazards.

You may want to characterize various zones in your community for the benefit of planning. For example, you could:

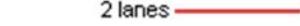
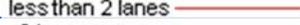
- Divide your community up into zones on a map that are parallel to your community's evacuation zones.
- Identify zones by usage. For example, residential, schools, golf course, recreational, industrial, commercial etc.
- Identify high-risk and low-risk zones.
- Explore other possibilities. What makes sense in your community?

## Mapping Symbols

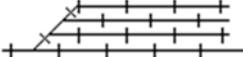
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The majority of the following symbols are used on Canadian National Topographic System (NTS) maps and have been standardized to simplify the mapping process. Others were added to symbolize features that may be important to Aboriginal communities. Your community may also wish to develop symbols that are meaningful to you. Be sure to include all symbols you use in your legend so that others will understand what is being shown on the map. The tables below describe some of the common symbols used on NTS maps and are included from the Centre for Topographic Information, Natural Resources Canada. You can also go to the Canadian National Topographic System website to learn more: <http://www.nrcan.gc.ca/earth-sciences/geography/topographic-information>

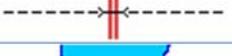
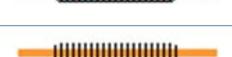
## Transportation Features - Roads and Trails

Feature Name	Symbol
Road - hard surface, all season	dual highway 
Road - hard surface, all season	more than 2 lanes  2 lanes  less than 2 lanes 
Road - loose or stabilized surface, all season	2 lanes or more  less than 2 lanes 
Road - loose surface, dry weather	
Rapid transit route, road	
Road under construction	
Vehicle track or winter road	
Trail or portage	
Traffic circle	
Highway route number	

## Transportation Features - Railways and Airports

Feature Name	Symbol
Railway - multiple track	
Railway - single track	
Railway sidings	
Railway - rapid transit	
Railway - under construction	
Railway - abandoned	
Railway on road	
Railway station	
Airfield; Heliport	
Airfield, position approximate	
Airfield runways; paved, unpaved	

### Other Transportation Features - Tunnels, Bridges, etc.

Feature Name	Symbol
Tunnel; railway, road	
Bridge	
Bridge; swing, draw, lift	
Footbridge	
Causeway	
Ford	
Cut	
Embankment	
Snow shed	
Barrier or gate	

### Hydrographic Features - Naturally Occurring

Feature Name	Symbol
Falls	
Rapids	
Direction of flow arrow	
Dry river bed	
Stream - intermittent	
Sand in Water or Foreshore Flats	
Rocky ledge, reef	
Flooded area	
Marsh, muskeg	
Swamp	
Well, water or brine; Spring	
Rocks in water or small islands	
Water elevation	

## Hydrographic Features - Human Made

Feature Name	Symbol
Lock	
Dam; large, small	
Dam carrying road	
Footbridge	
Ferry Route	
Pier; Wharf; Seawall	
Breakwater	
Slip; Boat ramp; Drydock	
Canal; navigable or irrigation	
Canal, abandoned	
Shipwreck, exposed	
Crib or abandoned bridge pier	
Submarine cable	
Seaplane anchorage; Seaplane base	

## Terrain Features - Geology and Geomorphology

Feature Name	Symbol
Cliff or escarpment	
Esker	
Pingo	
Sand	
Moraine	
Quarry	

### Terrain Features - Elevation

Feature Name	Symbol
Horizontal control point; Bench mark with elevation	
Precise elevation	
Contours; index, intermediate	
Depression contours	

### Terrain Features - Land Cover

Feature Name	Symbol
Wooded area	
Orchard	
Vineyard	
Berry Patch	
Sugar Bush	
Wild Rice	
Medicinal Plants	
Protected Area	

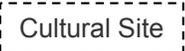
### Human Activity Symbols - Recreation

Feature Name	Symbol
Sports track	
Swimming pool	
Community Centre	
Snow Mobile Trails	
Fishing Area	
Hunting Ground	
Campground; Picnic site	
Hockey Rink	
Historic site or point of interest; Navigation light	
Trap Lines	

## Human Activity Symbols - Agriculture and Industry

Feature Name	Symbol
Silo	
Elevator	
Greenhouse	
Wind-operated device; Mine	
Landmark object (with height); tower, chimney, etc.	
Oil or natural gas facility	
Pipeline, multiple pipelines, control valve	
Pipeline, underground multiple pipelines, underground	
Electric facility	
Power transmission line multiple lines	
Telephone line	
Fence	
Crane, vertical and horizontal	
Dyke or levee	
Firebreak	
Cut line	
Landfill	
Water Treatment Plant	

## Human Activity Symbols - Buildings

Feature Name	Symbol
School; Fire station; Police station	   Police
Church; Non-Christian place of worship; Shrine; Sacred Space	   
Cultural site, meeting site	
Building	  
Service centre	
Customs post	
Coast Guard station	
Cemetery	
Ruins	
Fort	

## Mapping Resources

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### Internet-Based Mapping Websites

#### Google Maps

<http://www.google.com/earth/>

Google Earth has long been known as a great site to visit to get a 3D picture of your community. You will have to download and install files (they're free) to use Google Earth. Google Earth also has a "pin" feature which lets you add pins or markers to key sites on your map. You can also add in other features as described on the screen, including weather patterns, parks, etc.

#### Mapquest

<http://www.mapquest.com/maps>

MapQuest is easy to use – simply enter the name of your community and use the zoom slide to get to the best map of your community. You can also convert your map into an aerial map and display various businesses in your community.

#### ArcGIS Online

<http://www.arcgis.com/features/>

ArcGIS online is a powerful online mapping software platform. It comes at a cost but you can you can customize the map online to fit your community needs. Members of the community can also log in and add features to the map over time. ArcGIS online requires a strong Internet connection so if you are a remote community it may not be the best option.

## AWhere

<http://www.awhere.com/en-us>

The AWhere web-based platform allows users to build a map using AWhere's extensive database of weather data, administration boundaries and socio-economic data. Users cannot currently upload their own data, so it is important to first check with AWhere if using their platform will work for your community. AWhere also works with Open Data Kit (ODK) software that allows users to upload data directly to the map using their Google smart phones. iPhone and Blackberry currently are not compatible with ODK software. This allows for a customizable, real-time map with weather data that can be consulted online. AWhere software is often used in developing nations and does not require a high-quality Internet connection. The cost of using the service is \$25-\$75 per month depending on the amount of users.

### Other Web-Based Mapping Software:

- ActivityInfo: Similar to AWhere's web-based platform that allows users to create a map using ActivityInfo's database and upload new data directly using ODK software. <https://about.activityinfo.org>

## GIS Data Sources

### National Data

- Geo-Gratis: <http://www.geogratis.gc.ca/>
- GeoConnections: <http://geodiscover.cgdi.ca/>
- Atlas of Canada: <http://atlas.nrcan.gc.ca/>
- Government of Canada Open Data Portal: <http://open.canada.ca/>
- Environment Canada: <http://www.ec.gc.ca/scitech/default.asp?lang=En&n=EE731FE6-1>

### Provincial Data

#### Alberta

- Alberta Open Data Portal: <http://data.alberta.ca>
- GeoDiscover Alberta: <https://geodiscover.alberta.ca/geoportal/catalog/main/home.page>
- AtlaLIS: <http://www.altalis.com>
- First Nations Alberta Technical Services: <http://www.tsag.net/programs/environment/gis/>

#### British Columbia

- DataBC: <http://www.data.gov.bc.ca>
- GeoBC: <http://geobc.gov.bc.ca>
- Open Data BC: <https://www.opendatabc.ca>
- Community Mapping Network BC: <http://www.cmnbc.ca>

#### Manitoba

- Manitoba Land Initiative: <https://mli2.gov.mb.ca/index.html>

Maritimes (New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island)

- GeoNB: <http://www.snb.ca/geonb1/>
- Open Data Newfoundland and Labrador: <http://opendata.gov.nl.ca>
- Newfoundland and Labrador Statistics Agency: <http://www.stats.gov.nl.ca/Maps/>
- Community Mapping Infrastructure System Newfoundland and Labrador: <http://nlcims.ca/CIMS.aspx>
- GeoNova: <http://www.novascotia.ca/geonova/home/default.asp>
- PEI GIS Data Catalogue: <http://www.gov.pe.ca/gis/>

#### Ontario

- Provinces of Ontario Open Data Portal: <http://www.ontario.ca/government/government-ontario-open-data>
- Ontario Topographic Data: <http://canadiangis.com/how-to-get-ontario-topographic-data-for-your-gis.php>
- Ministry of Natural Resources: [http://www.mnr.gov.on.ca/en/STEL02\\_168321.html](http://www.mnr.gov.on.ca/en/STEL02_168321.html)
- Ontario Ministry of the Environment: [http://www.ene.gov.on.ca/environment/en/resources/collection/data\\_downloads/index.htm](http://www.ene.gov.on.ca/environment/en/resources/collection/data_downloads/index.htm)
- Ontario Basic Mapping: <http://www.geographynetwork.ca/website/obm/viewer.htm>

#### Quebec

- Energie et Ressources Naturelles Quebec: <http://www.mern.gouv.qc.ca/english/maps/index.jsp>
- Quebec Ouvert: <http://www.quebecouvert.org>

#### Saskatchewan

- GeoSask: <http://opendatask.ca/data/>
- Information Services Corporation of Saskatchewan: <https://www.isc.ca/MapsandPhotos/GISData/Pages/default.aspx>
- Saskatchewan Water Security Agency: <https://www.wsask.ca/>

#### Territories (Northwest Territories, Nunavut, Yukon)

- NWT Centre for Geomatics: <http://www.geomatics.gov.nt.ca>
- ATLAS (Administration of Territorial Land Act Systems): <http://gis.maca.gov.nt.ca/Website/index.asp>
- Nunavut Geoscience: [http://nunavutgeoscience.ca/mirage/index\\_e.php](http://nunavutgeoscience.ca/mirage/index_e.php)
- Geomatics Yukon: <http://www.geomaticsyukon.ca>

## Municipal Data

Many municipalities' websites in Canada provide interactive maps and data to create maps. The type of information and quality will differ from municipality to municipality but this can be a good starting point when looking for data to create your community map.

## Other

### Provincial Geological Organizations

The following are examples of the types of maps that are available on provincial and territorial geological websites. They may be of assistance to you in completing your community map:

- Timber harvesting maps
- Resource development zones and protected areas

- Landscape units
- Old growth management areas
- Winter ranges for moose
- Key wetlands for moose
- Critical fish habitat and stream classification
- Back country
- Resource management areas
- Water Management (flood watch, habitat protection, stream flows and lake levels)
- Mineral access, tenures and much, much more.

Examples:

- Alberta Geological Survey: <http://www.ags.gov.ab.ca/gis/index.html>
- Geology Ontario: <http://www.mndm.gov.on.ca/en/mines-and-minerals/applications/geologyontario>

## Department of Fisheries and Oceans

<http://www.dfo-mpo.gc.ca/index-eng.htm>

The Fisheries and Oceans Canada website provides you with extensive maps and information on:

- Administrative boundaries;
- Aquaculture;
- Biological resources;
- Fisheries;
- Marine ecological classification;
- Offshore oil and gas and fishery disruption;
- Fishery statistics;
- Harbors.

## Community Maps

- Your community volunteer fire department will most likely have a good map of your community that you could use
- On First Nations reserves, your Health Clinic or Band Office (e.g., public works or housing department) will have a map
- If you have a mutual aid agreement with a neighbouring municipality they may have a map of your community
- If you have a Search and Rescue (SAR) Team they will have a map of your community
- Your local regional and/or district representatives may have community maps
- You can access the Atlas of Canada from Natural Resources Canada and they will assist you in locating a map of your community. The cost ranges given the size and amount of detail on the map: <http://atlas.nrcan.gc.ca/>
- Provincial or territorial mapping and geography organizations
- Provincial or territorial community information databases
- Your local museum, historical centre or school library may have copies of a map of your community
- Your Tribal/Grand Council, Metis Council or town hall may have a map of your community
- The Canadian Cartographic Association may be able to locate a map for you: <http://cca-acc.org>

## Areas, Zones and Symbols

- For regional and district boundaries and associated services, contact your regional and/or district representatives and/or visit associated websites
- For school district boundaries contract your local school districts and/or visit associated websites
- For electoral and district boundaries contract your local government
- The Community Information Database has data regarding Economic Zones or Areas: <http://www.cid-bdc.ca/english/index.html>
- For RCMP and provincial policing areas, contact local and/or regional police
- For fire protection areas contact local and/or regional fire departments
- For census track information, go to: <http://www12.statcan.gc.ca/census-recensement/index-eng.cfm>
- Further to the symbols provided above the USGS has a publication that provides more symbols and information on how to create new symbols: <http://pubs.usgs.gov/gip/TopographicMapSymbols/topomapsymbols.pdf>