Hazard Resilience Index

Overview and Instructions

The Hazard Resilience Index (HRI)

The *HRI* provides an assessment of the community's resilience in the face of locally-identified hazard-risk priorities. Based on best practice in disaster and emergency management, community-based interviews, and pilot testing in rural, remote and coastal communities, the *HRI* represents an integrated approach to resilience assessment that has been adapted to more accurately represent the realities in rural, remote and Indigenous communities in Canada.

The *HRI* is designed to help communities assess their strengths, assets, and vulnerabilities across a wide range of community characteristics and resources in order to build resilience enhancement plans that are best suited to your community's geography, livelihoods and people. Part of a comprehensive disaster resilience planning process, the *HRI* is based in the principle that resilience starts from the ground-up, not the top-down. Further, it acknowledges that to be successful, community resilience planning should capitalize on local and Traditional Knowledge, existing skills and the resilience that is often characteristic of people and communities that have to cope with geographic isolation, weather extremes, and limited access to technical expertise and resources for disaster planning.

Whether your community has a formal disaster plan or not, there are many things that individuals, households, businesses and organizations can do to reduce risks and to increase resilience for potential threats and disasters. These efforts are basic things that can be done by individuals in the community, such as: increasing awareness through education and public safety campaigns, ensuring that common safety precautions (e.g., smoke detectors) are in place, knowing who has special skills and equipment that might be helpful in an emergency or disaster, and knowing what to do and when should an emergency or disaster occur.

Working with the HRI and the Community Resilience Index (CRI)

The *HRI* can be used in conjunction with the *Community Resilience Index* (*CRI*), to generate a dynamic portrait of a community's disaster resilience. When using either of these tools remember that a significant benefit of the process of assessing resilience arises from the discussions that it generates and the increased awareness of disaster preparedness, disaster risk reduction, and disaster resilience this can create in the community. Remember, as well, that it is sometimes

equally important to know what you do not have in place and what is not a strength for your community as it is to know what is a strength, because this can guide your community's future goals, planning and actions.

Instructions: How to use the Hazard Resilience Index

There are 17 categories of hazards against which you will assess your resilience (see table below). In an ideal world, you would assess all of these hazards, but your planning team may decide to initially focus on a subset of hazards. How you determine which hazards to start with could be based either on those hazards that residents are most concerned about (e.g., based on past events) or you may wish to start with hazards that have recently impacted a community elsewhere that has prompted local concern (e.g., pandemic disease). If you decide not to assess all hazards faced by your community at this time, you will want to come back to the other hazards later. It is often the hazards that you do not anticipate that can have a serious impact on your community. However, you are encouraged to use an all-hazards approach in developing your community's plan since many preparedness, education and structural activities can be designed for several hazards at once.

Here are five steps to assist you to complete the *Hazard Resilience Assessment*:

1. Decide on which hazards you will start with:

- Each hazard has a number of factors that describe that hazard (descriptions of each hazard are available in the *Hazard Risk Analysis* (*HRA*).
- To assess your resilience to each type of hazard you will rate the factor questions in the *Hazard Resilience Index* (*HRI*).

2. Rate the factors for each hazard:

- Rate your community's resilience against each factor using the following scale (this appears in the *HRI* in columns to the left of the list of factors):
    - Yes
    - No
    - Need More info
    - Not Applicable
- Place a check in the "yes" box next to each factor you believe is "strong" in your community.
- If you believe the factor is either not present or present only in a in a minor way, check "No".
- There may be some factors you think do not apply to your community, or for which you need more information. In this case, check "Not Applicable", "Needs More Information" or cross that factor out (if completing the assessment manually) so that this factor does not count in your assessment of that hazard.
- Before crossing anything off, be careful to consider whether the action or condition is something that you may not have in the community at this time but that would be important to develop in the future. If this is the case, you would not cross off that factor.
- If you are working in a group, we suggest that you go through each factor and discuss your assessment before deciding which box to check.

3. Highlight factors that are important to your community:

If you feel that any factor is particularly important to your community, and you want to make sure to identify it as something you want to focus on in your plan. To allow you to prioritize those factors after you complete the assessment, check the "important to my community" box in the right column.

4. Rate your community's overall resilience for each hazard:

- Once you have finished rating all of the factor boxes for a single hazard, review your checks and rate your community's resilience on that hazard using the following scale:
  - High Resilience
  - Low Resilience
  - Need More Info
  - Not Applicable

  Be sure you use the "Not Applicable" rating only for those hazards that have **absolutely no chance** of taking place in your community – for example, a tsunami in Saskatchewan. In some cases, there may be hazards for which you need more information to be able to assess them. In this case, you may want to check "Need More Info" and see whether others in the community have information that could help you more fully assess this dimension.

5. Complete the Integrated Resilience Profile Template:

- Once you have completed both the *Community Resilience Index* (*CRI*) and the *Hazard Resilience Index* (*HRI*), turn to the *Integrated Resilience Profile Template* to learn how to record and analyze your responses.
- This *Profile* will be the basis for building your community's *Resilience Plan*.

Comprehensive Classification and Type of Hazards

Category	Hazard
Accidents	Airplane Crashes Marine Accidents Motor Vehicle Crashes Train Derailments
Astronomical	Asteroid, Comets, and Meteor Crashes Geomagnetic Storms Space Object Crashes
Atmospheric	Blizzards Climate Change Drought Extreme Cold Fog Frost Hailstorms Heat Waves Hurricanes Ice Fogs, Ice Storms, and Freezing Rain Lake-Effect Storms Lightning and Thunderstorms Microbursts Sea Storms and Sea Surges Seiche Snowstorms Tornadoes and Waterspouts Windstorms
Conflictual Social Action	Conflictual Social Action
Contamination	Air Pollution Soil Contamination Water Contamination
Dam Failure and Structural Collapse	Dam Failure Structural Collapse – Buildings Structural Collapse - Transportation
Diseases	Diseases - Animals - Air & Water Diseases - Animals - Human Transmitted Diseases - Animals - Animal Transmitted Diseases - Human - Air and Water Transmitted Diseases - Human - Animal Transmitted Diseases - Human - Human Transmitted Diseases - Human - Food Transmitted Diseases - Plants - Human Controlled Diseases - Plants – General Diseases - Plant and Pest Infestations
Earthquakes, Tsunamis & Volcanoes	Earthquakes Tsunamis Volcano-Ash Falls, Projectiles and Lateral Blasts, Pyroclastic Flows and Lava Flows
Fires	Brush, Bush and Grass Fires Community Structural Fires Community Interface Fires Forest Fires or Wildfires Peat Bog Fires

Category	Hazard
Food Shortages	For communities that depend mostly on local food for sustenance For communities that depend mostly on food grown elsewhere for sustenance
Geological Hazards	Dust and Sand Storms Erosion, Accretion and Desertification Expansive Soils Gravitational Mass Movement (Landslides) Land Subsidence and Sinkholes Submarine Slides
Hazardous Material Spills, Explosions and Oil Pipeline and Gas Leaks	Gas Explosions and Gas Leaks Mine Explosions Oil Pipeline Leaks Other Explosions Hazardous Material Spill - On Site Hazardous Material Spill - Air Transport Hazardous Material Spill - Marine Transport Hazardous Material Spill - Land Transport Hazardous Material Spill - Rail Transport
Hydrological (water and snow) Hazards	Avalanches - Natural and Human Caused Flash Floods Ice Jam Floods Local Floods Rain Storm Floods Snow Melt Floods Glaciers Icebergs, Sea Ice and Ice floes Lake Outbursts
Nuclear Failure	Nuclear Accidents
Power and Water Outages	Power Outages Water Outages
Riots	Riots
Terrorism	General Biological Chemical Cyber Terrorism Explosives and Bombs Nuclear