

## Hazard, Risk and Vulnerability Analysis Toolkit (HRVA)

British Columbia Ministry of Public Safety and Solicitor General

### Organisation

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British Columbia Provincial Emergency Program

**Mission:** The Provincial Emergency Program, as an essential part of the public safety network of British Columbia, will be the leader in emergency management, helping people to prepare for, respond to and recover from emergencies and disasters.

**Vision:** The Provincial Emergency Program's Mission is to enhance public safety and reduce property and economic loss from actual or imminent emergencies or disasters by:

- mitigating the effects of emergencies and disasters through education and awareness;
- promoting preparedness through planning, training and exercising;
- coordinating and assisting in response activities;
- developing and implementing recovery measures.

Weblink: <http://www.pep.bc.ca>

### Bibliographical details

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File size: 1.5 MB

### Abstract

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This is a step-by-step toolkit that describes the process enabling a committee chair and a small working group to complete a hazard, risk and vulnerability analysis (HRVA). The purpose of an HRVA is to anticipate problems and possible solutions to help save lives and property, reduce damage, and speed a community's recovery. The HRVA aims to help a community make risk-based choices based on the acceptability of consequences and the frequency of hazards, to address vulnerabilities, mitigate hazards and prepare for response to and recovery from hazard events.

The publication advises that a thorough analysis requires a commitment of time in order to make recommendations to community leaders and improve emergency plans. The toolkit provides tools

such as forms, sample agendas, checklists and schedules. A web HRVA application, which is also available in Spanish, can be used to create a preliminary HRVA report. Although the web application is based on data from the province of British Columbia, it can provide immediate feedback on how changes to hazard scenarios impact on priorities for action.

## **Intended end users**

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The HRVA tool kit is for **emergency managers, planners and consultants**.

## **Geographical focus**

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This document was developed in the province of British Columbia, **Canada** and is intended to support the local, provincial authorities in designing their emergency preparedness plans. It can be used in **communities** and **neighbourhoods**, and possibly **regions** if subdivided into **sub-regions**. It is recommended to be used in locations where a similar voluntary Emergency Program Management Committees exist and there is commitment on the part of the community to the process of emergency management.

## **Type of Material**

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This publication is a **step-by-step manual** outlining the 8 step process for:

- ◆ Establishing an Advisory Committee
- ◆ Developing a workplan and task schedule
- ◆ Identifying, assessing and evaluating hazard and vulnerabilities
- ◆ Creating action plans and reporting to local authorities

The toolkit includes tools of a sample agenda, checklists, and a schedule as well as links to an interactive web-based HRVA java application which can be used to create a preliminary HRVA providing immediate feedback on how changes to hazard scenarios impact on priorities for action. The java application is available at: <http://www.pep.bc.ca/hrva/hazard.htm>

## **Language**

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This document is in English and the HRVA web java application is available in Spanish on request.

## **Scale of assessment**

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The scale of the assessment is focussed on the **community** level.

## **Type of assessment**

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This publication presents a Hazards, Risk and Vulnerability Analysis (HRVA) at the community level examining **hazards** (geohazard, infrastructure, animal and human) and **ranking** them according to severity scenarios for fatality, injury, critical facility failure, damage to lifelines, property damage, environmental impact, economic and social impact. Response and recovery **capacity** at the community level and beyond are also assessed.

## Analytical methods

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The principle method used is the **Hazard, Risk and Vulnerability Analysis (HRVA)**. This involves a mix of methods and tools such as scenario development, risk ranking, risk reduction and communication to assess, analyse and develop action plans for community level intervention.

*General Assessment methods include:*

- **Hazard Analysis**
- **Vulnerability Analysis**
- **Stakeholder Analysis**
- Capacity Analysis

## Tools

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Tools and examples are provided for the ranking methodology, checklists for hazards, impacts, vulnerabilities, risk reduction strategies, and public communication stakeholders. A sample analysis and training package is included. Supporting HRVA web software is also available to create a preliminary analysis and provide immediate feedback on how changes to hazard scenarios impact on priorities for action.

*The participatory tools include:*

- ♦ **Hazard and Resource Mapping**
- ♦ **Risk Mapping**

*Technical tools include:*

- ♦ Ranking/ scoring
- ♦ Checklists/ Gantt Chart
- ♦ Template for degree of hazard risk profile is provided
- ♦ Computer web-based software to generate a report

## Notes on methods

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- ♦ The manual uses the HRVA model, suggests some participatory tools to use, and provides sample ranking, checklists and Gantt charts.
- ♦ The tools are described in detail and examples are provided for the ranking methodology, checklists for hazards, impacts, vulnerabilities, risk reduction strategies, and public communication stakeholders.
- ♦ Risk data and maps must be collected and links to subject matter experts for the province of British Columbia are provided in the online HRVA tool; this assessment model would require previous understanding of the field and the hazards affecting the community.
- ♦ A sample analysis and training package is included.

## Case studies / practical examples

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Throughout this document examples of application are provided. A sample training chapter is provided with a case study and exercises.

## **Resource people**

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A list of hazard subject matter experts is provided as a link from the HRVA website at: <http://www.pep.bc.ca/hrva/toolkit.html>. Contact information for contributing experts in the development of the document is available on page 7 of the publication.

## **Author of guidance note**

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The ProVention Consortium contracted Stephanie Bouris to author this guidance note.

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