

Telemeeting Notes

January 16, 2013, 10:30 – 11:30

1-877-413-4790 conference ID 3381344#



@RiskAUG

Introduction

The forum is the 16th of monthly opportunities to share knowledge about incorporating Hazus Risk Assessment into disaster reduction decisions in Canada. The NRCan Quantitative Risk Assessment Project of the Public Safety Geoscience Program supports the forum until November 2013 (or so, maybe longer).

Telemeeting program :

- 1 Introductions, news and views
- 2 Hazus Starter Kit - Building inputs for Hazus
- 3 Discussion

Attendees

Dan Campbell, Joe Drechsler, Nicky Hastings, Bruce Kelly, Glen Magel, Sarah North, Jean-René Rivard, Jessica Shoubridge, Bert Struik, Malaika Ulmi, Carlos Ventura, Marty Zaleski

News

Still space available in course for the Hazus Comprehensive Data Management System in March in Washington State. Contact Kelly.Stone@fema.dhs.gov for details.

NRCan and Environment Canada move forward with adaptation of the Hazus Flood Module for Canada.

Hazus Starter Kit - Building Assets for Hazus

by Bert Struik, Carol Wagner, Jean-Rene Rivard, Nicky Hastings, Murray Journeay, Jorge Prieto, Maggie Wojtarowicz, Malaika Ulmi: Geological Survey of Canada, BC

Slide deck and podcast available at <http://www.usehazus.com/canadianhug> > Hug Resources

The audio presentation was recorded and made available as file CanHUG_2013-01-16-v2.ogg. OGG files can be used through a Firefox or Chromium browser or through various audio-play software, of which VLC is an open source freeware that does the job on PC, MAC and Linux platforms. <http://www.videolan.org/vlc/index.html> The ogg file format was used because it creates a much smaller file than other audio compression formats.

Presentation Points and Discussion

Q = Question

A = Answer

C = Comment

Slide 1: Title slide

Slide 2: Starter kit concept

4 presentations on Hazus input meant to give potential and existing Hazus users an idea of data input requirements and the implications of having or not having certain data.

Slide 3: Hazus input types covered in the 4 presentations

Slide 4: This presentations overview

Q: When will the Canadian flood module be available?

A: August 2013. Hazus study regions will be changed to make level 1 analysis of flood areas meaningful. Only level 1 analysis will be made available in the August roll out.

Slide 5: Primary and most up to date and comprehensive data source is the city

Hazus asset data not normally found in city databases can be added to them making the databases Hazus ready.

C: The best asset inventory data is held for local authorities.

Slide 6: Defines assets

Everything people have built and otherwise cherish or need.

In Hazus it is only structures people have built (e.g. buildings, pipes, roads, rail...)

Slide 7: Hazus asset categories

These are used in the Hazus asset tables of the asset database.

Slide 8: Example of a loss estimation: earthquake on all inventory with losses of that inventory

Slide 9: Organization of Asset information in Hazus

In Canada, as in the USA, the geographic organization is by the Census units and their boundaries.

Slide 10: Geography organized by census units

Slide 11: Sample of two types of census units

For floods the lowest geographic division will be census dissemination areas (census blocks).

C: Flood geographic geometry

- lowest geography is a dissemination area
- includes land-cover areas
- will not include undeveloped areas

Slide 12: Database attributes used in Hazus for buildings

To use your building database in Hazus it would need measures or types for these attributes.

Each of these are described in detail in the Hazus technical manual

Material types are used to describe the type and amount of debris generated from a destructive event.

Location has to be in Lat and Long

Square footage is used to calculate overall amount of material affected

Replacement cost is used to calculate the cost of the losses. Without a replacement cost the dollar value of the damage cannot be calculated.

Hazus calculates damage only the input database (one of those obvious statements)

Seismic code determined from the lookup table in Hazus that assigns a date to introduction of a seismic code.

C: Seismic code application in Canada

The seismic code measure in the Hazus database is linked to a time period. In present Hazus Canada the seismic code measures used are those of the USA. They can be changed to your own specifications. In Canada we have different times for roll out of code provisions in the provinces. As example, Canada introduced the National Building code with its first seismic provisions in 1941. Some provinces did not adopt a building code until 1965.

In Canada

pre-seismic code means prior to application of any building code seismic provisions, so for the province that adopted building codes in 1965, all buildings prior to 1965 are pre-code.

1985 code has the most profound changes to the code to modern standards.

Q: what about retrofitted buildings (seismic upgrades)?

A: Buildings are seismically retrofit to the seismic provisions in the Building Code available at the time of retrofit design. So the code measure for that building would be based on the retrofit date. The seismic code for your database then would be the measure of the date of retrofit. Local communities would have that data.

First floor height is used to determine if the building must be evacuated or are otherwise displaced. As an example: that information gets used in emergency service calculations.

Foundation type is specific to detailed seismic loss calculations.

C: A municipality is not going to have this data available automatically. So they need to gather that information. They certainly won't have use Hazus codes.

A: Yes. Existing city information would need to be transformed into a new column of data specific for Hazus. For instance an occupancy code may be able to be derived from the city zoning code for the building. A conversion routine can be written for such a data build. Another example would be translating the location scheme into latitude and longitude; also can be done through a computer routine.

C: seismic code data through construction and retrofit can be captured from existing data, as long as the city is aware of the need to include that in its dataset.

The assessment data can be used to collect the replacement cost.

C: Access to property assessment data for building replacement costs can be obtained through the client for which you work.

C: Hazus provides algorithms for estimating the building replacement costs based on occupancy code and square footage. In lieu of actual replacement costs, the Hazus calculation provides a good estimate of replacement costs.

C: NRCan has a routine for converting BC assessment data into Hazus format data, including occupancy code. It was developed as a test. NRCan will share if people are interested.

C: Certain clients have access to proprietary data.

Slide 13: The provincial database

Data you populate the Hazus database with, replaces existing data in the Hazus Provincial database. You then extract data from the Provincial database to create a Hazus study region on which to do calculations.

Hazus Canada presently has just the residential and people assets only

C: Natural Resources Canada is acquiring a national data set for businesses in Canada. That data set will be converted to information useful for Hazus. It will eventually be added to the national inventory available with Hazus Canada, which presently has residential buildings only (and demographics).

Q: What would it include?

A: 1.4 million businesses. Retail, wholesale, industrial.

Q: Would have valuation for businesses?

A: We would create replacement costs from Hazus formulas.

Q: do I understand it right that the detailed data we put into the Provincial database replaces what is in there?

A: Yes.

Q: And the Provincial database is the one on your computer only, right?

A: Yes. It is only on your computer. It would be good to have a common one to share someday.

Q: Would adding into the provincial database create doubling of data?

A: CDMS tool replaces existing data with your data.

C: When you create a study region, Hazus takes the data from the Provincial dataset. After that Hazus only works on the study region dataset, and not the Provincial database.

Slide 14: Sample of a data table.

Bndrygbs.mdb is the main Hazus database where all the asset inventory data resides.

Slide 15: Sample

Slide 16: Essential Facilities data structure.

Slide 17: Update data in the provincial database

Slide 18: CDMS tool

Slide 19: Creating a study region from Provincial database.

Slide 20: Data for essential facilities

Slide 21: Advanced Engineering Building Model for Earthquakes and User Defined Facilities

C: AEEM can be replicated as attributes across the region

C: User defined can be aggregated up into the Provincial database

These allow you to analyze structure by structure.

Slide 22: UDF categories

Slide 23: AEEM extra parameters.

Slide 24: Conclusions

Your city database can be made Hazus ready.

C: It would be nice to have some examples of issues you have to deal with in the various Hazus modules. It would be good to share some experiences of what was described today. For example the infrastructure / lifelines input into Hazus is weakest.