University of Nevada, Reno

Nevada Bureau of Mines and Geology Open-File Report 09-7

Nevada Statewide HAZUS Database Update

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This report is an update of the database used in Nevada for estimating losses from possible earthquakes and floods with HAZUS, the Federal Emergency Management Agency's computer model. It is available for HAZUS users as an online document at www.nbmg.unr.edu.

The Nevada Bureau of Mines and Geology (NBMG) is a research and public service unit of the University of Nevada, Reno and is the State geological survey. Established by the Nevada Legislature as a department within the public service division of the Nevada System of Higher Education, NBMG is part of the Mackay School of Earth Sciences and Engineering within the College of Science and one of the Statewide Programs at the University of Nevada, Reno. NBMG's mission, to provide the State's needs for geological and mineral-resource information and research, is defined in its enabling legislation. NBMG scientists conduct research and publish reports that focus on the economic development, public safety, and quality of life in urban and rural areas of Nevada.

The Process:

All HAZUS "essential facilities" (schools, hospitals, emergency operations centers, and fire and police stations) were targeted for updating. Questionnaires were created for the 734 essential facilities that already existed in the database. The questionnaires were sent to each facility so that data could be confirmed or corrected. Questions included address, phone number, emergency contact person for the facility, year the facility was built, number of stories and number of people who could be sheltered there in the event of an emergency. Overall response from the questionnaire campaign was approximately 25%. Additional grass roots data mining (mainly phone calls and web searches) yielded updated data for another approximately 25% of the existing essential facilities. More importantly, dozens of new facilities were identified and incorporated into the database.

NBMG then updated demographics with the most recent available population estimates, because the next Census would not take place until 2010. Population estimates were found for 2005 for the entire state. The estimates were broken down on the census tract and census block levels, which are both required by HAZUS. The 2005 population estimates for the entire state of Nevada were successfully incorporated into the database.

Lastly, all state-owned buildings were added to the database to enhance the usefulness of the estimates to the state of Nevada. A database of state-owned buildings was acquired from the Nevada Division of Emergency Management in 2004. After the data were formatted to be accepted by HAZUS, the state-owned buildings were successfully incorporated into the Nevada HAZUS database.

The Data:

The statewide database is now ready for your use and can be found by following this link: www.nbmg.unr.edu/dox/of097/NV1.zip

This NEW statewide database (NV1.zip) has been updated to the 2005 demographics along with all the essential facilities (Schools, Hospitals, Emergency Operations Centers, Fire Stations, and Police Stations) and with over 600 state-owned building locations. The data can be unzipped in a location other than where your current NV1 statewide database is located.

After you have backed up your current NV1 folder to a safe location, remove the NV1 (your old NV1) and then copy the new NV1 in the same location. You should test your scenarios once you have replaced the NV1 database.

This new statewide database has been tested with the HAZUS MR3 program only. Please update to a minimum of HAZUS MR3. HAZUS MR4 is now out but this database has not been fully tested with the newer version of HAZUS.

NOTE: make sure you save your old NV1 in a secure location, in case your replacement NV1 does not appear to work properly.

NBMG would like to thank FEMA officials Douglas Bausch and Jesse Rozelle for their support and expertise in working with the demographic data to import it into the Nevada statewide database. In addition, they assisted us in moving the location of population centers to the towns within census tracts rather than keeping them at the default locations in the geographic centers (centroids) of those census tracts.

References

Federal Emergency Management Agency, 2003, *Multi-hazard loss estimation methodology, earthquake model, HAZUS-MH MR3 technical manual*, developed by the Department of Homeland Security, Emergency Preparedness and Response Directorate under a contract with the National Institute of Building Sciences, Washington, D.C., 16 chapters, and Multi-hazard loss estimation methodolory, earthquake model, HAZUS®MH MR3 user manual, 11 chapters. Electronic document available at http://www.fema.gov/library/viewRecord.do?id=3503.

Federal Emergency Management Agency, 2004, *Using HAZUS-MH for risk assessment, how-to guide*, HAZUS®-MH Risk Assessment and User Group Series, FEMA 433, 5 chapters: Electronic document available at http://www.fema.gov/library/viewRecord.do?id=1985.

Disclaimer

The information in this report should be considered preliminary and approximate. It has not been thoroughly edited or peer reviewed.

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