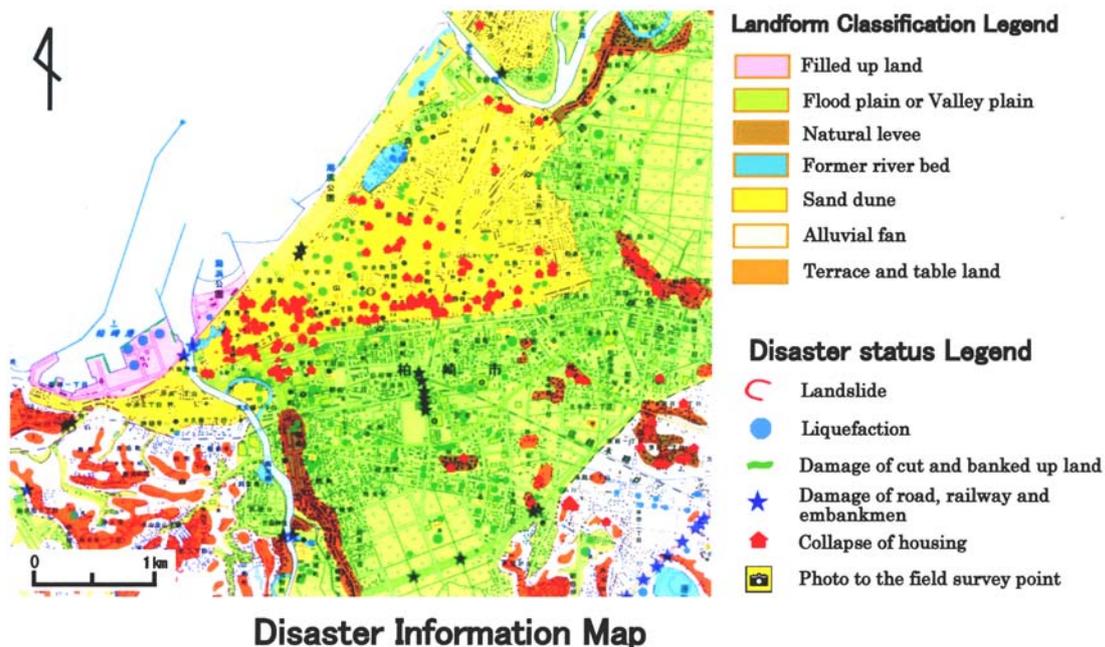


COMPILATION OF DISASTER INFORMATION MAP OF THE 2007 NIIGATAKEN CHUETSU-OKI EARTHQUAKE

The 2007 M 6.8 Chuetsu-oki earthquake occurred off the coast of the Chuetsu area, on July 16, 2007. It registered an upper 6 on the Japanese intensity scale in Kashiwazaki City, and caused a serious damage including collapse of housing, ground liquefaction, and landslides. The Geographical Survey Institute (GSI) conducted a field survey and examined the damage from the disaster in Kashiwazaki City and its surrounding area – the center of the disaster. GSI interpreted the damage by using aerial photos taken during their emergency survey and analyzed the correlation of damage and landforms of these areas. It was verified that many houses collapsed and liquefaction occurred especially in the region of sand dunes.



GSI performed post disaster investigations of the damage caused by landslides and liquefaction, to roads and railways, collapse of houses as well as their distribution and scales, which were compiled into a Disaster Status Map. The Map was made available to the public on GSI's Web Site.

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PRECAST SEGMENTAL CONCRETE BRIDGE COLUMNS FOR SEISMIC REGIONS

In recent years, growing attention has been given to the investigation, development and application of precast concrete bridge elements and systems for highway bridges. Cast-in-place concrete bridge construction normally causes traffic disruption for long periods of time. Precast concrete bridge construction offers a viable solution to this problem, by shifting most of the construction activities into precast factories where quality control is more reliable, thus minimizing traffic disruption and maintaining construction quality. Reducing on-site construction activities also means that work zone safety can be improved and environmental impact reduced.

Researchers at the University at Buffalo are conducting research funded by the US Federal Highway Administration (FHWA) to develop precast concrete bridge techniques for bridge substructure and superstructure for use in regions of moderate-to-high seismicity. Research collaboration has been established with the National Center for Research on Earthquake Engineering (NCREE) in Taiwan in the experimental study of the proposed precast segmental concrete columns. Results of seismic tests of the columns have showed that they possessed excellent ductility capacities that are adequate for use in regions of moderate-to-high seismicity. Moreover, the columns exhibited small residual displacements and little damage after two design earthquakes and one maximum probable earthquake. This means the proposed columns are able to remain fully functional after a major earthquake, which is critical to post-earthquake relief and reconstruction operations.

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Precast Segmental Column Prior to Seismic Testing