WESTERN STATES SEISMIC POLICY COUNCIL
POLICY RECOMMENDATION 21-2

Developing Earthquake and Tsunami Risk-Reduction Strategies

Policy Recommendation 21-2

WSSPC strongly encourages states, provinces, territories, First Nations, tribes, and local governments to form public-private partnerships to develop and continually update long-term, comprehensive statewide and community-level earthquake and tsunami risk-reduction strategies to reduce injury, loss of life, property damage and economic disruption from earthquakes and tsunamis.

Executive Summary

Given the high seismic activity and tsunami risk in the western states, provinces and territories, and the high risk of loss of life, property damage and economic loss due to earthquakes and related hazards, jurisdictions are encouraged to form partnerships that will develop earthquake and tsunami risk-mitigation plans and risk-reduction strategies that will benefit local communities. Mitigation policies and activities are long-term, multifaceted processes where effective coordination, collaboration and communication among partners are critical. Partnerships with the many state and regional collaborative efforts, involving emergency management and other agencies and private organizations that have been created in WSSPC states, provinces, and territories are critical in the effort to educate state and local policymakers about the importance of sound seismic and tsunami hazard policy.

Background

Mitigation of earthquake risks is a common interest among all the western states, territories, and provinces. FEMA's Report P-366 (April 2017) *HAZUS® Estimated Annualized Earthquake Losses for the United States*, clearly shows that the western states are most at risk, with 81% (~$5 billion) of the nation's estimated annual dollar losses (~$6.1 billion) from earthquakes. Coastal states and territories in the Pacific region also have been identified as facing a high to very high tsunami hazard (Dunbar and Weaver, 2016). WSSPC, as a consortium of 13 western states, 3 Pacific territories, and a Canadian territory and province, is the ideal organization to promote the benefits of earthquake and tsunami risk-mitigation policies, to promote collaboration among its members and the federal government, and to share mitigation successes between WSSPC and other organizations. From its inception, WSSPC has strongly supported reduction of losses from seismic and tsunami events through policy recommendations and annual conferences.

The benefits of proper mitigation and planning is highlighted by cost/benefit studies that show for every FEMA dollar spent on mitigation, seven dollars are saved in reduced disaster relief. This is determined by adding the one dollar spent to the six dollars saved. (source: *National Mitigation Investment Strategy (fema.gov)*, page 1). In addition, FEMA grants to mitigate natural-hazard risks are expected to save lives and injuries in future events (Multihazard Mitigation Council, 2005).

It is the responsibility and duty of the geological and emergency management community to organize and disseminate key information concerning proper earthquake- and tsunami-risk mitigation. WSSPC encourages its partners to collaborate through multi-state projects and other organizations, such as the National Earthquake Hazards Reduction Program (NEHRP) and National Tsunami Hazard Mitigation Program (NTHMP), to facilitate accurate, consistent, and cost-effective mitigation practices. WSSPC partners should continue to seek potential mitigation outreach activities, mitigation plan development, or construction projects, some of which may be eligible for funding through various mitigation program grants from FEMA or the states/territories. These efforts complement FEMA's Pre-Disaster Mitigation initiatives within the 2018-2022 FEMA Strategic Plan, as well as the 2018-2023 NTHMP Strategic Plan.

Comprehensive statewide and local earthquake and tsunami hazard mitigation plans and strategies should include the following elements:

- Assessment of all earthquake and tsunami hazards to quantify and define the risk to communities;
- Assessment of infrastructure risks;
- Implementation of land-use and development policies to reduce exposure to earthquake and tsunami hazards;
- Adoption and enforcement of the International Building Codes for the seismic and tsunami design, inspection, and construction of new buildings and structures;
- Adoption of the International Existing Building Code for the maintenance and retrofit of seismically "at risk" structures;
- Support for design and construction of tsunami vertical evacuation structures where they are needed;
- Development and implementation of retrofit, redevelopment, grant, and abatement programs to help strengthen existing structures, where necessary;
- Support of continuing public-education efforts and public/private partnerships to raise awareness of seismically induced threats and build constituent support for earthquake hazard reduction programs.

Safety of communities and infrastructure can only be accomplished though diligent, informed, and coordinated efforts of regulators and stakeholders. WSSPC will continue to play a key role in that organization and communication effort.

References

Dunbar, P., and Weaver, C., 2016, U.S. States and Territories National Tsunami Hazard Assessment: Historic Record and Sources for Waves – Update. Prepared for the National Tsunami Hazard Mitigation Program: published jointly by the National Oceanic and Atmospheric Administration and the U.S. Geological Survey, 59 p., *https://pubs.er.usgs.gov/publication/70159744*.

Federal Emergency Management Agency, 2017, HAZUS® Estimated Annualized Earthquake Losses for the United States: FEMA P-366, 78 p. *https://www.fema.gov/media-library-data/1497362829336-7831a863fd9c5490379b28409d541efe/FEMAP-366_2017.pdf*

Multihazard Mitigation Council, 2005, Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities: National Institute of Building Sciences, Washington, D.C., 2 Volumes. *https://www.nibs.org/?page=mmc_projects#nhms*

Assessment

Successes in policy implementation are occasions when the mitigation actions or requirements stated above are incorporated into public policies and decisions, and subsequently integrated into important public or private projects.

This statement of earthquake risk-reduction strategies should be adopted by all WSSPC partners. Successes should be submitted in a timely manner to WSSPC for posting on its website.

History

- WSSPC Policy Recommendation 18-2 was first adopted as Policy Recommendation 03-1 by unanimous voice vote of the WSSPC members at the Annual Business Meeting September 24, 2003 in Portland, Oregon.
- It was revised and re-adopted as WSSPC Policy Recommendation 06-1 by unanimous voice vote of the WSSPC members at the WSSPC Annual Business Meeting April 17, 2006 in San Francisco, California.
- It was revised and re-adopted as WSSPC Policy Recommendation 09-2 by unanimous voice vote of the WSSPC members at the WSSPC Annual Business Meeting February 11, 2009 in Salt Lake City, Utah.
- It was reformatted and re-adopted as WSSPC Policy Recommendation 12-2 by unanimous vote of the WSSPC members at the Annual Business Meeting April 10, 2012 in Memphis, Tennessee.
- Policy Recommendation 12-2 was revised and re-adopted as WSSPC Policy Recommendation 15-2 by unanimous voice vote of the WSSPC members at the Annual Business Meeting April 24, 2015 in Pasadena, California.
- WSSPC Policy Recommendation 15-2 was revised and re-adopted as Policy Recommendation 18-2 by unanimous voice vote of the WSSPC members at the Annual Business Meeting May 4, 2018 in Seattle, Washington.
- WSSPC Policy recommendation was revised and adopted unanimously at the 2021 Annual Business Meeting.