

Chapter 5

Regional Natural Hazards

**REGIONAL FRAMEWORK PLAN
CHAPTER 5 NATURAL HAZARDS**

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Chapter 5 Regional Natural Hazards

Introduction

Natural hazards provide a “reality check” to growth in any region, a yardstick against which we can ask, “Has the region’s future been built on solid ground?” This chapter includes policies concerning hazard mitigation, emergency preparedness, disaster response, and recovery.

Natural hazards that could potentially pose a risk in the Metro region include earthquakes, floods, landslides, volcanic events, wildfires, severe weather, and biological hazards. The risk of loss or damage from an earthquake depends on both the presence of seismically hazardous land (land subject to failure or strong effects from an earthquake) and the types of land uses occurring in those areas. Natural disasters such as a major earthquake will cause significant loss of life, injury and property damage. While vulnerability to hazards cannot be eliminated, implementation of the hazard mitigation policies described in this chapter will reduce human misery and property loss following a natural disaster. Metro has played an important role in assisting local emergency management agencies with disaster planning related to regional functions, such as disaster debris management and emergency transportation route designation.

This chapter includes the specific policies adopted to guide Metro in future planning for natural hazards. It addresses known regional natural hazards, and offers policy guidance for a comprehensive planning process that will help minimize the risks associated with such hazards to communities.

Policies

5.1 Earthquake Hazard Mitigation Measures

It is the policy of the Metro Council to:

- 5.1.1 Utilize the relative earthquake hazard maps for a variety of regional planning purposes, including:
 - a. Urban Growth Boundary selection.
 - b. Public facility plans.
 - c. Transportation planning.
 - d. Solid waste management plans.
 - e. Natural hazard mitigation programs.

- f. Parks and greenspaces planning.
- 5.1.2 Encourage local governments to utilize the relative earthquake hazard maps in developed and undeveloped areas as they undertake planning actions, including:
- a. Comprehensive land use plans updates.
 - b. Redevelopment plans updates.
 - c. Subdivision reviews.
 - d. Zoning.
 - e. Infrastructure plans updates.
 - f. Siting of new public facilities.
 - g. Siting of new public and private utility facilities.
 - h. Public and private facility emergency plan updates.
 - i. Developing retrofit and other mitigation programs.
 - j. Emergency response planning.
- 5.1.3 Encourage local governments to set requirements for where site-specific seismic hazard evaluation is needed.

5.2 Flood Hazard Mitigation Measures

It is the policy of the Metro Council to:

- 5.2.1 Protect the function of floodplains to safely convey floodwaters in the region by:
- a. Collaborating with federal agencies and local governments to use the February 1996 flood elevation and other relevant data to update the existing 100-year floodplain map.
 - b. Requiring local governments to maintain or increase the flood storage and conveyance capacity of floodplains through such measures as balancing fill in the floodplain with an equal or greater amount of soil material removal.
- 5.2.2 Encourage local governments to implement approaches for mitigating flood hazards such as:

- a. Acquisition, relocation or flood proofing of vulnerable facilities.
 - b. Changing local development ordinances related to height requirement above base flood elevation.
 - c. Allowing cluster or planned unit development that keep buildings out of floodplains.
 - d. Overlay zoning that sets public health, safety or welfare requirements.
 - e. Subdivision development requirements for locating public utilities and facilities (such as sewer and water systems) to minimize flood damage.
 - f. Construction of levees and floodwalls to mitigate flood hazards, particularly in densely developed urban areas, but should only be utilized when potential upstream and downstream damage is expected to be minimal.
 - g. Plans to leverage federal, state and local disaster assistance and hazard mitigation funds that may become available following a flood event.
 - h. Long-term capital improvement plans should be prepared and include provisions to elevate above the floodplain essential buildings for public health, safety and welfare services.
 - i. Flood threat recognition and/or warning systems should be investigated for cost-effectiveness.
- 5.2.3 Encourage the avoidance of floodplain development and other non-structural flood mitigation measures instead of using levee and dike construction and other structural flood mitigation techniques.

5.3 Landslide Hazard Mitigation Measures

It is the policy of the Metro Council to:

- 5.3.1 Encourage local governments to adopt landslide mitigation measures including:
- a. Logging regulations on steep slopes.
 - b. Landscape requirements.
 - c. Drainage controls.
 - d. Pre-development geotechnical studies.

- 5.3.2 Encourage local governments to limit development in the areas of greatest landslide hazard, except where development contributes to mitigation of the hazard. Such development should include appropriate safeguards and facilitate disaster response in the event it becomes necessary.
- 5.3.3 Encourage local governments to investigate and take part in Federal Emergency Management Agency “mudslide” and “mudflow” insurance programs through the National Flood Insurance Program.

5.4 Volcanic Hazard Mitigation Measures

It is the policy of the Metro Council to:

- 5.4.1 Collaborate with federal, state and local agencies to evaluate the regional risks of pyroclastic events, and encourage local governments to adopt appropriate hazard mitigation measures.

5.5 Wildland-Urban Interface Fire Mitigation Measures

It is the policy of the Metro Council to:

- 5.5.1 Collaborate with federal, state and local agencies to evaluate the regional risks of wildland-urban interface fires, and encourage state and local governments to adopt appropriate hazard mitigation measures which may include:
 - a. Collecting data related to fuel load and mapping vulnerable areas.
 - b. Identifying areas of steep slopes with limited year-round water availability.
 - c. Regulating highly flammable material on structures, for example wooden roof shingles.
 - d. Adequate roadway requirements to assure response by fire protection agencies.
 - e. Adequate placement of fire suppression water hydrants.
 - f. Landscaping regulation to improve fire resistance.

5.6 Severe Weather Hazard Mitigation Measures

It is the policy of the Metro Council to:

- 5.6.1 Collaborate with federal, state and local agencies to evaluate the regional risks of severe weather events, and encourage local governments and private organizations to adopt appropriate hazard mitigation measures which may include:

- a. Encouraging replanting with wind-resistant trees near power lines and other sensitive facilities.
- b. Incentives to retain larger stands of trees in newly developed areas, rather than preserve widely separated trees which are more vulnerable to wind fall.
- c. Incentives for drought-resistant landscaping.
- d. Improving public understanding of severe weather warnings and improving implementation of protective actions by governments, businesses and individuals.
- e. Encouraging vegetation management programs by utilities and local jurisdictions to reduce potential damages from the effects of severe weather events.

5.7 Biological Hazard Mitigation Measures

It is the policy of the Metro Council to:

- 5.7.1 Collaborate with federal, state and local agencies to evaluate the regional risks of biological hazards, and encourage local governments to adopt appropriate hazard mitigation measures which may include:
 - a. Support for existing insect and vector control programs to reduce the population of mosquitoes, flies, rats, etc., for disease prevention.
 - b. Regulatory structure to create or preserve habitat for appropriate urban wildlife, while discouraging inappropriate urban wildlife such as large predators.

5.8 Other Hazard Mitigation Measures

It is the policy of the Metro Council to:

- 5.8.1 Collaborate with federal, state and local agencies to evaluate the regional risks of other natural hazards, and encourage local governments to adopt appropriate hazard mitigation measures.

5.9 Natural Disaster Response Coordination

It is the policy of the Metro Council to:

- 5.9.1 Provide leadership and support to the Regional Emergency Management Group (REMG) and encourage local governments to participate in the existing intergovernmental agreement and to provide the resources required to develop a regional disaster response plan.

- 5.9.2 Collaborate with federal, state and local agencies, businesses and individuals to utilize the resources of Metro's Regional Land Information System and Natural Hazards Program data in developing a region-wide emergency management information system to improve disaster response coordination.