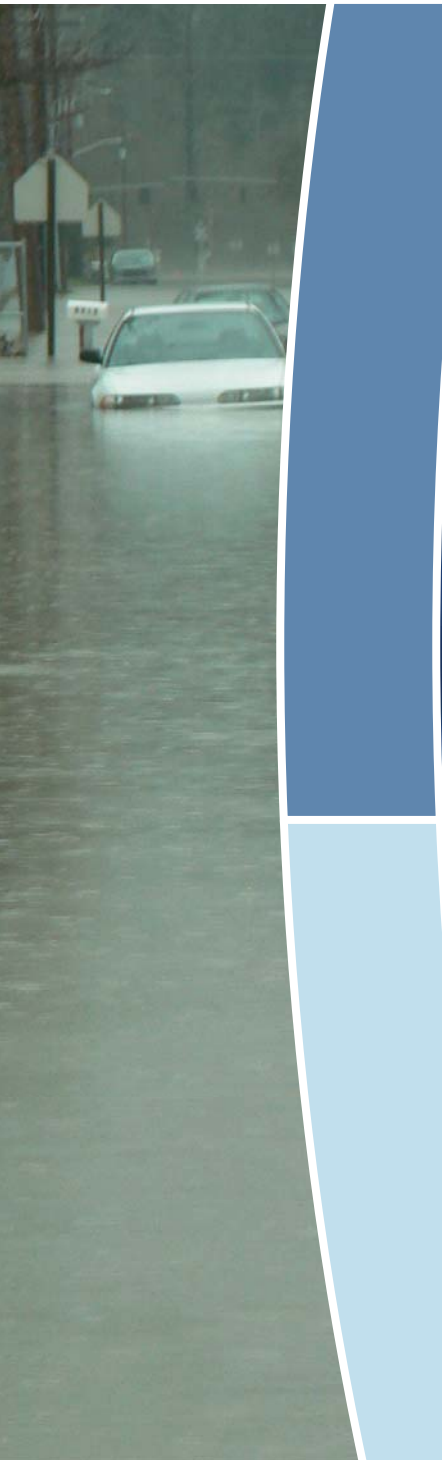



King County
Office of Emergency Management

King County Regional Hazard Mitigation Plan Update

EXECUTIVE SUMMARY

Agency Review Submittal
July 2014



TETRA TECH

EXECUTIVE SUMMARY

Hazard mitigation is the use of long-term and short-term policies, programs, projects, and other activities to alleviate the death, injury, and property damage that can result from a disaster. King County and a partnership of local governments within the County have developed and maintained a regional hazard mitigation plan to reduce risks from natural disasters. The plan complies with hazard mitigation planning requirements to maintain eligibility for funding under Federal Emergency Management Agency grant programs.

PREVIOUS HAZARD MITIGATION PLANNING IN KING COUNTY

Federal regulations require periodic updates of hazard mitigation plans to reevaluate recommendations, monitor the impacts of actions that have been accomplished, and determine if there is a need to change the focus of mitigation strategies. A jurisdiction covered by a plan that has expired is no longer in compliance with the federal requirements for hazard mitigation planning.

King County and a coalition of 39 planning partners prepared an initial hazard mitigation plan that was approved by the Federal Emergency Management Agency in November 2004. This document represents the second comprehensive update (the first update was made in 2009). The 2009 plan update process was truncated after back-to-back disasters in 2009—January flooding and March snowstorms—and the emergence of a significant flooding threat in the Green River Valley due to problems at Howard Hanson Dam. The truncated process resulted in a significant decrease in planning partners covered by the regional plan (12 local governments). Many of the original planning partners developed their own plans or let their plans expire. This 2014 update is a return to a truly regional planning effort. Fifty-four local governments are covered by this plan update, including King County, 26 city and town governments, and 27 special purpose districts, as listed in Tables ES-1 and ES-2.

The team that prepared the current update also prepared a five-year progress report of actions completed by all planning partners whose existing plan is replaced by this update. In the reporting period covered by the report, the partners started or completed 165 of 283 initiatives, 58 percent.

TABLE ES-1.
MUNICIPAL PLANNING PARTNERS

King County	City of Issaquah	City of Renton
City of Algona	City of Kent	City of SeaTac
City of Auburn	City of Kirkland	City of Shoreline
City of Bothell	City of Maple Valley	City of Snoqualmie
City of Burien	City of Medina	City of Tukwila
City of Carnation	City of Mercer Island	City of Woodinville
City of Clyde Hill	City of North Bend	Town of Beaux Arts Village
City of Duvall	City of Pacific	Town of Hunts Point
City of Federal Way	City of Redmond	Town of Skykomish

TABLE ES-2.
SPECIAL PURPOSE DISTRICT PLANNING PARTNERS

Coal Creek Utility District	Shoreline Fire
Covington Water District	Skyway Water & Sewer District
Highline Water District	Soos Creek Water & Sewer District
Kent Fire	Southwest Suburban Sewer District
Kent School District	Valley Regional Fire Authority
King County Fire District No. 2	Valley View Sewer District
King County Fire District No. 45	Vashon Island Fire & Rescue
King County Hospital District No. 2 (EvergreenHealth)	Water District 111
Midway Sewer District	Water District 125
North City Water District	Water District 19
Public Hospital District No. 1 (Valley Medical)	Water District 20
Riverview School District	Water District 90
Ronald Wastewater District	Woodinville Water District
Sammamish Plateau Water & Sewer District	

PLAN UPDATE PROCESS

Updating the plan consisted of the following phases:

- **Phase 1, Organize and Review**—A planning team was assembled for the plan update, consisting of staff from the King County Office of Emergency Management and a technical consultant. The team conducted outreach to establish the planning partnership. A 19-member steering committee was assembled to oversee the plan update, consisting of planning partner staff, citizens, and other stakeholders in the planning area. Coordination with other county, state and federal agencies involved in hazard mitigation occurred throughout the plan update process. This phase included a review of the existing plan, the Washington State Hazard Mitigation Plan, and existing programs that may support hazard mitigation actions.

Phase 2, Update the Risk Assessment—Risk assessment is the process of measuring the potential loss of life, personal injury, economic injury, and property damage resulting from natural hazards. This process assesses the vulnerability of people, buildings and infrastructure to natural hazards. Risk assessment models were enhanced with new data and technologies that have become available since 2009. The risk assessment included the following:

- Hazard identification and profiling
- Assessment of the impact of hazards on physical, social and economic assets
- Vulnerability identification
- Estimates of the cost of potential damage.

Planning partners used the risk assessment to rank risk and to gauge the potential impacts of each hazard of concern on their jurisdiction. The mitigation actions recommended in this plan include some that address limitations in the modeling caused by insufficient data. For example, in light of the Oso landslide, King County has initiated an effort identified as an action item in this plan to better characterize landslide risks in the County.

- **Phase 3, Engage the Public**—The planning team implemented a public involvement strategy developed by the Steering Committee. The strategy included public meetings to present the risk assessment and the draft plan, a hazard mitigation survey, a County-sponsored website, and multiple media releases.
- **Phase 4, Assemble the Updated Plan**—The planning team and Steering Committee assembled a document to meet federal hazard mitigation planning requirements for all partners. The updated plan contains two volumes. Volume 1 contains components that apply to all partners and the broader planning area. Volume 2 contains all components that are jurisdiction-specific. Each planning partner has a dedicated annex in Volume 2.
- **Phase 5, Plan Adoption/Implementation**—Once pre-adoption approval has been granted by Washington State's Emergency Management Division and FEMA Region X, the final adoption phase will begin. Each planning partner will individually adopt the updated plan. The plan maintenance process includes a schedule for monitoring and evaluating the plan's progress periodically and producing a plan revision every 5 years. This plan maintenance strategy also includes processes for continuing public involvement and integration with other programs that can support or enhance hazard mitigation.

RISK ASSESSMENT RESULTS

Based on the risk assessment, hazards were ranked as follows for the risk they pose to the overall planning area:

1. Earthquake (High)
2. Severe Weather (High)
3. Severe Winter Weather (High)
4. Flood (Medium)
5. Landslide (Medium)
6. Wildfire (Medium)
7. Dam Failure (Low)
8. Avalanche (Low)
9. Volcano (Low)
10. Tsunami (Low).

Each planning partner also ranked hazards for its own area. Table ES-3 summarizes the categories of high, medium and low (relative to other rankings) based on the numerical ratings that each jurisdiction assigned each hazard. The results indicate the following general patterns:

- Earthquake, severe weather and severe winter weather generally ranked as the highest risks.
- Tsunami and avalanche were not ranked by most jurisdictions.
- Tsunami, volcano and wildfire tended to receive medium or low rankings based on the geographic location of each jurisdiction. Tsunami was ranked as a higher risk for coastal communities; wildfire was ranked higher for jurisdictions located farther from the highly developed areas near Puget Sound. Volcano was ranked higher for jurisdictions in the southwestern portion of the County near lahar hazard areas.
- Dam failure, volcano and wildland fire tended to have low ratings.

TABLE ES-3.
SUMMARY OF HAZARD RANKING RESULTS

	Number of Jurisdictions Assigning Ranking to Hazard			
	High	Medium	Low	Not Ranked
Avalanche	0	0	6	48
Dam Failure	1	8	20	25
Earthquake	49	5	0	0
Flood	10	25	17	2
Landslide	5	28	17	4
Severe Weather	40	13	1	0
Severe Winter Weather	44	9	1	0
Tsunami	0	3	11	40
Volcano	0	11	34	9
Wildland Fire	3	5	26	10

MITIGATION GUIDING PRINCIPLE, GOALS AND OBJECTIVES

The following principle guided the Steering Committee and the planning partnership in selecting the initiatives contained in this plan update:

> King County is a region that promotes community resilience by eliminating or reducing risks and adverse impacts from hazards, while encouraging hazard mitigation activities by all sectors.

The Steering Committee and the planning partnership established the following goals for the plan update:

1. Protect life and property.
2. Increase public awareness of hazards and mitigation opportunities.
3. Protect, restore and enhance environmental quality.
4. Leverage partnering opportunities.
5. Enhance planning activities.
6. Develop and implement cost-effective mitigation strategies.
7. Promote a sustainable economy.

The following objectives were identified that meet multiple goals, helping to establish priorities for recommended mitigation actions:

1. Increase the resilience of critical facilities, infrastructure and government operations to ensure continuity of operations during and after a hazard event.
2. Consider the impacts of hazards in all planning mechanisms that address current and future land uses and integrate hazard mitigation goals and objectives into other existing plans and programs within the planning area.

3. Develop, improve and protect systems that provide early warnings, emergency response communications and evacuation procedures.
4. Use the best available data, science and technologies to improve understanding and stakeholder awareness of the location and potential impacts of hazards, the vulnerability of building types and community development patterns, and the measures needed to mitigate hazards.
5. Seek feasible mitigation projects that provide the highest degree of hazard protection with the best benefit-cost ratio.
6. Emphasize the hazard mitigation message in and promote the value of public outreach and education programs, such as Take Winter By Storm and What to Do to Make it Through.
7. Improve coordination among all sectors to mitigate hazards.
8. Reduce hazard-related risks and vulnerability to potentially isolated populations within the planning area.
9. Retrofit, purchase or relocate structures in high hazard areas, including those known to be repetitively damaged.
10. Strengthen codes to improve the hazard resilience of new construction.
11. Leverage social networks and other social capital mechanisms to educate the public and stakeholders and promote resilience.
12. Seek actions that protect or improve the environment for future environmental conditions.
13. Form private/public partnerships to leverage and share resources.
14. Partner with the private sector, including small businesses, to promote hazard mitigation as part of standard business practice.
15. Educate businesses about contingency planning countywide, targeting small businesses and those located in high risk areas, and promote employee education about disaster preparedness while on the job and at home.

MITIGATION ACTIONS

Mitigation actions presented in this update are activities designed to reduce or eliminate losses resulting from natural hazards. The update process resulted in the identification of nearly 700 mitigation actions for implementation by individual planning partners, as presented in Volume 2 of this plan. In addition, the steering committee and planning partnership identified seven countywide initiatives benefiting the whole partnership, as listed in Table ES-4.

IMPLEMENTATION

Full implementation of the recommendations of this plan will require time and resources. The measure of the plan's success will be its ability to adapt to changing conditions. King County and its planning partners will assume responsibility for adopting the recommendations of this plan and committing resources toward implementation. The framework established by this plan commits all planning partners to pursue initiatives when the benefits of a project exceed its costs. The planning partnership developed this plan with extensive public input, and public support of the actions identified in this plan will help ensure the plan's success.

TABLE ES-3.
ACTION PLAN—COUNTYWIDE MITIGATION ACTIONS

Hazards Addressed	Lead Agency	Possible Funding Sources or Resources	Time Line[a]	Objectives
CW-1—Continue to participate in and support the "Resilient King County" initiative.				
All hazards	King County Office of Emergency Management (OEM)	Local, possible grant funding (FEMA, DHS)	Ongoing	1, 3, 4, 7, 13, 14, 15
CW-2—Continue to maintain a website that will house the regional hazard mitigation plan, its progress reports and all components of the plan's maintenance strategy to provide the planning partners and public ongoing access to the plan and its implementation.				
All Hazards	King County OEM	King County OEM operating budget	Ongoing	4, 6, 7, 11, 15
CW-3—Continue to leverage/support/enhance ongoing, regional public education and awareness programs (such as "Take Winter by Storm and "Make it Through") as a method to educate the public on risk, risk reduction and community resilience.				
All Hazards	King County and all planning partners	Local	Ongoing	4, 6, 7, 11, 13, 14, 15
CW-4—Continue to support the use, development and enhancement of a regional alert and notification system.				
All Hazards	King County OEM	Local, possible grant funding (FEMA, DHS, NWS, NOAA)	Ongoing	3, 4, 7, 13
CW-5—Strive to capture time-sensitive, perishable data—such as high water marks, extent and location of hazard, and loss information—following hazard events to support future updates to the risk assessment.				
All hazards	All Planning partners	Local, FEMA (PA)	Short-term	4, 7
CW-6—Encourage signatories for the regional coordination framework for disasters and planned events.				
All Hazards	King County OEM	Local	Ongoing	3, 7, 13, 14
CW-7—Continue ongoing communication and coordination in the implementation of the King County Regional Hazard Mitigation Plan and the 2013 King County Flood Hazard Management Plan.				
Flood	King County OEM, King County Department of Natural Resources & Parks, King County Flood Control District	Local	Ongoing	2, 4, 5, 7, 10, 12