



King County

Office of Emergency Management

KING COUNTY REGIONAL HAZARD MITIGATION PLAN UPDATE

Volume 2: Planning Partner Annexes

Part 2b—Federal Way, Hunts Point, Issaquah, Kent,
Kirkland, Maple Valley, Medina, Mercer Island, North Bend

Agency Review Submittal

July 2014



TETRA TECH

King County
REGIONAL HAZARD MITIGATION PLAN UPDATE
VOLUME 2: PLANNING PARTNER ANNEXES

AGENCY REVIEW SUBMITTAL

JULY 2014

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Project #103S2548

King County
**Regional Hazard Mitigation Plan Update;
Volume 2—Planning Partner Annexes**

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INTRODUCTION

BACKGROUND

The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional planning for hazard mitigation. All participating jurisdictions must meet the requirements of Chapter 44 of the Code of Federal Regulations (44 CFR):

“Multi-jurisdictional plans (e.g. watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan.”
(Section 201.6.a(4))

For the King County Regional Hazard Mitigation Plan Update, a Planning Partnership was formed to leverage resources and to meet requirements of the federal Disaster Mitigation Act (DMA) for as many eligible local governments in King County as possible. The DMA defines a local government as follows:

“Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.”

There are two types of Planning Partners that participated in this process, with distinct needs and capabilities:

- Incorporated municipalities (cities and the County)
- Special purpose districts.

Each participating planning partner has prepared a jurisdiction-specific annex to this plan. These annexes, as well as information on the process by which they were created, are contained in this volume. This volume also includes brief profiles of the two Native American tribes that have land within King County. The tribes are independent, sovereign nations and were not official Planning Partners in this effort. However, they are important stakeholders in the region, and the King County Planning Partnership recognizes that tribal-level plans can support or enhance hazard mitigation in the planning area.

THE PLANNING PARTNERSHIP

Initial Solicitation and Letters of Intent

The planning team solicited the participation of the County and all County-recognized special purpose districts at the outset of this project. A kickoff meeting was held on January 24, 2013 at King County Office of Emergency Management in Renton to identify potential stakeholders and planning partners for this process. The purpose of the meeting was to introduce the planning process to jurisdictions in the County that could have a stake in the outcome of the planning effort. All eligible local governments within the planning area were invited to attend. Various agency and citizen stakeholders were also invited to this meeting. The goals of the meeting were as follows:

- Provide an overview of the Disaster Mitigation Act.
- Provide an update on the planning grant.

- Outline the King County plan update work plan.
- Describe the benefits of multi-jurisdictional planning.
- Outline planning partner expectations.
- Solicit planning partners.
- Confirm a Steering Committee.

All interested local governments were provided with a list of planning partner expectations developed by the planning team and were informed of the obligations required for participation. Local governments wishing to join the planning effort were asked to provide the planning team with a “notice of intent to participate” that agreed to the planning partner expectations (see Appendix A) and designated a point of contact for their jurisdiction. In all, formal commitment was received from 59 planning partners by the planning team, and the King County Planning Partnership was formed.

Maps for each participating city are provided in the individual annex for that city in Parts 2a through 2c of this volume. Maps showing the location of participating special purpose districts by district type are provided at the beginning of Part 2d, which includes the special purpose district annexes. These maps will be updated periodically as changes to the partnership occur, either through linkage or by a partner dropping out due to a failure to participate.

Planning Partner Expectations

The planning team developed the following list of planning partner expectations, which were confirmed at the kickoff meeting held on January 24, 2013:

- Each partner will provide a “Letter of Intent to Participate.”
- Each partner will support and participate in the selection and function of the Steering Committee overseeing the development of the update. Support includes allowing this body to make decisions regarding plan development and scope on behalf of the partnership.
- Each partner will provide support for the public involvement strategy developed by the Steering Committee in the form of mailing lists, possible meeting space, and media outreach such as newsletters, newspapers or direct-mailed brochures.
- Each partner will participate in plan update development activities such as:
 - Steering Committee meetings
 - Public meetings or open houses
 - Workshops and planning partner training sessions
 - Public review and comment periods prior to adoption.

Attendance will be tracked at such activities, and attendance records will be used to track and document participation for each planning partner. No minimum level of participation will be established, but each planning partner should attempt to attend all such activities.

- Each partner will be expected to perform a “consistency review” of all technical studies, plans, and ordinances specific to hazards identified within the planning area to determine the existence of plans, studies or ordinances not consistent with the equivalent documents reviewed in preparation of the County plan. For example: if a planning partner has a floodplain management plan that makes recommendations that are not consistent with any of the County’s basin plans, that plan will need to be reviewed for probable incorporation into the plan for the partner’s area.

- Each partner will be expected to review the risk assessment and identify hazards and vulnerabilities specific to its jurisdiction. Contract resources will provide jurisdiction-specific mapping and technical consultation to aid in this task, but the determination of risk and vulnerability will be up to each partner.
- Each partner will be expected to review the mitigation recommendations chosen for the overall county and determine if they will meet the needs of its jurisdiction. Projects within each jurisdiction consistent with the overall plan recommendations will need to be identified, prioritized and reviewed to determine their benefits and costs.
- Each partner will be required to create its own action plan that identifies each project, who will oversee the task, how it will be financed and when it is estimated to occur.
- Each partner will be required to complete its normal pre-adoption process prior to submitting the plan to its governing body for adoption. For example, if it is the community's normal process to submit a planning document to a Planning Commission prior to submittal to council for adoption, then that process must be followed for the adoption of this plan.
- Each partner will be required to formally adopt the plan.

It should be noted that by adopting this plan, each planning partner also agrees to the plan implementation and maintenance protocol established in Volume 1. Failure to meet these criteria may result in a partner being dropped from the partnership by the Steering Committee, and thus losing eligibility under the scope of this plan.

Linkage Procedures

Eligible local jurisdictions that did not participate in development of this regional plan update may comply with DMA requirements by linking to this plan following the procedures outlined in Appendix B.

ANNEX-PREPARATION PROCESS

Templates

Templates were created to help the Planning Partners prepare their jurisdiction-specific annexes. Since special purpose districts operate differently from incorporated municipalities, separate templates were created for the two types of jurisdictions. The templates were created so that all criteria of Section 201.6 of 44 CFR would be met, based on the partners' capabilities and mode of operation. Templates available for the planning partners' use were specific as to whether the partner is a municipality or a special purpose district and whether the annex is an update to a previous hazard mitigation plan or a first-time hazard plan. Each partner was asked to participate in a technical assistance workshop during which key elements of the template were completed by a designated point of contact for each partner and a member of the planning team. The templates were set up to lead each partner through a series of steps that would generate the DMA-required elements that are specific for each partner. The templates and their instructions can be found in Appendix C to this volume of the Regional Hazard Mitigation Plan Update.

Workshop

Workshops were held for Planning Partners to learn about the templates and the overall planning process. Topics included the following:

- DMA
- King County plan background
- The templates

- Risk ranking
- Developing your action plan
- Cost/benefit review.

Separate sessions were held for special purpose districts and municipalities, in order to better address each type of partner’s needs. The sessions provided technical assistance and an overview of the template completion process. Attendance at this workshop was mandatory under the planning partner expectations established by the Steering Committee. There was 92-percent attendance of the partnership at these sessions.

In the risk-ranking exercise, each planning partner was asked to rank each risk specifically for its jurisdiction, based on the impact on its population or facilities. Cities were asked to base this ranking on probability of occurrence and the potential impact on people, property and the economy. Special purpose districts were asked to base this ranking on probability of occurrence and the potential impact on their constituency, their vital facilities and the facilities’ functionality after an event. The methodology followed that used for the countywide risk ranking presented in Volume 1. A principal objective of this exercise was to familiarize the partnership with how to use the risk assessment as a tool to support other planning and hazard mitigation processes. Tools utilized during these sessions included the following:

- The risk assessment results developed for this plan
- Hazard maps for all hazards of concern
- Special district boundary maps that illustrated the sphere of influence for each special purpose district partner
- Hazard mitigation catalogs
- Federal funding and technical assistance catalogs
- Copies of partners’ prior annexes, if applicable.

Prioritization

44 CFR requires actions identified in the action plan to be prioritized (Section 201.c.3.iii). The planning team and steering committee developed a methodology for prioritizing the action plans that meets the needs of the partnership and the requirements of 44 CFR. The actions were prioritized according to the following criteria:

- **High Priority**—Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
- **Medium Priority**—Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
- **Low Priority**—Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

These priority definitions are dynamic and can change from one category to another based on changes to a parameter such as availability of funding. For example, a project might be assigned a medium priority because of the uncertainty of a funding source, but be changed to high once a funding source has been

identified. The prioritization schedule for this plan will be reviewed and updated as needed annually through the plan maintenance strategy.

Benefit/Cost Review

44 CFR requires the prioritization of the action plan to emphasize a benefit/cost analysis of the proposed actions. Because some actions may not be implemented for up to 10 years, benefit/cost analysis was qualitative and not of the detail required by FEMA for project grant eligibility under the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) grant program. A review of the apparent benefits versus the apparent cost of each project was performed. Parameters were established for assigning subjective ratings (high, medium, and low) to costs and benefits as follows:

- Cost ratings:
 - **High**—Existing funding levels are not adequate to cover the costs of the proposed action; implementation would require an increase in revenue through an alternative source (for example, bonds, grants, and fee increases).
 - **Medium**—The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
 - **Low**—The action could be funded under the existing budget. The action is part of or can be part of an existing, ongoing program.
- Benefit ratings:
 - **High**—The action will have an immediate impact on the reduction of risk exposure to life and property.
 - **Medium**—The action will have a long-term impact on the reduction of risk exposure to life and property or will provide an immediate reduction in the risk exposure to property.
 - **Low**—Long-term benefits of the action are difficult to quantify in the short term.

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial and are prioritized accordingly.

It should be noted that for many of the strategies identified in this action plan, funding might be sought under FEMA’s HMGP or PDM programs. Both of these programs require detailed benefit/cost analysis as part of the application process. These analyses will be performed on projects at the time of application preparation. The FEMA benefit-cost model will be used to perform this review. For projects not seeking financial assistance from grant programs that require this sort of analysis, the Partners reserve the right to define “benefits” according to parameters that meet their needs and the goals and objectives of this plan.

Analysis of Mitigation Initiatives

Each planning partner reviewed its recommended initiatives to classify each initiative based on the hazard it addresses and the type of mitigation it involves. Mitigation types used for this categorization are as follows:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.

- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

COMPATIBILITY WITH PREVIOUS APPROVED PLANS

Of the 59 committed planning partners, 22 were covered by prior plans approved by FEMA. This does not include local governments covered under the initial 2004 Regional Plan that did not perform and update to that plan in 2009. Table 1 lists those communities, the status of those plans, and the role this regional plan will play in achieving compliance and the CRS status if applicable. These 22 plans identified over 280 initiatives. The progress made on these initiatives has been reviewed in the progress report included in Appendix B of Volume 1 of this plan update.

FINAL COVERAGE UNDER THE PLAN

Of the 59 committed planning partners, 54 fully met the participation requirements specified by the Steering Committee. The principal requirement not met by the other partners was the completion of the jurisdictional annex template following the workshops. All 54 partners that attended the workshop subsequently submitted completed templates. Only those 54 jurisdictions are included in this volume and will seek DMA compliance under this plan. The remaining jurisdictions will need to follow the linkage procedures described in Appendix B of this volume. Table 2 lists the jurisdictions that submitted letters of intent and their ultimate status in this plan.

**TABLE 1.
PRIOR PLAN STATUS**

Jurisdiction	FEMA Approval Date	Will Be Replaced by King County Regional Hazard Mitigation Plan? (Yes/No)	CRS Community (Yes/No)	King County Regional Hazard Mitigation Plan Will Become CRS Plan of Record?(Yes/No)
City of Auburn	12/2/2009	Yes	Yes	Yes
City of Bothell	6/17/2010	Yes	No	N/A
City of Federal Way	12/2/2009	Yes	No	N/A
City of Issaquah	1/28/2010	Yes	Yes	Yes
City of Kent (including annex for Kent Fire Department/King County Fire District 37)	1/27/2005	Yes	Yes	Yes
City of Mercer Island	6/16/2011	Yes	No	N/A
City of Pacific	12/2/2009	Yes	No	N/A
City of Redmond	1/8/2010	Yes	No	N/A
City of Renton	4/19/2012	Yes	Yes	Yes
City of Shoreline (including annex for Shoreline Fire Department /King County Fire District 4)	12/2/2009	Yes	No	n/a
City of Snoqualmie	4/20/2010	Yes	Yes	Yes
City of Tukwila	2/16/2011	Yes	No	N/A
City of Woodinville (an annex to the North King and South Snohomish Counties Regional Mitigation Plan for Natural Hazards)	11/29/2010	Yes	No	N/A
King County (Unincorporated)	1/28/2010	Yes	Yes	No ^a
Covington Water District	1/28/2010	Yes	N/A	N/A
Highline Water District	12/2/2009	Yes	N/A	N/A
King County Water District 19	12/28/2010	Yes	N/A	N/A
King County Water District 111	4/20/2010	Yes	N/A	N/A
North City Water District (known as Shoreline Water District at the time of the previous hazard mitigation plan')	N/A ^b	Yes	N/A	N/A
Soos Creek Water District	3/18/2010	Yes	N/A	N/A
Sammamish Plateau Water and Sewer District	12/2/2009	Yes	N/A	N/A
Southwest Suburban Sewer District	1/28/2010	Yes	N/A	N/A
South King Fire and Rescue	12/2/2009	No	N/A	N/A
<p>a. For unincorporated King County, the CRS plan of record is the <i>2013 King County Flood Hazard Management Plan Update and Progress Report</i>.</p> <p>b. The 2010 Shoreline Water District Hazard Mitigation Plan was not submitted to FEMA for approval.</p>				

**TABLE 2.
PLANNING PARTNER STATUS**

Jurisdiction	Letter of Intent Date	Attended Workshop?	Completed Template?	Covered by This Plan?
Municipalities				
King County	N/A	Yes	Yes	Yes
City of Algona	1/29/2013	Yes	Yes	Yes
City of Auburn	2/13/2013	Yes	Yes	Yes
City of Bellevue	2/22/2013	No ^a	No	No
City of Bothell	2/12/2013	Yes	Yes	Yes
City of Burien	2/13/2013	Yes	Yes	Yes
City of Carnation	2/11/2013	Yes	Yes	Yes
City of Covington	2/12/2013	No ^a	No	No
City of Clyde Hill	2/21/2013	Yes	Yes	Yes
City of Duvall	2/13/2013	Yes	Yes	Yes
City of Federal Way	1/31/2013	Yes	Yes	Yes
City of Issaquah	1/33/2013	Yes	Yes	Yes
City of Kent	2/21/2013	Yes	Yes	Yes
City of Kirkland	2/21/2013	Yes	Yes	Yes
City of Maple Valley	1/30/2013	Yes	Yes	Yes
City of Medina	2/11/2013	Yes	Yes	Yes
City of Mercer Island	2/21/2013	Yes	Yes	Yes
City of North Bend	2/22/2013	Yes	Yes	Yes
City of Pacific	3/15/2013	Yes	Yes	Yes
City of Redmond	2/19/2013	Yes	Yes	Yes
City of Renton	2/22/2013	Yes	Yes	Yes
City of SeaTac	2/7/2013	Yes	Yes	Yes
City of Shoreline	2/15/2013	Yes	Yes	Yes
City of Snoqualmie	3/14/2013	Yes	Yes	Yes
City of Tukwila	3/1/2013	Yes	Yes	Yes
City of Woodinville	2/28/2013	Yes	Yes	Yes
Town of Beaux Arts Village	2/14/2013	Yes	Yes	Yes
Town of Hunts Point	2/23/2013	Yes	Yes	Yes
Town of Skykomish	3/15/2013	Yes	Yes	Yes
Fire Districts				
Burien Fire (King County Fire District #2)	1/24/2013	Yes	Yes	Yes
Duvall Fire (King County Fire District #45)	2/15/2013	Yes	Yes	Yes
Kent Fire	2/21/2013	Yes	Yes	Yes
Shoreline Fire	2/13/2013	Yes	Yes	Yes

**TABLE 2.
PLANNING PARTNER STATUS**

Jurisdiction	Letter of Intent Date	Attended Workshop?	Completed Template?	Covered by This Plan?
Valley Regional Fire Authority	1/29/2013	Yes	Yes	Yes
South King Co. Fire and Rescue	2/13/2013	No	No	No
Vashon Island Fire & Rescue	1/31/2013	Yes	Yes	Yes
School and Hospital Districts				
Kent School District	2/14/2013	Yes	Yes	Yes
Lake Washington School District	3/15/2013	No	No	No
Riverview School District	1/30/2013	Yes	Yes	Yes
Evergreen Health (Public Hospital District #2)	2/5/2013	Yes	Yes	Yes
Snoqualmie Hospital	2/25/2013	No	No	No
Valley Medical (Public Hospital District #1)	2/21/2013	Yes	Yes	Yes
Water, Sewer and Utility Districts				
Covington Water District	2/12/2013	Yes	Yes	Yes
Highline Water District	2/21/2013	Yes	Yes	Yes
King County Water District 19	2/21/2013	Yes	Yes	Yes
King County Water District 20	2/20/2013	Yes	Yes	Yes
King County Water District 90	2/12/2013	Yes	Yes	Yes
King County Water District 111	2/25/2013	Yes	Yes	Yes
King County Water District 125	2/21/2013	Yes	Yes	Yes
North City Water District (formerly Shoreline Water District)	2/26/2013	Yes	Yes	Yes
Coal Creek Utility District	1/30/2013	Yes	Yes	Yes
Sammamish Plateau Water & Sewer District	2/26/2013	Yes	Yes	Yes
Skyway Water & Sewer District	3/12/2013	Yes	Yes	Yes
Soos Creek Water & Sewer District	2/27/2013	Yes	Yes	Yes
Midway Sewer District	2/21/2013	Yes	Yes	Yes
Ronald Wastewater District	2/13/2013	Yes	Yes	Yes
Southwest Suburban Sewer District	2/21/2013	Yes	Yes	Yes
Valley View Sewer District	2/21/2013	Yes	Yes	Yes
Woodinville Water District	2/20/2013	Yes	Yes	Yes

a. Cities of Bellevue and Covington decided to maintain their own plans after submitting letter of intent

KING COUNTY TRIBAL STAKEHOLDERS

FEMA's Tribal Multi-Hazard Mitigation Planning Guidance

FEMA's 2010 *Tribal Multi-Hazard Mitigation Planning Guidance* assists Indian tribal governments and other tribal entities in identifying and assessing their risk to natural hazards. The document offers the following types of assistance (44 CFR 201.7):

- It helps Indian tribal governments identify their risks from natural hazards and protect their members and other resources.
- It helps Indian tribal governments develop and adopt new mitigation plans, or revise or update existing mitigation plans, to meet the requirements of 44 CFR 201.7.
- It helps plan reviewers evaluate mitigation plans from different Indian Tribal governments in a fair and consistent manner.
- It helps Indian tribal governments exercise flexibility and apply for assistance as either a grantee or subgrantee under FEMA grant programs with a single plan type.
- It provides guidance and culturally relevant examples to other tribal entities that comply with similar planning requirements under 44 CFR 201.6 as a local government.

Indian tribal governments with an approved tribal mitigation plan in accordance with 44 CFR 201.7 may apply for assistance from FEMA as a grantee. If the Indian tribal government coordinates with the state for review of the tribal mitigation plan, then the Indian tribal government also has the option to apply as a subgrantee through a state or another tribe. A grantee is an entity such as a state, territory, or Indian tribal government to which a grant is awarded and that is accountable for the funds provided. A subgrantee is an entity—such as a community, local or Indian tribal government, state-recognized tribe, or private nonprofit organization—to which a subgrant is awarded and that is accountable to the grantee for use of the funds provided.

If the Indian tribal government is eligible as a grantee or subgrantee because it has an approved tribal mitigation plan and has coordinated with the state for review, it can decide which option it wants to take on a case-by-case basis with respect to each federal disaster declaration, and for each grant program under a declaration, but not on a project-by-project basis within a grant program. For example, an Indian tribal government can participate as a subgrantee for public assistance, but as a grantee for the Hazard Mitigation Grant Program under the same declaration. However, the Indian tribal government would not be able to request grantee status under HMGP for one HMGP project, then request subgrantee status for another HMGP project under the same declaration.

By acknowledging the tribes as stakeholders, the King County regional planning partnership recognizes tribal level plans as existing and potential mechanisms that could support or enhance hazard mitigation in King County. This is a requirement of 44 CFR 201.6.b.3. While the King County regional planning effort and those of the tribal governments are separate and autonomous efforts, tribal plans offer an opportunity to partner and share information that may lead help to leverage resources in the planning area.

The Muckleshoot Indian Tribe

Brief Profile

This section is excerpted from the City of Auburn's 2013 Annex to the King County Regional Hazard Mitigation Plan (<http://www.auburnwa.gov/Assets/EM/AuburnWA/Docs/hazmit2013.pdf>) and the Muckleshoot Indian Tribe website (<http://www.muckleshoot.nsn.us/about-us/overview.aspx>)

The Muckleshoot Indian Tribe is a federally recognized Indian tribe whose membership is composed of descendants of the Duwamish and Upper Puyallup people who inhabited Central Puget Sound for thousands of years before non-Indian settlement. The Tribe's name is derived from the native name for the prairie on which the Muckleshoot Reservation was established. Following the Reservation's establishment in 1857, the Tribe and its members came to be known as Muckleshoot, rather than by the historical tribal names of their Duwamish and Upper Puyallup ancestors. Today, the United States recognizes the Muckleshoot Tribe as a tribal successor to the Duwamish and Upper Puyallup bands from which the Tribe's membership descends.

The Muckleshoot Reservation consists of six sections situated diagonally, has 20 miles of boundaries, and encompasses 6 square-miles. Three sections (3 square miles) are within the municipal limits of the City of Auburn. The Muckleshoot Tribe is one of Washington's largest tribes, with a membership of about 3,300. Through the Indian Reorganization Act, the Tribe adopted its constitution in 1936. It provides a nine-member council with advice and input of the General Council, consisting of all community members, and it provides a full range of governance services to tribal members and tribal properties in the reservation.

Status of Approved Plan

The Muckleshoot Tribe does not currently have a FEMA-approved, state-level, multi-hazard mitigation plan; however, the Tribe is currently pursuing plan development.

The Snoqualmie Indian Tribe

Brief Profile

The following information is excerpted from the 2011 Snoqualmie Tribe Hazard Mitigation Plan (http://www.snoqualmietribe.us/sites/default/files/linkedfiles/snoqualmie_tribe_hmp_final_11.1.11.pdf).

The people known today as the Snoqualmie Tribe have lived in the Puget Sound region of Washington State since time immemorial, long before the early explorers came to the Northwest. They hunted deer, elk, and other game animals, fished for salmon and gathered berries and wild plants for food and medicinal purposes.

The Snoqualmie Tribe currently has approximately 650 members. Historically, tribal members lived in an area of East King and Snohomish Counties that now contains the communities of Monroe, Carnation, Fall City, Snoqualmie, North Bend, Mercer Island and Issaquah. Tribal members continue to live in each of these communities.

In 1855, Snoqualmie signed the Point Elliott Treaty creating a government-to-government relationship between the United States and the Snoqualmie Tribe. The Tribe ceded to the U.S. government all of its land between Snoqualmie Pass and Marysville. The Tribe lost federal recognition in 1953 when federal policies limited recognition to tribes having reservations.

In October 1999, After 46 years of petitioning, the Bureau of Indian Affairs notified the Tribe's Fall City headquarters that the U.S. government had re-recognized the Snoqualmie Tribe and granted Snoqualmie Nation tribal status based on evidence that the Tribe had maintained a continuous community from historical times to the present. Recognition gave the Tribe the right to acquire its initial reservation land and to develop a casino to help fund tribal governance, administration and services to its members.

In the decade since re-recognition, the Tribe has worked to develop programs and provide services to meet the needs of its members. The Tribe has developed a government, created medical clinics, and promoted economic development, social and health services, and housing programs.

On March 2, 2006 the Snoqualmie Reservation site was officially put into trust status. The Snoqualmie Casino (which opened in 2009) was built on the reservation and is used to pursue economic development and increase the financial resources of the Tribe for government operations.

Status of Approved Plan

The Snoqualmie Tribe has a FEMA-approved, state-level, multi-hazard mitigation plan effective October 2011 through October 11, 2016.

Hazards of Concern

The 2011 plan addressed the following hazards of concern:

- Earthquake
- Flood
- Landslide/mass movement
- Epidemic/pandemic
- Hazardous materials.
- Severe weather
- Wildfire
- Dam failure
- Abandoned mines

ACRONYMS AND ABBREVIATIONS

The following terms are used in the planning partner annexes:

- ATC—Applied Technology Council
- CED—Community and Economic Development (city department)
- CEMP—Comprehensive Emergency Management Plan
- CERT—Citizens Emergency Response Training
- CFR—Code of Federal Regulations
- cfs—cubic feet per second
- CIP—Capital Improvement Plan
- CRS—Community Rating System
- DCD—Department of Community Development
- DI—Ductile iron
- DMA—Disaster Mitigation Act
- DNRP—Department of Natural Resources and Parks (King County)
- DOT—Department of Transportation (King County)
- DPER—Department of Permitting and Environmental Review (King County)
- EOC—Emergency Operations Center
- EPA—U.S. Environmental Protection Agency
- FEMA—Federal Emergency Management Agency
- GIS—Geographic Information System
- GMA—Growth Management Act (Washington State)
- gpm—gallons per minute
- Hazus-MH—Hazards, United States-Multi Hazard
- HDPE—High-density polyethylene
- HMGP—Hazard Mitigation Grant Program
- IBC—International Building Code
- IRC—International Residential Code
- KCFD—King County Fire District
- KCSO—King County Sheriff's Office
- KCWD—King County Water District
- mgd—million gallons per day
- NFIP—National Flood Insurance Program
- NOAA—National Oceanic and Atmospheric Administration
- NPDES—National Pollutant Discharge Elimination System

- OEM—Office of Emergency Management (King County)
- OFM—Office of Financial Management (Washington State)
- PDM—Pre-Disaster Mitigation Grant Program
- PRV—Pressure-reducing valve
- RCW—Revised Code of Washington
- SCADA—Supervisory Control and Data Acquisition
- SPU—Seattle Public Utilities
- USGS—U.S. Geological Survey
- WSDOT—Washington State Department of Transportation
- WTD—Wastewater Treatment Division (a division of King County Department of Natural Resources and Parks)

CHAPTER 10.

CITY OF FEDERAL WAY UPDATE ANNEX

10.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Ray Gross, Deputy EM
33325 8th Avenue South
Federal Way, WA 98003
Telephone: 253-835-2712
e-mail Address: ray.gross@cityoffederalway.com

Alternate Point of Contact

Brian Wilson, Chief of Staff
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Federal Way, WA 98003
Telephone: 253-835-6711
e-mail Address:
brian.wilson@cityoffederalway.com

10.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—February 20, 1990
- **Current Population**—89,720 as of April 1, 2013
- **Population Growth**—Federal Way boasts a growing population of approximately 90,000 people within the city limits and up to 200,000 within a five-mile primary market area. Federal Way residents enjoy one of the highest average household incomes and levels of education attained among residents of South King County cities. Ethnic and cultural diversity are paramount in Federal Way, with up to one-third of the city’s residents being of Asian-American, African-American or Hispanic-American background.
- **Location and Description**—The City of Federal Way is located in the southwestern corner of King County on a plateau between Puget Sound and the Green River Valley, approximately 25 miles south of downtown Seattle and eight miles north of downtown Tacoma. The City of Federal Way is approximately 21.2 square miles in size and has approximately 92,250 residents within the corporate City limits. An additional 30,000 residents outside the City boundary receive some or all services from Lakehaven Utility District, South King Fire & Rescue, Federal Way Public Schools and Saint Francis Hospital for a total of approximately 122,250 residents within the Greater Federal Way service area. The Greater Federal Way area is connected to the region by three exits of Interstate 5 (I-5) as well as access points to State Highways SR-18, SR-509, SR-161 and Pacific Highway South (SR-99). I-5 provides easy access to the nearby Seattle-Tacoma International Airport, Seattle, Tacoma, Interstate 90 (I-90) and is the major travel corridor for commuters in the Puget Sound Region. Federal Way has eight miles of Puget Sound shoreline and is located between two of the largest ports on the west coast, the Ports of Seattle and Tacoma.
- **Brief History**—Federal Way began in the late 1800s as a logging settlement. By the 1920s, Federal Highway 99 was complete, linking the community to the economic centers of Seattle and Tacoma, and suggesting a name for the young community. The name Federal Way was first used in 1929 when five existing schools consolidated operations into School District No. 210 and planned construction of Federal Way High School next to Highway 99. Rapid retail and residential growth created significant changes in the community during the 1970s and 1980s. Desiring controlled, quality growth and community identity, Federal Way citizens

organized to form what was then Washington’s sixth largest city, incorporating in February of 1990.

- **Climate**—Federal Way has a relatively temperate climate, influenced by its proximity to Puget Sound. The abundance of moist marine air keeps temperatures mild throughout the year. The Federal Way area has an average high temperature of 75 degrees in July and an average low temperature of 33 degrees in January. The mean temperature is in the mid-50s. Precipitation ranges from 0.71 inches in July to 5.7 inches in January. Annual precipitation averages about 38 inches.
- **Governing Body Format**—The local Governance of Federal Way includes seven elected officials with a strong Mayor, all serving a 4-year term. There are three primary Committees reporting to the council, with each Committee containing 3 council members as well as leaders from various organizations within the City. These Committees are; 1) Finance, Economic Development & Regional Affairs Committee, 2) Land Use and Transportation Committee **and**, 3) Parks, Recreation, Human Services & Public Safety Committee. Public Works Emergency Management Division assumes responsibility for the adoption of this plan; Public Works will oversee its implementation.
- **Development Trends**—The Federal Way City Center is an optimally located urban center that is undergoing exciting new redevelopment, with prime opportunities for commercial, residential and mixed use development in proximity to the redeveloping Commons at Federal Way Mall and new Federal Way Transit Center.

10.3 CAPABILITY ASSESSMENT

The assessment of the jurisdiction’s legal and regulatory capabilities is presented in Table 10-1. The assessment of the jurisdiction’s fiscal capabilities is presented in Table 10-2. The assessment of the jurisdiction’s administrative and technical capabilities is presented in Table 10-3. Information on the community’s National Flood Insurance Program (NFIP) compliance is presented in Table 10-4. Classifications under various community mitigation programs are presented in Table 10-5.

**TABLE 10-1.
LEGAL AND REGULATORY CAPABILITY**

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Yes	No	No	No	FWRC 9/3/2013
Zoning	Yes	No	No	No	Ord. 13-747 Sept 3, 2013
Subdivisions	Yes	No	No	No	Title 18 FWRC 9/3/2013
Stormwater Management	Yes	No	No	No	Title 16 FWRC 9/3/2013
Post Disaster Recovery	Yes	No	No	No	Res 91-90
Real Estate Disclosure	No	No	Yes	Yes	Washington State Disclosure Law (RCW 64.06)
Growth Management	Yes	No	No	No	FWRC 9/3/2013
Site Plan Review	Yes	No	No	No	FWRC 9/3/2013
Public Health and Safety	Yes	No	No	No	Title 6 FWRC 9/3/2013
Environmental Protection	Yes	No	No	No	Title 14 FWRC 9/3/2013
Planning Documents					
General or Comprehensive Plan	Yes				Federal Way Comp Plan Sept 2007
<i>Is the plan equipped to provide linkage to this mitigation plan?</i> Yes. Plan includes a land use, natural environment and shorelines elements					
Floodplain or Basin Plan	No	No	No	No	
Stormwater Plan	Yes	No	No	No	Title 15 FWRC 9/3/2013
Capital Improvement Plan	Yes				Surface Water / Streets / Transportation, 1/1/2013
<i>What types of capital facilities does the plan address?</i> Roads, streets, water retention and drainage system <i>How often is the plan revised/updated?</i> Annually					
Habitat Conservation Plan	Yes	No	No	No	Chapter 19 FW Comp Plan
Economic Development Plan	Yes	No	No	No	Chapter 4 FW Comp Plan
Shoreline Management Plan	Yes	No	No	Yes	Chapter 11 FW Comp Plan
Community Wildfire Protection Plan	No	No	No	No	
Response/Recovery Planning					
Comprehensive Emergency Management Plan	Yes				FW CEMP 1/1/2010
Threat and Hazard Identification and Risk Assessment	No	No	Yes	No	King County OEM
Terrorism Plan	Yes	No	No	No	FW CEMP 1/1/2010
Post-Disaster Recovery Plan	Yes	No	No	No	FW CEMP 1/1/2010
Continuity of Operations Plan	Yes	No	No	No	FW CEMP 1/1/2010
Public Health Plans	No	No	Yes	No	King County Public Health

TABLE 10-2. FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	No
Incur Debt through Special Tax Bonds	No
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Real Estate Excise Tax; King County Flood Control District-Basin Opportunity Fund

TABLE 10-3. ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Public Works / Community Economic Development
Engineers or professionals trained in building or infrastructure construction practices	Yes	Public Works / Community Economic Development
Planners or engineers with an understanding of natural hazards	Yes	Public Works / Community Economic Development
Staff with training in benefit/cost analysis	Yes	Emergency Management
Surveyors	Yes	Public Works
Personnel skilled or trained in GIS applications	Yes	Information Technologies
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Public Works
Grant writers	Yes	All City Departments

TABLE 10-4. NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE	
What department is responsible for floodplain management in your community?	Public Works
Who is your community’s floodplain administrator? (department/position)	Public Works / Surface Water Manager
Do you have any certified floodplain managers on staff in your community?	No
What is the date of adoption of your flood damage prevention ordinance?	September 3, 2013
When was the most recent Community Assistance Visit or Community Assistance Contact?	Community Assistance Contact -1/27/2012 Community Assistance Visit - 4/14/2006
To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	No
Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why)	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	No
Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?	No Not at this time

TABLE 10-5. COMMUNITY CLASSIFICATIONS			
	Participating?	Classification	Date Classified
Community Rating System	No	--	--
Building Code Effectiveness Grading Schedule	Yes	2	Not available
Public Protection	Yes	2	Not available
StormReady	Yes	Blue Dot	Not available
Firewise	No	N/A	N/A
Tsunami Ready (if applicable)	No	N/A	N/A

10.4 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 10-6 lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: 0
- Number of FEMA-Identified Severe Repetitive Loss Properties: 0

- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties Known to Have Been Mitigated: 0

TABLE 10-6. NATURAL HAZARD EVENTS			
Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Winter Storm	4056-DR-WA	1/14-23/2012	\$267,000
Severe Winter Storm	1825-DR-WA	3/2/2009	\$120,000
Severe Storms	1734-DR-WA	12/8/2007	\$186,000
Severe Storms	1671-DR-WA	12/12/2006	\$110,000
Earthquake	1361-DR-WA	3/0/2001	

10.5 HAZARD RISK RANKING

Table 10-7 presents the ranking of the hazards of concern. Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

TABLE 10-7. HAZARD RISK RANKING		
Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Earthquake	54
2	Severe Weather	51
3	Severe Winter Weather	51
4	Flood	18
5	Landslide	18
6	Volcano	13
7	Tsunami	6
8	Wildfire	6
9	Avalanche	0
10	Dam Failure	0

10.6 STATUS OF PREVIOUS PLAN INITIATIVES

Table 10-8 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

10.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 10-9 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 10-10 identifies the priority for each initiative. Table 10-11 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

TABLE 10-8. PREVIOUS ACTION PLAN IMPLEMENTATION STATUS				
Action #	Action Status			Comments
	Completed	Carry Over to Plan Update	Removed; No Longer Feasible	
FW-1		X		Action Carried over as item #2 in updated action plan.
FW-2	✓			Completed April of 2011.
FW-3			X	No longer considered feasible.
FW-4	✓			Completed September 2012
FW-5		X		Action Carried over as item #3 in updated action plan.
FW-6	✓			Completed June 2013.

TABLE 10-9. HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
FW-1 —Continue to maintain compliance and good standing under the National Flood Insurance Program. This will be accomplished through the implementation of floodplain management programs that, at a minimum, will meet the minimum requirements of the NFIP, which include the following:							
<ul style="list-style-type: none"> • Enforcement of the adopted flood damage prevention ordinance, • Participating in floodplain identification and mapping updates, and • Providing public assistance/information on floodplain requirements and impacts 							
New and Existing	Flood	2,4,10,12	Public Works Surface Water	Low	General Fund	Ongoing	No
FW-2 —Continue public education efforts related to wide-spread utility outages. These will be done through a series of community outreach programs in partnership with local utilities and City Emergency Management.							
Existing	All Hazards	6,8,11,14, 15	Emergency Management	Low	General Fund	Ongoing	Yes
FW -3 —Continue site-hardening of all City facilities. Focus on securing computers, storage areas and equipment.							
Existing	Earthquake	1,3,10	Parks	Medium	General Fund	Ongoing	Yes

TABLE 10-9. HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
FW- 4 —Conduct a Firewise presentation for the Federal Way community.							
New	Wildfire	1,6,10	Emergency Management	Low	General Fund	Short term	No
FW -5 —Creek channel realignment near S 373rd where the Hylebos creek crosses.							
New	Flood	5,9,12	Surface Water	High	Surface Water Utility & Grant	Long Term	No
FW-6 —Integrate the hazard mitigation plain into other plans, ordinances or programs to dictate land uses within the jurisdiction.							
New	All Hazards	2,4,8,10	Community and Economic Development	Low	General Fund	Short-term	No
FW-7 —Consider participation in incentive based programs such as the CRS, and Firewise							
New and Existing	Flood, Severe Weather, Wildfire	2, 3, 4, 6, 10, 13	City of Federal Way	Low	General Fund	Long-term	No
FW-8 —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.							
Existing	All Hazards	5,9,13	City of Federal Way	High	FEMA grants	Long-term	No
FW-9 —Continue to support the county-wide initiatives identified in this plan.							
New and Existing	All Hazards	4,6,11,12, 13, 14, 15	City of Federal Way	Low	General Fund	Ongoing	No
FW-10 —Actively participate in the plan maintenance strategy identified in this plan.							
New and Existing	All Hazards	4,6,11,12, 13, 14, 15	City of Federal Way	Low	General Fund	Ongoing	no

**TABLE 10-10.
MITIGATION STRATEGY PRIORITY SCHEDULE**

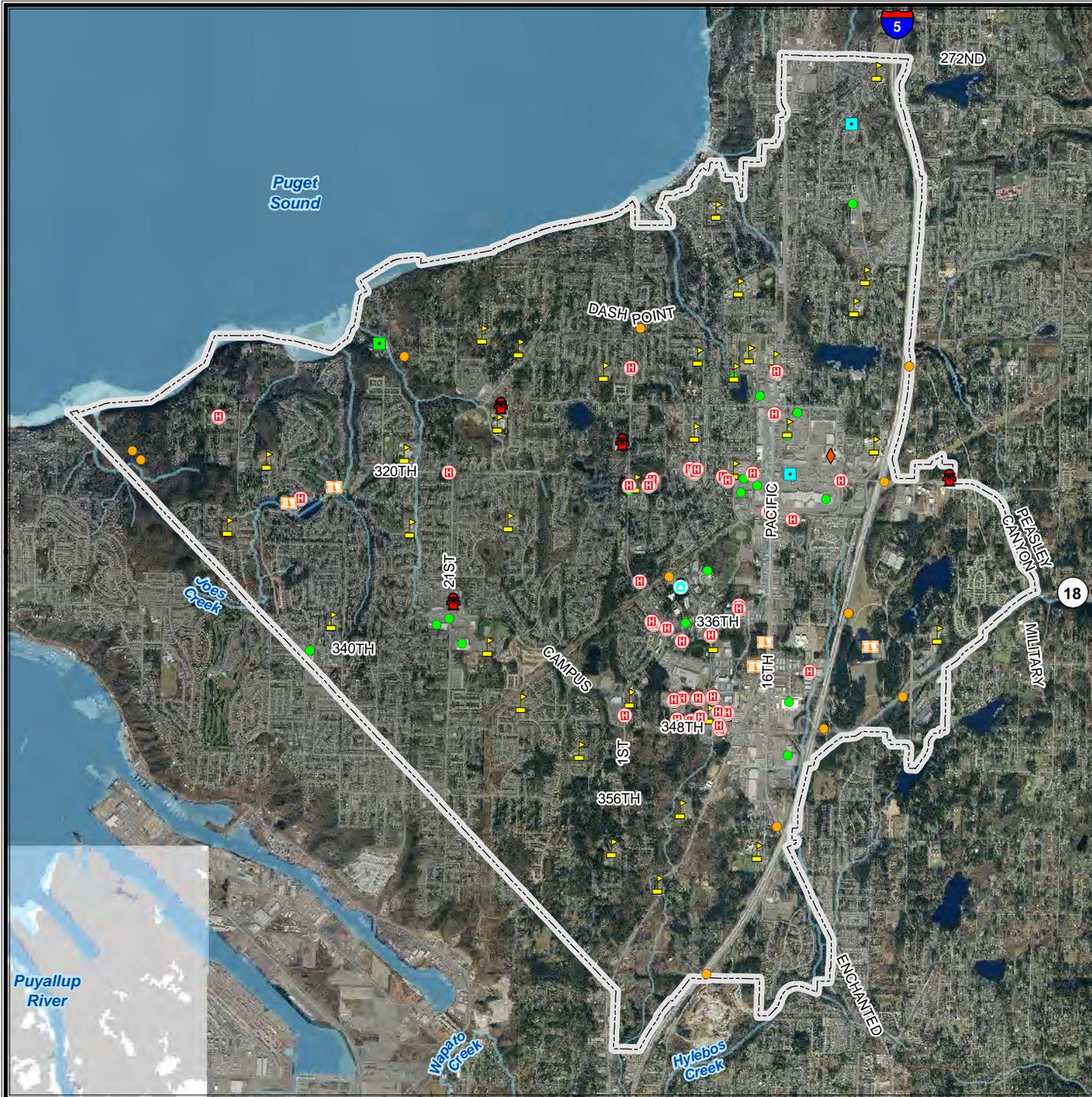
Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Priority ^a
FW-1	4	Low	Low	Yes	Yes	Yes	High
FW-2	5	Low	Low	Yes	Yes	Yes	High
FW-3	3	Medium	Medium	Yes	Yes	Yes	High
FW-4	3	Low	Low	Yes	Yes	Yes	High
FW-5	3	High	Medium	Yes	Yes	Yes	High
FW-6	4	Medium	Low	Yes	No	Yes	High
FW-7	7	Medium	Low	Yes	No	No	Medium
FW-8	3	High	High	Yes	Yes	No	Medium
FW-9	7	Medium	Low	Yes	No	Yes	High
FW-10	7	Low	Low	Yes	Yes	Yes	High

a. See Introduction for explanation of priorities.

**TABLE 10-11.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche	--	--	--	--	--	--
Dam Failure	--	--	--	--	--	--
Earthquake	6,10	3,8	2,9			
Flood	1,6,7,10	1,7,8	1,2,7,9	1,7	1,7	5
Landslide	6,10	8	2,9			
Severe Weather	6,10	8	2,9			
Severe Winter Weather	6,10	8	2,9			
Tsunami	6,10	8	2,9			
Volcano	6,10	3,8	2,9			
Wildfire	6,7,10	4,7,8	2,4,7,9	4,7	7	

a. See Introduction for explanation of mitigation types.



CITY OF FEDERAL WAY

Critical Facilities and Infrastructure

Critical Facilities

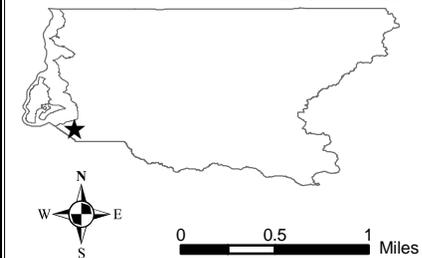
-  Government Function
-  HazMat
-  Medical Care
-  Protective Function
-  Schools
-  Other Facility

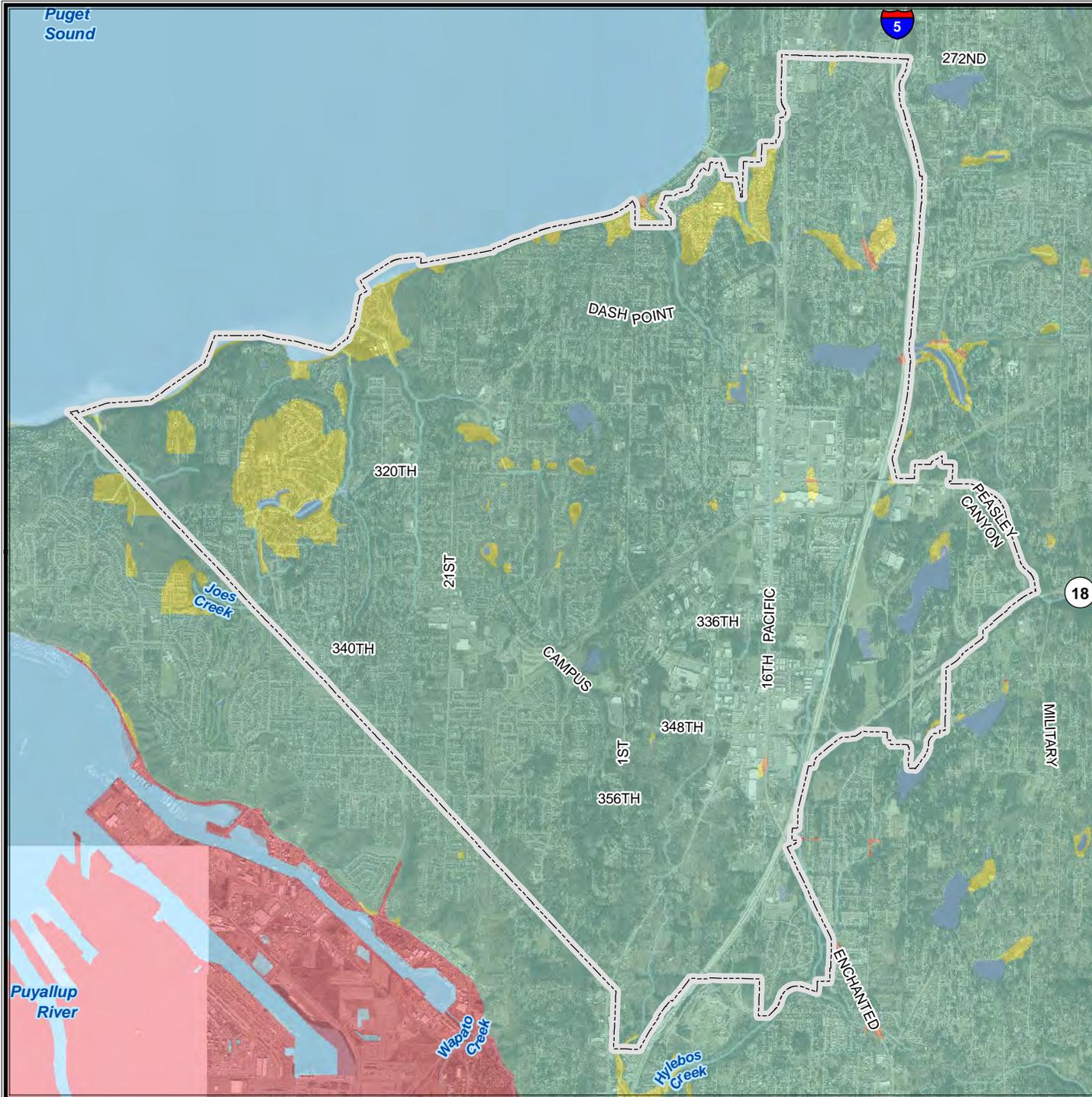
Critical Infrastructure

-  Bridges
-  Communications
-  Dams
-  Water Supply
-  Power
-  Transportation
-  Wastewater

Locations are approximate.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF FEDERAL WAY

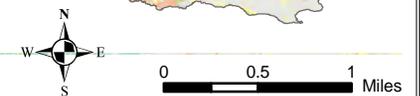
Liquefaction Susceptibility

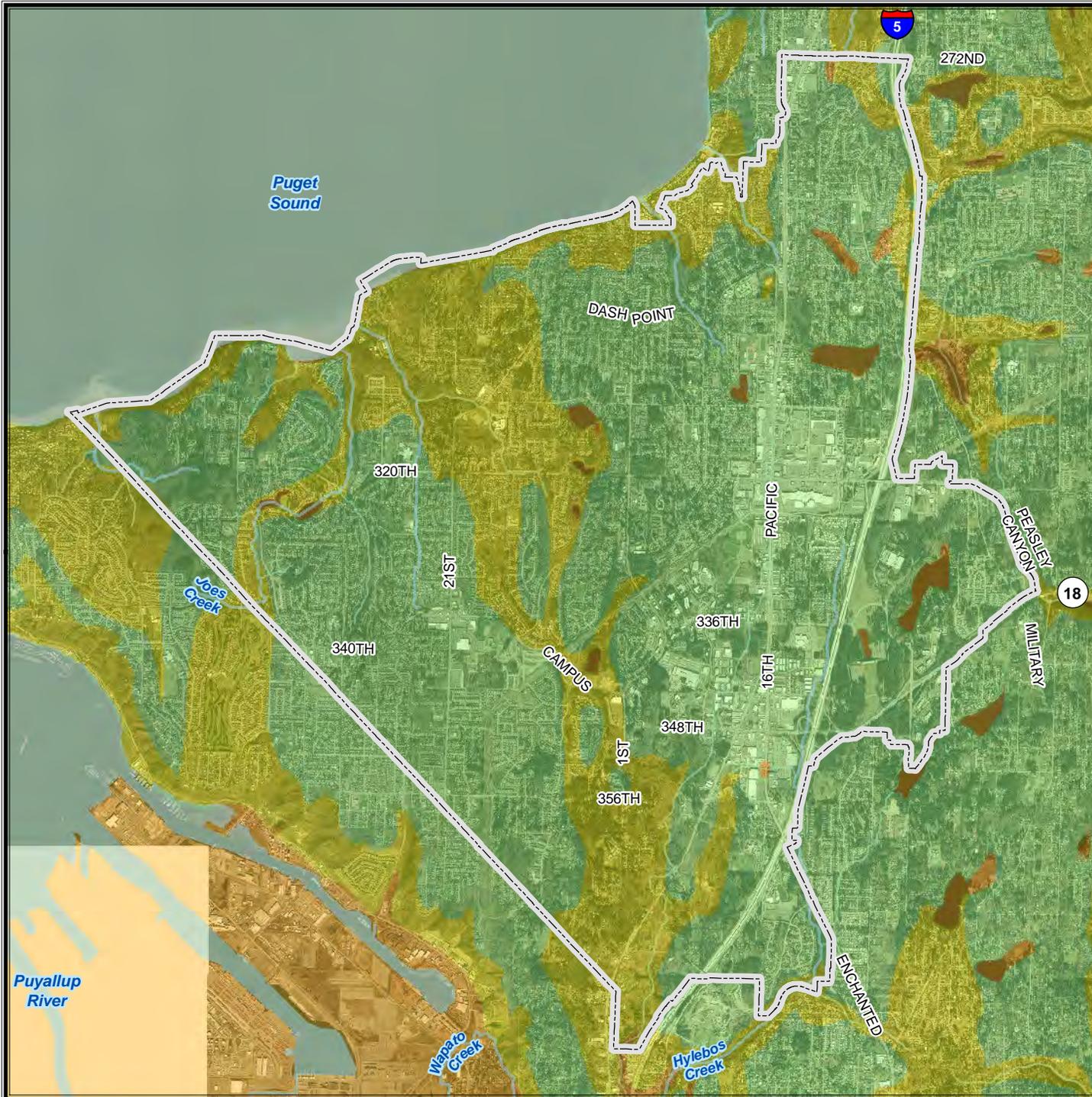
Susceptible		Not Susceptible	
High	Moderate to High	Bedrock	Peat
Moderate	Low to Moderate	Water	Ice
Low	Very Low to Low		
Very Low			

Liquefaction data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. Data is based solely on surficial geology published at a scale of 1:100,000.

A liquefaction susceptibility map provides an estimate of the likelihood that soil will liquefy as a result of earthquake shaking. This type of map depicts the relative susceptibility in a range that varies from very low to high. Areas underlain by bedrock or peat are mapped separately as these earth materials are not liquefiable, although peat deposits may be subject to permanent ground deformation caused by earthquake shaking.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF FEDERAL WAY

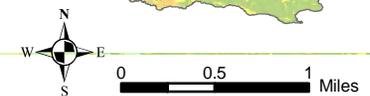
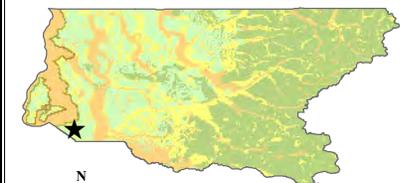
National Earthquake Hazard Reduction Program (NEHRP) Soil Classification

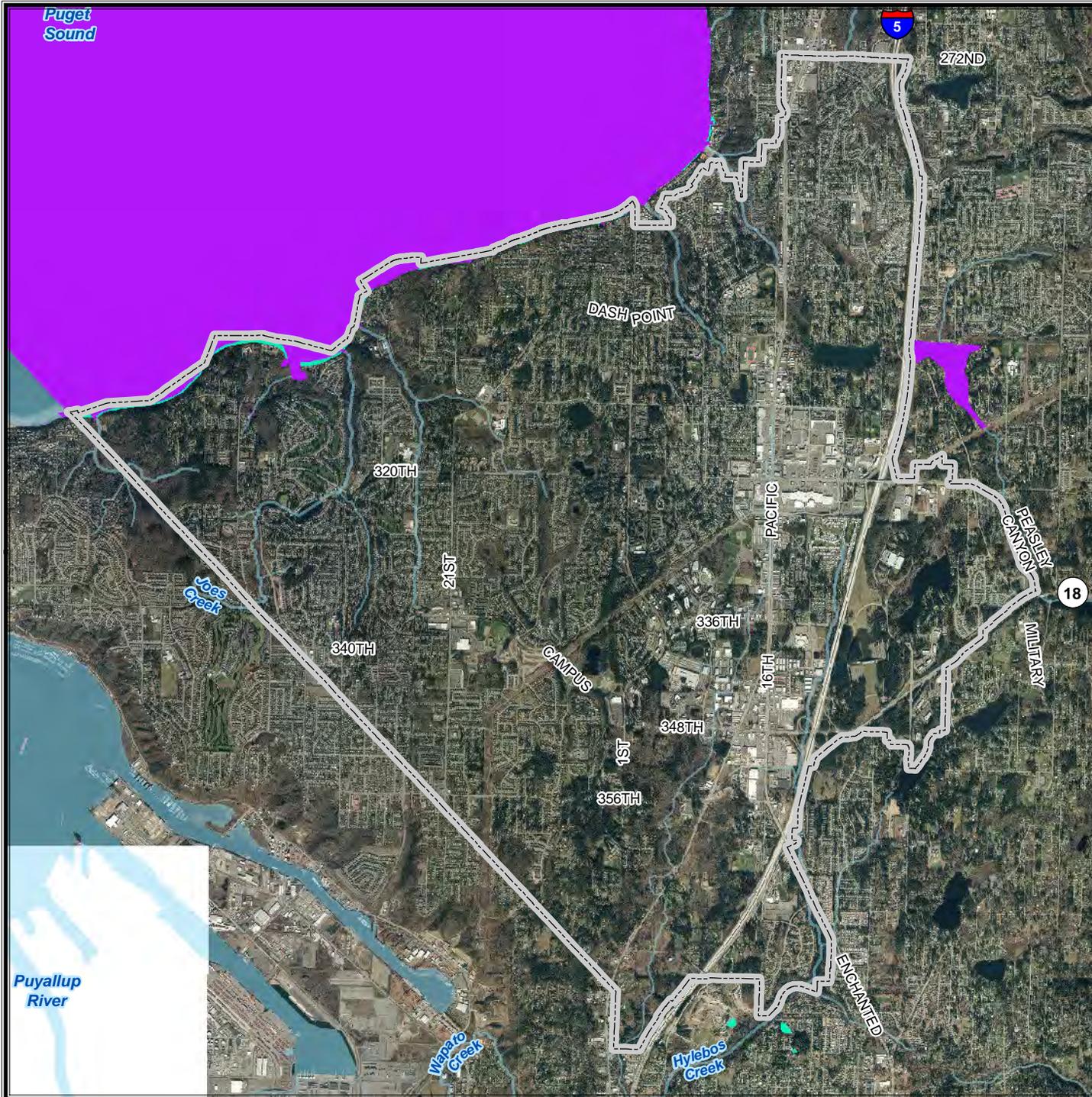
- Site Class B - Rock
- Site Class C - Very Dense Soil, Soft Rock
- Site Class D - Stiff Soil
- Site Class E - Soft Soil

Soil classification data provided by Washington State Department of Natural Resources, Geology and Earth Resources Division.

The dataset identifies site classes for approximately 33,000 polygons derived from the geologic map of Washington. The methodology chosen for developing the site class map required the construction of a database of shear wave velocity measurements. This database was created by compiling shear wave velocity data from published and unpublished sources, and through the collection of a large number of shear wave velocity measurements from seismic refraction surveys conducted for this project. All of these sources of data were then analyzed using the chosen methodologies to produce the statewide site class maps.

Base Map Data Sources:
King County, U.S. Geological Survey





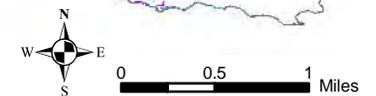
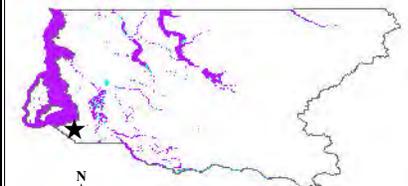
CITY OF FEDERAL WAY FEMA DFIRM Flood Hazard Areas

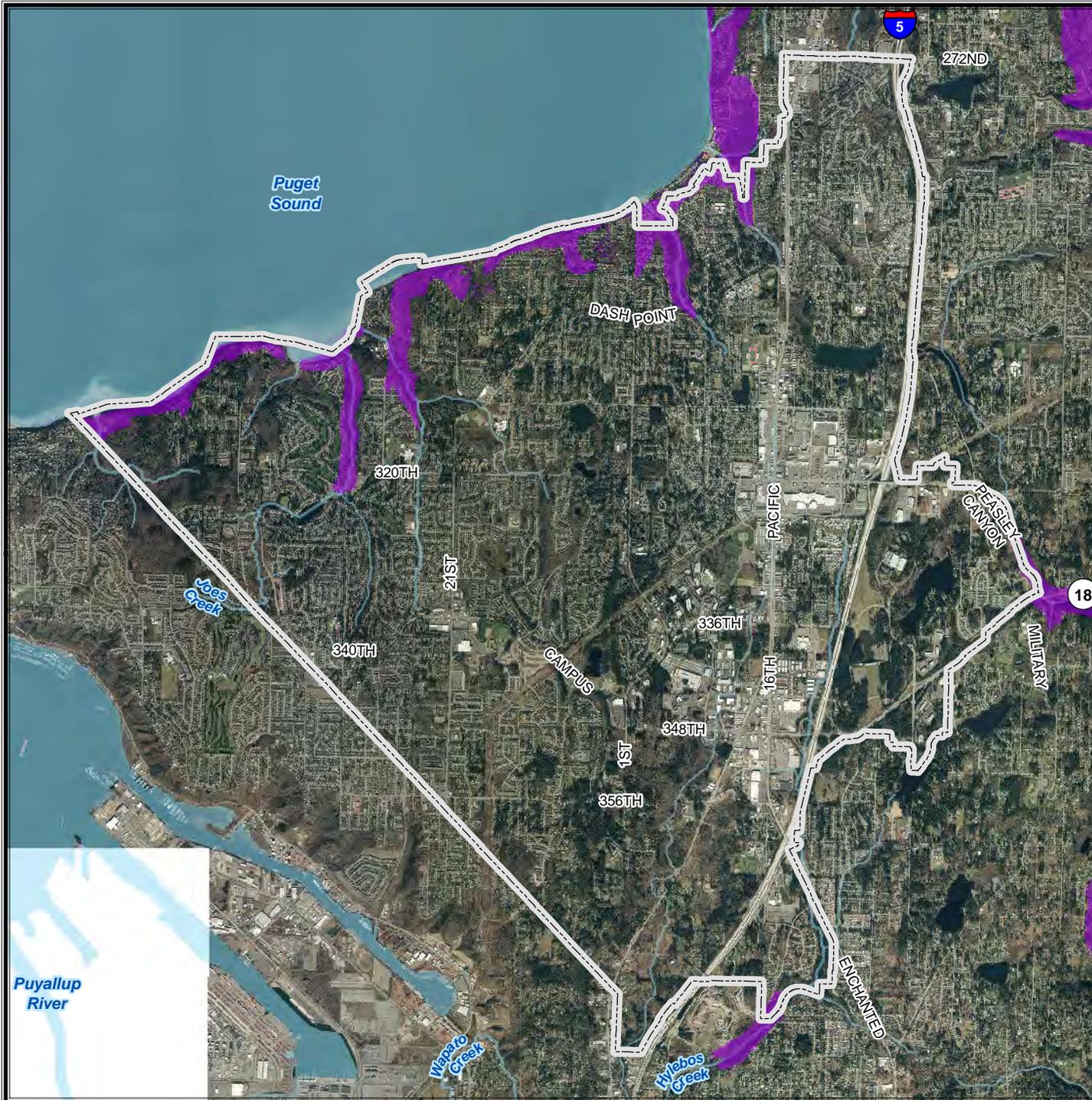
-  Floodway
-  1 Percent Annual Flood Hazard
-  0.2 Percent Annual Flood Hazard

Flood hazard areas as depicted on draft FEMA Digital Flood Insurance Rate Maps (DFIRM).

The 1 percent annual flood hazard is commonly referred to as the 100 year floodplain. The 0.2 percent annual flood hazard is commonly referred to as the 500 year floodplain.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF FEDERAL WAY

Landslide Hazard Areas

■ All Hazard Areas

The landslide hazard areas shown have been merged from three assessments for use for planning purposes:

WA DNR Landslide Areas data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. This dataset contains 1:24,000-scale polygons defining the extent of mapped landslides in the state of Washington, compiled chiefly from pre-existing landslide databases created in different divisions of the Washington State Department of Natural Resources to meet a variety of purposes.

King County Slide Areas - Landslide areas are areas subject to severe landslide risk identified in the Sensitive Areas Ordinance as:

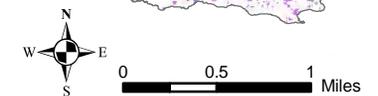
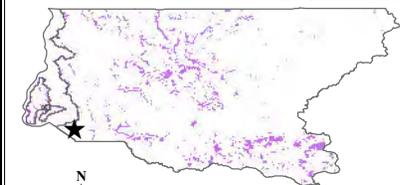
- A. Any area with a combination of:
 1. Slopes greater than 15 %
 2. Impermeable soils (typically silt and clay) frequently interbedded with granular soils (predominantly sand and gravel)
 3. Springs or groundwater seepage.
- B. Any area that has shown movement during the Holocene epoch (from 10,000 years ago to present), or that is underlain by mass wastage debris of that epoch.
- C. Any area potentially unstable as a result of rapid stream incision, stream bank erosion or undercutting by wave action.
- D. Any area that shows evidence of, or is at risk from, snow avalanches.
- E. Any area located on an alluvial fan, presently subject to or potentially subject to inundation by debris flows or deposition of stream-transported deposits.

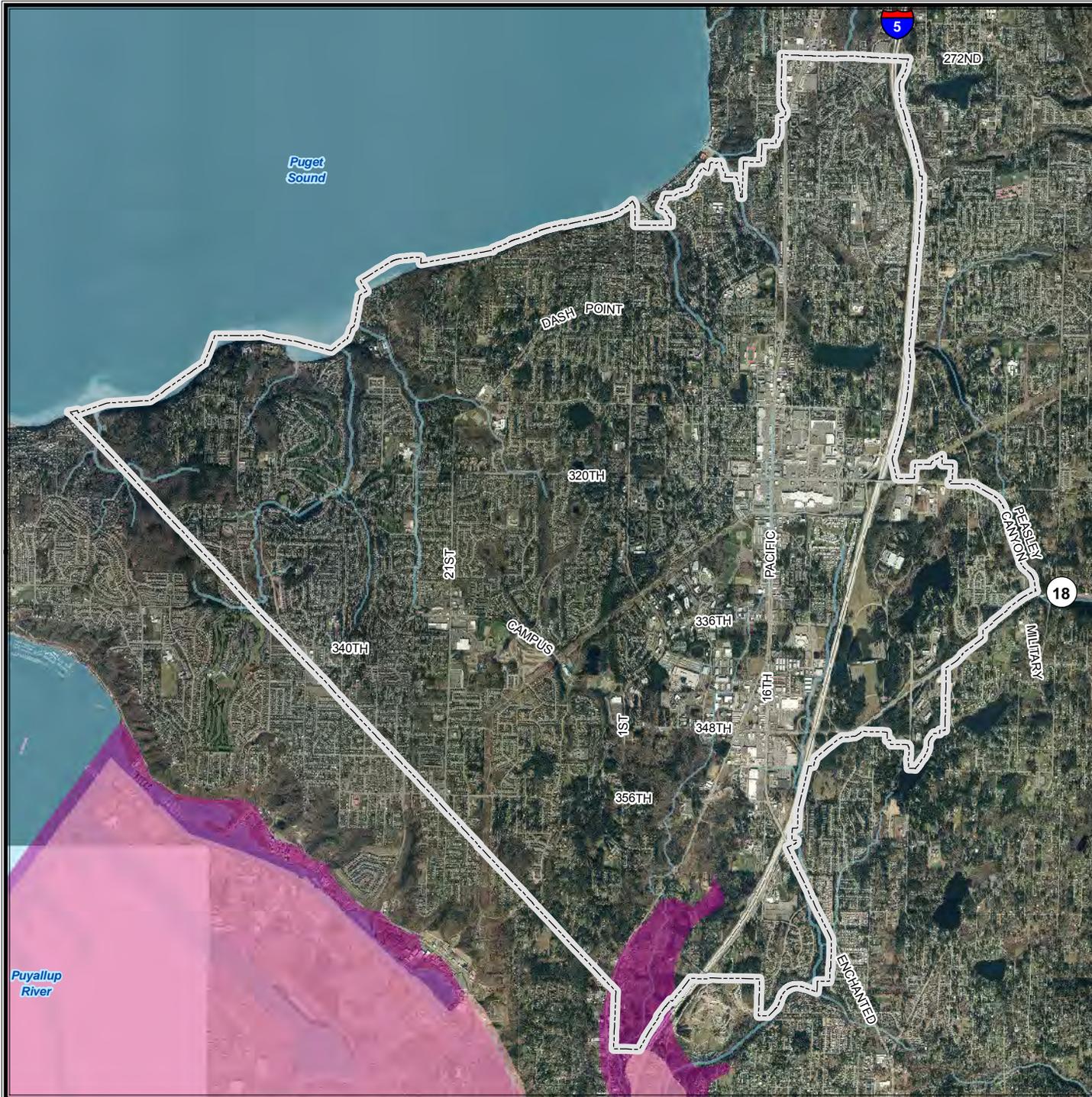
Slope/Soils Analysis:

1. Areas of slope greater than 40%. Slope determined using a DEM generated from 2002 LiDAR data. Slope data provided by King County DNRP.
2. Areas of Qf (alluvial fans), Qls (discrete landslides), and Qmw (colluvium and the cumulative debris from small indistinct landslides that accumulate on and at the base of unstable slopes) soils as identified in surface geology data provided by King County DNRP.

Base Map Data Sources:

King County, U.S. Geological Survey





CITY OF FEDERAL WAY

Lahar Hazards (Puyallup Valley)

- Case 1 - Large Lahars
- Case 2 - Moderate Lahars
- Post-Lahar Sedimentation

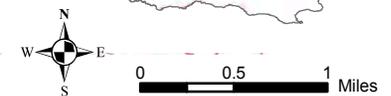
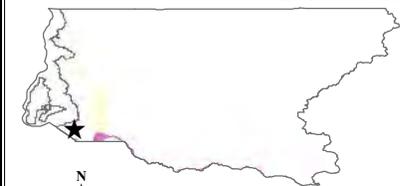
Lahar hazards data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. These data were produced as part of a project to estimate the potential economic losses from future eruptions of Mount Rainier.

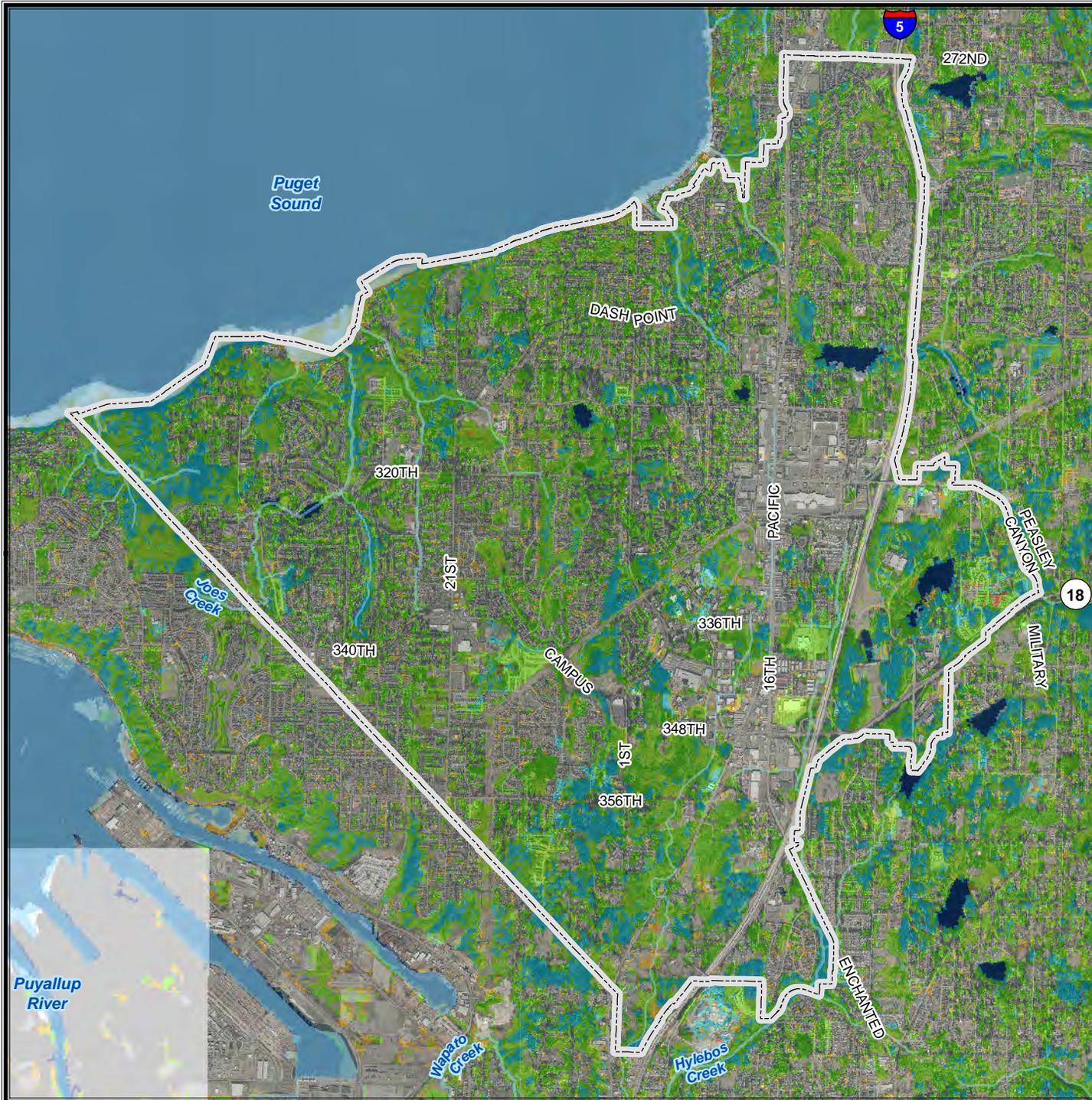
Case 1 - Large Lahars (Recurrence Interval 500–1000 Years)
Shows areas that could be affected by cohesive lahars that originate as enormous avalanches of weak, chemically altered rock from the volcano. Case I lahars can occur with or without eruptive activity. The time interval between Case I lahars on Mount Rainier is about 500 to 1,000 years.

Case 2 - Moderate Lahars (Recurrence Interval 100–500 Years)
Shows areas that could be affected by relatively large noncohesive lahars, which are commonly caused by the melting of snow and glacier ice by hot rock fragments during an eruption, but they can also have a noneruptive origin. The time interval between Case II lahars from Mount Rainier is near the lower end of the 100- to 500-year range, making these flows analogous to the so-called "100-year flood" commonly considered in engineering practice.

Post-Lahar Sedimentation Shows areas subject to post-lahar erosion and sedimentation and the ongoing potential for flooding.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF FEDERAL WAY

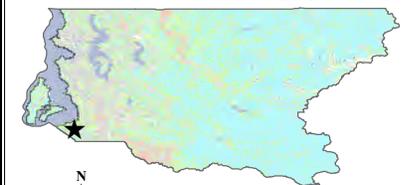
2008 LANDFIRE Fire Behavior Fuel Model

Anderson 13 Fuel Classes

Burnable	Non-Burnable
FBFM1	Developed
FBFM2	Agriculture
FBFM3	Water
FBFM5	Barren
FBFM6	
FBFM8	
FBFM9	
FBFM10	
FBFM11	

Fuel Class data (LANDFIRE REFRESH 2008 (If_1.1.0)) provided by the Wildland Fire Science, Earth Resources Observation and Science Center, U.S. Geological Survey. The LANDFIRE fuel data describe the composition and characteristics of both surface fuel and canopy fuel. Thirteen typical surface fuel arrangements or "collections of fuel properties" (Anderson 1982) were described to serve as input for Rothermel's mathematical surface fire behavior and spread model (Rothermel 1972). These fire behavior fuel models represent distinct distributions of fuel loadings found among surface fuel components (live and dead), size classes and fuel types. The fuel models are described by the most common fire carrying fuel type (grass, brush, timber litter or slash), loading and surface area-to-volume ratio by size class and component, fuelbed depth and moisture of extinction.

Base Map Data Sources:
King County, U.S. Geological Survey



CHAPTER 11. TOWN OF HUNTS POINT ANNEX

11.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Sue Ann Spens, Clerk-Treasurer
3000 Hunts Point Rd
Hunts Point, WA 98004
Telephone: (425) 455-1834
e-mail Address: clerk@huntspoint-wa.gov

Alternate Point of Contact

Linda Kroner, Deputy Clerk/Treasurer
3000 Hunts Point Rd
Hunts Point, WA 98004
Telephone: (425) 455-1834
e-mail Address: depclerk@huntspoint-wa.gov

11.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—1955
- **Current Population**—395 as of April 1, 2013 (Washington State Office of Financial Management estimate)
- **Population Growth**—The Town of Hunts Point is a fully developed community with no real population growth.
- **Location and Description**—The Town of Hunts Point is a residential-only town covering approximately 205 acres and sitting on the eastern shore of Lake Washington at longitude W122° 13' 50" and latitude N47° 38' 12" in King County, Washington. Downtown Bellevue is less than 3 miles away and Downtown Seattle less than 10 miles. The Town is located conveniently near both Interstate 405 and State Route 520.
- **Brief History**—In the days when Washington was a territory, Hunts Point was a favorite camping and hunting ground for the Sammamish Indian Tribe. In the late 1800s, Washington settlers began acquiring property on the eastern shores of Lake Washington. One of these settlers, Leigh S. J. Hunts, who lived on Yarrow Point, purchased the Hunts Point peninsula so that he could cut down trees that blocked his view to the west. Mr. Hunt was to lose the property in the changing fortunes of the turn of the 20th century, at which time other Seattle families began purchasing property in the Hunts Point area, and a summer community was created. Upon the completion of SR-520, interest in the Eastside dramatically increased, leading to phenomenal growth and development for the area. To preserve the nature of the community and to retain local control over this development, residents decided to incorporate as a town in 1955. Since incorporation, the town has seen a small increase in the number of homes, but it retains the large lots that are a signature characteristic of the town and the urban forest that shapes the sylvan feeling of Hunts Point.
- **Climate**—The Town of Hunts Point has a mild oceanic climate, experiencing warm, but not hot summers and cool, but not cold winters, with a relatively narrow annual temperature range. The annual average high is 60.2 degrees Fahrenheit, and the average annual low is 44.6 degrees Fahrenheit. Annual average precipitation is approximately 36 inches and is dispersed more evenly throughout the year with no real dry season in typical years.

- **Governing Body Format**—The Town of Hunts Points is governed by a Mayor-Council form of government. The Town Council is the legislative and administrative body and consists of a Mayor and five Councilmembers, all of whom are residents of the Town elected at large. The Mayor and Councilmembers are volunteers who serve four-year terms and are eligible for re-election without term limits. The Town Council assumes responsibility for the adoption of this plan and will oversee its implementation.
- **Development Trends**—The current development trend ranges from restoring older homes of architectural significance to replacing older homes with larger ones. This trend is typical for this area of the Eastside. Hunts Point is a fully developed community.

11.3 CAPABILITY ASSESSMENT

The assessment of the jurisdiction’s legal and regulatory capabilities is presented in Table 11-1. The assessment of the jurisdiction’s fiscal capabilities is presented in Table 11-2. The assessment of the jurisdiction’s administrative and technical capabilities is presented in Table 11-3. Information on the community’s National Flood Insurance Program (NFIP) compliance is presented in Table 11-4. Classifications under various community mitigation programs are presented in Table 11-5.

**TABLE 11-1.
LEGAL AND REGULATORY CAPABILITY**

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Yes	No	No	Yes	HPMC 15.10 (2013)
Zoning	Yes	No	No	No	HPMC 18.05 (2003)
Subdivisions	Yes	No	No	No	HPMC Title 17 (2008)
Stormwater Management	No	No	No	No	
Post Disaster Recovery	Yes	No	No	Yes	HPMC 2.50 (2002)
Real Estate Disclosure	No	No	No	Yes	RCW 64.56
Growth Management	Yes	No	No	Yes	HPMC 11.05 (2004)
Site Plan Review	Yes	No	No	No	HPMC 15.45 (2007)
Environmental Protection	Yes	No	No	Yes	HPMC Title 16 (1998)
Planning Documents					
General or Comprehensive Plan	Yes	No	No	Yes	HPMC 11.05 (2004)
	<i>Is the plan equipped to provide linkage to this mitigation plan?</i> Yes, Plan includes land use, environment and Shorelines elements				
Floodplain or Basin Plan	No	No	No	No	In planning
Stormwater Plan	No	No	No	No	In planning
Capital Improvement Plan	Yes	No	No	No	CIP not codified
	<i>What types of capital facilities does the plan address?</i> Roads, Other infrastructure <i>How often is the plan revised/updated?</i> Annually				
Habitat Conservation Plan	No	Yes	No	No	Washington State Bald Eagle Rules
Economic Development Plan	No	No	No	No	All SFR, no commercial activity
Shoreline Management Plan	Yes	No	No	Yes	HPMC 16.10 (1975, update in process)
Community Wildfire Protection Plan	No	No	No	No	
Response/Recovery Planning					
Comprehensive Emergency Management Plan	Yes	No	No	Yes	CEMP not codified. Last updated 2012
Threat and Hazard Identification and Risk Assessment	No	No	No	No	
Terrorism Plan	No	No	N	No	
Post-Disaster Recovery Plan	Yes	No	No	No	CEMP
Continuity of Operations Plan	YES	NO	No	No	HPMC 2.50 (2002)
Public Health Plans	No	No	No	No	

TABLE 11-2. FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Real Estate Excise Tax; King County Flood Control District-Basin Opportunity Fund

TABLE 11-3. ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Town Building Official, Town Planner, and Town Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Town Building Official and Town Engineer
Planners or engineers with an understanding of natural hazards	Yes	Town Planner and Town Engineer
Staff with training in benefit/cost analysis	Yes	Clerk-Treasurer
Surveyors	Yes	By contract.
Personnel skilled or trained in GIS applications	Yes	By contract.
Scientist familiar with natural hazards in local area	Yes	By contract.
Emergency manager	Yes	Assigned member of Planning Commission.
Grant writers	Yes	By contract.

**TABLE 11-4.
NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE**

What department is responsible for floodplain management in your community?	Not assigned at this time.
Who is your community's floodplain administrator? (department/position)	None assigned at this time.
Do you have any certified floodplain managers on staff in your community?	No
What is the date of adoption of your flood damage prevention ordinance?	N/A
When was the most recent Community Assistance Visit or Community Assistance Contact?	No identified floodplains in Hunts Point.
To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	No
Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why)	N/A
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	Not at this time.
Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?	No.
**Note-Hunts Point is not currently mapped by FEMA and is not participating in the NFIP	

**TABLE 11-5.
COMMUNITY CLASSIFICATIONS**

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection	Yes	3	Not available
StormReady	No	N/A	N/A
Firewise	No	N/A	N/A
Tsunami Ready (if applicable)	No	N/A	N/A

11.4 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 11-6 lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: 0
- Number of FEMA-Identified Severe Repetitive Loss Properties: 0
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties Known to Have Been Mitigated: 0

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Wind		11/2013	No estimate available.
Severe Winter Storm, Ice Storm	DR-4056	01/2012	No estimate available. (Minimal costs for removal of debris from fallen tree limbs.)
Severe Winter Storm, Heavy Snow	DR-1825	12/2008	No estimate available. (Minimal costs for removal of debris from fallen tree limbs and removal of snow.)
High Wind	DR-1682	12/2006	No estimate available. (Minimal costs for removal of debris from fallen tree limbs.)
Heavy Rain		1/2006	No estimate available.
Heavy Rain	DR-1499	10/2003	No estimate available.
Heavy Rain		11/2001	No estimate available.
Earthquake (Nisqually)	DR-1361	02/2001	No estimate available. (No measurable damage to Town structures or streets.)
High Wind	DR-981	1/1993	No estimate available. (Minimal costs for removal of debris from fallen tree limbs.)
Severe Winter Storm, Heavy Snow	DR-883	12/1990	No estimate available. (Minimal costs for removal of debris from fallen tree limbs and removal of snow.)
Earthquake		4/1965	No estimate available.
Wind	DR-196	10/1962	No estimate available.

11.5 HAZARD RISK RANKING

Table 11-7 presents the ranking of the hazards of concern. Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

11.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 11-8 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 11-9 identifies the priority for each initiative. Table 11-10 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Earthquake	51
2	Severe Weather	51
3	Severe Winter Weather	48
4	Wildfire	45
5	Flood	6
6	Volcano	3
7	Avalanche	0
8	Dam Failure	0
9	Landslide	0
10	Tsunami	0

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
HP-1—Consider participation in the National Flood Insurance program (NFIP)						
New and Existing	All Hazards	2,4,10,12	Town Council	Low	General Fund	Ongoing
HP-2—Continue to educate residents on how to prevent loss of life and property damage from earthquakes, storms, and urban wildfires.						
New and Existing	All Hazards	4, 6, 7	Town Council	Low	General Fund	Ongoing
HP-3—Develop a Stormwater Management Comprehensive Plan. This will be accomplished by surveying and mapping the Town’s existing stormwater facilities, determining the additional infrastructure needed to upgrade the existing system, and developing a comprehensive plan for implementing the upgrades.						
New and Existing	Severe Storm	1, 2, 4, 12	Town Council	Medium	General Fund, King County Flood Control District Grants	Short Term
HP-4—Partner with a neighboring city for snow removal. This will be accomplished by executing an Interlocal Agreement.						
Existing	Severe Winter Storm	1, 5, 7,8,	Town Council	Low	General Fund	Short Term
HP-5—Prepare and maintain an inventory of significant trees on Town property, including rights of way. This inventory will result in a watch list for monitoring and maintaining the health of trees on public property.						
New and Existing	Wildfire	2, 4, 5, 8, 10	Town Council	Medium	General Fund	Short Term

TABLE 11-8. HAZARD MITIGATION ACTION PLAN MATRIX						
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
HP-6 —Integrate the hazard mitigation plain into other plans, ordinances or programs to dictate land uses within the jurisdiction.						
New	All Hazards	2,4,8,10	Town Council	Low	General Fund	Short-term
HP-7 —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.						
Existing	All Hazards	5,9,13	Town Council	High	FEMA grants, Local sources for local Match	Long-term
HP-8 —Continue to support the county-wide initiatives identified in this plan.						
New and Existing	All Hazards	4,6,11,12,13, 14, 15	Town Council	Low	General Fund	Ongoing
HP-9 —Actively participates in the plan maintenance strategy identified in this plan.						
New and Existing	All Hazards	4,6,11,12,13, 14, 15	King County OEM, Town Council	Low	General Fund	Ongoing

TABLE 11-9. MITIGATION STRATEGY PRIORITY SCHEDULE							
Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant- Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Priority ^a
HP-1	4	Low	Low	Yes	No	Yes	High
HP-2	3	Low	Low	Yes	No	Yes	High
HP-3	4	Medium	Medium	Yes	Yes	No	High
HP-4	4	Medium	Low	Yes	No	Yes	High
HP-5	5	Medium	Medium	Yes	Yes	No	Medium
HP-6	4	Medium	Low	Yes	No	Yes	High
HP-7	3	High	High	Yes	Yes	No	Medium
HP-8	7	Medium	Low	Yes	No	Yes	High
HP-9	7	Low	Low	Yes	Yes	Yes	High

a. See Introduction for explanation of priorities.

**TABLE 11-10.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche	--	--	--	--	--	--
Dam Failure	--	--	--	--	--	--
Earthquake	6,9	7	2,8	5	8	
Flood	1,3,6,9	1,7	1,2,8	1,5	1,8	
Landslide	--	--	--	--	--	--
Severe Weather	3,6,9	7	2,8	5	8	
Severe Winter Weather	3,6,9	7	2,8	5	4,8	
Tsunami	--	--	--	--	--	--
Volcano	6,9	7	2,8	5	8	
Wildfire	6,9	7	2,8	5	8	

a. See Introduction for explanation of mitigation types.

11.7 ADDITIONAL COMMENTS

While Earthquake ranks as the highest hazard risk in the Town of Hunts Point, the 2001 Nisqually Earthquake did not compromise any public structures, and damage to private homes was minimal; however it should be noted that this intraslab (or Benioff) earthquake measured M7.0 on the Richter Scale, and its epicenter was 30 miles beneath the surface and centered 100 miles from Hunts Point. It is estimated that an earthquake involving the Cascadia Subduction Zone could measure M9.0 on the Richter Scale, and while the energy released from such a quake would be spread over a large area, the impact on communities throughout the Puget Sound would be considerable. Similarly, an M7.0 crustal earthquake along any of the faults in the Seattle area would have a similar impact, because the epicenter would be much shallower than a subduction or intraslab quake.

The Town recently completed a structural survey of Town Hall and has determined that its earthquake vulnerability is limited largely because it is a single-story wood structure built on a slab-on-grade. At this time, periodic reviews of this structure and ongoing public education campaigns for our residents appear to be sufficient to mitigate the earthquake hazard.

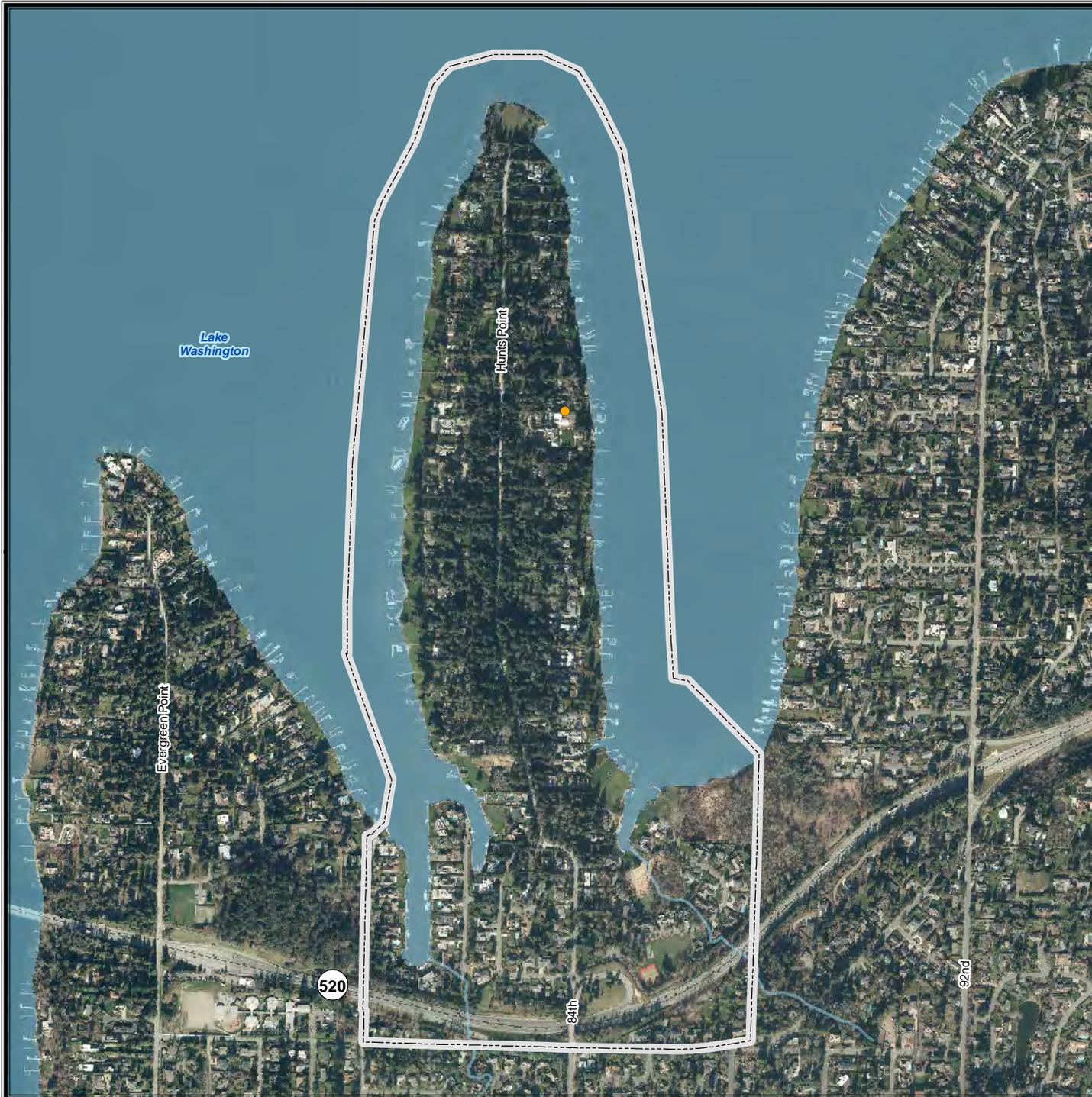
The Town has no historical incidences of flooding during severe storms, except minor localized street flooding. This is why the Town did not join the National Flood Insurance Program in 2002. Our geography is such that most stormwater flows through the existing stormwater conveyance system and a couple of small natural creeks that drain to Lake Washington. However, in instances of heavy rain, stormwater can temporarily overwhelm the conveyance system and small creeks, backing water up onto the streets and onto private property in isolated areas. Participation in the NFIP will open up funding opportunities for flood-prevention projects, including stormwater control. In addition, a Stormwater

Management Comprehensive Plan will help the Town determine where the existing infrastructure needs improvement and will allow us to prioritize spending to complete these improvements.

All of the Town's utilities, including electricity, telephone, and cable, are underground, so the impact of Severe Storms and Severe Winter Storms is usually limited to debris from fallen trees/limbs and the accumulation of either stormwater or unplowed snow on the roads, though storm damage affecting regional electrical-distribution facilities may cause local power outages. A partnership with a nearby city to cooperatively remove accumulated snow from roadways will eliminate the hazard to motorists and private structures near the roadways.

Residents in the Town value trees and have enacted rules to protect them and guide their replacement. The Town now has a mature urban forest, which is vulnerable to wildfire, though no such event has occurred in the Town since its development. In 2007, the Town performed an inventory of all significant trees on public property. An update of this inventory will help us monitor the health of all public trees, especially those identified as needing to be watched, and mitigate some of the danger posed by wildfire. Education regarding the value of managing the private forest will encourage similar stewardship among our residents.

An item of concern to the Town of Hunts Point that is not addressed by this plan and that is beyond our direct control is road/bridge access. The Town has one primary means of vehicular access: an overpass crossing State Route 520. An earthquake of sufficient magnitude could damage this overpass and eliminate the only automobile ingress/egress available to residents to exit the town. Much of the risk associated with this hazard has been addressed by replacement of this overpass as part of the Washington State Department of Transportation's (WSDOT) current project to improve the SR-520 corridor. The Town's Emergency Response Plan includes alternate means of evacuating residents should this overpass collapse; however, only limited local emergency-response services would be available in this scenario as fire trucks, ambulances, and other emergency-response vehicles would have no access by road.



TOWN OF HUNTS POINT

Critical Facilities and Infrastructure

Critical Facilities

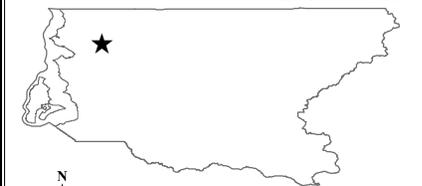
-  Government Function
-  HazMat
-  Medical Care
-  Protective Function
-  Schools
-  Other Facility

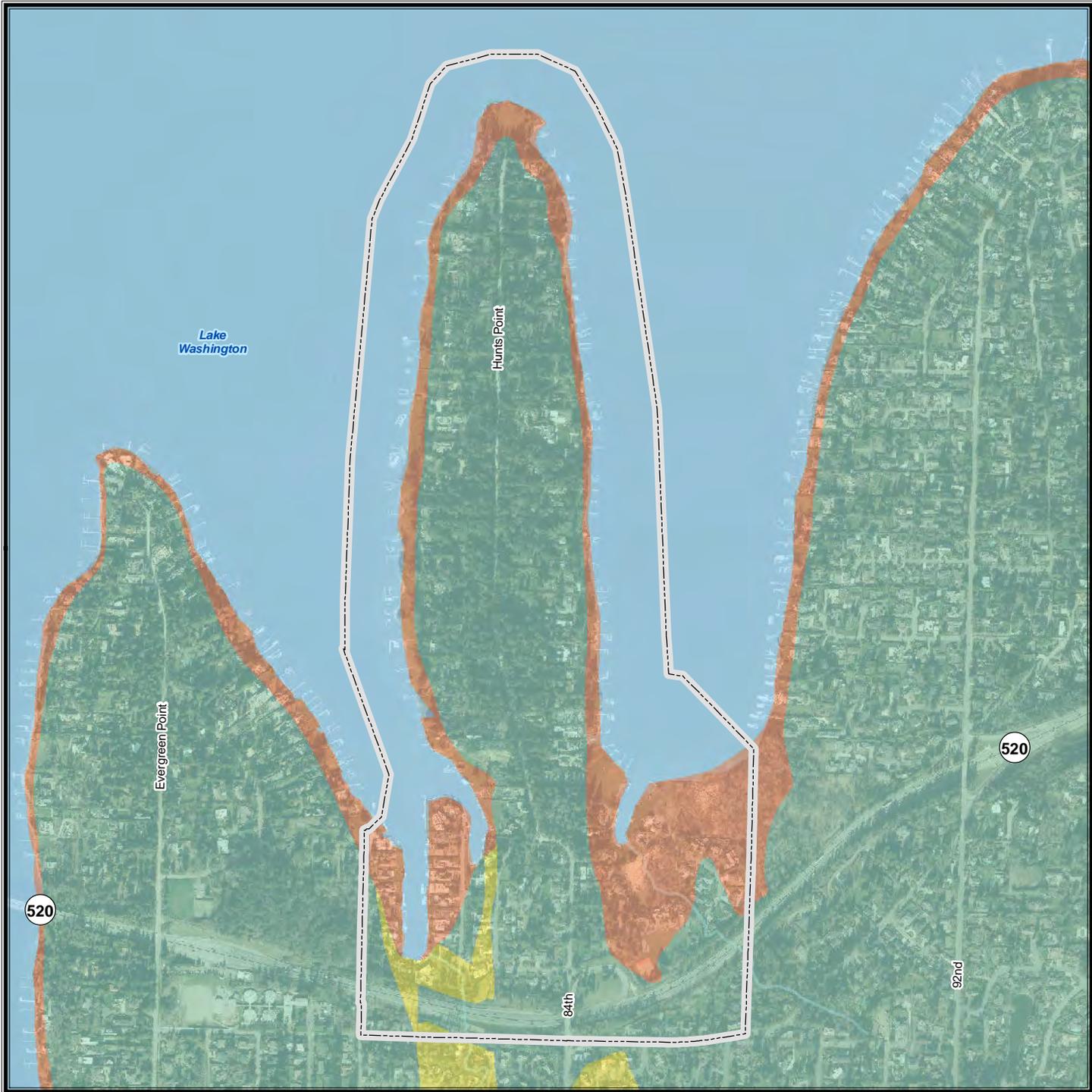
Critical Infrastructure

-  Bridges
-  Communications
-  Dams
-  Water Supply
-  Power
-  Transportation
-  Wastewater

Locations are approximate.

Base Map Data Sources:
King County, U.S. Geological Survey





TOWN OF HUNTS POINT

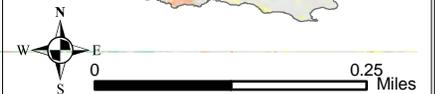
Liquefaction Susceptibility

Susceptible		Not Susceptible	
High	Moderate to High	Bedrock	Peat
Moderate	Low to Moderate	Water	Ice
Low	Very Low to Low		
Very Low			

Liquefaction data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. Data is based solely on surficial geology published at a scale of 1:100,000.

A liquefaction susceptibility map provides an estimate of the likelihood that soil will liquefy as a result of earthquake shaking. This type of map depicts the relative susceptibility in a range that varies from very low to high. Areas underlain by bedrock or peat are mapped separately as these earth materials are not liquefiable, although peat deposits may be subject to permanent ground deformation caused by earthquake shaking.

Base Map Data Sources:
King County, U.S. Geological Survey



TOWN OF HUNTS POINT

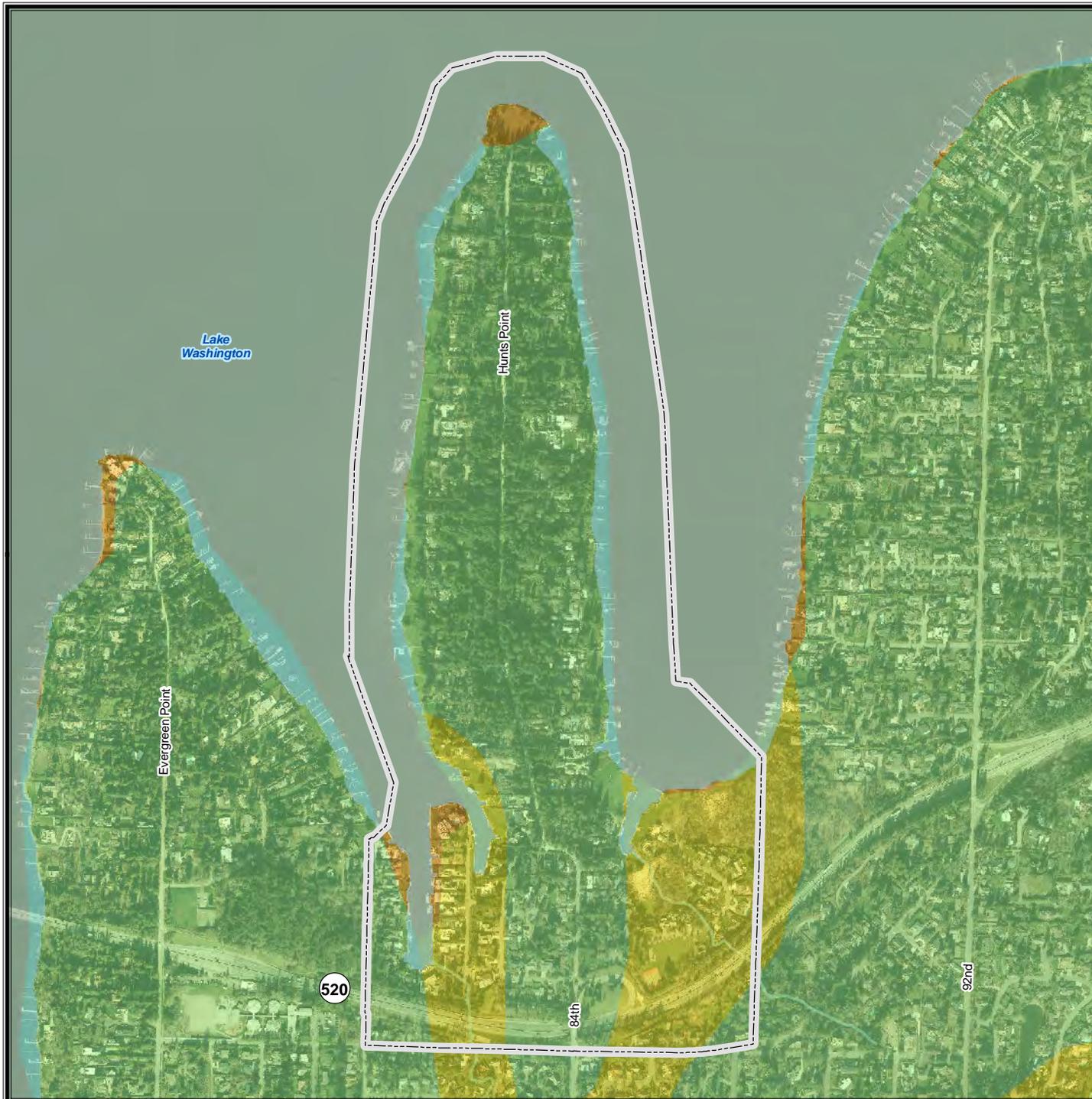
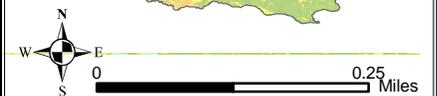
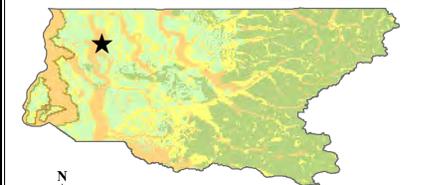
National Earthquake Hazard Reduction Program (NEHRP) Soil Classification

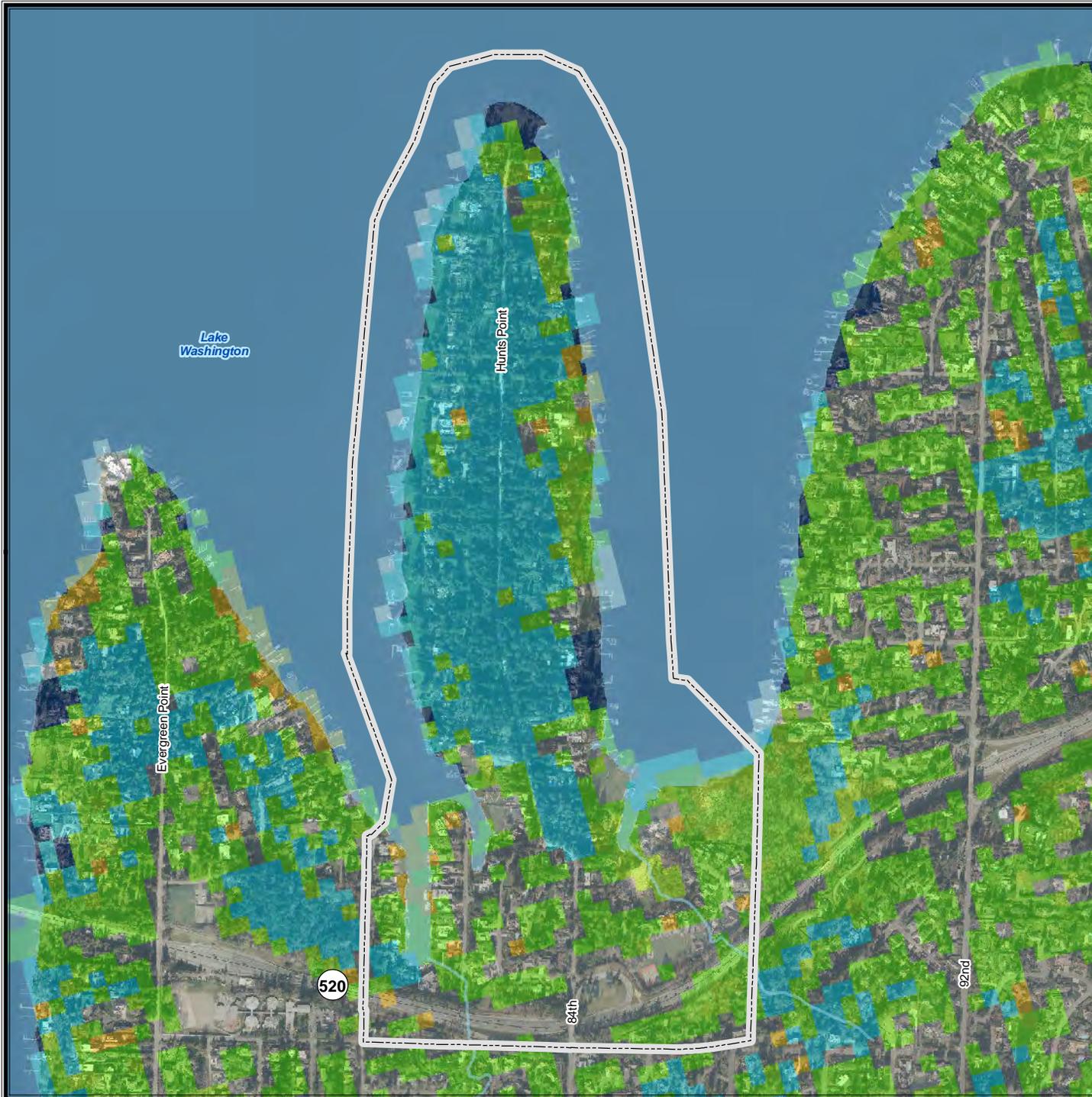
- Site Class B - Rock
- Site Class C - Very Dense Soil, Soft Rock
- Site Class D - Stiff Soil
- Site Class E - Soft Soil

Soil classification data provided by Washington State Department of Natural Resources, Geology and Earth Resources Division.

The dataset identifies site classes for approximately 33,000 polygons derived from the geologic map of Washington. The methodology chosen for developing the site class map required the construction of a database of shear wave velocity measurements. This database was created by compiling shear wave velocity data from published and unpublished sources, and through the collection of a large number of shear wave velocity measurements from seismic refraction surveys conducted for this project. All of these sources of data were then analyzed using the chosen methodologies to produce the statewide site class maps.

Base Map Data Sources:
King County, U.S. Geological Survey





TOWN OF HUNTS POINT

2008 LANDFIRE Fire Behavior Fuel Model

Anderson 13 Fuel Classes

Burnable	Non-Burnable
FBFM1	Developed
FBFM2	Agriculture
FBFM3	Water
FBFM5	Barren
FBFM6	
FBFM8	
FBFM9	
FBFM10	
FBFM11	

Fuel Class data (LANDFIRE REFRESH 2008 (lf_1.1.0)) provided by the Wildland Fire Science, Earth Resources Observation and Science Center, U.S. Geological Survey. The LANDFIRE fuel data describe the composition and characteristics of both surface fuel and canopy fuel. Thirteen typical surface fuel arrangements or "collections of fuel properties" (Anderson 1982) were described to serve as input for Rothermel's mathematical surface fire behavior and spread model (Rothermel 1972). These fire behavior fuel models represent distinct distributions of fuel loadings found among surface fuel components (live and dead), size classes and fuel types. The fuel models are described by the most common fire carrying fuel type (grass, brush, timber litter or slash), loading and surface area-to-volume ratio by size class and component, fuelbed depth and moisture of extinction.

Base Map Data Sources:
King County, U.S. Geological Survey



0 0.25 Miles

CHAPTER 12.

CITY OF ISSAQUAH UPDATE ANNEX

12.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Bret Heath, Emergency Management
Director
670 1st Ave NE
Issaquah, WA. 98027
Telephone: (425) 837-3475
e-mail Address: breth@issaquahwa.gov

Alternate Point of Contact

Brenda Bramwell, Emergency Management
Coordinator
670 1st Ave NE
Issaquah, WA. 98027
Telephone: (425) 837-3464
e-mail Address: BrendaB@issaquahwa.gov

12.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—1892
- **Current Population**—31,151 as of April 2012
- **Population Growth**—Over the last three decades the City of Issaquah has been a relatively fast growing community with increases in population ranging from 91% between 1980 and 1995, 18% between 1995 and 2000 and 171% between 2000 and 2010. Average annual population increases are expected to continue to grow at 2.59% between 2012 and 2015, 1.67% between 2015 and 2020 and 0.58% between 2020 and 2031. The growth rate is estimated using King County’s projected 0.5 percent annual growth rate from 2011 to 2031 and taking into account the planned developments of the Urban Villages, the Issaquah Highlands, Talus and the Rowley Properties, which are in the development “pipeline.” The population within the City is expected to grow to at least 38,492 by the year 2031. Much of this growth is attributable to the Urban Villages; Issaquah Highlands, Talus, and the Rowley Properties; and to the annexation of North Issaquah, Providence Point/Hans Jensen and the Greenwood Point areas. The population within the remaining Potential Annexation Areas is expected to grow minimally by 2031.
- **Location and Description**—The City of Issaquah is located at the South end of Lake Sammamish fifteen miles east of Seattle. Occupying 11.38 square miles and bisected by Interstate 90; Issaquah covers portions of three mountains, two valleys and a plateau, and includes four major stream systems. The economy of Issaquah includes a mix of retail, office, commercial and some light industry with a number of major employers including Costco and Microsoft. The City of Issaquah is a full service city with its own police department and City-owned and operated water, sewer and storm water utilities. Eastside Fire and Rescue provides fire and medical services.
- **Brief History**—Established in 1892 as a coal mining community and later a timber community, Issaquah has grown to a diverse full service community covering 11.38 square miles and 31,151 people. Much of this growth has occurred since 1990, when the City began annexing several large areas including Grand Ridge (Issaquah Highlands), East Village (Talus), Providence Point and South Cove/Greenwood Point.

- **Climate**—Issaquah weather is typical of the Puget Sound, Seattle Eastside area with an average 60 inches of rain per year and 11 inches of snowfall. The average number of days with any measurable precipitation is 186 with 154 sunny days per year. The July high is around 75 degrees and the average January low is 36.
- **Governing Body Format**—The City of Issaquah is governed by a seven member City Council elected at large from the general population. An elected Mayor oversees the executive branch of government with the City Administrator responsible for day to day operations. Legislative proposals are brought before the City Council through an Agenda Bill process for review by a Council committee before it is drafted in final form for adoption by either ordinance or resolution by City Council at a public meeting. All City Council committee meetings are open to the public and each agenda provides opportunities for the public to speak to the City Council regarding items on the agenda. Except for confidential information, all emergency management plans and programs are available for public review at City Hall, the local libraries and the City’s web site. The Issaquah City council will assume responsibility for the adoption of this plan and Emergency Management Director will oversee its implementation.
- **Development Trends**—As growth and development have expanded in the Pacific Northwest; Issaquah has emerged as leader in innovative Sustainable Development practices. A sustainable community creates a system that supports the proper functioning of the natural environment and recognizes the interconnected need for social and economic vitality. Sustainable Development policies provide the quantifiable measures needed to reduce local greenhouse gas emissions and enhance urban livability through the environment, economic vitality and social equity. From Issaquah’s renowned Salmon Days and the City’s efforts to restore viable salmon habitat, to the development of a Sustainable Building Program, Issaquah has demonstrated leadership in Sustainable Development and should continue in the pursuit of these goals. The City of Issaquah pursues the type of growth and development patterns that support and complement the community’s quality of life. For example, over the next 20 years, the City will provide incentives to concentrate new growth in the mixed use areas throughout Issaquah such as the Olde Town’s Cultural Business District and the Central Issaquah area. Where land supply is unavailable due to build out or development constraints, or if transportation concurrency cannot be met, growth must be accommodated in appropriate Potential Annexation Areas. Issaquah intends to phase development to occur first in areas where the City can provide services and facilities in a timely and efficient manner. Focusing development into specific activity areas can also protect sensitive and critical areas and prevent the conversion of undeveloped land into sprawling, under-utilized land. Policies require infrastructure and transportation improvements are available as development occurs; the establishment, improvement and adherence to building and design standards; and the completion of subarea plans to address the more individual sectors of the City.

12.3 CAPABILITY ASSESSMENT

The assessment of the jurisdiction’s legal and regulatory capabilities is presented in Table 12-1. The assessment of the jurisdiction’s fiscal capabilities is presented in Table 12-2. The assessment of the jurisdiction’s administrative and technical capabilities is presented in Table 12-3. Information on the community’s National Flood Insurance Program (NFIP) compliance is presented in Table 12-4. Classifications under various community mitigation programs are presented in Table 12-5.

TABLE 12-1. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Yes	Yes	No	Yes	Issaquah Municipal Code (IMC) Title 16. IBC. Updated 2012
Zoning	Yes	Yes	No	Yes	IMC Title 18. Updated 9/16/13
Subdivisions	Yes	Yes	No	Yes	IMC Title 18.13. Updated 9/16/13
Stormwater Management	Yes	Yes	No	Yes	IMC Title 13.28 1/31/2011 Stormwater Management Policy
Floodplain Management	Yes	Yes	Yes	Yes	IMC Title 16.36 3/21/2005 Areas of Special Flood Hazard
Post Disaster Recovery	Yes				CEMP 2011
Real Estate Disclosure	No	No	Yes	Yes	Washington State Disclosure Law (RCW 64.06)
Growth Management	Yes	Yes	Yes	Yes	Comp Plan. Updated 12/17/12
Site Plan Review	Yes	Yes	No	Yes	IMC 18.4. Updated 9/16/13
Public Health and Safety	No	Yes	Yes	Yes	King County Public Health
Environmental Protection	Yes	Yes	Yes	Yes	IMC 18.10. Updated 2/13.
Planning Documents					
General or Comprehensive Plan	Yes			Yes	Comp Plan adopted 1995, amended 12/17/12.
	<i>Is the plan equipped to provide linkage to this mitigation plan?</i> Yes				
Floodplain or Basin Plan	Yes	No	Yes	Yes	Issaquah Creek Basin & Non-Point Action Plan adopted Resolution 95-12. Adopted 1995
Stormwater Plan	Yes	No	No	Yes	Stormwater Management Plan adopted Resolution No. 2004-08. Adopted 2004
Capital Improvement Plan	Yes			Yes	2014 Annual
	<i>What types of capital facilities does the plan address?</i> All capital projects within the City. <i>How often is the plan revised/updated?</i> Annually				
Habitat Conservation Plan	Yes	No	No	No	Comp Plan. Updated 12/17/12
Economic Development Plan	No	No	No	No	In Process. Expected summer of 2014.
Shoreline Management Plan	Yes	No	No	Yes	IMC 18.10. Updated 2/13
Community Wildfire Protection Plan	No	No	No	No	

TABLE 12-1. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Response/Recovery Planning					
Comprehensive Emergency Management Plan	Yes	No	No	Yes	Promulgated 2012
Threat and Hazard Identification and Risk Assessment	Yes	No	No	Yes	2009 Resolution
Terrorism Plan	No	No	Yes	No	King County OEM
Post-Disaster Recovery Plan	No	No	No	No	
Continuity of Operations Plan	No	No	No	No	Some Continuity of Operations Plan issues addressed in Pandemic Flu Plan. 2008.
Public Health Plans	NA	No	No	No	

TABLE 12-2. FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Real Estate Excise Tax; King County Flood Control District-Basin Opportunity Fund

TABLE 12-3. ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Development Services Department/Senior Planner, Senior Engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Development Services Department/Senior Engineer Public Works Engineering/ Senior Engineer
Planners or engineers with an understanding of natural hazards	Yes	Development Services Department/ Environmental Planner
Staff with training in benefit/cost analysis	Yes	Public Works Engineering/ Senior Engineer
Surveyors	Yes	On contract
Personnel skilled or trained in GIS applications	Yes	Public Works Engineering/ GIS Coordinator
Scientist familiar with natural hazards in local area	Yes	On contract
Emergency manager	Yes	Public Works Operations/ Emergency Management Director
Grant writers	Yes	Mayor's Office/ Grant Coordinator

TABLE 12-4. NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE	
What department is responsible for floodplain management in your community?	Public Works Engineering
Who is your community's floodplain administrator? (department/position)	Public Works Engineering/ Surface Water Manager
Do you have any certified floodplain managers on staff in your community?	No
What is the date of adoption of your flood damage prevention ordinance?	1980
When was the most recent Community Assistance Visit or Community Assistance Contact?	2007
To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	No
Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why)	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	No
Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?	Yes (Class 5), Yes.

	Participating?	Classification	Date Classified
Community Rating System	Yes	5	10/01/12
Building Code Effectiveness Grading Schedule	Yes	2	Not available
Public Protection	Yes	4	Not available
StormReady	No	N/A	N/A
Firewise	No	N/A	N/A
Tsunami Ready (if applicable)	No	N/A	N/A

12.4 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 12-6 lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: 23
- Number of FEMA-Identified Severe Repetitive Loss Properties: 4
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties Known to Have Been Mitigated: 1

12.5 HAZARD RISK RANKING

Table 12-7 presents the ranking of the hazards of concern. Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

12.6 STATUS OF PREVIOUS PLAN INITIATIVES

Table 12-8 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

12.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 12-9 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 12-10 identifies the priority for each initiative. Table 12-11 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

**TABLE 12-6.
NATURAL HAZARD EVENTS**

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment ^a
Winter Weather/ Ice	4056	1/19/2012	\$545,000
Flooding	--	12/12/2010	\$86,000
Flooding	1817	1/6/2009	\$213,000
Winter Weather/ Snow	1825	12/12/2008	\$613,000
Flooding	1734	12/1/2007	\$103,000
High Winds	1682	12/14/2006	\$122,000
Flooding	1671	11/2/2006	\$35,000
Flooding		12/16/2001	\$15,000
Earthquake	1361	2/28/2001	\$1,057,364
Flooding	1100	2/9/1996	\$20,000
High Winds	981	1/20/1993	\$80,000
Flooding	883	11/9/1990	\$45,000
Flooding	852	1/6/1990	\$175,000
Flooding	784	11/22/1986	\$50,000
Flooding	757	1/16/1986	\$30,000
Volcano	623	5/21/1980	\$5,000
Flooding	492	12/13/1975	\$20,000

a. Estimates are for public damage only. FEMA payout for flood insurance claims within the City during 1978-2011 was approximately \$3.9 million, in addition to the above estimates.

**TABLE 12-7.
HAZARD RISK RANKING**

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Earthquake	32
2	Wildfire	32
3	Landslide	27
4	Severe Winter Weather	27
5	Severe Weather	26
6	Flood	18
7	Volcano	9
8	Dam Failure	6
9	Avalanche	0
10	Tsunami	0

TABLE 12-8. PREVIOUS ACTION PLAN IMPLEMENTATION STATUS				
Action #	Action Status			Comments
	Completed	Carry Over to Plan Update	Removed; No Longer Feasible	
IQ-1	✓			Highwood reservoirs received retrofitting in 2011 and the Cemetery reservoirs were retrofitted in 2012.
IQ-2		✓		Now IQ-3
IQ-3	✓			Project completed by Public Works in October 2011.
IQ-4	✓			Six single-family homes elevated in 2010 and 2011. This includes three repetitive loss properties and one severe repetitive loss property.
IQ-5	✓	✓		City sponsors at least two CERT classes annually and offers Map Your Neighborhood facilitator training to CERT graduates and conducts ongoing Map Your Neighborhood meetings. This is an ongoing annual program.

TABLE 12-9. HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
<p>Initiative #IQ-1—Continue to maintain compliance and good standing under the National Flood Insurance Program. This will be accomplished through the implementation of floodplain management programs that, at a minimum, will meet the minimum requirements of the NFIP, which include the following:</p> <ul style="list-style-type: none"> • Enforcement of the adopted flood damage prevention ordinance, • Participating in floodplain identification and mapping updates, and • Providing public assistance/information on floodplain requirements and impacts 							
New and existing	Flood	2,4,5,9,10, 12	Public Works	Low	General Fund	Ongoing	No
<p>Initiative #IQ-2—Replace Mt Park Pump Station. Construct a new concrete earthquake resistant structure on same site as the existing pump station, demolish the old building and replace pumps and electrical equipment. Upgrade pumps to provide additional fire flow capacity.</p>							
Existing	Earthquake	1,5,8	Public Works	Low	Water Fund	2014	No
<p>Initiative #IQ-3—Replace Mt Hood Pump Station. Mount Hood pump station is a cinder block building constructed in 1977 which houses two 450 gpm pumps lifting water about 190 feet. The seismic hazard evaluation study concluded that the building has vulnerability. Should the station be damaged the upper Squak mountain area would be without water. The pump station should be replaced with a new earthquake resistant concrete building with larger and more efficient pumps and motors, electronics, and security systems.</p>							
Existing	Earthquake	1,5,8	Public Works	Low	Water Fund	2015	Yes

<p align="center">TABLE 12-9. HAZARD MITIGATION ACTION PLAN MATRIX</p>							
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
<p>Initiative #IQ-4—Replace Forest Rim Pump Station. Due to seismic issues, the station could be damaged and the upper Squak mountain area would be without water. The existing pump station is a cinder block building constructed in 1979 which houses two 300 gpm pumps lifting water about 300 feet. The pump station should be replaced with a new earthquake resistant concrete building with new more efficient pumps, motors, electronics, and security systems.</p>							
Existing	Earthquake	1,5,8	Public Works	Low	Water Fund	2017	No
<p>Initiative #IQ-5—Emergency Portable Drinking Water Equipment. The emergency water fill station would serve as a public access to drinking water in events where normal water distribution is interrupted: from water main breaks to catastrophic, system-wide interruptions. The project will also purchase a stock of plastic, sealed, sterile five-gallon water containers; the containers, when new, are compressed flat and are fitted with a secure and sterile filling attachment that connects to the filling ports of the station.</p>							
New	Earthquake, Flood, Landslide	8	Public Works	Medium	Water Fund	2017	No
<p>Initiative #IQ-6—CERT/ Map Your Neighborhood Program More than 500 citizens have been involved in Issaquah’s CERT and Medical Reserve Corps programs since the group started in 2005. Nearly 100 have applied to become credentialed Emergency Workers and active volunteers during incidents including flooding. In addition, more than 12 percent of residential parcels in Issaquah are Map Your Neighborhood trained, meaning the neighbors have plans in place to help each other during emergencies and disasters.</p>							
Existing	All Hazards	5,6,8	Emergency Management	Low	General Fund	Ongoing	Yes
<p>Initiative #IQ-7—Replace Anti-Aircraft Creek Culvert. The problem with this culvert was originally caused when the Summerhill subdivision was built, which relocated the creek with a 90-degree bend just upstream of Newport Way. The 1996 Issaquah Creek Basin Plan recommended that this problem be fixed. Significant rainfall events on Cougar Mountain in the last few years have renewed interest in fixing this problem, which creates a significant hazard to motorists. Most large rainfall events require a costly cleanup effort by Public Works Operations (the December 2010 event alone cost \$30,000)</p>							
Existing	Flooding	1,12	Public Works	Low	Stormwater Fund/ FEMA grant	2015	No
<p>Initiative #IQ-8-Continuity of Operations/ Government Plan. Prepare a continuity of operations and a continuity of government plan for the City of Issaquah.</p>							
New	All Hazards	1,5	Emergency Management	Medium	General and Utility Funds	2017	No
<p>Initiative #IQ-9- Continue to maintain/enhance the City’s status under the Community Rating System (CRS) program.</p>							
New and Existing	Flood	2,4,5,9,10, 12	Public Works	Low	Stormwater Fund	Ongoing	No

**TABLE 12-9.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
Initiative #IQ-10 —Integrate the hazard mitigation plain into other plans, ordinances or programs to dictate land uses within the jurisdiction.							
New	All Hazards	2,4,8,10	Development Services	Low	General Fund	Short-term	No
Initiative # IQ-11 —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority. This includes redevelopment of flood-prone commercial areas in downtown Issaquah that were constructed prior to establishment of floodplain development standards. In 2014 the Gilman Square area, which has two repetitive loss properties, will be redeveloped by the property owner. Two repetitive loss properties will be eliminated. This property is the source of nearly 50% of historic flood insurance claims in Issaquah. This will mitigate the repetitive loss properties.							
Existing	All Hazards	5,9,13	Public Works	High	FEMA grants, Local sources for local Match	Long-term	No
Initiative # IQ-12 —Continue to support the county-wide initiatives identified in this plan.							
New and Existing	All Hazards	4,6,11,12,1 3, 14, 15	City of Issaquah	Low	General Fund	Ongoing	No
Initiative # IQ-13 —Actively participate in the plan maintenance strategy identified in this plan.							
New and Existing	All Hazards	4,6,11,12,1 3, 14, 15	City of Issaquah	Low	General Fund	Ongoing	no

**TABLE 12-10.
MITIGATION STRATEGY PRIORITY SCHEDULE**

Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Priority ^a
1	6	High	Low	Yes	Yes	Yes	High
2	3	High	Low	Yes	No	Yes	High
3	3	High	Low	Yes	No	Yes	High
4	3	High	Low	Yes	No	Yes	High
5	2	High	Medium	Yes	Yes	No	Medium
6	1	High	Low	Yes	Yes	Yes	High
7	3	High	Low	Yes	Yes	Yes	High
8	2	High	Medium	Yes	Yes	No	Medium
9	6	Medium	Low	Yes	No	Yes	High
10	5	Medium	Low	Yes	No	Yes	High
11	3	High	High	Yes	Yes	No	Medium
12	7	Medium	Low	Yes	No	Yes	High
13	7	Low	Low	Yes	Yes	Yes	High

a. See Introduction for explanation of priorities.

**TABLE 12-11.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche	--	--	--	--	--	--
Dam Failure	8,10,13	11	6,12	10	12	
Earthquake	8,10,13	11	6,12	10	5,12	2,3,4
Flood	1,8,9,10,13	1,7,9,11	1,6,9,12	1,9, 10	1,5,9,12	9
Landslide	8,10,13	11	6,12	10	5,12	
Severe Weather	8,10,13	11	6,12	10	12	
Severe Winter Weather	10,13	11	12	10	12	
Tsunami	--	--	--	--	--	--
Volcano	8,10,13	11	6,12	10	12	
Wildfire	8,10,13	11	6,12	10	12	

a. See Introduction for explanation of mitigation types.

CITY OF ISSAQUAH

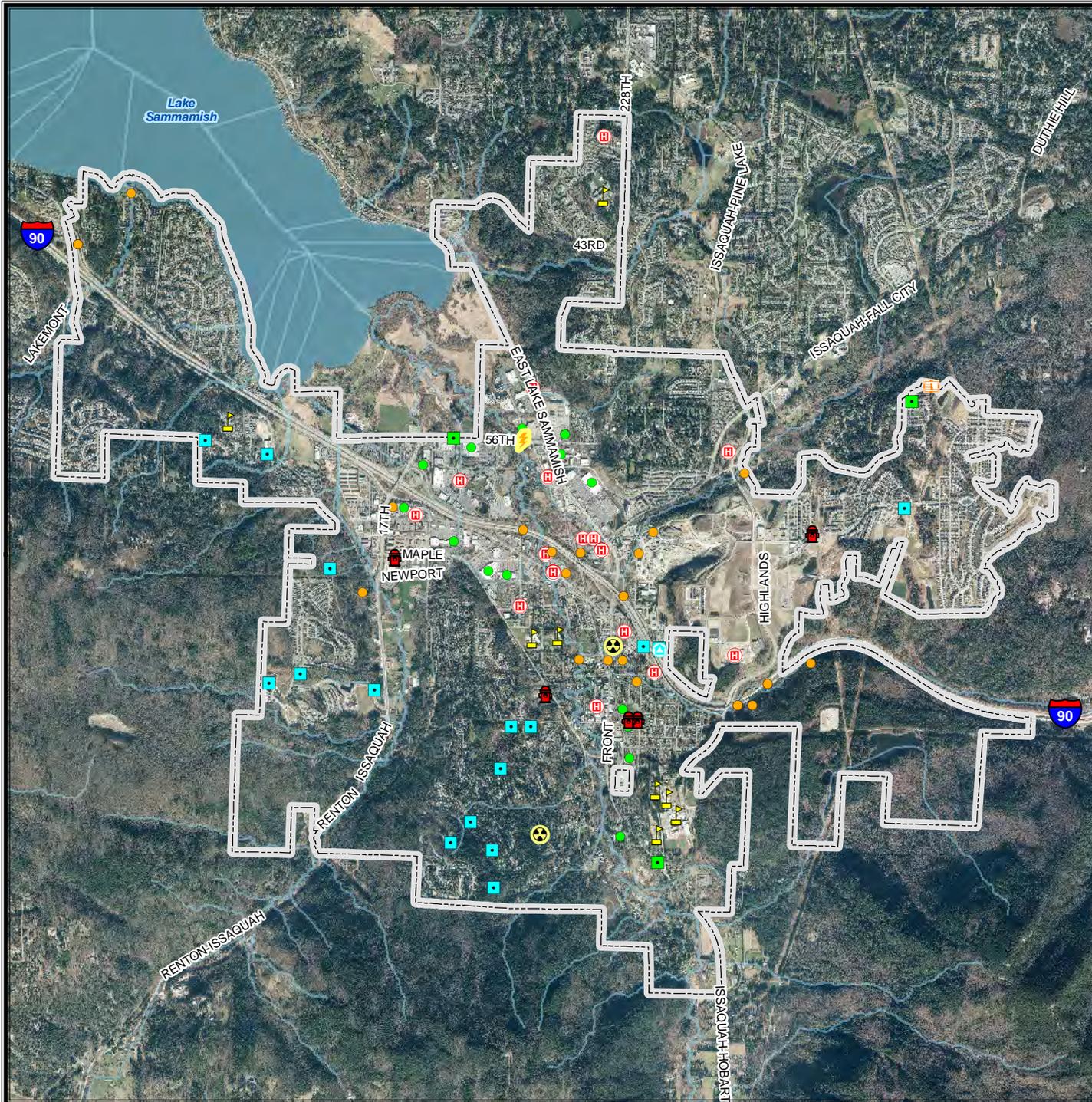
Critical Facilities and Infrastructure

Critical Facilities

- Government Function
- HazMat
- Medical Care
- Protective Function
- Schools
- Other Facility

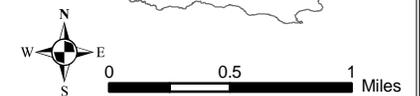
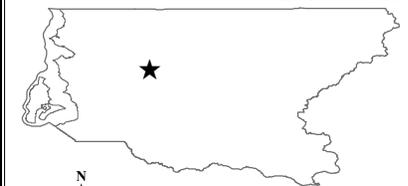
Critical Infrastructure

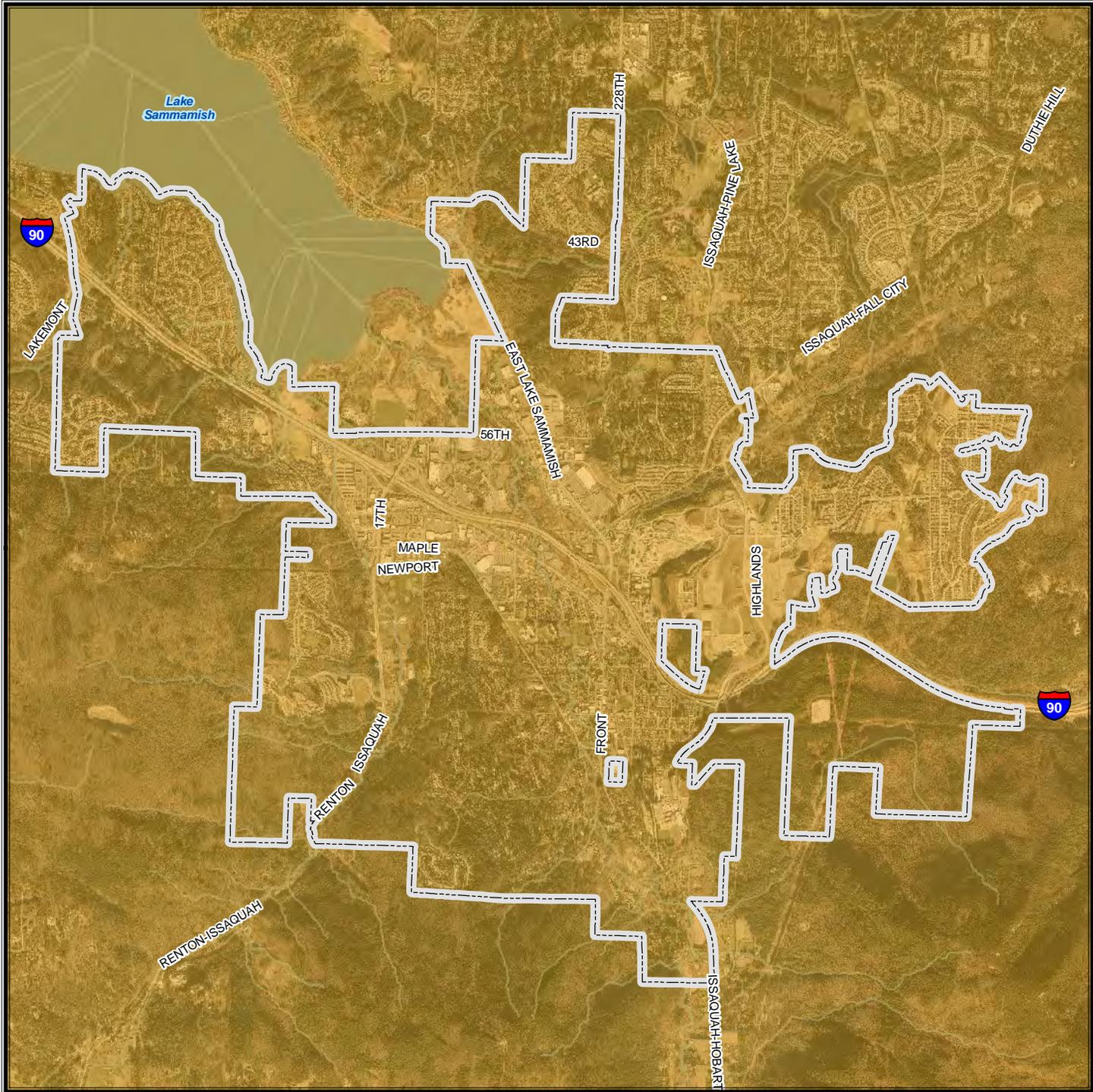
- Bridges
- Communications
- Dams
- Water Supply
- Power
- Transportation
- Wastewater



Locations are approximate.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF ISSAQUAH

Seattle M7.2 Scenario Peak Ground Acceleration

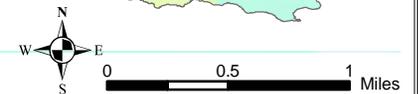
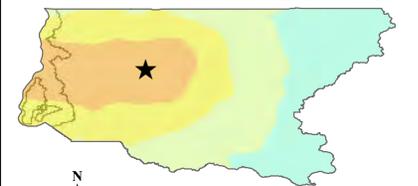
Mercalli Scale, Potential Shaking

- I (Not Felt)
- II - III (Weak)
- IV (Light)
- V (Moderate)
- VI (Strong)
- VII (Very Strong)
- VIII (Severe)
- IX (Violent)
- X+ (Extreme)

Magnitude: 7.2
Epicenter: N47.52 W122.37

A ShakeMap is designed as a rapid response tool to portray the extent and variation of ground shaking throughout the affected region immediately following significant earthquakes. Ground motion and intensity maps are derived from peak ground motion amplitudes recorded on seismic sensors (accelerometers), with interpolation based on both estimated amplitudes where data are lacking, and site amplification corrections. Color-coded instrumental intensity maps are derived from empirical relations between peak ground motions and Modified Mercalli intensity.

Base Map Data Sources:
King County, U.S. Geological Survey



CITY OF ISSAQUAH

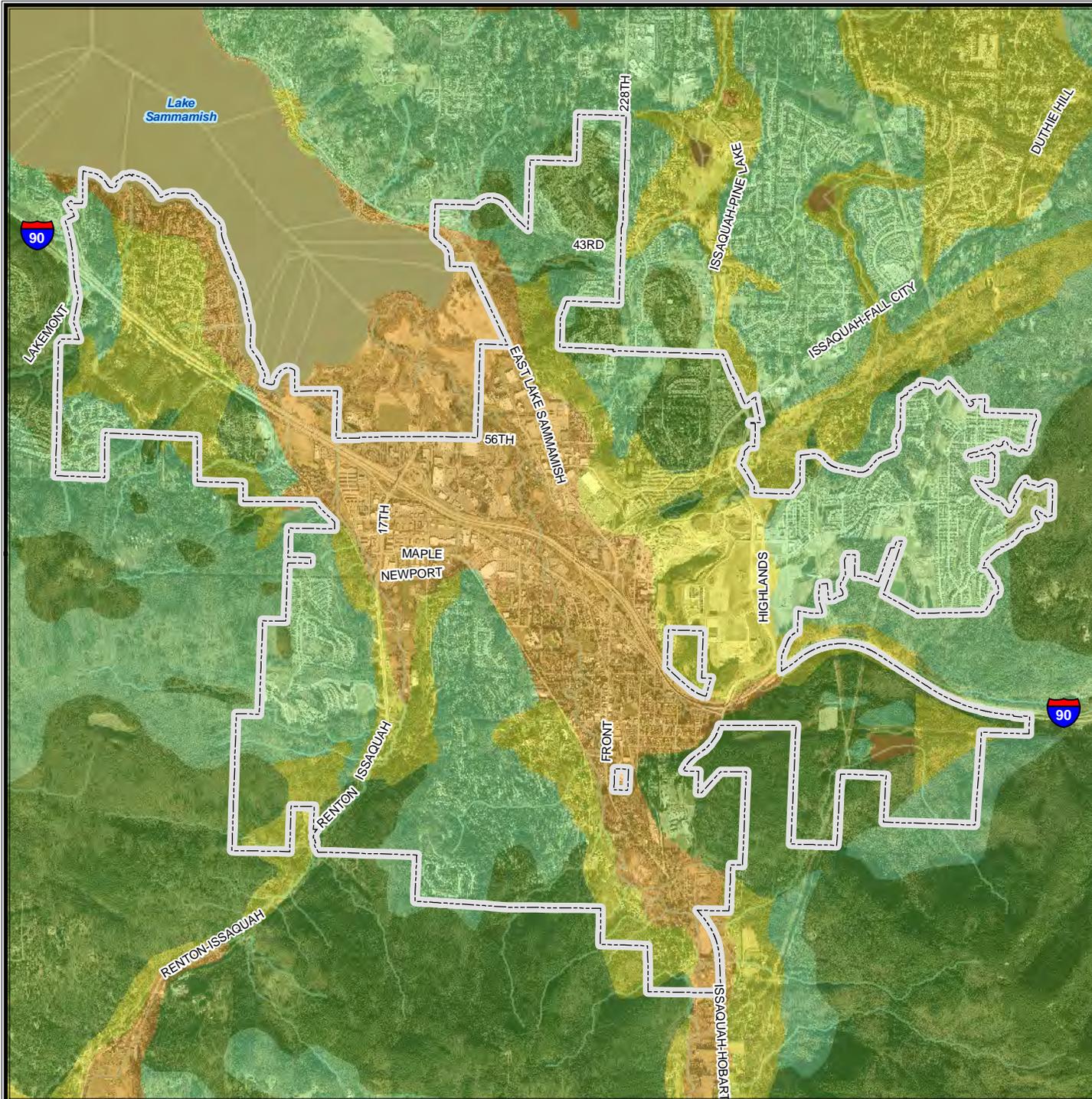
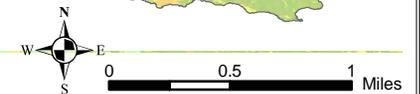
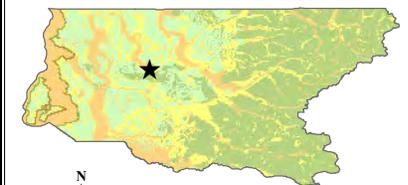
National Earthquake Hazard Reduction Program (NEHRP) Soil Classification

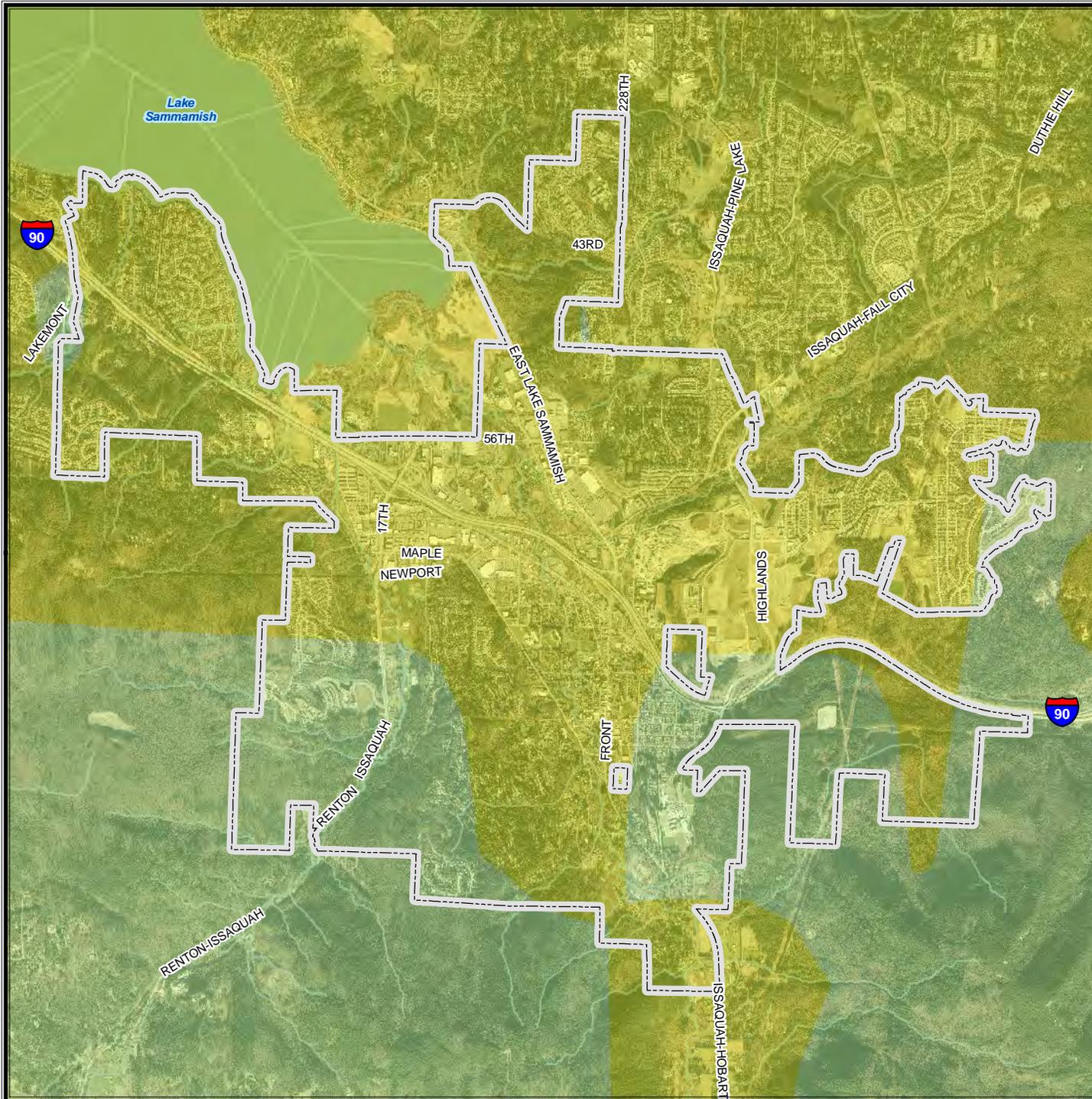
- Site Class B - Rock
- Site Class C - Very Dense Soil, Soft Rock
- Site Class D - Stiff Soil
- Site Class E - Soft Soil

Soil classification data provided by Washington State Department of Natural Resources, Geology and Earth Resources Division.

The dataset identifies site classes for approximately 33,000 polygons derived from the geologic map of Washington. The methodology chosen for developing the site class map required the construction of a database of shear wave velocity measurements. This database was created by compiling shear wave velocity data from published and unpublished sources, and through the collection of a large number of shear wave velocity measurements from seismic refraction surveys conducted for this project. All of these sources of data were then analyzed using the chosen methodologies to produce the statewide site class maps.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF ISSAQUAH

South Whidbey M7.4 Scenario Peak Ground Acceleration

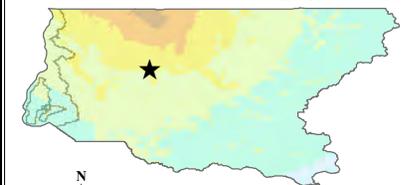
Mercalli Scale, Potential Shaking

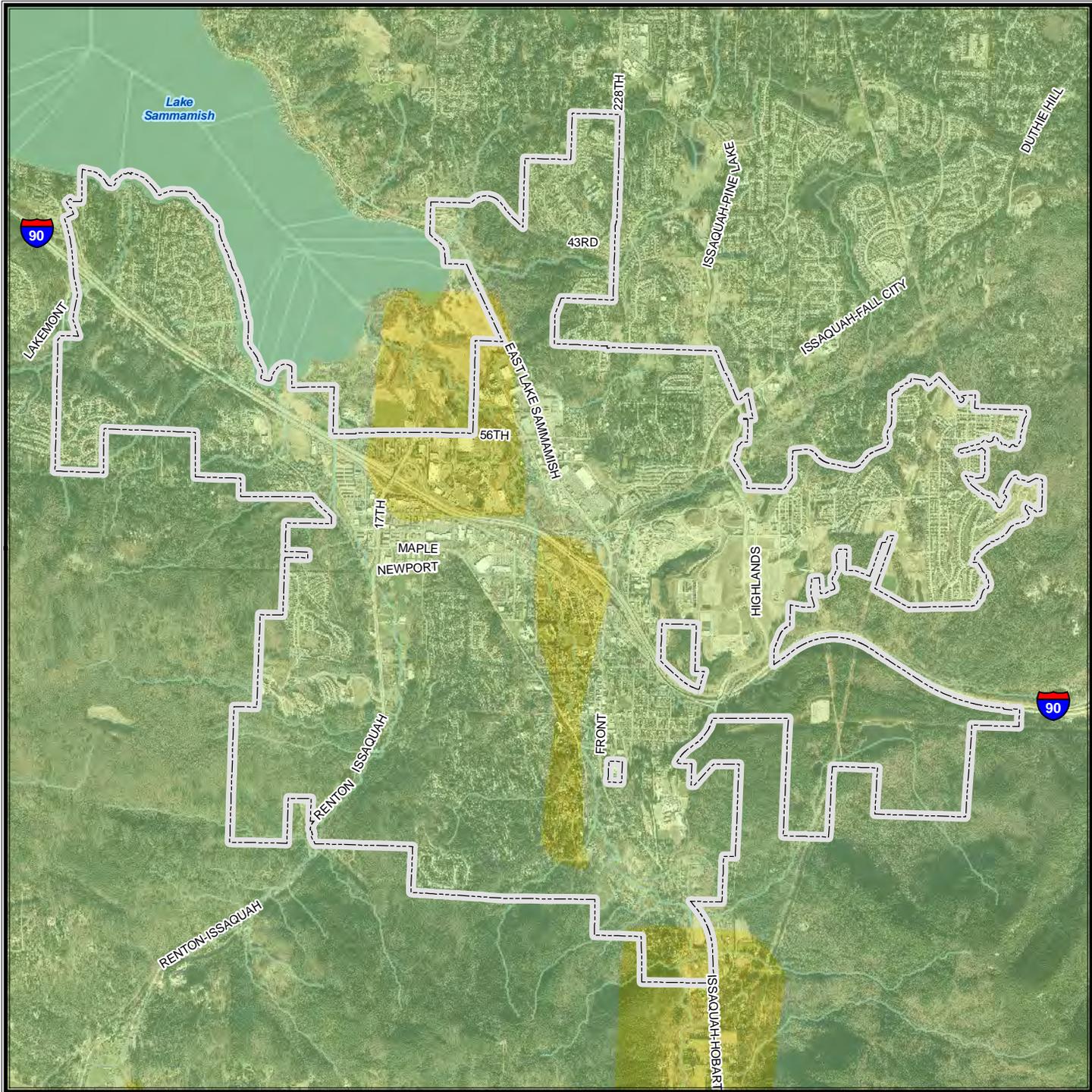
- I (Not Felt)
- II - III (Weak)
- IV (Light)
- V (Moderate)
- VI (Strong)
- VII (Very Strong)
- VIII (Severe)
- IX (Violent)
- X+ (Extreme)

Magnitude: 7.4
Epicenter: N48.05 W122.47

A ShakeMap is designed as a rapid response tool to portray the extent and variation of ground shaking throughout the affected region immediately following significant earthquakes. Ground motion and intensity maps are derived from peak ground motion amplitudes recorded on seismic sensors (accelerometers), with interpolation based on both estimated amplitudes where data are lacking, and site amplification corrections. Color-coded instrumental intensity maps are derived from empirical relations between peak ground motions and Modified Mercalli intensity.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF ISSAQUAH

Tacoma M7.1 Scenario Peak Ground Acceleration

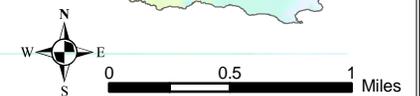
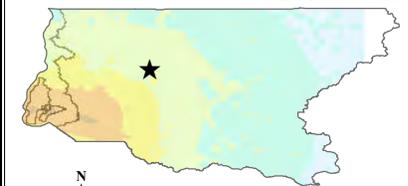
Mercalli Scale, Potential Shaking

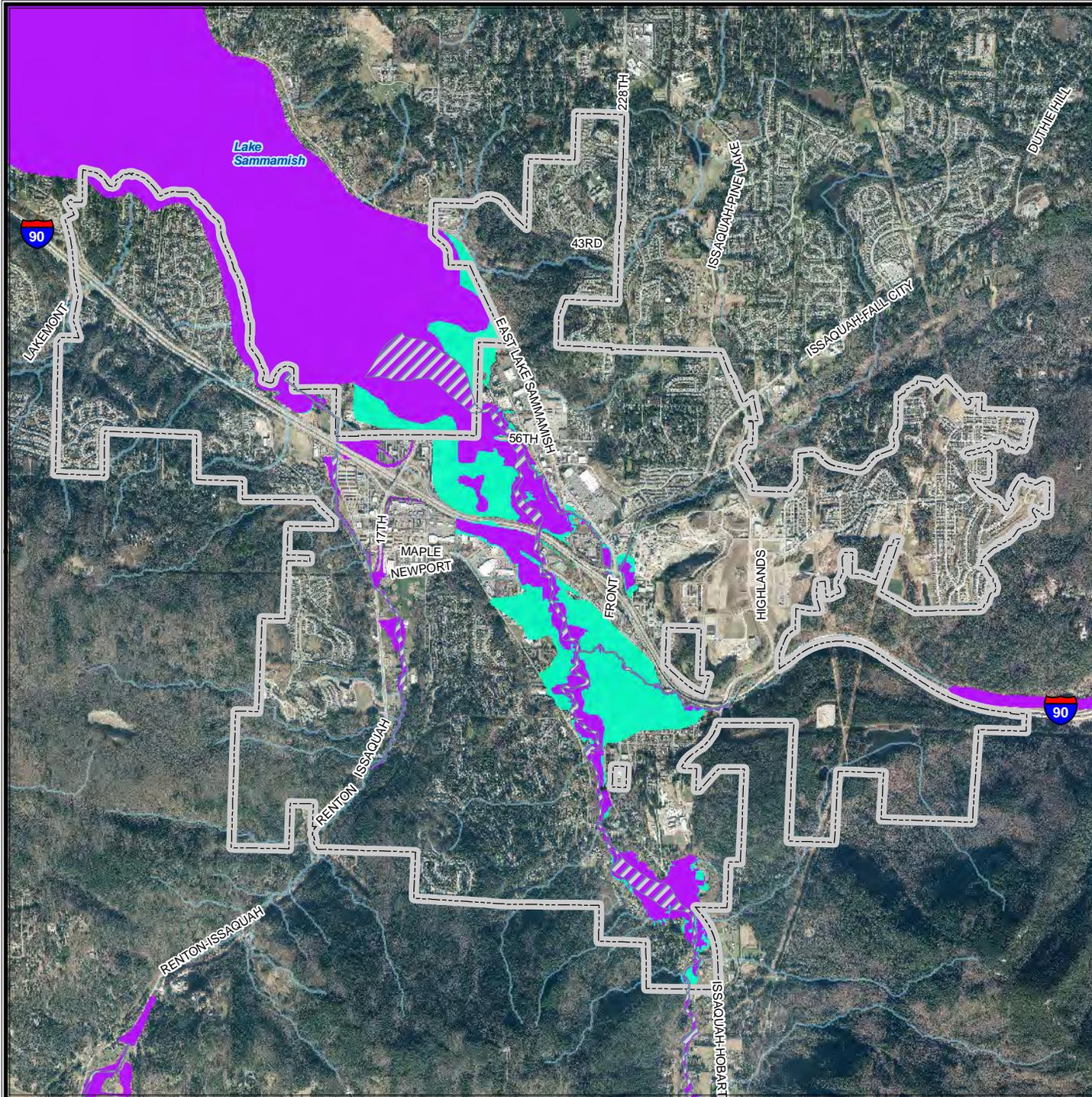
- I (Not Felt)
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- VII (Very Strong)
- VIII (Severe)
- IX (Violent)
- X+ (Extreme)

Magnitude: 7.2
Epicenter: N47.52 W122.37

A ShakeMap is designed as a rapid response tool to portray the extent and variation of ground shaking throughout the affected region immediately following significant earthquakes. Ground motion and intensity maps are derived from peak ground motion amplitudes recorded on seismic sensors (accelerometers), with interpolation based on both estimated amplitudes where data are lacking, and site amplification corrections. Color-coded instrumental intensity maps are derived from empirical relations between peak ground motions and Modified Mercalli intensity.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF ISSAQUAH

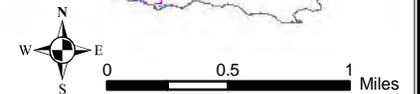
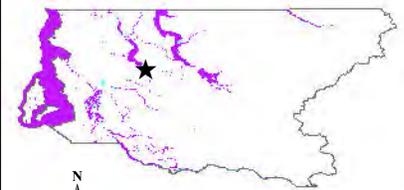
FEMA DFIRM Flood Hazard Areas

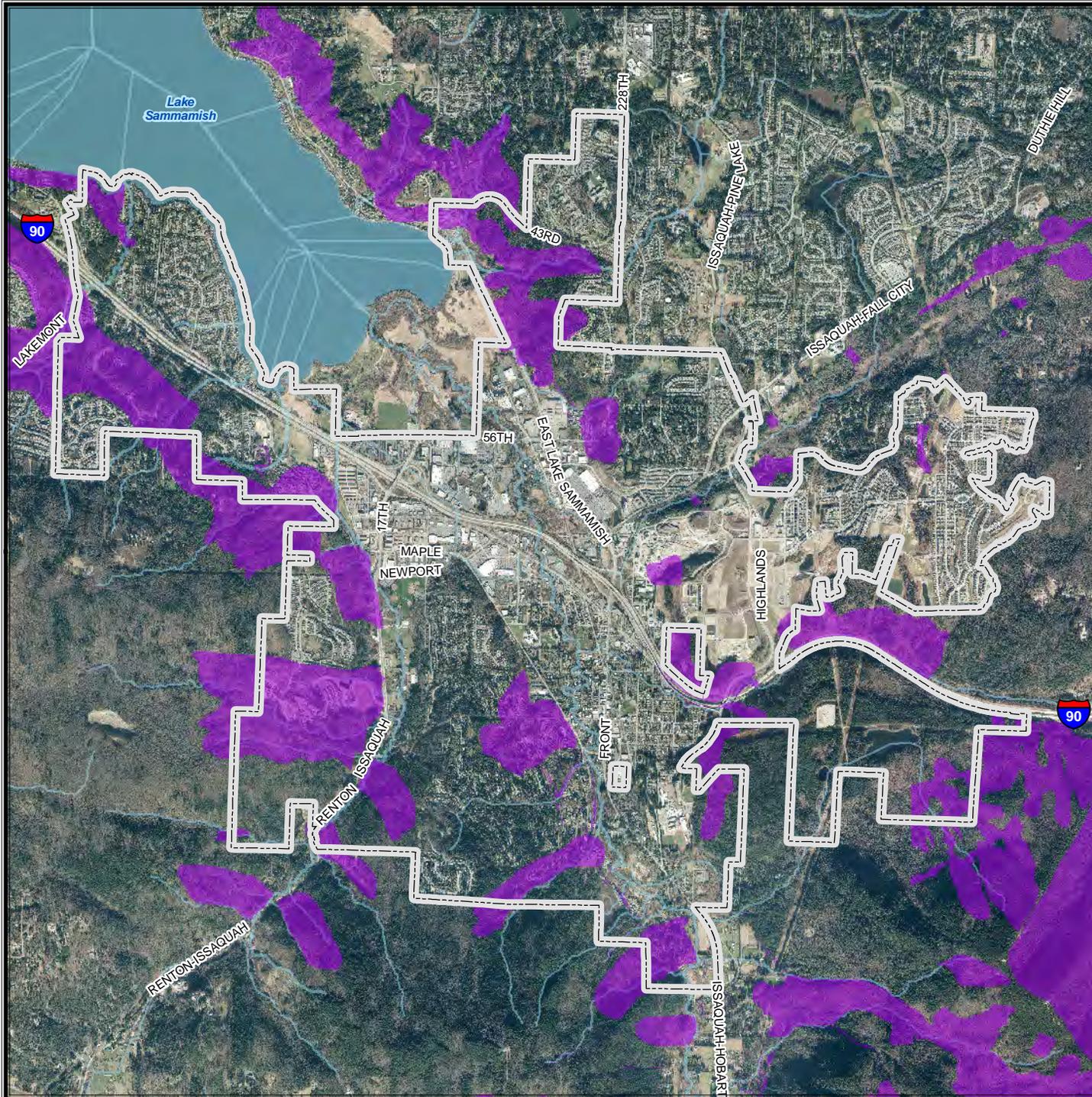
-  Floodway
-  1 Percent Annual Flood Hazard
-  0.2 Percent Annual Flood Hazard

Flood hazard areas as depicted on draft FEMA Digital Flood Insurance Rate Maps (DFIRM).

The 1 percent annual flood hazard is commonly referred to as the 100 year floodplain. The 0.2 percent annual flood hazard is commonly referred to as the 500 year floodplain.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF ISSAQUAH

Landslide Hazard Areas

All Hazard Areas

The landslide hazard areas shown have been merged from three assessments for use for planning purposes:

WA DNR Landslide Areas data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. This dataset contains 1:24,000-scale polygons defining the extent of mapped landslides in the state of Washington, compiled chiefly from pre-existing landslide databases created in different divisions of the Washington State Department of Natural Resources to meet a variety of purposes.

King County Slide Areas - Landslide areas are areas subject to severe landslide risk identified in the Sensitive Areas Ordinance as:

A. Any area with a combination of:

1. Slopes greater than 15 %
2. Impermeable soils (typically silt and clay) frequently interbedded with granular soils (predominantly sand and gravel)
3. Springs or groundwater seepage.

B. Any area that has shown movement during the Holocene epoch (from 10,000 years ago to present), or that is underlain by mass wastage debris of that epoch.

C. Any area potentially unstable as a result of rapid stream incision, stream bank erosion or undercutting by wave action.

D. Any area that shows evidence of, or is at risk from, snow avalanches.

E. Any area located on an alluvial fan, presently subject to or potentially subject to inundation by debris flows or deposition of stream-transported deposits.

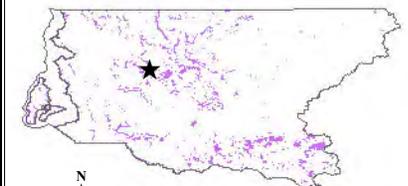
Slope/Soils Analysis:

1. Areas of slope greater than 40%. Slope determined using a DEM generated from 2002 LiDAR data. Slope data provided by King County DNRP.

2. Areas of Qf (alluvial fans), Qls (discrete landslides), and Qmw (colluvium and the cumulative debris from small indistinct landslides that accumulate on and at the base of unstable slopes) soils as identified in surface geology data provided by King County DNRP.

Base Map Data Sources:

King County, U.S. Geological Survey





CITY OF ISSAQUAH

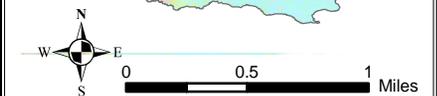
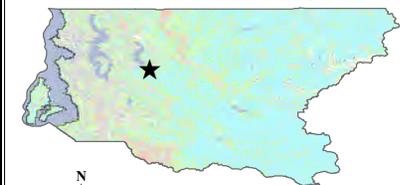
2008 LANDFIRE Fire Behavior Fuel Model

Anderson 13 Fuel Classes

Burnable		Non-Burnable	
FBFM1	FBFM2	Developed	Agriculture
FBFM3	FBFM5	Water	Barren
FBFM6	FBFM8		
FBFM9	FBFM10		
FBFM11			

Fuel Class data (LANDFIRE REFRESH 2008 (If_1.1.0)) provided by the Wildland Fire Science, Earth Resources Observation and Science Center, U.S. Geological Survey. The LANDFIRE fuel data describe the composition and characteristics of both surface fuel and canopy fuel. Thirteen typical surface fuel arrangements or "collections of fuel properties" (Anderson 1982) were described to serve as input for Rothermel's mathematical surface fire behavior and spread model (Rothermel 1972). These fire behavior fuel models represent distinct distributions of fuel loadings found among surface fuel components (live and dead), size classes and fuel types. The fuel models are described by the most common fire carrying fuel type (grass, brush, timber litter or slash), loading and surface area-to-volume ratio by size class and component, fuelbed depth and moisture of extinction.

Base Map Data Sources:
King County, U.S. Geological Survey



CHAPTER 13. CITY OF KENT UPDATE ANNEX

13.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Kimberly Behymer, Program Coordinator
24611 116th Ave SE
Kent, WA 98030
Telephone: (253) 856 4343
e-mail Address: kbehymmer@kentwa.gov

Alternate Point of Contact

Dominic Marzano
24611 116th Ave SE
Kent, WA 98030
Telephone: (253) 856 4316
e-mail Address: dmarzano@kentwa.gov

13.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—1890
- **Current Population**—120,500 as of April 2013
- **Population Growth**—Kent is a fast-growing suburban city in South King County. The City of Kent is the third largest city in King County and the sixth largest in Washington. The population grew from 79,524 in 2000 to 92,411 in 2010. Much of the population growth over the years in Kent has been via annexations.
- **Location and Description**—The City of Kent, Washington is centrally located in a region known as the Puget Sound area. The Cities of Seattle and Tacoma lie 18 miles to the north and south respectively, with adjacent cities being Renton and Tukwila on the north; Des Moines on the west; Auburn on the south; Federal Way on the southwest; and the cities of Covington and Maple Valley along with unincorporated King County on the east. Today Kent is 34.5 square miles and at its widest part 8.5 miles across.
- **Brief History**—At the end of World War II, the Kent valley still was basically rural and agricultural. Cash cropping in the eastern part of the lowland and dairying were the principle agricultural activities. By 1950, the City's population of 3,278 people still was concentrated within an area not much larger than one (1) square mile.

Serious floods in 1906 and 1946 caused major property damage; the latter finally led to a flood control study conducted by the U.S. Army Corps of Engineers. As a result of this study, Congress authorized the construction of the Howard Hanson Dam in 1955. The dam was completed in 1961.

By 1970, the major land use changes and growth in the Kent area were obvious. The City's population increased from 9,017 in 1960 to 16,275 in 1970. New industries continued to locate in Kent, including firms relocating from Seattle and Tacoma industrial areas. Warehousing and distribution became an increasingly important part of Kent's industrial development.

Throughout the 1960s decade, commercial development continued to occur on East Hill in areas such as the intersection of Benson Road and Kent-Kangley Road, changing the character of both East Hill and downtown.

By 1980, the overall character of Kent had changed significantly. The increased residential population has led to increased demand for public facilities and commercial services. Commercial development, both retail and office, have continued to occur on East Hill, particularly along Benson Highway. Office development also has spread throughout the City, in the form of office and corporate parks along West Valley Highway and on East Hill. On the other hand, commercial activity in the downtown area has been minimal.

- **Climate**—The City of Kent, like most of Western Washington, has a moderate climate with summers that do not get too hot and winters that do not get too cold. The average high for July is 78 and the average low for January is 34. Kent gets an average of 39 inches of rain per year with 158 days of measurable precipitation.
- **Governing Body Format**—Kent is governed by an elected Mayor and 7 City Council members. The City Council assumes responsibility for the adoption of this plan; Kent Office of Emergency Management will oversee its implementation.
- **Development Trends**—In the past few decades, Kent has been transformed from a small, primarily residential and agriculture community into an employment and population center for South King County. Kent is strategically located between both the Ports of Seattle and Tacoma, and has rail and truck transportation corridors that pass through the City. In recent years, Kent has experienced impressive growth. Kent is now the sixth largest City in Washington and the largest in South King County. The Kent Valley is the fourth largest warehouse and distribution center in the United States and the second largest manufacturing cent on the West Coast. Kent is expected to continue to see growth and development.

13.3 CAPABILITY ASSESSMENT

The assessment of the jurisdiction’s legal and regulatory capabilities is presented in Table 13-1. The assessment of the jurisdiction’s fiscal capabilities is presented in Table 13-2. The assessment of the jurisdiction’s administrative and technical capabilities is presented in Table 13-3. Information on the community’s National Flood Insurance Program (NFIP) compliance is presented in Table 13-4. Classifications under various community mitigation programs are presented in Table 13-5.

TABLE 13-1. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Yes	No	No	Yes	KMC, Title 14, adopted 5/21/13
Zoning	Yes	No	No	Yes	KMC, Title 15 Adopted 12/13/11
Subdivisions	Yes	No	No	Yes	KMC, Title 12, Chapter 12.04, adopted 12/6/09
Stormwater Management	Yes	No	No	Yes	KMC, Title 7, Chapter 7.07, adopted 7/5/04
Post Disaster Recovery	No	No	No	No	
Real Estate Disclosure	No	No	Yes	Yes	Washington State Disclosure Law (RCW 64.06)
Growth Management	Yes	No	No	Yes	

**TABLE 13-1.
LEGAL AND REGULATORY CAPABILITY**

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Site Plan Review	Yes	No	No	Yes	KMC, Title 12, Chapter 12.04, adopted 12/6/09
Public Health and Safety	No	No	Yes	No	King County Public Health
Environmental Protection	Yes	No	No	Yes	KMC, Title 11
Planning Documents					
General or Comprehensive Plan	Yes	No	No	Yes	2004 Update
	<i>Is the plan equipped to provide linkage to this mitigation plan?</i> Yes, Plan includes a land use element as well as a Shorelines appendix				
Floodplain or Basin Plan	No	No	No	No	
Stormwater Plan	Yes	Yes	No	No	City of Kent Drainage Master Plan, 2008
Capital Improvement Plan	Yes	Yes	No	No	
	<i>What types of capital facilities does the plan address?</i> Police, Fire sewer, stormwater, water supply, roads <i>How often is the plan revised/updated?</i> Annually				
Habitat Conservation Plan	No	No	No	No	
Economic Development Plan	Yes	No	No	No	Economic development element in Comprehensive Plan
Shoreline Management Plan	Yes	No	No	Yes	Shorelines Annex to Comprehensive Plan
Community Wildfire Protection Plan	No	No	No	No	
Response/Recovery Planning					
Comprehensive Emergency Management Plan	Yes	No	No	No	May, 2010
Threat and Hazard Identification and Risk Assessment	Yes	No	No	No	
Terrorism Plan	Yes	No	No	No	
Post-Disaster Recovery Plan	No	No	No	No	
Continuity of Operations Plan	Yes	No	No	No	
Public Health Plans	No	No	Yes	No	King County Public Health

TABLE 13-2. FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Real Estate Excise Tax; King County Flood Control District-Basin Opportunity Fund

TABLE 13-3. ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Economic & Community Development (Planning Services, Engineering Services)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Economic & Community Development (Building Services, Building Services)
Planners or engineers with an understanding of natural hazards	Yes	Economic & Community Development (Planning Services, Engineering Services)
Staff with training in benefit/cost analysis	Yes	Economic & Community Development
Surveyors	Yes	Public Works
Personnel skilled or trained in GIS applications	Yes	Economic & Community Development (Planning Services)
Scientist familiar with natural hazards in local area	Yes	Use contractor
Emergency manager	Yes	Office of Emergency Management
Grant writers	Yes	Economic & Community Development (Planning Services, Economic Development)

TABLE 13-4. NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE	
What department is responsible for floodplain management in your community?	Public Works Engineering
Who is your community’s floodplain administrator? (department/position)	Alex Murillo
Do you have any certified floodplain managers on staff in your community?	Yes
What is the date of adoption of your flood damage prevention ordinance?	1983
When was the most recent Community Assistance Visit or Community Assistance Contact?	2008
To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	No
Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why)	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	No
Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?	Yes. Yes.

TABLE 13-5. COMMUNITY CLASSIFICATIONS			
	Participating?	Classification	Date Classified
Community Rating System	Yes	6	05/01/2010
Building Code Effectiveness Grading Schedule	Yes	3	Not available
Public Protection	Yes	3	Not available
StormReady	Yes	Blue	Not available
Firewise	No	N/A	N/A
Tsunami Ready (if applicable)	No	N/A	N/A

13.4 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 13-6 lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: 1
- Number of FEMA-Identified Severe Repetitive Loss Properties: 0
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties Known to Have Been Mitigated: 0

**TABLE 13-6.
NATURAL HAZARD EVENTS**

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Flooding	852	1/6	\$87,000
Severe Storm, High Winds	981	1/20	\$82,000
Storm, Winds and Floods	1079	11/7	\$9,000
Severe Storms/Flooding	1100	2/9	\$93,000
Earthquake	1361	2/28	\$128,000
Severe Storms	1671	11/2	\$20,000
Severe Storms	1682	12/14	\$77,000
Severe Winter Storm	1817	1/6/2009	\$22,000
Severe Winter Storm	1825	12/12/08	\$48,000
Severe Winter Storm	4056	1/12/12	

13.5 HAZARD RISK RANKING

Table 13-7 presents the ranking of the hazards of concern. Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

**TABLE 13-7.
HAZARD RISK RANKING**

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Severe Weather	48
2	Severe Winter Weather	48
3	Flood	45
4	Earthquake	39
5	Landslide	32
6	Dam Failure	14
7	Volcano	12
8	Wildfire	7
9	Avalanche	0
10	Tsunami	0

13.6 STATUS OF PREVIOUS PLAN INITIATIVES

Table 13-8 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan and their implementation status at the time this update was prepared.

**TABLE 13-8.
PREVIOUS ACTION PLAN IMPLEMENTATION STATUS**

Action #	Action Status			Comments
	Completed	Carry Over to Plan Update	Removed; No Longer Feasible	
KE-1		✓		See KE-1 in action Plan
KE-2		✓		See KE-2-This is an ongoing action
KE-3	✓			Completed as part of the regional hazard mitigation plan update
KE-4	✓			
KE-5		✓		See KE-3 in action plan
KE-6		✓		Se KE-4 in Action Plan
KE-7		✓		See KE-5 in action plan. This is an ongoing action.
KE-8	✓			
KE-9		✓		See KE-6 in action plan. This is an ongoing action
KE-10		✓		See KE-7 in action Plan.
KE-11		✓		See KE-8 in action plan

13.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 13-9 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 13-10 identifies the priority for each initiative. Table 13-11 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

**TABLE 13-9.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
KE-1 —Prioritize seismic retrofit for critical facilities to meet the most current standards for new buildings to the maximum extent possible							
Existing	Earthquake	1,5,9	City of Kent	High	FEMA Grant Funding	Long-term	Yes
KE-2 —Mitigate the non-structural impacts of an earthquake on City owned critical facilities.							
Existing	Earthquake	1,5,9	City of Kent	Low	CIP, FEMA Grant Funding	Ongoing	Yes
KE-3 —Enhance public notification system. Implement a public awareness campaign focused NOAA weather radios. Improve the existing Traffic Information System by increasing coverage area and adding alert beacons							
New and Existing	All Hazards	4,6,7,13	Kent Emergency Management	Low	CERT program budget	Ongoing	Yes
KE-4 —Identify slope areas that threaten critical facilities due to lack of vegetation and erosion control. Prioritize and implement slope stabilization measures.							
New and existing	Landslide	1,4	Community Development	Medium	General Fund, FEMA planning grant funding	Long-term	Yes
KE-5 —Increase public education efforts toward preventing stovetop cooking fires the cause of most residential fires.							
New and Existing	Fire	4,6,7,13	Kent Emergency management	Low	General Fund	Ongoing	Yes
KE-6 —Identify reoccurring utility outage areas and work with utility providers to remove hazards along those areas.							
Existing	All Hazards	1,7,13	City of Kent	Low	General Fund	Ongoing	Yes
KE-7 —Make available back-up power sources to vulnerable populations.							
New and Existing	All hazards	7,8,13	Kent Emergency Management	High	Grants	Long term	Yes
KE-8 —Construct a facility that would house a permanent Emergency Coordination Center.							
New	All Hazards	1,3	Kent Emergency Management	High	EOC Grant	Long Term	Yes

**TABLE 13-9.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
<p>KE-9—Continue to maintain compliance and good standing under the National Flood Insurance Program. This will be accomplished through the implementation of floodplain management programs that, at a minimum, will meet the minimum requirements of the NFIP, which include the following:</p> <ul style="list-style-type: none"> • Enforcement of the adopted flood damage prevention ordinance, • Participating in floodplain identification and mapping updates, and • Providing public assistance/information on floodplain requirements and impacts 							
New and existing	Flood	2,4,10,12	City of Kent	Low	General Fund	Ongoing	No
<p>KE-10—Work to achieve FEMA accreditation on the Green River Levees per the Green River Levee Improvement Program, which includes studies, inspections, retrofits and new construction along the Green River in Kent. Projects will provide setback levees where possible to increase capacity in the river and help reduce flood risk.</p>							
New and Existing	Flood	1,2,4,5,7,8, 9,12,13	City of Kent	High	Stormwater Drainage Funds	Ongoing	No
<p>KE-11—Continue to complete projects identified in the City of Kent’s Drainage Master Plan which was prepared in 2008. The Drainage Master Plan evaluates and recommends drainage facility capital improvement needs to reduce flood risks, improve water quality, enhance fish passage and in-stream/riparian habitats, and to efficiently serve planned growth. Projects include dam retrofits, culvert replacements, stream enhancement and creation among many others.</p>							
New and Existing	Flood, Severe Weather	1,2,4,5,8,9, 12,13	City of Kent	Various	Stormwater Drainage Funds	Ongoing	No
<p>KE-12-- Continue to maintain/enhance the City’s status under the Community Rating System (CRS) program.</p>							
New and Existing	Flood	2,4,5,9,10, 12	Public Works- Engineering	Low	General Fund	Ongoing	No
<p>KE-13—Integrate the hazard mitigation plain into other plans, ordinances or programs to dictate land uses within the jurisdiction.</p>							
New	All Hazards	2,4,8,10	Economic and Community Development	Low	General Fund	Short-term	No
<p>KE-14—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.</p>							
Existing	All Hazards	5,9,13	Public Works	High	FEMA grants, Local sources for local Match	Long-term	No

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
KE-15 —Continue to support the county-wide initiatives identified in this plan.							
New and Existing	All Hazards	4,6,11,12,13, 14, 15	City of Kent	Low	General Fund	Ongoing	No
KE-16 —Actively participate in the plan maintenance strategy identified in this plan.							
New and Existing	All Hazards	4,6,11,12,13, 14, 15	City of Kent	Low	General Fund	Ongoing	No

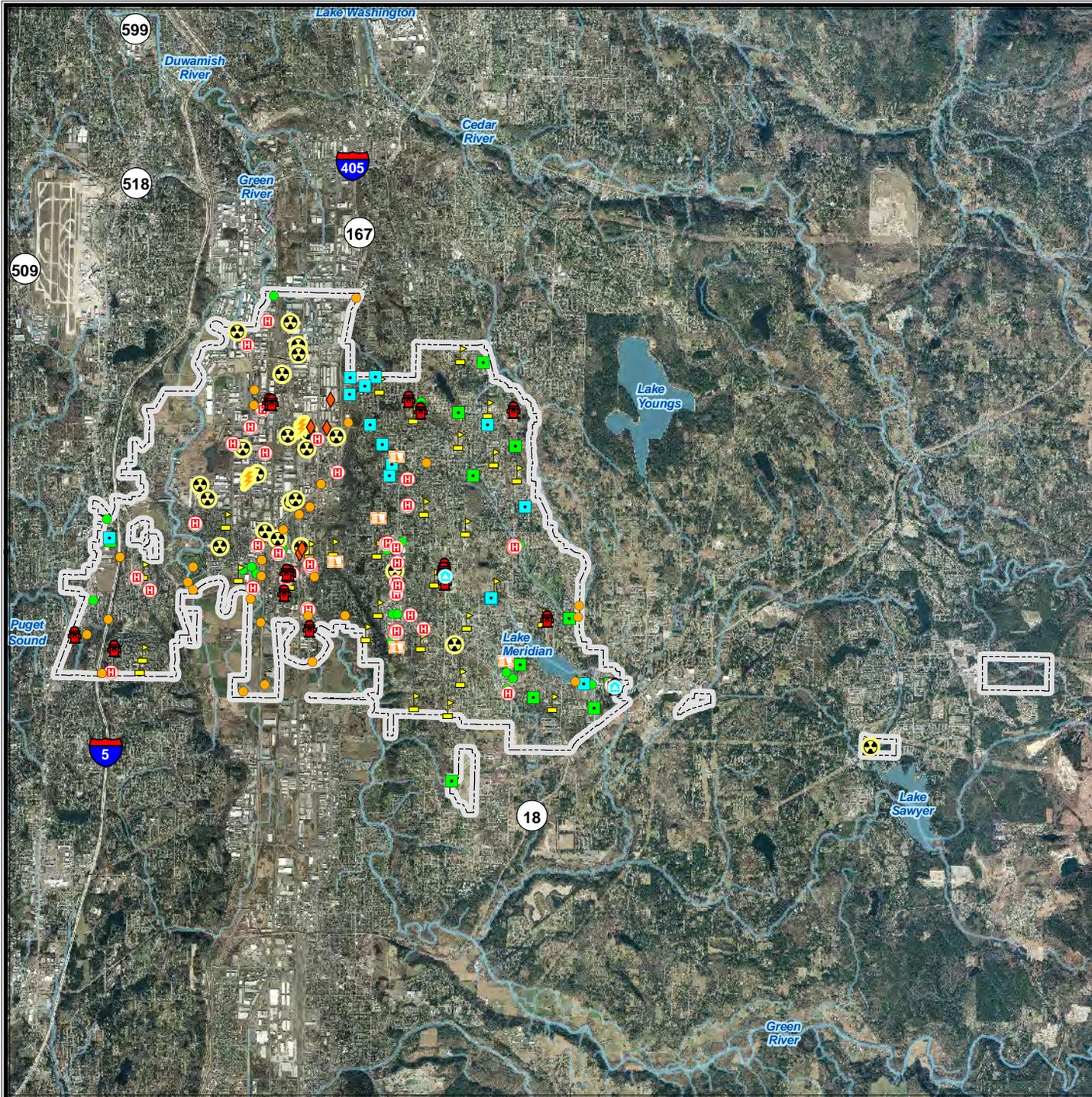
Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Priority ^a
1	3	High	High	Yes	Yes	No	Medium
2	3	High	Low	Yes	Yes	Yes	High
3	4	High	Low	Yes	No	Yes	High
4	2	High	Medium	Yes	Yes	No	Medium
5	4	Low	Low	Yes	No	Yes	High
6	3	Medium	Low	Yes	No	Yes	High
7	3	High	High	Yes	Yes	No	Medium
8	2	High	High	Yes	Yes	No	Medium
9	4	Medium	Low	Yes	No	Yes	High
10	9	High	High	Yes	Yes	Yes	High
11	9	High	High	Yes	Yes	Yes	High
12	6	Medium	Low	Yes	No	Yes	High
13	4	Medium	Low	Yes	No	Yes	High
14	3	High	High	Yes	Yes	No	Medium
15	7	Medium	Low	Yes	No	Yes	High
16	7	Low	Low	Yes	Yes	Yes	High

a. See Introduction for explanation of priorities.

**TABLE 13-11.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche	--	--	--	--	--	--
Dam Failure	13,16	6,14	3,15		3,7,8,15	
Earthquake	13,16	1,2,6,14	3,15		3,7,8,15	
Flood	9,12,13,16	6,9,12,14	3,9,12,15	9,12	3,7,8,9,12,15	10,11,12
Landslide	4,13,16	6,14	3,15		3,7,8,15	
Severe Weather	13,16	6,14	3,15		3,7,8,15	11
Severe Winter Weather	13,16	6,14	3,15		3,7,8,15	
Tsunami	--	--	--	--	--	--
Volcano	13,16	6,14	3,15		3,7,8,15	
Wildfire	13,16	6,14	3,5,15		3,7,8,15	

a. See Introduction for explanation of mitigation types.



CITY OF KENT

Critical Facilities and Infrastructure

Critical Facilities

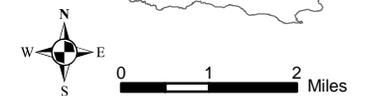
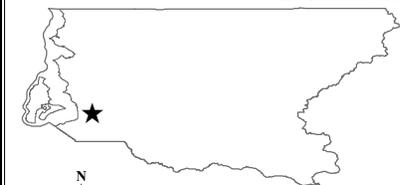
- Government Function
- HazMat
- Medical Care
- Protective Function
- Schools
- Other Facility

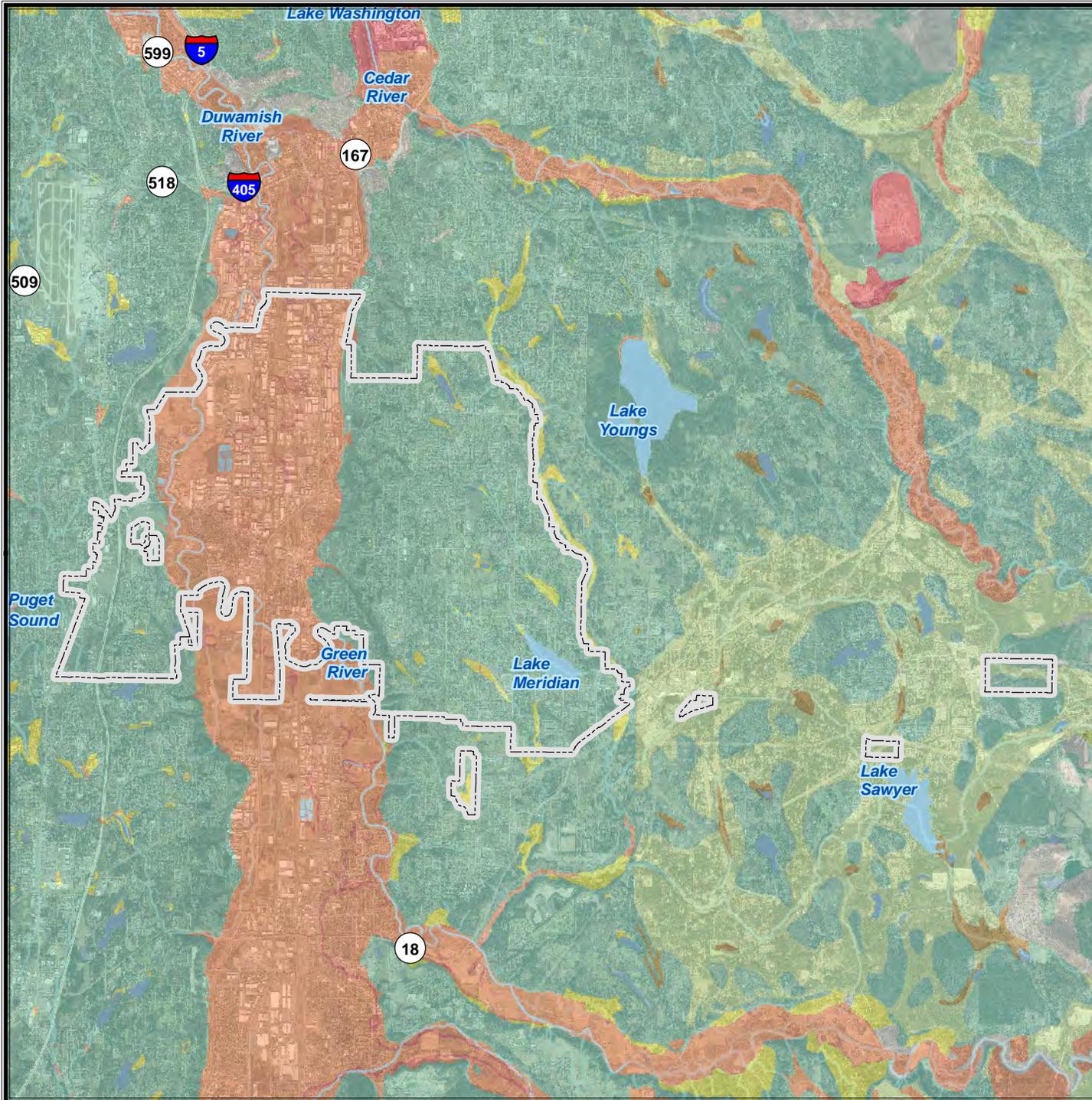
Critical Infrastructure

- Bridges
- Communications
- Dams
- Water Supply
- Power
- Transportation
- Wastewater

Locations are approximate.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF KENT

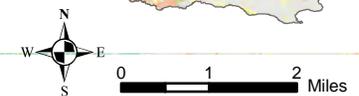
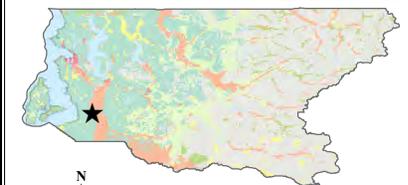
Liquefaction Susceptibility

Susceptible		Not Susceptible	
High	Moderate to High	Bedrock	Peat
Moderate	Low to Moderate	Water	Ice
Low	Very Low to Low		
Very Low			

Liquefaction data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. Data is based solely on surficial geology published at a scale of 1:100,000.

A liquefaction susceptibility map provides an estimate of the likelihood that soil will liquefy as a result of earthquake shaking. This type of map depicts the relative susceptibility in a range that varies from very low to high. Areas underlain by bedrock or peat are mapped separately as these earth materials are not liquefiable, although peat deposits may be subject to permanent ground deformation caused by earthquake shaking.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF KENT

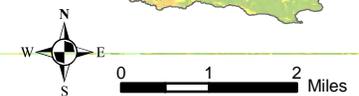
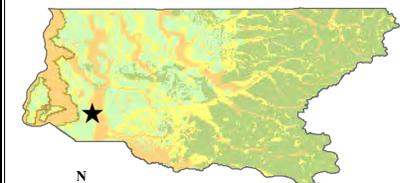
National Earthquake Hazard Reduction Program (NEHRP) Soil Classification

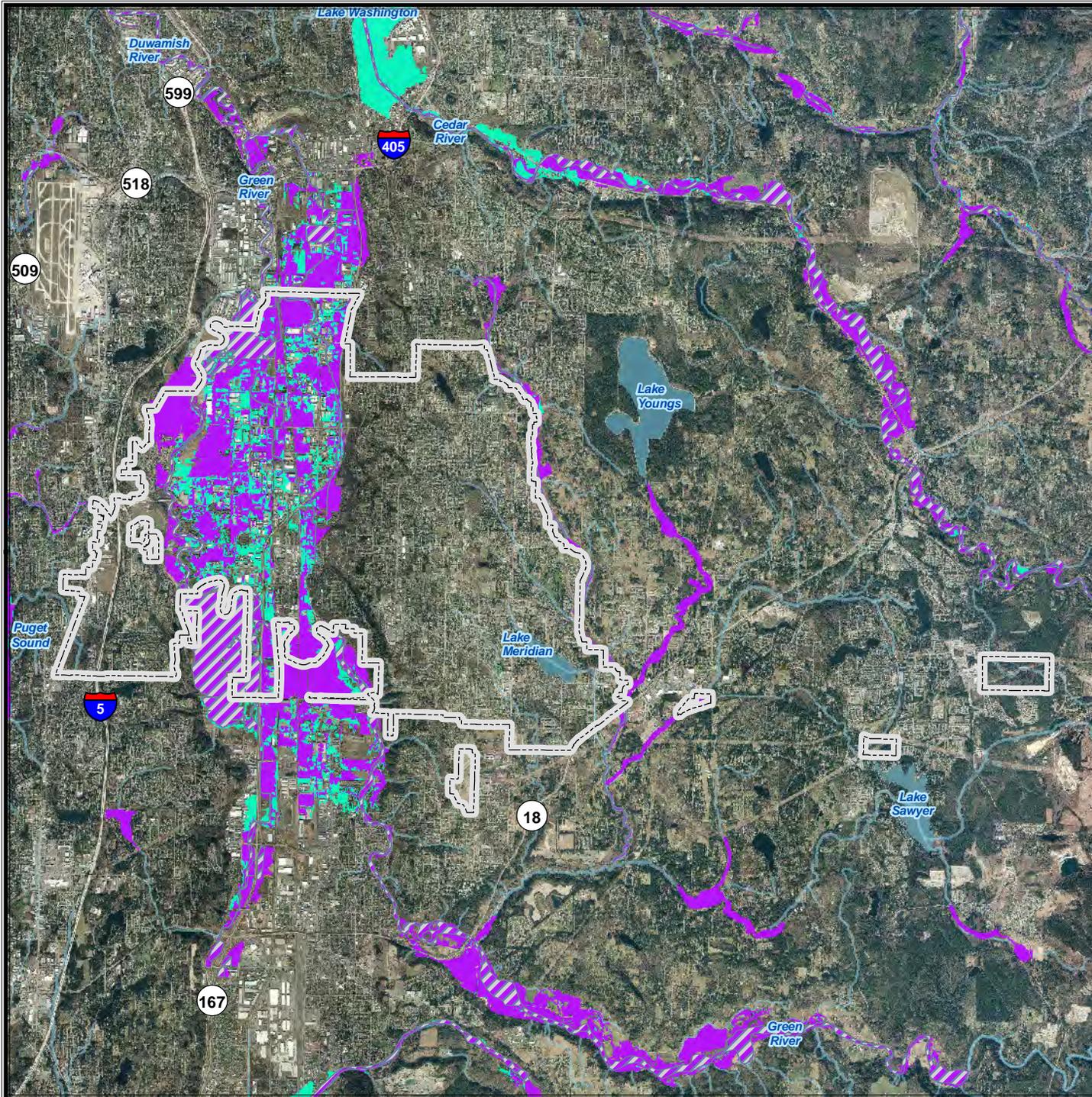
- Site Class B - Rock
- Site Class C - Very Dense Soil, Soft Rock
- Site Class D - Stiff Soil
- Site Class E - Soft Soil

Soil classification data provided by Washington State Department of Natural Resources, Geology and Earth Resources Division.

The dataset identifies site classes for approximately 33,000 polygons derived from the geologic map of Washington. The methodology chosen for developing the site class map required the construction of a database of shear wave velocity measurements. This database was created by compiling shear wave velocity data from published and unpublished sources, and through the collection of a large number of shear wave velocity measurements from seismic refraction surveys conducted for this project. All of these sources of data were then analyzed using the chosen methodologies to produce the statewide site class maps.

Base Map Data Sources:
King County, U.S. Geological Survey





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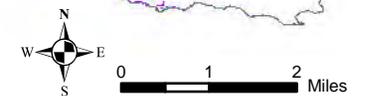
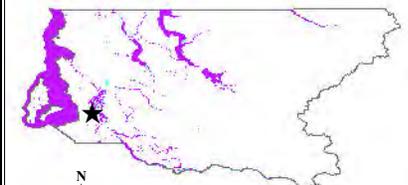
FEMA DFIRM Flood Hazard Areas

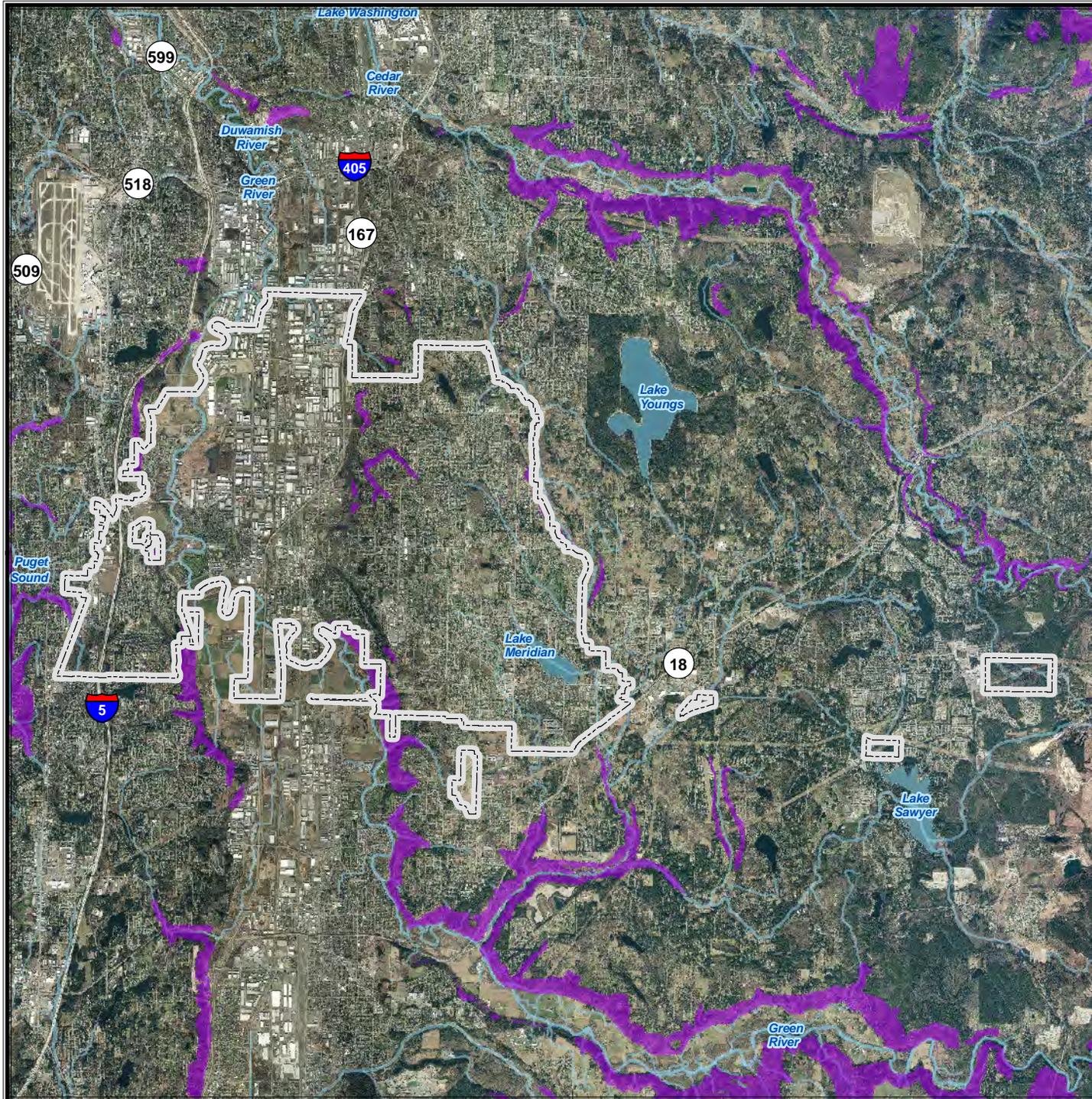
-  Floodway
-  1 Percent Annual Flood Hazard
-  0.2 Percent Annual Flood Hazard

Flood hazard areas as depicted on draft FEMA Digital Flood Insurance Rate Maps (DFIRM).

The 1 percent annual flood hazard is commonly referred to as the 100 year floodplain. The 0.2 percent annual flood hazard is commonly referred to as the 500 year floodplain.

Base Map Data Sources:
King County, U.S. Geological Survey





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Landslide Hazard Areas

All Hazard Areas

The landslide hazard areas shown have been merged from three assessments for use for planning purposes:

WA DNR Landslide Areas data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. This dataset contains 1:24,000-scale polygons defining the extent of mapped landslides in the state of Washington, compiled chiefly from pre-existing landslide databases created in different divisions of the Washington State Department of Natural Resources to meet a variety of purposes.

King County Slide Areas - Landslide areas are areas subject to severe landslide risk identified in the Sensitive Areas Ordinance as:

A. Any area with a combination of:

1. Slopes greater than 15%
2. Impermeable soils (typically silt and clay) frequently interbedded with granular soils (predominantly sand and gravel)
3. Springs or groundwater seepage.

B. Any area that has shown movement during the Holocene epoch (from 10,000 years ago to present), or that is underlain by mass wastage debris of that epoch.

C. Any area potentially unstable as a result of rapid stream incision, stream bank erosion or undercutting by wave action.

D. Any area that shows evidence of, or is at risk from, snow avalanches.

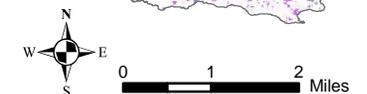
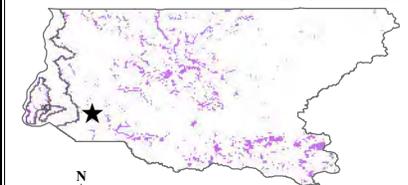
E. Any area located on an alluvial fan, presently subject to or potentially subject to inundation by debris flows or deposition of stream-transported deposits.

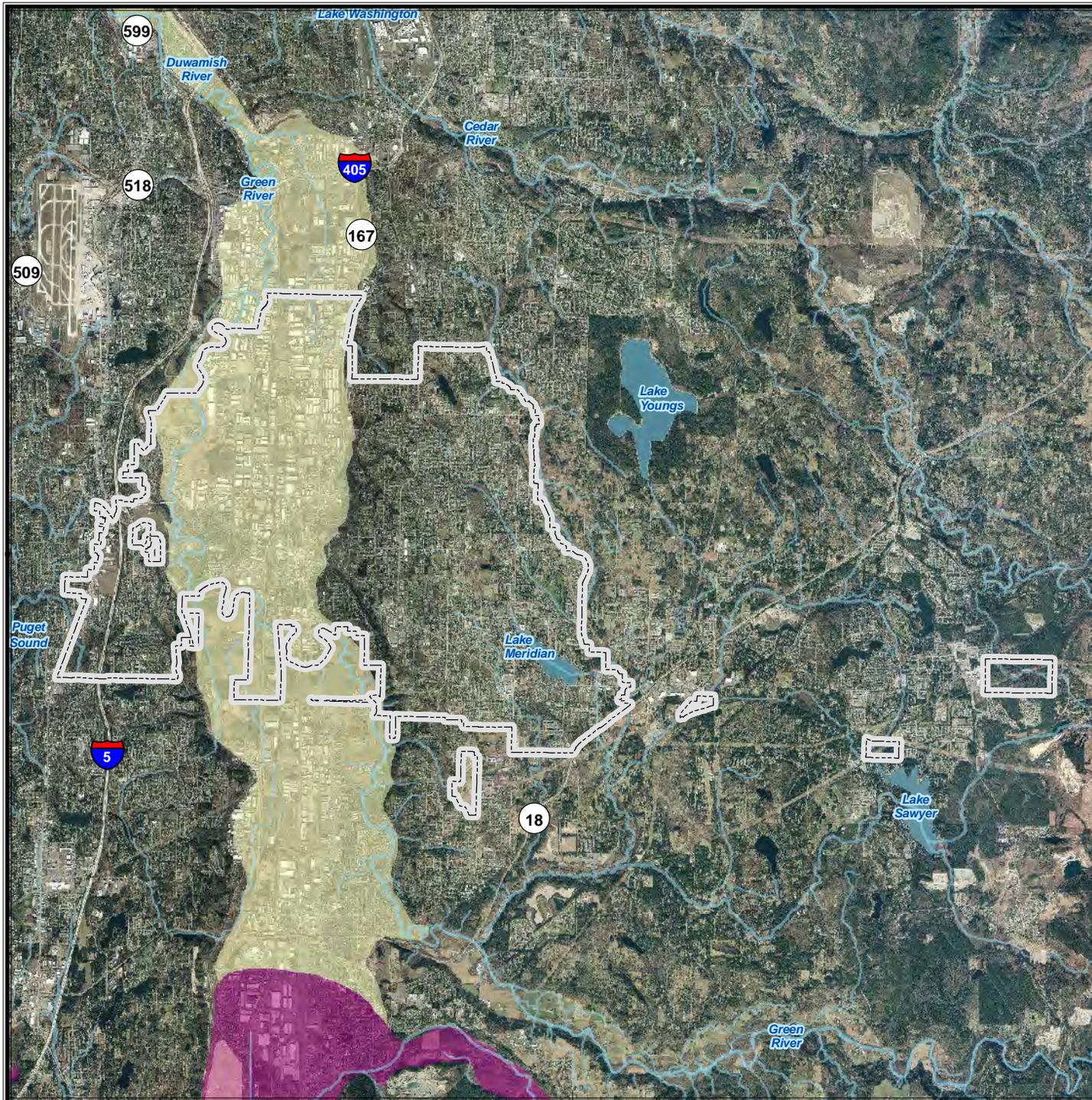
Slope/Soils Analysis:

1. Areas of slope greater than 40%. Slope determined using a DEM generated from 2002 LiDAR data. Slope data provided by King County DNRP.
2. Areas of Qf (alluvial fans), Qls (discrete landslides), and Qmw (colluvium and the cumulative debris from small indistinct landslides that accumulate on and at the base of unstable slopes) soils as identified in surface geology data provided by King County DNRP.

Base Map Data Sources:

King County, U.S. Geological Survey





CITY OF KENT

Lahar Hazards (Puyallup Valley)

- Case 2 - Moderate Lahars
- Case 1 - Large Lahars
- Post-Lahar Sedimentation

Lahar hazards data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. These data were produced as part of a project to estimate the potential economic losses from future eruptions of Mount Rainier.

Case 1 - Large Lahars (Recurrence Interval 500–1000 Years)

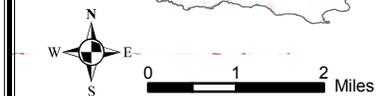
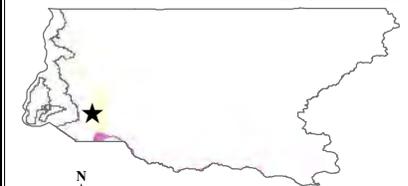
Shows areas that could be affected by cohesive lahars that originate as enormous avalanches of weak, chemically altered rock from the volcano. Case I lahars can occur with or without eruptive activity. The time interval between Case I lahars on Mount Rainier is about 500 to 1,000 years.

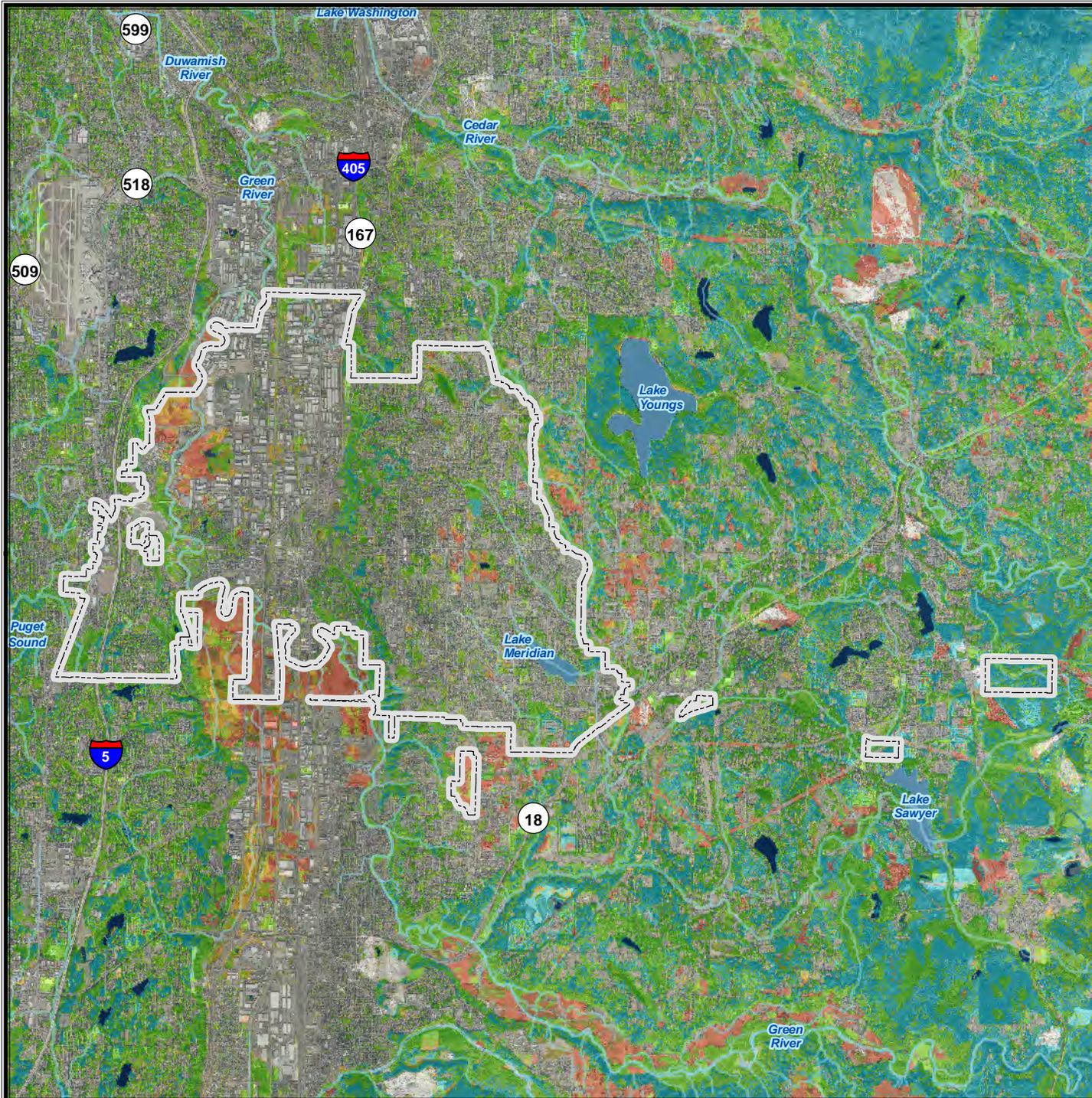
Case 2 - Moderate Lahars (Recurrence Interval 100–500 Years)

Shows areas that could be affected by relatively large noncohesive lahars, which are commonly caused by the melting of snow and glacier ice by hot rock fragments during an eruption, but they can also have a noneruptive origin. The time interval between Case II lahars from Mount Rainier is near the lower end of the 100- to 500-year range, making these flows analogous to the so-called "100-year flood" commonly considered in engineering practice.

Post-Lahar Sedimentation Shows areas subject to post-lahar erosion and sedimentation and the ongoing potential for flooding.

Base Map Data Sources:
King County, U.S. Geological Survey





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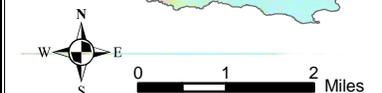
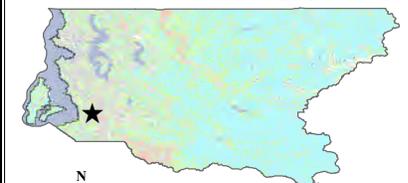
2008 LANDFIRE Fire Behavior Fuel Model

Anderson 13 Fuel Classes

Burnable	Non-Burnable
FBFM1	Developed
FBFM2	Agriculture
FBFM3	Water
FBFM5	Barren
FBFM6	
FBFM8	
FBFM9	
FBFM10	
FBFM11	

Fuel Class data (LANDFIRE REFRESH 2008 (lf_1.1.0)) provided by the Wildland Fire Science, Earth Resources Observation and Science Center, U.S. Geological Survey. The LANDFIRE fuel data describe the composition and characteristics of both surface fuel and canopy fuel. Thirteen typical surface fuel arrangements or "collections of fuel properties" (Anderson 1982) were described to serve as input for Rothermel's mathematical surface fire behavior and spread model (Rothermel 1972). These fire behavior fuel models represent distinct distributions of fuel loadings found among surface fuel components (live and dead), size classes and fuel types. The fuel models are described by the most common fire carrying fuel type (grass, brush, timber litter or slash), loading and surface area-to-volume ratio by size class and component, fuelbed depth and moisture of extinction.

Base Map Data Sources:
King County, U.S. Geological Survey



CHAPTER 14. CITY OF KIRKLAND ANNEX

14.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Pattijean Hooper, Ph.D.
Emergency Manager
123 5th Avenue
Kirkland, WA 98033
Telephone: (425) 587-3603
e-mail Address: pjhooper@kirklandwa.gov

Alternate Point of Contact

Erin Tramontozzi
Emergency Preparedness Coordinator
123 5th Avenue
Kirkland, WA 98033
Telephone: (425) 587-3670
e-mail Address: etramontozzi@kirklandwa.gov

14.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—October 9, 1905
- **Current Population**—81,730 as of April 1, 2013
- **Population Growth**—Since its incorporation in 1905, the population of the City of Kirkland has grown from 392 people to 81,730. Most of this growth can be attributed to numerous annexations and the consolidation of the cities of Kirkland and Houghton in 1968. The Rose Hill and South Juanita areas were annexed into the City in the 1980s. The 2011 annexation of Finn Hill, North Juanita, and Kingsgate also significantly increased the City’s population and geographic area. Each of the large annexations/consolidations almost doubled the existing population of Kirkland causing it to reach its current stage
- **Location and Description**—The City of Kirkland is located in the Pacific Northwest Puget Sound Region on the east side of Lake Washington. Kirkland is located across Lake Washington from the City of Seattle. Nearby cities also include Hunts Point located southwest, Bellevue located on the south, Redmond, located on the east, Bothell and Woodinville located on the north. Interstate 405 runs north to south bisecting portions of the City and State Route 520 borders a part of the City on the south.
- **Brief History**—Kirkland incorporated in 1905 with a population of 392 people and was primarily a logging and farming community. In the early 1900s, Kirkland was a transportation center for the eastside with ferries transporting commuters and goods to Seattle 18 hours a day. The opening of the Lake Washington Floating Bridge in 1940 signaled the end of the lake ferries. Kirkland’s downtown is located on Lake Washington. The City has grown beyond a bedroom community and has become a commercial and employment center characterized by a mix of small businesses, corporate headquarters, light industrial and manufacturing, and a growing base of high-tech businesses (with branches of IBM, Microsoft, and Google).
- **Climate**—Kirkland’s climate is mild during the summer months when temperatures tend to be in the 70s and cold during winter when temperatures tend to be in the 40s. The warmest month of the year is August with an average maximum temperature of 75.8 degrees Fahrenheit. The coldest month of the year is January with an average minimum temperature

of 35.2 degrees Fahrenheit. Daily temperature variations tend to be limited in range throughout the year. During summer the range can reach 19 degrees Fahrenheit, and during winter the average difference is 12 degrees Fahrenheit between daytime and evening temperatures. The annual average precipitation at Kirkland is 35.96 inches. More precipitation generally occurs in winter months rather than summer months. The wettest month of the year is December with an average rainfall of 5.45 inches.

- **Governing Body Format**— Kirkland operates under the *council-manager* form of government. The City Council is comprised of seven non-partisan members who are elected by the registered voters of Kirkland to serve *at-large*. Council Members are elected every two years to serve four-year terms. The Mayor and Deputy Mayor are elected among the members to serve two-year terms. The City consists of ten departments: City Manager’s Office, Finance & Administration, Fire & Building, Police, City Attorney’s Office, Human Resources, Information Technology, Parks and Community Services, Planning & Community Development, and Public Works. The Office of Emergency Management assumes responsibility for the adoption of this plan; and will coordinate with the other City Departments oversee its implementation.
- **Development Trends**— Development levels have increased significantly in the past three years partially due to the 2011 annexation. The development consists of infill and some larger subdivisions. There are some currently some large, non-residential redevelopment plans that have been approved and will be implemented in the coming years. Kirkland is currently in the process of updating its Comprehensive Plan, which serves as the guiding policy document for the City’s vision for the future. City actions relating to zoning, subdivision, design review, redevelopment, and capital improvements must be consistent with the Comprehensive Plan.

14.3 CAPABILITY ASSESSMENT

The assessment of the jurisdiction’s legal and regulatory capabilities is presented in Table 14-1. The assessment of the jurisdiction’s fiscal capabilities is presented in Table 14-2. The assessment of the jurisdiction’s administrative and technical capabilities is presented in Table 14-3. Information on the community’s National Flood Insurance Program (NFIP) compliance is presented in Table 14-4. Classifications under various community mitigation programs are presented in Table 14-5.

**TABLE 14-1.
LEGAL AND REGULATORY CAPABILITY**

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Yes	No	No	Yes	O-4410 05.21.13
Zoning	Yes	No	No	Yes	O-4408 05.21.13
Subdivisions	Yes	No	No	Yes	O-4372 08.02.12
Stormwater Management	Yes	No	No	Yes	R-4350 11.01.05
Post Disaster Recovery	No	No	No	No	
Real Estate Disclosure	No	No	Yes	Yes	RCW 64.06 – this is a State mandated seller disclosure requirement. Not enforced by City of Kirkland.
Growth Management	Yes	No	No	Yes	We update our comprehensive plan annually to be consistent with State Growth Management Act. O-4392 on 12.11.12
Site Plan Review	Yes	No	No	No	Development Services (Planning, Public Works, Building & Fire Departments) group performs site plan review
Public Health and Safety	Yes	No	No	No	O-4392 12.11.12
Environmental Protection	Yes	No	No	Yes	O-4150 10.21.08
Planning Documents					
General or Comprehensive Plan	Yes	No	No	Yes	O-4392 12.11.12
	<i>Is the plan equipped to provide linkage to this mitigation plan?</i> Yes. Plan includes a land use and environment elements				
Floodplain or Basin Plan	No	No	No	No	
Stormwater Plan	Yes	No	No	Yes	R-4350 11.01.05
Capital Improvement Plan	Yes	No	No	Yes	
	<i>What types of capital facilities does the plan address?</i> Must be of Public Work and greater than \$50,000. Transportation, Water/Sewer/Utilities, Surface Water Improvements, Parks, Facilities and IT				
	<i>How often is the plan revised/updated?</i> Annually				
Habitat Conservation Plan	Yes	No	No	Yes	O-4320 09.06.11
Economic Development Plan	Yes	No	No	No	Economic development element of Comprehensive Plan
Shoreline Management Plan	Yes	No	No	Yes	O-4302 06.07.11
Community Wildfire Protection Plan	No				

TABLE 14-1. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Response/Recovery Planning					
Comprehensive Emergency Management Plan	Yes	No	No	Yes	2010 Resolution R-4865
Threat and Hazard Identification and Risk Assessment	No	No	No	No	
Terrorism Plan	Yes	No	No	No	2010 Resolution R-4865
Post-Disaster Recovery Plan	No	No	No	No	
Continuity of Operations Plan	No	No	No	No	
Public Health Plans	No	No	No	No	

TABLE 14-2. FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes (through regional consortium)
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes (vote may be required)
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes (by vote)
Incur Debt through Private Activity Bonds	No (would require change in policy)
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes (if project is eligible per statute)
Other	Real Estate Excise Tax King County Flood Control District-Basin Opportunity Fund

**TABLE 14-3.
ADMINISTRATIVE AND TECHNICAL CAPABILITY**

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Planning/City of Kirkland/Planners
Engineers or professionals trained in building or infrastructure construction practices	Yes	Public Works, Building and Fire /City of Kirkland/Engineers
Planners or engineers with an understanding of natural hazards	Yes	Public Works/City of Kirkland/Engineers
Staff with training in benefit/cost analysis	Yes	Finance/City of Kirkland/Director of Finance
Surveyors	No	
Personnel skilled or trained in GIS applications	Yes	GIS/City of Kirkland
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	Fire Department/City of Kirkland/Manager
Grant writers	Yes	Public Works/City of Kirkland/Analyst

**TABLE 14-4.
NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE**

What department is responsible for floodplain management in your community?	Building Department
Who is your community's floodplain administrator? (department/position)	Fire and Building/Building Official
Do you have any certified floodplain managers on staff in your community?	No
What is the date of adoption of your flood damage prevention ordinance?	Ordinance 4376 effective on October 12, 2012 updated flood damage prevention code to meet current NFIP and Ecology standards.
When was the most recent Community Assistance Visit or Community Assistance Contact?	June 14, 2005
To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	No
Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why)	No – floodplain mapping and updates to current floodplain designations are needed on Juanita Creek, Totem Lake, and Forbes Lake.
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	Sources of assistance in requiring and reviewing floodplain modeling would be helpful.
Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?	No. Kirkland's Office of Emergency Management has made joining CRS a goal for the upcoming year (2015).

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	Yes	2	Not available
Public Protection	Yes	4	Not available
StormReady	No	N/A	N/A
Firewise	No	N/A	N/A
Tsunami Ready (if applicable)	No	N/A	N/A

14.4 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 14-6 lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: 1
- Number of FEMA-Identified Severe Repetitive Loss Properties: 0
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties Known to Have Been Mitigated: 1

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Winter Weather	4056-DR-WA	1/14-1/23/12	127,818
Flooding	1963-DR-WA	1/11-1/21/11	9,410
Severe Winter Weather	1825-DR-WA	12/12/08-1/5/09	68,046
Severe Storm Flooding	1734-DR-WA	12/1/07	4,7186
Severe storm		12/3/07	
Severe wind		1/6/07	
Severe wind		12/15/06	
Severe winter weather		11/26/06	
Severe wind		2/3-2/4/06	
Earthquake		2/28/01	
Severe storm		3/1-3/15/99	
Severe wind		11/23/11/24/98	
Severe Winter Weather		12/28/96	
Severe Wind		1/20/93	

14.5 HAZARD RISK RANKING

Table 14-7 presents the ranking of the hazards of concern. Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Earthquake	48
2	Severe Weather	45
3	Severe Winter Weather	45
4	Flood	27
5	Landslide	27
6	Wildfire	26
7	Volcano (Ash fall)	5
8	Avalanche	0
9	Dam Failure	0
10	Tsunami	0

14.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 14-8 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 14-9 identifies the priority for each initiative. Table 14-10 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

**TABLE 14-8.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
<p>KL-1—Continue to maintain compliance and good standing under the National Flood Insurance Program. This will be accomplished through the implementation of floodplain management programs that, at a minimum, will meet the minimum requirements of the NFIP, which include the following:</p> <ul style="list-style-type: none"> • Enforcement of the adopted flood damage prevention ordinance, • Participating in floodplain identification and mapping updates, and • Providing public assistance/information on floodplain requirements and impacts 						
New and Existing	All Hazards	2,4,10,12	Building	Low	General Fund	Ongoing
<p>KL-2—Floodplain management staff need assistance in requiring and reviewing floodplain modeling and floodplain mapping and updates to current floodplain designations are needed on Juanita Creek, Totem Lake, and Forbes Lake.</p>						
New and Existing	All Hazards	2,4,10,12,	Public Works	Medium	Grant/General fund/CIP PDM	Short
<p>KL-3—Develop and implement a public education campaign to residents and businesses on how to secure items in the home or business to prevent damage from earthquakes.</p>						
Existing	Earthquake	11,14,15	Office of Emergency Management	Medium	Grant/General Fund	Short
<p>KL-4—Develop a City of Kirkland Continuity of Operations Plan to be able to serve the community better during and after a disaster.</p>						
New and Existing	All Hazards	1	Office of Emergency Management	Medium	Grant/General Fund	Long term
<p>KL-5, COCHRAN SPRINGS / LAKE WASHINGTON BLVD CROSSING ENHANCEMENT—Sedimentation deposits in the channel downstream of this culvert results in backwater conditions and sedimentation presenting an ongoing maintenance task for City crews. The backwater condition impedes the culvert’s capacity to convey large peak events. Additionally, sediment deposition downstream of Lake Washington Boulevard increases the risk of overbank flooding water in the Yarrow Bay business park. Improving fish passage at the culvert will allow access to approximately 375 feet of breeding and rearing habitat. Increasing the culvert’s flow capacity will reduce the risk of flooding on Lake Washington Boulevard.</p>						
New and Existing	Severe winter weather/ severe weather/ flood	5,9,12,	Public works	High	Grant/General Fund, King County Flood Control District	Long term

**TABLE 14-8.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
KL-6, TOTEM LAKE BOULEVARD FLOOD CONTROL MEASURES —Totem Lake Totem Lake Boulevard has a history of flooding during mid and large storm events. Evaluation of the storm drainage system previously completed under this project has identified options for implementing flood control improvements. The improvements include emergency pumping and removal of sediment and vegetation along the conveyance channel. This work will reduce the frequency and magnitude of flooding on Totem Lake Boulevard.						
New and Existing	Severe winter weather/ severe weather/ flood	5,9,12,	Public works	High	Grant/ General Fund, King Co Flood Control District	Short
KL-7, NEIGHBORHOOD DRAINAGE ASSISTANCE PROGRAM (NDA) —City-wide design and construct small-scale flooding solution occurring outside the public right of way. Projects qualifying for assistance include those situations that are too small to rank highly in the regular Surface Water CIP, will benefit several homes or businesses while serving a general public benefit, and are primarily caused by the cumulative impacts of upstream development. Individual projects will be evaluated and those that qualify will be prioritized. Staff will produce a report each year summarizing the number type and priority of problems that qualify for NDA fixes, and a list of NDA projects completed in the previous year.						
New and Existing	Severe winter weather/ severe weather/ flood	5,9,12,	Public works	Med	General Fund	Ongoing
KL-8, CHEMICAL DEICE/BRINE STORAGE AND DISPERSING FACILITY —Winter weather events including ice and snow on roadways critically impact commercial, private, and public transportation systems. Kirkland’s current snow policies include plowing, sanding, and pre-event roadway treatment. Current chemical storage facilities do not process commercially available products efficiently. The current practice of manual mixing and storage of materials is inadequate for significant events. This project will provide for additional hard storage capable of holding liquid product for distribution by existing City vehicles. Structurally sufficient storage and the appropriate dispersing apparatus at this facility will improve operations of the transportation system during events.						
New and Existing	Severe winter weather/ severe weather/ flood	1, 5,12,	Public works	High	Grant/ General Fund	Long
KL-9 —Plan and apply as a participant in the Community Rating System (CRS)						
New and Existing	Flood, Severe Weather, Severe Winter Weather	2,4,5,9,10,12	Building Department, Emergency Management	High	General Fund	Short-term
KL-10 —Integrate the hazard mitigation plain into other plans, ordinances or programs to dictate land uses within the jurisdiction.						
New	All Hazards	2,4,8,10	Planning	Low	General Fund	Short-term

**TABLE 14-8.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
KL-11 —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.						
Existing	All Hazards	5,9,13	Public Works	High	FEMA grants, Local sources for local Match	Long-term
KL-12 —Continue to support the county-wide initiatives identified in this plan.						
New and Existing	All Hazards	4,6,11,12,13, 14, 15	City of Kent	Low	General Fund	Ongoing
KL-13 —Actively participate in the plan maintenance strategy identified in this plan.						
New and Existing	All Hazards	4,6,11,12,13, 14, 15	City of Kent	Low	General Fund	Ongoing

**TABLE 14-9.
MITIGATION STRATEGY PRIORITY SCHEDULE**

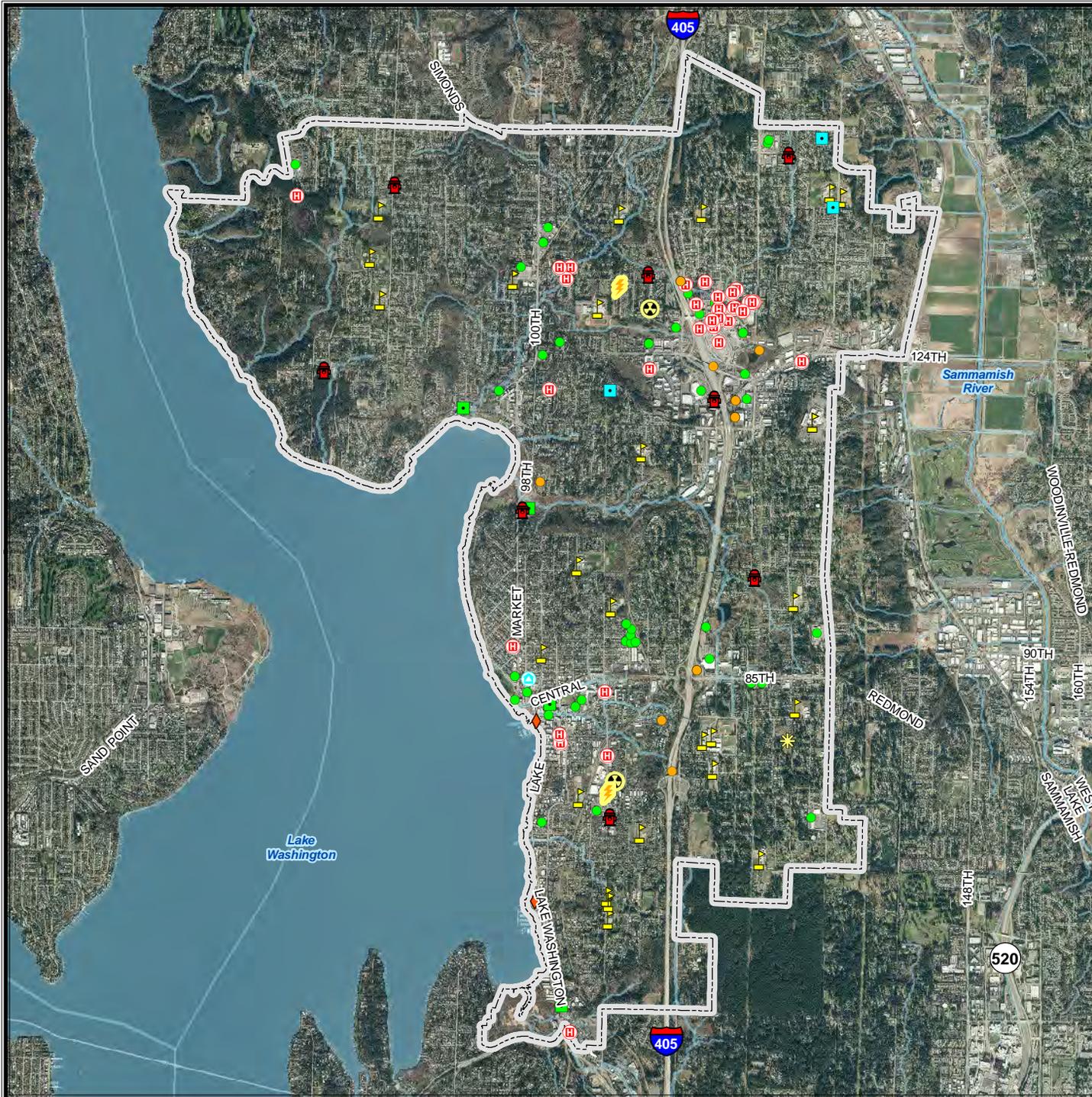
Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant- Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Priority ^a
KL-1	4	Med	Low	Yes	No	Yes	High
KL-2	4	Med	Med	Yes	Yes	No	Medium
KL-3	3	High	Med	Yes	No	No	Medium
KL-4	1	Low	Med	No	No	No	Low
KL-5	3	High	High	Yes	Yes	No	Medium
KL-6	3	High	High	Yes	Yes	No	Medium
KL-7	3	High	Med	Yes	Yes	Yes	High
KL-8	3	High	High	Yes	Yes	No	Medium
KL-9	6	Medium	Low	Yes	No	Yes	High
KL-10	4	Medium	Low	Yes	No	Yes	High
KL-11	3	High	High	Yes	Yes	No	Medium
KL-12	7	Medium	Low	Yes	No	Yes	High
KL-13	7	Low	Low	Yes	Yes	Yes	High

a. See Introduction for explanation of priorities.

**TABLE 14-10.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche	--	--	--	--	--	--
Dam Failure	--	--	--	--	--	--
Earthquake	10,13	11	3,12		4,12	
Flood	1,2,9,10,13	1,9,11	1,9,12	1,9	1,4,8,9,12	5,6,7
Landslide	10,13	11	12		4,12	
Severe Weather	10,13	11	9,12		4,8,9,12	5,6,7
Severe Winter Weather	10,13	11	9,12		4,8,9,12	5,6,7
Tsunami	--	--	--	--	--	--
Volcano	10,13	11	12		4,12	
Wildfire	10,13	11	12		4,12	

a. See Introduction for explanation of mitigation types.

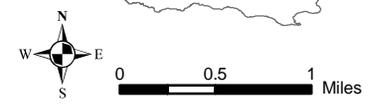
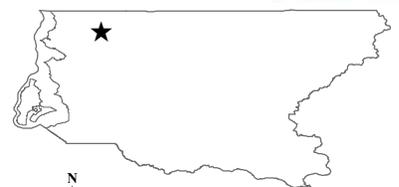


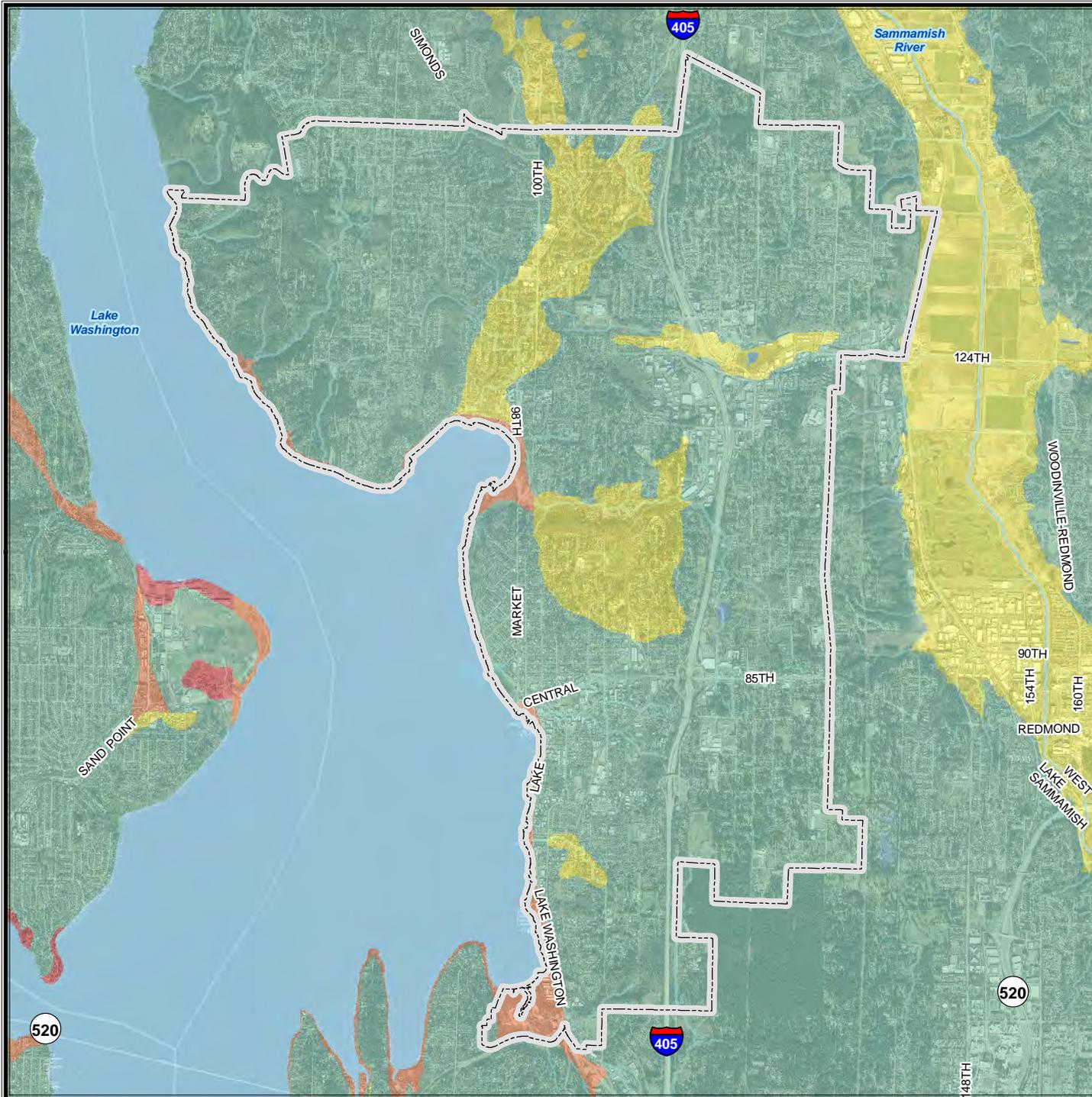
CITY OF KIRKLAND

Critical Facilities and Infrastructure

- Critical Facilities**
- Government Function
 - HazMat
 - Medical Care
 - Protective Function
 - Schools
 - Other Facility
- Critical Infrastructure**
- Bridges
 - Communications
 - Dams
 - Water Supply
 - Power
 - Transportation
 - Wastewater

Locations are approximate.
 Base Map Data Sources: King County, U.S. Geological Survey, WA Department of Ecology





CITY OF KIRKLAND

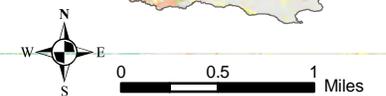
Liquefaction Susceptibility

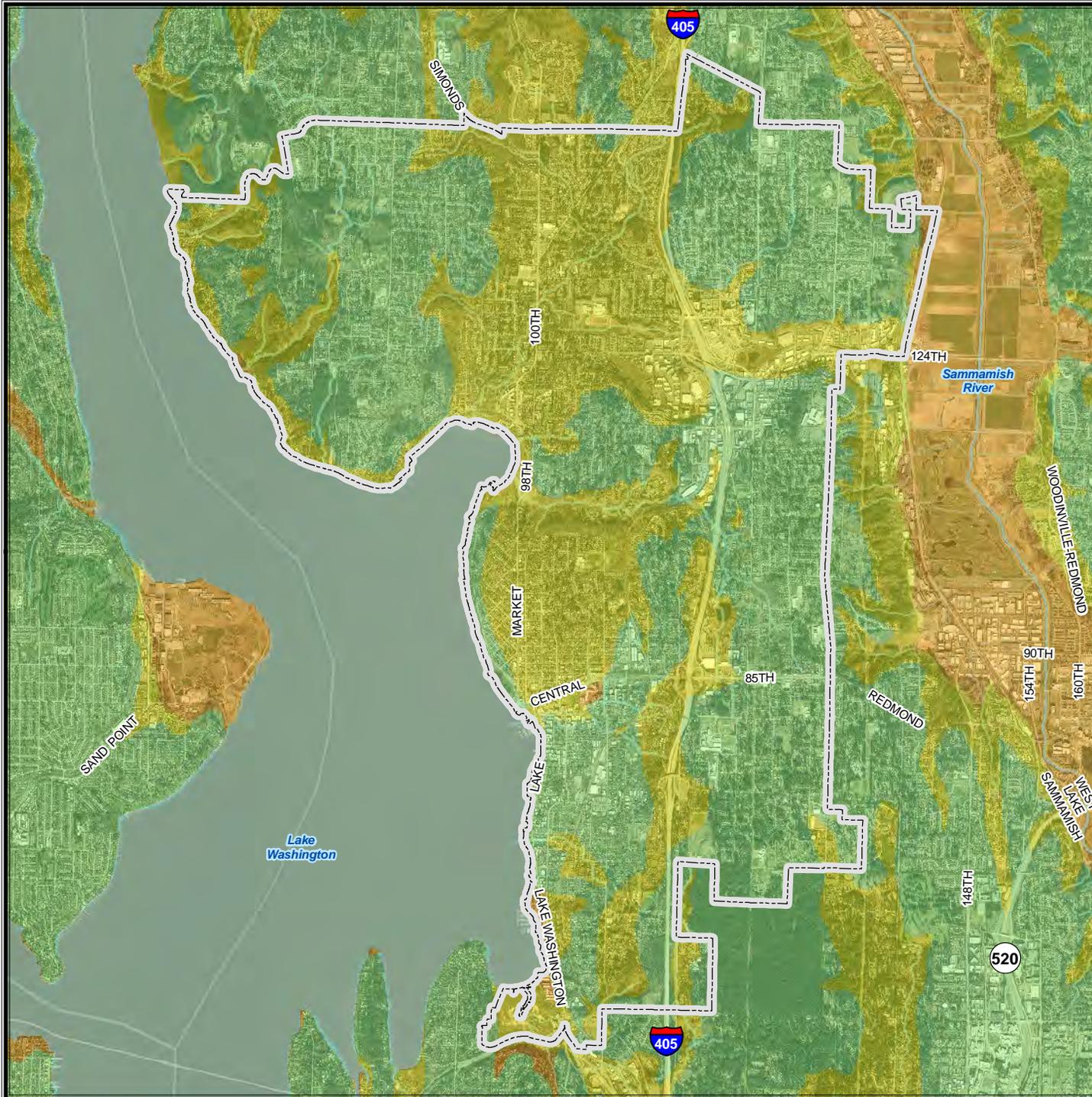
Susceptible		Not Susceptible	
High	Moderate to High	Bedrock	Peat
Moderate	Low to Moderate	Water	Ice
Low	Very Low to Low		
Very Low			

Liquefaction data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. Data is based solely on surficial geology published at a scale of 1:100,000.

A liquefaction susceptibility map provides an estimate of the likelihood that soil will liquefy as a result of earthquake shaking. This type of map depicts the relative susceptibility in a range that varies from very low to high. Areas underlain by bedrock or peat are mapped separately as these earth materials are not liquefiable, although peat deposits may be subject to permanent ground deformation caused by earthquake shaking.

Base Map Data Sources: King County, U.S. Geological Survey, WA Department of Ecology





CITY OF KIRKLAND

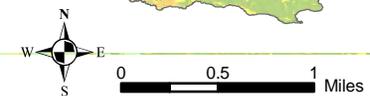
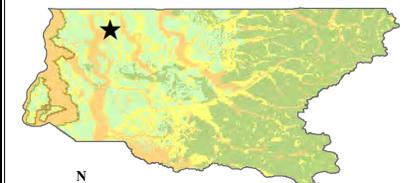
National Earthquake Hazard Reduction Program (NEHRP) Soil Classification

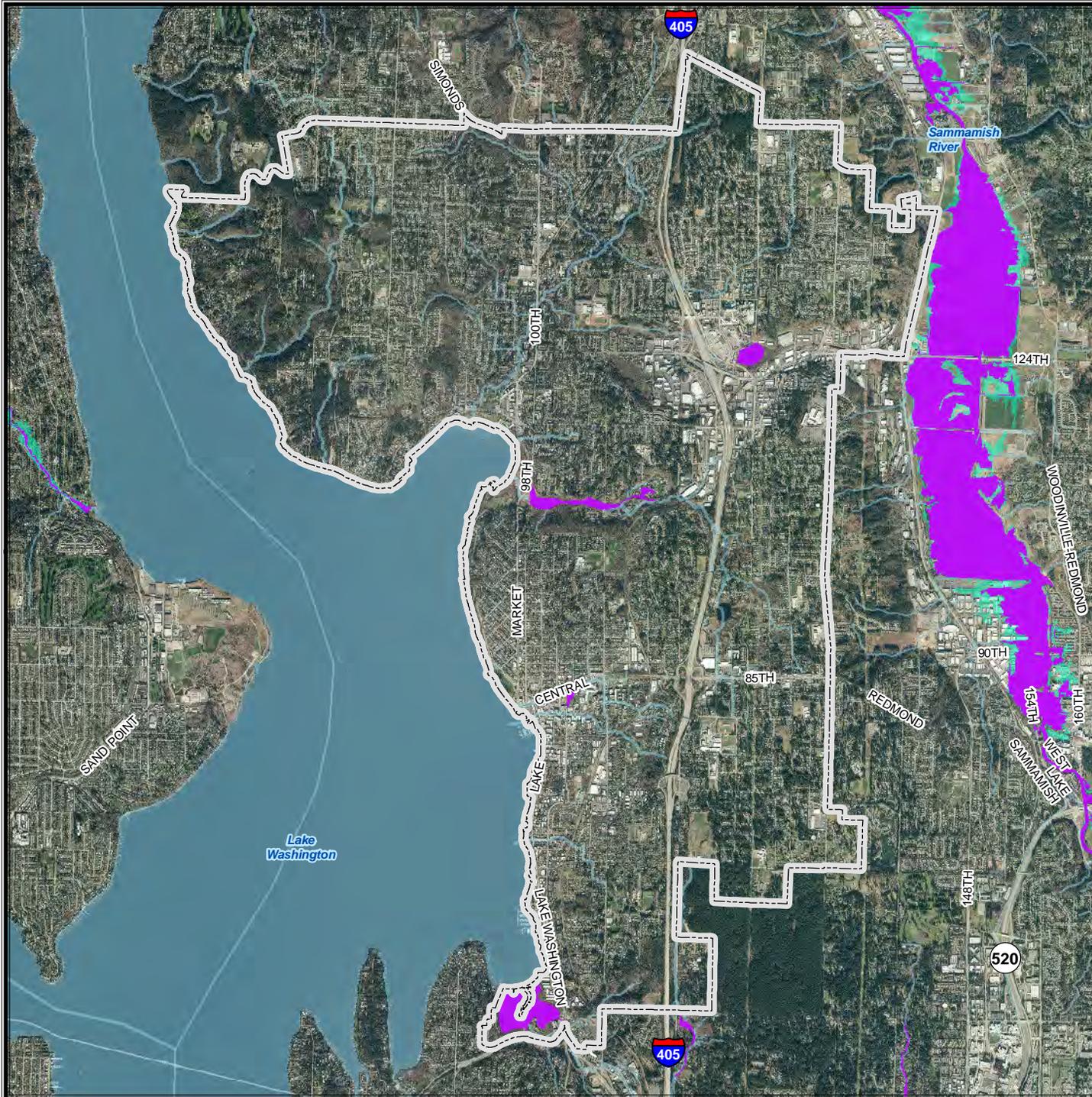
- Site Class B - Rock
- Site Class C - Very Dense Soil, Soft Rock
- Site Class D - Stiff Soil
- Site Class E - Soft Soil

Soil classification data provided by Washington State Department of Natural Resources, Geology and Earth Resources Division.

The dataset identifies site classes for approximately 33,000 polygons derived from the geologic map of Washington. The methodology chosen for developing the site class map required the construction of a database of shear wave velocity measurements. This database was created by compiling shear wave velocity data from published and unpublished sources, and through the collection of a large number of shear wave velocity measurements from seismic refraction surveys conducted for this project. All of these sources of data were then analyzed using the chosen methodologies to produce the statewide site class maps.

Base Map Data Sources: King County, U.S. Geological Survey, WA Department of Ecology





CITY OF KIRKLAND

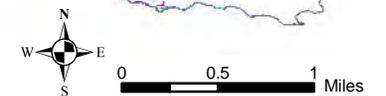
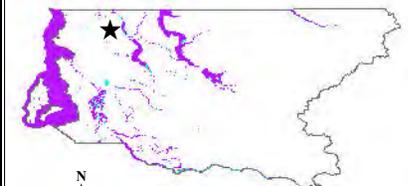
FEMA DFIRM Flood Hazard Areas

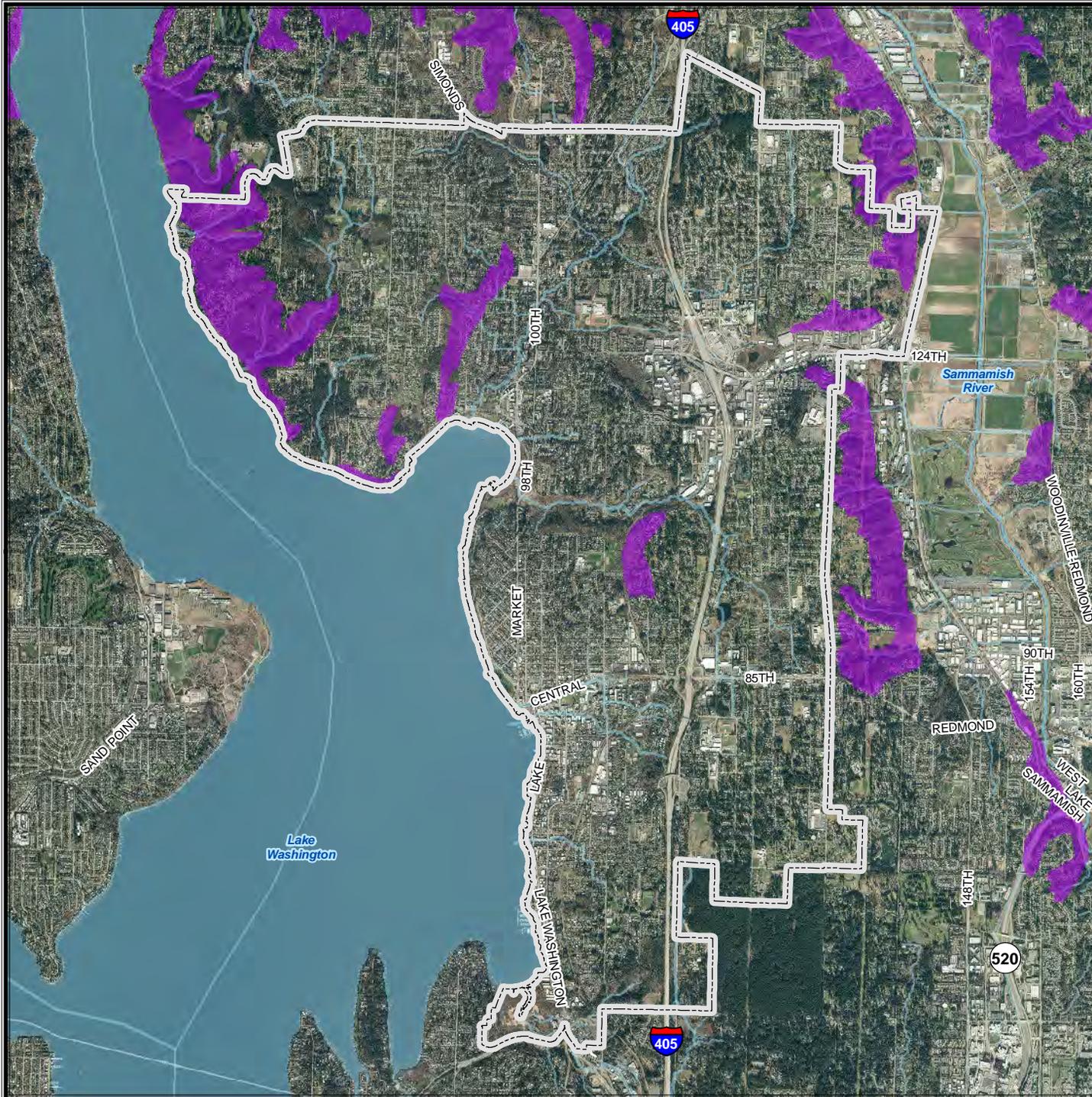
-  Floodway
-  1 Percent Annual Flood Hazard
-  0.2 Percent Annual Flood Hazard

Flood hazard areas as depicted on draft FEMA Digital Flood Insurance Rate Maps (DFIRM).

The 1 percent annual flood hazard is commonly referred to as the 100 year floodplain. The 0.2 percent annual flood hazard is commonly referred to as the 500 year floodplain.

Base Map Data Sources: King County, U.S. Geological Survey, WA Department of Ecology





CITY OF KIRKLAND

Landslide Hazard Areas

■ All Hazard Areas

The landslide hazard areas shown have been merged from three assessments for use for planning purposes:

WA DNR Landslide Areas data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. This dataset contains 1:24,000-scale polygons defining the extent of mapped landslides in the state of Washington, compiled chiefly from pre-existing landslide databases created in different divisions of the Washington State Department of Natural Resources to meet a variety of purposes.

King County Slide Areas - Landslide areas are areas subject to severe landslide risk identified in the Sensitive Areas Ordinance as:

A. Any area with a combination of:

1. Slopes greater than 15%
2. Impermeable soils (typically silt and clay) frequently interbedded with granular soils (predominantly sand and gravel)
3. Springs or groundwater seepage.

B. Any area that has shown movement during the Holocene epoch (from 10,000 years ago to present), or that is underlain by mass wastage debris of that epoch.

C. Any area potentially unstable as a result of rapid stream incision, stream bank erosion or undercutting by wave action.

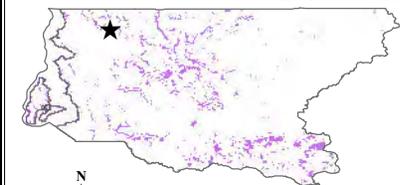
D. Any area that shows evidence of, or is at risk from, snow avalanches.

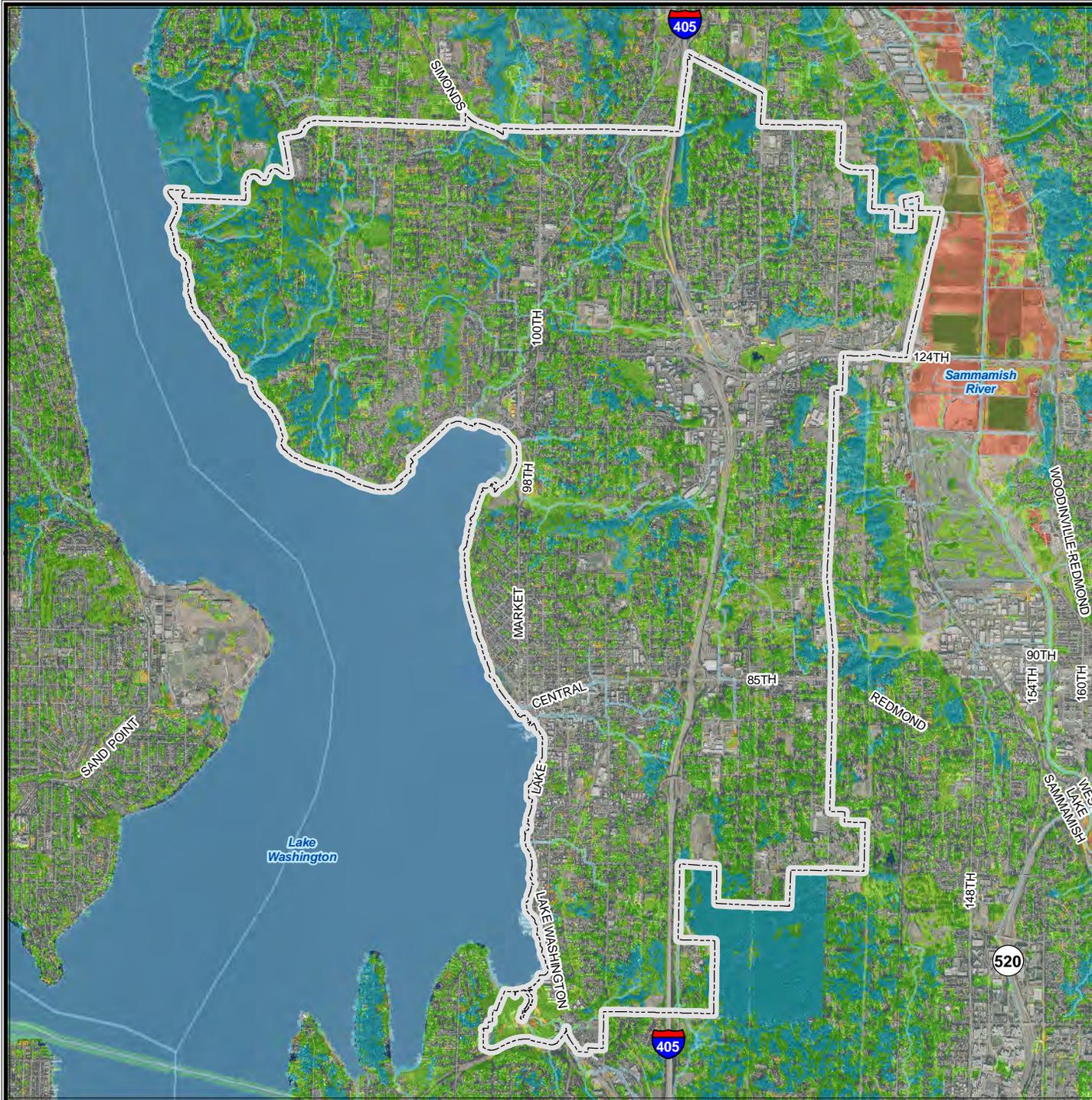
E. Any area located on an alluvial fan, presently subject to or potentially subject to inundation by debris flows or deposition of stream-transported deposits.

Slope/Soils Analysis:

1. Areas of slope greater than 40%. Slope determined using a DEM generated from 2002 LiDAR data. Slope data provided by King County DNR.
2. Areas of Qf (alluvial fans), Qls (discrete landslides), and Qmw (colluvium and the cumulative debris from small indistinct landslides that accumulate on and at the base of unstable slopes) soils as identified in surface geology data provided by King County DNR.

Base Map Data Sources: King County, U.S. Geological Survey, WA Department of Ecology





CITY OF KIRKLAND

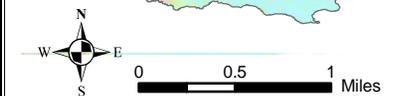
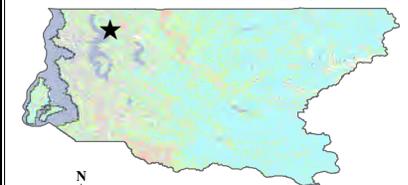
2008 LANDFIRE Fire Behavior Fuel Model

Anderson 13 Fuel Classes

Burnable	Non-Burnable
FBFM1	Developed
FBFM2	Agriculture
FBFM3	Water
FBFM5	Barren
FBFM6	
FBFM8	
FBFM9	
FBFM10	
FBFM11	

Fuel Class data (LANDFIRE REFRESH 2008 (lf_1.1.0)) provided by the Wildland Fire Science, Earth Resources Observation and Science Center, U.S. Geological Survey. The LANDFIRE fuel data describe the composition and characteristics of both surface fuel and canopy fuel. Thirteen typical surface fuel arrangements or "collections of fuel properties" (Anderson 1982) were described to serve as input for Rothermel's mathematical surface fire behavior and spread model (Rothermel 1972). These fire behavior fuel models represent distinct distributions of fuel loadings found among surface fuel components (live and dead), size classes and fuel types. The fuel models are described by the most common fire carrying fuel type (grass, brush, timber litter or slash), loading and surface area-to-volume ratio by size class and component, fuelbed depth and moisture of extinction.

Base Map Data Sources: King County, U.S. Geological Survey, WA Department of Ecology



CHAPTER 15. CITY OF MAPLE VALLEY ANNEX

15.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Jeff O Johnson, Planner
22017 S.E. Wax Rd.
Maple Valley, WA 98038
Telephone: (425) 413-6633
e-mail Address: jeffjohnson@maplevalleywa.gov

Alternate Point of Contact

Steve Clark, Director
22017 S.E. Wax Rd.
Maple Valley, WA 98038
Telephone: (425) 413-6637
e-mail Address: steve.clark@maplevalleywa.gov

15.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—August 31, 1997
- **Current Population**—23,190 as of April 1, 2013
- **Population Growth**—Between 1990 and 1996, the overall population of the Maple Valley area increased from 6,660 to 10,600, setting off a transformation of the area from rural to urban. From 2000 – 2010 the City grew nearly 63%, making it the 17th fastest growing city in the State during that period.

As of the census of 2010, there were 22,684 people, 7,679 households, and 6,159 families residing in the city. The population density was 3,965.7 inhabitants per square mile, and there were 7,997 housing units at an average density of 1,398.1 per square mile.

Today, the population of the municipality is approximately 24,171. The City currently ranks 43rd out of 281 municipalities in the State for population. The build-out population for the City is projected to be 24,500.

- **Location and Description**—The City of Maple Valley is located in south central King County, roughly midway between Puget Sound and the Cascade Mountains. The City is, approximately 10 miles southeast of Renton and 20 miles southeast of Seattle. The City shares common boundaries with Black Diamond on the south, Covington on the west and by areas of unincorporated King County to the southwest, east and north.

The City, which comprises 5.8 square miles, is central to the larger geographic area known historically as Maple Valley. The City sits along the eastern edge of King County's urban growth boundary

Maple Valley is served internally by three major arterials: State Route (SR) 169, known as Maple Valley-Black Diamond Road; Witte Road, a north-south corridor through the City; and SR 512, known as Kent-Kangley Road. In addition, SR 18, which links Interstate (I) 90 and I-5, provides regional access to and from the City.

In the center of the City, there are multiple neighborhoods with tree-lined streets and community parks. Many neighborhoods have access to trail systems that connect the Black Diamond Mountain Biking trail system, Lake Wilderness Park and Arboretum, the Maple Valley Library and the Green to Cedar River Trail (Lake Wilderness Trail).

The City embraces three lakes; Lake Wilderness the largest, Pipe Lake, and Lake Lucerne the smallest. The shorelines of all three lakes are developed largely as single family residences, with the exception of Lake Wilderness, which features the City’s largest park, along the west and north shoreline of the lake.

- **Brief History**—Historically, the larger Maple Valley area has been recognized as a community of abundant natural resources. Early residents were rooted in resource-based economies such as mining, logging and farming. The area was most known for its abundance of coal.

In 1885, the Columbia and Puget Sound Railroad built a line through Maple Valley to Black Diamond and the coal mines. This brought settlers to the area in large numbers. Residents not employed at the mines engaged in logging and in dairy and poultry farming.

After the mining and logging boom of the late 19th and early 20th centuries, Maple Valley grew slowly as a rural agricultural community-until the 1970s, when the rural atmosphere that characterized Maple Valley—single homes on large tracts of forest, grassland or pasture land—gave way to urban subdivisions and planned developments.

Gradually, Maple Valley changed from a predominantly resource-based economy to a commercial and retail-based economy. Today, Maple Valley is characterized by urban residential developments interspersed among undeveloped forested tracts, low density residential areas, and scattered large-lot agricultural uses, including pasture land for horses or sheep.

- **Climate**—Maple Valley is subject to a Maritime climate, with an average temperature range from winter lows of 32 degrees and 43-degree highs, to summer lows of 51 degrees, with 75-degree highs. In the past, Maple Valley has experienced strong winds, hail, thunderstorm, rain, snow and freezing rain.

Precipitation averages 52.8 inches annually, with a one-day high of 5.50 inches. Prevailing winds are from the south, with an annual average speed of about 8 miles per hour. The region has experienced winds as high as 95.52 mph. The average annual low temperature is 40 degrees (f) with an average high temperature or 59.2 degrees and a recorded high of 102 degrees. Snowfall averages 9.28 inches per year, with a one day record of 14 inches.

Record winds events (Sea-Tac Airport)	
1981	66.75
1984	67.9
1993	64.44
2006	69.05
2010	95.52
2011	75.95
2012	58.69

- **Governing Body Format**—The City is served by a council-manager form of government, wherein an elected council, comprised of seven members, each serving a four-year term, appoints the city manager, who holds executive power. A mayor is elected from among the council by the council members. The City Council is responsible for adoption of this plan with the Department of Public Works and Community Development department overseeing its implementation.

There are two primary committees reporting to the council: the Audit Committee and the Public Safety Oversight Committee. There are three advisory commissions, the Planning Commission, Parks and Recreation Commission and the Arts Commission. City Council assumes responsibility for the adoption of this plan; The Department of Public Works and Community Development will oversee its implementation.

Maple Valley employs its own Public Works and Community Development services; police protection is provided through contract with the King County Sheriff’s Department; and fire and life safety through King County Fire District No. 43.

The City receives the majority of its water through Covington Water District; the primary sewer purveyor is Soos Creek Water and Sewer District; and electricity and natural gas services are provided through Puget Sound Energy. The Tahoma School District provides public education.

Development Trends—Housing in Maple Valley now spans the economic spectrum from high-priced shoreline view neighborhoods to high-density multi-family apartment complexes.

Along with residential growth has come a gradual change in the area’s commerce from a predominantly resource-based economy to a commercial and retail-based economy, with an estimated trade area population of 65,000-94,000.

The City contains two primary commercial nodes: the south node, known as Four Corners, anchored by three shopping centers at the intersections of SR 169 and SR 512, and the north node, centered at the intersection of Witte Road and SR 169 and anchored by Wilderness Village Shopping Center.

15.3 CAPABILITY ASSESSMENT

The assessment of the jurisdiction’s legal and regulatory capabilities is presented in Table 15-1. The assessment of the jurisdiction’s fiscal capabilities is presented in Table 15-2. The assessment of the jurisdiction’s administrative and technical capabilities is presented in Table 15-3. Information on the community’s National Flood Insurance Program (NFIP) compliance is presented in Table 15-4. Classifications under various community mitigation programs are presented in Table 15-5.

TABLE 15-1. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Yes	No	No	Yes	MVMC Title 15 Building and Construction; International Building Code; and International Residential Building Code
Zoning	Yes	No	No	Yes	MVMC Title 18 Zoning
Subdivisions	Yes	No	No	Yes	Chapter 18.90 MVMC Subdivision and Platting
Post Disaster Recovery	Yes	No	No	Yes	Chapter 2.90 MVMC Emergency Management 2012 Comprehensive Emergency Management Plan

TABLE 15-1. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Stormwater Management	Yes	No	Yes	Yes	The City has adopted the King County Surface Water Design Manual as the design standard for stormwater facilities. Chapter 13.05 MVMC Storm Drainage and Surface Water Management Utility; Chapter 14.30 MVMC Surface Water Management; Chapter 14.35 MVMC Surface Water and Drainage
Real Estate Disclosure	No	No	Yes	Yes	RCW 64.06 – this is a State mandated seller disclosure requirement.
Growth Management	Yes	No	No	Yes	City of Maple Valley Comprehensive Plan; Growth Management Act RCW 36.70A
Site Plan Review	Yes	No	No	Yes	Chapter 18.40 MVMC Development Standards; Chapter 18.70 MVMC Design Guidelines and Requirements
Public Health and Safety	Yes	No	No	No	MVMC Title 8 Health and safety; MVMC Title 9 Criminal Code; MVMC Title 12 Streets, Sidewalks and Public Places; MVMC Title 13 Water and Sewers; MVMC Title 14 Environment; MVMC Title 15 Buildings and Construction.
Environmental Protection	Yes	No	Yes	Yes	MVMC Title 14 Environment; Chapter 18.60 MVMC Critical Area Regulations
Planning Documents					
General or Comprehensive Plan	Yes	No	No	Yes	City of Maple Valley Comprehensive Plan; Growth Management Act RCW 36.70A
	<i>Is the plan equipped to provide linkage to this mitigation plan?</i> Yes. The Plan includes a land use and environmental elements				
Floodplain or Basin Plan	No	No	No	No	
Stormwater Plan	Yes	No	Yes	Yes	
Capital Improvement Plan	Yes	No	No	Yes	
	<i>What types of capital facilities does the plan address?</i> Transportation, Community Facilities, Surface Water Management, Parks and Recreation, Lake Wilderness Golf Program, and Debt Service				
	<i>How often is the plan revised/updated?</i> Annually				
Habitat Conservation Plan	No	No	No	No	

TABLE 15-1. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Economic Development Plan	Yes	No	No	Yes	This is an element of the Comprehensive Plan.
Shoreline Management Plan	Yes	No	Yes	Yes	MVMC 14.05 Shoreline Management adopts King County Code Chapter 21A.25 Shorelines by reference.
Community Wildfire Protection Plan	No	No	No	No	
Response/Recovery Planning					
Comprehensive Emergency Management Plan	Yes	No	No	Yes	Adopted July 23, 2012
Threat and Hazard Identification and Risk Assessment	Yes	No	No	Yes	Comprehensive Emergency Management Plan
Terrorism Plan	Yes	No	No	Yes	Comprehensive Emergency Management Plan
Post-Disaster Recovery Plan	Yes	No	No	Yes	Comprehensive Emergency Management Plan
Continuity of Operations Plan	Yes	No	No	Yes	Comprehensive Emergency Management Plan
Public Health Plans					

TABLE 15-2. FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Real Estate Excise Tax; King County Flood Control District-Basin Opportunity Fund

**TABLE 15-3.
ADMINISTRATIVE AND TECHNICAL CAPABILITY**

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Public Works/Community Development director Community Development, 3 planners Public Works, city engineer
Engineers or professionals trained in building or infrastructure construction practices	Yes	Public Works/Community Development director Community Development, building official Community Development, 2 building inspectors Public Works, inspector Public Works, capital projects manager Public Works, city engineer Public Works, surface water, NPDES program manager.
Planners or engineers with an understanding of natural hazards	Yes	Public Works/Community Development director Community Development, 3 planners Public Works, city engineer Public Works, surface water, NPDES program manager.
Staff with training in benefit/cost analysis	Yes	Finance
Surveyors	No	None on staff
Personnel skilled or trained in GIS applications	Yes	GIS analyst
Scientist familiar with natural hazards in local area	No	None on staff
Emergency manager	Yes	City Manager's Office, city manager Public Works/Community development, director
Grant writers	Yes	City Manager's Office, city manager City Manager's Office, city clerk Public Works/Community Development, director Public Works, city engineer Public Works, surface water, NPDES program manager. Public Works, programs project manager Public Works, capital projects manager Police Department, police civilian assistant

TABLE 15-4. NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE	
What department is responsible for floodplain management in your community?	Maple Valley does not participate in the National Flood Insurance Program.
Who is your community’s floodplain administrator? (department/position)	NA
Do you have any certified floodplain managers on staff in your community?	NA
What is the date of adoption of your flood damage prevention ordinance?	NA
When was the most recent Community Assistance Visit or Community Assistance Contact?	NA
To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	NA
Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why)	NA
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	NA
Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?	No

TABLE 15-5. COMMUNITY CLASSIFICATIONS			
	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	Yes	3	Not available
Public Protection	Yes	4	Not available
StormReady	No	N/A	N/A
Firewise	No	N/A	N/A
Tsunami Ready (if applicable)	No	N/A	N/A

15.4 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 15-6 lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: None
- Number of FEMA-Identified Severe Repetitive Loss Properties: None
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties Known to Have Been Mitigated: None

**TABLE 15-6.
NATURAL HAZARD EVENTS**

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Earthquake	N/A	1965	Unknown
High Winds	N/A	1981	Unknown
High Winds	N/A	1983	Unknown
Severe Storm w/ High Winds	981	1993	Unknown
Severe Storm w/ High Winds	1079	1995	Unknown
Severe Winter Storm	N/A	1996	Unknown
Magnitude 6.8 Earthquake	1361	2001	\$1 to \$4 billion region wide (various estimates)
Severe Winter Storm	1682	2006	Unknown
Severe Winter Storm	1825	2008	Unknown
Severe Winter Storm	1817	2009	Unknown
Winter Snow and Ice Storm	4056	2012	Unknown

15.5 HAZARD RISK RANKING

Table 15-7 presents the ranking of the hazards of concern. Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

**TABLE 15-7.
HAZARD RISK RANKING**

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Earthquake	48
2	Severe Weather	48
3	Severe Winter Weather	48
4	Landslide	12
9	Flood	11
5	Volcano	10
6	Wildfire	8
7	Avalanche	0
8	Dam Failure	0
10	Tsunami	0

Although there is no mapped floodplain within Maple Valley, there is infrequent localized urban flooding

15.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 15-8 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 15-9 identifies the priority for each initiative. Table 15-10 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

TABLE 15-8. HAZARD MITIGATION ACTION PLAN MATRIX						
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
MV-1—Consider participation in the National Flood Insurance Program (NFIP)						
new and existing	Flood	2,4,10,12	Public Works and Community Development	Low	General Fund	Long term
MV- 2—Create and maintain local multi-hazard model(s) using Hazus for mitigation planning, disaster response and public awareness.						
new and existing	Landslide, earthquake, volcano	1, 3, 4, 6	GIS, Public Works and Community Development	Low	General Fund	short-term
MV-3—Provide hazard preparedness and awareness outreach information to the community via a dedicated page on the City of Maple Valley web site.						
new and existing	Earthquake, severe weather, severe winter weather, volcano	3, 6, 8, 11, 15	Public Works, Community Development and City Manager	Low	General Fund	short-term
MV-4—Address existing identified and emergent drainage or flooding problems within the City, along with maintenance, repair or replacement of small works drainage improvements						
new and existing	Flood, severe weather	1, 5, 8,	Public Works	Low	Surface Water Management Fund	long-term
MV-5—Integrate the hazard mitigation plain into other plans, ordinances or programs to dictate land uses within the jurisdiction.						
New	All Hazards	2,4,8,10	Community Development	Low	General Fund	Short-term

TABLE 15-8. HAZARD MITIGATION ACTION PLAN MATRIX						
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
MV-6 —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.						
Existing	All Hazards	5,9,13	Public Works	High	FEMA grants, Local sources for local Match	Long-term
MV-7 —Continue to support the county-wide initiatives identified in this plan.						
New and Existing	All Hazards	4,6,11,12,13, 14, 15	City of Maple Valley	Low	General Fund	Ongoing
MV-8 —Actively participate in the plan maintenance strategy identified in this plan.						
New and Existing	All Hazards	4,6,11,12,13, 14, 15	City of Maple Valley	Low	General Fund	Ongoing

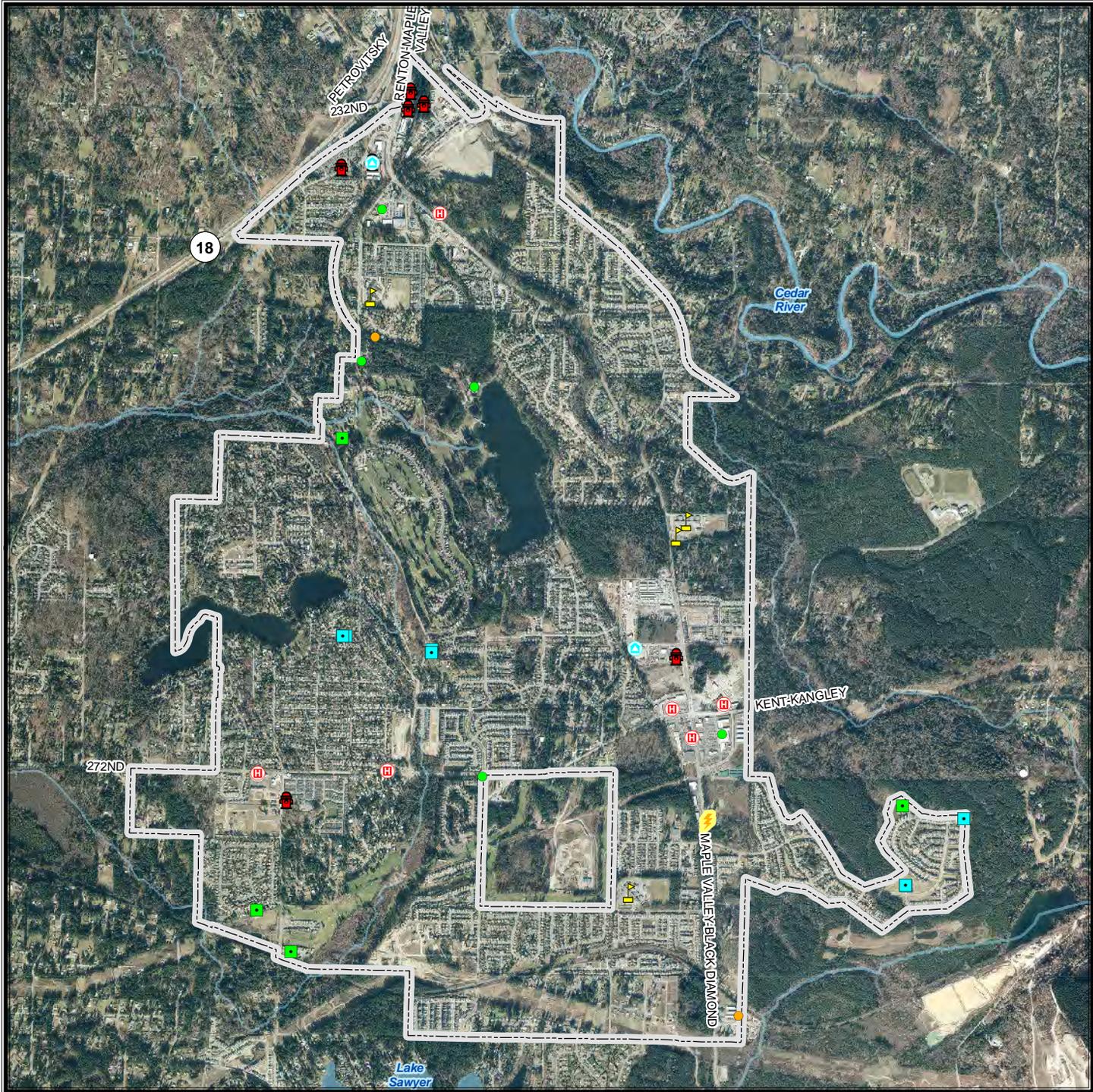
TABLE 15-9. MITIGATION STRATEGY PRIORITY SCHEDULE							
Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant- Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Priority ^a
MV-1	4	Medium	Low	Yes	No	Yes	High
MV-2	4	Medium	Low	Yes	No	Yes	High
MV-3	5	Medium	Low	Yes	No	Yes	High
MV-4	3	Medium	Low	Yes	Yes	Yes	High
MV-5	4	Medium	Low	Yes	No	Yes	High
MV-6	3	High	High	Yes	Yes	No	Medium
MV-7	7	Medium	Low	Yes	No	Yes	High
MV-8	7	Low	Low	Yes	Yes	Yes	High

a. See Introduction for explanation of priorities.

**TABLE 15-10.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche	--	--	--	--	--	--
Dam Failure	--	--	--	--	--	--
Earthquake	2, 3,5,8	6	2, 3,7		7	
Flood	1, 4,5,8	1,4,6	1,3,7	1	1,7	4
Landslide	2,5,8	6	2, 3,7		7	
Severe Weather	2, 4,5,8	4,6	3,7		7	4
Severe Winter Weather	5,8	6	7		7	
Tsunami	--	--	--	--	--	--
Volcano	5,8	6	3,7		7	
Wildfire	5,8	6	7		7	

a. See Introduction for explanation of mitigation types.



CITY OF MAPLE VALLEY

Critical Facilities and Infrastructure

Critical Facilities

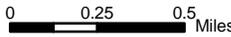
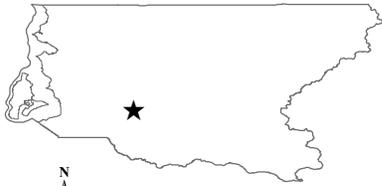
-  Government Function
-  HazMat
-  Medical Care
-  Protective Function
-  Schools
-  Other Facility

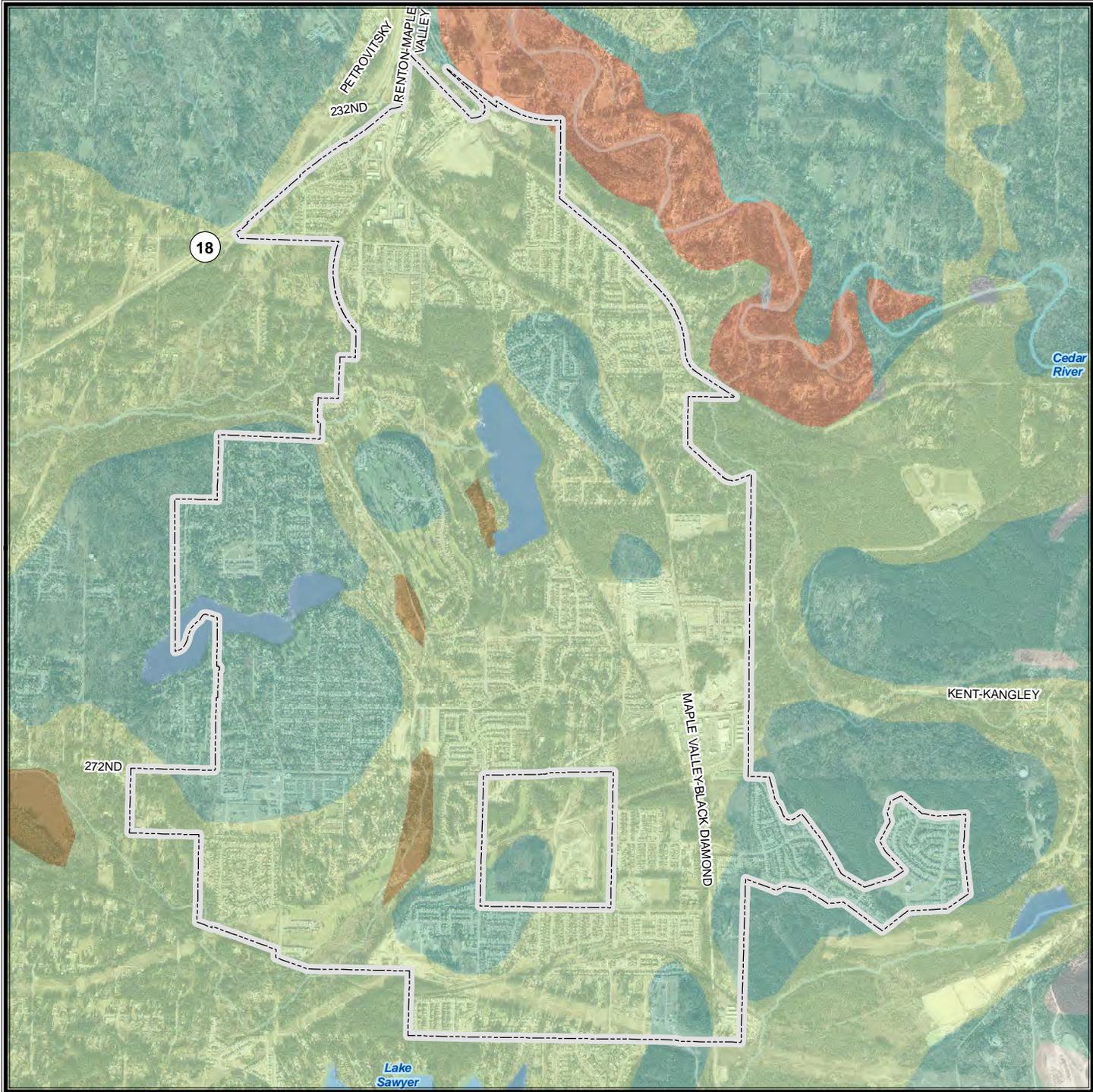
Critical Infrastructure

-  Bridges
-  Communications
-  Dams
-  Water Supply
-  Power
-  Transportation
-  Wastewater

Locations are approximate.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF MAPLE VALLEY

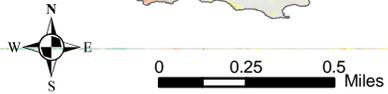
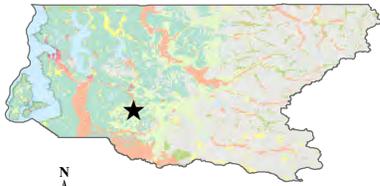
Liquefaction Susceptibility

Susceptible		Not Susceptible	
High	Moderate to High	Bedrock	Peat
Moderate	Low to Moderate	Water	Ice
Low	Very Low to Low		
Very Low			

Liquefaction data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. Data is based solely on surficial geology published at a scale of 1:100,000.

A liquefaction susceptibility map provides an estimate of the likelihood that soil will liquefy as a result of earthquake shaking. This type of map depicts the relative susceptibility in a range that varies from very low to high. Areas underlain by bedrock or peat are mapped separately as these earth materials are not liquefiable, although peat deposits may be subject to permanent ground deformation caused by earthquake shaking.

Base Map Data Sources:
King County, U.S. Geological Survey



CITY OF MAPLE VALLEY

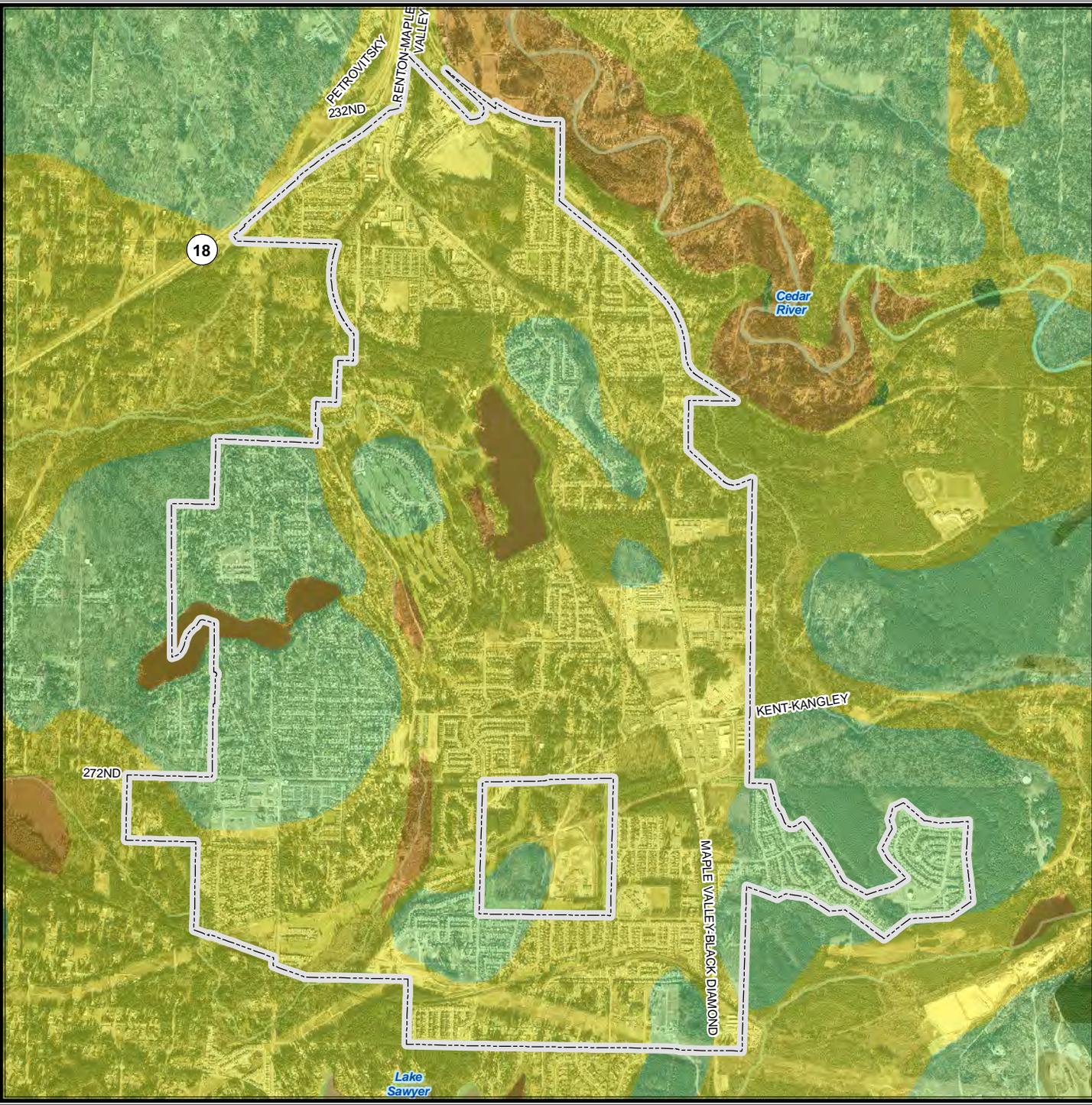
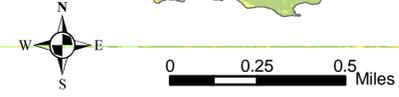
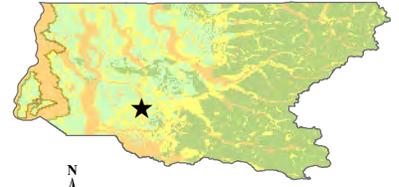
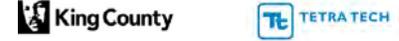
National Earthquake Hazard Reduction Program (NEHRP) Soil Classification

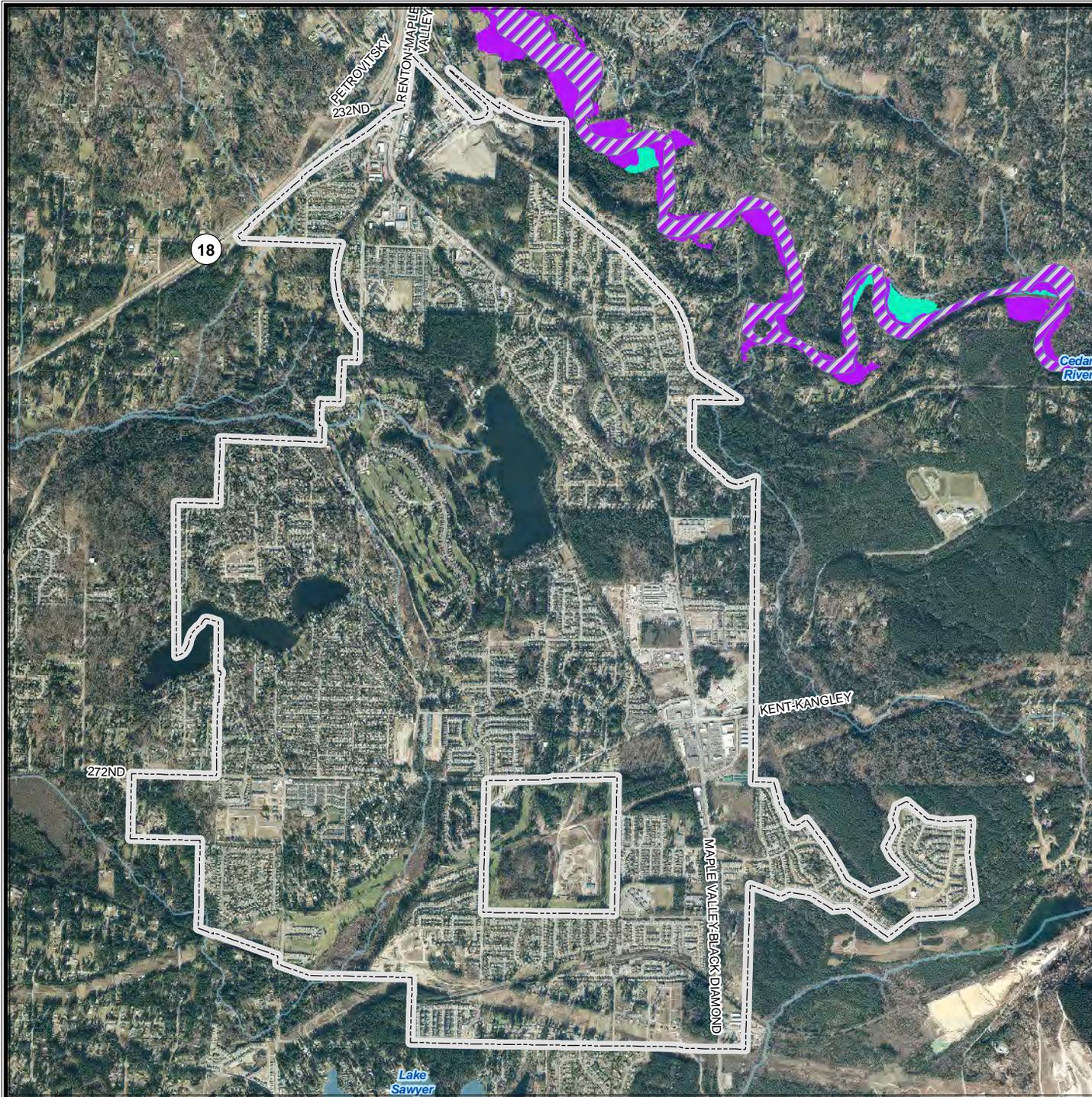
- Site Class B - Rock
- Site Class C - Very Dense Soil, Soft Rock
- Site Class D - Stiff Soil
- Site Class E - Soft Soil

Soil classification data provided by Washington State Department of Natural Resources, Geology and Earth Resources Division.

The dataset identifies site classes for approximately 33,000 polygons derived from the geologic map of Washington. The methodology chosen for developing the site class map required the construction of a database of shear wave velocity measurements. This database was created by compiling shear wave velocity data from published and unpublished sources, and through the collection of a large number of shear wave velocity measurements from seismic refraction surveys conducted for this project. All of these sources of data were then analyzed using the chosen methodologies to produce the statewide site class maps.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF MAPLE VALLEY

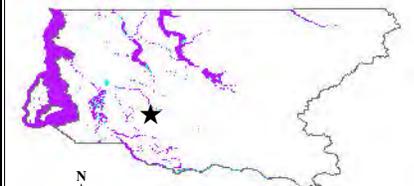
FEMA DFIRM Flood Hazard Areas

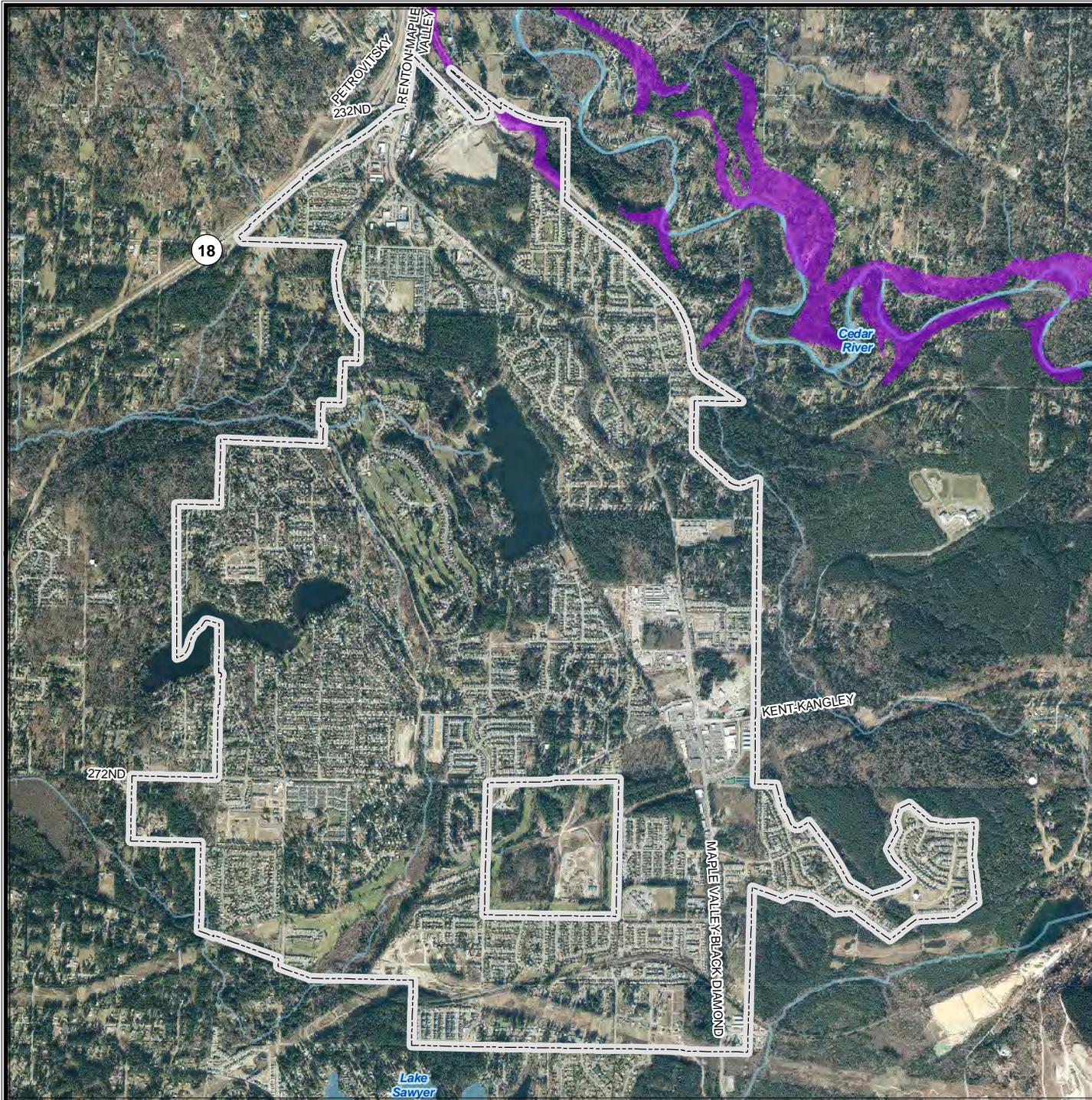
-  Floodway
-  1 Percent Annual Flood Hazard
-  0.2 Percent Annual Flood Hazard

Flood hazard areas as depicted on draft FEMA Digital Flood Insurance Rate Maps (DFIRM).

The 1 percent annual flood hazard is commonly referred to as the 100 year floodplain. The 0.2 percent annual flood hazard is commonly referred to as the 500 year floodplain.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF MAPLE VALLEY

Landslide Hazard Areas

■ All Hazard Areas

The landslide hazard areas shown have been merged from three assessments for use for planning purposes:

WA DNR Landslide Areas data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. This dataset contains 1:24,000-scale polygons defining the extent of mapped landslides in the state of Washington, compiled chiefly from pre-existing landslide databases created in different divisions of the Washington State Department of Natural Resources to meet a variety of purposes.

King County Slide Areas - Landslide areas are areas subject to severe landslide risk identified in the Sensitive Areas Ordinance as:

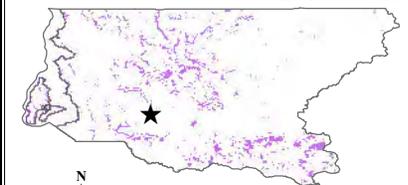
- A. Any area with a combination of:
 1. Slopes greater than 15 %
 2. Impermeable soils (typically silt and clay) frequently interbedded with granular soils (predominantly sand and gravel)
 3. Springs or groundwater seepage.
- B. Any area that has shown movement during the Holocene epoch (from 10,000 years ago to present), or that is underlain by mass wastage debris of that epoch.
- C. Any area potentially unstable as a result of rapid stream incision, stream bank erosion or undercutting by wave action.
- D. Any area that shows evidence of, or is at risk from, snow avalanches.
- E. Any area located on an alluvial fan, presently subject to or potentially subject to inundation by debris flows or deposition of stream-transported deposits.

Slope/Soils Analysis:

1. Areas of slope greater than 40%. Slope determined using a DEM generated from 2002 LiDAR data. Slope data provided by King County DNRP.
2. Areas of Qf (alluvial fans), Qls (discrete landslides), and Qmw (colluvium and the cumulative debris from small indistinct landslides that accumulate on and at the base of unstable slopes) soils as identified in surface geology data provided by King County DNRP.

Base Map Data Sources:

King County, U.S. Geological Survey





CITY OF MAPLE VALLEY

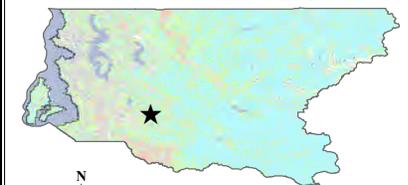
2008 LANDFIRE Fire Behavior Fuel Model

Anderson 13 Fuel Classes

Burnable	Non-Burnable
FBFM1	Developed
FBFM2	Agriculture
FBFM3	Water
FBFM5	Barren
FBFM6	
FBFM8	
FBFM9	
FBFM10	
FBFM11	

Fuel Class data (LANDFIRE REFRESH 2008 (If_1.1.0)) provided by the Wildland Fire Science, Earth Resources Observation and Science Center, U.S. Geological Survey. The LANDFIRE fuel data describe the composition and characteristics of both surface fuel and canopy fuel. Thirteen typical surface fuel arrangements or "collections of fuel properties" (Anderson 1982) were described to serve as input for Rothermel's mathematical surface fire behavior and spread model (Rothermel 1972). These fire behavior fuel models represent distinct distributions of fuel loadings found among surface fuel components (live and dead), size classes and fuel types. The fuel models are described by the most common fire carrying fuel type (grass, brush, timber litter or slash), loading and surface area-to-volume ratio by size class and component, fuelbed depth and moisture of extinction.

Base Map Data Sources:
King County, U.S. Geological Survey



0 0.25 0.5 Miles

CHAPTER 16. CITY OF MEDINA ANNEX

16.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Kris Finnigan, Emergency Preparedness Coord.
P.O. Box 144 – 501 Evergreen Point Road
Medina, WA 98039-0144
Telephone: (425) 233-6429
e-mail Address: kfinnigan@medina-wa.gov

Alternate Point of Contact

Dan Yourkoski, Interim Police Chief
P.O. Box 144 – 501 Evergreen Point Road
Medina, WA 98039-0144
Telephone: (425) 233-6424
e-mail Address: dyourkoski@medina-wa.gov

16.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—1955
- **Current Population**—3,000 as of April 2013 (Washington OFM estimate)
- **Population Growth**—Population decreased by 1.4 percent between the 2000 and 2010 census. In 2000 there were 3,011 residents, while in 2010 there were 2,969 residents.
- **Location and Description**—Medina is a 1.4 square mile residential community, located approximately two miles west of Interstate 405, along State Route 520 and north of Interstate 90, on the east side and bordering Lake Washington.
- **Brief History**—Known as one of the Points Communities, Medina became home to a ferry landing, directly across from the Leshi Landing in 1891. Many settlers maintained jobs in Seattle. Local farmers shipped their produce to Seattle’s Pike Place Market. By 1940, as automobiles increased on the Eastside, the large home sites had begun to divide, becoming today’s very desirable community.
- **Climate**—Medina receives approximately 35 inches of rainfall per year. On average, the City receives 3 inches of snowfall per year. There is an annual average of 152 days per year with measurable precipitation and 155 sunny days per year. The average high temperature in July is 75 degrees and the average January low is 37 degrees.
- **Governing Body Format**—The City of Medina is a Code City that operates under the Council-Manager form of government. The registered voters of Medina elect seven residents at large to staggered four year terms. The Council elects one of its members to serve as Mayor for a two-year term. The Mayor serves as the Chief Elected Officer of the City and has the authority to appoint members to serve on various boards and commissions, as well as special advisory committees, upon confirmation by the City Council. The City Council has the primary responsibility of establishing policy, direction, and the goals for the City. City Council assumes responsibility for the adoption of this plan; City Manager will oversee its implementation.
- **Development Trends**—Medina is a developed community that consists almost exclusively of single family homes on individual lots. At the time of the city’s incorporation, it was the desire of the community to promote a development pattern that would maintain a single

family residential character. Since that time, Medina has developed and matured according to that vision. Limited population growth is expected in Medina. Only 31 new housing units are expected by 2022. The most common development in Medina is the razing of an older single-family home and the subsequent construction of a newer, larger residence.

16.3 CAPABILITY ASSESSMENT

The assessment of the jurisdiction’s legal and regulatory capabilities is presented in Table 16-1. The assessment of the jurisdiction’s fiscal capabilities is presented in Table 16-2. The assessment of the jurisdiction’s administrative and technical capabilities is presented in Table 16-3. Information on the community’s National Flood Insurance Program (NFIP) compliance is presented in Table 16-4. Classifications under various community mitigation programs are presented in Table 16-5.

TABLE 16-1. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Yes	No	Yes	No	Title 20, Adopted 2010
Zoning	Yes	No	Yes	No	Title 20, Ordinance 900, Adopted September 2013
Subdivisions	Yes	No	Yes	No	Ordinance 854, Adopted 2010
Stormwater Management	Yes	No	Yes	Yes	Title 13, Adopted 2009
Post Disaster Recovery	Yes	No	Yes	No	CEMP 2013
Real Estate Disclosure	No	No	Yes	Yes	RCW 64.06 – this is a State mandated seller disclosure requirement.
Growth Management	Yes	Yes	Yes	Yes	Comp Plan, Updated 2005
Site Plan Review	Yes	Yes	No	Yes	Title 20, Ordinance 900, September 2013
Public Health and Safety	Yes	No	Yes	No	King County Public Health
Environmental Protection	Yes	No	Yes	Yes	Title 18, Ordinance 888, 2012
Planning Documents					
General or Comprehensive Plan	Yes	No	Yes	Yes	Comp Plan Amended Ord. 783, 2005
	<i>Is the plan equipped to provide linkage to this mitigation plan?</i> Yes				
Floodplain or Basin Plan	Yes	No	Yes	Yes	Stormwater Management Ord. MMC 13.06 and Development Ord. MMC 18.12
Stormwater Plan	Yes	No	Yes	Yes	Updated March 2013
Capital Improvement Plan	Yes	No	Yes	Yes	2013
	<i>What types of capital facilities does the plan address?</i> Roads, Public Buildings, Storm Drain				
	<i>How often is the plan revised/updated?</i> Annually				
Habitat Conservation Plan	-	-	-	None	N/A

**TABLE 16-1.
LEGAL AND REGULATORY CAPABILITY**

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Economic Development Plan	No	No	Yes	No	
Shoreline Management Plan	Yes	No	Yes	Yes	Title 17, 1989 Title 18, 2012
Community Wildfire Protection Plan	No	No	Yes	No	
Response/Recovery Planning					
Comprehensive Emergency Management Plan	Yes	No	Yes	Yes	Ord. 849 – Updated Plan Passed Nov. 12, 2013
Threat and Hazard Identification and Risk Assessment	No	No	Yes	No	King County OEM
Terrorism Plan	No	No	Yes	No	
Post-Disaster Recovery Plan	No	No	Yes	No	Emergency Support Function 14 – CEMP – Long Term Community Recovery
Continuity of Operations Plan	No	No	Yes	No	—
Public Health Plans	No	No	Yes	No	—

**TABLE 16-2.
FISCAL CAPABILITY**

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Real Estate Excise Tax; King County Flood Control District-Basin Opportunity Fund

TABLE 16-3. ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Director of Development Services
Engineers or professionals trained in building or infrastructure construction practices	Yes	Director of Public Works, Bldg. Official
Planners or engineers with an understanding of natural hazards	Yes	Director of Public Works
Staff with training in benefit/cost analysis	Yes	Director of Public Works/Finance Director
Surveyors	Yes	Director of Public Works
Personnel skilled or trained in GIS applications	Yes	Consultant
Scientist familiar with natural hazards in local area	No	
Emergency manager	Yes	
Grant writers	No	

TABLE 16-4. NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE	
What department is responsible for floodplain management in your community?	Community Development
Who is your community's floodplain administrator? (department/position)	Director of Development Services
Do you have any certified floodplain managers on staff in your community?	No
What is the date of adoption of your flood damage prevention ordinance?	2009
When was the most recent Community Assistance Visit or Community Assistance Contact?	Community Assistance Contact -1/27/2012
To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	No
Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why)	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	No
Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?	No and No

**TABLE 16-5.
COMMUNITY CLASSIFICATIONS**

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	N/A	N/A
Public Protection	Yes	3	Not available
StormReady	No	N/A	N/A
Firewise	No	N/A	N/A
Tsunami Ready (if applicable)	No	N/A	N/A

16.4 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 16-6 lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: None
- Number of FEMA-Identified Severe Repetitive Loss Properties: None
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties Known to Have Been Mitigated: None

**TABLE 16-6.
NATURAL HAZARD EVENTS**

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Winter Storm	4056	1/12/2012	No Information Available
Severe Winter Storm	1963	1/11/2011	“
Severe Winter Storm	1825	12/12/2008	“
Severe Winter Storm	1817	1/06/2009	“
Severe Winter Storm	1734	12/01/2007	“
Severe Winter Storm	1682	12/14/2006	“
Severe Storm	1671	11/02/2006	“
Severe Storm	1499	10/15/2003	“
Earthquake	1361	2/28/2001	“
Severe Storm	1100	2/09/1997	“
Severe Storm		December 1996	“
Windstorm		November 1996	“
Windstorm	1079	11/07/1995	“
Inaugural Day Storm	981	1/20/1993	“

**TABLE 16-6.
NATURAL HAZARD EVENTS**

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Heavy Snow		December 1992	“
Snowstorm	896	12/20/1990	“
Wind/Snow Storm		January 1989	“
Severe Storm	784	11/22/1986	“
Volcanic Eruption Mt St Helens	623	5/21/1980	“

16.5 HAZARD RISK RANKING

Table 16-7 presents the ranking of the hazards of concern. Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

**TABLE 16-7.
HAZARD RISK RANKING**

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Earthquake	54
2	Severe Weather	48
3	Severe Winter Weather	48
4	Landslide	18
5	Flood	18
6	Wildfire	16
7	Volcano	11
8	Avalanche	0
9	Dam Failure	0
10	Tsunami	0

16.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 16-8 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 16-9 identifies the priority for each initiative. Table 16-10 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

**TABLE 16-8.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
ME 1 —Annual public outreach efforts in emergency preparedness education, at Medina Days festivities in August and through September Emergency Preparedness Newsletter. Support life, safety and public education/awareness.						
New and Existing	All Hazards	4,6,11, 15	City of Medina	High	Emergency Management Performance Grants, General Fund	Long Term
ME 2 —To provide emergency back-up power to all critical facilities to maintain electricity to Medina’s critical facilities.						
New and Existing	All Hazards	1,3,5	City of Medina	High	Emergency Management Performance Grants, FEMA Grants, General Fund	Long Term
ME 3 —Secure all electronic equipment to avoid damage/destruction in the event of a catastrophic earthquake.						
New and Existing	Earthquake	1,3,5	City of Medina	High	Emergency Management Performance Grants, General Fund	Long Term
ME 4 —To provide for under-grounding of cable and telecommunications lines						
New	All Hazards	1,2,3,	City of Medina	High	HMGP and PDM	Long Term
ME 5 —To adopt Shoreline Management Program						
New	All Hazards	1,4	City of Medina	High	General Fund	Short Term
ME-6 —Integrate the hazard mitigation plain into other plans, ordinances or programs to dictate land uses within the jurisdiction.						
New	All Hazards	2,4,8,10	Community Development	Low	General Fund	Short-term
ME-7 —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.						
Existing	All Hazards	5,9,13	Public Works	High	FEMA grants, Local sources for local Match	Long-term

**TABLE 16-8.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
ME-8 —Continue to support the county-wide initiatives identified in this plan.						
New and Existing	All Hazards	4,6,11,12,13, 14, 15	City of Medina	Low	General Fund	Ongoing
ME-9 —Actively participate in the plan maintenance strategy identified in this plan.						
New and Existing	All Hazards	4,6,11,12,13, 14, 15	King County OEM, City of Medina	Low	General Fund	Ongoing
ME-10 —Continue to maintain compliance and good standing under the National Flood Insurance Program. This will be accomplished through the implementation of floodplain management programs that, at a minimum, will meet the minimum requirements of the NFIP, which include the following: <ul style="list-style-type: none"> • Enforcement of the adopted flood damage prevention ordinance, • Participating in floodplain identification and mapping updates, and • Providing public assistance/information on floodplain requirements and impacts 						
New and Existing	All Hazards	2,4,10,12	Community Development	Low	General Fund	Ongoing

**TABLE 16-9.
MITIGATION STRATEGY PRIORITY SCHEDULE**

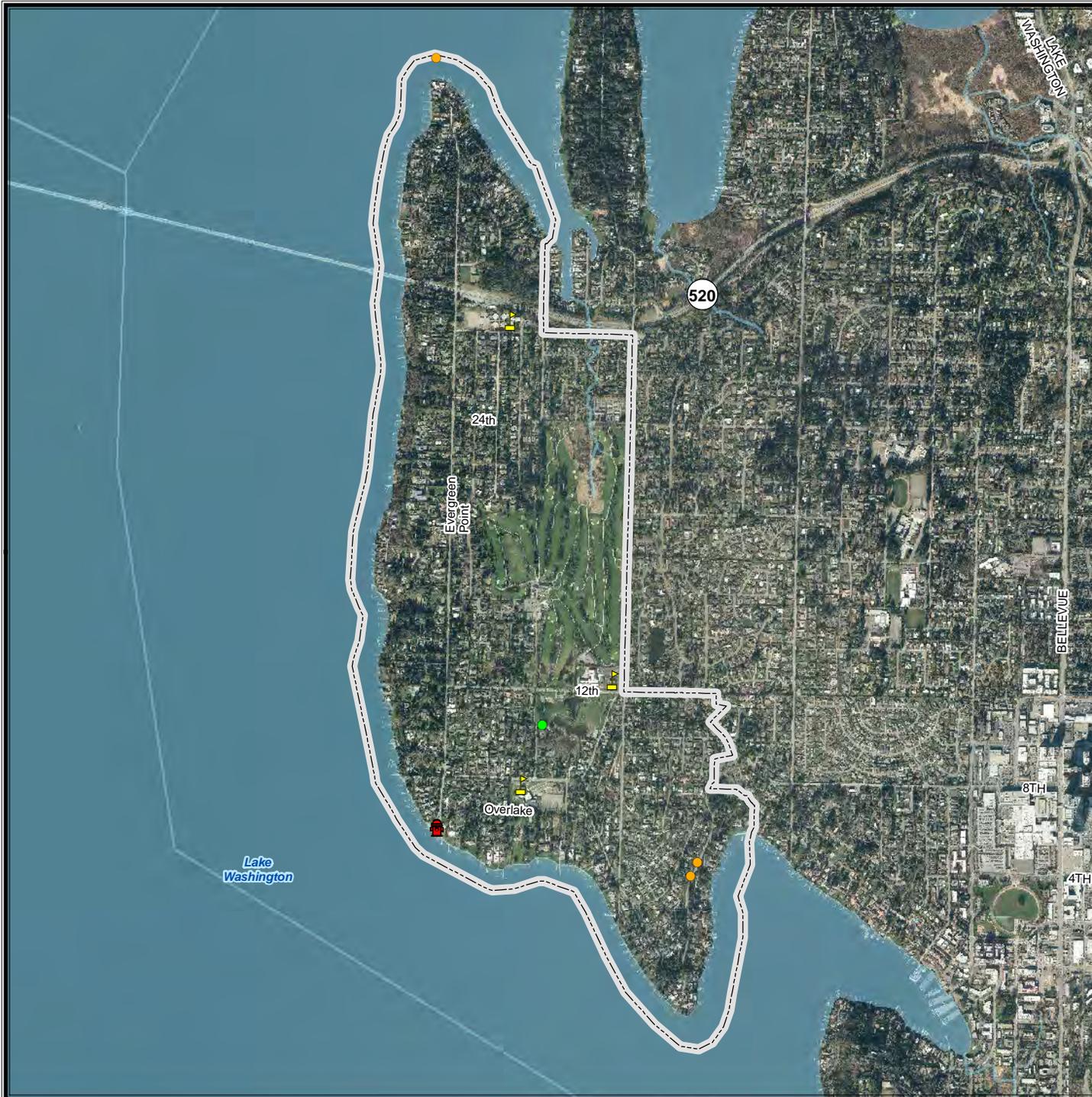
Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Priority ^a
1	4	Medium	High	Yes	Yes	Yes	High
2	3	High	High	Yes	Yes	Yes	High
3	3	High	High	Yes	Yes	No	High
4	3	High	High	Yes	Yes	No	Medium
5	3	High	High	Yes	Yes	Yes	High
6	4	Medium	Low	Yes	No	Yes	High
7	3	High	High	Yes	Yes	No	Medium
8	7	Medium	Low	Yes	No	Yes	High
9	7	Low	Low	Yes	Yes	Yes	High
10	4	Medium	Low	Yes	No	Yes	High

a. See Introduction for explanation of priorities.

**TABLE 16-10.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche	--	--	--	--	--	--
Dam Failure	--	--	--	--	--	--
Earthquake	4,6,9	3,4,7	1,8	6	2,8	4
Flood	5,6,9,10	5,7,10	1,8,10	5,6,10	2,8,10	
Landslide	4,6,9	7	1,8	6	2,8	
Severe Weather	4,6,9	7	1,8	6	2,8	
Severe Winter Weather	6,9	7	8	6	8	
Tsunami	--	--	--	--	--	--
Volcano	6,9	7	1,8	6	2,8	
Wildfire	6,9	7	1,8	6	2,8	

a. See Introduction for explanation of mitigation types.



CITY OF MEDINA

Critical Facilities and Infrastructure

Critical Facilities

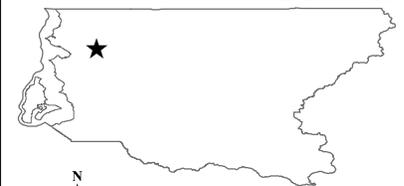
-  Government Function
-  HazMat
-  Medical Care
-  Protective Function
-  Schools
-  Other Facility

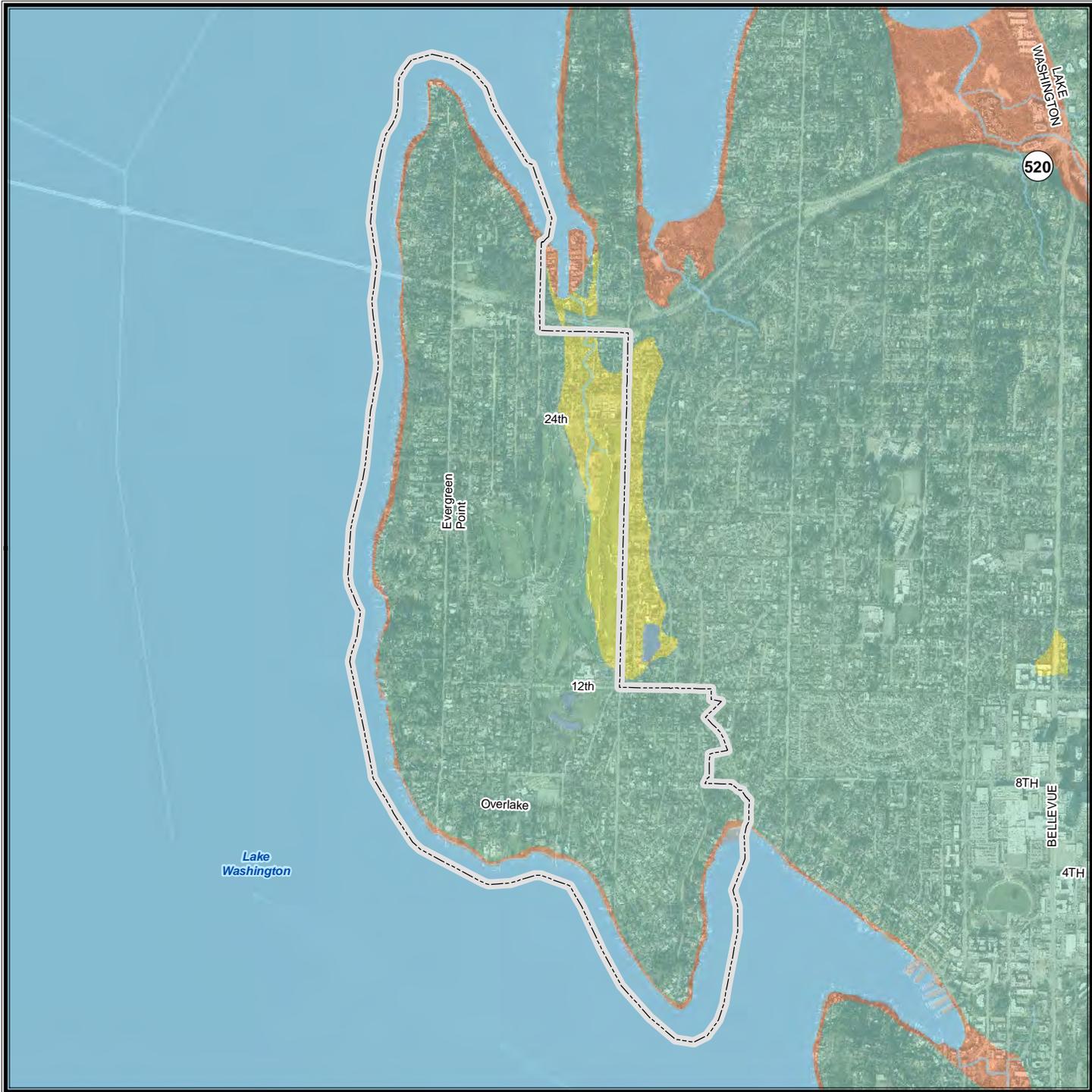
Critical Infrastructure

-  Bridges
-  Communications
-  Dams
-  Water Supply
-  Power
-  Transportation
-  Wastewater

Locations are approximate.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF MEDINA

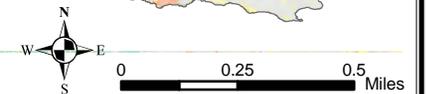
Liquefaction Susceptibility

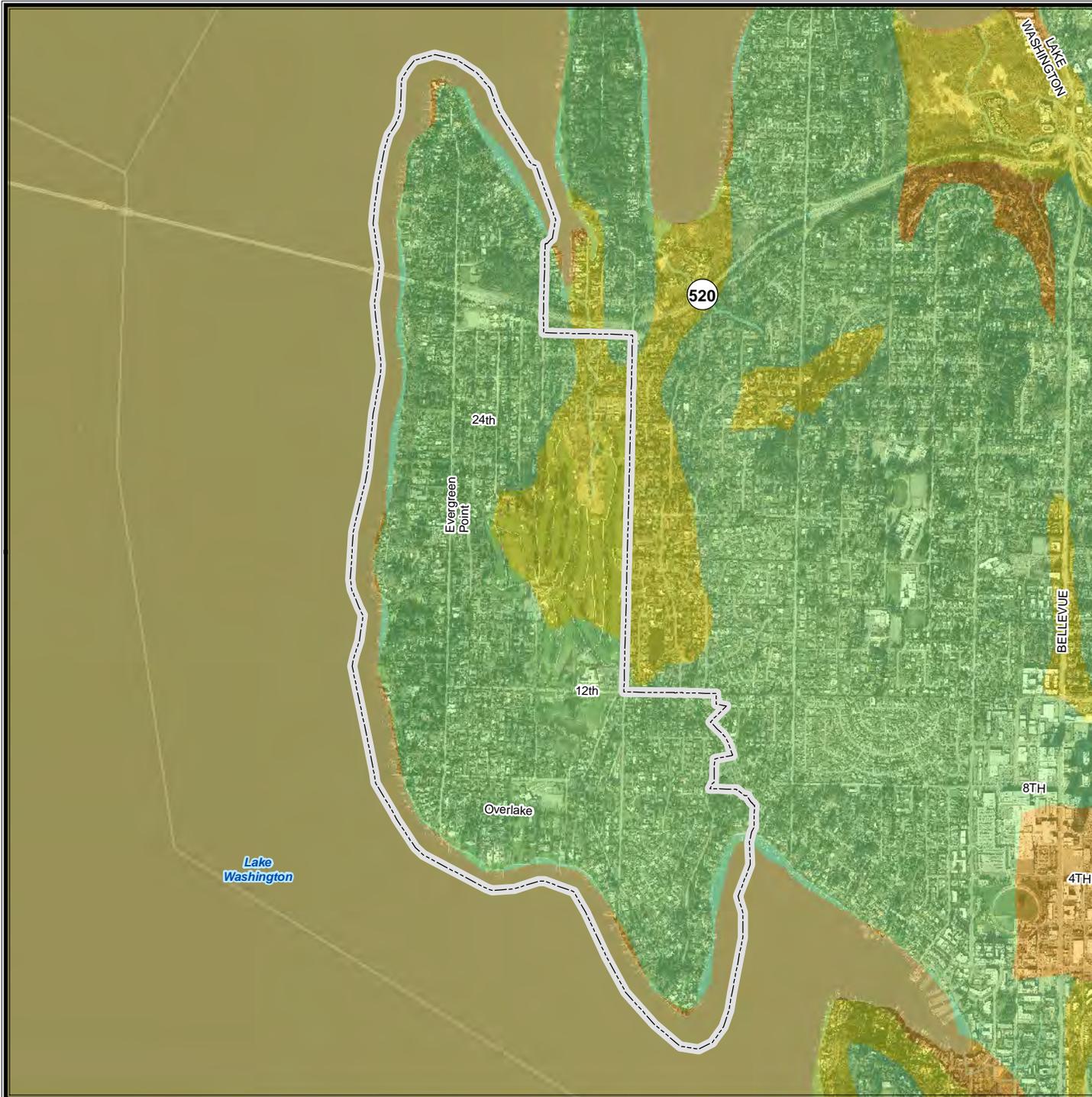
Susceptible		Not Susceptible	
High	Moderate to High	Bedrock	Peat
Moderate	Low to Moderate	Water	Ice
Low	Very Low to Low		
Very Low			

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A liquefaction susceptibility map provides an estimate of the likelihood that soil will liquefy as a result of earthquake shaking. This type of map depicts the relative susceptibility in a range that varies from very low to high. Areas underlain by bedrock or peat are mapped separately as these earth materials are not liquefiable, although peat deposits may be subject to permanent ground deformation caused by earthquake shaking.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF MEDINA

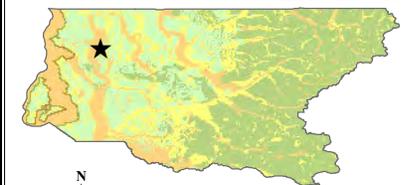
National Earthquake Hazard Reduction Program (NEHRP) Soil Classification

- Site Class B - Rock
- Site Class C - Very Dense Soil, Soft Rock
- Site Class D - Stiff Soil
- Site Class E - Soft Soil

Soil classification data provided by Washington State Department of Natural Resources, Geology and Earth Resources Division.

The dataset identifies site classes for approximately 33,000 polygons derived from the geologic map of Washington. The methodology chosen for developing the site class map required the construction of a database of shear wave velocity measurements. This database was created by compiling shear wave velocity data from published and unpublished sources, and through the collection of a large number of shear wave velocity measurements from seismic refraction surveys conducted for this project. All of these sources of data were then analyzed using the chosen methodologies to produce the statewide site class maps.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF MEDINA

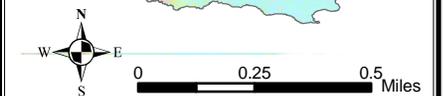
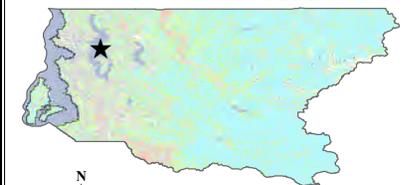
2008 LANDFIRE Fire Behavior Fuel Model

Anderson 13 Fuel Classes

Burnable	Non-Burnable
FBFM1	Developed
FBFM2	Agriculture
FBFM3	Water
FBFM5	Barren
FBFM6	
FBFM8	
FBFM9	
FBFM10	
FBFM11	

Fuel Class data (LANDFIRE REFRESH 2008 (lf_1.1.0)) provided by the Wildland Fire Science, Earth Resources Observation and Science Center, U.S. Geological Survey. The LANDFIRE fuel data describe the composition and characteristics of both surface fuel and canopy fuel. Thirteen typical surface fuel arrangements or "collections of fuel properties" (Anderson 1982) were described to serve as input for Rothermel's mathematical surface fire behavior and spread model (Rothermel 1972). These fire behavior fuel models represent distinct distributions of fuel loadings found among surface fuel components (live and dead), size classes and fuel types. The fuel models are described by the most common fire carrying fuel type (grass, brush, timber litter or slash), loading and surface area-to-volume ratio by size class and component, fuelbed depth and moisture of extinction.

Base Map Data Sources:
King County, U.S. Geological Survey



CHAPTER 17.

CITY OF MERCER ISLAND UPDATE ANNEX

17.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Jennifer Franklin, Emergency Manager
9611 SE 36th St.
Mercer Island, WA 98040
Telephone: (206) 275-7905
Email: Jennifer.franklin@mercergov.org

Alternate Point of Contact

Glenn Boettcher, Maintenance Director
9611 SE 36th St.
Mercer Island, WA 98040
Telephone: (206) 275-7802
Email: glenn.boettcher@mercergov.org

17.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—July 5, 1960
- **Current Population**—22,720 as of April 2013
- **Population Growth**—Population increased from 22,036 residents in 2000 to 22,699 in 2010. This represents an increase of 3 percent over the decade.
- **Location and Description**—Mercer Island is just over five miles long and two miles wide and lies in the southern section of Lake Washington east of the City of Seattle and west of the City of Bellevue. The Island is 6.2 square miles of land area. There are several exits from I-90 to Mercer Island with four main roads on the island. Island Crest Way runs north/south down the middle of the island. West Mercer Way follows the shoreline from the north/south on the west side of the island with steep slopes, ravines and gullies. East Mercer Way follows the shoreline from the north/south on the east side of the island. North Mercer Way follows the shoreline from the east/west on the north side of the island. The Central Business District is centered on the north end of the island south of I-90, and a smaller business district is on the south end. The central business district is a 76-acre bowl-shaped area that includes the Island's main post office, the main Fire Station (Station 91), medical and dental offices, drug stores, restaurants and coffee shops, apartment houses and condos, service stations, a bookstore, several retirement homes, two supermarkets, office buildings, and banks. The south end Village is just across the road from Pioneer Park with 120 acres of woods and trails, including horse trails. The Village includes several businesses: a post office, gasoline station, retail and service businesses. It also includes a Park 'n Ride for metro bus commuters. Abutting the Village is Mercer Island's second fire station: Fire Station 92 (South Fire Station). Mercer Island boasts 467 acres of parklands and open spaces that feature ball fields, extensive bike trails and picnic areas. In addition there are more than 150 miles of marked walking trails. The bridge linking Mercer Island to Seattle is the renowned multi-lane Mercer Island Floating Bridge. The East Channel Bridge links the island to Bellevue, the State's third most populous city.
- **Brief History**—Settlement of the island by non-Native Americans began in the late 1870s. The island is named after one of the three pioneering Mercer brothers from Illinois, all of whom had great influence in the Seattle area. Although none of the brothers lived on Mercer Island, they would often hunt in and explore throughout the island's secluded forests. The

early settlers traveled by rowboats to the neighboring community of Seattle to pick up necessities. An occasional tramp steamer would drop off items that were too large to transport by rowboat. Because of the inconveniences of island living, settlement lagged until C.C. Calkins platted the town of East Seattle, having purchased 160 acres; nearly three percent (3%) of the island's total acreage. In 1891 he built a luxurious resort on the western side of the island, which spurred the building of a ferry dock, and small steamers began to make regular trips. This availability of transportation attracted more residents. Ferry travel continued until July 2, 1940 when the floating bridge from Mercer Island to Seattle was opened.

- **Climate**—Mercer Island enjoys the mild climate prominent in the Puget Sound Region. The average winter temperature is 40 degrees Fahrenheit and the average summer temperature is 70 degrees Fahrenheit. The average annual rainfall is 35 inches with half typically falling within the months of October and January.
- **Governing Body Format**—The City of Mercer Island has a six member Council that includes the elected position of Mayor. The City Manager runs the city government, with 10 departments: Police, Fire, Maintenance, Human Resources, City Attorney, Developmental Services Group, Youth and Family Services, Information Technology, Finance and Parks and Recreation. The City of Mercer Island City Council assumes responsibility for the adoption of this plan; the Emergency Manager will oversee its implementation.
- **Development Trends**—Anticipated development levels for Mercer Island include low to moderate development consisting primary of residential units. The majority of recent development has been mixed-use low rises with retail shops located on the ground level and residential units above. There has been minimal infill development.

The City of Mercer Island's City Emergency Management Plan was updated and approved by Washington State Emergency Management Division and FEMA December of 2012. City actions, such as those relating to land use allocations, zoning subdivision and design review, redevelopment, and capital improvements, must be consistent with such a plan.

17.3 CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table 17-1. The assessment of the jurisdiction's fiscal capabilities is presented in Table 17-2. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table 17-3. Information on the community's National Flood Insurance Program (NFIP) compliance is presented in Table 17-4. Classifications under various community mitigation programs are presented in Table 17-5.

TABLE 17-1. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Y	N	N	Y	MIMC, Title 17, adopted: 3/3/2014
Zoning	Y	N	N	Y	MIMC, Title 19, adopted 3/3/2014
Subdivisions	Y	N	N	N	MIMC, Title 19, Chapter 19.08, adopted 3/3/2014
Stormwater Management	Y	N	N	Y	MIMC, Title 15, Chapter 15.09, adopted 3/3/2014
Post Disaster Recovery	N	N	N	N	
Real Estate Disclosure	N	N	Y	Y	RCW 64.06 – this is a State mandated seller disclosure requirement.
Growth Management	Y	N	N	Y	City of Mercer Island Comprehensive Plan, adopted; 7/5/2005
Site Plan Review	Y	N	N	N	MIMC, Title 19, adopted 3/3/2014
Public Health and Safety	Y	N	N	N	MIMC, Title 8, adopted 3/3/2014
Environmental Protection	Y	Y	Y	Y	MIMC, Title 19, Chapter 19.07, adopted 3/3/2014
Planning Documents					
General or Comprehensive Plan	Y	N	N	Y	City of Mercer Island Comprehensive Plan, adopted; 7/5/2005
	<i>Is the plan equipped to provide linkage to this mitigation plan?</i>		Yes, Plan includes: land use, Environment and Shorelines elements		
Floodplain or Basin Plan	N	N	N	N	
Stormwater Plan	Y	N	N	Y	Puget Sound Water Quality Management Plan
Capital Improvement Plan	Y	N	N	Y	
	<i>What types of capital facilities does the plan address?</i>		City Facilities, Pedestrian and Bicycle Facilities, Parks, Streets and Right of Way, Storm and Surface Water Drainage, Water System, Sanitary Sewer System and Schools		
	<i>How often is the plan revised/updated?</i>		Biennially		
Habitat Conservation Plan	Y	N	N	Y	
Economic Development Plan	Y	N	N	N	Economic development element in Comprehensive Plan
Shoreline Management Plan	Y	N	N	Y	Shoreline Management element in Comprehensive Plan

TABLE 17-1. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Community Wildfire Protection Plan	N	N	N	N	
Transportation Improvement Plan	Y	N	N	N	Updated Annually
Response/Recovery Planning					
Comprehensive Emergency Management Plan	Y	N	N	Y	
Threat and Hazard Identification and Risk Assessment	Y	N	N	Y	
Terrorism Plan	Y	N	N	Y	2003
Post-Disaster Recovery Plan	N	N	N	N	(will be completed 2014)
Continuity of Operations Plan	N	N	N	N	(will be completed 2014)
Public Health Plans	Y	N	Y	Y	

TABLE 17-2. FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	No
Withhold Public Expenditures in Hazard-Prone Areas	No
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Real Estate Excise Tax; King County Flood Control District-Basin Opportunity Fund

**TABLE 17-3.
ADMINISTRATIVE AND TECHNICAL CAPABILITY**

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Y	Development Services Group
Engineers or professionals trained in building or infrastructure construction practices	Y	Building Officials and Inspectors
Planners or engineers with an understanding of natural hazards	Y	Development Services Group
Staff with training in benefit/cost analysis	Y	Finance
Surveyors	Y	Maintenance
Personnel skilled or trained in GIS applications	Y	IT/GIS Dept.
Scientist familiar with natural hazards in local area	N	
Emergency manager	Y	Emergency Manager/ Police Dept.
Grant writers	N	

**TABLE 17-4.
NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE**

What department is responsible for floodplain management in your community?	Maintenance
Who is your community's floodplain administrator? (department/position)	Maintenance Director
Do you have any certified floodplain managers on staff in your community?	No
What is the date of adoption of your flood damage prevention ordinance?	June 30, 1997 FEMA classified Mercer Island as Zone C (minimal Flood Hazard) However, Mercer Island participate in the NFIP
When was the most recent Community Assistance Visit or Community Assistance Contact?	None that I am aware of.
To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	No
Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why)	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	No
Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?	No Not at this time

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	No	99	99
Public Protection	Yes	5	N/A
StormReady	No	N/A	N/A
Firewise	No	N/A	N/A
Tsunami Ready (if applicable)	No	N/A	N/A

17.4 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 17-6 lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: 1
- Number of FEMA-Identified Severe Repetitive Loss Properties: 0
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties Known to Have Been Mitigated: None

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Fire		2000	\$304,000
Fire		2001	\$452,000
Fire		2002	\$600,000
Fire		2003	\$452,150
Landslide		1997 January	\$243,189
Landslide		2006 December	
Nisqually Earthquake (magnitude 6.8)	1361	2001	\$366,381
Severe Storm (Snow)		Dec-1996	
Severe Storm (Wind)		Apr 1997	
Severe Storm (Wind)		Feb 1999	
Severe Storm (Snow)		Feb 2000	
Severe Storm (Hail)		July 2000	
Severe Storm (Wind)		Dec 2000	
Severe Storm (2 Windstorms)		Feb 2002	
Severe Storm (Wind)		Dec 2002	

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Storm (Wind)		Dec 2003	
Sever Storm (Wind)	DR 1682	Dec. 2006	
Sever Storm (Snow)	DR 1817	Jan 2009	\$27,147
Severe Storm (Snow)	DR 1963	Jan 2011	

17.5 HAZARD RISK RANKING

Table 17-7 presents the ranking of the hazards of concern. Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Earthquake	54
2	Severe Winter Weather	51
3	Landslide	42
4	Severe Weather	34
5	Urban/Wildfire	32
6	Tsunami/Seiche	22
7	Volcano	7
8	Flood	6
9	Dam Failure	2
10	Avalanche	0

17.6 STATUS OF PREVIOUS PLAN INITIATIVES

Table 17-8 summarizes the initiatives that were recommended in the previous version of the hazard mitigation plan. Table 17-9 indicates their implementation status at the time this update was prepared.

**TABLE 17-8.
PREVIOUS ACTION PLAN INITIATIVES**

Program Number	Project Name	Location	Schedule	Potential Funding Source	Department Responsible for Implementation	Hazard Category Addressed
1	Incorporate Hazard Mitigation policies into City Comprehensive Plan	City-wide	2010-2011	General Fund	Police (Emergency Management)	all
2	Develop/Maintain Watercourse CIP list	City-wide	biannual	Stormwater	Development Services (City Engineer)	Localized Flooding/Landslide and Erosion
3	Rehabilitate damaged storm culverts	system-wide	annual	Stormwater	Maintenance	Localized Flooding/Landslide and Erosion
4	Large Ravine/Watercourse Projects	system-wide	biannual	Stormwater	Maintenance	Localized Flooding/Landslide and Erosion
5	Small Ravine/Watercourse Projects	system-wide	annual	Stormwater	Maintenance	Localized Flooding/Landslide and Erosion
6	Replace aging watermains	system-wide	annual	Water	Maintenance	Earthquake/Landslide and Erosion
7	Sewer generator replacement program	system-wide	annual	Sewer	Maintenance	Severe Storm/tsunami/seiche
8	Sewer rehab/replace	system-wide	annual	Sewer	Maintenance	Earthquake
9	Emergency Program	City-wide	annual	General Fund	Police (Emergency Management)	All
10	IT Systems Continuity	City-wide	annual	General Fund	Information and Geographic Services	Earthquake
11	Firewise	system-wide	unfunded	General Fund	Fire	Urban Fire

TABLE 17-9. PREVIOUS ACTION PLAN IMPLEMENTATION STATUS				
Action #	Action Status			Comments
	Completed	Carry Over to Plan Update	Removed; No Longer Feasible	
MI-1	✓			2012
MI-2	✓			2012
MI-3		✓		
MI-4	✓			2013
MI-5		✓		
MI-6		✓		
MI-7		✓		
MI-8		✓		
MI-9		✓		
MI-10		✓		
MI-11		✓		

17.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 17-10 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 17-11 identifies the priority for each initiative. Table 17-12 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

TABLE 17-10. HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
<p>MI-1—Continue to maintain compliance and good standing under the National Flood Insurance Program. This will be accomplished through the implementation of floodplain management programs that, at a minimum, will meet the minimum requirements of the NFIP, which include the following:</p> <ul style="list-style-type: none"> • Participating in floodplain identification and mapping updates, and • Providing public assistance/information on floodplain requirements and impacts 							
New/ Existing	Flood	2,4,10,12	Maintenance	Low	General Fund	Ongoing	No

TABLE 17-10. HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
MI-2- Rehabilitate Damage Storm Culverts.							
Existing	Localized flooding/ landslide and erosion	1,4,5,9,12,	Maintenance	20,000 Low	Stormwater	Annual	Yes
MI-3- Small ravine watercourse projects							
New/ Existing	Localized flooding /landslide and erosion	1,4,5,9,12,	Maintenance	150,000 Low	Stormwater	Annual	Yes
MI-4- Replacing aging water mains							
New/ Existing	Earthquake /landslide and erosion	1,4,5,9,12,	Maintenance	997,000 Medium	water	Annual	Yes
MI-5- Sewer generator replacement program							
New/ Existing	All Hazards	1,4,5,9,12,	Maintenance	50,000 Low	Sewer	Annual	Yes
MI-6- Sewer rehab/replace							
New/ Existing	Earthquake	1,4,5,9,12,	Maintenance	500,000 High	Sewer	Annual	Yes
MI-7- Emergency Program							
Existing	All Hazards	1 -15	Police	50,000 Low	General	Annual	Yes
MI-8 – IT System Continuity							
Existing	Earthquake	1 -15	IT	200,000 High	General	Annual	Yes
MI-9 – Firewise							
Existing	Urban Fire	1 -15	Fire	100,000 Medium	General	Annual	Yes
MI-10—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.							
Existing	All Hazards	5,7,9	City of Mercer Island	High	FEMA Grant funding, local match	Long-term	No

TABLE 17-10. HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
MI-11 —Continue to support the county-wide initiatives identified in this plan.							
New and Existing	All Hazards	4,6,11,12,13, 14, 15	City of Mercer Island	Low	General Fund	Short term	No
MI-12 —Actively participate in the plan maintenance strategy identified in this plan.							
New and Existing	All Hazards	4,6,11,12,13, 14, 15	King County OEM, City of Mercer Island	Low	General fund	Short term	No

TABLE 17-11. MITIGATION STRATEGY PRIORITY SCHEDULE							
Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Priority ^a
1	4	Medium	Low	Yes	No	Yes	High
2	5	High	Low	Yes	Yes	Yes	High
3	5	High	Low	Yes	Yes	Yes	High
4	5	High	Medium	Yes	Yes	Yes	High
5	5	High	Low	Yes	Yes	Yes	High
6	5	High	High	Yes	Yes	Yes	High
7	15	High	Low	Yes	No	Yes	High
8	15	High	High	Yes	No	Yes	High
9	15	Medium	Medium	Yes	No	Yes	High
10	3	High	High	Yes	Yes	No	Medium
11	7	Medium	Low	Yes	No	Yes	High
12	7	Low	Low	Yes	Yes	Yes	High

a. See Introduction for explanation of priorities.

**TABLE 17-12.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche	--	--	--	--	--	-
Dam Failure	12	5,8,10	11		7,11	
Earthquake	12	4,5,6,8,10	11		7,11	
Flood	1,12	1,5,8,10	1,11	1	1,7,11	2,3
Landslide	12	4,5,8,10	11		7,11	
Severe Weather	12	5,8,10	11		7,11	2,3
Severe Winter Weather	12	5,8,10	11		7,11	2,3
Tsunami	12	5,8,10	11		7,11	
Volcano	12	5,8,10	11		7,11	
Wildfire	9,12	5,8,9,10	9,11	9	7,9,11	

a. See Introduction for explanation of mitigation types.



CITY OF MERCER ISLAND

Critical Facilities and Infrastructure

Critical Facilities

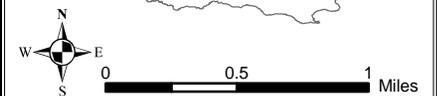
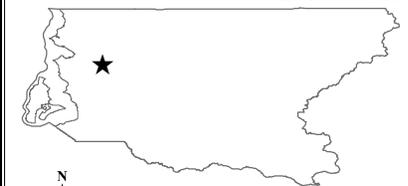
- Government Function
- HazMat
- Medical Care
- Protective Function
- Schools
- Other Facility

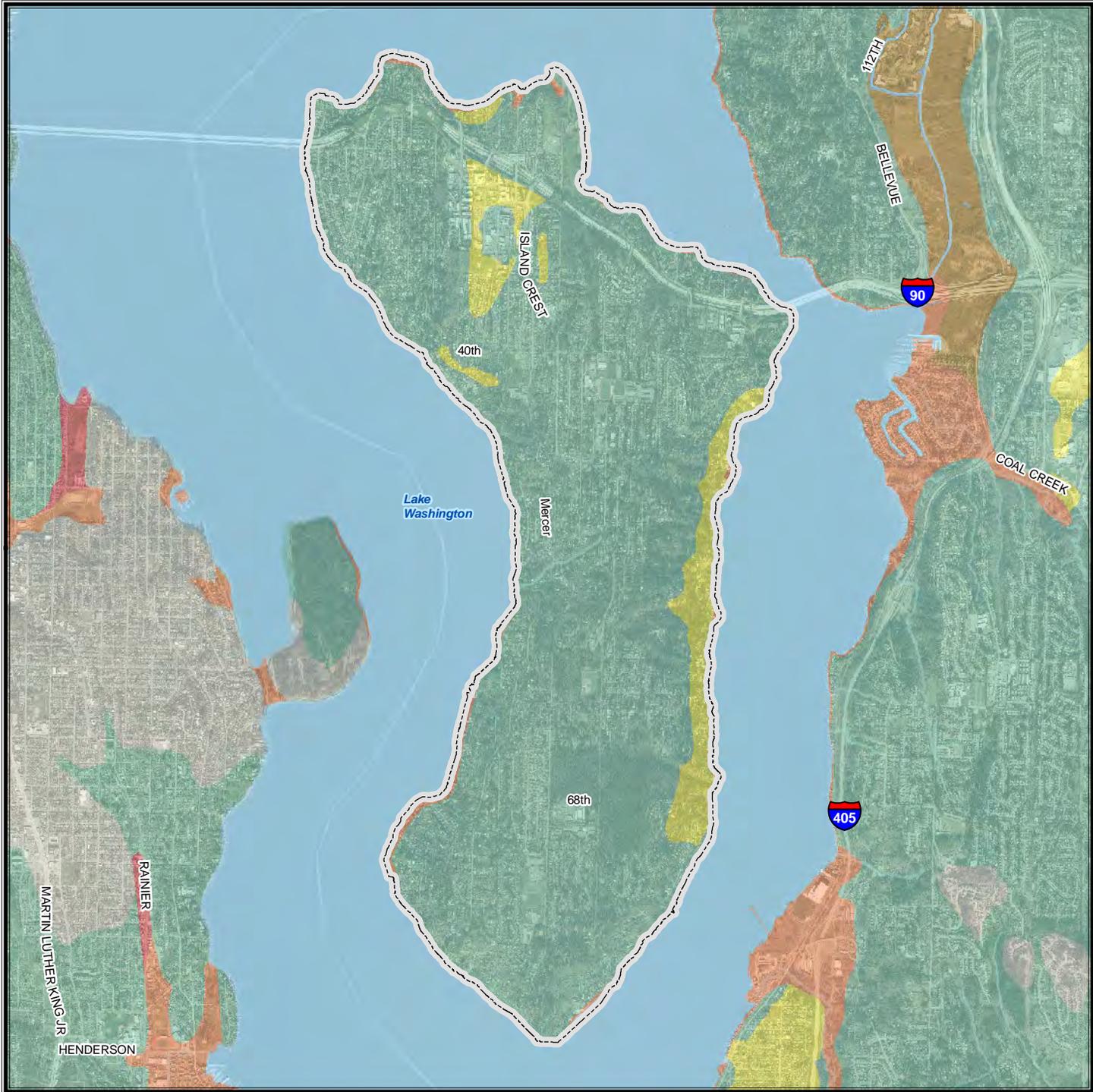
Critical Infrastructure

- Bridges
- Communications
- Dams
- Water Supply
- Power
- Transportation
- Wastewater

Locations are approximate.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF MERCER ISLAND

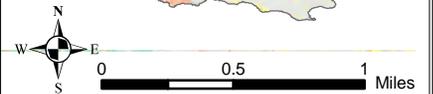
Liquefaction Susceptibility

Susceptible		Not Susceptible	
High	Moderate to High	Bedrock	Peat
Moderate	Low to Moderate	Water	Ice
Low	Very Low to Low		
Very Low			

Liquefaction data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. Data is based solely on surficial geology published at a scale of 1:100,000.

A liquefaction susceptibility map provides an estimate of the likelihood that soil will liquefy as a result of earthquake shaking. This type of map depicts the relative susceptibility in a range that varies from very low to high. Areas underlain by bedrock or peat are mapped separately as these earth materials are not liquefiable, although peat deposits may be subject to permanent ground deformation caused by earthquake shaking.

Base Map Data Sources:
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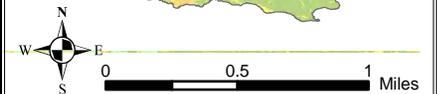
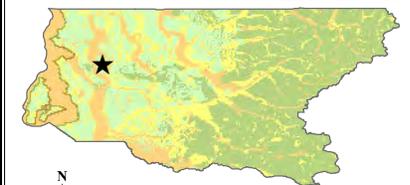
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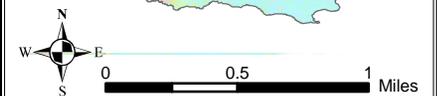
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Base Map Data Sources:
King County, U.S. Geological Survey



CHAPTER 18.

CITY OF NORTH BEND ANNEX

18.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

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e-mail Address: ddeberg@northbendwa.gov

18.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—March 12, 1909
- **Current Population**—6,020 as of 2012
- **Population Growth**—Population in North Bend has increased 26 percent in the last 12 years from 4,746 in 2000, to a 2012 population of 6,030. This is much higher than the state average of 14 percent and the national average of 9.7 percent.
- **Location and Description**—The City of North Bend is 30 miles east of Seattle in the Cascade foothills and the last stop before Snoqualmie Pass along Interstate 90. The town lies between Mount Si to the north and Rattlesnake Ridge to the south, with the 3 forks of the Snoqualmie River meandering through the valley floor.
- **Brief History**—North Bend began as the home of the Snoqualmie Tribe. Early settlers arrived in the late 1850s. By 1880, William Taylor platted the community which became known as North Bend, due to its location near the north bend of the South Fork of the Snoqualmie River. Soon after, the railroads arrived, connecting Seattle to the Snoqualmie Valley and bringing tourists and more settlers. It's location as a stopping point before Snoqualmie Pass's Wagon Road proved beneficial to the community.
- **Climate**—North Bend's climate is warm and usually dry during the summer with temperatures in the 70s and 80s; the winter months are cool with temperatures usually in the 40s. Average annual precipitation is 61 inches. The warmest month is typically August and the coldest month usually is typically December.
- **Governing Body Format**—North Bend's government is a mayor-council form with a seven member council that create policy and a mayor that is the City's separately-elected chief executive officer. Mayor Ken Hearing assumes responsibility for the adoption of this plan; Public Works Director Frank Page will oversee its implementation.
- **Development Trends**—Since lifting the water moratorium in 2009 and establishing water rights in 2010, development in the City has increased significantly. There are currently 17 private development projects in various stages in the City, including single family residential, multi-family and commercial properties; a planned Civic Center and downtown revitalization project called Downtown Plaza. These projects are all invigorating the community.

18.3 CAPABILITY ASSESSMENT

The assessment of the jurisdiction’s legal and regulatory capabilities is presented in Table 18-1. The assessment of the jurisdiction’s fiscal capabilities is presented in Table 18-2. The assessment of the jurisdiction’s administrative and technical capabilities is presented in Table 18-3. Information on the community’s National Flood Insurance Program (NFIP) compliance is presented in Table 18-4. Classifications under various community mitigation programs are presented in Table 18-5.

TABLE 18-1. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Yes	No	No	No	2012 IBC ordinance 1496
Zoning	Yes	No	No	No	NBMC Title 18
Subdivisions	Yes	No	No	No	NBMC Title 17
Stormwater Management	Yes	Yes	No	No	NBMC 14.16
Post Disaster Recovery	Yes	Yes	Yes	No	NBMC 2.68
Real Estate Disclosure	No	No	Yes	Yes	RCW 64.06 – this is a State mandated seller disclosure requirement.
Growth Management	Yes	Yes	No	No	Comprehensive Plan, 11/06/2007
Site Plan Review	Yes	No	No	No	NBMC 17 & 18
Public Health and Safety	Yes	Yes	Yes	No	NBMC Title 8
Environmental Protection	Yes	Yes	No	Yes	NBMC Title 14
Planning Documents					
General or Comprehensive Plan	Yes	Yes	No	Yes	
	<i>Is the plan equipped to provide linkage to this mitigation plan?</i> No				
Floodplain or Basin Plan	Yes	Yes	No	Yes	City of N. Bend Floodplain Management Plan, July 2012
Stormwater Plan	Yes	Yes	No	Yes	Stormwater Comp Plan, 2/3/2014
Capital Improvement Plan	Yes	No	No	Yes	CIP is included in individual comp plan elements
	<i>What types of capital facilities does the plan address?</i> Transportation, storm, water, sewer, facilities				
	<i>How often is the plan revised/updated?</i> 1-5 years				
Habitat Conservation Plan	Yes	Yes	Yes	Yes	NBMC 14.09
Economic Development Plan	Yes	No	No	No	Economic development element in Comp Plan
Shoreline Management Plan	Yes	Yes	Yes	Yes	NBMC 14.20
Community Wildfire Protection Plan	No	No	Yes	No	

TABLE 18-1. LEGAL AND REGULATORY CAPABILITY					
	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Response/Recovery Planning					
Comprehensive Emergency Management Plan	Yes	Yes	Yes	No	
Threat and Hazard Identification and Risk Assessment	No	No	No	No	
Terrorism Plan	No	Yes	No	No	
Post-Disaster Recovery Plan	Yes	Yes	Yes	No	
Continuity of Operations Plan	Yes	Yes	No	No	
Public Health Plans	No	Yes	Yes	No	

TABLE 18-2. FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Yes
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	Yes
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Other	Real Estate Excise Tax; King County Flood Control District-Basin Opportunity Fund

TABLE 18-3. ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Community & Economic Development / Public Works
Engineers or professionals trained in building or infrastructure construction practices	Yes	Community & Economic Development / Public Works
Planners or engineers with an understanding of natural hazards	Yes	Community & Economic Development / Public Works
Staff with training in benefit/cost analysis	Yes	Finance Office
Surveyors	Yes	Consultants On-Call
Personnel skilled or trained in GIS applications	Yes	Community & Economic Development
Scientist familiar with natural hazards in local area	Yes	Consultants On-Call
Emergency manager	Yes	Public Works
Grant writers	Yes	Community & Economic Development / Public Works

TABLE 18-4. NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE	
What department is responsible for floodplain management in your community?	Public Works
Who is your community's floodplain administrator? (department/position)	Public Works Director
Do you have any certified floodplain managers on staff in your community?	No
What is the date of adoption of your flood damage prevention ordinance?	1/17/2006
When was the most recent Community Assistance Visit or Community Assistance Contact?	2010
To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	No
Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why)	No – Multiple Letters of Map Amendment and Letters of Map Revision have been processed for our City
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	Yes – NFIP regulations; CRS
Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?	Yes – not currently working to improve, just maintain.

	Participating?	Classification	Date Classified
Community Rating System	Yes	6	10/01/2005
Building Code Effectiveness Grading Schedule	Yes	3	Not available
Public Protection	Yes	5	Not available
StormReady	No	N/A	N/A
Firewise	Yes	Sallal Meadows & Wilderness Rim	2010/2013
Tsunami Ready (if applicable)	No	N/A	N/A

18.4 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 18-6 lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: Insert # 4
- Number of FEMA-Identified Severe Repetitive Loss Properties: Insert # 1
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties Known to Have Been Mitigated: Insert # 0

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Ice Storm	4056	2012	\$9,589
Snow-Storm-Flood	1963	2011	\$20,419
Flood Event	1817	2009	\$35,430
Snow Event	1825	2009	\$17,804
Flood Event	1671	2006	\$8,683
Severe Storm	1982	2006	\$20,207

18.5 HAZARD RISK RANKING

Table 18-7 presents the ranking of the hazards of concern. Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Severe Weather	51
2	Severe Winter	51
3	Flood	48
4	Earthquake	34
5	Wildfire	18
6	Volcano	16
7	Dam Failure	6
8	Landslide	6
9	Avalanche	6
10	Tsunami	0

18.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 18-8 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 18-9 identifies the priority for each initiative. Table 18-10 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
NB-1 —Continue to maintain compliance and good standing under the National Flood Insurance Program. This will be accomplished through the implementation of floodplain management programs that, at a minimum, will meet the minimum requirements of the NFIP, which include the following: <ul style="list-style-type: none"> • Enforcement of the adopted flood damage prevention ordinance, • Participating in floodplain identification and mapping updates, and • Providing public assistance/information on floodplain requirements and impacts 						
New and Existing	Flood and Earthquake	2,4,10,12	Public Works	Low	General Fund	Ongoing
NB-2 —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority						
New and Existing	Flood and Earthquake	3,8,9	Public Works	High	FEMA Grants, Local contribution	Long term
NB-3 - Continue to maintain/enhance the City’s classification under the Community Rating System						
New and Existing	Flood	3,4,5,6	Public Works	Low	General Fund	Ongoing

**TABLE 18-8.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
NB-4 – Continue to maintain our equipment to be fully available in the event of severe storms and weather						
New and Existing	Severe Storm Severe Weather	1	Public Works	Moderate	General Fund	Ongoing
NB-5 - Continue coordinating amongst neighboring agencies during emergency events; coordination shall include planning, training and drills.						
New and Existing	All Hazards	1,3,6,7,8,1 1, 13, 15	City of North Bend, EFR, City of Snoqualmie, King Co.	Low	General Fund	Ongoing
NB-6 - Implement capital improvement projects identified in stormwater management plan						
New & Existing	Severe Storm, Severe Weather, flood	1,5,8,12	Public Works	High	General Fund, Grants	Ongoing
NB 7 - Continue to enforce building codes on new construction and remodels						
New and Existing	Earthquake, Severe weather, Flood	1,10,	Planning/ Building Department	Low	General Fund	Ongoing
NB 8 -Strive to capture perishable data (i.e. high water marks, preliminary damage estimates, and damage photos) after significant hazard events to support future updates to the risk assessment of this plan.						
New and Existing	All Hazards	1,2,4	Public Works	Medium	General Fund, FEMA Grants (PA)	Short Term
NM 9 —Integrate the hazard mitigation plain into other plans, ordinances or programs to dictate land uses within the jurisdiction.						
New	All Hazards	2,4,8,10	Planning	Low	General Fund	Short-term
NB 10 —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.						
Existing	All Hazards	5,9,13	Public Works	High	FEMA grants, Local sources for local Match	Long-term
NB 11 —Continue to support the county-wide initiatives identified in this plan.						
New and Existing	All Hazards	4,6,11,12, 13, 14, 15	City of N. Bend	Low	General Fund	Ongoing
NB 12 —Actively participate in the plan maintenance strategy identified in this plan.						
New and Existing	All Hazards	4,6,11,12,1 3, 14, 15	King County OEM, City of N. Bend	Low	General Fund	Ongoing

**TABLE 18-9.
MITIGATION STRATEGY PRIORITY SCHEDULE**

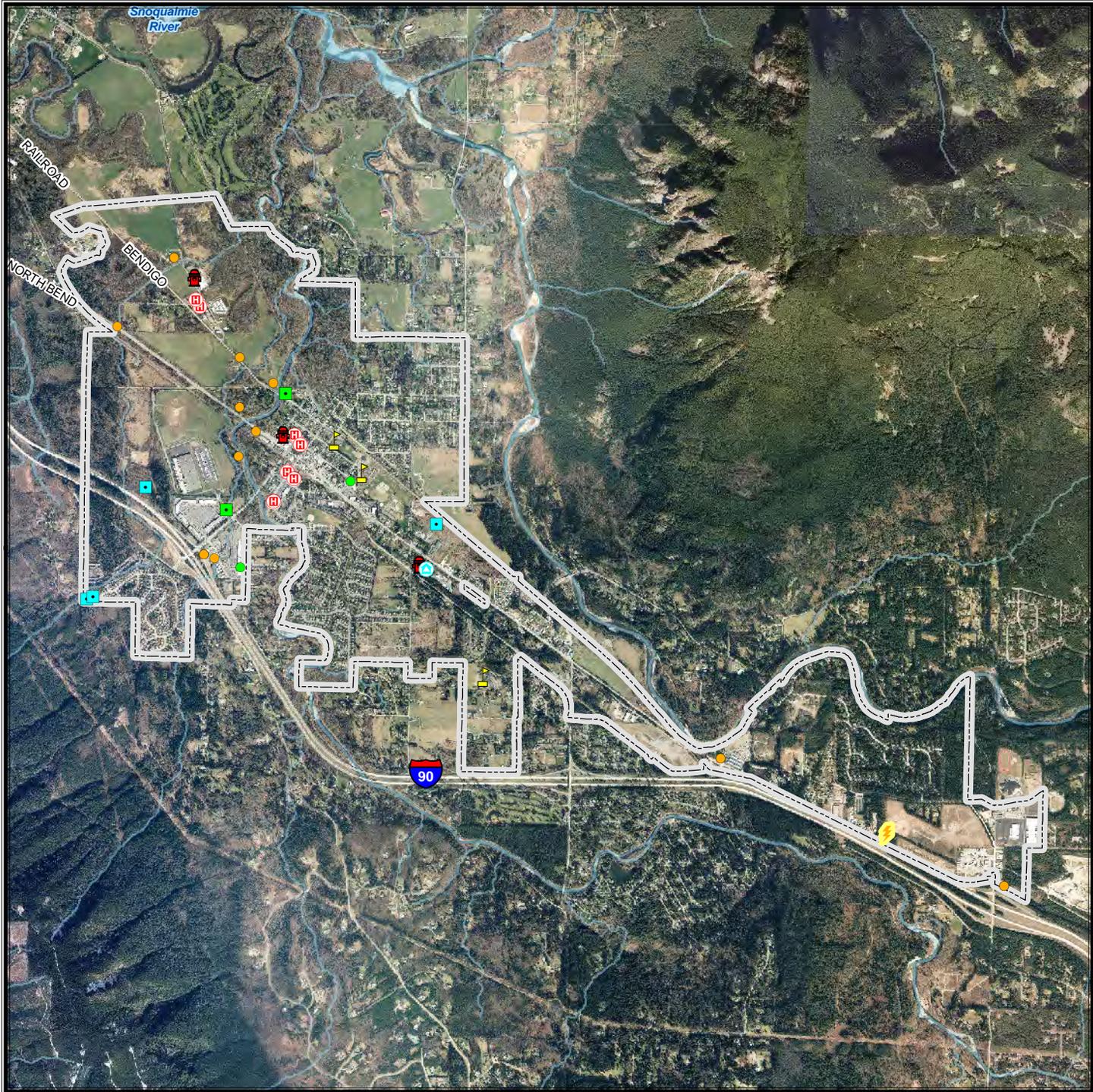
Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Priority ^a
1	4	Medium	Low	Yes	No	Yes	High
2	3	Medium	Medium	Yes	Yes	No	Low
3	4	Medium	Low	Yes	No	Yes	High
4	1	Medium	Medium	Yes	No	Yes	Medium
5	8	High	Low	Yes	No	Yes	High
6	4	High	High	Yes	Yes	Yes	High
7	2	High	Low	Yes	No	Yes	High
8	3	Medium	Medium	Yes	Yes	No	Medium
9	4	Medium	Low	Yes	No	Yes	High
10	3	High	High	Yes	Yes	No	Medium
11	7	Medium	Low	Yes	No	Yes	High
12	7	Low	Low	Yes	Yes	Yes	High

a. See Introduction for explanation of priorities.

**TABLE 18-10.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche	8,9,12	10	11		11	
Dam Failure	8,9,12	10	11		11	
Earthquake	1,2,5,7,8,9,12	1,2,5,7,10	1,7,11	1,2,7	5,11	2,7
Flood	1,2,3,5,6,7,8,9,12	1,2,3,5,6,7,10	1,2,3,5,7,11	1,2,3,6,7	5,11	1,2,3,6,7
Landslide	8,9,12	10	11	n/a	5,11	n/a
Severe Weather	4,5,6,7,8,9,12	4,5,6,7,10	5,7,11	6,7	5,11	6,7
Severe Winter Weather	8,9,12	10	11		11	
Tsunami	--	--	--	--	--	--
Volcano	8,9,12	10	11		5,11	
Wildfire	8,9,12	10	11		5,11	

a. See Introduction for explanation of mitigation types.



CITY OF NORTH BEND

Critical Facilities and Infrastructure

Critical Facilities

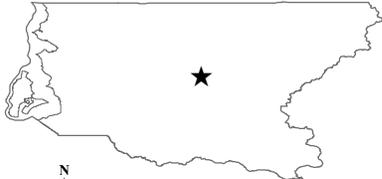
- Government Function
- HazMat
- Medical Care
- Protective Function
- Schools
- Other Facility

Critical Infrastructure

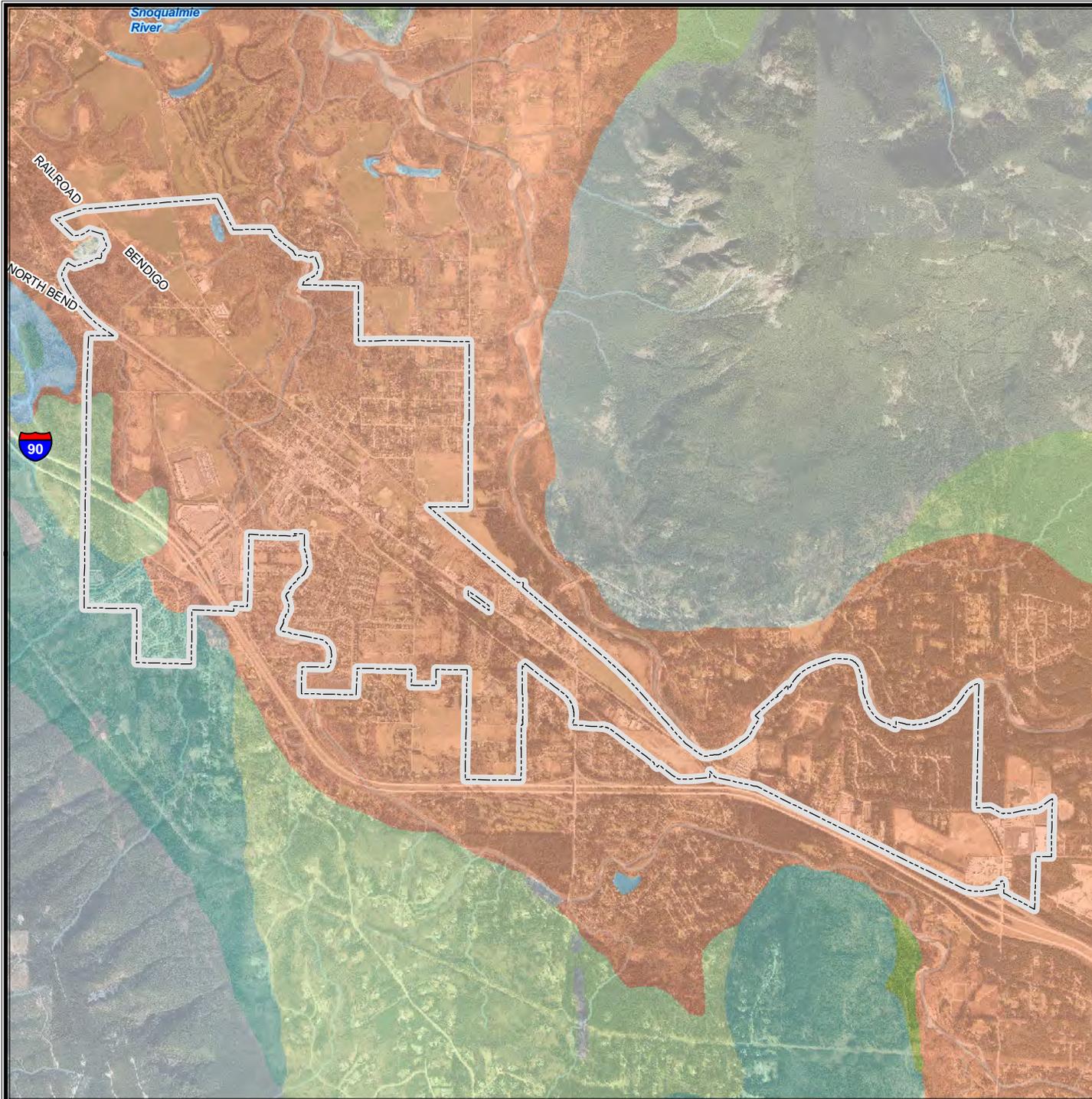
- Bridges
- Communications
- Dams
- Water Supply
- Power
- Transportation
- Wastewater

Locations are approximate.

Base Map Data Sources:
King County, U.S. Geological Survey



0 0.25 0.5 Miles



CITY OF NORTH BEND

Liquefaction Susceptibility

Susceptible		Not Susceptible	
High	Moderate to High	Bedrock	Peat
Moderate	Low to Moderate	Water	Ice
Low	Very Low to Low		
Very Low			

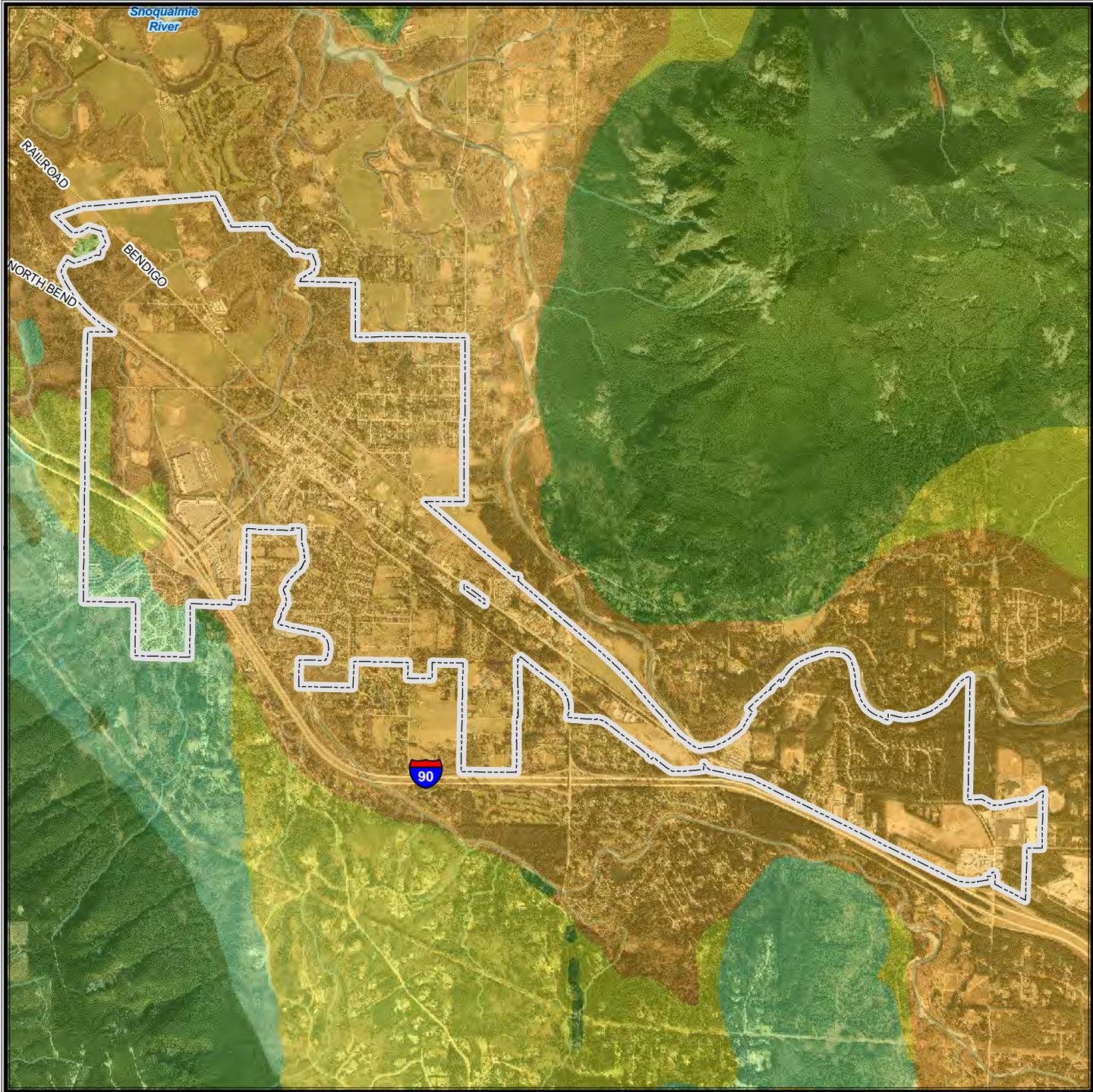
Liquefaction data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. Data is based solely on surficial geology published at a scale of 1:100,000.

A liquefaction susceptibility map provides an estimate of the likelihood that soil will liquefy as a result of earthquake shaking. This type of map depicts the relative susceptibility in a range that varies from very low to high. Areas underlain by bedrock or peat are mapped separately as these earth materials are not liquefiable, although peat deposits may be subject to permanent ground deformation caused by earthquake shaking.

Base Map Data Sources:
King County, U.S. Geological Survey



0 0.25 0.5 Miles



CITY OF NORTH BEND

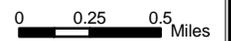
National Earthquake Hazard Reduction Program (NEHRP) Soil Classification

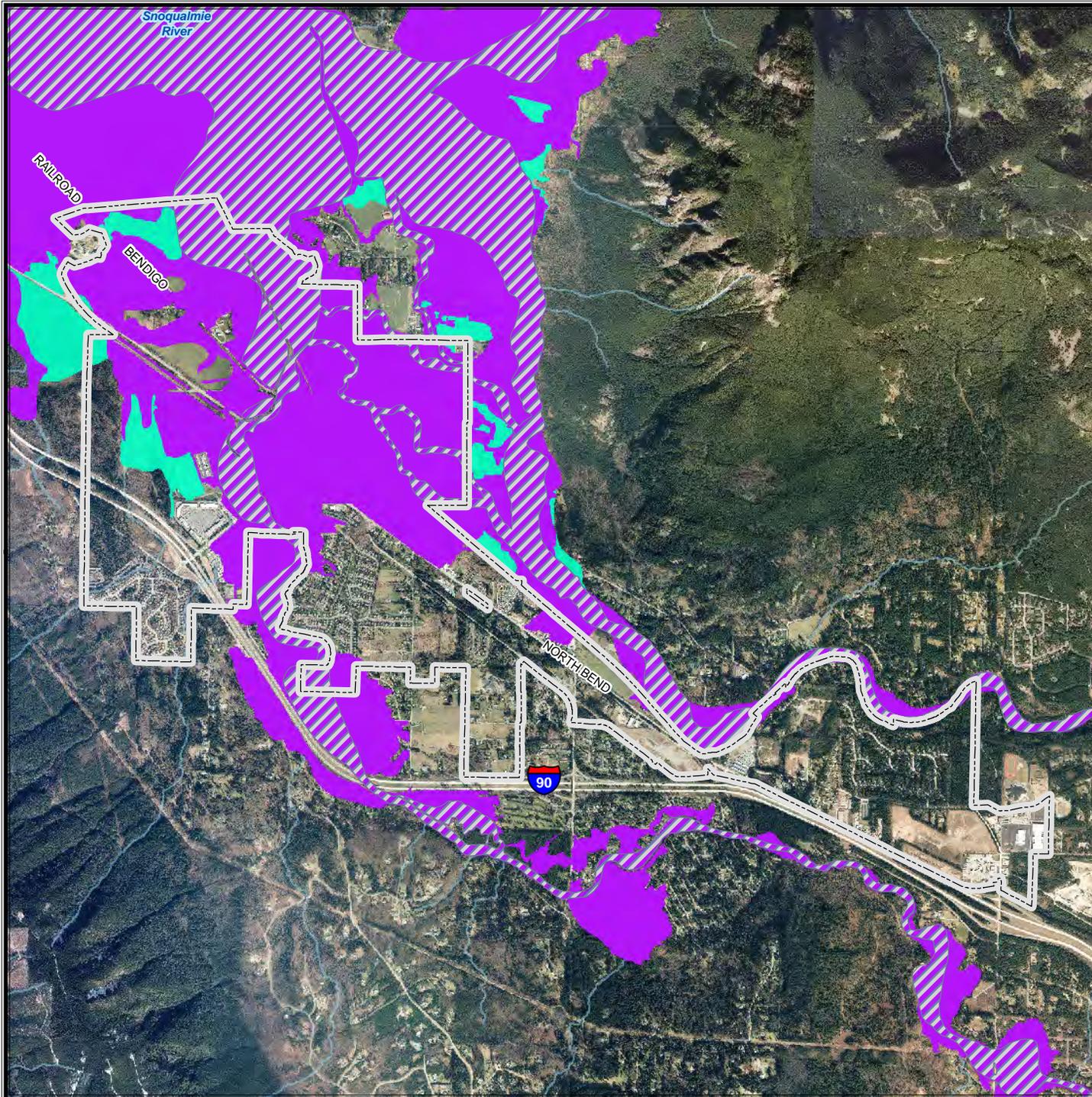
- Site Class B - Rock
- Site Class C - Very Dense Soil, Soft Rock
- Site Class D - Stiff Soil
- Site Class E - Soft Soil

Soil classification data provided by Washington State Department of Natural Resources, Geology and Earth Resources Division.

The dataset identifies site classes for approximately 33,000 polygons derived from the geologic map of Washington. The methodology chosen for developing the site class map required the construction of a database of shear wave velocity measurements. This database was created by compiling shear wave velocity data from published and unpublished sources, and through the collection of a large number of shear wave velocity measurements from seismic refraction surveys conducted for this project. All of these sources of data were then analyzed using the chosen methodologies to produce the statewide site class maps.

Base Map Data Sources:
King County, U.S. Geological Survey





CITY OF NORTH BEND

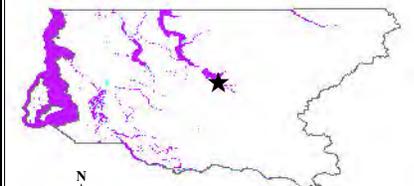
FEMA DFIRM Flood Hazard Areas

-  Floodway
-  1 Percent Annual Flood Hazard
-  0.2 Percent Annual Flood Hazard

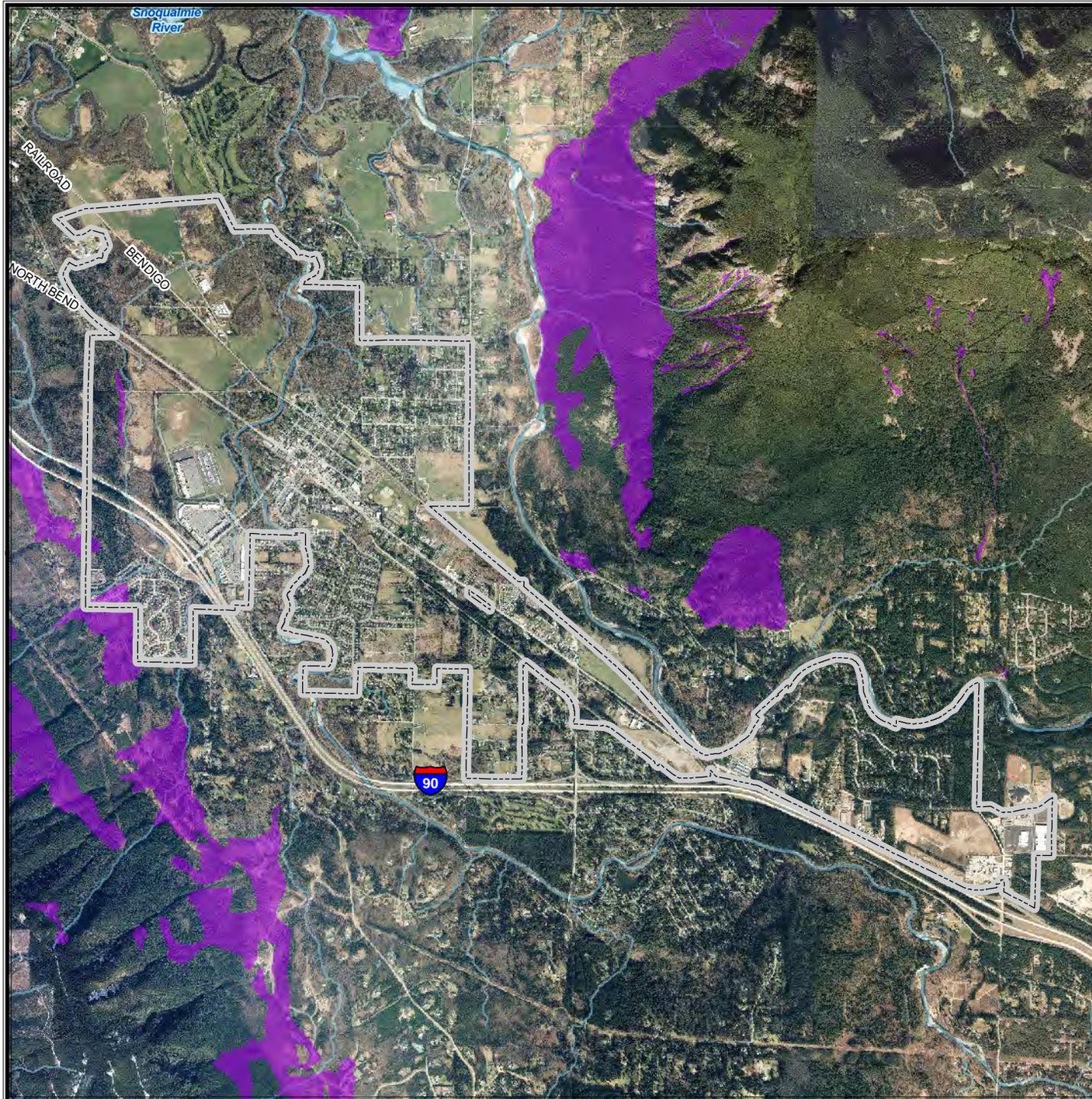
Flood hazard areas as depicted on draft FEMA Digital Flood Insurance Rate Maps (DFIRM).

The 1 percent annual flood hazard is commonly referred to as the 100 year floodplain. The 0.2 percent annual flood hazard is commonly referred to as the 500 year floodplain.

Base Map Data Sources:
King County, U.S. Geological Survey



0 0.25 0.5 Miles



CITY OF NORTH BEND

Landslide Hazard Areas

■ All Hazard Areas

The landslide hazard areas shown have been merged from three assessments for use for planning purposes:

WA DNR Landslide Areas data provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. This dataset contains 1:24,000-scale polygons defining the extent of mapped landslides in the state of Washington, compiled chiefly from pre-existing landslide databases created in different divisions of the Washington State Department of Natural Resources to meet a variety of purposes.

King County Slide Areas - Landslide areas are areas subject to severe landslide risk identified in the Sensitive Areas Ordinance as:

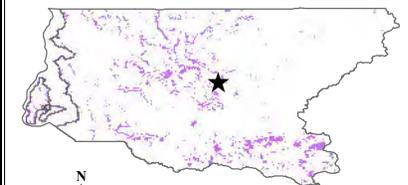
- A. Any area with a combination of:
 1. Slopes greater than 15 %
 2. Impermeable soils (typically silt and clay) frequently interbedded with granular soils (predominantly sand and gravel)
 3. Springs or groundwater seepage.
- B. Any area that has shown movement during the Holocene epoch (from 10,000 years ago to present), or that is underlain by mass wastage debris of that epoch.
- C. Any area potentially unstable as a result of rapid stream incision, stream bank erosion or undercutting by wave action.
- D. Any area that shows evidence of, or is at risk from, snow avalanches.
- E. Any area located on an alluvial fan, presently subject to or potentially subject to inundation by debris flows or deposition of stream-transported deposits.

Slope/Soils Analysis:

1. Areas of slope greater than 40%. Slope determined using a DEM generated from 2002 LiDAR data. Slope data provided by King County DNRP.
2. Areas of Qf (alluvial fans), Qls (discrete landslides), and Qmw (colluvium and the cumulative debris from small indistinct landslides that accumulate on and at the base of unstable slopes) soils as identified in surface geology data provided by King County DNRP.

Base Map Data Sources:

King County, U.S. Geological Survey



0 0.25 0.5 Miles



CITY OF NORTH BEND

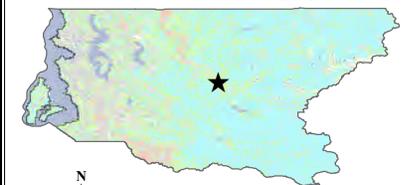
2008 LANDFIRE Fire Behavior Fuel Model

Anderson 13 Fuel Classes

Burnable	Non-Burnable
FBFM1	Developed
FBFM2	Agriculture
FBFM3	Water
FBFM5	Barren
FBFM6	
FBFM8	
FBFM9	
FBFM10	
FBFM11	

Fuel Class data (LANDFIRE REFRESH 2008 (If_1.1.0)) provided by the Wildland Fire Science, Earth Resources Observation and Science Center, U.S. Geological Survey. The LANDFIRE fuel data describe the composition and characteristics of both surface fuel and canopy fuel. Thirteen typical surface fuel arrangements or "collections of fuel properties" (Anderson 1982) were described to serve as input for Rothermel's mathematical surface fire behavior and spread model (Rothermel 1972). These fire behavior fuel models represent distinct distributions of fuel loadings found among surface fuel components (live and dead), size classes and fuel types. The fuel models are described by the most common fire carrying fuel type (grass, brush, timber litter or slash), loading and surface area-to-volume ratio by size class and component, fuelbed depth and moisture of extinction.

Base Map Data Sources:
King County, U.S. Geological Survey



0 0.25 0.5 Miles

**APPENDIX A.
PLANNING PARTNER EXPECTATIONS**

APPENDIX A. PLANNING PARTNER EXPECTATIONS

One of the goals of the multi-jurisdictional approach to hazard mitigation planning is to achieve compliance with the Disaster Mitigation Act (DMA) for all participating members in the planning effort. There are several different groups who will be involved in this process at different levels. In order to provide clarity, the following is a general breakdown of those groups: the planning team, which is customarily the Tetra Tech Team and those actually responsible for the plan's written development; the Steering Committee, which represent members from the planning partnership that serve as the oversight body, assuming responsibility for many of the planning milestones prescribed for this process to help reduce the burden of time required by each planning partner; the planning partners are those jurisdictions or special purpose districts that are actually developing an annex to the regional plan; and the planning stakeholders, which are the individuals, groups, businesses, academia, etc., from which the planning team gains information to support the various elements of the plan.

DMA compliance requires that participation be defined in order to maintain eligibility with respect to meeting the requirements which allow a jurisdiction or special purpose district to develop an annex to the base plan. To achieve compliance for all partners, the plan must clearly document how each planning partner that is seeking linkage to the plan participated in the plan's development. The best way to do this is to clearly define "participation." For this planning process, "participation" is defined by the following criteria:

- **Estimated Level of Effort.** It is estimated that the total time commitment to meet these "participation" requirements for a planning partner not participating on the Steering Committee would be approximately 40 hours over the 12 to 14 month period. This time is reduced somewhat for special purpose districts.
- **Participate in the Process.** As indicated, it must be documented in the plan that each planning partner "participated" in the process to the best of your capabilities. There is flexibility in defining "participation," which can vary based on the type of planning partner (i.e.: City or County, vs. a Special Purpose District) involved. However, the level of participation must be defined at the on-set of the planning process, and we must demonstrate the extent to which this level of participation has been met for each partner. This planning process will utilize a Steering Committee that will assume responsibility for many of the planning milestones prescribed for this process to help reduce the burden of time required by each planning partner. This committee will be representative of the whole body and you as a planning partner will have input on its makeup. This committee will meet periodically (frequency to be determined by the committee) throughout the process and provide direction and guidance to the planning team. Steering Committee meetings are not mandatory meetings for all planning partners. If you are not on the committee, your attendance is not required; however, it is our hope that all planning partners will attempt to remain engaged with this process. Each committed planning partner will be notified of the date and time for all scheduled steering committee meetings. The planning team will also request support from the partnership during the public involvement phase of the planning process. Support could be in the form of providing venues for public meetings, attending these meetings as meeting participants, providing technical support, etc.
- **Duration of Planning Process.** This process is anticipated to take 12 to 14 months to complete. It will be easy to become disconnected with the process objectives if you do not participate in some of these meetings to some degree. The planning team will keep all

planning partners apprised of plan development milestones via informational bulletins that will be periodically distributed to the entire partnership.

- **Critical Facility Update.** All planning partners will be requested to update their critical facilities/infrastructure lists for use during the risk assessment. The CDMS extension to Hazaus will be used for this process, and guidance will be provided by the planning team. If the list is not updated, Hazus default data will be used. Updating this list provides a much more detailed analysis.
- **Capability Assessment.** All planning partners will be asked to identify their capabilities during this process. This assessment will look at the regulatory, technical, financial and floodplain management capabilities of each municipal partner. Special purpose districts will perform a different type of capability assessment. These capability assessments will require a review of existing plans, studies, ordinances and programs pertinent to each jurisdiction to identify policies or recommendations that can complement the hazard mitigation initiatives selected (e.g., comprehensive plans, basin plans or hazard-specific plans). This step is important because increasing a jurisdiction's capability is a viable mitigation action.
- **Action/Strategy Review.** All previous planning partners will be required to perform a review of the strategies from their respective prior action plan to: determine those that have been accomplished and how they were accomplished; and why those that have not been accomplished were not completed. The planning team will be available to assist with this task.
- **Action Plan Development.** Each planning partner must identify and prioritize an action plan that they will strive to implement to reduce the risks from hazards they have ranked that impact their jurisdiction.
- **Plan Adoption.** The plan must be adopted by each jurisdiction.

One of the benefits to multi-jurisdictional planning is the ability to pool resources. This means more than monetary resources. Resources such as staff time, meeting locations, media resources, technical expertise will all need to be utilized to generate a successful plan. In addition, these resources can be pooled such that decisions can be made by a peer group applying to the whole and thus reducing the individual level of effort of each planning partner. This will be accomplished by the formation of a steering committee made up of planning partners and other "stakeholders" within the planning area. The size and makeup of this steering committee will be determined by the planning partnership during our kick-off meeting. This body will assume the decision-making responsibilities on behalf of the entire partnership. This will streamline the planning process by reducing the number of meetings that will need to be attended by each planning partner. The assembled Steering Committee for this effort will meet monthly (unless decided otherwise) on an as-needed basis as determined by the planning team, and will provide guidance and decision making during all phases of the plan's development.

With the above participation requirements in mind, each planning partner will be asked to aid this process by being prepared to develop its section of the plan. To be an eligible planning partner in this effort, each Planning Partner will be asked to provide the following:

- A "Letter of Intent to participate" or Resolution to participate to the Planning Team (see exhibit A).
- Designate a lead point of contact for this effort. This designee will be listed as the hazard mitigation point of contact for your jurisdiction in the plan.
- Identify an un-burdened billing rate for this point of contact which will be used to calculate the in-kind match for the grant that is funding this project.

- Approve the Steering Committee.
- If requested, provide support in the form of mailing list, possible meeting space, and public information materials, such as newsletters, newspapers or direct mailed brochures, required to implement the public involvement strategy developed by the Steering Committee.
- Participate in the process. There will be many opportunities as this plan evolves to participate. Opportunities such as:
 - Steering Committee meetings
 - Public meetings or open houses
 - Workshops/ Planning Partner specific training sessions
 - Public review and comment periods prior to adoption

At each and every one of these opportunities, attendance will be recorded. Attendance records will be used to document participation for each planning partner. No thresholds will be established as minimum levels of participation. However, each planning partner should attempt to attend all possible meetings and events.

- There will be one mandatory workshop that all planning partners will be required to attend. This workshop will cover the proper completion of the jurisdictional annex template, which is the basis for each partner's jurisdictional chapter in the plan. Failure to have a representative at this workshop will disqualify the planning partner from participation in this effort. The schedule for this workshop will be such that all committed planning partners will be able to attend.
- After participation in the mandatory annex workshop, each partner will be required to complete their annex and provide it to the planning team in the time frame established by the Steering Committee. Technical assistance in the completion of these annexes will be available from the planning team. Failure to complete your annex in the required time frame may lead to disqualification from the partnership.
- Each partner will be asked to review the Risk Assessment and identify hazards and vulnerabilities specific to its jurisdiction. Contract resources will provide the jurisdiction specific mapping and technical consultation to aid in this task, but the determination of risk and vulnerability will be up to each partner (through a facilitated process during the mandatory workshop).
- Each partner will be required to create its own action plan that identifies each project, who will oversee the task, how it will be financed and when it is estimated to occur.
- Each partner will be required to formally adopt the plan.

Planning tools and instructions to aid in the compilation of this information will be provided to all committed planning partners. Each partner will be asked to complete their annexes in a timely manner and according to the timeline specified by the Steering Committee.

**** Note**:** Once this plan is completed, and FEMA approval has been determined for each partner, maintaining that eligibility will be dependent upon each partner implementing the plan implementation-maintenance protocol identified in the plan.

Exhibit A
Example Letter of Intent to Participate

King County Hazard Mitigation Planning Partnership

C/O Tetra Tech, Inc.
19803 N. Creek Parkway
Bothell, WA 98011

Via email at: rob.flaner@tetrattech.com

Dear King County Planning Partnership,

Please be advised that the _____ (*insert City or district name*) is committed to participating in the update to the King County Regional Multi- Hazard Mitigation Plan. As the _____ (title, e.g., Chief Administrative Official) for this jurisdiction, I certify that I will commit all necessary resources in order to meet Partnership expectations as outlined in the “Planning Partners expectations” document provided by the planning team, in order to obtain Disaster Mitigation Act (DMA) compliance for our jurisdiction.

Mr./Ms. _____ will be our jurisdiction’s point of contact for this process and they can be reached at (*insert: address, phone number and e-mail address*). We understand that this designated point of contact’s time will be applied to the “in-kind” local match for the grant that is funding this project. To aid in the determination of this local match, we have determined that the fully burdened bill rate for our designated point of contact is \$ _____. The funding source for our point of contact’s position within our jurisdiction is _____ / is not _____ through federal funds. If it is through federal funds, what percentage of their salary is federally funded? _____%

Sincerely,

Exhibit B
(Current) Planning Team Contact information

Name	Representing	Address	Phone	e-mail
Janice Rahman	King County OEM	3511 NE 2nd Street Renton, WA 98056	(206) 205-4061	<u>Janice.Rahman@Kingcounty.gov</u>
Sam Ripley	King County OEM	3511 NE 2nd Street Renton, WA 98056	(206) 205-4072	<u>Sam.Ripley@kingcounty.gov</u>
Rob Flaner	Tetra Tech, Inc.	90 S. Blackwood Ave Eagle, ID 83616	(208) 939-4391	<u>Rob.flaner@tetrattech.com</u>

**APPENDIX B.
PROCEDURES FOR LINKING TO
THE REGIONAL HAZARD MITIGATION PLAN UPDATE**

APPENDIX B. PROCEDURES FOR LINKING TO THE REGIONAL HAZARD MITIGATION PLAN UPDATE

Not all eligible local governments in King County are included in the King County Regional Hazard Mitigation Plan Update. Some or all of these non-participating local governments may choose to “link” to the Plan at some point to gain eligibility for programs under the federal Disaster Mitigation Act (DMA). In addition, some current partners may not continue to meet eligibility requirements due to a lack of participation prescribed by the plan. The following “linkage” procedures define the requirements established by the Planning Team for dealing with an increase or decrease in the number of planning partners linked to this plan. No currently non-participating jurisdiction within the defined planning area is obligated to link to this plan. These jurisdictions can choose to do their own “complete” plan that addresses all required elements of Section 201.6 of Chapter 44 of the Code of Federal Regulations (44 CFR).

INCREASING THE PARTNERSHIP THROUGH LINKAGE

Eligible jurisdictions located in the planning area may link to this plan at any point during the plan’s performance period. It is expected that linking jurisdictions will complete the requirements outlined below and submit their completed template to the lead agency (King County Office of Emergency Management) for review within three months of beginning the linkage process:

- The eligible jurisdiction requests a “Linkage Package” by contacting the Point of Contact (POC) for the plan:
 - Janice Rahman, Project Manager
 - King County Office of Emergency Management
 - 3511 NE 2nd Street
 - Renton, WA 98056
 - (206) 205-4061
 - Janice.Rahman@kingcounty.gov
- The POC will provide a linkage procedure package that includes linkage information and a linkage tool-kit:
 - Linkage Information
 - Procedures for linking to the regional hazard mitigation plan update
 - Planning partner’s expectations for linking jurisdictions
 - A sample “letter of intent” to link to the Regional Hazard Mitigation Plan
 - A copy of Section 201.6 of 44 CFR, which defines the federal requirements for a local hazard mitigation plan.
 - Linkage Tool-Kit
 - Copy of Volume 1 and 2 of the plan
 - A special purpose district or city template and instructions
 - A catalog of hazard mitigation alternatives
 - A “request for technical assistance” form
 - An annex review check-list
 - A sample resolution for plan adoption
- The new jurisdiction will be required to review both volumes of the Regional Hazard Mitigation Plan, which include the following key components for the planning area:

- Goals and objectives
- The planning area risk assessment
- Comprehensive review of alternatives
- Countywide initiatives
- Plan implementation and maintenance procedures.

Once this review is complete, the jurisdiction will complete its specific annex using the template and instructions provided by the POC. Jurisdictions can request technical assistance (TA) by completing the TA form provided in the linkage package and submitting it to the POC. The POC will coordinate the provision of the TA based on resources available at the time of the request.

- The development of the new jurisdiction’s annex must not be completed by one individual in isolation. The jurisdiction must develop, implement and describe a public involvement strategy and a methodology to identify and vet jurisdiction-specific actions. The original partnership was covered under a uniform public involvement strategy and a process to identify actions that covered the planning area described in Volume 1 and Volume 2 of this plan. Since new partners were not addressed by these strategies, they will have to initiate new strategies and describe them in their annex. For consistency, new partners are encouraged to develop and implement strategies similar to those described in this plan.
- The public involvement strategy must ensure the public’s ability to participate in the plan development process. At a minimum, the new jurisdiction must solicit public opinion on hazard mitigation at the onset of the linkage process and hold one or more public meetings to present the draft jurisdiction-specific annex for comment at least two weeks prior to adoption by the governing body. The POC will have resources available to aid in the public involvement strategy, including:
 - The questionnaire utilized in the plan development
 - Presentations from public meeting workshops and the public comment period
 - Flyers and information cards that were distributed to the public
 - Press releases used throughout the planning process
 - The plan website.
- The methodology to identify actions should include a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard and a description of the process by which chosen actions were identified. As part of this process, linking jurisdictions should coordinate the selection of actions amongst the jurisdiction’s various departments.
- Once their public involvement strategy and template are completed, the new jurisdiction will submit the completed package to the POC for a pre-adoption review to ensure conformance with the Regional plan format and linkage procedure requirements.
- The POC will review for the following:
 - Documentation of public involvement and action plan development strategies
 - Conformance of template entries with guidelines outlined in instructions
 - Chosen initiatives are consistent with goals, objectives and mitigation catalog of the Regional Hazard Mitigation Plan Update
 - A designated point of contact
- Plans will be reviewed by the POC and submitted to Washington State Emergency Management Division (EMD) for review and approval.

- EMD will review plans for federal compliance. Non-compliant plans are returned to the lead agency for correction. Compliant plans are forwarded to FEMA for review with annotation as to the adoption status.
- FEMA reviews the new jurisdiction's plan in association with the approved plan to ensure DMA compliance. FEMA notifies the new jurisdiction of the results of review with copies to EMD and the approved plan lead agency.
- New jurisdiction corrects plan shortfalls (if necessary) and resubmits to EMD through the approved plan lead agency.
- For plans with no shortfalls from the FEMA review that have not been adopted, the new jurisdiction governing authority adopts the plan and forwards adoption resolution to FEMA with copies to lead agency and EMD.
- FEMA regional director notifies the new jurisdiction's governing authority of the plan's approval.

The new jurisdiction plan is then included with the regional plan, and the new jurisdiction is committed to participate in the ongoing plan implementation and maintenance strategies.

DECREASING THE PARTNERSHIP

The eligibility afforded under this process to the planning partnership can be rescinded in two ways. First, a participating planning partner can ask to be removed from the partnership. This may be done because the partner has decided to develop its own plan or has identified a different planning process for which it can gain eligibility. A partner that wishes to voluntarily leave the partnership shall inform the POC of this desire in writing. This notification can occur any time during the calendar year. A jurisdiction wishing to pursue this avenue is advised to make sure that it is eligible under the new planning effort, to avoid any period of being out of compliance with the Disaster Mitigation Act.

After receiving this notification, the POC shall immediately notify both the Washington State Emergency Management Division and FEMA in writing that the partner in question is no longer covered by the Regional Hazard Mitigation Plan Update, and that the eligibility afforded that partner under this plan should be rescinded based on this notification.

The second way a partner can be removed from the partnership is by failure to meet the participation requirements specified in the "Planning Partner Expectations" package provided to each partner at the beginning of the process, or the plan maintenance and implementation procedures specified under Chapter 21 in Volume 1 of the plan. Each partner agreed to these terms by adopting the plan.

Eligibility status of the planning partnership will be monitored by the POC. The determination of whether a partner is meeting its participation requirements will be based on the following parameters:

- Are progress reports being submitted annually by the specified time frames?
- Are partners notifying the POC of changes in designated points of contact?
- Are the partners supporting the Steering Committee by attending designated meetings or responding to needs identified by the body?
- Are the partners continuing to be supportive as specified in the Planning Partners expectations package provided to them at the beginning of the process?

Participation in the plan does not end with plan approval. This partnership was formed on the premise that a group of planning partners would pool resources and work together to strive to reduce risk within the planning area. Failure to support this premise lessens the effectiveness of this effort. The following procedures will be followed to remove a partner due to the lack of participation:

- The POC will advise the Steering Committee of this pending action and provide evidence or justification for the action. Justification may include: multiple failures to submit annual progress reports, failure to attend meetings determined to be mandatory by the Steering Committee, failure to act on the partner's action plan, or inability to reach designated point of contact after a minimum of five attempts.
- The Steering Committee will review information provided by POC, and determine action by a vote. The Steering Committee will invoke the voting process established in the ground rules established during the formation of this body.
- Once the Steering Committee has approved an action, the POC will notify the planning partner of the pending action in writing via certified mail. This notification will outline the grounds for the action, and ask the partner if it is their desire to remain as a partner. This notification shall also clearly identify the ramifications of removal from the partnership. The partner will be given 30 days to respond to the notification.
- Confirmation by the partner that they no longer wish to participate or failure to respond to the notification shall trigger the procedures for voluntary removal discussed above.
- Should the partner respond that they would like to continue participation in the partnership, they must clearly articulate an action plan to address the deficiencies identified by the POC. This action plan shall be reviewed by the Steering Committee to determine whether the actions are appropriate to rescind the action. Those partners that satisfy the Steering Committee's review will remain in the partnership, and no further action is required.
- Automatic removal from the partnership will be implemented for partners where these actions have to be initiated more than once in a 5-year planning cycle.

**APPENDIX C.
ANNEX INSTRUCTIONS AND TEMPLATES**

Appendix C1.
Annex Instructions and Templates for Municipalities

INSTRUCTIONS FOR COMPLETING MUNICIPALITY ANNEX TEMPLATE

This document provides instructions for city and county governments participating in multi-partner hazard mitigation planning. These instructions are intended for municipalities that do not have a FEMA approved hazard mitigation plan.

Assistance in completing the template will be available in the form of a workshop for all Planning Partners in November and technical assistance as requested and as funding allows. Any questions on completing the template should be directed to:

Rob Flaner
208. 939.4391
Rob.Flaner@TetraTech.com

Fully completed templates must be completed and returned by:

Friday, January 17, 2014.

A NOTE ABOUT FORMATTING

The template for the jurisdiction annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner. Partners who do not have Microsoft Word capability may prepare the document in other formats, and the planning team will convert it to the Word format.

Content should be entered within the yellow, highlighted text that is currently in the template, rather than creating text in another document and pasting it into the template. Text from another source will alter the style and formatting of the document.

The numbering in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of this numbering.

Municipality Annex:

This document provides instructions for completing the jurisdictional annex template for city and county governments.

Please refer all questions to:

Rob Flaner
208.939.4391

rob.flaner@tetrattech.com

Please complete and return by:

Friday, January 17, 2014

Please email completed template to:

Kristen Gelino
425.482.7801

kristen.gelino@tetrattech.com

Associated Materials:

Along with the annex template and these instructions, you have been provided with other materials with information that is needed for completing the template. Be sure to review these materials before you begin the process of filling in the template:

- SHELDUS historical event data
- Summary-of-loss matrix for the hazard mitigation plan,
- Results from the hazard mitigation plan questionnaire,
- Catalog of funding programs,
- Catalog of mitigation alternatives, and
- Fact sheet on Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Grant Program (PDM).

CHAPTER NUMBER AND TITLE

In the chapter title at the top of page 1, type in the complete official name of your jurisdiction (The City of Metropolis, Jefferson County, etc.), replacing the yellow, highlighted text.

HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

JURISDICTION PROFILE

Provide information specific to your jurisdiction as indicated, in a style similar to the example provided in the box at right. This should be information that was not provided in the overall mitigation plan document. For population data, use the most current population figure for your jurisdiction based on an official means of tracking (e.g., the U.S. Census or state office of financial management).

Please be sure to include information about who will adopt the Plan and who will oversee plan implementation. Consider using the following sentence: _____ assumes responsibility for the adoption of this plan; _____ will oversee its implementation.

For each bullet point, please replace the highlighted, yellow text with your jurisdiction-specific information.

Example Jurisdiction Profile:

- **Date of Incorporation**—1858
- **Current Population**—17,289 as of July 2006
- **Population Growth**—Based on the data tracked by the California Department of Finance, Arcata has experienced a relatively flat rate of growth. The overall population has increased only 3.4% since 2000 and has averaged 0.74% per year from 1990 to 2007
- **Location and Description**—The City of Arcata is located on California's redwood coast, approximately 760 miles north of Los Angeles and 275 miles north of San Francisco. The nearest seaport is Eureka, five miles south on Humboldt Bay. Arcata is the home of Humboldt State University and is situated between the communities of McKinleyville to the north and Blue Lake to the east. It sits at the intersection of US Highway 101 and State Route 299.
- **Brief History**—The Arcata area was settled during the California gold rush in the 1850s as a supply center for miners. As the gold rush died down, timber and fishing became the area's major economic resource. Arcata was incorporated in 1858 and by 1913 the Humboldt Teachers College, a predecessor to today's Humboldt State University was founded in Arcata. Recently, the presence of the college has come to shape Arcata's population into a young, liberal, and educated crowd. In 1981 Arcata developed the Arcata Marsh and Wildlife sanctuary, an innovative environmentally friendly, sewage treatment enhancement system.
- **Climate**—Arcata's weather is typical of the Northern California coast, with mild summers and cool, wet winters. It rarely freezes in the winter and it is rarely hot in the summer. Annual average rainfall is over 40 inches, with 80% of that falling in the six-month period of November through April. The average year-round temperature is 59°F. Humidity averages between 72 and 87 percent. Prevailing winds are from the north, and average 5 mph.
- **Governing Body Format**—The City of Arcata is governed by a five-member City Council. The City consists of six departments: Finance, Environmental Services, Community Development, Public Works, Police and the City Manager's Office. The City has 13 Committees, Commissions and Task Forces, which report to the City Council.
- **Development Trends**—Anticipated development levels for Arcata are low to moderate, consisting primarily of residential development. The majority of recent development has been infill. Residentially, there has been a focus on affordable housing and a push for more secondary mother-in-law units on properties.

The City of Arcata adopted its general plan in July 2000. The plan focuses on issues of the greatest concern to the community. City actions, such as those relating to land use allocations, annexations, zoning, subdivision and design review, redevelopment, and capital improvements, must be consistent with such a plan. Future growth and development in the City will be managed as identified in the general plan.

CAPABILITY ASSESSMENT

NOTE: Please do not attempt to complete this section of the template by yourself. You will need to reach out to other departments within your jurisdiction to find the answers to these questions. Departments such as, Planning, Public Works/Engineering, and Emergency Services are responsible for the implementation of many of the capabilities listed in this assessment. If you find that your jurisdiction does not have any of the listed capabilities, then ask yourself or the responsible department “why?” Remember, increasing capability is a way to reduce risk and is, therefore, a viable mitigation action.

Legal and Regulatory Capability

Describe the legal authorities available to your jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that can support hazard mitigation initiatives. In Table 1-1, indicate “Yes” or “No” for each listed code, ordinance, requirement or planning document in each of the following columns:

- **Local Authority**—Enter “Yes” if your jurisdiction has prepared or adopted the identified item; otherwise, enter “No.” If yes, then enter the code or ordinance number and its date of adoption in the comments column. It is very important that you list the code citation as well as date of adoption. Identification of old codes often are leads to identifying mitigation actions. For example, if your flood damage prevention ordinance has a date of adoption prior to 2004, there is a good chance that the ordinance is out of compliance with the National Flood Insurance Program (NFIP). This should be addressed as an action in your action plan. If a code has been updated since its initial adoption date, please provide the date of the most recent update.
- **State or Federal Prohibitions**—Enter “Yes” if there are any state or federal regulations or laws that would prohibit local implementation of the identified item; otherwise, enter “No.”
- **Other Regulatory Authority**—Enter “Yes” if there are any regulations that may impact your initiative that are enforced or administered by another agency (e.g., a state agency or special purpose district); otherwise, enter “No.”
- **State Mandated**—Enter “Yes” if state laws or other requirements enable or require the listed item to be implemented at the local level; otherwise, enter “No.”

A Note On Planning Documents:

Comprehensive Plans - Jurisdictions that engage in comprehensive planning may wish to link their plan to the hazard mitigation plan. This linkage can occur in many related elements such as the safety element or in the critical areas discussion of the land use element.

Capital Improvement Programs – CIPs may address a variety of infrastructure such as sewer, water, drainage, roads and storm water. Capital Facilities Plans are a required element of the Washington State Growth Management Act; however, counties and municipalities may have differing definitions of “capital.”

Fiscal Capability

Identify what financial resources (other than the Hazard Mitigation Grant Program and the Pre-Disaster Mitigation Grant Program) are available to your jurisdiction for implementing mitigation initiatives.

Complete Table 1-2 by indicating whether each of the listed financial resources is accessible to your jurisdiction. Enter “Yes” if the resource is fully accessible to your jurisdiction. Enter “No” if there are limitations or prerequisites that may hinder your eligibility for this resource.

Administrative and Technical Capability

This section requires you to take inventory of the staff/personnel resources available to your jurisdiction to help with hazard mitigation planning and the implementation of specific mitigation actions.

Complete Table 1-3 by indicating whether your jurisdiction has access to each of the listed personnel resources. Enter “Yes” or “No” in the column labeled “Available?” If yes, then enter the department and position title in the right-hand column.

National Flood Insurance Program Compliance

For those communities that participate in the National Flood Insurance program (NFIP), this section will aid in meeting the requirements specified in 44CFR 201.6(c)(3)(ii), dealing with the maintenance of NFIP compliance. This section asks a series of questions aimed at identifying the community’s floodplain management program and any inherent needs within that program. Table 1-4 asks nine questions about the community floodplain management program. To complete this table, you will need to identify the department responsible for floodplain management within your jurisdiction. Guidance on how to respond to each of these questions is as follows:

<p>What department is responsible for floodplain management in your community?</p>	<p>All communities that participate in the NFIP must appoint a department that is responsible for the administration of its floodplain management program. This can be designated in the actual ordinance language. Places to check include; Building Department, Community Development, Public Works or Engineering Department</p>
<p>Who is your Community’s Floodplain Administrator? (Department/Position)</p>	<p>This position will be designated in the Community’s flood damage prevention ordinance. Please confirm that this position is still acting as the designated Flood Plain Administrator. If it is not, then you will need to amend your ordinance.</p>
<p>Do you have any Certified Floodplain Managers (CFM) on staff within your community?</p>	<p>The Association of State Floodplain Managers has established a national program for professional certification of floodplain managers. The program recognizes continuing education and professional development that enhance the knowledge and performance of local, state, federal, and private-sector floodplain managers. The role of the nation’s floodplain managers is expanding due to increases in disaster losses, the emphasis being placed upon mitigation to alleviate the cycle of damage-rebuild-damage, and a recognized need for professionals to adequately address these issues. This certification program lays the foundation for ensuring that highly qualified individuals are available to meet the challenge of breaking the damage cycle and stopping its negative drain on the nation’s human, financial, and natural resources.</p>
<p>What is the date of adoption of your flood damage prevention ordinance?</p>	<p>Check the date your floodplain management ordinance was last adopted/amended. Please site the code number and whether this date reflects the initial adoption date or an amendment date.</p>
<p>When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?</p>	<p>The CAV is the method utilized by FEMA to monitor NFIP compliance. CAV’s are supposed to occur every 3 to 5 years. They can be performed by the FEMA Regional Office or by the State Coordinating Agency. The best source for this information is your</p>

	<p>Community Floodplain Administrator. If she or he does not know, you should check with the State NFIP Coordinator:</p> <p>Scott McKinney, Washington Department of Ecology 360-407-6131 scott.mckinney@ecy.wa.gov</p>
<p>To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.</p>	<p>If any administrative problems or potential violations are identified during a CAV the community will be notified and given the opportunity to correct those administrative procedures and remedy the violations to the maximum extent possible within established deadlines. The best source for this information is your Community Floodplain Administrator. If she does not know, you should check with the State NFIP Coordinator.</p>
<p>Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why).</p>	<p>If you believe that the flood hazard maps for your community do not adequately address the flood risk, please provide an explanation. If you believe the maps do adequately address the flood risk within your community, please answer “Yes.”</p>
<p>Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?</p>	<p>What do you need to make your floodplain management program better? Do you need staffing, training, better maps? This is the section where you identify needs. Needs result in actions. If you identify needs here, you should identify an action in your action plan to address those needs. It is plausible to answer “nothing” here. But to do so, you need to have a very well established floodplain management program or little or no floodplain to manage.</p>
<p>Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?</p>	<p>The CRS program is a part of the National Flood Insurance Program that rewards participating communities for exceeding the minimum requirements of the NFIP by lowering the cost of flood insurance premiums in participating jurisdictions. The CRS provides credit for 18, non-structural flood mitigation activities. The CRS program is voluntary, and communities must be in full compliance and good standing under the NFIP to be eligible to apply.</p>

Community Mitigation Related Classifications

The Planning Team will complete Table 1-5 to indicate your jurisdiction’s participation in various national programs related to natural hazard mitigation. You do not need to provide information for this table.

JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Chronological List of Hazard Events

In Table 1-6, list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction since 1975. Include the date of the event and the estimated dollar amount of

damage it caused. Please refer to the summary of natural hazard events in the SHELDUS historical data included in your tool kit. Potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)
- Citizen input.

Repetitive Loss Properties

A repetitive loss property is any property for which FEMA has paid two or more flood insurance claims in excess of \$1,000 in any rolling 10-year period since 1978. The Planning Team will provide information regarding repetitive loss properties for your jurisdiction. Please do not worry about completing this portion of the template.

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and, therefore, needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and the economy. A detailed discussion of the concepts associated with risk ranking is provided in the overall hazard mitigation plan. The instructions below outline steps for assessing risk in your jurisdiction to develop results that are to be included in the template.

Determine Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. In Table 1, list the probability of occurrence for each hazard as it pertains to your jurisdiction, along with its probability factor, as follows:

- **High**—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- **Medium**—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- **Low**—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- **None**—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

The probability of occurrence of a hazard event is generally based on past hazard events in an area. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category.

TABLE 2. HAZARD IMPACT ON PEOPLE			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 3)

Impacts on Property

To assess impacts on property, values are assigned based on the percentage of the total *property value exposed* to the hazard event. In Table 3, enter the cost estimates for potential damage to exposed structures, taken from the “Summary of Loss” matrix provided with these instructions.

TABLE 3. COST ESTIMATES FOR POTENTIAL DAMAGE TO STRUCTURES	
Hazard type	Estimate of Potential Dollar Losses to Exposed Structures

In Table 4, list the potential impact of each hazard on property in your jurisdiction, along with its impact factor. Determine impact based on damage estimates from Table 3, as follows:

- **High Impact**—25% or more of the total assessed property value is exposed to a hazard (Impact Factor = 3)

- **Medium Impact**—10% to 24% of the total assessed property value is exposed to a hazard (Impact Factor = 2)
- **Low Impact**—9% or less of the total assessed property value is exposed to the hazard (Impact Factor = 1)
- **No Impact**—None of the total assessed property value is exposed to a hazard (Impact Factor = 0)

Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 2)

Impacts on the Economy

To assess impacts on the economy, values are assigned based on the percentage of the total *property value vulnerable* to the hazard event. Values represent estimates of the loss from a major event of each hazard in comparison to the total assessed value of property in the county. For some hazards, such as wildland fire, landslide and severe weather, vulnerability is the same as exposure due to the lack of loss estimation tools specific to those hazards. In Table 5, list the potential impact of each hazard on the economy in your jurisdiction, along with its impact factor, as follows:

- **High Impact**—Estimated loss from the hazard is 15% or more of the total assessed property value (Impact Factor = 3)
- **Medium Impact**—Estimated loss from the hazard is 5% to 14% of the total assessed property value (Impact Factor = 2)
- **Low Impact**—Estimated loss from the hazard is 4% or less of the total assessed property value (Impact Factor = 1)
- **No Impact**—No loss is estimated from the hazard (Impact Factor = 0)

TABLE 5. HAZARD IMPACT ON THE ECONOMY			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 1)

Determine Risk Rating for Each Hazard

A risk rating for each hazard is determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and the economy:

- Risk Rating = Probability Factor x Weighted Impact Factor {people + property + economy}

Using the results developed in Tables 1, 2, 4 and 5, complete Table 6 to calculate a risk rating for each hazard of concern.

TABLE 6. HAZARD RISK RATING			
Hazard Type	Probability Factor (P)	Sum of Weighted Impact Factors on People, Property & Economy (I)	Risk Rating (P x I)

Complete Risk Ranking in Template

Once Table 6 has been completed above, complete Table 1-7 in your template. The hazard with the highest risk rating in Table 6 should be listed at the top of Table 1-7 and given a rank of 1; the hazard with the second highest rating should be listed second with a rank of 2; and so on. Two hazards with equal risk ratings should be given the same rank.

It is important to note that this exercise should not override your subjective assessment of relative risk based on your knowledge of the history of natural hazard events in your jurisdiction. If this risk ranking exercise generates results other than what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in the comments at the end of the template. Remember, one of the purposes of this exercise is to support the selection and prioritization of initiatives in your plan. If you identify an initiative with a high priority that mitigates the risk of a hazard you have ranked low, that project will not be competitive in the grant arena.

HAZARD MITIGATION ACTION PLAN

Action Plan Matrix

Identify the initiatives your jurisdiction would like to pursue with this plan. Refer to the mitigation catalog for mitigation options you might want to consider. Be sure to consider the following factors in your selection of initiatives:

- Select initiatives that are consistent with the overall goals, objectives and vision of the hazard mitigation plan. The approved goals, objectives and vision are included in your tool kit.
- Identify projects where benefits exceed costs.
- Include any project that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the HMGP and PDM (see fact sheet provided). Listing HMGP or PDM as a potential funding source for an ineligible project will be a red flag when this plan goes through review. If you have projects that are not HMGP or PDM grant eligible, but do mitigate part or the entire hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- Although you should identify at least one initiative for your highest ranked risk, a hazard-specific project is not required for every hazard. If you have not identified an earthquake related project, and an earthquake occurs that causes damage in your jurisdiction, you are not discounted from HMGP project grant eligibility.

Wording Your Initiative Descriptions:

Descriptions of your initiatives need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the project's scope and impact. The following are typical descriptions for an action plan initiative:

- **Initiative 1**—Address Repetitive Loss properties. Through targeted mitigation, acquire, relocate or retrofit the five repetitive loss structures in the County as funding opportunities become available.
- **Initiative 2**—Perform a non-structural, seismic retrofit of City Hall.
- **Initiative 3**—Acquire floodplain property in the Smith subdivision.
- **Initiative 4**—Enhance the County flood warning capability by joining the NOAA "Storm Ready" program.

Complete Table 1-8 for all the initiatives you have identified:

- Enter the initiative number and description.

- Indicate whether the initiative mitigates hazards for new or existing assets.
- Identify the specific hazards the initiative will mitigate.
- Identify by number the mitigation plan objectives that the initiative addresses. The approved goals, objectives and vision are included in your tool kit.
- Indicate who will be the lead in administering the project. This will most likely be your governing body.
- Identify funding sources for the project. If it is a grant, include the funding sources for the cost share. Refer to your fiscal capability assessment (Table 1-2) to identify possible sources of funding.
- Indicate the time line as “short term” (1 to 5 years) or “long term” (5 years or greater).

Technical assistance will be provided upon request.

Prioritization of Mitigation Initiatives

Complete the information in Table 1-9 as follows:

- **Initiative #**—Indicate the initiative number from Table 1-8.
- **# of Objectives Met**—Enter the number of objectives the initiative will meet.
- **Benefits**—Enter “High,” “Medium” or “Low” as follows:
 - **High:** Project will have an immediate impact on the reduction of risk exposure to life and property.
 - **Medium:** Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
 - **Low:** Long-term benefits of the project are difficult to quantify in the short term.
- **Costs**—Enter “High,” “Medium” or “Low” as follows:
 - **High:** Would require an increase in revenue via an alternative source (e.g., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.
 - **Medium:** Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
 - **Low:** Possible to fund under existing budget. Project is part of, or can be part of an existing ongoing program.

If you know the estimated cost of a project because it is part of an existing, ongoing program, indicate the amount.

- **Do Benefits Equal or Exceed the Cost?**—Enter “Yes” or “No.” This is a qualitative assessment. Enter “Yes” if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter “No” if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Project Grant-Eligible?**—Enter “Yes” or “No.” Refer to the fact sheet on HMGP and PDM.

- **Can Project Be Funded Under Existing Program Budgets?**—Enter “Yes” or “No.” In other words, is this initiative currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Priority**— Enter “High,” “Medium” or “Low” as follows:
 - **High:** Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
 - **Medium:** Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
 - **Low:** Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

This prioritization is a simple review to determine that the initiatives you have identified meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM project grants. The prioritization will identify any projects whose probable benefits will not exceed the probable costs.

Analysis of Mitigation Actions

Complete Table 1-10 by summarizing the mitigation actions by hazard of concern and the following six mitigation types:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates such as EPA's Bio-terrorism assessment requirement for water districts.

ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template.

As you complete your template, please forward it to:

Kristen Gelino, Tetra Tech, Inc.
425.482.7801
Kristen.Gelino@TetraTech.com

CHAPTER 1.

INSERT JURISDICTION NAME ANNEX

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: Phone #
e-mail Address: email address

Alternate Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: Phone #
e-mail Address: email address

1.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—Insert Date of Incorporation
- **Current Population**—Insert Population as of Insert Date of Population Count
- **Population Growth**—Insert Discussion of Population Growth
- **Location and Description**—Insert Description of Location, Surroundings, Key Geographic Features
- **Brief History**—Insert Summary Discussion of Jurisdiction's History
- **Climate**—Insert Summary Discussion of Climate
- **Governing Body Format**—Insert Summary Description of Governing Body
- **Development Trends**—Insert Summary Description of Development

1.3 CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table 1-1. The assessment of the jurisdiction's fiscal capabilities is presented in Table 1-2. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table 1-3. Information on the community's National Flood Insurance Program (NFIP) compliance is presented in Table 1-4. Classifications under various community mitigation programs are presented in Table 1-5.

**TABLE 1-1.
LEGAL AND REGULATORY CAPABILITY**

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code					
Zonings					
Subdivisions					
Stormwater Management					
Post Disaster Recovery					
Real Estate Disclosure					
Growth Management					
Site Plan Review					
Public Health and Safety					
Environmental Protection					
Planning Documents					
General or Comprehensive Plan					
					<i>Is the plan equipped to provide linkage to this mitigation plan?</i> <input type="text" value="Yes or No"/>
Floodplain or Basin Plan					
Stormwater Plan					
Capital Improvement Plan					
					<i>What types of capital facilities does the plan address?</i> <input type="text"/>
					<i>How often is the plan revised/updated?</i> <input type="text"/>
Habitat Conservation Plan					
Economic Development Plan					
Shoreline Management Plan					
Community Wildfire Protection Plan					
Response/Recovery Planning					
Comprehensive Emergency Management Plan					
Threat and Hazard Identification and Risk Assessment					
Terrorism Plan					
Post-Disaster Recovery Plan					
Continuity of Operations Plan					
Public Health Plans					

TABLE 1-2. FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	
Capital Improvements Project Funding	
Authority to Levy Taxes for Specific Purposes	
User Fees for Water, Sewer, Gas or Electric Service	
Incur Debt through General Obligation Bonds	
Incur Debt through Special Tax Bonds	
Incur Debt through Private Activity Bonds	
Withhold Public Expenditures in Hazard-Prone Areas	
State Sponsored Grant Programs	
Development Impact Fees for Homebuyers or Developers	
Other	

TABLE 1-3. ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices		
Engineers or professionals trained in building or infrastructure construction practices		
Planners or engineers with an understanding of natural hazards		
Staff with training in benefit/cost analysis		
Surveyors		
Personnel skilled or trained in GIS applications		
Scientist familiar with natural hazards in local area		
Emergency manager		
Grant writers		

**TABLE 1-4.
NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE**

What department is responsible for floodplain management in your community?	
Who is your community’s floodplain administrator? (department/position)	
Do you have any certified floodplain managers on staff in your community?	
What is the date of adoption of your flood damage prevention ordinance?	
When was the most recent Community Assistance Visit or Community Assistance Contact?	
To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	
Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why)	
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	
Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?	

**TABLE 1-5.
COMMUNITY CLASSIFICATIONS**

	Participating?	Classification	Date Classified
Community Rating System			
Building Code Effectiveness Grading Schedule			
Public Protection			
Storm Ready			
Firewise			
Tsunami Ready (if applicable)			

1.4 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 1-6 lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: **Insert #**
- Number of FEMA-Identified Severe Repetitive Loss Properties: **Insert #**
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties That Have Been Mitigated: **Insert #**

1.5 HAZARD RISK RANKING

Table 1-7 presents the ranking of the hazards of concern.

Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Delete this paragraph if no maps available.

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

1.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 1-8 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 1-9 identifies the priority for each initiative. Table 1-10 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

TABLE 1-8. HAZARD MITIGATION ACTION PLAN MATRIX						
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						

**TABLE 1-10.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche						
Dam Failure						
Drought						
Earthquake						
Flood						
Landslide						
Severe Weather						
Tsunami						
Volcano						
Wildfire						

a. See Chapter 1 for explanation of mitigation types.

1.7 FUTURE NEEDS TO BETTER UNDERSTAND RISK/ VULNERABILITY

Insert text, if any; delete section if not used

1.8 ADDITIONAL COMMENTS

Insert text, if any; delete section if not used

INSTRUCTIONS FOR COMPLETING MUNICIPALITY UPDATE ANNEX TEMPLATE

This document provides instructions for city and county governments participating in multi-partner hazard mitigation planning. These instructions are intended for municipalities that currently have a FEMA approved hazard mitigation plan.

Assistance in completing the template will be available in the form of a workshop for all Planning Partners in November and technical assistance as requested and as funding allows. Any questions on completing the template should be directed to:

Rob Flaner
208. 939.4391
Rob.Flaner@TetraTech.com

Fully completed templates must be completed and returned by:

Friday, January 17, 2014.

A NOTE ABOUT FORMATTING

The template for the municipal jurisdiction annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner. Partners who do not have Microsoft Word capability may prepare the document in other formats, and the planning team will convert it to the Word format.

Content should be entered within the yellow, highlighted text that is currently in the template, rather than creating text in another document and pasting it into the template. Text from another source will alter the style and formatting of the document.

The numbering in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of this numbering.

Municipality Update Annex:

This document provides instructions for completing the jurisdictional annex template for city and county governments.

Please refer all questions to:

Rob Flaner
208.939.4391
rob.flaner@tetrattech.com

Please complete and return by:

Friday, January 17, 2013

Please email completed template to:

Kristen Gelino
425.482.7801
kristen.gelino@tetrattech.com

Associated Materials:

Along with the annex template and these instructions, you have been provided with other materials with information that is needed for completing the template. Be sure to review these materials before you begin the process of filling in the template:

- SHELDUS historical event data
- Summary-of-loss matrix for the hazard mitigation plan,
- Results from the hazard mitigation plan questionnaire,
- Catalog of funding programs,
- Catalog of mitigation alternatives, and
- Fact sheet on Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Grant Program (PDM).

CHAPTER NUMBER AND TITLE

In the chapter title at the top of page 1, type in the complete official name of your jurisdiction (The City of Metropolis, Jefferson County, etc.), replacing the yellow, highlighted text.

HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

JURISDICTION PROFILE

Provide information specific to your jurisdiction as indicated, in a style similar to the example provided in the box at right. This should be information that was not provided in the overall mitigation plan document. For population data, use the most current population figure for your jurisdiction based on an official means of tracking (e.g., the U.S. Census or state office of financial management).

Please be sure to include information about who will adopt the Plan and who will oversee plan implementation. Consider using the following sentence: _____ assumes responsibility for the adoption of this plan; _____ will oversee its implementation.

For each bullet point, please replace the highlighted, yellow text with your jurisdiction-specific information.

Example Jurisdiction Profile:

- **Date of Incorporation**—1858
- **Current Population**—17,289 as of July 2006
- **Population Growth**—Based on the data tracked by the California Department of Finance, Arcata has experienced a relatively flat rate of growth. The overall population has increased only 3.4% since 2000 and has averaged 0.74% per year from 1990 to 2007
- **Location and Description**—The City of Arcata is located on California's redwood coast, approximately 760 miles north of Los Angeles and 275 miles north of San Francisco. The nearest seaport is Eureka, five miles south on Humboldt Bay. Arcata is the home of Humboldt State University and is situated between the communities of McKinleyville to the north and Blue Lake to the east. It sits at the intersection of US Highway 101 and State Route 299.
- **Brief History**—The Arcata area was settled during the California gold rush in the 1850s as a supply center for miners. As the gold rush died down, timber and fishing became the area's major economic resource. Arcata was incorporated in 1858 and by 1913 the Humboldt Teachers College, a predecessor to today's Humboldt State University was founded in Arcata. Recently, the presence of the college has come to shape Arcata's population into a young, liberal, and educated crowd. In 1981 Arcata developed the Arcata Marsh and Wildlife sanctuary, an innovative environmentally friendly, sewage treatment enhancement system.
- **Climate**—Arcata's weather is typical of the Northern California coast, with mild summers and cool, wet winters. It rarely freezes in the winter and it is rarely hot in the summer. Annual average rainfall is over 40 inches, with 80% of that falling in the six-month period of November through April. The average year-round temperature is 59°F. Humidity averages between 72 and 87 percent. Prevailing winds are from the north, and average 5 mph.
- **Governing Body Format**—The City of Arcata is governed by a five-member City Council. The City consists of six departments: Finance, Environmental Services, Community Development, Public Works, Police and the City Manager's Office. The City has 13 Committees, Commissions and Task Forces, which report to the City Council.
- **Development Trends**—Anticipated development levels for Arcata are low to moderate, consisting primarily of residential development. The majority of recent development has been infill. Residentially, there has been a focus on affordable housing and a push for more secondary mother-in-law units on properties.

The City of Arcata adopted its general plan in July 2000. The plan focuses on issues of the greatest concern to the community. City actions, such as those relating to land use allocations, annexations, zoning, subdivision and design review, redevelopment, and capital improvements, must be consistent with such a plan. Future growth and development in the City will be managed as identified in the general plan.

CAPABILITY ASSESSMENT

NOTE: Please do not attempt to complete this section of the template by yourself. You will need to reach out to other departments within your jurisdiction to find the answers to these questions. Departments such as, Planning, Public Works/Engineering, and Emergency Services are responsible for the implementation of many of the capabilities listed in this assessment. If you find that your jurisdiction does not have any of the listed capabilities, then ask yourself or the responsible department “why?” Remember, increasing capability is a way to reduce risk and is, therefore, a viable mitigation action.

Legal and Regulatory Capability

Describe the legal authorities available to your jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that can support hazard mitigation initiatives. In Table 1-1, indicate “Yes” or “No” for each listed code, ordinance, requirement or planning document in each of the following columns:

- **Local Authority**—Enter “Yes” if your jurisdiction has prepared or adopted the identified item; otherwise, enter “No.” If yes, then enter the code or ordinance number and its date of adoption in the comments column. It is very important that you list the code citation as well as date of adoption. Identification of old codes often are leads to identifying mitigation actions. For example, if your flood damage prevention ordinance has a date of adoption prior to 2004, there is a good chance that the ordinance is out of compliance with the National Flood Insurance Program (NFIP). This should be addressed as an action in your action plan. If a code has been updated since its initial adoption date, please provide the date of the most recent update.
- **State or Federal Prohibitions**—Enter “Yes” if there are any state or federal regulations or laws that would prohibit local implementation of the identified item; otherwise, enter “No.”
- **Other Regulatory Authority**—Enter “Yes” if there are any regulations that may impact your initiative that are enforced or administered by another agency (e.g., a state agency or special purpose district); otherwise, enter “No.”
- **State Mandated**—Enter “Yes” if state laws or other requirements enable or require the listed item to be implemented at the local level; otherwise, enter “No.”

A Note On Planning Documents:

Comprehensive Plans - Jurisdictions that engage in comprehensive planning may wish to link their plan to the hazard mitigation plan. This linkage can occur in many related elements such as the safety element or in the critical areas discussion of the land use element.

Capital Improvement Programs – CIPs may address a variety of infrastructure such as sewer, water, drainage, roads and storm water. Capital Facilities Plans are a required element of the Washington State Growth Management Act; however, counties and municipalities may have differing definitions of “capital.”

Fiscal Capability

Identify what financial resources (other than the Hazard Mitigation Grant Program and the Pre-Disaster Mitigation Grant Program) are available to your jurisdiction for implementing mitigation initiatives.

Complete Table 1-2 by indicating whether each of the listed financial resources is accessible to your jurisdiction. Enter “Yes” if the resource is fully accessible to your jurisdiction. Enter “No” if there are limitations or prerequisites that may hinder your eligibility for this resource.

Administrative and Technical Capability

This section requires you to take inventory of the staff/personnel resources available to your jurisdiction to help with hazard mitigation planning and the implementation of specific mitigation actions.

Complete Table 1-3 by indicating whether your jurisdiction has access to each of the listed personnel resources. Enter “Yes” or “No” in the column labeled “Available?” If yes, then enter the department and position title in the right-hand column.

National Flood Insurance Program Compliance

For those communities that participate in the National Flood Insurance program (NFIP), this section will aid in meeting the requirements specified in 44CFR 201.6(c)(3)(ii), dealing with the maintenance of NFIP compliance. This section asks a series of questions aimed at identifying the community’s floodplain management program and any inherent needs within that program. Table 1-4 asks nine questions about the community floodplain management program. To complete this table, you will need to identify the department responsible for floodplain management within your jurisdiction. Guidance on how to respond to each of these questions is as follows:

<p>What department is responsible for floodplain management in your community?</p>	<p>All communities that participate in the NFIP must appoint a department that is responsible for the administration of its floodplain management program. This can be designated in the actual ordinance language. Places to check include; Building Department, Community Development, Public Works or Engineering Department</p>
<p>Who is your Community’s Floodplain Administrator? (Department/Position)</p>	<p>This position will be designated in the Community’s flood damage prevention ordinance. Please confirm that this position is still acting as the designated Flood Plain Administrator. If it is not, then you will need to amend your ordinance.</p>
<p>Do you have any Certified Floodplain Managers (CFM) on staff within your community?</p>	<p>The Association of State Floodplain Managers has established a national program for professional certification of floodplain managers. The program recognizes continuing education and professional development that enhance the knowledge and performance of local, state, federal, and private-sector floodplain managers. The role of the nation’s floodplain managers is expanding due to increases in disaster losses, the emphasis being placed upon mitigation to alleviate the cycle of damage-rebuild-damage, and a recognized need for professionals to adequately address these issues. This certification program lays the foundation for ensuring that highly qualified individuals are available to meet the challenge of breaking the damage cycle and stopping its negative drain on the nation’s human, financial, and natural resources.</p>
<p>What is the date of adoption of your flood damage prevention ordinance?</p>	<p>Check the date your floodplain management ordinance was last adopted/amended. Please site the code number and whether this date reflects the initial adoption date or an amendment date.</p>
<p>When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?</p>	<p>The CAV is the method utilized by FEMA to monitor NFIP compliance. CAV’s are supposed to occur every 3 to 5 years. They can be performed by the FEMA Regional Office or by the State Coordinating Agency. The best source for this information is your</p>

	<p>Community Floodplain Administrator. If she or he does not know, you should check with the State NFIP Coordinator:</p> <p>Scott McKinney, Washington Department of Ecology 360-407-6131 scott.mckinney@ecy.wa.gov</p>
<p>To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.</p>	<p>If any administrative problems or potential violations are identified during a CAV the community will be notified and given the opportunity to correct those administrative procedures and remedy the violations to the maximum extent possible within established deadlines. The best source for this information is your Community Floodplain Administrator. If she does not know, you should check with the State NFIP Coordinator.</p>
<p>Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why).</p>	<p>If you believe that the flood hazard maps for your community do not adequately address the flood risk, please provide an explanation. If you believe the maps do adequately address the flood risk within your community, please answer “Yes.”</p>
<p>Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?</p>	<p>What do you need to make your floodplain management program better? Do you need staffing, training, better maps? This is the section where you identify needs. Needs result in actions. If you identify needs here, you should identify an action in your action plan to address those needs. It is plausible to answer “nothing” here. But to do so, you need to have a very well established floodplain management program or little or no floodplain to manage.</p>
<p>Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?</p>	<p>The CRS program is a part of the National Flood Insurance Program that rewards participating communities for exceeding the minimum requirements of the NFIP by lowering the cost of flood insurance premiums in participating jurisdictions. The CRS provides credit for 18, non-structural flood mitigation activities. The CRS program is voluntary, and communities must be in full compliance and good standing under the NFIP to be eligible to apply.</p>

Community Mitigation Related Classifications

The Planning Team will complete Table 1-5 to indicate your jurisdiction’s participation in various national programs related to natural hazard mitigation. You do not need to provide information for this table.

JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Chronological List of Hazard Events

In Table 1-6, list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction since 1975. Include the date of the event and the estimated dollar amount of

damage it caused. Please refer to the summary of natural hazard events in the SHELDUS historical data included in your tool kit. Potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)
- Citizen input.

Repetitive Loss Properties

A repetitive loss property is any property for which FEMA has paid two or more flood insurance claims in excess of \$1,000 in any rolling 10-year period since 1978. The Planning Team will provide information regarding repetitive loss properties for your jurisdiction. Please do not worry about completing this portion of the template.

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and, therefore, needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and the economy. A detailed discussion of the concepts associated with risk ranking is provided in the overall hazard mitigation plan. The instructions below outline steps for assessing risk in your jurisdiction to develop results that are to be included in the template.

Determine Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. In Table 1, list the probability of occurrence for each hazard as it pertains to your jurisdiction, along with its probability factor, as follows:

- **High**—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- **Medium**—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- **Low**—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- **None**—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

The probability of occurrence of a hazard event is generally based on past hazard events in an area. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category.

TABLE 2. HAZARD IMPACT ON PEOPLE			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 3)

Impacts on Property

To assess impacts on property, values are assigned based on the percentage of the total *property value exposed* to the hazard event. In Table 3, enter the cost estimates for potential damage to exposed structures, taken from the “Summary of Loss” matrix provided with these instructions.

TABLE 3. COST ESTIMATES FOR POTENTIAL DAMAGE TO STRUCTURES	
Hazard type	Estimate of Potential Dollar Losses to Exposed Structures

In Table 4, list the potential impact of each hazard on property in your jurisdiction, along with its impact factor. Determine impact based on damage estimates from Table 3, as follows:

- **High Impact**—25% or more of the total assessed property value is exposed to a hazard (Impact Factor = 3)

- **Medium Impact**—10% to 24% of the total assessed property value is exposed to a hazard (Impact Factor = 2)
- **Low Impact**—9% or less of the total assessed property value is exposed to the hazard (Impact Factor = 1)
- **No Impact**—None of the total assessed property value is exposed to a hazard (Impact Factor = 0)

Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 2)

Impacts on the Economy

To assess impacts on the economy, values are assigned based on the percentage of the total *property value vulnerable* to the hazard event. Values represent estimates of the loss from a major event of each hazard in comparison to the total assessed value of property in the county. For some hazards, such as wildland fire, landslide and severe weather, vulnerability is the same as exposure due to the lack of loss estimation tools specific to those hazards. In Table 5, list the potential impact of each hazard on the economy in your jurisdiction, along with its impact factor, as follows:

- **High Impact**—Estimated loss from the hazard is 15% or more of the total assessed property value (Impact Factor = 3)
- **Medium Impact**—Estimated loss from the hazard is 5% to 14% of the total assessed property value (Impact Factor = 2)
- **Low Impact**—Estimated loss from the hazard is 4% or less of the total assessed property value (Impact Factor = 1)
- **No Impact**—No loss is estimated from the hazard (Impact Factor = 0)

TABLE 5. HAZARD IMPACT ON THE ECONOMY			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 1)

Determine Risk Rating for Each Hazard

A risk rating for each hazard is determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and the economy:

- Risk Rating = Probability Factor x Weighted Impact Factor {people + property + economy}

Using the results developed in Tables 1, 2, 4 and 5, complete Table 6 to calculate a risk rating for each hazard of concern.

TABLE 6. HAZARD RISK RATING			
Hazard Type	Probability Factor (P)	Sum of Weighted Impact Factors on People, Property & Economy (I)	Risk Rating (P x I)

Complete Risk Ranking in Template

Once Table 6 has been completed above, complete Table 1-7 in your template. The hazard with the highest risk rating in Table 6 should be listed at the top of Table 1-7 and given a rank of 1; the hazard with the second highest rating should be listed second with a rank of 2; and so on. Two hazards with equal risk ratings should be given the same rank.

It is important to note that this exercise should not override your subjective assessment of relative risk based on your knowledge of the history of natural hazard events in your jurisdiction. If this risk ranking exercise generates results other than what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in the comments at the end of the template. Remember, one of the purposes of this exercise is to support the selection and prioritization of initiatives in your plan. If you identify an initiative with a high priority that mitigates the risk of a hazard you have ranked low, that project will not be competitive in the grant arena.

STATUS OF PREVIOUS PLAN INITIATIVES

In this section, provide a status report of actions recommended in your previous hazard mitigation plan. You must be able to reconcile your original action plan to meet FEMA requirements for plan updates. Enter all the recommended actions from your previous plan in Table 1-8 and put an ✓ in one of the following three columns for each action to indicate its status:

- **Completed**—If the action has been completed, place a check mark in this column and enter a brief explanation in the “Comments” column (e.g., “Action #WC31 was completed by the Public Works Department on 3/12/2009”). Ongoing actions, such as annual outreach projects or maintenance activities, should also be indicated as “Completed,” with a statement about the ongoing nature of the action provided in the “Comments” column (e.g., “Ongoing action, implemented annually by Community Development Department”).
- **Carry Over to Plan Update**—If you did not complete an action and want to carry it over to your updated action plan, place a check mark in this column, and enter an explanatory statement in the comment section (e.g., “Action carried over as Action #WC14 in updated action plan”).
- **Removed; No Longer Feasible**—If you want to remove an action because you have determined that it is no longer feasible, place a check mark in this column. “No longer feasible” means that you have determined that you do not have the capability to implement the action or that the action does not serve the best interest of your jurisdiction. Lack of funding does not mean that it is no longer feasible, unless the sole source of funding for an action is no longer available. Place a comment in the comment section explaining why the action is no longer feasible (e.g., “Action no longer considered feasible due to lack of political support to complete it.”)

HAZARD MITIGATION ACTION PLAN

Action Plan Matrix

Identify the initiatives your jurisdiction would like to pursue with this plan. Refer to the mitigation catalog for mitigation options you might want to consider. Be sure to consider the following factors in your selection of initiatives:

- Select initiatives that are consistent with the overall goals, objectives and vision of the hazard mitigation plan. The approved goals, objectives and vision are included in your tool kit.

- Identify projects where benefits exceed costs.
- Include any project that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the HMGP and PDM (see fact sheet provided). Listing HMGP or PDM as a potential funding source for an ineligible project will be a red flag when this plan goes through review. If you have projects that are not HMGP or PDM grant eligible, but do mitigate part or the entire hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- Although you should identify at least one initiative for your highest ranked risk, a hazard-specific project is not required for every hazard. If you have not identified an earthquake related project, and an earthquake occurs that causes damage in your jurisdiction, you are not discounted from HMGP project grant eligibility.

Complete Table 1-9 for all the initiatives you have identified:

- Enter the initiative number and description.
- Indicate whether the initiative mitigates hazards for new or existing assets.
- Identify the specific hazards the initiative will mitigate.
- Identify by number the mitigation plan objectives that the initiative addresses. The approved goals, objectives and vision are included in your tool kit.
- Indicate who will be the lead in administering the project. This will most likely be your governing body.
- Identify funding sources for the project. If it is a grant, include the funding sources for the cost share. Refer to your fiscal capability assessment (Table 1-2) to identify possible sources of funding.
- Indicate the time line as “short term” (1 to 5 years) or “long term” (5 years or greater).
- Enter “Yes” or “No” to indicate whether this initiative was included in the previous version of this hazard mitigation plan.

Wording Your Initiative Descriptions:

Descriptions of your initiatives need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the project’s scope and impact. The following are typical descriptions for an action plan initiative:

- **Initiative 1**—Address Repetitive Loss properties. Through targeted mitigation, acquire, relocate or retrofit the five repetitive loss structures in the County as funding opportunities become available.
- **Initiative 2**—Perform a non-structural, seismic retrofit of City Hall.
- **Initiative 3**—Acquire floodplain property in the Smith subdivision.
- **Initiative 4**—Enhance the County flood warning capability by joining the NOAA "Storm Ready" program.

Technical assistance will be provided upon request.

Prioritization of Mitigation Initiatives

Complete the information in Table 1-10 as follows:

- **Initiative #**—Indicate the initiative number from Table 1-9.
- **# of Objectives Met**—Enter the number of objectives the initiative will meet.
- **Benefits**—Enter “High,” “Medium” or “Low” as follows:
 - **High:** Project will have an immediate impact on the reduction of risk exposure to life and property.

- **Medium:** Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
- **Low:** Long-term benefits of the project are difficult to quantify in the short term.
- **Costs**—Enter “High,” “Medium” or “Low” as follows:
 - **High:** Would require an increase in revenue via an alternative source (e.g., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.
 - **Medium:** Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
 - **Low:** Possible to fund under existing budget. Project is part of, or can be part of an existing ongoing program.

If you know the estimated cost of a project because it is part of an existing, ongoing program, indicate the amount.

- **Do Benefits Exceed the Cost?**—Enter “Yes” or “No.” This is a qualitative assessment. Enter “Yes” if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter “No” if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Project Grant-Eligible?**—Enter “Yes” or “No.” Refer to the fact sheet on HMGP and PDM.
- **Can Project Be Funded Under Existing Program Budgets?**—Enter “Yes” or “No.” In other words, is this initiative currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Priority**— Enter “High,” “Medium” or “Low” as follows:
 - **High:** Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
 - **Medium:** Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
 - **Low:** Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

This prioritization is a simple review to determine that the initiatives you have identified meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM project grants. The prioritization will identify any projects whose probable benefits will not exceed the probable costs.

Analysis of Mitigation Actions

Complete Table 1-11 by summarizing the mitigation actions by hazard of concern and the following six mitigation types:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates such as EPA's Bio-terrorism assessment requirement for water districts.

ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template.

CHAPTER 1.

INSERT JURISDICTION NAME UPDATE ANNEX

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: Phone #
e-mail Address: email address

Alternate Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: Phone #
e-mail Address: email address

1.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation**—Insert Date of Incorporation
- **Current Population**—Insert Population as of Insert Date of Population Count
- **Population Growth**—Insert Discussion of Population Growth
- **Location and Description**—Insert Description of Location, Surroundings, Key Geographic Features
- **Brief History**—Insert Summary Discussion of Jurisdiction’s History
- **Climate**—Insert Summary Discussion of Climate
- **Governing Body Format**—Insert Summary Description of Governing Body
- **Development Trends**—Insert Summary Description of Development

1.3 CAPABILITY ASSESSMENT

The assessment of the jurisdiction’s legal and regulatory capabilities is presented in Table 1-1. The assessment of the jurisdiction’s fiscal capabilities is presented in Table 1-2. The assessment of the jurisdiction’s administrative and technical capabilities is presented in Table 1-3. Information on the community’s National Flood Insurance Program (NFIP) compliance is presented in Table 1-4. Classifications under various community mitigation programs are presented in Table 1-5.

**TABLE 1-1.
LEGAL AND REGULATORY CAPABILITY**

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code					
Zonings					
Subdivisions					
Stormwater Management					
Post Disaster Recovery					
Real Estate Disclosure					
Growth Management					
Site Plan Review					
Public Health and Safety					
Environmental Protection					
Planning Documents					
General or Comprehensive Plan					
					<i>Is the plan equipped to provide linkage to this mitigation plan?</i> <input type="text" value="Yes or No"/>
Floodplain or Basin Plan					
Stormwater Plan					
Capital Improvement Plan					
					<i>What types of capital facilities does the plan address?</i> <input type="text"/>
					<i>How often is the plan revised/updated?</i> <input type="text"/>
Habitat Conservation Plan					
Economic Development Plan					
Shoreline Management Plan					
Community Wildfire Protection Plan					
Response/Recovery Planning					
Comprehensive Emergency Management Plan					
Threat and Hazard Identification and Risk Assessment					
Terrorism Plan					
Post-Disaster Recovery Plan					
Continuity of Operations Plan					
Public Health Plans					

TABLE 1-2. FISCAL CAPABILITY	
Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	
Capital Improvements Project Funding	
Authority to Levy Taxes for Specific Purposes	
User Fees for Water, Sewer, Gas or Electric Service	
Incur Debt through General Obligation Bonds	
Incur Debt through Special Tax Bonds	
Incur Debt through Private Activity Bonds	
Withhold Public Expenditures in Hazard-Prone Areas	
State Sponsored Grant Programs	
Development Impact Fees for Homebuyers or Developers	
Other	

TABLE 1-3. ADMINISTRATIVE AND TECHNICAL CAPABILITY		
Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices		
Engineers or professionals trained in building or infrastructure construction practices		
Planners or engineers with an understanding of natural hazards		
Staff with training in benefit/cost analysis		
Surveyors		
Personnel skilled or trained in GIS applications		
Scientist familiar with natural hazards in local area		
Emergency manager		
Grant writers		

**TABLE 1-4.
NATIONAL FLOOD INSURANCE PROGRAM COMPLIANCE**

What department is responsible for floodplain management in your community?	
Who is your community’s floodplain administrator? (department/position)	
Do you have any certified floodplain managers on staff in your community?	
What is the date of adoption of your flood damage prevention ordinance?	
When was the most recent Community Assistance Visit or Community Assistance Contact?	
To the best of your knowledge, does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are.	
Do your flood hazard maps adequately address the flood risk within your community? (If no, please state why)	
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of assistance/training is needed?	
Does your community participate in the Community Rating System (CRS)? If so, is your community seeking to improve its CRS Classification? If not, is your community interested in joining the CRS program?	

**TABLE 1-5.
COMMUNITY CLASSIFICATIONS**

	Participating?	Classification	Date Classified
Community Rating System			
Building Code Effectiveness Grading Schedule			
Public Protection			
Storm Ready			
Firewise			
Tsunami Ready (if applicable)			

1.4 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 1-6 lists all past occurrences of natural hazards within the jurisdiction. Repetitive flood loss records are as follows:

- Number of FEMA-Identified Repetitive Loss Properties: **Insert #**
- Number of FEMA-Identified Severe Repetitive Loss Properties: **Insert #**
- Number of Repetitive Flood Loss/Severe Repetitive Loss Properties That Have Been Mitigated: **Insert #**

1.5 HAZARD RISK RANKING

Table 1-7 presents the ranking of the hazards of concern.

Hazard area extent and location maps are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. **Delete this paragraph if no maps available.**

TABLE 1-7. HAZARD RISK RANKING		
Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

1.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 1-9 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 1-10 identifies the priority for each initiative. Table 1-11 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

TABLE 1-9. HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							

**TABLE 1-11.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche						
Dam Failure						
Drought						
Earthquake						
Flood						
Landslide						
Severe Weather						
Tsunami						
Volcano						
Wildfire						

a. See Chapter 1 for explanation of mitigation types.

**1.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/
VULNERABILITY**

Insert text, if any; delete section if not used

1.9 ADDITIONAL COMMENTS

Insert text, if any; delete section if not used

Maps to Be Inserted Here, If Any; Delete this page if no maps

Appendix C2.
Annex Instructions and Templates for Special-Purpose Districts

INSTRUCTIONS FOR COMPLETING SPECIAL-PURPOSE DISTRICT ANNEX TEMPLATE

This document provides instructions for special-purpose districts participating in multi-partner hazard mitigation planning. These instructions are intended for districts that do not have a previously approved hazard mitigation plan.

Assistance in completing the template will be available in the form of a workshop for all planning partners in November and technical assistance as requested and as funding allows. Any questions on completing the template should be directed to:

Rob Flaner
208. 939.4391
Rob.Flaner@TetraTech.com

Fully completed templates must be completed and returned by:

Friday, January 17, 2014.

A NOTE ABOUT FORMATTING

The template for the jurisdiction annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner. Partners who do not have Microsoft Word capability may prepare the document in other formats, and the planning team will convert it to the Word format.

Content should be entered within the yellow, highlighted text that is currently in the template, rather than creating text in another document and pasting it into the template. Text from another source will alter the style and formatting of the document.

The numbering in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of this numbering.

CHAPTER NUMBER AND TITLE

In the chapter title at the top of page 1, type in the complete official name of your jurisdiction (West County Fire Protection District #1, Burgville Flood Protection District, etc.) replacing the yellow, highlighted text.

Special District Annex:

This document provides instructions for completing the jurisdictional annex template for special purpose districts.

Please refer all questions to:

Rob Flaner
208.939.4391

rob.flaner@tetrattech.com

Please complete and return by:

Friday, January 17, 2014

Please email completed template to:

Kristen Gelino
425.482.7801

kristen.gelino@tetrattech.com

Associated Materials:

Along with the annex template and these instructions, you have been provided with other materials with information that is needed for completing the template. Be sure to review these materials before you begin the process of filling in the template:

- SHELDUS historical event data
- Summary-of-loss matrix for the hazard mitigation plan,
- Results from the hazard mitigation plan questionnaire,
- Catalog of funding programs
- Catalog of mitigation alternatives, and
- Fact sheet on Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Grant Program (PDM).

HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

JURISDICTION PROFILE

Narrative Profile

Please provide a brief summary to profile your jurisdiction. Include the purpose of the jurisdiction, the date of inception, the type of organization, the number of employees, the mode of operation (i.e., how operations are funded), the type of governing body, and who has adoptive authority. Describe who the jurisdiction's customers are (if applicable, include number of users or subscribers). Include a geographical description of the service area.

Provide information in a style similar to the example provided in the box at right. This should be information that was not provided in the overall mitigation plan document.

Please be sure to include in this profile description who will assume responsibility for the adoption of the plan and who will oversee the implementation of the plan.

Example Jurisdiction Narrative Profile:

Humboldt Community Services District is a special-purpose district created in 1952 to provide water, sewer, and street lighting to the unincorporated area surrounding the City of Eureka known as Pine Hill & Cutten. The District's designated service areas expanded throughout the years to include other unincorporated areas of Humboldt County known as Myrtle town, Humboldt Hill, Fields Landing, King Salmon, and Freshwater. A five-member elected Board of Directors governs the District. The Board assumes responsibility for the adoption of this plan; the General Manager will oversee its implementation. As of April 30, 2007, the District serves 7,305 water connections and 6,108 sewer connections, with a current staff of 21. Funding comes primarily through rates and revenue bonds.

Summary Information

Complete the bulleted list of summary information as follows:

- **Population Served**—List the estimated population that your jurisdiction provides services to. If you do not know this number directly, create an estimate (e.g., the number of service connections times the average household size for the service area based on Census data).
- **Land Area Served**—Enter the service area of your jurisdiction in acres or square miles.
- **Value of Area Served**—Enter the approximate assessed value of your service area. If you do not have this information, the County should be able to provide a number using the County Assessor's database.
- **Land Area Owned**—Enter the area of property owned by the jurisdiction in acres or square miles.
- **List of Critical Infrastructure/ Equipment Owned by the Jurisdiction**—List all infrastructure and equipment that is critical to your jurisdiction's operations and is located in

a natural hazard risk zone. Briefly describe the item and give its estimated replacement-cost value. Examples are as follows:

- Fire Districts—Apparatus and equipment housed in a facility that is located in a natural hazard risk zone. This is the equipment that is essential for you to deliver services to this area should a natural hazard occur. It is not necessary to provide a detailed inventory of each engine and truck and its contents. A summary will suffice, such as “5 Engines, 2 ladders, and their contents”. Do not list reserve equipment.
- Dike/Flood Control Districts—Miles of levees, pump stations, retention/detention ponds, tide gates, miles of ditches, etc., within natural hazard risk zones.
- Water Districts—Total length of pipe (it is not necessary to specify size and type), pump stations, treatment facilities, dams and reservoirs, within natural hazard risk zones.
- Public Utility Districts—Miles of power line (above ground and underground), generators, power generating sub-stations, miles of pipeline, etc., within natural hazard risk zones.
- School Districts—Anything within natural hazard risk zones, besides school buildings, that is critical for you to operate (e.g., school buses if you own a fleet of school buses).
- **Total Value of Critical Infrastructure/Equipment**—Enter total replacement-cost value of the critical infrastructure and equipment listed above.
- **List of Critical Facilities Owned by the Jurisdiction**—List all buildings and other facilities that are critical to your jurisdiction’s operations and are located in a natural hazard risk zone. Briefly describe the facility and give its estimated replacement-cost value.
- **Total Value of Critical Facilities**— Enter total replacement-cost value of the critical facilities listed above.
- **Current and Anticipated Service Trends**— Enter a brief description on how your jurisdiction’s services are projected to expand in the foreseeable future and why. Note any identified capital improvements needed to meet the projected expansion. Examples are as follows:
 - For a Fire District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land uses will represent an increase in population and thus a projected increase in call volume. Our District is experiencing an average annual increase in call volume of 13 percent.
 - For Dike/Drainage/Flood Control District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land use will result in an increase in impermeable surface within our service area and thus increase the demand on control facilities.
 - For a Water District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land use will represent an increase in the number of housing units within the service area and thus represent an expansion of the district’s delivery network.

APPLICABLE REGULATIONS AND PLAN

List any federal, state, local or district laws, ordinances, codes and policies that govern your jurisdiction that include elements addressing hazard mitigation. Describe how these laws may support or conflict with the mitigation strategies of this plan. List any other plans, studies or other documents that address hazard mitigation issues for your jurisdiction or may allow you to support or enhance actions identified in this plan. Note whether the documents could have a positive or a negative impact on the mitigation strategies of this plan. Some examples of plans that may be relevant include Emergency Response Plan, Continuity of Operations Plan, Recovery Plan, and Capital Improvement Program. “None applicable” is a possible answer for this section.

JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

In Table 1-1, list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction since 1975. Include the date of the event and the estimated dollar amount of damage it caused. Please refer to the SHELDUS historical event data included on your cd.. Potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)
- Citizen input.

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and, therefore, needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and operations. A detailed discussion of the concepts associated with risk ranking is provided in the overall hazard mitigation plan. The instructions below outline steps for assessing risk in your jurisdiction in order to develop results that are to be included in the template.

Determine Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. In Table 1, list the probability of occurrence for each hazard as it pertains to your jurisdiction, along with its probability factor, as follows:

- **High**—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- **Medium**—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- **Low**—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- **None**—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

The probability of occurrence of a hazard event is generally based on past hazard events in an area. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no

damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category.

TABLE 1. HAZARD PROBABILITY OF OCCURRENCE		
Hazard Type	Probability	Probability Factor

Determine Potential Impacts of Each Hazard

The impact of each hazard was divided into three categories: impacts on people, impacts on property, and impacts on your jurisdiction’s operations. These categories were also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on operations was assigned a weighting factor of 1. Steps to assess each type of impact are described below.

Impacts on People

To assess impacts on people, values are assigned based on the percentage of the total *population exposed* to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. In Table 2, list the potential impact of each hazard on people in your jurisdiction, along with its impact factor, as follows:

- **High Impact**—30% or more of the population is exposed to a hazard (Impact Factor = 3)
- **Medium Impact**—15% to 29% of the population is exposed to a hazard (Impact Factor = 2)
- **Low Impact**—14% or less of the population is exposed to the hazard (Impact Factor = 1)
- **No Impact**—None of the population is exposed to a hazard (Impact Factor = 0)

TABLE 2. HAZARD IMPACT ON PEOPLE			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 3)

Impacts on Property

To assess impacts on property, values are assigned based on the percentage of the total *value of buildings, equipment and infrastructure that is exposed* to the hazard event. In Table 3, enter the cost estimates for potential damage to the jurisdiction’s exposed buildings, equipment and infrastructure, taken from the “Summary of Loss” matrix provided with these instructions.

TABLE 3. COST ESTIMATES FOR POTENTIAL DAMAGE TO STRUCTURES	
Hazard type	Estimate of Potential Dollar Losses to Jurisdiction- Owned Facilities Exposed to the Hazard

In Table 4, list the potential impact of each hazard on property in your jurisdiction, along with its impact factor. Determine impact based on damage estimates from Table 3, as follows:

- **High Impact**—30% or more of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 3)

- **Medium Impact**—15% to 29% of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 2)
- **Low Impact**—14% or less of the total assessed property value of facilities, equipment and infrastructure is exposed to the hazard (Impact Factor = 1)
- **No Impact**—None of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 0)

Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 2)

Impacts on the Jurisdiction’s Operations

Impact on operations is assessed based on estimates of *how long it will take your jurisdiction to become 100-percent operable* after a hazard event. The estimated functional downtime for critical facilities has been estimated for most hazards within the planning area. In Table 5, list the potential impact of each hazard on the operations of your jurisdiction, along with its impact factor, as follows:

- High = functional downtime of 365 days or more (Impact Factor = 3)
- Medium = Functional downtime of 180 to 364 days (Impact Factor = 2)
- Low = Functional downtime of 180 days or less (Impact Factor = 1)
- No Impact = No functional downtime is estimated from the hazard (Impact Factor = 0)

You will need to consult the risk assessment for this task. The critical facilities exposed to each hazard have been identified, and the impacts on operability have been estimated for most of the hazards within the planning area. If the functional downtime component has not been provided for a hazard in the risk assessment, consider the impact on operability of that hazard to be low.

TABLE 5. HAZARD IMPACT ON OPERATIONS			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 1)

Determine Risk Rating for Each Hazard

A risk rating for each hazard is determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and operations:

- Risk Rating = Probability Factor x Weighted Impact Factor {people + property + operations}

Using the results developed in Tables 1, 2, 4 and 5, complete Table 6 to calculate a risk rating for each hazard of concern.

TABLE 6. HAZARD RISK RATING			
Hazard Type	Probability Factor (P)	Sum of Weighted Impact Factors on People, Property & Operations (I)	Risk Rating (P x I)

Complete Risk Ranking in Template

Once Table 6 has been completed above, complete Table 1-2 in your template. The hazard with the highest risk rating in Table 6 should be listed at the top of Table 1-2 and given a rank of 1; the hazard with the second highest rating should be listed second with a rank of 2; and so on. Two hazards with equal risk ratings should be given the same rank.

It is important to note that this exercise should not override your subjective assessment of relative risk based on your knowledge of the history of natural hazard events in your jurisdiction. If this risk ranking exercise generates results other than what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in the comments at the end of the template. Remember, one of the purposes of this exercise is to support the selection and prioritization of initiatives in your plan. If you identify an initiative with a high priority that mitigates the risk of a hazard you have ranked low, that project will not be competitive in the grant arena.

HAZARD MITIGATION ACTION PLAN

Action Plan Matrix

Identify the initiatives your jurisdiction would like to pursue with this plan. Refer to the mitigation catalog for mitigation options you might want to consider. Be sure to consider the following factors in your selection of initiatives:

- Select initiatives that are consistent with the overall goals, objectives and guiding principles of the hazard mitigation plan.
- Identify projects where benefits exceed costs.
- Include any project that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the HMGP and PDM (see fact sheet provided). Listing HMGP or PDM as a potential funding source for an ineligible project will be a red flag when this plan goes through review. If you have projects that are not HMGP or PDM grant eligible, but do mitigate part or all of the hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- Although you should identify at least one initiative for your highest ranked risk, a hazard-specific project is not required for every hazard. If you have not identified an earthquake related project, and an earthquake occurs that causes damage in your jurisdiction, you are not discounted from HMGP project grant eligibility.

Wording Your Initiative Descriptions:

Descriptions of your initiatives need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the project's scope and impact. The following are typical descriptions for an action plan initiative:

- **Initiative 1**—Address Repetitive Loss properties. Through targeted mitigation, acquire, relocate or retrofit the five repetitive loss structures in the County as funding opportunities become available.
- **Initiative 2**—Perform a non-structural, seismic retrofit of City Hall.
- **Initiative 3**—Acquire floodplain property in the Smith subdivision.
- **Initiative 4**—Enhance the County flood warning capability by joining the NOAA "Storm Ready" program.

Complete Table 1-3 for all the initiatives you have identified:

- Enter the initiative number and description.
- Indicate whether the initiative mitigates hazards for new or existing assets.
- Identify the specific hazards the initiative will mitigate.

- Identify by number the mitigation plan objectives that the initiative addresses. Approved objectives have been included in your tool kit.
- Indicate who will be the lead in administering the project. This will most likely be your governing body.
- Identify funding sources for the project. If it is a grant, include the funding sources for the cost share.
- Indicate the time line as “short term” (1 to 5 years) or “long term” (5 years or greater).

Technical assistance will provided upon request.

Prioritization of Mitigation Initiatives

Complete the information in Table 1-4 as follows:

- **Initiative #**—Indicate the initiative number from Table 1-3.
- **# of Objectives Met**—Enter the number of objectives the initiative will meet.
- **Benefits**—Enter “High,” “Medium” or “Low” as follows:
 - High: Project will have an immediate impact on the reduction of risk exposure to life and property.
 - Medium: Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
 - Low: Long-term benefits of the project are difficult to quantify in the short term.
- **Costs**—Enter “High,” “Medium” or “Low” as follows:
 - High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.
 - Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
 - Low: Possible to fund under existing budget. Project is part of, or can be part of an existing ongoing program.

If you know the estimated cost of a project because it is part of an existing, ongoing program, indicate the amount.

- **Do Benefits Equal or Exceed the Cost?**—Enter “Yes” or “No.” This is a qualitative assessment. Enter “Yes” if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter “No” if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Project Grant-Eligible?**—Enter “Yes” or “No.” Refer to the fact sheet on HMGP and PDM.
- **Can Project Be Funded Under Existing Program Budgets?**—Enter “Yes” or “No.” In other words, is this initiative currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?

- **Priority**— Enter “High,” “Medium” or “Low” as follows:
 - High: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
 - Medium: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
 - Low: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

This prioritization is a simple review to determine that the initiatives you have identified meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM project grants. The prioritization will identify any projects whose probable benefits will not exceed the probable costs.

Analysis of Mitigation Actions

Complete Table 1-5 summarizing the mitigation actions by hazard of concern and the following six mitigation types:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates such as EPA’s Bio-terrorism assessment requirement for water districts.

ADDITIONAL COMMENTS

Use this section add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template.

As you complete your template, please forward it to:

Kristen Gelino, Tetra Tech, Inc.

425.482.7801

Kristen.Gelino@TetraTech.com

CHAPTER 1.

INSERT JURISDICTION NAME ANNEX

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: Phone #
e-mail Address: email address

Alternate Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: Phone #
e-mail Address: email address

1.2 JURISDICTION PROFILE

Insert Narrative Profile Information, per Instructions

The following is a summary of key information about the jurisdiction:

- **Population Served**—Insert Population as of Insert Date of Population Count
- **Land Area Served**—Insert Area
- **Value of Area Served**—The estimated value of the area served by the jurisdiction is Insert Total Value
- **Land Area Owned**—Insert Area
- **List of Critical Infrastructure/Equipment Owned by the Jurisdiction:**
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
- **Total Value of Critical Infrastructure/Equipment**—The total value of critical infrastructure and equipment owned by the jurisdiction is Insert Total Value
- **List of Critical Facilities Owned by the Jurisdiction:**
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
- **Total Value of Critical Facilities**—The total value of critical facilities owned by the jurisdiction is Insert Total Value
- **Current and Anticipated Service Trends**—Insert Summary Description of Service Trends

1.3 APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

- Insert Name of Code, Ordinance, Policy or Plan

1.5 HAZARD RISK RANKING

Table 1-2 presents the ranking of the hazards of concern.

TABLE 1-2. HAZARD RISK RANKING		
Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

1.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 1-3 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 1-4 identifies the priority for each initiative. Table 1-5 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

TABLE 1-3. HAZARD MITIGATION ACTION PLAN MATRIX						
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						

**TABLE 1-5.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche						
Dam Failure						
Drought						
Earthquake						
Flood						
Landslide						
Severe Weather						
Tsunami						
Volcano						
Wildfire						

a. See Chapter 1 for explanation of mitigation types.

1.7 FUTURE NEEDS TO BETTER UNDERSTAND RISK/ VULNERABILITY

Insert text, if any; delete section if not used

1.8 ADDITIONAL COMMENTS

Insert text, if any; delete section if not used

INSTRUCTIONS FOR COMPLETING SPECIAL-PURPOSE DISTRICT UPDATE ANNEX TEMPLATE

This document provides instructions for special-purpose districts participating in multi-partner hazard mitigation planning. These instructions are intended for districts that currently have a previously approved hazard mitigation plan.

Assistance in completing the template will be available in the form of a workshop for all planning partners in November and technical assistance as requested and as funding allows. Any questions on completing the template should be directed to:

Rob Flaner
208. 939.4391
Rob.Flaner@TetraTech.com

Fully completed templates must be completed and returned by:

Friday, January 17, 2014.

A NOTE ABOUT FORMATTING

The template for the jurisdiction annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner. Partners who do not have Microsoft Word capability may prepare the document in other formats, and the planning team will convert it to the Word format.

Content should be entered within the yellow, highlighted text that is currently in the template, rather than creating text in another document and pasting it into the template. Text from another source will alter the style and formatting of the document.

The numbering in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of this numbering.

CHAPTER NUMBER AND TITLE

In the chapter title at the top of page 1, type in the complete official name of your jurisdiction (West County Fire Protection District #1, Burgville Flood Protection District, etc.) replacing the yellow, highlighted text.

Special District Update Annex:

This document provides instructions for completing the jurisdictional annex template for special purpose districts.

Please refer all questions to:

Rob Flaner
208.939.4391

rob.flaner@tetrattech.com

Please complete and return by:

Friday, January 17, 2014

Please email completed template to:

Kristen Gelino
425.482.7801

kristen.gelino@tetrattech.com

Associated Materials:

Along with the annex template and these instructions, you have been provided with other materials with information that is needed for completing the template. Be sure to review these materials before you begin the process of filling in the template:

- SHELDUS historical event data
- Summary-of-loss matrix for the hazard mitigation plan,
- Results from the hazard mitigation plan questionnaire,
- Catalog of funding programs
- Catalog of mitigation alternatives, and
- Fact sheet on Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Grant Program (PDM).

HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

JURISDICTION PROFILE

Narrative Profile

Please provide a brief summary to profile your jurisdiction. Include the purpose of the jurisdiction, the date of inception, the type of organization, the number of employees, the mode of operation (i.e., how operations are funded), the type of governing body, and who has adoptive authority. Describe who the jurisdiction's customers are (if applicable, include number of users or subscribers). Include a geographical description of the service area.

Provide information in a style similar to the example provided in the box at right. This should be information that was not provided in the overall mitigation plan document.

Please be sure to include in this profile description who will assume responsibility for the adoption of the plan and who will oversee the implementation of the plan.

Example Jurisdiction Narrative Profile:

Humboldt Community Services District is a special-purpose district created in 1952 to provide water, sewer, and street lighting to the unincorporated area surrounding the City of Eureka known as Pine Hill & Cutten. The District's designated service areas expanded throughout the years to include other unincorporated areas of Humboldt County known as Myrtle town, Humboldt Hill, Fields Landing, King Salmon, and Freshwater. A five-member elected Board of Directors governs the District. The Board assumes responsibility for the adoption of this plan; the General Manager will oversee its implementation. As of April 30, 2007, the District serves 7,305 water connections and 6,108 sewer connections, with a current staff of 21. Funding comes primarily through rates and revenue bonds.

Summary Information

Complete the bulleted list of summary information as follows:

- **Population Served**—List the estimated population that your jurisdiction provides services to. If you do not know this number directly, create an estimate (e.g., the number of service connections times the average household size for the service area based on Census data).
- **Land Area Served**—Enter the service area of your jurisdiction in acres or square miles.
- **Value of Area Served**—Enter the approximate assessed value of your service area. If you do not have this information, the County should be able to provide a number using the County Assessor's database.
- **Land Area Owned**—Enter the area of property owned by the jurisdiction in acres or square miles.
- **List of Critical Infrastructure/ Equipment Owned by the Jurisdiction**—List all infrastructure and equipment that is critical to your jurisdiction's operations and is located in

a natural hazard risk zone. Briefly describe the item and give its estimated replacement-cost value. Examples are as follows:

- Fire Districts—Apparatus and equipment housed in a facility that is located in a natural hazard risk zone. This is the equipment that is essential for you to deliver services to this area should a natural hazard occur. It is not necessary to provide a detailed inventory of each engine and truck and its contents. A summary will suffice, such as “5 Engines, 2 ladders, and their contents”. Do not list reserve equipment.
- Dike/Flood Control Districts—Miles of levees, pump stations, retention/detention ponds, tide gates, miles of ditches, etc., within natural hazard risk zones.
- Water Districts—Total length of pipe (it is not necessary to specify size and type), pump stations, treatment facilities, dams and reservoirs, within natural hazard risk zones.
- Public Utility Districts—Miles of power line (above ground and underground), generators, power generating sub-stations, miles of pipeline, etc., within natural hazard risk zones.
- School Districts—Anything within natural hazard risk zones, besides school buildings, that is critical for you to operate (e.g., school buses if you own a fleet of school buses).
- **Total Value of Critical Infrastructure/Equipment**—Enter total replacement-cost value of the critical infrastructure and equipment listed above.
- **List of Critical Facilities Owned by the Jurisdiction**—List all buildings and other facilities that are critical to your jurisdiction’s operations and are located in a natural hazard risk zone. Briefly describe the facility and give its estimated replacement-cost value.
- **Total Value of Critical Facilities**— Enter total replacement-cost value of the critical facilities listed above.
- **Current and Anticipated Service Trends**— Enter a brief description on how your jurisdiction’s services are projected to expand in the foreseeable future and why. Note any identified capital improvements needed to meet the projected expansion. Examples are as follows:
 - For a Fire District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land uses will represent an increase in population and thus a projected increase in call volume. Our District is experiencing an average annual increase in call volume of 13 percent.
 - For Dike/Drainage/Flood Control District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land use will result in an increase in impermeable surface within our service area and thus increase the demand on control facilities.
 - For a Water District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land use will represent an increase in the number of housing units within the service area and thus represent an expansion of the district’s delivery network.

APPLICABLE REGULATIONS AND PLAN

List any federal, state, local or district laws, ordinances, codes and policies that govern your jurisdiction that include elements addressing hazard mitigation. Describe how these laws may support or conflict with the mitigation strategies of this plan. List any other plans, studies or other documents that address hazard mitigation issues for your jurisdiction or may allow you to support or enhance actions identified in this plan. Note whether the documents could have a positive or a negative impact on the mitigation strategies of this plan. Some examples of plans that may be relevant include Emergency Response Plan, Continuity of Operations Plan, Recovery Plan, and Capital Improvement Program. “None applicable” is a possible answer for this section.

JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

In Table 1-1, list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction since 1975. Include the date of the event and the estimated dollar amount of damage it caused. Please refer to the SHELDUS historical event data included on your cd.. Potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)
- Citizen input.

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and, therefore, needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and operations. A detailed discussion of the concepts associated with risk ranking is provided in the overall hazard mitigation plan. The instructions below outline steps for assessing risk in your jurisdiction in order to develop results that are to be included in the template.

Determine Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. In Table 1, list the probability of occurrence for each hazard as it pertains to your jurisdiction, along with its probability factor, as follows:

- **High**—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- **Medium**—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- **Low**—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- **None**—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

The probability of occurrence of a hazard event is generally based on past hazard events in an area. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no

damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category.

TABLE 1. HAZARD PROBABILITY OF OCCURRENCE		
Hazard Type	Probability	Probability Factor

Determine Potential Impacts of Each Hazard

The impact of each hazard was divided into three categories: impacts on people, impacts on property, and impacts on your jurisdiction’s operations. These categories were also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on operations was assigned a weighting factor of 1. Steps to assess each type of impact are described below.

Impacts on People

To assess impacts on people, values are assigned based on the percentage of the total *population exposed* to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. In Table 2, list the potential impact of each hazard on people in your jurisdiction, along with its impact factor, as follows:

- **High Impact**—30% or more of the population is exposed to a hazard (Impact Factor = 3)
- **Medium Impact**—15% to 29% of the population is exposed to a hazard (Impact Factor = 2)
- **Low Impact**—14% or less of the population is exposed to the hazard (Impact Factor = 1)
- **No Impact**—None of the population is exposed to a hazard (Impact Factor = 0)

TABLE 2. HAZARD IMPACT ON PEOPLE			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 3)

Impacts on Property

To assess impacts on property, values are assigned based on the percentage of the total *value of buildings, equipment and infrastructure that is exposed* to the hazard event. In Table 3, enter the cost estimates for potential damage to the jurisdiction’s exposed buildings, equipment and infrastructure, taken from the “Summary of Loss” matrix provided with these instructions.

TABLE 3. COST ESTIMATES FOR POTENTIAL DAMAGE TO STRUCTURES	
Hazard type	Estimate of Potential Dollar Losses to Jurisdiction- Owned Facilities Exposed to the Hazard

In Table 4, list the potential impact of each hazard on property in your jurisdiction, along with its impact factor. Determine impact based on damage estimates from Table 3, as follows:

- **High Impact**—30% or more of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 3)

- **Medium Impact**—15% to 29% of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 2)
- **Low Impact**—14% or less of the total assessed property value of facilities, equipment and infrastructure is exposed to the hazard (Impact Factor = 1)
- **No Impact**—None of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 0)

TABLE 4. HAZARD IMPACT ON PROPERTY			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 2)

Impacts on the Jurisdiction’s Operations

Impact on operations is assessed based on estimates of *how long it will take your jurisdiction to become 100-percent operable* after a hazard event. The estimated functional downtime for critical facilities has been estimated for most hazards within the planning area. In Table 5, list the potential impact of each hazard on the operations of your jurisdiction, along with its impact factor, as follows:

- High = functional downtime of 365 days or more (Impact Factor = 3)
- Medium = Functional downtime of 180 to 364 days (Impact Factor = 2)
- Low = Functional downtime of 180 days or less (Impact Factor = 1)
- No Impact = No functional downtime is estimated from the hazard (Impact Factor = 0)

You will need to consult the risk assessment for this task. The critical facilities exposed to each hazard have been identified, and the impacts on operability have been estimated for most of the hazards within the planning area. If the functional downtime component has not been provided for a hazard in the risk assessment, consider the impact on operability of that hazard to be low.

TABLE 5. HAZARD IMPACT ON OPERATIONS			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 1)

Determine Risk Rating for Each Hazard

A risk rating for each hazard is determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and operations:

- Risk Rating = Probability Factor x Weighted Impact Factor {people + property + operations}

Using the results developed in Tables 1, 2, 4 and 5, complete Table 6 to calculate a risk rating for each hazard of concern.

TABLE 6. HAZARD RISK RATING			
Hazard Type	Probability Factor (P)	Sum of Weighted Impact Factors on People, Property & Operations (I)	Risk Rating (P x I)

Complete Risk Ranking in Template

Once Table 6 has been completed above, complete Table 1-2 in your template. The hazard with the highest risk rating in Table 6 should be listed at the top of Table 1-2 and given a rank of 1; the hazard with the second highest rating should be listed second with a rank of 2; and so on. Two hazards with equal risk ratings should be given the same rank.

It is important to note that this exercise should not override your subjective assessment of relative risk based on your knowledge of the history of natural hazard events in your jurisdiction. If this risk ranking exercise generates results other than what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in the comments at the end of the template. Remember, one of the purposes of this exercise is to support the selection and prioritization of initiatives in your plan. If you identify an initiative with a high priority that mitigates the risk of a hazard you have ranked low, that project will not be competitive in the grant arena.

STATUS OF PREVIOUS PLAN INITIATIVES

In this section, provide a status report of actions recommended in your previous hazard mitigation plan. You must be able to reconcile your original action plan to meet FEMA requirements for plan updates. Enter all the recommended actions from your previous plan in Table 1-3 and put a ✓ in one of the following three columns for each action to indicate its status:

- **Completed**—If the action has been completed, place a check mark in this column and enter a brief explanation in the “Comments” column (e.g., “Action #WC31 was completed by the Public Works Department on 3/12/2009”). Ongoing actions, such as annual outreach projects or maintenance activities, should also be indicated as “Completed,” with a statement about the ongoing nature of the action provided in the “Comments” column (e.g., “Ongoing action, implemented annually by Community Development Department”).
- **Carry Over to Plan Update**—If you did not complete an action and want to carry it over to your updated action plan, place a check mark in this column, and enter an explanatory statement in the comment section (e.g., “Action carried over as Action #WC14 in updated action plan”).
- **Removed; No Longer Feasible**—If you want to remove an action because you have determined that it is no longer feasible, place a check mark in this column. “No longer feasible” means that you have determined that you do not have the capability to implement the action or that the action does not serve the best interest of your jurisdiction. Lack of funding does not mean that it is no longer feasible, unless the sole source of funding for an action is no longer available. Place a comment in the comment section explaining why the action is no longer feasible (e.g., “Action no longer considered feasible due to lack of political support to complete it.”)

HAZARD MITIGATION ACTION PLAN

Action Plan Matrix

Identify the initiatives your jurisdiction would like to pursue with this plan. Refer to the mitigation catalog for mitigation options you might want to consider. Be sure to consider the following factors in your selection of initiatives:

- Select initiatives that are consistent with the overall goals, objectives and guiding principles of the hazard mitigation plan.
- Identify projects where benefits exceed costs.
- Include any project that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the HMGP and PDM (see fact sheet provided). Listing HMGP or PDM as a potential funding source for an ineligible project will be a red flag when this plan goes through review. If you have projects that are not HMGP or PDM grant eligible, but do mitigate part or all of the hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- Although you should identify at least one initiative for your highest ranked risk, a hazard-specific project is not required for every hazard. If you have not identified an earthquake related project, and an earthquake occurs that causes damage in your jurisdiction, you are not discounted from HMGP project grant eligibility.

Wording Your Initiative Descriptions:

Descriptions of your initiatives need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the project's scope and impact. The following are typical descriptions for an action plan initiative:

- **Initiative 1**—Address Repetitive Loss properties. Through targeted mitigation, acquire, relocate or retrofit the five repetitive loss structures in the County as funding opportunities become available.
- **Initiative 2**—Perform a non-structural, seismic retrofit of City Hall.
- **Initiative 3**—Acquire floodplain property in the Smith subdivision.
- **Initiative 4**—Enhance the County flood warning capability by joining the NOAA "Storm Ready" program.

Complete Table 1-4 for all the initiatives you have identified:

- Enter the initiative number and description.
- Indicate whether the initiative mitigates hazards for new or existing assets.
- Identify the specific hazards the initiative will mitigate.
- Identify by number the mitigation plan objectives that the initiative addresses. Approved objectives have been included in your tool kit.
- Indicate who will be the lead in administering the project. This will most likely be your governing body.
- Identify funding sources for the project. If it is a grant, include the funding sources for the cost share.
- Indicate the time line as “short term” (1 to 5 years) or “long term” (5 years or greater).

Technical assistance will provided upon request.

Prioritization of Mitigation Initiatives

Complete the information in Table 1-5 as follows:

- **Initiative #**—Indicate the initiative number from Table 1-4.
- **# of Objectives Met**—Enter the number of objectives the initiative will meet.
- **Benefits**—Enter “High,” “Medium” or “Low” as follows:
 - High: Project will have an immediate impact on the reduction of risk exposure to life and property.

- Medium: Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
- Low: Long-term benefits of the project are difficult to quantify in the short term.
- **Costs**—Enter “High,” “Medium” or “Low” as follows:
 - High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.
 - Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
 - Low: Possible to fund under existing budget. Project is part of, or can be part of an existing ongoing program.

If you know the estimated cost of a project because it is part of an existing, ongoing program, indicate the amount.

- **Do Benefits Exceed the Cost?**—Enter “Yes” or “No.” This is a qualitative assessment. Enter “Yes” if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter “No” if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Project Grant-Eligible?**—Enter “Yes” or “No.” Refer to the fact sheet on HMGP and PDM.
- **Can Project Be Funded Under Existing Program Budgets?**—Enter “Yes” or “No.” In other words, is this initiative currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Priority**— Enter “High,” “Medium” or “Low” as follows:
 - High: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
 - Medium: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
 - Low: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

This prioritization is a simple review to determine that the initiatives you have identified meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM project grants. The prioritization will identify any projects whose probable benefits will not exceed the probable costs.

Analysis of Mitigation Actions

Complete Table 1-6 summarizing the mitigation actions by hazard of concern and the following six mitigation types:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates such as EPA's Bio-terrorism assessment requirement for water districts.

ADDITIONAL COMMENTS

Use this section add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template.

As you complete your template, please forward it to:

Kristen Gelino, Tetra Tech, Inc.

425.482.7801

Kristen.Gelino@TetraTech.com

CHAPTER 1.

INSERT JURISDICTION NAME UPDATE ANNEX

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: Phone #
e-mail Address: email address

Alternate Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: Phone #
e-mail Address: email address

1.2 JURISDICTION PROFILE

Insert Narrative Profile Information, per Instructions

The following is a summary of key information about the jurisdiction:

- **Population Served**—Insert Population as of Insert Date of Population Count
- **Land Area Served**—Insert Area
- **Value of Area Served**—The estimated value of the area served by the jurisdiction is Insert Total Value
- **Land Area Owned**—Insert Area
- **List of Critical Infrastructure/Equipment Owned by the Jurisdiction:**
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
- **Total Value of Critical Infrastructure/Equipment**—The total value of critical infrastructure and equipment owned by the jurisdiction is Insert Total Value
- **List of Critical Facilities Owned by the Jurisdiction:**
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
- **Total Value of Critical Facilities**—The total value of critical facilities owned by the jurisdiction is Insert Total Value
- **Current and Anticipated Service Trends**—Insert Summary Description of Service Trends

1.3 APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

- Insert Name of Code, Ordinance, Policy or Plan

1.5 HAZARD RISK RANKING

Table 1-2 presents the ranking of the hazards of concern.

TABLE 1-2. HAZARD RISK RANKING		
Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

1.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 1-4 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 1-5 identifies the priority for each initiative. Table 1-6 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

TABLE 1-4. HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							

**TABLE 1-6.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche						
Dam Failure						
Drought						
Earthquake						
Flood						
Landslide						
Severe Weather						
Tsunami						
Volcano						
Wildfire						

a. See Chapter 1 for explanation of mitigation types.

1.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/ VULNERABILITY

Insert text, if any; delete section if not used

1.9 ADDITIONAL COMMENTS

Insert text, if any; delete section if not used

Appendix C3.
Annex Instructions and Templates for Fire Districts

INSTRUCTIONS FOR COMPLETING FIRE DISTRICT ANNEX TEMPLATE

This document provides instructions for fire districts participating in multi-partner hazard mitigation planning. These instructions are intended for districts that do not currently have a FEMA approved hazard mitigation plan.

Assistance in completing the template will be available in the form of a workshop for all planning partners in November and technical assistance as requested and as funding allows. Any questions on completing the template should be directed to:

Rob Flaner
208. 939.4391
Rob.Flaner@TetraTech.com

Fully completed templates must be completed and returned by:

Friday, January 17, 2014.

A NOTE ABOUT FORMATTING

The template for the jurisdiction annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner. Partners who do not have Microsoft Word capability may prepare the document in other formats, and the planning team will convert it to the Word format.

Content should be entered within the yellow, highlighted text that is currently in the template, rather than creating text in another document and pasting it into the template. Text from another source will alter the style and formatting of the document.

The numbering in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of the numbering.

CHAPTER NUMBER AND TITLE

In the chapter title at the top of page 1, type in the complete official name of your jurisdiction (West County Fire Protection District #1, Burgville Flood Protection District, etc.) replacing the yellow, highlighted text.

Fire District Annex:

This document provides instructions for completing the jurisdictional annex template for fire districts.

Please refer all questions to:

Rob Flaner
208.939.4391

rob.flaner@tetrattech.com

Please complete and return by:

Friday, January 17, 2014

Please email completed template to:

Kristen Gelino
425.482.7801

kristen.gelino@tetrattech.com

Associated Materials:

Along with the annex template and these instructions, you have been provided with other materials with information that is needed for completing the template. Be sure to review these materials before you begin the process of filling in the template:

- SHELDUS historical event data
- Summary-of-loss matrix for the hazard mitigation plan,
- Results from the hazard mitigation plan questionnaire,
- Catalog of funding programs
- Catalog of mitigation alternatives, and
- Fact sheet on Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Grant Program (PDM).

HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

JURISDICTION PROFILE

Narrative Profile

Please provide a brief summary to profile your jurisdiction. Include the purpose of the jurisdiction, the date of inception, the type of organization, the number of employees, the mode of operation (i.e., how operations are funded), the type of governing body, and who has adoptive authority. Describe who the jurisdiction's customers are (if applicable, include number of users or subscribers). Include a geographical description of the service area.

Provide information in a style similar to the example provided in the box at right. This should be information that was not provided in the overall mitigation plan document.

Please be sure to include who will assume responsibility for the adoption of the plan and who will oversee the implementation of the plan.

Example Jurisdiction Narrative Profile:

Humboldt Community Services District is a special-purpose district created in 1952 to provide water, sewer, and street lighting to the unincorporated area surrounding the City of Eureka known as Pine Hill & Cutten. The District's designated service areas expanded throughout the years to include other unincorporated areas of Humboldt County known as Myrtle town, Humboldt Hill, Fields Landing, King Salmon, and Freshwater. A five-member elected Board of Directors governs the District. The Board assumes responsibility for the adoption of this plan; the General Manager will oversee its implementation. As of April 30, 2007, the District serves 7,305 water connections and 6,108 sewer connections, with a current staff of 21. Funding comes primarily through rates and revenue bonds.

Summary Information

Complete the bulleted list of summary information as follows:

- **Population Served**—List the estimated population that your jurisdiction provides services to. If you do not know this number directly, create an estimate (e.g., the number of service connections times the average household size for the service area based on Census data).
- **Land Area Served**—Enter the service area of your jurisdiction in acres or square miles.
- **Value of Area Served**—Enter the approximate assessed value of your service area. If you do not have this information, the County should be able to provide a number using the County Assessor's database.
- **Land Area Owned**—Enter the area of property owned by the jurisdiction in acres or square miles.
- **List of Critical Infrastructure/ Equipment Owned by the Jurisdiction**—List all infrastructure and equipment that is critical to your jurisdiction's operations and is located in a natural hazard risk zone. Briefly describe the item and give its estimated replacement-cost value. Example is as follows:

- Fire Districts—Apparatus and equipment housed in a facility that is located in a natural hazard risk zone. This is the equipment that is essential for you to deliver services to this area should a natural hazard occur. It is not necessary to provide a detailed inventory of each engine and truck and its contents. A summary will suffice, such as “5 Engines, 2 ladders, and their contents”. Do not list reserve equipment.
- **Total Value of Critical Infrastructure/Equipment**—Enter total replacement-cost value of the critical infrastructure and equipment listed above.
- **List of Critical Facilities Owned by the Jurisdiction**—List all buildings and other facilities that are critical to your jurisdiction’s operations and are located in a natural hazard risk zone. Briefly describe the facility and give its estimated replacement-cost value.
- **Total Value of Critical Facilities**— Enter total replacement-cost value of the critical facilities listed above.
- **Current and Anticipated Service Trends**— Enter a brief description on how your jurisdiction’s services are projected to expand in the foreseeable future and why. Note any identified capital improvements needed to meet the projected expansion. Examples are as follows:
 - For a Fire District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land uses will represent an increase in population and thus a projected increase in call volume. Our District is experiencing an average annual increase in call volume of 13 percent.

APPLICABLE REGULATIONS AND PLAN

List any federal, state, local or district laws, ordinances, codes and policies that govern your jurisdiction that include elements addressing hazard mitigation. Describe how these laws may support or conflict with the mitigation strategies of this plan. List any other plans, studies or other documents that address hazard mitigation issues for your jurisdiction or may allow you to support or enhance actions identified in this plan. Note whether the documents could have a positive or a negative impact on the mitigation strategies of this plan. Some examples of plans that may be relevant include Emergency Response Plan, Continuity of Operations Plan, Recovery Plan, and Capital Improvement Program. “None applicable” is a possible answer for this section.

CLASSIFICATION IN HAZARD MITIGATION PROGRAMS

If you know your jurisdiction’s Public Protection number, please enter it under the “Classification” column in Table 1-1. If you do not know if your jurisdiction participates in this program or do not know the number, please leave it blank and the Planning Team will provide this information for you. No entries are needed for the other items in Table 1-1.

JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

In Table 1-2, list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction since 1975. Include the date of the event and the estimated dollar amount of damage it caused. Please refer to the SHELDUS historical event data included on your dvd. Potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives

- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)
- Citizen input.

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and, therefore, needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and operations. A detailed discussion of the concepts associated with risk ranking is provided in the overall hazard mitigation plan. The instructions below outline steps for assessing risk in your jurisdiction in order to develop results that are to be included in the template.

Determine Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. In Table 1, list the probability of occurrence for each hazard as it pertains to your jurisdiction, along with its probability factor, as follows:

- **High**—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- **Medium**—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- **Low**—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- **None**—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

Hazard Type	Probability	Probability Factor

The probability of occurrence of a hazard event is generally based on past hazard events in an area. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category.

Determine Potential Impacts of Each Hazard

The impact of each hazard was divided into three categories: impacts on people, impacts on property, and impacts on your jurisdiction’s operations. These categories were also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on operations was assigned a weighting factor of 1. Steps to assess each type of impact are described below.

Impacts on People

To assess impacts on people, values are assigned based on the percentage of the total *population exposed* to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. In Table 2, list the potential impact of each hazard on people in your jurisdiction, along with its impact factor, as follows:

- **High Impact**—30% or more of the population is exposed to a hazard (Impact Factor = 3)
- **Medium Impact**—15% to 29% of the population is exposed to a hazard (Impact Factor = 2)
- **Low Impact**—14% or less of the population is exposed to the hazard (Impact Factor = 1)
- **No Impact**—None of the population is exposed to a hazard (Impact Factor = 0)

TABLE 2. HAZARD IMPACT ON PEOPLE			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 3)

Impacts on Property

To assess impacts on property, values are assigned based on the percentage of the total *value of buildings, equipment and infrastructure that is exposed* to the hazard event. In Table 3, enter the cost estimates for potential damage to the jurisdiction’s exposed buildings, equipment and infrastructure, taken from the “Summary of Loss” matrix provided with these instructions.

TABLE 3. COST ESTIMATES FOR POTENTIAL DAMAGE TO STRUCTURES	
Hazard type	Estimate of Potential Dollar Losses to Jurisdiction- Owned Facilities Exposed to the Hazard

In Table 4, list the potential impact of each hazard on property in your jurisdiction, along with its impact factor. Determine impact based on damage estimates from Table 3, as follows:

- **High Impact**—30% or more of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 3)
- **Medium Impact**—15% to 29% of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 2)
- **Low Impact**—14% or less of the total assessed property value of facilities, equipment and infrastructure is exposed to the hazard (Impact Factor = 1)
- **No Impact**—None of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 0)

TABLE 4. HAZARD IMPACT ON PROPERTY			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 2)

Impacts on the Jurisdiction’s Operations

Impact on operations is assessed based on estimates of *how long it will take your jurisdiction to become 100-percent operable* after a hazard event. The estimated functional downtime for critical facilities has been estimated for most hazards within the planning area. In Table 5, list the potential impact of each hazard on the operations of your jurisdiction, along with its impact factor, as follows:

- High = functional downtime of 365 days or more (Impact Factor = 3)
- Medium = Functional downtime of 180 to 364 days (Impact Factor = 2)
- Low = Functional downtime of 180 days or less (Impact Factor = 1)
- No Impact = No functional downtime is estimated from the hazard (Impact Factor = 0)

TABLE 5. HAZARD IMPACT ON OPERATIONS			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 1)

You will need to consult the risk assessment for this task. The critical facilities exposed to each hazard have been identified, and the impacts on operability have been estimated for most of the hazards within the planning area. If the functional downtime component has not been provided for a hazard in the risk assessment, consider the impact on operability of that hazard to be low.

Determine Risk Rating for Each Hazard

A risk rating for each hazard is determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and operations:

- Risk Rating = Probability Factor x Weighted Impact Factor {people + property + operations}

Using the results developed in Tables 1, 2, 4 and 5, complete Table 6 to calculate a risk rating for each hazard of concern.

TABLE 6. HAZARD RISK RATING			
Hazard Type	Probability Factor (P)	Sum of Weighted Impact Factors on People, Property & Operations (I)	Risk Rating (P x I)

Complete Risk Ranking in Template

Once Table 6 has been completed above, complete Table 1-3 in your template. The hazard with the highest risk rating in Table 6 should be listed at the top of Table 1-3 and given a rank of 1; the hazard with the second highest rating should be listed second with a rank of 2; and so on. Two hazards with equal risk ratings should be given the same rank.

It is important to note that this exercise should not override your subjective assessment of relative risk based on your knowledge of the history of natural hazard events in your jurisdiction. If this risk ranking exercise generates results other than what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in the comments at the end of the template. Remember, one of the purposes of this exercise is to support the selection and prioritization of initiatives in your plan. If you identify an initiative with a high priority that mitigates the risk of a hazard you have ranked low, that project will not be competitive in the grant arena.

HAZARD MITIGATION ACTION PLAN

Action Plan Matrix

Identify the initiatives your jurisdiction would like to pursue with this plan. Refer to the mitigation catalog for mitigation options you might want to consider. Be sure to consider the following factors in your selection of initiatives:

- Select initiatives that are consistent with the overall goals, objectives and guiding principles of the hazard mitigation plan.
- Identify projects where benefits exceed costs.
- Include any project that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the HMGP and PDM (see fact sheet provided). Listing HMGP or PDM as a potential funding source for an ineligible project will be a red flag when this plan goes through review. If you have projects that are not HMGP or PDM grant eligible, but do mitigate part or all of the hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- Although you should identify at least one initiative for your highest ranked risk, a hazard-specific project is not required for every hazard. If you have not identified an earthquake related project, and an earthquake occurs that causes damage in your jurisdiction, you are not discounted from HMGP project grant eligibility.

Complete Table 1-4 for all the initiatives you have identified:

- Enter the initiative number and description.
- Indicate whether the initiative mitigates hazards for new or existing assets.
- Identify the specific hazards the initiative will mitigate.
- Identify by number the mitigation plan objectives that the initiative addresses. Approved objectives have been included in your tool kit.
- Indicate who will be the lead in administering the project. This will most likely be your governing body.
- Identify funding sources for the project. If it is a grant, include the funding sources for the cost share.
- Indicate the time line as “short term” (1 to 5 years) or “long term” (5 years or greater).

Technical assistance will provided upon request.

Prioritization of Mitigation Initiatives

Complete the information in Table 1-5 as follows:

- **Initiative #**—Indicate the initiative number from Table 1-4.

Wording Your Initiative Descriptions:

Descriptions of your initiatives need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the project’s scope and impact. The following are typical descriptions for an action plan initiative:

- **Initiative 1**—Address Repetitive Loss properties. Through targeted mitigation, acquire, relocate or retrofit the five repetitive loss structures in the County as funding opportunities become available.
- **Initiative 2**—Perform a non-structural, seismic retrofit of City Hall.
- **Initiative 3**—Acquire floodplain property in the Smith subdivision.
- **Initiative 4**—Enhance the County flood warning capability by joining the NOAA "Storm Ready" program.

- **# of Objectives Met**—Enter the number of objectives the initiative will meet.
- **Benefits**—Enter “High,” “Medium” or “Low” as follows:
 - High: Project will have an immediate impact on the reduction of risk exposure to life and property.
 - Medium: Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
 - Low: Long-term benefits of the project are difficult to quantify in the short term.
- **Costs**—Enter “High,” “Medium” or “Low” as follows:
 - High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.
 - Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
 - Low: Possible to fund under existing budget. Project is part of, or can be part of an existing ongoing program.

If you know the estimated cost of a project because it is part of an existing, ongoing program, indicate the amount.

- **Do Benefits Equal or Exceed the Cost?**—Enter “Yes” or “No.” This is a qualitative assessment. Enter “Yes” if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter “No” if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Project Grant-Eligible?**—Enter “Yes” or “No.” Refer to the fact sheet on HMGP and PDM.
- **Can Project Be Funded Under Existing Program Budgets?**—Enter “Yes” or “No.” In other words, is this initiative currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Priority**— Enter “High,” “Medium” or “Low” as follows:
 - High: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
 - Medium: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
 - Low: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

This prioritization is a simple review to determine that the initiatives you have identified meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM project grants. The prioritization will identify any projects whose probable benefits will not exceed the probable costs.

Analysis of Mitigation Actions

Complete Table 1-6 summarizing the mitigation actions by hazard of concern and the following six mitigation types:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates such as EPA's Bio-terrorism assessment requirement for water districts.

ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template.

As you complete your template, please forward it to:

Kristen Gelino, Tetra Tech, Inc.

425.482.7801

Kristen.Gelino@TetraTech.com

CHAPTER 1.

INSERT JURISDICTION NAME ANNEX

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: Phone #
e-mail Address: email address

Alternate Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: Phone #
e-mail Address: email address

1.2 JURISDICTION PROFILE

Insert Narrative Profile Information, per Instructions

The following is a summary of key information about the jurisdiction:

- **Population Served**—Insert Population as of Insert Date of Population Count
- **Land Area Served**—Insert Area
- **Value of Area Served**—The estimated value of the area served by the jurisdiction is Insert Total Value
- **Land Area Owned**—Insert Area
- **List of Critical Infrastructure/Equipment Owned by the Jurisdiction:**
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
- **Total Value of Critical Infrastructure/Equipment**—The total value of critical infrastructure and equipment owned by the jurisdiction is Insert Total Value
- **List of Critical Facilities Owned by the Jurisdiction:**
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
- **Total Value of Critical Facilities**—The total value of critical facilities owned by the jurisdiction is Insert Total Value
- **Current and Anticipated Service Trends**—Insert Summary Description of Service Trends

1.3 APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

- Insert Name of Code, Ordinance, Policy or Plan

1.6 HAZARD RISK RANKING

Table 1-3 presents the ranking of the hazards of concern.

TABLE 1-3. HAZARD RISK RANKING		
Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

1.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 1-4 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 1-5 identifies the priority for each initiative. Table 1-6 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

TABLE 1-4. HAZARD MITIGATION ACTION PLAN MATRIX						
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						
Initiative #—Description						

**TABLE 1-6.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche						
Dam Failure						
Drought						
Earthquake						
Flood						
Landslide						
Severe Weather						
Tsunami						
Volcano						
Wildfire						

a. See Chapter 1 for explanation of mitigation types.

**1.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/
VULNERABILITY**

Insert text, if any; delete section if not used

1.9 ADDITIONAL COMMENTS

Insert text, if any; delete section if not used

INSTRUCTIONS FOR COMPLETING FIRE DISTRICT UPDATE ANNEX TEMPLATE

This document provides instructions for fire districts participating in multi-partner hazard mitigation planning. These instructions are intended for districts that currently have a previously approved hazard mitigation plan.

Assistance in completing the template will be available in the form of a workshop for all planning partners in November and technical assistance as requested and as funding allows. Any questions on completing the template should be directed to:

Rob Flaner
208. 939.4391
Rob.Flaner@TetraTech.com

Fully completed templates must be completed and returned by Friday, January 17, 2014.

A NOTE ABOUT FORMATTING

The template for the jurisdiction annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner. Partners who do not have Microsoft Word capability may prepare the document in other formats, and the planning team will convert it to the Word format.

Content should be entered within the yellow, highlighted text that is currently in the template, rather than creating text in another document and pasting it into the template. Text from another source will alter the style and formatting of the document.

The numbering in the document will be updated when completed annexes are combined into the final document. Please do not adjust any of this numbering.

CHAPTER NUMBER AND TITLE

In the chapter title at the top of page 1, type in the complete official name of your jurisdiction (West County Fire Protection District #1, Burgville Flood Protection District, etc.) replacing the yellow, highlighted text.

Fire District Update Annex:

This document provides instructions for completing the jurisdictional annex template for fire districts.

Please refer all questions to:

Rob Flaner
208.939.4391

rob.flaner@tetrattech.com

Please complete and return by:

Friday, January 17, 2014

Please email completed template to:

Kristen Gelino
425.482.7801

kristen.gelino@tetrattech.com

Associated Materials:

Along with the annex template and these instructions, you have been provided with other materials with information that is needed for completing the template. Be sure to review these materials before you begin the process of filling in the template:

- SHELDUS historical event data
- Summary-of-loss matrix for the hazard mitigation plan,
- Results from the hazard mitigation plan questionnaire,
- Catalog of funding programs
- Catalog of mitigation alternatives, and
- Fact sheet on Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Grant Program (PDM).

HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

JURISDICTION PROFILE

Narrative Profile

Please provide a brief summary to profile your jurisdiction. Include the purpose of the jurisdiction, the date of inception, the type of organization, the number of employees, the mode of operation (i.e., how operations are funded), the type of governing body, and who has adoptive authority. Describe who the jurisdiction's customers are (if applicable, include number of users or subscribers). Include a geographical description of the service area.

Provide information in a style similar to the example provided in the box at right. This should be information that was not provided in the overall mitigation plan document.

Please be sure to include in this profile description who will assume responsibility for the adoption of the plan and who will oversee the implementation of the plan.

Example Jurisdiction Narrative Profile:

Humboldt Community Services District is a special-purpose district created in 1952 to provide water, sewer, and street lighting to the unincorporated area surrounding the City of Eureka known as Pine Hill & Cutten. The District's designated service areas expanded throughout the years to include other unincorporated areas of Humboldt County known as Myrtle town, Humboldt Hill, Fields Landing, King Salmon, and Freshwater. A five-member elected Board of Directors governs the District. The Board assumes responsibility for the adoption of this plan; the General Manager will oversee its implementation. As of April 30, 2007, the District serves 7,305 water connections and 6,108 sewer connections, with a current staff of 21. Funding comes primarily through rates and revenue bonds.

Summary Information

Complete the bulleted list of summary information as follows:

- **Population Served**—List the estimated population that your jurisdiction provides services to. If you do not know this number directly, create an estimate (e.g., the number of service connections times the average household size for the service area based on Census data).
- **Land Area Served**—Enter the service area of your jurisdiction in acres or square miles.
- **Value of Area Served**—Enter the approximate assessed value of your service area. If you do not have this information, the County should be able to provide a number using the County Assessor's database.
- **Land Area Owned**—Enter the area of property owned by the jurisdiction in acres or square miles.
- **List of Critical Infrastructure/ Equipment Owned by the Jurisdiction**—List all infrastructure and equipment that is critical to your jurisdiction's operations and is located in a natural hazard risk zone. Briefly describe the item and give its estimated replacement-cost value. Examples are as follows:

- Fire Districts—Apparatus and equipment housed in a facility that is located in a natural hazard risk zone. This is the equipment that is essential for you to deliver services to this area should a natural hazard occur. It is not necessary to provide a detailed inventory of each engine and truck and its contents. A summary will suffice, such as “5 Engines, 2 ladders, and their contents”. Do not list reserve equipment.
- **Total Value of Critical Infrastructure/Equipment**—Enter total replacement-cost value of the critical infrastructure and equipment listed above.
- **List of Critical Facilities Owned by the Jurisdiction**—List all buildings and other facilities that are critical to your jurisdiction’s operations and are located in a natural hazard risk zone. Briefly describe the facility and give its estimated replacement-cost value.
- **Total Value of Critical Facilities**— Enter total replacement-cost value of the critical facilities listed above.
- **Current and Anticipated Service Trends**— Enter a brief description on how your jurisdiction’s services are projected to expand in the foreseeable future and why. Note any identified capital improvements needed to meet the projected expansion. Examples are as follows:
 - For a Fire District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land uses will represent an increase in population and thus a projected increase in call volume. Our District is experiencing an average annual increase in call volume of 13 percent.

APPLICABLE REGULATIONS AND PLAN

List any federal, state, local or district laws, ordinances, codes and policies that govern your jurisdiction that include elements addressing hazard mitigation. Describe how these laws may support or conflict with the mitigation strategies of this plan. List any other plans, studies or other documents that address hazard mitigation issues for your jurisdiction or may allow you to support or enhance actions identified in this plan. Note whether the documents could have a positive or a negative impact on the mitigation strategies of this plan. Some examples of plans that may be relevant include Emergency Response Plan, Continuity of Operations Plan, Recovery Plan, and Capital Improvement Program. “None applicable” is a possible answer for this section.

CLASSIFICATION IN HAZARD MITIGATION PROGRAMS

If you know your jurisdiction’s Public Protection number, please enter it under the “Classification” column in Table 1-1. If you do not know if your jurisdiction participates in this program or do not know the number, please leave it blank and the Planning Team will provide this information for you. No entries are needed for the other items in Table 1-1.

JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

In Table 1-2, list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction since 1975. Include the date of the event and the estimated dollar amount of damage it caused. Please refer to the SHELDUS historical event data included on your cd.. Potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives

- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)
- Citizen input.

HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and, therefore, needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and operations. A detailed discussion of the concepts associated with risk ranking is provided in the overall hazard mitigation plan. The instructions below outline steps for assessing risk in your jurisdiction in order to develop results that are to be included in the template.

Determine Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. In Table 1, list the probability of occurrence for each hazard as it pertains to your jurisdiction, along with its probability factor, as follows:

- **High**—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- **Medium**—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- **Low**—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- **None**—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

TABLE 1. HAZARD PROBABILITY OF OCCURRENCE		
Hazard Type	Probability	Probability Factor

The probability of occurrence of a hazard event is generally based on past hazard events in an area. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no

damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category.

Determine Potential Impacts of Each Hazard

The impact of each hazard was divided into three categories: impacts on people, impacts on property, and impacts on your jurisdiction’s operations. These categories were also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on operations was assigned a weighting factor of 1. Steps to assess each type of impact are described below.

Impacts on People

To assess impacts on people, values are assigned based on the percentage of the total *population exposed* to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. In Table 2, list the potential impact of each hazard on people in your jurisdiction, along with its impact factor, as follows:

- **High Impact**—30% or more of the population is exposed to a hazard (Impact Factor = 3)
- **Medium Impact**—15% to 29% of the population is exposed to a hazard (Impact Factor = 2)
- **Low Impact**—14% or less of the population is exposed to the hazard (Impact Factor = 1)
- **No Impact**—None of the population is exposed to a hazard (Impact Factor = 0)

Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 3)

Impacts on Property

To assess impacts on property, values are assigned based on the percentage of the total *value of buildings, equipment and infrastructure that is exposed* to the hazard event. In Table 3, enter the cost estimates for potential damage to the jurisdiction’s exposed buildings, equipment and infrastructure, taken from the “Summary of Loss” matrix provided with these instructions.

TABLE 3. COST ESTIMATES FOR POTENTIAL DAMAGE TO STRUCTURES	
Hazard type	Estimate of Potential Dollar Losses to Jurisdiction- Owned Facilities Exposed to the Hazard

In Table 4, list the potential impact of each hazard on property in your jurisdiction, along with its impact factor. Determine impact based on damage estimates from Table 3, as follows:

- **High Impact**—30% or more of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 3)
- **Medium Impact**—15% to 29% of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 2)
- **Low Impact**—14% or less of the total assessed property value of facilities, equipment and infrastructure is exposed to the hazard (Impact Factor = 1)
- **No Impact**—None of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 0)

TABLE 4. HAZARD IMPACT ON PROPERTY			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 2)

Impacts on the Jurisdiction’s Operations

Impact on operations is assessed based on estimates of *how long it will take your jurisdiction to become 100-percent operable* after a hazard event. The estimated functional downtime for critical facilities has been estimated for most hazards within the planning area. In Table 5, list the potential impact of each hazard on the operations of your jurisdiction, along with its impact factor, as follows:

- High = functional downtime of 365 days or more (Impact Factor = 3)
- Medium = Functional downtime of 180 to 364 days (Impact Factor = 2)
- Low = Functional downtime of 180 days or less (Impact Factor = 1)
- No Impact = No functional downtime is estimated from the hazard (Impact Factor = 0)

TABLE 5. HAZARD IMPACT ON OPERATIONS			
Hazard Type	Impact	Impact Factor	Weighted Impact Factor (Unweighted Factor x 1)

You will need to consult the risk assessment for this task. The critical facilities exposed to each hazard have been identified, and the impacts on operability have been estimated for most of the hazards within the planning area. If the functional downtime component has not been provided for a hazard in the risk assessment, consider the impact on operability of that hazard to be low.

Determine Risk Rating for Each Hazard

A risk rating for each hazard is determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and operations:

- Risk Rating = Probability Factor x Weighted Impact Factor {people + property + operations }

Using the results developed in Tables 1, 2, 4 and 5, complete Table 6 to calculate a risk rating for each hazard of concern.

TABLE 6. HAZARD RISK RATING			
Hazard Type	Probability Factor (P)	Sum of Weighted Impact Factors on People, Property & Operations (I)	Risk Rating (P x I)

Complete Risk Ranking in Template

Once Table 6 has been completed above, complete Table 1-3 in your template. The hazard with the highest risk rating in Table 6 should be listed at the top of Table 1-3 and given a rank of 1; the hazard with the second highest rating should be listed second with a rank of 2; and so on. Two hazards with equal risk ratings should be given the same rank.

It is important to note that this exercise should not override your subjective assessment of relative risk based on your knowledge of the history of natural hazard events in your jurisdiction. If this risk ranking exercise generates results other than what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in the comments at the end of the template. Remember, one of the purposes of this exercise is to support the selection and prioritization of initiatives in your plan. If you identify an initiative with a high priority that mitigates the risk of a hazard you have ranked low, that project will not be competitive in the grant arena.

STATUS OF PREVIOUS PLAN INITIATIVES

In this section, provide a status report of actions recommended in your previous hazard mitigation plan. You must be able to reconcile your original action plan to meet FEMA requirements for plan updates. Enter all the recommended actions from your previous plan in Table 1-4 and put a ✓ in one of the following three columns for each action to indicate its status:

- Completed**—If the action has been completed, place a check mark in this column and enter a brief explanation in the “Comments” column (e.g., “Action #WC31 was completed by the Public Works Department on 3/12/2009”). Ongoing actions, such as annual outreach projects or maintenance activities, should also be indicated as “Completed,” with a statement about the ongoing nature of the action provided in the “Comments” column (e.g., “Ongoing action, implemented annually by Community Development Department”).
- Carry Over to Plan Update**—If you did not complete an action and want to carry it over to your updated action plan, place a check mark in this column, and enter an explanatory statement in the comment section (e.g., “Action carried over as Action #WC14 in updated action plan”).

- **Removed; No Longer Feasible**—If you want to remove an action because you have determined that it is no longer feasible, place a check mark in this column. “No longer feasible” means that you have determined that you do not have the capability to implement the action or that the action does not serve the best interest of your jurisdiction. Lack of funding does not mean that it is no longer feasible, unless the sole source of funding for an action is no longer available. Place a comment in the comment section explaining why the action is no longer feasible (e.g., “Action no longer considered feasible due to lack of political support to complete it.”)

HAZARD MITIGATION ACTION PLAN

Action Plan Matrix

Identify the initiatives your jurisdiction would like to pursue with this plan. Refer to the mitigation catalog for mitigation options you might want to consider. Be sure to consider the following factors in your selection of initiatives:

- Select initiatives that are consistent with the overall goals, objectives and guiding principles of the hazard mitigation plan.
- Identify projects where benefits exceed costs.
- Include any project that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the HMGP and PDM (see fact sheet provided). Listing HMGP or PDM as a potential funding source for an ineligible project will be a red flag when this plan goes through review. If you have projects that are not HMGP or PDM grant eligible, but do mitigate part or all of the hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- Although you should identify at least one initiative for your highest ranked risk, a hazard-specific project is not required for every hazard. If you have not identified an earthquake related project, and an earthquake occurs that causes damage in your jurisdiction, you are not discounted from HMGP project grant eligibility.

Wording Your Initiative Descriptions:

Descriptions of your initiatives need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the project’s scope and impact. The following are typical descriptions for an action plan initiative:

- **Initiative 1**—Address Repetitive Loss properties. Through targeted mitigation, acquire, relocate or retrofit the five repetitive loss structures in the County as funding opportunities become available.
- **Initiative 2**—Perform a non-structural, seismic retrofit of City Hall.
- **Initiative 3**—Acquire floodplain property in the Smith subdivision.
- **Initiative 4**—Enhance the County flood warning capability by joining the NOAA "Storm Ready" program.

Complete Table 1-5 for all the initiatives you have identified:

- Enter the initiative number and description.
- Indicate whether the initiative mitigates hazards for new or existing assets.
- Identify the specific hazards the initiative will mitigate.
- Identify by number the mitigation plan objectives that the initiative addresses. Approved objectives have been included in your tool kit.
- Indicate who will be the lead in administering the project. This will most likely be your governing body.
- Identify funding sources for the project. If it is a grant, include the funding sources for the cost share.

- Indicate the time line as “short term” (1 to 5 years) or “long term” (5 years or greater).

Technical assistance will provided upon request.

Prioritization of Mitigation Initiatives

Complete the information in Table 1-6 as follows:

- **Initiative #**—Indicate the initiative number from Table 1-5.
- **# of Objectives Met**—Enter the number of objectives the initiative will meet.
- **Benefits**—Enter “High,” “Medium” or “Low” as follows:
 - High: Project will have an immediate impact on the reduction of risk exposure to life and property.
 - Medium: Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
 - Low: Long-term benefits of the project are difficult to quantify in the short term.
- **Costs**—Enter “High,” “Medium” or “Low” as follows:
 - High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.
 - Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
 - Low: Possible to fund under existing budget. Project is part of, or can be part of an existing ongoing program.

If you know the estimated cost of a project because it is part of an existing, ongoing program, indicate the amount.

- **Do Benefits Exceed the Cost?**—Enter “Yes” or “No.” This is a qualitative assessment. Enter “Yes” if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter “No” if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- **Is the Project Grant-Eligible?**—Enter “Yes” or “No.” Refer to the fact sheet on HMGP and PDM.
- **Can Project Be Funded Under Existing Program Budgets?**—Enter “Yes” or “No.” In other words, is this initiative currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- **Priority**— Enter “High,” “Medium” or “Low” as follows:
 - High: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
 - Medium: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.

- Low: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

This prioritization is a simple review to determine that the initiatives you have identified meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM project grants. The prioritization will identify any projects whose probable benefits will not exceed the probable costs.

Analysis of Mitigation Actions

Complete Table 1-7 summarizing the mitigation actions by hazard of concern and the following six mitigation types:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates such as EPA's Bio-terrorism assessment requirement for water districts.

ADDITIONAL COMMENTS

Use this section add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template.

As you complete your template, please forward it to:

Kristen Gelino, Tetra Tech, Inc.
425.482.7801
Kristen.Gelino@TetraTech.com

CHAPTER 1.

INSERT JURISDICTION NAME UPDATE ANNEX

1.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: Phone #
e-mail Address: email address

Alternate Point of Contact

Name, Title
Street Address
City, State ZIP
Telephone: Phone #
e-mail Address: email address

1.2 JURISDICTION PROFILE

Insert Narrative Profile Information, per Instructions

The following is a summary of key information about the jurisdiction:

- **Population Served**—Insert Population as of Insert Date of Population Count
- **Land Area Served**—Insert Area
- **Value of Area Served**—The estimated value of the area served by the jurisdiction is Insert Total Value
- **Land Area Owned**—Insert Area
- **List of Critical Infrastructure/Equipment Owned by the Jurisdiction:**
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
- **Total Value of Critical Infrastructure/Equipment**—The total value of critical infrastructure and equipment owned by the jurisdiction is Insert Total Value
- **List of Critical Facilities Owned by the Jurisdiction:**
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
 - Insert Description of Item Insert Value of Item
- **Total Value of Critical Facilities**—The total value of critical facilities owned by the jurisdiction is Insert Total Value
- **Current and Anticipated Service Trends**—Insert Summary Description of Service Trends

1.3 APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

- Insert Name of Code, Ordinance, Policy or Plan



1.6 HAZARD RISK RANKING

Table 1-3 presents the ranking of the hazards of concern.

TABLE 1-3. HAZARD RISK RANKING		
Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

1.8 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 1-5 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 1-6 identifies the priority for each initiative. Table 1-7 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

TABLE 1-5. HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							
Initiative #—Description							

**TABLE 1-7.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche						
Dam Failure						
Drought						
Earthquake						
Flood						
Landslide						
Severe Weather						
Tsunami						
Volcano						
Wildfire						

a. See Chapter 1 for explanation of mitigation types.

1.9 FUTURE NEEDS TO BETTER UNDERSTAND RISK/ VULNERABILITY

Insert text, if any; delete section if not used

1.10 ADDITIONAL COMMENTS

Insert text, if any; delete section if not used