

# CHAPTER 9. CITY OF MARYSVILLE ANNEX

## 9.1 HAZARD MITIGATION PLAN POINT OF CONTACT

### Primary Point of Contact

John Cowling, PE, Asst. City Engineer  
80 Columbia Ave.  
Marysville, WA 98270  
Telephone: 360-363-8281  
e-mail: jcowling@marysvillewa.gov

### Alternate Point of Contact

Bob Dolhanyk, City Emergency Management Coordinator &  
Police Administrative Division Manager  
1635 Grove St.  
Marysville, WA 98270  
Telephone: 360-363-8323  
e-mail Address: rdolhanyk@marysvillewa.gov

## 9.2 JURISDICTION PROFILE

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

- **Date of Incorporation**—1891
- **Current Population**—57,578 as of December 31, 2009
- **Population Growth**—Based on the *Snohomish County Tomorrow 2008 Growth Monitoring Report*, Marysville experienced a 4.9 percent average annual increase in population from 2000 through 2008. Marysville also completed the annexation of the remaining Urban Growth Area in December of 2009 increasing population by 20,048. The City is impacted by the Washington State Growth Management Act (GMA) and is compliant with the provisions of this State mandate.
- **Location and Description**—The City of Marysville is located with the Tulalip Indian Reservation to the west and the foothills of the Cascade Mountains to the east. The City and the immediate area are primarily suburban and rural-residential, with supporting retail and commercial enterprises. Light industrial and manufacturing business are located in the north and south portions of the City, with vacant property in the north end emerging as a key location for economic development plans to attract light-industrial companies.
- **Brief History**—The City, incorporated in 1891, has experienced continued growth from businesses and individuals drawn to the area by the availability of buildable property and accessibility to water and sewer services. For these reasons, and because of its proximity to the population centers of Everett and Seattle, continued growth is expected.

Local industrial payrolls and agricultural activities provide a portion of the area’s economic base, which is supplemented by “commuter payrolls” in Everett. Planners classify Marysville as a service-oriented community with no major industry of its own. Therefore, the economy of Marysville is highly influenced by the industry of the surrounding area, the most significant of which is the Boeing Company’s manufacturing facilities in Everett.

- **Climate**—Marysville’s weather is typical of Western Washington, summers are cool and comparatively dry and winters are mild, wet and cloudy. The average number of clear or only partly cloudy days each month varies from four to eight in winter, 8 to 15 in spring and fall, and 15 to 20 in summer. The percent of possible sunshine received each month ranges from approximately 25 percent in winter to 60 percent in summer. In the interior valleys,

measurable rainfall is recorded on 150 days each year and on 190 days in the mountains and along the coast. Thunderstorms over the lower elevations occur on four to eight days each year and over the mountains on seven to 15 days. Damaging hailstorms rarely, if ever, occur in most localities of western Washington. During July and August, the driest months, it is not unusual for two to four weeks to pass with only a few showers; however, in December and January, the wettest months, precipitation is frequently recorded on 20 to 25 days or more each month.

- **Governing Body Format**—The City of Marysville is governed by a Council-Mayor form of government consisting of seven elected council members and a full-time elected mayor. A Chief Administrative Officer oversees day-to-day operation of City-sponsored services, which include: Executive, Administrative Services, Finance, Community Development, Police, Fire, Parks and Recreations, Public Works and Community Information.
- **Development Trends**—Over the years, the greater Marysville area has realized an increase in commercial and industrial growth along I-5 in central Marysville and north of the City in the Smokey Point region. Many of these commercial facilities are oriented toward the automobile-driving public. Residential development slowed in 2008 and 2009 due to the slowing economy but prior to that time residential growth was high. With the City having adopted a Downtown Master Plan and Smokey Point Master Plan, the focus will be on mixed uses, affordable housing and commercial / industrial uses leading to local job creation and security.

Washington State Law (RCW 36.70) requires that counties that meet specified population criteria, and the cities within those counties, to prepare and adopt a comprehensive long-range plan to serve as a guide for community development. The plan must consist of an integrated and internally consistent set of goals, policies, and implementation measures. In addition, the plan must focus on issues of the greatest concern to the community and be written in a clear and concise manner. 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. The City of Marysville is in compliance and good standing with the provisions of RCW 36.70 and adopted its most recent general plan in 2005. The City will review and amend its Comprehensive Plan as necessary. Future growth and development will be managed as identified in this plan.

### **9.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY**

Table 9-1 lists all past occurrences of natural hazards within the jurisdiction. Repetitive loss records are as follows:

- Number of FEMA Identified Repetitive Flood Loss Properties: None
- Number of Repetitive Flood Loss Properties that have been mitigated: None

### **9.4 HAZARD RISK RANKING**

Table 9-2 presents the ranking of the hazards of concern.

### **9.5 CAPABILITY ASSESSMENT**

The assessment of the jurisdiction’s legal and regulatory capabilities is presented in Table 9-3. The assessment of the jurisdiction’s administrative and technical capabilities is presented in Table 9-4. The assessment of the jurisdiction’s fiscal capabilities is presented in Table 9-5. Classifications under various community mitigation programs are presented in Table 9-6.

## 9.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 9-7 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 9-8 identifies the priority for each initiative. Table 9-9 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

## 9.7 STATUS OF PREVIOUS PLAN INITIATIVES

Table 9-10 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.

## 9.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK

Mapping based on models with sufficient detail to accurately show the probable exposure to tsunami hazards are essential to better understand the risk and vulnerability of the community to these hazards.

## 9.9 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps have been generated for the City of Marysville and 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.

Type of Event	FEMA Disaster #(if applicable)	Date	Preliminary Damage Assessment
Severe Winter Storm	1825-DR	3/2009	\$43,926.62
Earthquake (Nisqually)	1361-DR	2/2001	2-3 million for county
Flood/Landslide	1172-DR	3/1997	Information not available
Flood	1100-DR	2/1996	Information not available
Flood	1079-DR	12/1995	Information not available

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Flood	36
2	Earthquake	36
3	Severe Storm	21
4	Landslide	14
5	Tsunami	6
6	Dam Failure	6
7	Avalanche	0
8	Volcano/Lahar	0
9	Wildland Fire	0

**TABLE 9-3.  
LEGAL AND REGULATORY CAPABILITY**

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
<b>Codes, Ordinances &amp; Requirements</b>					
Building Code	Y	N	N	Y	2006 International Building Code
Zonings	Y	N	N	Y	City Ordinance 2131
Subdivisions	Y	N	N	Y	City Ordinance 1986
Stormwater Management	Y	N	N	Y	City Ordinance 2476 (2003)
Post Disaster Recovery	N	N	N	N	
Real Estate Disclosure	N	N	N	N	
Growth Management	Y	N	N	Y	City Ordinance 2406 (2002) substantial update 2005
Site Plan Review	Y	N	N	N	City Ordinance 1986 (1994)
Special Purpose (flood management, critical areas)	Y	Y	N	Y	Title 16.32 (Adopted 2003 – Floodplain regulations) Title 19.24 (Adopted in 1997 – updated 2005) <i>State law prohibits residential construction in designated floodway.</i>
<b>Planning Documents</b>					
General or Comprehensive Plan	Y	N	N	Y	City Ordinance 2068 (2005)
Floodplain or Basin Plan	Y	N	Y	N	City Ordinance 1339 (1984) WAC 173-806-173
Stormwater Plan	Y	N	N	Y	City Ordinance 2476 (2003)
Capital Improvement Plan	Y	N	N	N	Water Sewer Transportation
Habitat Conservation Plan	N	N	N	N	City Ordinance 2131 (1997)
Economic Development Plan	Y	N	N	Y	City Ordinance 1298 (1983) and City Ordinance 2030 (1995)
Emergency Response Plan	Y	N	N	N	City Ordinance 1440 (1985)
Shoreline Management Plan	Y	N	N	Y	City Ordinance 859 (1975); substantial update 2006
Post Disaster Recovery Plan	N	N	N	N	
<b>Other</b>					
Other	Y	N	N	N	The City of Marysville Engineering Design and Development Standards

**TABLE 9-4.  
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 Development Department/Planning Director or Designee Engineering Department: City Engineer and staff
Engineers or professionals trained in building or infrastructure construction practices	Yes	Building Department / City Engineer and staff
Planners or engineers with an understanding of natural hazards	Yes	Engineering Department: City Engineer and staff
Staff with training in benefit/cost analysis	Yes	Public Works Financial Analyst
Floodplain manager	Yes	Engineering Department: City Engineer and staff
Surveyors	Yes	Engineering Department and on-call PLS
Personnel skilled or trained in GIS applications	Yes	GIS Administrator; and GIS Analyst Several other Public Works and Community Development staff are familiar and proficient in GIS
Scientist familiar with natural hazards in local area	No	The City keeps and updated list of qualified consultant for on-call services
Emergency manager	Yes	Robert Dolhanyk, Emergency Management Coordinator
Grant writers	Yes	Engineering staff are familiar with grant writing and applications

**TABLE 9-5.  
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	Council bonds, REET

	Participating?	Classification	Date Classified
Community Rating System	No	N/A	N/A
Building Code Effectiveness Grading Schedule	Yes	2/2	5/1/2010
Public Protection	Yes	4	5/1/2010
Storm Ready	No	N/A	N/A
Firewise	No	N/A	N/A
Tsunami Ready	No	N/A	N/A

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
<b>M-1—Construct additional Regional Stormwater Detention Facilities in Smokey Point Master Plan Area</b>							
New	Flood, Severe Weather	1, 2	Marysville	\$7,000,000	General Fund, FEMA Hazard Mitigation Grants	Short Term	No
<b>M-2—Construct additional Reservoir at SR 9 &amp; SR 528</b>							
New	Earthquake	1, 2	Marysville	\$2,250,000	Franchise Fund	Short Term	No
<b>M-3—Construct 67th Ave. Water main for redundant water system</b>							
New	All Hazards	1, 2	Marysville	\$3,780,000	Franchise Fund	Short Term	No
<b>M-4—Install Waste Water Treatment Plant Generator for backup power supply</b>							
Existing	Severe Storm	2	Marysville	\$300,000	Franchise Fund	Short Term	No
<b>M-5—Install Generators at Cedarcrest and Carroll’s Landing Lift Stations for backup power supply</b>							
Existing	Severe Storm	2	Marysville	\$240,000	Franchise Fund	Short Term	No
<b>M-6—Upgrade and retrofit Lake Goodwill Well Standpipe</b>							
Existing	Earthquake	2	Marysville	Medium	Franchise Fund	Short Term	No
<b>M-7—Improve 132nd St. Soldier Pile Wall</b>							
Existing	Earthquake	1, 2	Marysville	Medium	General Fund	Short Term	No

<b>TABLE 9-7 (continued).</b> <b>HAZARD MITIGATION ACTION PLAN MATRIX</b>							
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
<b>M-8—Upgrade State Avenue Quilceda Creek Crossing</b>							
Existing	Earthquake	1, 2	Marysville	Medium	General Fund	Long Term	No
<b>M-9—Install Earthquake valves at Cedarcrest, Getchell, Edward Springs and Highway 9 Reservoirs</b>							
Existing	Earthquake	1, 2	Marysville	N/A	Franchise Fund	Short Term	No
<b>M-10—Upgrade 45 Road Water main from AC to DI</b>							
Existing	Earthquake	1, 2	Marysville	\$4,580,000	Franchise Fund	Short Term	No
<b>M-11—Improve Development Standards to include regulations to mitigate for natural hazards.</b>							
Existing	All Natural Hazards	1, 2, 3, 4, 5	Marysville	Medium	General Fund	Short Term Ongoing	Yes
<b>M-12—Create or enhance public information programs that will promote preparedness and mitigation of risks</b>							
Existing	Earthquake	1, 2, 3, 4, 5	Marysville, Snohomish County DEM	Medium	General Fund, grants	Short Term Ongoing	Yes
<b>M-13—Support County-wide initiatives identified in Chapter 21 of Volume 1.</b>							
New and Existing	All Hazards	All	City	Low	General Fund	Short term, ongoing	No
<b>M-14—Continue to maintain compliance and good standing under the National Flood Insurance Program (NFIP).</b>							
New and existing	Flooding	1, 2, 9, 10, 11	City	Low	General Fund	Short term, ongoing	No
<b>M-15—Consider participation in the Community Rating System (CRS)</b>							
New	Flooding	3, 5, 6, 7, 9, 10, 11, 13, 14	City	Low	General Fund	Short term, ongoing	Yes

<b>TABLE 9-7 (continued). HAZARD MITIGATION ACTION PLAN MATRIX</b>							
Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline	Included in Previous Plan?
<b>M-16</b> —Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority when applicable.							
Existing	All Hazards	6, 7, 11, 14	City	High	FEMA Hazard Mitigation Grant funding with local match provided by property owner contribution	Long term depends on funding	No
<b>M-17</b> —Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Chapter 7 of Volume 1.							
New and Existing	All Hazards	All	City	Low	General Fund, FEMA Mitigation Grant Funding for 5-year update	Short term, ongoing	No
<b>M-18</b> —Integrate, where appropriate, risk assessment information from the Snohomish County Hazard Mitigation Plan into other planning mechanisms available to the City such as; the Capital Improvements Program, the Comprehensive planning process, and Shoreline Master planning.							
New and Existing	All Hazards	All	City	Low	General Fund	Short term, ongoing	No

**TABLE 9-8.  
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 <sup>a</sup>
M-1	2	Medium	Low	Yes	Yes	Yes	High
M-2	2	Medium	Medium	Yes	Yes	Yes	Medium
M-3	2	Medium	Medium	Yes	Yes	No	Low
M-4	1	High	Low	Yes	Yes	Yes	High
M-5	1	Medium	Low	Yes	Yes	Yes	High
M-6	1	Medium	Low	Yes	No	Yes	Medium
M-7	2	Medium	Medium	Yes	No	No	Low
M-8	2	Medium	High	No	Yes	No	Low
M-9	2	Medium	Low	Yes	No	Yes	High
M-10	2	Medium	High	No	Yes	No	Low
M-11	5	High	Low	Yes	No	Yes	High
M-12	5	High	Low	Yes	Yes	No	Medium
M-13	14	Medium	Low	Yes	No	Yes	High
M-14	5	Medium	Low	Yes	No	Yes	High
M-15	9	Medium	Low	Yes	No	Yes	High
M-16	4	High	High	Yes	Yes	No	Medium
M-17	14	Medium	Low	Yes	Yes	Yes	High
M-18	14	High	Low	Yes	No	Yes	High

a. Explanation of priorities

- 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).

**TABLE 9-9.  
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche						
Dam Failure	M-11, M-13, M-17, M-18	M-13, M-16	M-13, M-17	M-13	M-13	M-3, M-13
Earthquake	M-11, M-13, M-17, M-18	M-13, M-16	M-12, M-13, M-17	S-3, M-13	M-13	M-2, M-3, M-6, M-7, M-8, M-9, M-10, M-13
Flood	M-11, M-13, M-14, M-15, M-17, M-18	M-13, M-14, M-15, M-16	M-13, M-14, M-15, M-17	M-13, M-14, M-15	M-13, M-14, M-15	M-1, M-3, M-13, M-14, M-15
Landslide	M-11, M-13, M-17, M-18	M-13, M-16	M-13, M-17	M-13	M-5, M-13	M-3, M-13
Severe Weather	M-11, M-13, M-17, M-18	M-13, M-16	M-13, M-17	M-13	M-4, M-13	M-1, M-3, M-4, M-13
Tsunami	M-11, M-13, M-17, M-18	M-13, M-16	M-13, M-17	M-13	M-13	M-3, M-13
Volcano/ Lahar						
Wildfire						

Notes:

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.

**TABLE 9-10.  
PREVIOUS ACTION PLAN IMPLEMENTATION STATUS**

Action #	Action Status			Comments
	Completed	Carry Over to Plan Update	Removed; No Longer Feasible	
1	✓			Action completed.
2	✓			Action completed.
3	✓			Action completed.
4	✓			Action completed.
5			✓	Action not feasible.
6		✓		No action completed on this initiative during initial performance period. Act has been carried over to updated action plan (M-11)
7		✓		No action completed on this initiative during initial performance period. Act has been carried over to updated action plan (M-12)
8	✓			Action completed.
9		✓		No action completed on this initiative during initial performance period. Act has been carried over to updated action plan (M-15)










# CITY OF MARYSVILLE

## Map 9-2

Earthquake  
Peak Ground Acceleration  
100-year Probabilistic  
Scenario

Mercalli Scale, Potential Damage

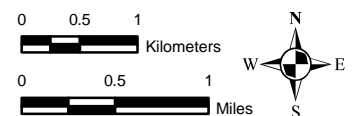
-  IV, None
-  V, Very Light
-  VI, Light
-  VII, Moderate
-  VIII, Moderate-Heavy
-  IX, Heavy



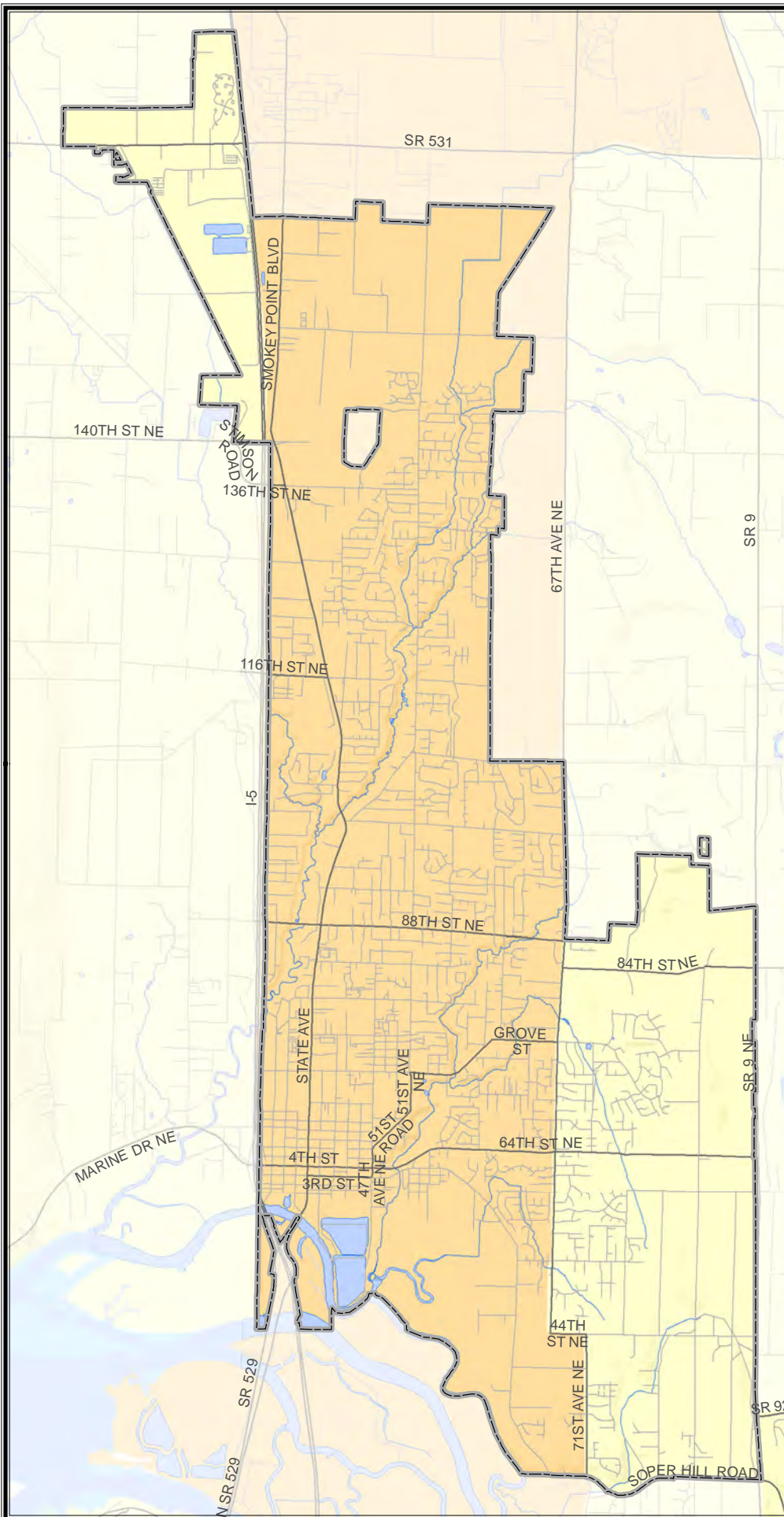
**Snohomish County**

Tetra Tech, Inc.  
May 2010

*Data Sources:*  
Snohomish County  
HAZUS-MH MR4 Output,  
US Geological Survey  
Washington State Department of  
Natural Resources, Division of Geology  
and Earth Resources



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# CITY OF MARYSVILLE

## Map 9-3

Earthquake  
Peak Ground Acceleration  
500-year Probabilistic  
Scenario

Mercalli Scale, Potential Damage

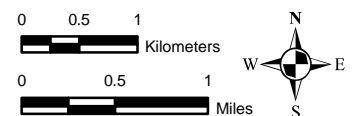
-  IV, None
-  V, Very Light
-  VI, Light
-  VII, Moderate
-  VIII, Moderate-Heavy
-  IX, Heavy



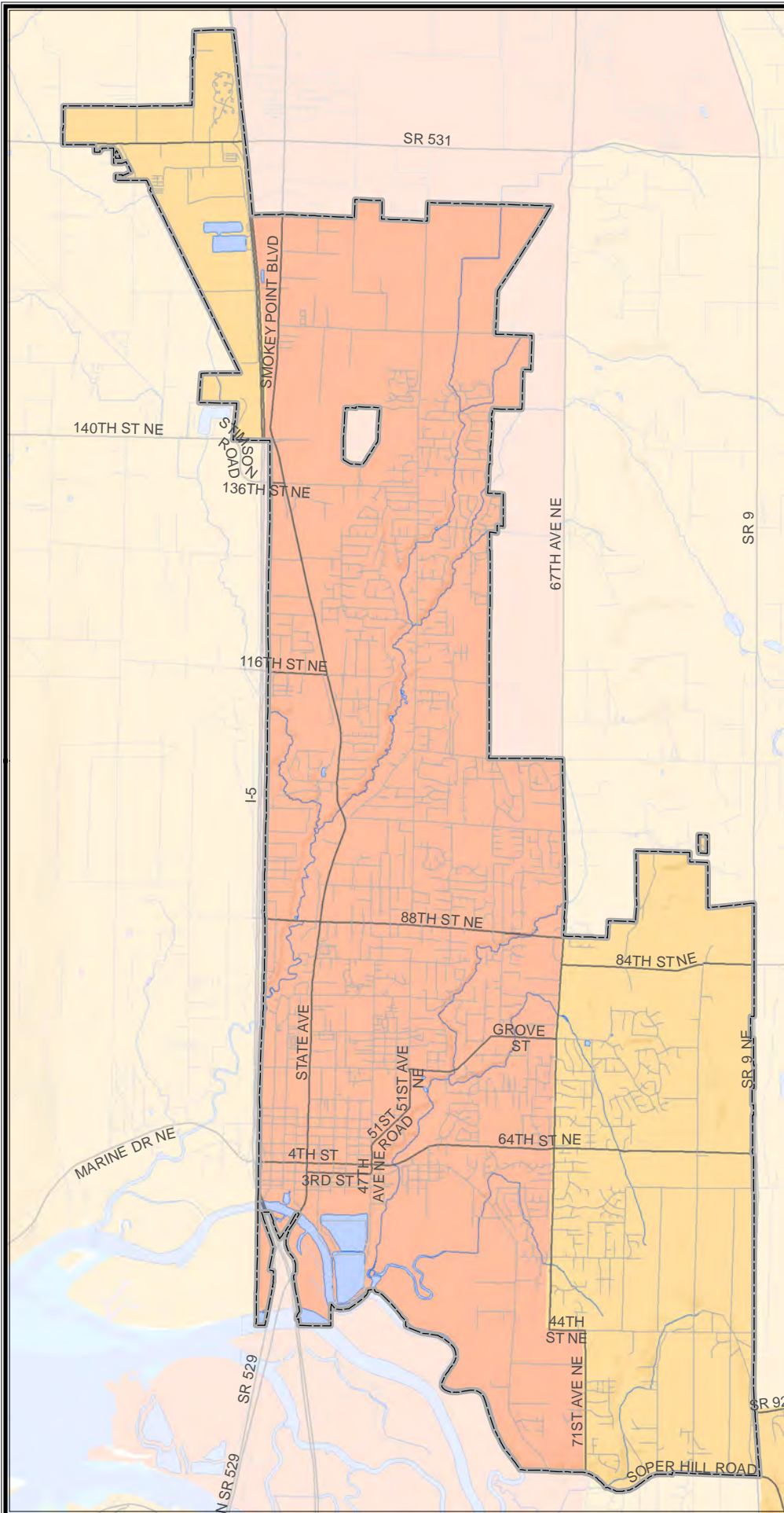
**Snohomish County**

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*Data Sources:*  
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# CITY OF MARYSVILLE

## Map 9-4

### Devil's Mountain Fault Peak Ground Acceleration 7.1-Magnitude Scenario Shake Map

Mercalli Scale, Potential Damage

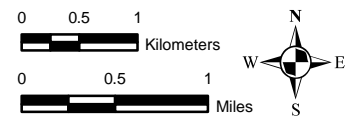
-  IV, None
-  V, Very Light
-  VI, Light
-  VII, Moderate
-  VIII, Moderate-Heavy
-  IX, Heavy



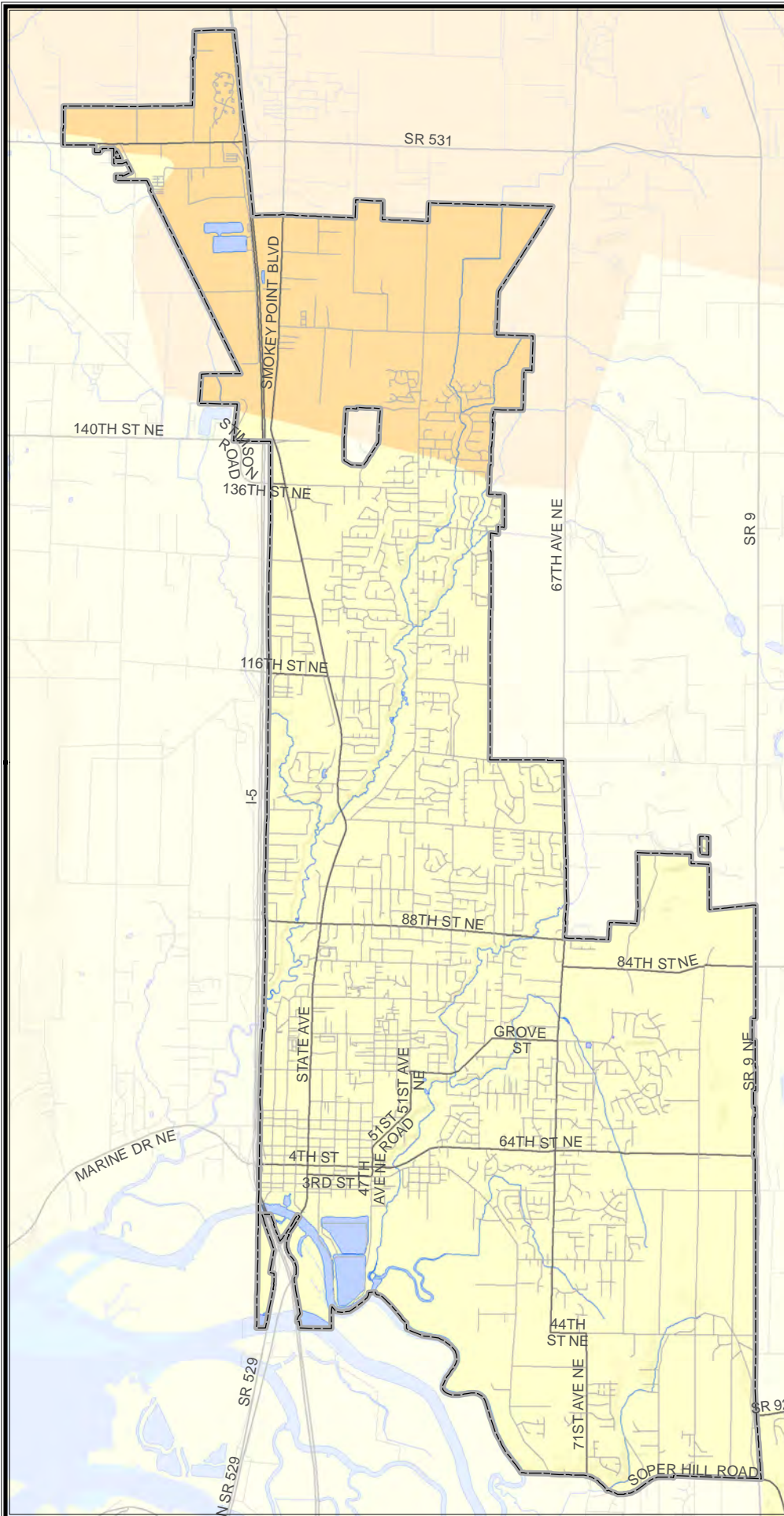
**Snohomish County**

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May 2010

Data Sources:  
Snohomish County  
US Geological Survey  
Washington State Department of  
Natural Resources, Division of Geology  
and Earth Resources



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# CITY OF MARYSVILLE

## Map 9-5

### South Whidbey Fault Peak Ground Acceleration 7.4-Magnitude Scenario Shake Map

Mercalli Scale, Potential Damage

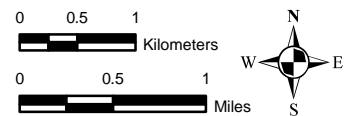
-  IV, None
-  V, Very Light
-  VI, Light
-  VII, Moderate
-  VIII, Moderate-Heavy
-  IX, Heavy



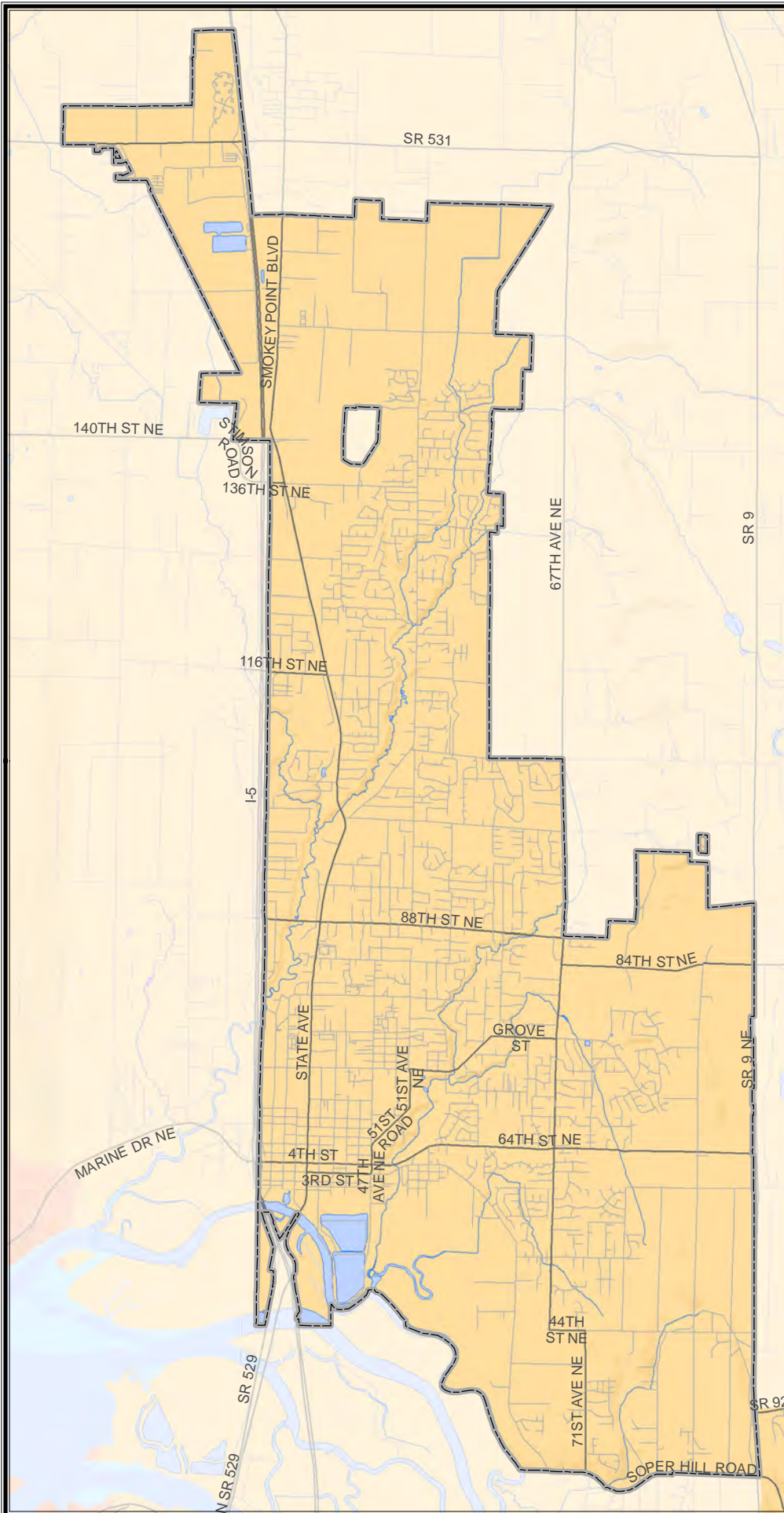
**Snohomish County**

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May 2010

Data Sources:  
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# CITY OF MARYSVILLE

## Map 9-6

### National Earthquake Hazard Reduction Program (NEHRP) Soil Site Classes

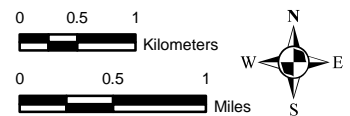
-  Site Class F - Requires site-specific investigation
-  Site Class E - Soft Soil
-  Site Class D - Stiff Soil
-  Site Class C - Very Dense Soil and Soft Rock
-  Site Class B - Rock
-  Water
-  Ice



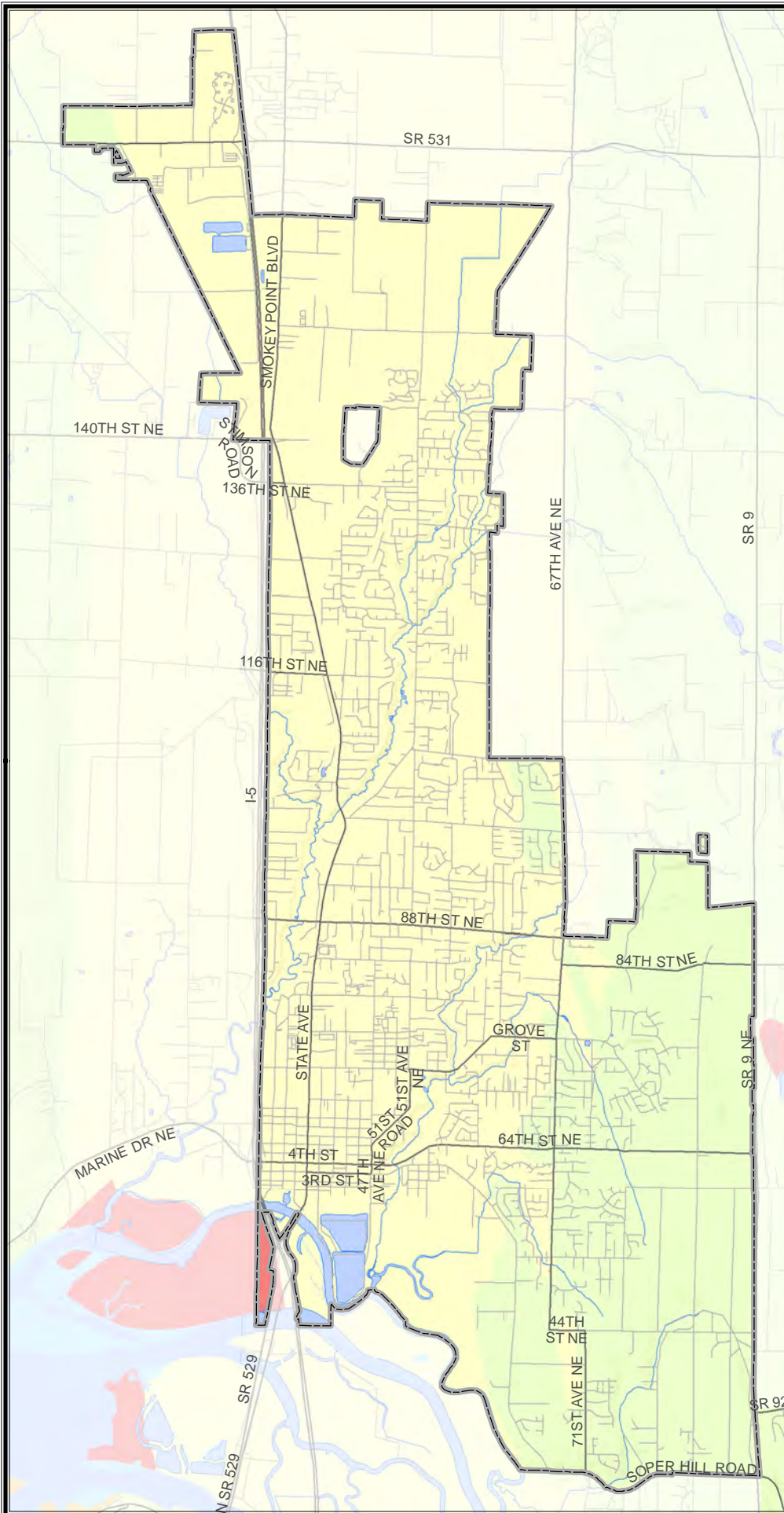
**Snohomish County**

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May 2010

*Data Sources:*  
Snohomish County  
US Geological Survey  
Washington State Department of  
Natural Resources, Division of Geology  
and Earth Resources



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# CITY OF MARYSVILLE

## Map 9-7

### Liquefaction Susceptibility

#### Liquefaction Susceptibility

-  High
-  Moderate to High
-  Moderate
-  Low to Moderate
-  Low
-  Very Low to Low
-  Very Low

#### Not Susceptible to Liquefaction

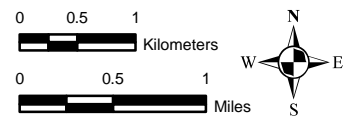
-  Bedrock
-  Peat
-  Water
-  Ice



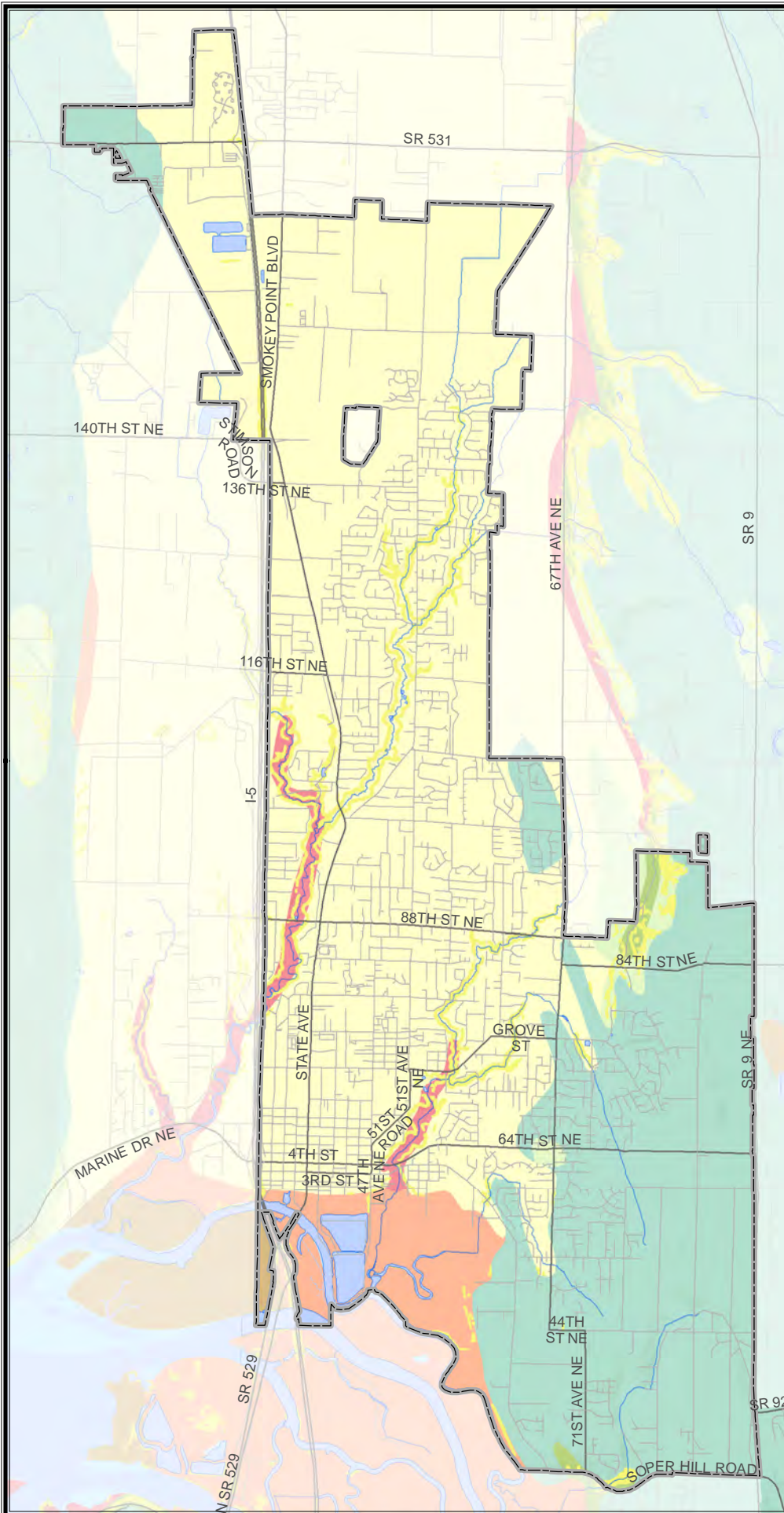
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# CITY OF MARYSVILLE

## Map 9-9

### Jackson Hydroelectric Project Culmback Dam Inundation Area

Culmback Dam  
Area of Inundation

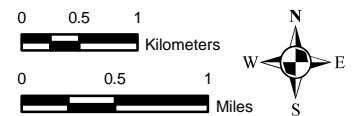
-  Flood Condition Failure
-  Fair Weather Condition



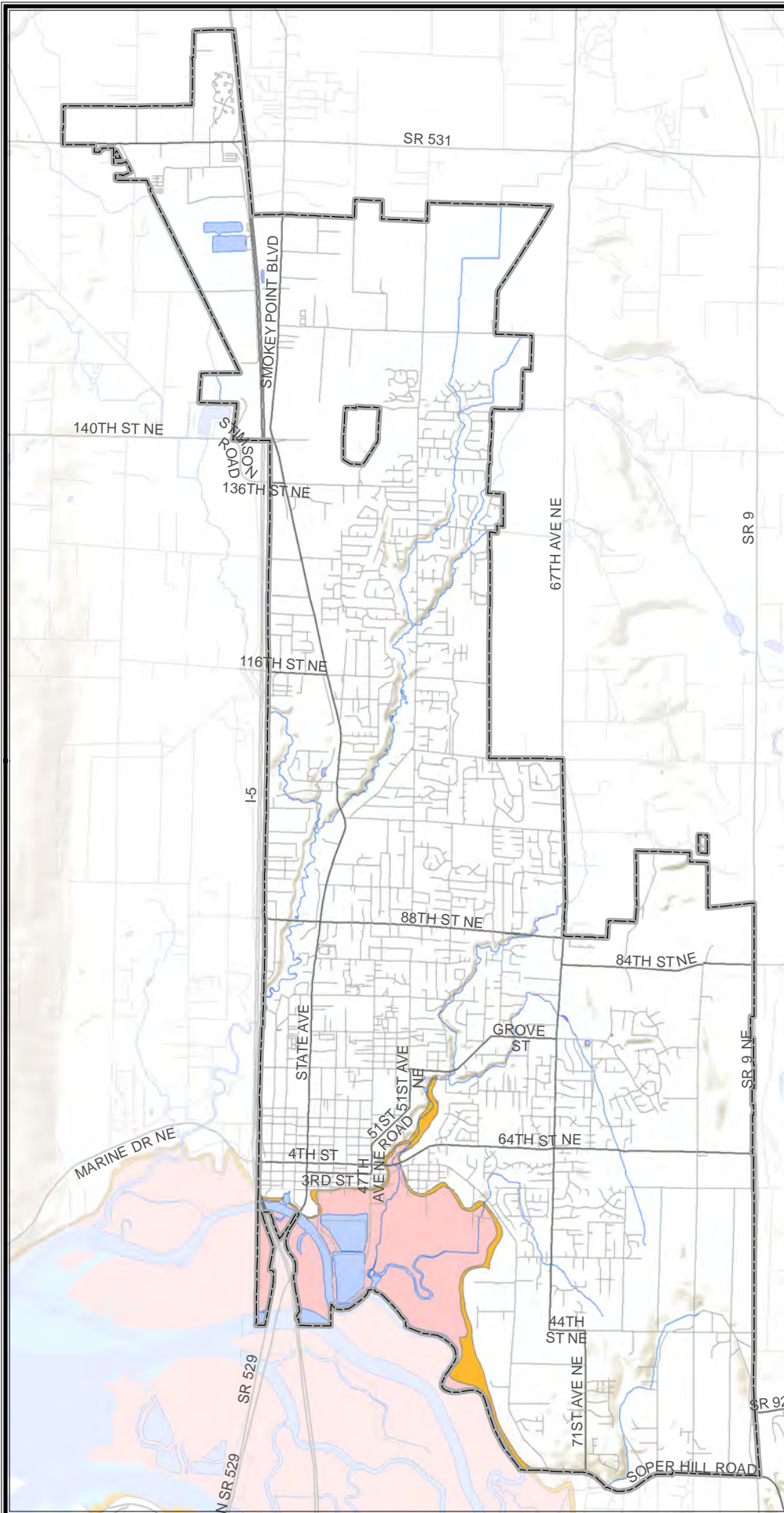
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Data Sources:  
Snohomish County  
Snohomish County PUD #1  
US Geological Survey  
Washington State Department of  
Natural Resources, Division of Geology  
and Earth Resources



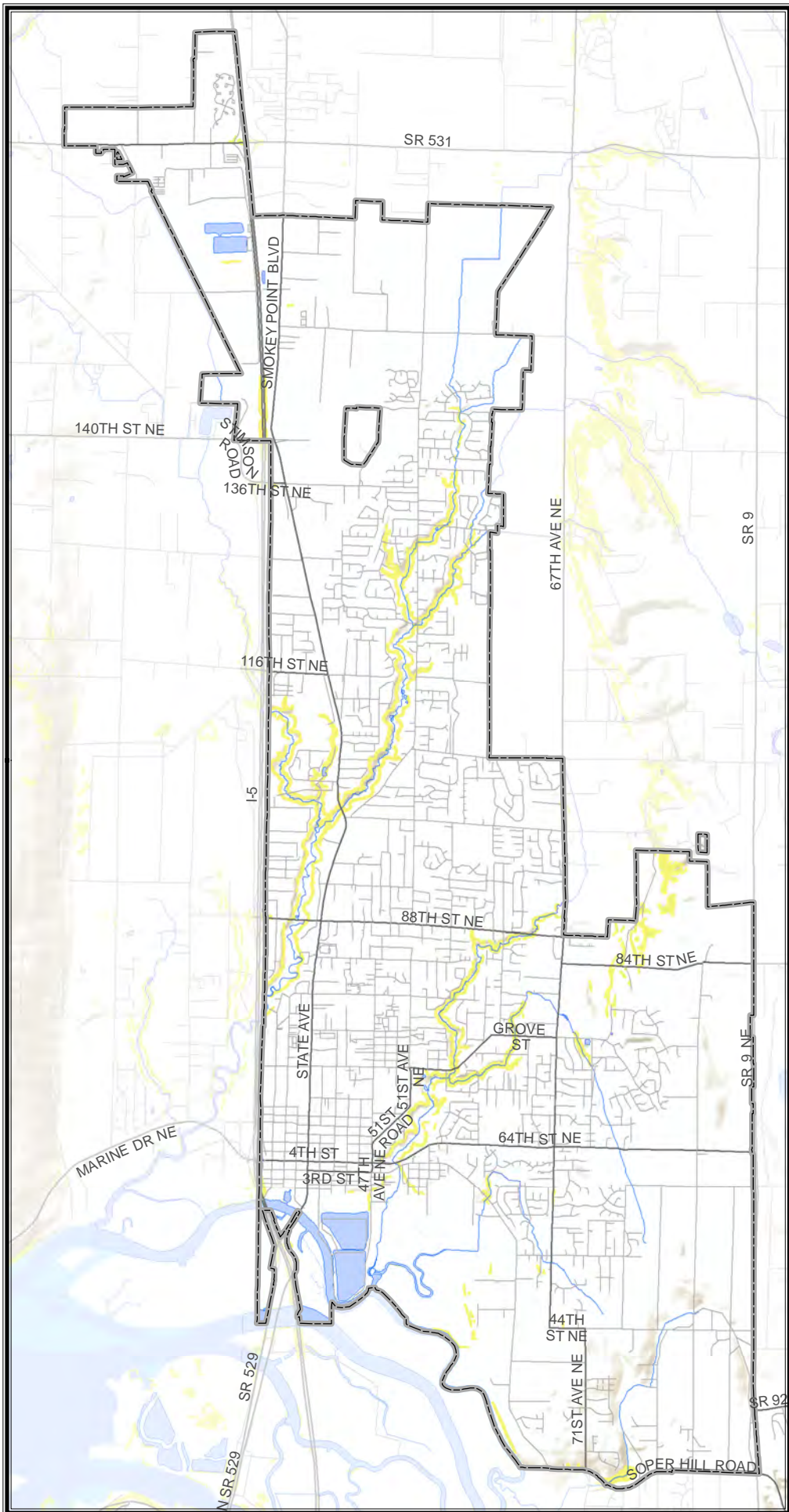
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CITY OF MARYSVILLE  
**Map 9-10**  
 Landslide Hazard Areas

 Landslide Potential Areas

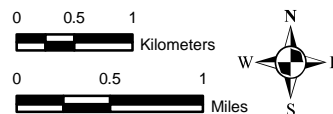
Slope Greater than 33% and elevation change greater than or equal to 10 feet, intersecting soft and stiff soils.



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 Snohomish County  
 US Geological Survey  
 Washington State Department of  
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# CITY OF MARYSVILLE

## Map 9-11

### Tsunami Hazard Areas

Tsunami Hazard Area



Maximum Depth : 16 ft

Minimum Depth : 0 ft

This scenario tsunami is based on a magnitude 7.3 earthquake of the Seattle Fault.

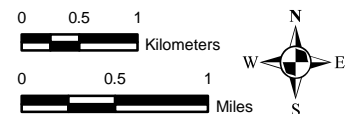
Reviewers of this data must be aware that these inundation areas are estimates and are to be utilized for planning purposes only. These maps represent an interpretation of the best data available at the time of this plan update. This map is deterministic based on a scenario event, and is not assigning any probability of occurrence.



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May 2010

Data Sources:  
Snohomish County  
NOAA PMEL  
HAZUS-MH MR4 Tsunami Model Output  
Washington State Department of  
Natural Resources, Division of Geology  
and Earth Resources



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