HAZARD MITIGATION PLAN

CITY OF MARYSVILLE

2026

DRAFT

MARYSVILLE

Executive Summary

The City of Marysville Hazard Mitigation Plan (HMP) establishes a framework to reduce the community's vulnerability to natural, human-caused, and technological hazards. The HMP represents a forward-looking, community-driven roadmap to reduce risk, enhance preparedness, and build resilience against the hazards that threaten the city's people, infrastructure, and economy. Through collaboration, informed planning, and ongoing public engagement, Marysville is positioning itself to safeguard its growing and diverse community while fostering a more resilient future.

Developed in alignment with the Federal Emergency Management Agency's (FEMA) Local Mitigation Planning Policy Guide, the Washington State Enhanced Hazard Mitigation Plan, and Snohomish County Hazard Mitigation Plan, this document ensures consistency with federal, state, and regional resilience goals. Adoption of this FEMA-approved plan enables the City to remain eligible for mitigation funding, fulfilling the requirements of the Disaster Mitigation Act of 2000.

Planning Process and Participation

The HMP was developed through an inclusive, collaborative process that engaged City departments, community partners, and the public.

Planning Team: Led by Marysville Emergency Management, the core team coordinated plan development, meetings, and outreach.

Hazard Mitigation Plan Workgroup (HMPW): Comprised of City staff and community partners, the HMPW informed the planning process, reviewed materials, and refined mitigation strategies.

Stakeholders and Community Partners: Additional experts and community representatives contributed through surveys, meetings, and direct feedback.

Public Engagement: Residents, businesses, and visitors were encouraged to participate through public meetings, surveys, and a comment period. A variety of outreach methods were used leveraging community events, press releases, social media, and a dedicated HMP webpage.

Implementation and Maintenance

Following FEMA and Washington State approval and Marysville City Council adoption the plan will be implemented and monitored by Marysville Emergency Management in collaboration with the HMPW. Progress will be tracked annually and updates shared.

The plan will be reviewed and updated on a five-year cycle or sooner if significant changes occur in community development or hazard risk. Integration with local plans will ensure that hazard mitigation remains embedded in the City's long-term planning and decision-making.

Hazard Identification and Risk Assessment

The HMP identifies and assesses both natural and human-caused or technological hazards that could occur in Marysville. This section includes hazard maps, discusses potential hazard impacts, and assesses the risk to the community.

Natural Hazards
- Earthquake
- Extreme Temperatures
- Flooding
- Landslides
- Severe Weather
- Tsunami
- Volcano/Ashfall
- Wildfire

Human-Caused or Technological Hazards
- Active Assailant or Targeted Attack
- Cybersecurity Incidents or Technology Disruptions
- Dam Failure
- Epidemic/Pandemic
- Hazardous Materials Release
- Train Incident
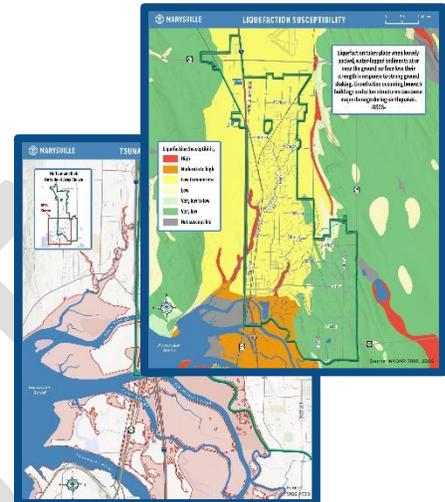
Mitigation Strategy

The HMP identifies four goals to guide long-term efforts of the overall mitigation strategy.

2026 Mitigation Goals:
1. Reduce hazard-related threats to life, safety, and public health.
2. Strengthen critical infrastructure and key facilities to better withstand the effects of hazards and threats.
3. Enhance preparedness and response capacity while addressing the specific needs of the community.
4. Align priorities across departments, agencies, and private entities for coordinated efforts toward a sustainable and resilient community.

To achieve these goals, the HMP identifies 20 mitigation actions in four key categories:

- **Infrastructure:** Upgrading utilities, installing generators, improving network redundancy, and enhancing seismic and flood resilience.
- **Local Planning:** Integrating hazard mitigation into other local plans and policies to improve resilience.
- **Public Information and Outreach:** Expanding outreach and warning systems for residents, businesses, and visitors.
- **Readiness:** Increasing interagency coordination and the ability to respond to and recover from disasters.

Each proposed action is accompanied by a detailed description that includes a cost-benefit evaluation score, list of responsible agencies, and supporting projects or steps.

Hold for Adoption Resolution

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Introduction

The City of Marysville Hazard Mitigation Plan (HMP) provides a framework to increase the community's resilience to natural and human-caused hazards. This plan identifies risks to this community, assesses potential impacts, and outlines a mitigation strategy that reduces vulnerabilities and increases the capabilities to address them. Part 201 of title 44 of the Code of Federal Regulations states that "the purpose of mitigation planning is for state, local and Indian tribal governments to identify the natural hazards that impact them, to identify actions and activities to reduce any losses from those hazards, and to establish a coordinated process to implement the plan, taking advantage of a wide range of resources."

The Disaster Mitigation Act of 2000 requires local governments to adopt Federal Emergency Management Agency (FEMA) approved hazard mitigation plans to remain eligible for federal disaster assistance and mitigation funding. This plan aligns with FEMA's Local Mitigation Planning Policy Guide, the Washington State Enhanced Hazard Mitigation Plan, and Snohomish County's Hazard Mitigation Plan ensuring consistency with federal, state, and county mitigation goals.

Planning Participants

Various groups were involved in the HMP process. Involvement for the purposes of this plan means being included in planning activities, invited to provide input, and review content as the representative of the participating organization.

Planning Team

The core planning team included the following individuals who were responsible for developing the content in the plan, organizing meetings, and conducting outreach and engagement activities.

- Sarah LaVelle, Emergency Management
- Kassidy Aldrich, Emergency Management
- Jacob Milner, GIS
- Tosh McKetta, GIS
- Connie Mennie, Communications

Hazard Mitigation Plan Workgroup

The Hazard Mitigation Plan Workgroup (HMPW) is comprised of City staff and key stakeholders and community partners. The HMPW informed the planning process including hazard analysis, public engagement, development of the mitigation strategy, and review of draft materials including the final plan draft before submission to Washington State Emergency Management Division and FEMA for approval. The HMPW members were emailed multiple times[1] with invitations to meetings and to review materials or provide feedback.

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[1] Emails to the HMPW included: Invitation to the Kick-Off meeting and notification that they were selected to be on the HMPW (1/28/25), Minutes from the Kick-Off meeting and request to support plan engagement efforts (3/11/25), invitation to the second HMPW meeting (7/3/25), request to complete action cost-benefit evaluation survey (9/26/25), draft of plan for final review (10/20/25).

Table 1. Hazard Mitigation Plan Workgroup member names, position, and agency.

Hazard Mitigation Plan Workgroup (HMPW) Members		
Name	**Position**	**Agency**
Kassidy Aldrich	Emergency Preparedness Specialist	City of Marysville
Jesse Birchman	Transportation Services Manager	City of Marysville
Kim Bryant	Water Utility Manager	City of Marysville
Hunter Burchard	Emergency Management Program Manager	Snohomish County PUD
Rebecca Carpenter	Resilience and Mitigation Program Analyst	Snohomish County Department of Emergency Management
Kari Chennault	Grants Coordinator	City of Marysville
Angel Cortez	Emergency Preparedness Manager	Tulalip Tribes
Stephen Doherty	Information Services Director	City of Marysville
Scott Eastman	Senior Manager Security and Emergency Management	Community Transit
Jennifer Egger	PIO	Marysville Fire District
Paul Ellis	City Administrator	City of Arlington
Matthew Eyer	Storm and Wastewater Utility Manager	City of Marysville
Jennifer Ferrer-Santa Ines	Finance Director	City of Marysville
Angela Gemmer	Planning Manager	City of Marysville
Jesse Gilpatrick	Peer Support Group Coordinator	Center for Independence
Gwen Grubb	District Nurse	Lakewood School District
Mary Hobday	Emergency Planning Manager	Puget Sound Energy
Chris Holland	Planning Manager	City of Marysville
David Jackson	NPDES Coordinator	City of Marysville
Lisa Jackson	Emergency Management Operations Analyst	Snohomish County PUD
Jim Kaylor	Utilities and Maintenance Director	City of Marysville
Skip Knutsen	Maintenance Services and Solid Waste Manager	City of Marysville
Connor Krebbs	Director of Facilities and Security	Marysville School District
Sarah LaVelle	Emergency Preparedness Manager	City of Marysville
Jeff Laycock	Engineering Services Director	City of Marysville
Kyle Leatham	Manager Public Projects	BNSF Railway
Amy Lucas	Resilience and Mitigation Program Manager	Snohomish County Department of Emergency Management
Ed Madura	Security Director	Port of Everett
Ken McIntyre	City Engineer	City of Marysville
Tosh McKetta	GIS Analyst	City of Marysville
Connie Mennie	Communications Manager	City of Marysville
Haylie Miller	Community Development Director	City of Marysville
Jacob Milner	GIS Manager	City of Marysville
Tara Mizell	Parks, Culture, and Recreation Director	City of Marysville

Hazard Mitigation Plan Workgroup (HMPW) Members		
Jon Nehring	Mayor	City of Marysville
Tyler Nies	Assistant Chief of Police	BNSF Railway
Scott Parker	Manager, Physical Security & Emergency Management	Snohomish County PUD
Steven Paschal	Emergency Management Officer	Naval Station Everett
Maximilian Roth	Risk Manager	City of Lake Stevens
Jim Sande	Emergency Management Director	City of Everett
Erik Scairpon	Police Chief	City of Marysville
Lucia Schmit	Emergency Management Director	Snohomish County Department of Emergency Management
Ivonne Sepulveda	President/CEO	Greater Marysville Tulalip Chamber of Commerce
Mike Snook	Building Official	City of Marysville
Jennifer Stapleton	City Administrator	City of Marysville
Kelly Sunagel	District Coordinator	Northwest Healthcare Response Network
Leah Tocco	Risk and Program Manager	City of Marysville
Ned Vander Pol	Fire Chief	Marysville Fire District
David Vannatta	Community Disaster Program Manager	American Red Cross
Tyler Verda	Program Planner	Snohomish County Human Services
Jon Walker	City Attorney	City of Marysville
Seth Williamson	Community Disaster Program Manager	American Red Cross
Jeff Wilson	Interim Community Development Director	City of Marysville
Reid Wolcott	Warning Coordination Meteorologist	National Weather Service
Ryan Zavala	Senior Program Manager	Community Transit

Stakeholders and Community Partners

Other stakeholders and community partners were invited to participate in the HMP process. They included subject matter experts, representatives for a group within the community, or other interested parties.

Public Engagement

The public had opportunities to be involved in the planning process through open meetings and access to draft materials. The public included people who live in, work in, or visit the Marysville area. The public could provide comments and input through a survey, at public meetings, and other times by contacting Emergency Management staff. The planning team attempted to be inclusive in engagement outreach and worked with community partners and their existing networks for a broad reach.

Engagement Strategies

Development of this plan was a collaborative effort including many City departments and many community partners. Public engagement was also an important focus in the development of this plan. At the beginning of the planning process, the planning team met with other City staff (Communications, Community Development, and Engineering Services) to discuss strategies that have worked for other City planning efforts. This section outlines the approach used to encourage engagement and inclusion in the plan development.

Hazard Mitigation Plan Webpage

The planning team used a webpage to share information and documents related to the HMP. It can be found at www.marysvillewa.gov/HMP and is maintained by Marysville Emergency Management.

The webpage included instructions on how someone can provide input or feedback on the plan or planning process. Communications related to the HMP directed people to the webpage for information and also provided an option to contact the Emergency Management office via phone, email, or in-person. The webpage included draft documents, meeting schedules, planning team contact information, and descriptions of the HMP process. Website content can be translated through the web platform's translator.

Figure 1. HMP Outreach Postcard

Media

The planning team utilized media outlets to share information on the HMP and to encourage public participation. The Marysville Communications team assisted with developing and releasing press releases to announce the planning efforts and how the public can be involved. The planning team also used social media accounts to share information.

Public Survey

A public survey was made available for the public to provide input to be included in the plan. The survey was available online and accessible through the HMP webpage, digital and printed communications, and emails. Planning team contact information was shared in outreach materials if an individual could not access the online survey.

Outreach Materials

The planning team created and distributed digital and printed communications to share HMP information. These communications directed people to the webpage or invited them to attend specific meetings or review draft materials. Stakeholders and members of the HMPW also helped to share these communications

Figure 2. HMP information at an outreach event

within their networks. Emergency Management attended several public engagement events (school resource fairs, National Night Out, farmer's markets, etc.) and shared mitigation planning information with attendees.

Meetings and Presentations

There were several meetings throughout the process to inform the plan and collect input from various stakeholders and the public. Announcements were shared in press releases, printed materials, and social media posts. All meetings were documented including promotional efforts, sign-in sheets, and notes. Attendees of meetings had an opportunity to provide contact information to receive notifications throughout the process.

City Council Meetings

Emergency Management presented to the City Council in a work session twice; first to introduce the plan process and a second time to present the final draft of the plan. City Council will adopt the final version of the plan after FEMA approval.

Hazard Mitigation Plan Workgroup Participation

The HMPW met two times in addition to other opportunities to provide input. Each meeting had specific objectives and topics for conversation.

- Meeting #1: The HMPW had a kick-off meeting to introduce the plan process, discuss the importance of hazard mitigation, outline the planning process, and gather input to inform the plan. The HMPW also learned about their role in the process. Some risk assessment mapping was displayed at the meeting and participants provided input on hazard vulnerabilities and capabilities.

Figure 3. Hazard Mitigation Plan Workgroup Kick- Off Meeting

- Meeting #2: The second HMPW meeting reviewed the risk assessment data and mitigation strategy developed from discussions in previous meetings. They discussed the draft actions in greater detail and documented additional information on how to accomplish those actions.
- Action Cost-Benefit Evaluation: The HMPW members were asked to participate in an online survey for a cost-benefit evaluation of all actions. These results informed the action priority ranking.
- Draft Plan Review: The HMPW members were emailed a link to the draft plan prior to it being opened for public comment. They were asked to provide any feedback or edits.
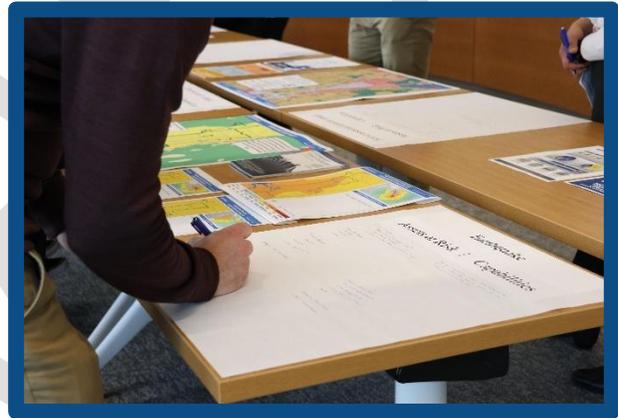
Stakeholder Meetings and Interviews

Multiple stakeholder meetings were held to discuss specific mitigation topics to inform the plan. Targeted outreach was conducted to ensure that the appropriate stakeholders for the topics being discussed were present. For a full list of meetings and discussions, see Appendix B.

General Public Meetings

Three public meetings were held to provide an opportunity for the general public or stakeholders to provide input in person.

- Business Meeting: A meeting targeting businesses in Marysville was held to share risk assessment information and collect specific feedback on what mitigation efforts might be most important to the business community. This meeting was promoted in the local Chamber of Commerce newsletter in addition to website, email, and social media announcements.
- Meeting #1: The first general public meeting shared information on the purpose of the HMP, the importance of hazard mitigation, and overview of

Figure 4. Public Meeting #1 display

available hazard risk data. The goal of the meeting was to gather information from the public on the impacts of the hazard risks and what types of mitigation activities would be viewed as beneficial.
- Meeting #2: The second public meeting provided additional risk assessment information, an overview of the mitigation strategy and an opportunity to provide feedback.

Public Comment

Community members had the opportunity to review the draft plan and provide comments from November 3, 2025 to December 3, 2025. Materials were available on the City webpage or through the Marysville Emergency Management office. Announcements were made using City social media, newsletters, and email distribution lists.

Community Profile

This section of the plan provides an overview of the City of Marysville to describe the community that the HMP is addressing.

City of Marysville Overview[2]

Marysville, Washington is located in northern Snohomish County and is the county's second largest city. Marysville's western boundary runs mainly along Interstate 5 (I-5) from Ebey Slough (off the Snohomish River) to the Smokey Point area. Neighboring jurisdictions include the Tulalip Tribes, Lake Stevens, and Arlington as well as unincorporated Snohomish County.

Marysville has become a dynamic city with strong economic, cultural, and environmental assets. Marysville has experienced significant population growth over the past two decades. In 2009, the city had a population of 39,628 and jumped to 60,020 people in 2010 after the Central Marysville Annexation. By 2023, Marysville's population reached 73,780 with projections indicating growth to almost 100,000 residents by 2044.

Marysville is made up of 11 neighborhoods with major growth occurring in East Sunnyside-Whiskey Ridge, Lakewood, and the Downtown core. These areas are projected to continue accommodating future housing and employment expansion.

The average age in 2021 was 37, indicating an upward trend from previous years. Marysville is

Figure 5. Marysville Neighborhoods

predominately White but is becoming more diverse with growing Hispanic and Asian populations. English is the predominant language spoken in Marysville. In 2021, 17.4% of Marysville residents age 5 and older spoke a language other than English at home. Of those, 7.6% spoke Spanish, the predominant non-English language in Marysville. Other significant language groups include Russian/Polish/other Slavic languages (2.6%) and Tagalog (2.5%). [3] Approximately 24,900 residents
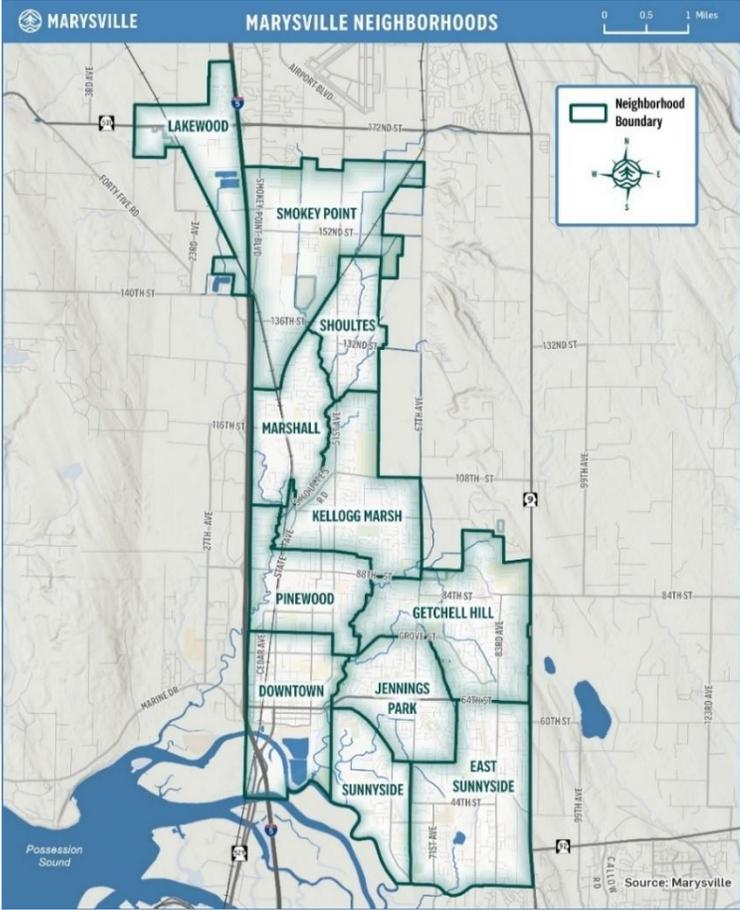
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[2] Information in this section comes from the 2024-2044 Comprehensive Plan unless otherwise noted.
[3] *U.S. Census Bureau, 2021 American Community Survey 5-Year Estimates*

leave Marysville to work and 2,006 live and work in the city. Approximately 8,725 non-Marysville residents commute into Marysville to work.

Marysville has transitioned from a primarily residential city to a growing employment hub in many different sectors. Projects like the Cascade Industrial Center have brought in manufacturing, aerospace, maritime, food processing, and clean technology businesses to the area. Downtown Marysville and the waterfront are also undergoing revitalization with investments for mixed-use development, recreation, and infrastructure improvements.

The City provides a full range of public services including police, water, wastewater, stormwater, solid waste, community development, and transportation services. Marysville has over 520 acres of parkland, trails, and facilities supported by a parks, culture, and recreation department and parks maintenance division. Marysville Fire District provides fire and emergency medical services for the community.

Critical Infrastructure

Critical infrastructure refers to the assets that are essential to the functioning of the community or whose damage could pose a significant threat to the community.

The assets identified as critical infrastructure in this plan include:

- utility infrastructure (water, wastewater, power, gas, stormwater, communications etc.)
- governmental facilities (local and federal)
- public safety resources
- medical facilities
- transportation infrastructure
- facilities with hazardous materials
- schools
- sites with sheltering capabilities
- other key community facilities (food bank)

For security purposes, the location of all critical infrastructure is not included in this plan but is referenced in the hazard identification and risk assessment section to examine hazard impact on these locations. Critical infrastructure sites in this plan are categorized based on the community lifeline or essential community function that they serve.

Addressing Social Vulnerability

When a disaster occurs, individuals may be affected differently depending on a number of factors. In a disaster some groups may be more at risk than others. Some individuals may not have the same resources or capabilities to address the impacts of a hazard. To address how different groups may be more adversely impacted by a disaster, the planning team considered social vulnerability rankings in assessing risk and developing the mitigation strategy. Census data was used to identify

which tracts were more vulnerable. This was determined by identifying the region's most disproportionately cost-burdened demographic groups which includes lower income households, people without a bachelor's degree or higher, People of Color, and people living with one or more disability.[4]

The areas identified as having high social vulnerability may be more susceptible to impacts of hazards because they are more likely to have limited access to resources (money, insurance, emergency supplies, etc.), less reliable access to services, and could face language or cultural barriers making communication during a crisis more difficult.
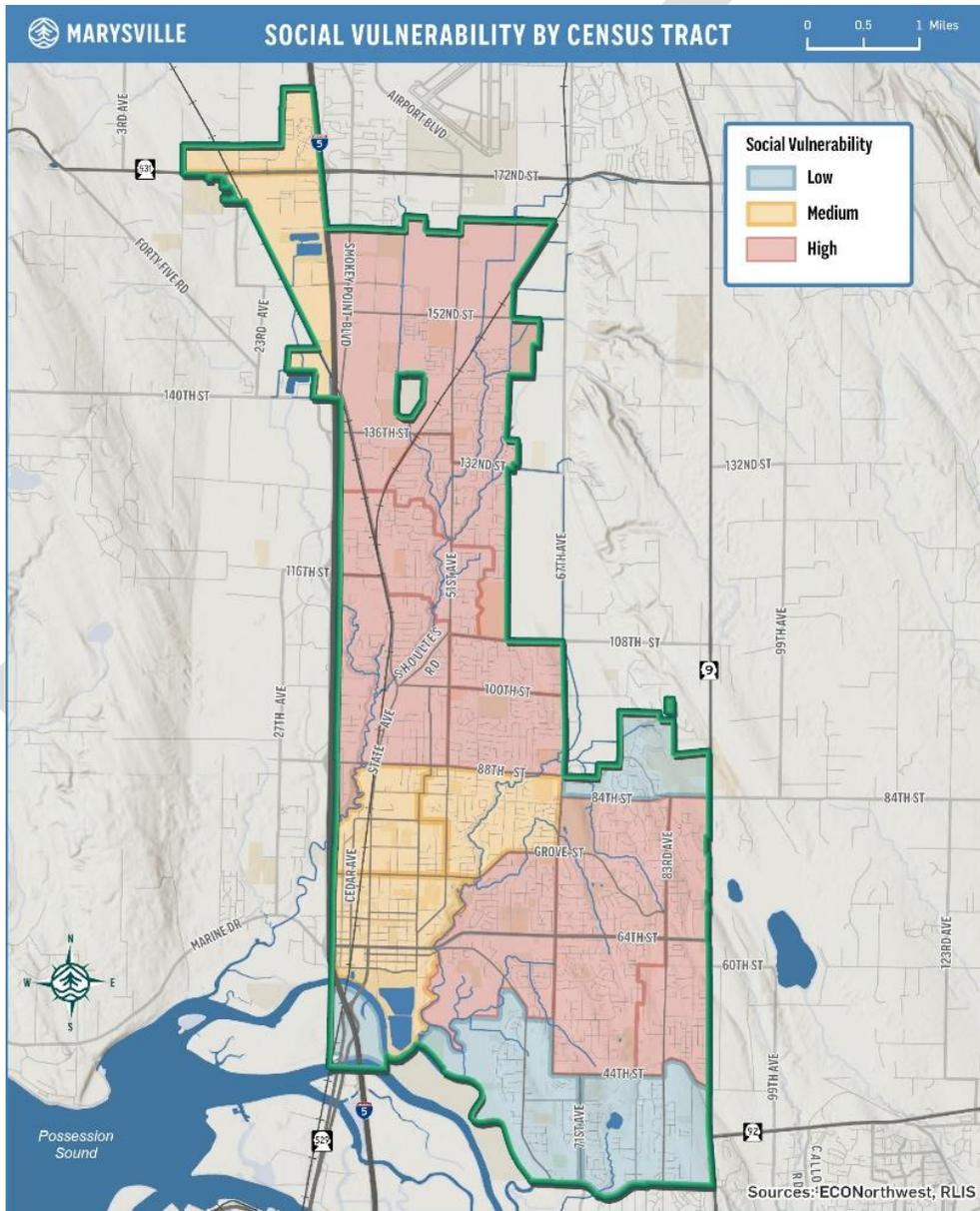

Figure 6. Social Vulnerability by Census Tract

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[4] Social vulnerability designations were developed by ECONorthwest to support the Marysville 2024 update of their Comprehensive Plan. This plan uses the same designations to align with the Comprehensive Plan.

Hazard Identification and Risk Assessment

This section identifies the hazards that could affect Marysville and assesses their risks to the community. It covers both natural hazards as well as human-caused and technological hazards.

Hazard List

The following hazards are included in this HMP:

Natural Hazards

- Earthquake
- Extreme Temperatures
- Flooding
- Landslides
- Severe Weather
- Tsunami
- Volcano/Ashfall
- Wildfire

Human-Caused or Technological Hazards

- Active Assailant or Targeted Attack
- Cybersecurity Incidents or Technology Disruptions
- Dam Failure
- Epidemic/Pandemic
- Hazardous Materials Release
- Train Incident

Hazard Matrix

The following matrix serves as a tool to compare the various hazards in terms of estimated severity and likelihood. Boxes are used rather than single points to demonstrate that there is a range of possibilities for each hazard. This matrix is meant to be used as a tool to provide a general idea of the impacts that hazards would have on the community to reference when assessing mitigation projects.
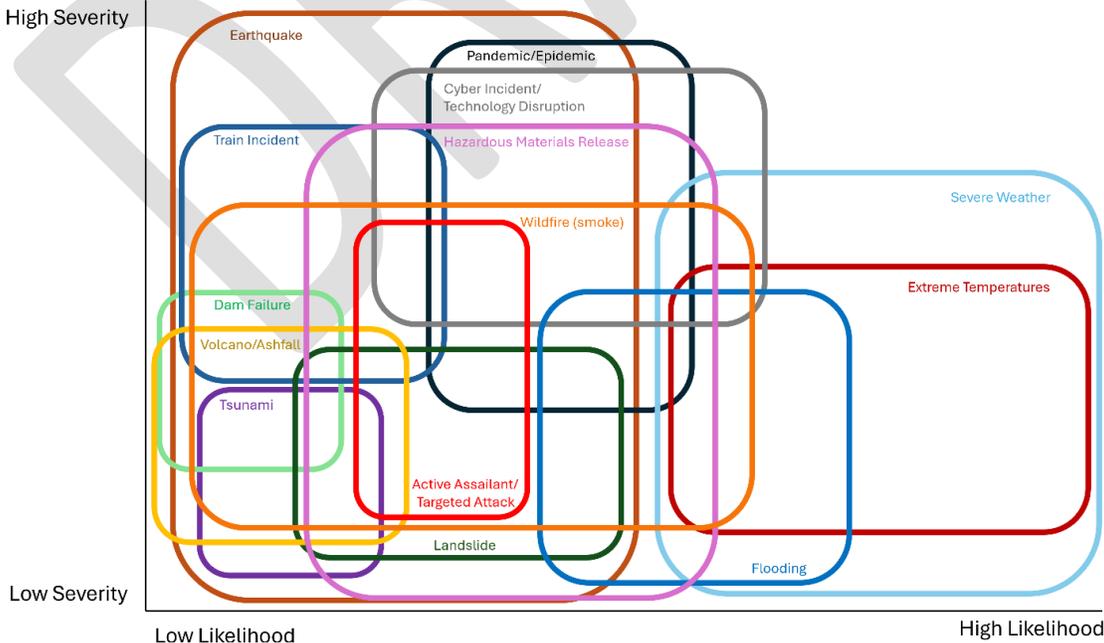

Figure 7. Hazard Matrix

Earthquake

Marysville is at risk from multiple fault systems, including the Cascadia Subduction Zone, deep intraslab faults, and shallow crustal faults. Each type is capable of producing damaging earthquakes at any time. All of Marysville would experience shaking from a significant earthquake but roughly three quarters of Marysville, including over 130 critical facilities, has greater than low potential for liquefaction and may experience more damaging shaking. A major event would cause widespread building and infrastructure damage, utility outages, transportation disruptions, and community displacement. Depending on severity, impacts may include casualties, displaced households, supply shortages, and impaired emergency response.

Hazard Description

An earthquake occurs when two parts of the earth's surface move past one another causing the ground to shake. Western Washington contains many fault zones where earthquakes occur. Different types of fault zones can create earthquakes of different sizes and severity. Earthquakes can range from a small magnitude (too small to be felt by humans) to a large magnitude (shaking causing catastrophic damage).

Marysville can experience earthquakes from different types of fault zones.

- Intraslab (up to magnitude 7.5[i]) - These earthquakes originate deep down beneath the earth's surface (30-70 km). Due to their deep depths, larger magnitude earthquakes may not cause as intensive shaking as earthquakes closer to the surface.[ii] Examples: 2001 Nisqually (6.8) and 1965 Puget Sound (6.7).
- Cascadia Subduction Zone (up to magnitude 9.0[iii]) – As the Pacific tectonic plate subducts under the North American tectonic plate, it gets stuck and builds up energy. When that energy is released, it can create very large magnitude earthquakes (and tsunamis). Example: 1700 Cascadia Subduction Zone.
- Crustal (up to magnitude 7.5) – There are shallow faults (between 0-35 km deep) that produce earthquakes when they rupture. Due to their proximity to the earth's surface, these earthquakes can cause very intense shaking. [iv] Example: ~900 Seattle Fault[v]

There are two main ways that earthquakes are measured.

- Magnitude: The size of the earthquake at its source is often measured as the moment magnitude using numbers (ex. 6.7 or 9.0).
- Intensity: The measure of the amount of shaking perceived in a given location. The level of shaking will depend on many factors including magnitude, proximity to earthquake sources, and soil type. The Modified Mercalli scale is used to measure intensity.

Notable Past Events

Nisqually Earthquake (magnitude 6.8) - February 28, 2001
An intraslab earthquake that caused extensive damage throughout the Puget Sound area. Marysville experienced shaking but did not have extensive damage to residents or public

infrastructure. There was one death (heart attack) attributed to the earthquake and there was about $500 million in damage in Washington State[vi]

Cascadia Subduction Zone (magnitude 9.0) – January 26, 1700
A subduction zone earthquake off the coast of Washington that resulted in widespread shaking and a tsunami.

Hazard Maps

Shake maps are used to show the intensity of the shaking in different areas for a modeled earthquake.[vii]The following shake maps give an idea of the modeled shaking in the Marysville area for three earthquake scenarios.

Stories From the Past

Marysville Fortunate Place in Which to Be When Earthquake Rocks Northwest; Only Small Amount of Minor Damage Done

On April 13, 1949 a 6.9 magnitude earthquake centered near Olympia shook the region. Although it was the most severe felt in recent past it resulted in little damage and no reported injuries in Marysville.

Source: Marysville Historical Society

SOUTHERN WHIDBEY ISLAND FAULT SHAKING INTENSITY
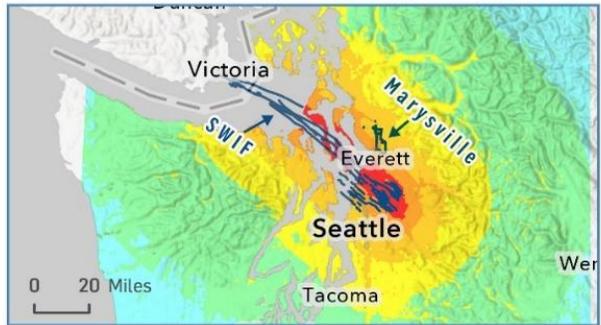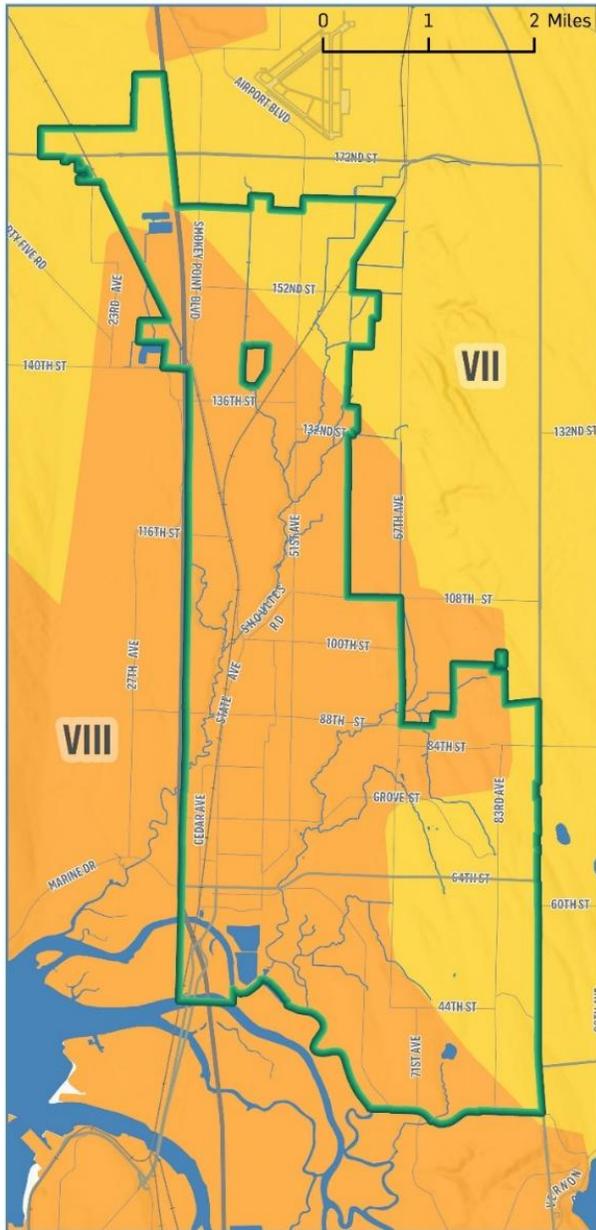
Southern Whidbey Island Fault Magnitude 7.4 Event

These maps show estimated shaking intensity and damage using the Modified Mercalli Intensity Scale.

The Southern Whidbey Island Fault (SWIF) is a crustal fault so its earthquakes occur close to the surface. Due to its proximity to the SWIF, the Marysville area could expect to see very strong to severe shaking with moderate to heavy damage in a 7.4 magnitude earthquake. Shaking would be felt by all, heavy furniture may be overturned, and buildings will likely be damaged.

Source: WADNR 2017, USGS, Esri

Intensity	I	II-III	IV	V	VI	VII	VIII	IX	X+
Shaking	Not Felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
Damage	None	None	None	Very Slight	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy

Figure 8. Southern Whidbey Island Fault Shaking Intensity

Darrington-Devils Mountain West Fault - Magnitude 7.4 Event

These maps show estimated shaking intensity and damage using the Modified Mercalli Intensity Scale.

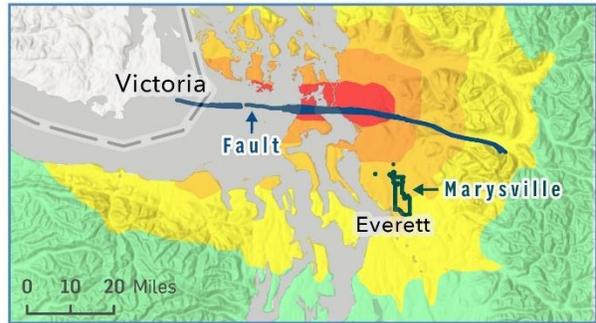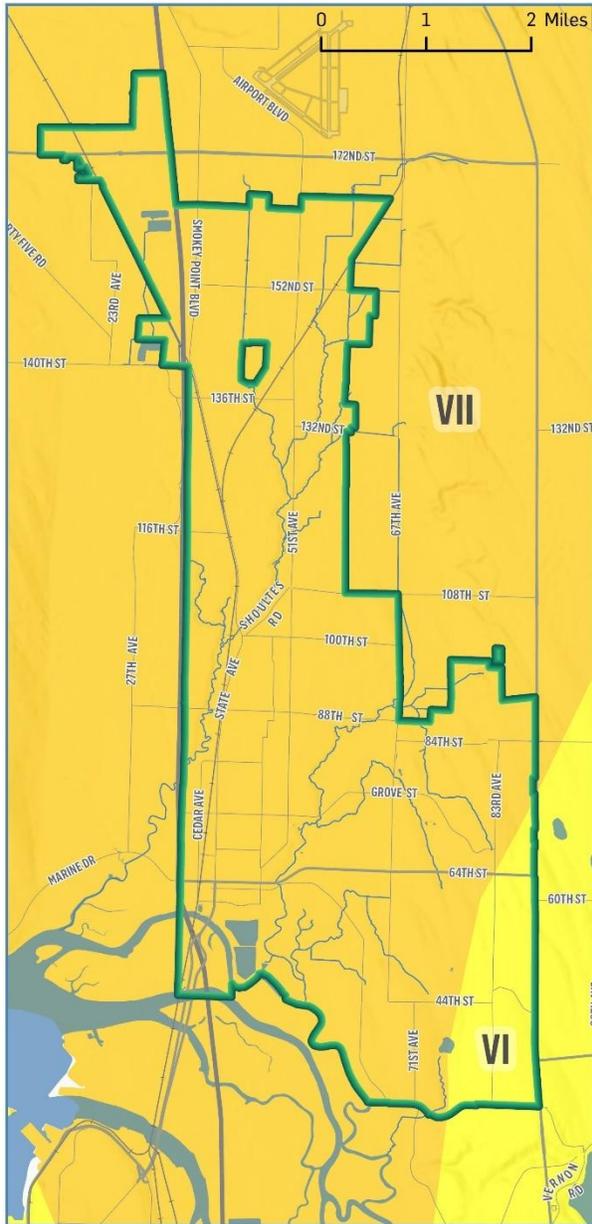The Darrington-Devils Mountain West Fault is a crustal fault so its earthquakes occur close to the surface. The Marysville area could expect to see strong to very strong shaking with light to moderate damage in a 7.4 magnitude earthquake. Shaking will be felt by all, some heavy furniture may move, and some buildings may have negligible to considerable damage.

Source: WADNR 2017, USGS, Esri

Intensity	I	II-III	IV	V	VI	VII	VIII	IX	X+
Shaking	Not Felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
Damage	None	None	None	Very Slight	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy

Figure 9. Darrington-Devils Mountain West Fault Shaking Intensity

CASCADIA SUBDUCTION ZONE SHAKING INTENSITY

MARYSVILLE

Cascadia Subduction Zone Magnitude 9.0 Event

These maps show estimated shaking intensity and damage using the Modified Mercalli Intensity Scale.

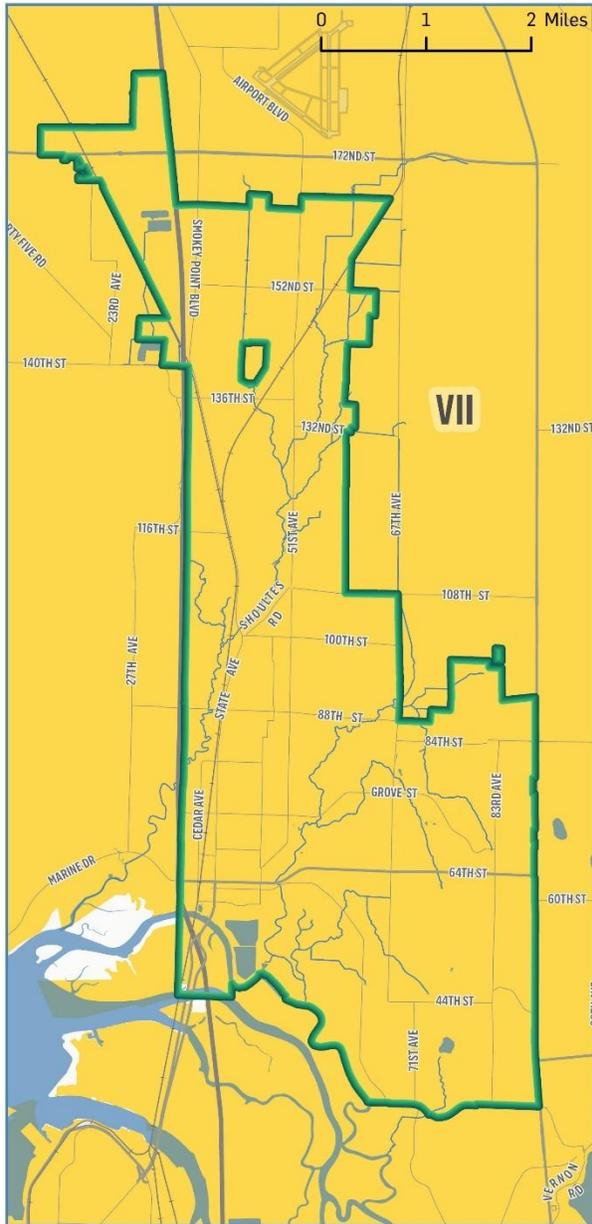The Cascadia Subduction Zone (CSZ) is a megathrust fault that can produce very powerful earthquakes. Shaking from a CSZ earthquake can last for several minutes. The Marysville area could expect to see very strong shaking with moderate damage in a 9.0 magnitude earthquake. Shaking will be felt by all, some heavy furniture may move, and some buildings may have slight to considerable damage.

Source: WADNR 2017, USGS, Esri

Intensity	I	II-III	IV	V	VI	VII	VIII	IX	X+
Shaking	Not Felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
Damage	None	None	None	Very Slight	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy

Figure 10. Cascadia Subduction Zone Shaking Intensity

Hazard Probability

While seismic activity is ongoing in our region, many earthquakes are too small to be felt. Larger earthquakes do not occur at a regular interval, however, over a long geologic history an average return interval can be estimated. For example, a Cascadia Subduction Zone earthquake has occurred about every 300-500 years. Washington State Emergency Management Division estimates there is a 15-25% chance of a Cascadia Subduction Zone earthquake and tsunami within the next 50 years.[viii] The USGS estimates that there is an 84% chance of the region experiencing an intraslab earthquake in the next 50 years.[ix] There is an estimated 17% chance of a crustal fault occurring within the next 50 years.[x]

Hazard Risk

One way to estimate the amount of shaking in a given area is to look at the liquefaction potential. Liquefaction occurs when the ground shakes and soil particles saturated with water settle. This can lead to amplified shaking and loss of stability or integrity. Liquefaction risk is determined by different factors including soil type.
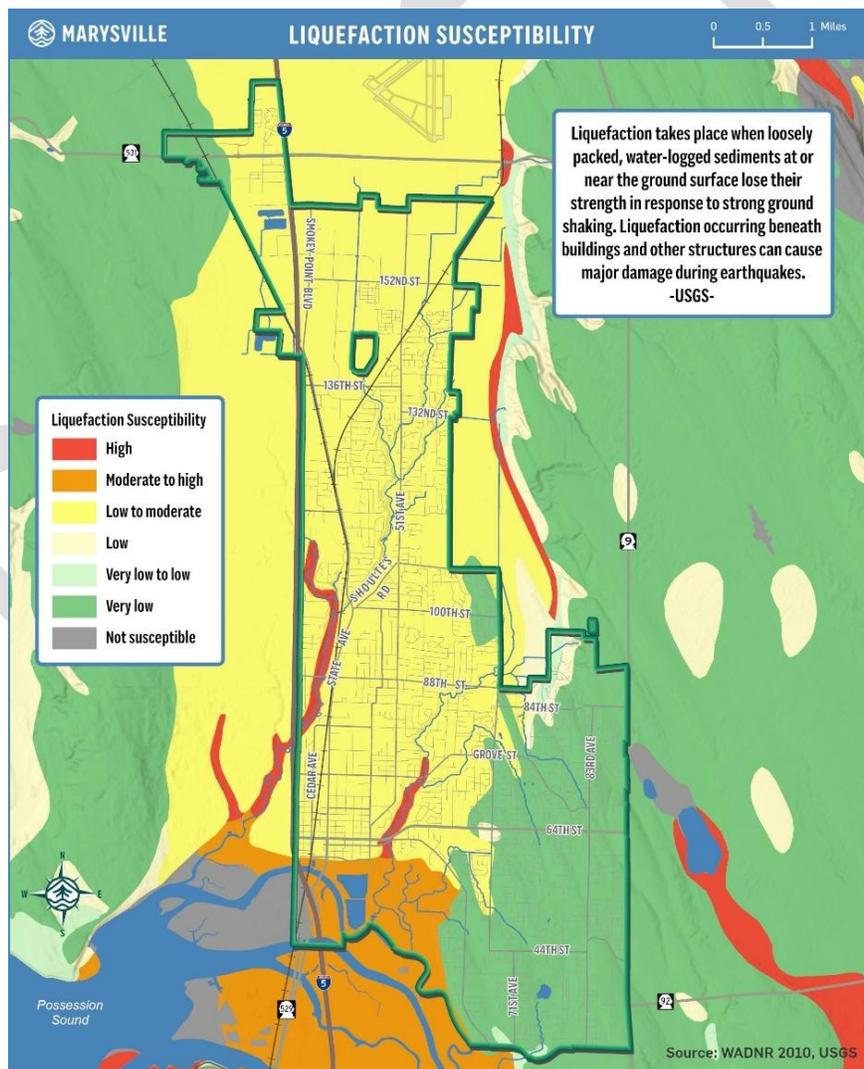

Figure 11. Liquefaction Susceptibility

Community Assets at Risk

An earthquake felt in Marysville will affect the entire city though shaking intensity and level of damage will vary. The majority of Marysville is in a low to moderate liquefaction susceptibility area including most of the commercial and downtown areas. Areas along the waterfront and creeks have a higher liquefaction potential. These areas include City utilities, transportation infrastructure, park and trail systems, and businesses. The many bridges in and leading into Marysville are at risk from failure in an earthquake which can limit access throughout the city.

The level of damage for a building will also vary depending on building age, construction type, and whether or not any mitigation measures have been taken. Buildings built prior to code changes for seismic-related standards (1972) have a greater chance of experiencing damage in a large earthquake. Different construction types can also react differently to earthquakes. Many structures in Marysville are wood framed and typically can withstand shaking. Unreinforced masonry (brick) buildings are less able to withstand shaking without damage.

Most of Marysville has a low to moderate liquefaction susceptibility with some sections of moderate to high or high along the waterfront and creeks. These are also areas of medium or high social vulnerability. Residents in these areas have an increased risk because they may experience greater shaking than other parts of the city and may have fewer resources to prepare, mitigate, or recover.

Table 2. Critical Facilities Liquefaction Potential

Critical Facilities Liquefaction Potential								
Community Lifeline	High	Moderate to High	Low to Moderate	Low	Very Low to Low	Very Low	Water	Total
Communications Infrastructure						1		1
Community Safety						1		1
Dam		1	3					4
Fire Services			4			2		6
Food			1					1
Fuel			1					1
Government Services		1	5					6
Highway Roadway	6	5	47		1	2	9	70
Law Enforcement			2					2
Medical Care			14			1		15
Potable Water Infrastructure	1		4	5	1	14		25
Power			4			2		6
Shelter			15			3		18
Wastewater Management	3	4	12		1	5		25
Total	10	11	112	5	3	31	9	181

Hazard Impacts

The level of damage from an earthquake will depend on many factors. For a catastrophic earthquake, anticipated impacts include:

- Casualties and displaced residents/businesses
- Building and infrastructure damage
- Damaged roads/bridges and blocking debris
- Utility outages (power, gas, water, wastewater, etc.)
- Supply shortages (fuel, groceries, etc.) due to increased need and decreased ability to transport goods through damaged areas
- Communications challenges (cell and internet outages)

Extreme Temperatures

Marysville regularly experiences unusually high summer heat and unusually severe winter cold that create dangerous conditions for the public, particularly those who are more sensitive to extreme temperatures. Generally, the Marysville community and the infrastructure are not well adapted to prolonged extremes. Impacts from an extreme heat or extreme cold event may include public health concerns and increased demand for medical services, utility outages due to damage or increased demand, business disruptions, and infrastructure damage.

Hazard Description

For the purpose of this plan, extreme heat and extreme cold are discussed in the same section as they have similar impacts to the community. Extreme heat and cold do not have specific temperature thresholds, but determinations are made by the National Weather Service (NWS) to issue advisories, watches, or warnings when dangerous conditions exist or are forecasted. This ranges depending on the location and other factors (ex. length of time experiencing extreme temperatures and if there is relief).

This section talks about extreme cold but does not directly address impacts from snow or other winter storms that may cause damage in a community. That is addressed under "Severe Weather." Cold weather advisories are typically issued in the Marysville area when temperatures are forecasted to reach 25°F and extreme cold warnings are typically issued when temperatures are forecasted to reach 10°F.[xi]

For heat events, the NWS uses multiple tools for determining when to issue official heat products. One of these tools is HeatRisk, a color-numeric-based index. It forecasts what the potential level of risk is for a community based on many factors.[xii] Marysville uses HeatRisk to inform its decision making.

Category	Risk of Heat-Related Impacts
Green 0	Little to no risk from expected heat.
Yellow 1	Minor - Primarily affects those who are extremely sensitive to heat and without cooling/hydration.
Orange 2	Moderate - Affects those who are sensitive to heat, especially those without cooling/hydration, and some health systems and industries.
Red 3	Major - Affects anyone without cooling/hydration as well as health systems and industries.
Magenta 4	Extreme - Rare and/or long-duration extreme heat with no overnight relief affecting anyone without cooling/hydration as well as health systems, industries, and infrastructure.

Figure 12. NWS HeatRisk Categories

Notable Past Events

In January of 1950, Western Washington experienced several weeks of very low temperatures including a reading of 2°F below zero in Everett.[xiii]

In the summer of 2021, the Pacific Northwest experienced an extreme heat event with record breaking temperatures that led to 157 deaths in Washington State (15 in Snohomish County).[xiv]

In the past 20 years of HeatRisk data from the NWS, the Marysville area (using Everett, WA records) each year had between 56-123 minor HeatRisk that extend throughout the summer months, between 0-20 days with moderate HeatRisk, and between 0-3 days of major heat risk.[xv] The past five years are shown below.
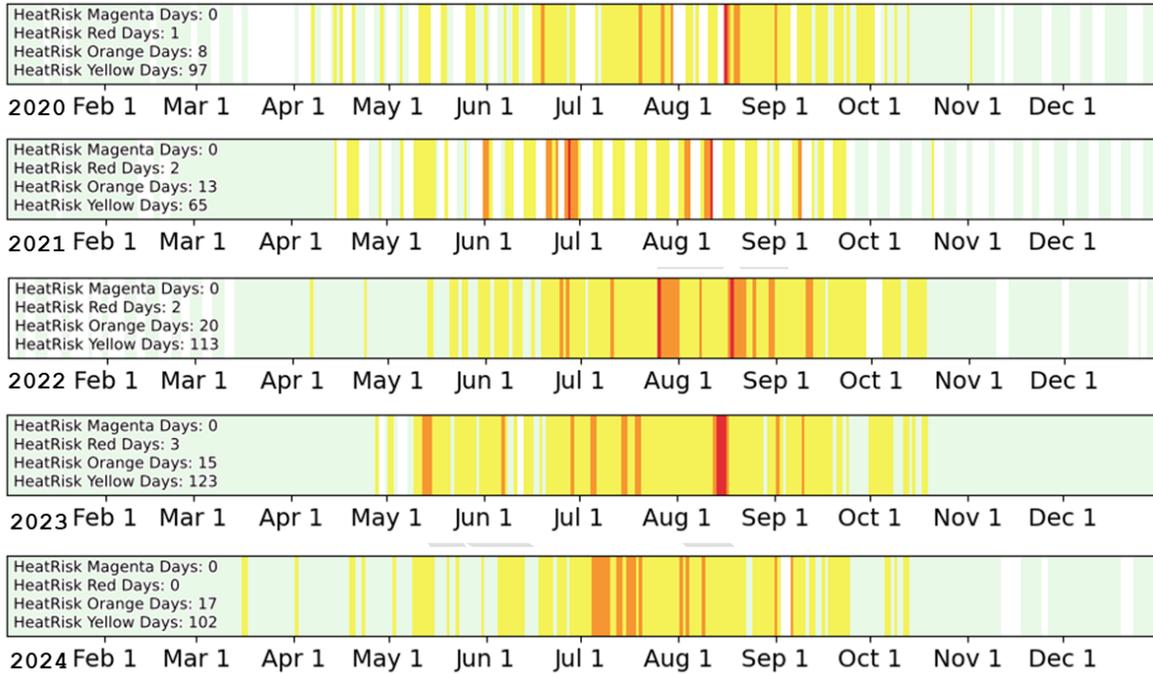
Figure 13. NOAA/NWS HeatRisk Days - Everett, WA 2020-2024

Hazard Probability

Due to changing climate trends, periods of extreme temperatures are a recurring event and have become more frequent than in years past. Snohomish County's average annual temperature rose 4.06°F from 1895 to 2020 and summer maximum temperatures are projected to continue to increase and heat waves are projected to lengthen and intensify.[xvi]

Hazard Risk

Built and natural resources are also exposed to extreme temperatures. For heat events, urban areas may experience higher temperatures than vegetated areas that are able to provide shade for cooling.

Extreme temperatures would affect the entire city. In heat events, there are factors that could cause some areas to have greater surface temperatures than others. More urban areas with more paved surfaces and fewer trees may feel hotter than areas with more vegetation.
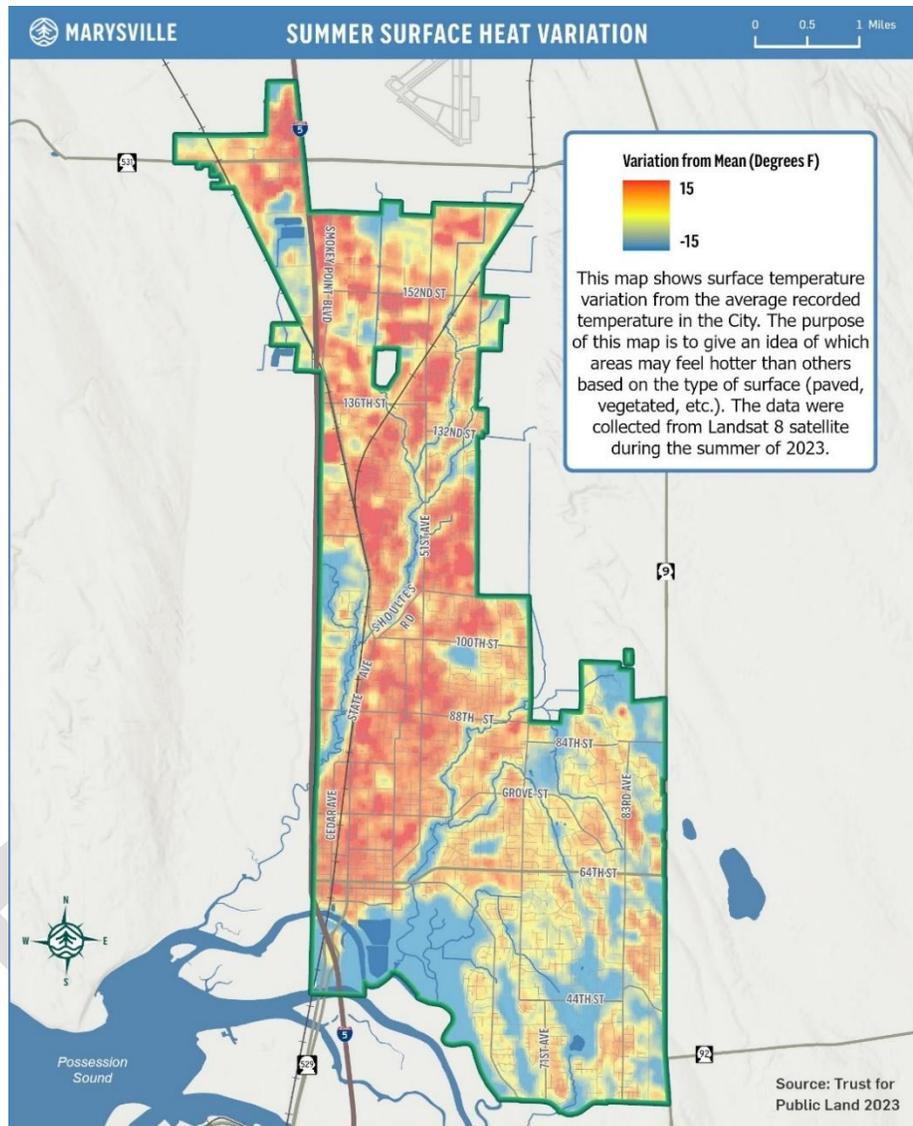
Figure 14. Summer Surface Heat Variation

Community Assets at Risk

While extreme temperatures cover the entire community, the exposure varies depending on the individual. There are people that are more susceptible to the effects of extreme heat or cold:

- The elderly and the very young
- People experiencing homelessness
- Those on certain medications and/or those with pre-existing conditions which make them more sensitive to heat
- Those working outdoors
- Those without a reliable source of heating, cooling and/or hydration

- Those sensitive to poor air quality, which can be exacerbated by heat waves
- Those living in low-income communities with limited access to resources[xvii]

Many of the areas that have medium or high social vulnerability also have less vegetation than other parts of the city. For extreme heat events, socially vulnerable populations have an increased risk because those areas do not have as much natural shade and could experience greater heat effects.

Hazard Impacts

Both extreme heat and cold have a direct impact on public health and wellbeing, especially for those more susceptible to extreme temperatures. Heat is the leading cause of weather-related deaths in the United States and results in hundreds of deaths every year.[xviii]

Extreme temperatures can be harmful to plants leading to loss of crops or other vegetation. Both heat and cold can result in power outages related to damage or overconsumption related to widespread heating and cooling needs. Heat can damage transportation infrastructure (ex. bridge expansion joints). Air conditioning is not a common amenity in most homes in Marysville so many may be without adequate ability to cool down in their own homes. Freezing temperatures also can result in utility damage (ex. frozen pipes within homes/businesses). Businesses may not be able to operate in extreme temperatures which can impact the availability of goods and services to the community.

Our community and infrastructure are generally not built for or used to extreme temperatures. People who have grown up and lived in the Pacific Northwest are not accustomed to extreme temperatures and may not handle them as well as others. Public education is a large piece of the response to extreme temperatures to better inform residents/business owners of the potential hazards.

The impact of extreme temperatures can also be very dependent on vulnerability factors. For example, some may not have access to resources that enable them to deal with extreme temperatures.

Other impacts from extreme temperatures could include:
- Increased demand for medical services
- Utility outages
- Increased need for adequate heating or cooling
- Infrastructure damage

Drought

Another weather hazard that relates to extreme temperatures is drought. In Washington State, a drought occurs when the water supply is below or projected to be below 75% of normal and water shortages are likely to create undue hardships for water users or the environment.[xix] Snowpack is an important piece to water supply in Washington and the level of snowpack contributes to drought condition determination. A drought declaration is made when drought conditions meet the established thresholds. Snohomish County has been included in eight drought declarations since 2001.[xx] Drought conditions can affect agriculture as well as water supply which can lead to measures to conserve water. Drought conditions in Western Washington are becoming a regular occurrence due to climate change and are expected to continue being a regular occurrence.[xxi]

Flooding

Marysville can experience riverine flooding along Ebey Slough and can also experience flash flooding in local streams and urban areas during times of excessive rainfall. Flooding is a recurring hazard in the Pacific Northwest and can occur more frequently as severe weather events become more common. Potential impacts include inundation of homes, businesses, and infrastructure; blocked or damaged roadways; resident and business displacement; and environmental contamination.

Hazard Description

Floods occur when water overflows onto land that is usually dry. It is often caused by heavy rain or quickly melting snow that overtops the banks of rivers and streams. Flooding can occur over a longer period of time or very quickly in a flash flood.[xxii]

There are different types of flooding that Marysville could experience.[xxiii]

- Riverine Flooding - Riverine flooding occurs when large amounts of rainfall lead to overloaded rivers. When riverbanks are overtopped or levy's fail, flooding can be widespread throughout low lying areas.
- Flash Flooding - Flash floods develop very quickly when large rainfall amounts exceed the ability of the ground to absorb it. They can cause rapid rise of fast-moving water in short time periods. Localized flash flooding can also happen in streams when beaver dams fail.
- Urban Flooding – Periods of heavy rain can cause localized flooding in urban areas where rainwater is not able to penetrate the ground. Other factors (such as leaves covering storm drains) can lead to flooded roadways or structures.
- King Tides - King tides is a term used to describe exceptionally high tides. These can cause inundation of usually dry land or cause damage especially if they coincide with other hazard events.[xxiv]

Hazard Probability

Flooding is a very common occurrence in the United States and Snohomish County. Floods are among the most common and costliest disasters in the state.

Floodplain maps indicate flooding extents using the terms 100-year flood and 500-year flood. A 100-year floodplain is an area that has a 1 in 100 (or 1%) chance of flooding in any given year. The 500-year floodplain is an area that has a 1 in 500 (or 0.2%) chance of flooding in any given year.[xxv]

Other types of flooding are harder to model as they are dependent on many factors and are localized to specific areas. Likelihood of flash floods and urban flooding can depend on the weather systems as well as the environment and development in the area. Recent climate trends indicate that the frequency of large rain events will increase. According to Marysville's Climate Change Vulnerability Assessment, Marysville is likely to experience increased flooding especially in winter. By 2050, summer rainfall is projected to decline by 8.7% but winter precipitation is projected to increase by 8.7%. Rain events will continue to become heavier and more severe.[xxvi]

Hazard Risk

Modeled flooding is shown using Flood Insurance Rate Maps (FIRMS) developed by the Federal Emergency Management Agency (FEMA). There are two flooding zones in Marysville. Both the 100- and 500-year floodplains are along the shoreline of Ebey Slough, cover Qwuloolt Estuary, and extend up Quil Ceda Creek and Allen Creek. A rise in sea levels in the future would increase tidal and flooding effects along Marysville's shoreline. Sea levels around Marysville could rise 1.4 feet on average by 2050 and 3.3 feet on average by 2080. [xxvii] Flooding can also occur in other areas of Marysville, especially along creeks, retention ponds, and areas that are particularly flat or at lower elevations.

Hazard Maps

Marysville borders Ebey Slough which is connected to the Snohomish River. It is also influenced by tidal activity from Possession Sound.
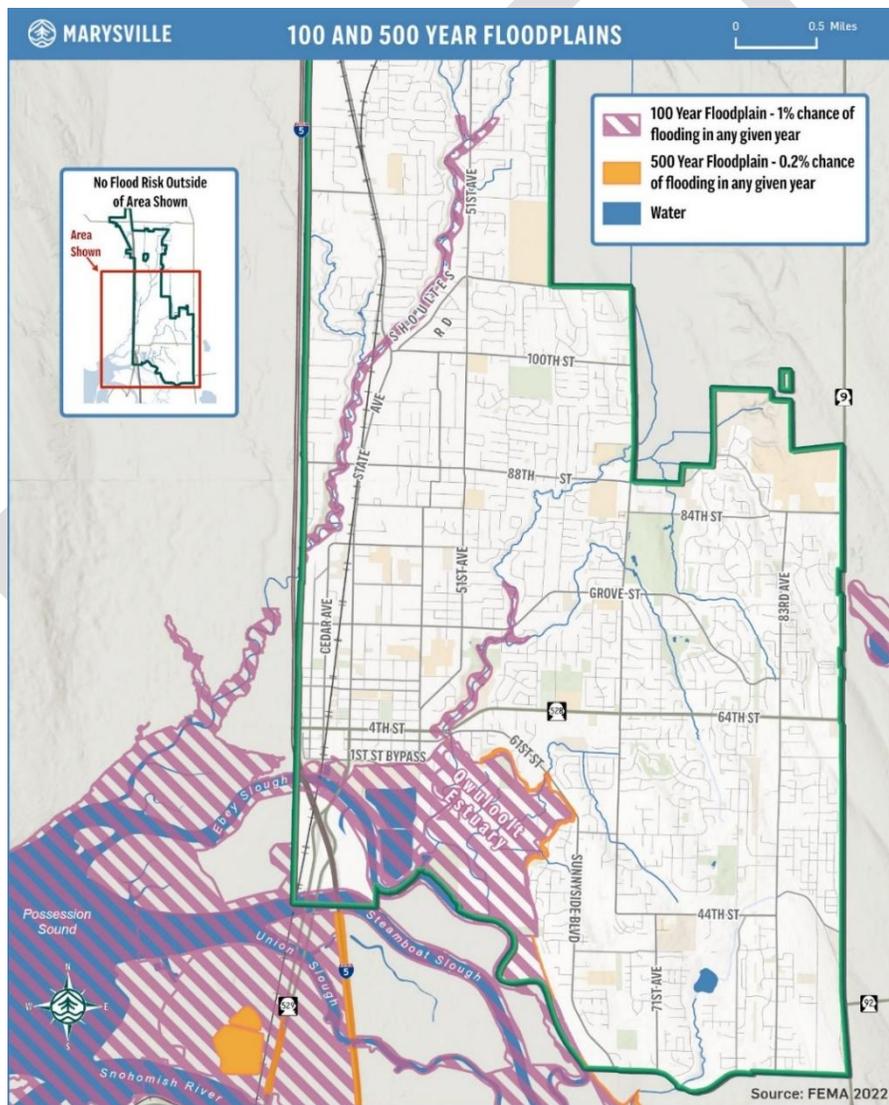

Figure 15. 100- and 500-Year Floodplains

Community Assets at Risk

Based on available modeling, riverine flooding risk is isolated to the low-lying shoreline areas and streams in Marysville. The southwestern boundary of Marysville borders Ebey slough and includes a public boat launch but does not have a marina or other docks. City facilities within the floodplains are the Wastewater Treatment Plant, Public Works Administration and Maintenance facilities, a stormwater treatment facility and Ebey Waterfront Park. There are also businesses in close proximity to the modeled inundation areas near the shoreline. There are no residential structures in the modeled inundation areas, but there are neighborhoods surrounding the Qwuloolt Estuary. Levees were removed in 2015 to return the area to natural tidal marsh and forest scrub-shrub habitat.[xxviii] Major thoroughfares (I-5 and 529) cross over the Snohomish River and other sloughs which would experience flood impacts. Flooding that affects railways could lead to blocked crossings and impacts to travel and emergency services in Marysville.

Floodplains extend up Quil Ceda Creek and Allen Creek, which are alongside residential areas and major roadways. There are 27 National Flood Insurance Program (NFIP) policies in Marysville with $8,366,000 insurance in force (Community Assistance Visit January 26, 2024). There are no repetitive loss structures in the city. Most of the creeks and waterfront area, with the exception of the southernmost part of the city, are in areas of medium or high social vulnerability. Those residents are more at risk from flooding impacts because they have a greater likelihood of experiencing flooding and may have fewer resources to prepare, mitigate, or recover.

City water utility infrastructure is also susceptible to flooding from along the Stillaguamish River and could be inundated with flood water or become isolated and inaccessible to staff.[xxix]

Table 3. Properties in the 100-Year Floodplain

Properties in the 100-Year Floodplain					
Land Use Type	Buildings	Building Assessed Value	Parcels	Affected Acres	Affected Land Value
Cultural, Entertainment, Recreation	1	$63,780	8	8	$1,995,811
Goods/Products	1	$0	2	14	$9,818,374
Manufacturing	15	$12,590,850	18	15	$8,628,012
Open Space			1	9	$152,213
Open Space-Common Area			9	31	$0
Other			24	24	$0
Residential	54	$15,798,750	284	104	$31,399,320
Resource Production/Extraction			1	2	$295,682
Retail			3	0	$246,888
Services	11	$3,945,000	11	26	$3,908,259
Transportation/Utility	7	$117,600	8	110	$1,005,242
Undeveloped			89	456	$4,600,719
Water			3	16	$16,014
Total	**89**	**$32,515,980**	**461**	**816**	**$62,066,533**

Table 4. Properties in the 500-Year Floodplain

Properties in the 500-Year Floodplain					
Land Use Type	Buildings	Building Assessed Value	Parcels	Affected Acres	Affected Land Value
Cultural, Entertainment, Recreation	1	$63,780	8	8	$1,995,811
Goods/Products	1	$0	2	14	$9,818,374
Manufacturing	15	$12,590,850	18	15	$8,628,012
Open Space	0	$0	1	9	$152,213
Open Space-Common Area	0	$0	15	34	$0
Other	0	$0	31	26	$0
Residential	69	$19,743,050	338	106	$35,322,823
Resource Production/Extraction	0	$0	2	4	$503,856
Retail	0	$0	3	0	$246,888
Services	11	$3,945,000	11	26	$3,908,259
Transportation/Utility	7	$117,600	8	110	$1,005,242
Undeveloped	0	$0	98	458	$4,741,636
Water	0	$0	3	16	$16,014
Total	**104**	**$36,460,280**	**538**	**826**	**$66,339,129**

Table 5. Critical Facilities in the Floodplain

Critical Facilities in the Floodplains			
Community Lifeline	100-Year Floodplain	500-Year Floodplain	Total
Dam	1	0	1
Government Services	1	0	1
Highway Roadway	17	0	17
Potable Water Infrastructure	1	0	1
Wastewater Management	6	0	6
Total	**26**	**0**	**26**

Hazard Impacts

Impacts from a major flooding event would include:

- Water inundation along shoreline and streams
- Displaced or damaged businesses/facilities
- Damaged roads/bridges and blocking debris
- Streambed and shoreline ecosystem damage
- Contaminated water

Landslides

Steep slopes in Marysville, especially when combined with water saturation, disturbances, or erosion, pose a risk for landslides. Almost 600 parcels in the city have steep areas (over 33% slope), most of which are residential. A landslide could result in casualties, displacement, property damage, utility outages, and blocked or damaged roadways.

Hazard Description

Landslide is a general term for an event where rock, soil, or debris move down a slope. There are different types depending on the type of material and the nature of the failure in the slope. Debris flows (mudflows and mudslides) and rock falls are examples of landslide types. They typically occur on steep slopes and are usually caused by a number of factors including gravity, water saturation, earthquakes, disturbance by human activities, or erosion.[xxx]

Notable Past Events

In 2014 the Oso (530) landslide destroyed 40 homes, buried parts of a highway, blocked the North Fork Stillaguamish River, and caused 43 fatalities. This landslide resulted in a Presidential emergency declaration. [xxxi]

Hazard Probability

The types of soil and weather in Western Washington make this area prone to landslides. There is a history of large landslides in the area and smaller scale events are fairly common. Some landslides provide warning signs to indicate a slide may occur or there may be activity (human or natural) that increases the likelihood of a landslide occurring. Periods of heavy rain or wildfire activity may increase the likelihood of a landslide.

Landslides are more likely to happen in areas with steep slopes. Slopes with a 33% grade or steeper are considered a landslide hazard area by the Snohomish County Code. With projected increase in amount and severity of rain events due to climate change, Marysville is likely to see an increase in number of landslides in steep slope areas when the slopes become saturated.[xxxii]

Hazard Maps

Areas of steep slope have a greater landslide risk than flatter areas. The following map shows steep slope areas as well as the landslide deposits of past landslides.
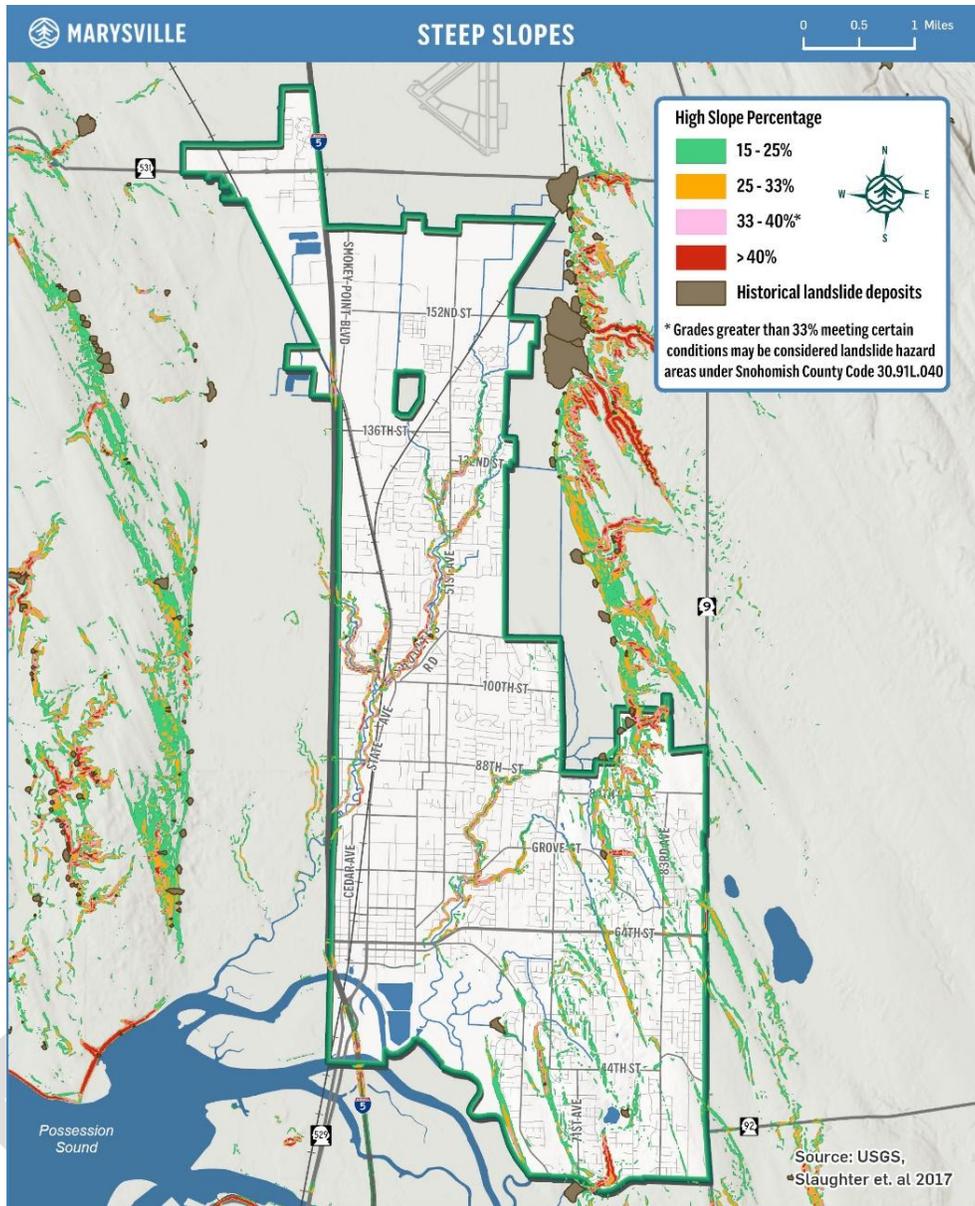
Figure 16. Steep Slopes

Hazard Risk

Landslides can range from minor events to large scale events that are very destructive. Any structures on the hillside that fails are likely to be damaged as will whatever is below that is covered by the hillside material. When it fails, the material and debris can fan out and cover very large distances, especially if the soil is saturated with water.

Community Assets at Risk

Many of the steep areas of Marysville are residential, putting personal property and residents at risk of landslides. The infrastructure (utilities, roadways, etc.) is also susceptible to damage from landslides. Steep slope areas are primarily along creeks and in the hilly areas of the southeast portion of the city. Steep slopes in the western part of the city are primarily along creeks. These are

also in areas of medium to high social vulnerability. Some parts of the southeast area of the city have a low social vulnerability. The sections with high social vulnerability have an increased risk because they may have fewer resources to prepare, mitigate, or recover.

Table 6. Parcels that include Steep Slopes

Parcels that include Steep Slopes (>33% grade)		
Land Use Type	Parcels	Assessed Land Value
Cultural, Entertainment, Recreation	5	$4,121,700
Manufacturing	4	$3,038,600
Open Space	1	$285,100
Open Space-Common Area	16	$1,631,100
Open Space-Water Retention	5	$538,500
Other	25	$1,373,200
Residential	473	$146,112,300
Retail	6	$9,502,300
Services	5	$5,048,600
Transportation/Utility	2	$799,600
Undeveloped	54	$15,911,000
Water	1	$21,100
Total	**597**	**$188,383,100**

Table 7. Critical Facilities on Parcels that include Slopes >33% or Fan Deposits

Critical Facilities on Parcels that include Slopes > 33% or Fan Deposits	
Community Lifeline	Total
Highway Roadway	1
Potable Water Infrastructure	9
Wastewater Management	1
Total	**24**

Hazard Impacts

The level of damage from a landslide will depend on the location and size. The majority of impacts will be isolated to the immediate landslide area and include:

- Injured and displaced residents/businesses
- Building and infrastructure damage
- Damaged roads/bridges and blocking debris
- Utility outages (power, gas, water, wastewater, etc.)

Severe Weather

> Marysville regularly experiences damaging severe weather, including windstorms, snow, and thunderstorms. These events can topple trees, damage power infrastructure, and cause widespread outages. Impacts may include prolonged utility disruptions, building damage, blocked roads, delayed emergency response, and increased demand for public assistance and medical services.

Hazard Description

Severe weather in this plan refers to a variety of storm events including wind, snow, and thunderstorms. Marysville is located within a convergence zone which means that it can experience stronger weather systems diverted by nearby mountain ranges.

A severe weather event may include different types of weather hazards.[xxxiii]

- Wind storm – periods of unusually high sustained wind speeds and gusts.
- Winter precipitation – types of precipitation in cold temperatures includes snow, sleet, and freezing rain.
- Thunderstorms – a thunderstorm occurs when a weather system is accompanied by thunder and lightning. They can also generate hail, wind, or tornados.
- Tornado – a tornado is a violently rotating column of air and can be highly destructive.

Notable Past Events

Severe weather has led to several Presidential Disaster Declarations over the past several decades.

Table 8. Severe Weather Presidential Disaster Declarations

Severe Weather Presidential Disaster Declarations			
Hazard Event Type	**FEMA Disaster Number**	**Date of Hazard Event**	**Preliminary Damage Assessment Amount**
Severe Winter Storm, Straight-line Winds, Flooding, Landslides, and Mudslides	4682-DR-WA	November 2022	$224,495.00
Severe Storm, Flooding, Landslides, and Mudslides	4539-DR-WA	January 2020	$548,000.00
Severe Winter Storms, Straight-line Winds, Flooding, Landslides, Mudslides, and Tornado	4418-DR-WA	December 2018	$624,603.12
Severe Winter Storms, Straight-line Winds, Flooding, Landslides, and Mudslides	4249-DR-WA	November 2015	$95,528.36
Severe Windstorm	4242-DR-WA	August 2015	$67,289.05
Severe Winter Storm, Flooding, Landslides, and Mudslides	4056-DR-WA	January 2012	$56,156.77
Severe Winter Storm and Record and Near Record Snow	1825-DR-WA	December 2008	$50,201.85
Severe Winter Storm and Flooding	1159-DR-WA	January 1997	$80,593.00

Hazard Probability

Marysville experiences severe weather every year and in the past decade has seen on average a major storm with a Presidential Disaster Declaration every two years. Wind storms typically happen in the fall and winter but can extend into the late summer or early spring months. Snow events usually occur in the winter or early spring if temperatures are cold enough, and thunderstorms usually occur in the spring or fall. Tornadoes can occur any time of the year but are usually in the spring, although these hazards are not common in Marysville.

Changes in weather patterns have resulted in more instances of severe weather events. Marysville can expect to continue to see severe weather each year.

Hazard Risk

A major thunderstorm, snow, or wind event would impact all of Marysville but may differ in severity or damage from place to place. The record snowfall in Marysville reached 40 inches, but most snow events do not reach that level. Damaging wind in Snohomish County has reached sustained speeds around 20-30 mph and gusts around 50 mph. Thunderstorms can produce strong winds, hail, flash flooding from heavy rainfall, lighting, and tornadoes. A tornado produces very strong and damaging winds (ex. a Port Orchard tornado in 2018 reached speeds of 120-130 mph).[xxxiv]

Community Assets at Risk

Severe weather, particularly snow and wind events, cause a lot of downed trees and tree limbs. The falling trees and branches often cause damage to buildings, bring down power lines, block roads, or damage other critical infrastructure. Power infrastructure like power poles can also be damaged from high-speed winds or weighed down powerlines from snow, ice, or trees. Severe storms can lead to water or wastewater infrastructure outages when there are extended power outages or damage affecting the operations of key facilities. In a severe weather event, especially one with power outages, populations with medium or high social vulnerability have an increased risk because they may have fewer resources to prepare, mitigate, or recover.

Stories From the Past

In February of 1916 Marysville got 40 inches of snow in just a matter of days. This is the largest recorded snow event in the County.

Source: Marysville Historical Society

The level of damage from severe weather will depend on many factors and may include:

- Building and infrastructure damage
- Damaged roads/bridges and blocking debris
- Extended power outages
- Supply shortages (fuel, groceries, etc.) due to increased need and decreased ability to transport goods through damaged areas
- Closure of schools and businesses

Tsunami

Marysville can experience both distant and local source tsunamis that can occur at any time. Modeling indicates that up to 510 acres along the shoreline, including Allen Creek and surrounding areas, could be inundated. Businesses, City infrastructure, and park facilities are within the modeled inundation zone. Tsunami waves could inundate areas with water, erode built or natural features, and leave behind debris. Depending on the severity and warning time, impacts may include casualties, interrupted utility services, blocked roadways, and infrastructure damage.

Hazard Description

Tsunamis are series of large ocean waves that have been triggered by a rapid vertical displacement of water. They can rush on shore very quickly with very strong currents and inundate areas farther inland than normal. Tsunamis are typically caused by large magnitude earthquakes but can also be caused by landslides, volcanic eruptions, or asteroid strikes.[xxxv]

Table 9. Tsunami Sources

Source Type	Impact	Examples
Local sources – Earthquake faults in the Pacific Northwest are capable of producing tsunamis including the Cascadia Subduction Zone, the Seattle Fault, and the Southern Whidbey Island Fault.	Tsunamis generated from local faults are likely to have more severe impacts and greater damage. They will also have less warning time than distant source earthquakes.	Seattle Fault around 900 Cascadia Subduction Zone 1700
Distant sources – Large magnitude subduction zone earthquake from distant sources across the Pacific Ocean can cause tsunamis that reach Washington State.	Tsunamis from distant source earthquakes will have less energy by the time they reach Washington and into the Puget Sound than locally-generated tsunamis but they can still be damaging, especially their strong currents. They will also have greater warning times allowing for more preparedness.	Fukushima 2011 Tonga 2022 Kamchatka Peninsula 2025
Landslides – Large amounts of debris suddenly entering local waters can generate a tsunami. These can occur anywhere in the Puget Sound area.	Tsunamis generated by landslides are harder to model so damage potential is dependent on the specific situation. There would be little warning time once a tsunami is generated and wave heights would be hard to predict.	Camano Head 1825 Lake Roosevelt 2024
Asteroid (or other space debris) - A large asteroid crashing into any body of water is expected to create a large tsunami.	Depending on the location, the impacts of a tsunami generated from an asteroid can be catastrophic.	Chicxulub asteroid 66 million years ago[xxxvi]

Cascadia Subduction Zone – January 26, 1700

A 9.0 Cascadia Subduction Zone generated a large tsunami that swept over the Pacific Coast and inundated shorelines within the Puget Sound area. Damages and inundation depths were not documented in writing, but tsunami deposits can be found throughout the region.

Hazard Probability

Seismic activity is ongoing in our region and throughout the Pacific Ocean, but not all earthquakes can generate a tsunami. Large subduction zone earthquakes typically generate a tsunami, but crustal faults (like the Seattle Fault or SWIF) have also generated tsunamis in the past. Deep intraslab earthquakes do not directly generate a tsunami but could cause a landslide into a body of water that does. Tsunamis can vary in size and impact depending on the location and the nature of the earthquake that generates them.

Tsunami-generating earthquakes do not occur at a regular interval, however, over a long geologic history an average return interval can be estimated. For example, a Cascadia Subduction Zone earthquake has occurred about every 300-500 years. Washington State Emergency Management Division estimates there is a 15-25% chance of a Cascadia Subduction Zone earthquake and tsunami within the next 50 years.[xxxvii]

Hazard Risk

Modeling for tsunamis include inundation maps as well as current velocity for a given earthquake scenario. A tsunami from a Seattle fault earthquake is included to demonstrate our greatest risk (with the exception of non-earthquake generated tsunamis which are not modeled) because it has the greatest inundation and less warning time than other scenarios.
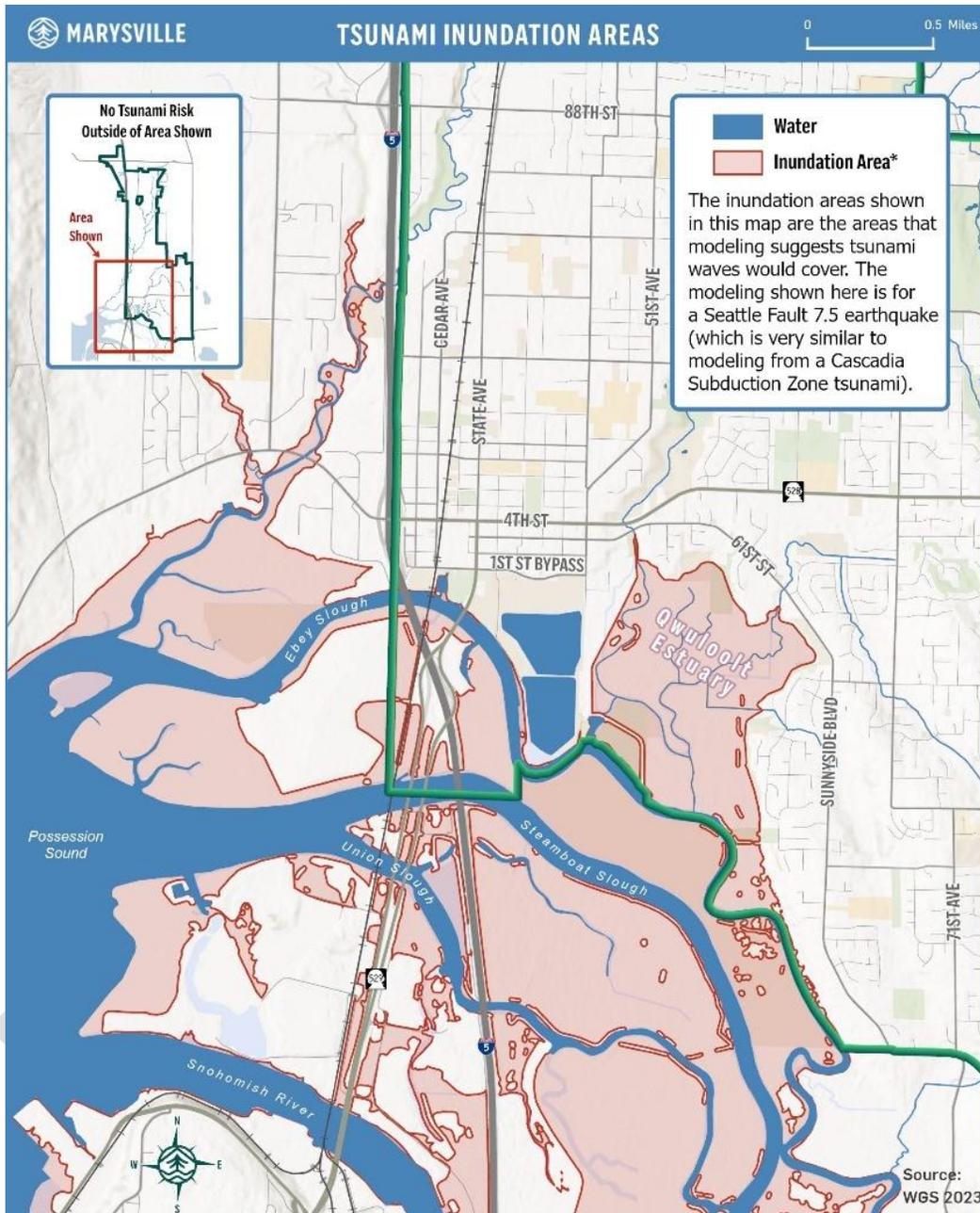
Figure 17. Tsunami Inundation Areas

Community Assets at Risk

Based on available modeling, tsunami inundation risk is isolated to the low-lying shoreline areas and streams in Marysville. The southwestern boundary of Marysville borders Ebey slough and includes a public boat launch but does not have a marina or other docks. There are no City facilities in the inundation areas, but in close proximity are the Wastewater Treatment Plant, a stormwater treatment facility and Ebey Waterfront Park. The park includes a trail along the shoreline which could experience inundation from a tsunami. There are also some businesses in close proximity to the modeled inundation areas near the shoreline. There are no residential structures in the

modeled inundation areas, but there are neighborhoods surrounding the Qwuloolt Estuary which would be inundated. Levees were removed in 2015 to return the area to natural tidal marsh and forest scrub-shrub habitat.[xxxviii] This helps to regulate flooding impacts and can slow down tsunami waves.

Major thoroughfares (I-5 and 529) cross over the Snohomish River and other sloughs which would experience tsunami impacts.

Table 10. Tsunami Inundation Parcels (Seattle Fault Scenario)

Tsunami Inundation Parcels (Seattle Fault Scenario)			
Land Use Type	Parcels	Acres	Assessed Land Value
Cultural, Entertainment, Recreation	1	0.2	$62,883
Goods/Products	2	0.9	$646,049
Open Space-Common Area	4	8.2	$0
Other	3	5.0	$0
Residential	21	12.3	$941,701
Resource Production/Extraction	1	1.0	$130,325
Services	1	0.4	$48,126
Transportation/Utility	3	5.3	$10,309
Undeveloped	48	467.8	$3,543,393
Water	2	8.8	$11,400
Total	**86**	**510**	**$5,394,186**

Hazard Impacts

If the Marysville area experiences a tsunami, there will likely be widespread damage throughout the region which would lead to supply shortages and limited response assistance due to transportation infrastructure damage and resource availability. The level of damage from a tsunami will depend on many factors. For a catastrophic tsunami, anticipated impacts include:

- Water inundation along shoreline and streams (erosion)
- Damaged roads/bridges and blocking debris
- Supply shortages (regional impacts)
- Utility outages if damaged
- Streambed damage

Wildfire

Wildfire risk exists throughout Marysville wherever vegetation is present, particularly during hot, dry conditions. Wildfires can damage or destroy vegetation, homes, businesses, and infrastructure, and smoke from local or regional fires can degrade air quality. Over 130 critical facilities are located in wildland urban interface or intermix areas. Impacts may include health emergencies, displacement, infrastructure damage, and utility outages.

Hazard Description

Wildfires occur when vegetated materials (trees, grass, brush, etc.) burn. They are typically unplanned and can be caused by different factors both natural and human caused. Wildfires become particularly dangerous when they burn in areas that have been developed or include buildings or other infrastructure. Areas that have homes built near or among vegetated areas are called the wildland urban interface (WUI). Wildfires release large amounts of smoke into the air that can travel far distances resulting in degraded air quality both locally and across broader regions.[xxxix]

Notable Past Events

In 2023, brushfires along I-5 in Marysville triggered a large response from Marysville Fire, Police, and Public Works. The fire spread quickly through dry vegetation between the freeway and businesses but was extinguished before any buildings were seriously damaged.

Hazard Probability

Wildfires can happen any time of the year but usually occur when it has been dry and hot as materials are more likely to burn. Wildfires have not historically been a major concern on the western side of the Cascade Mountains as it is not as hot and dry as Eastern Washington, but there has been more emphasis on preparing for fires in Western Washington as they've become more common. Changes in our weather patterns and seasonal outlooks have led to longer stretches of hot and dry weather that can contribute to increased likelihood of fires. Some areas are more prone to fires starting or spreading uncontrollably based on their location. For example, we often see brushfires along major highways where they have been started by human activity (sparks from vehicles, discarded cigarettes, or fireworks). Some fires can be quickly stopped but stopping them can be hindered if they occur in a more vegetated area, are in an area that is difficult to access by responders, or winds speed up the spread of fire.

Hazard Risk

A WUI is where humans and their development meet or intermix with wildland fuel and is broken into three categories:

- Interface – structures next to wildland fuels with a clear line between fuel sources and developed community.
- Intermix – structures scattered throughout a wildland area with no clear lines of development.
- Occluded – usually a more urban environment where structure surround an island of wildland fuels (park or open space that is usually less than 1000 acres in size).[xl]

Marysville does not have areas in the interface or intermix category, so will focus on occluded areas except when discussing secondary impacts from larger wildfires. Marysville has several areas with vegetation interspersed with development and buildings.

Hazard Maps

The Washington State Legislature is working with the Washington Department of Natural Resources to develop a WUI map that will designate where WUI related State building code will be enforced. Until the WA-WUI map is available for use, Snohomish County DEM has used best available science and data to develop the Snohomish County WUI Planning and Prevention Map to use for planning purposes only.[xli] This mapping does not show any WUI identified areas within city limits.
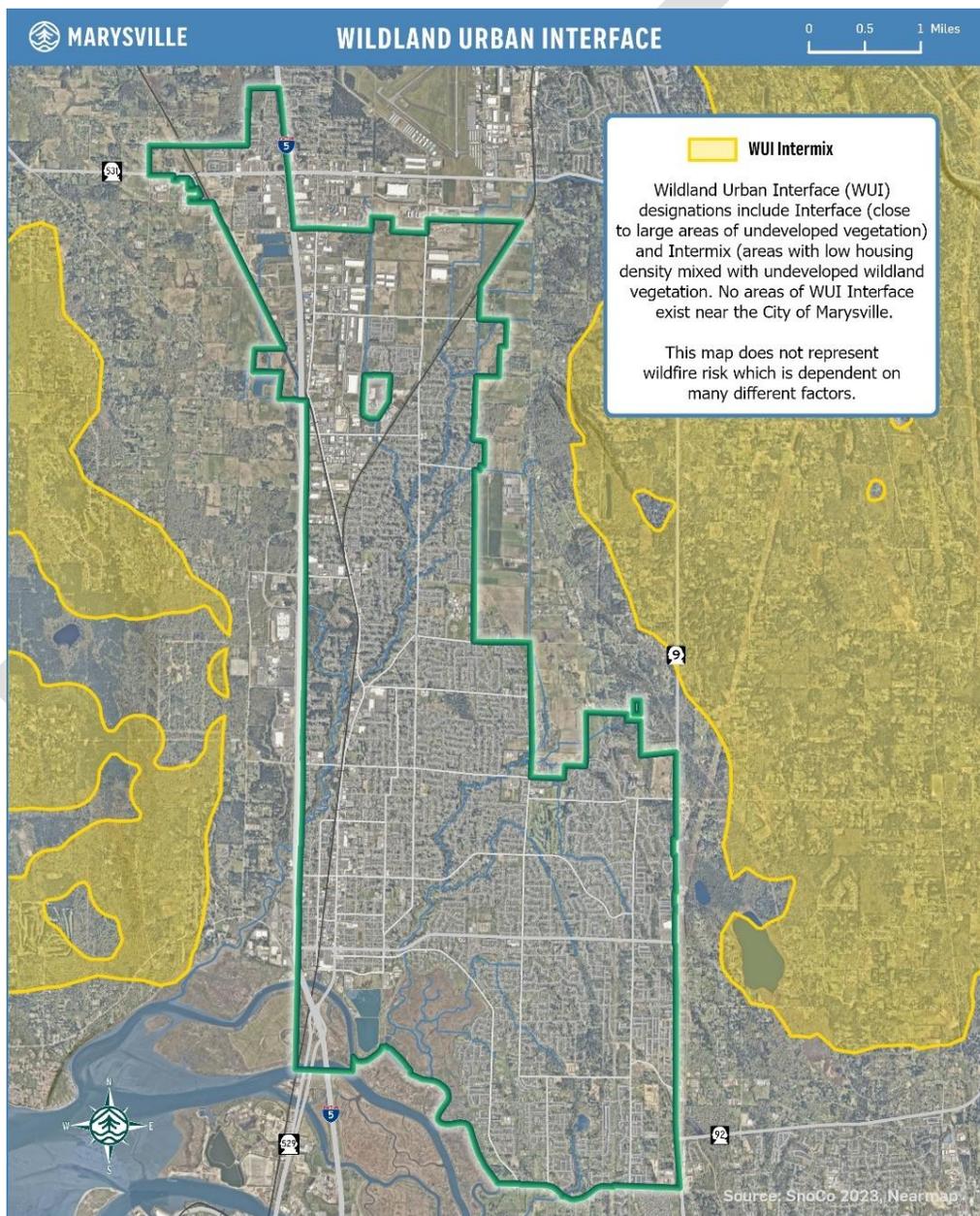

Figure 18. Wildland Urban Interface

While Marysville may not have identified interface or intermix areas, there are many pockets of vegetation throughout the city that are surrounded by development. The following map shows how many trees and buildings are spread throughout the city. It also shows where large islands of vegetation are.
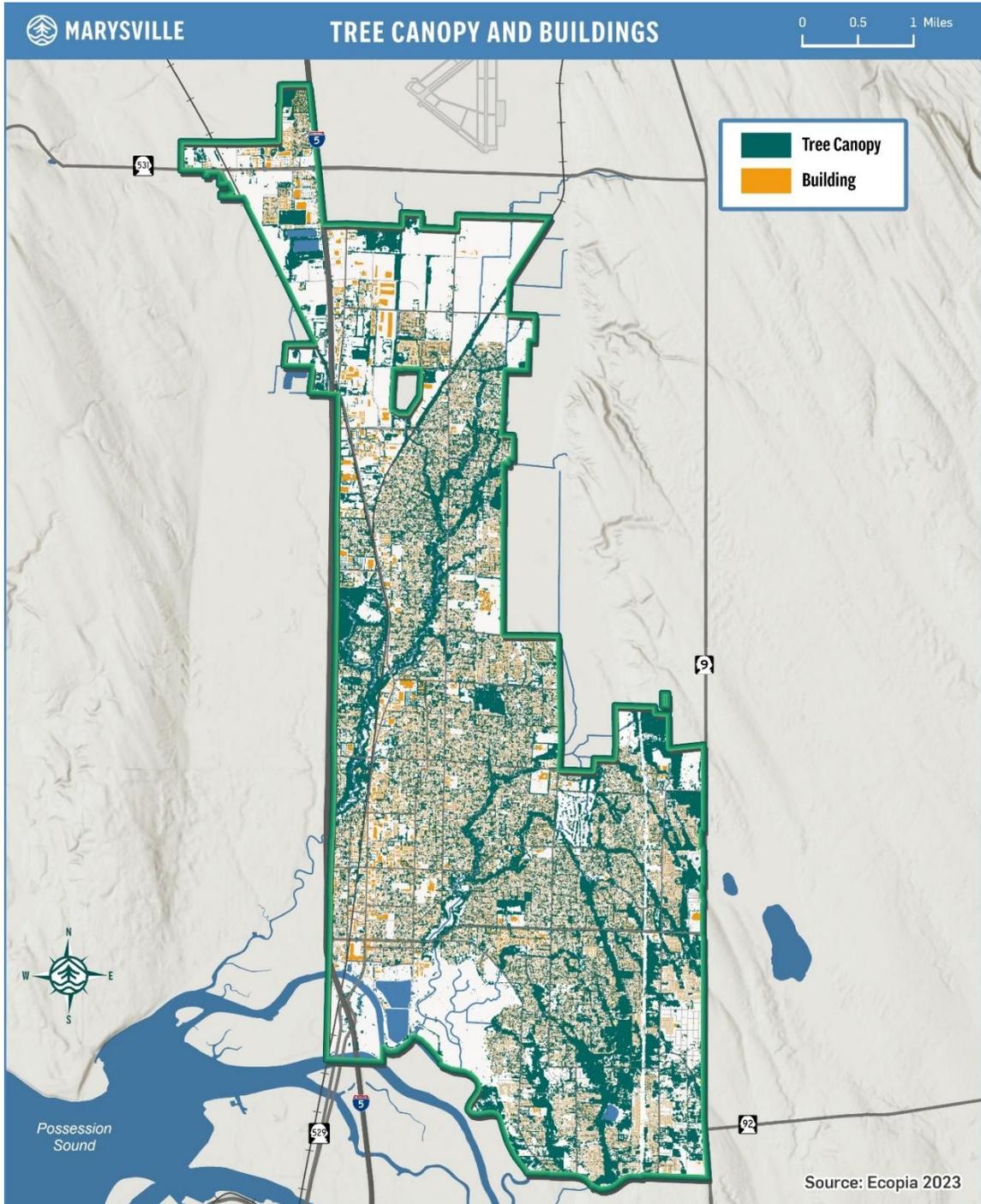

Figure 19. Tree Canopy Map

Wildfire smoke that leads to degraded air quality can affect all of Marysville even if the fire is not in or near city limits. The severity and duration of poor air quality would depend on the weather conditions.

Community Assets at Risk

Marysville is generally a more urban community and doesn't have homes or businesses intermixed with or next to large, vegetated areas. This reduces the likelihood of a large wildfire within city boundaries, but Marysville does have pockets of vegetated areas like parks and native growth protection areas (NGPAs) with a lot of fuel that could threaten nearby structures and could be difficult to control.

Sections of vegetation with surrounding structures and residences can be found throughout the city within low, medium, and high social vulnerability areas. Populations with medium or high social vulnerability have an increased risk from wildfire or related air quality events because they may have fewer resources to prepare, mitigate, or recover.

Hazard Impacts

The impacts of a wildfire would depend on the location and intensity of the incident but could include:

- Displaced residents/businesses
- Building and infrastructure damage
- Damaged roads/bridges and blocking debris
- Utility outages
- Harmful air quality

Wildfire smoke that leads to degraded air quality can have serious impacts on public health and safety. It can be unhealthy for individuals to be outside, especially if they are more vulnerable to respiratory illness. It is best to avoid breathing in the smoke particles in the air, so it is recommended that people stay inside when possible. Without proper filtering or air purifying systems, indoor air can also be degraded. Wildfire smoke can have greater impacts on those more socially vulnerable and may not have the ability to stay indoors or have access to an air filtration system.

Poor air quality from wildfires can lead to economic and community impacts especially during warmer months when there are many outdoor events and activities. Large gatherings like holiday events or the annual Strawberry Festival bring in a lot of visitors and degraded air quality coinciding with those events can lead to reduced attendance, cancellations, and loss of tourism revenue in addition to posing a health risk to attendees. Smaller outdoor events could be similarly impacted including Parks, Culture, and Recreation sponsored classes, farmers markets, and other recreational activities.

Volcano/Ashfall

> Marysville could be affected by ashfall from eruptions of any Washington volcano, particularly nearby Glacier Peak. All Washington volcanoes are considered active, with high or very high threat potential. Ashfall could degrade air quality, cover homes and infrastructure, damage vehicles and utilities, and disrupt transportation and supply chains. Significant events may lead to public health concerns, infrastructure damage, supply shortages, and large-scale debris removal needs.

Hazard Description

Washington State is home to five volcanos, Mt. Baker, Glacier Peak, Mt. Rainier, Mt. Adams, and Mt. St. Helens. All of these volcanoes are active, meaning that they could potentially erupt. An eruption is when gases, rock fragments, and/or lava are ejected out of the volcano. They are often preceded by increased seismic activity which is monitored.[xlii]

Volcanic eruptions produce different hazards.[xliii]

- Lava Flows - Molten rock that flows from a volcano.
- Pyroclastic Flows - Dangerous and fast-moving mixture of ash, rock, and gas that reach temperatures of up to 1,500°F and speeds up to 150 mph.
- Lahars - Volcanic mudflows that consist of ash, water, and rock as well as other debris it washes away. Lahars can be very destructive and reach more than 50 miles from volcanoes at speeds up to 120 mph.
- Ashfall – Ash consists of tiny particles of rock and glass that can travel for hundreds of miles. They are very damaging if they are inhaled or get into mechanical systems.

Notable Past Events

The most recent major eruption in Washington State was Mt. St. Helens in 1980 that resulted in about $1 billion in damages and 57 deaths. [xliv]

Hazard Probability

There are no specific return intervals for volcanic eruptions, but some volcanoes have been more active than others throughout geologic history. All Washington volcanoes have a very high threat potential, except Mt. Adams (which has a high threat potential).[xlv] Volcanic eruptions in the Cascade Range have occurred at an average rate of 2-3 times per century during recent millennia. [xlvi] Volcanoes are heavily monitored to watch for signs that an eruption is coming so probability of an eruption would increase if signs of activity are recorded.

Hazard Risk

The impacts to Marysville will differ depending on which volcano erupts, the nature of the eruption, as well as other factors such as wind direction. The closest volcano to Marysville is Glacier Peak located in the eastern part of the county. Due to the composition of the volcano, it has a history of explosive eruptions creating a large amount of debris and tephra. Marysville is outside of modeled lahar flow areas and lava flow areas for all volcanoes, so they do not pose an immediate risk.

One of the far-reaching hazards from an eruption is volcanic ash. Ash is fine particles of volcanic rock and dust that are ejected into the atmosphere and can travel far distances before settling down and accumulating on the ground, buildings, roads, etc. Where ash travels is dependent on the direction of prevailing winds. While it is possible to experience ashfall in Marysville from any of the Washington volcanoes, winds are typically blowing towards the east which would carry ash away from Marysville.
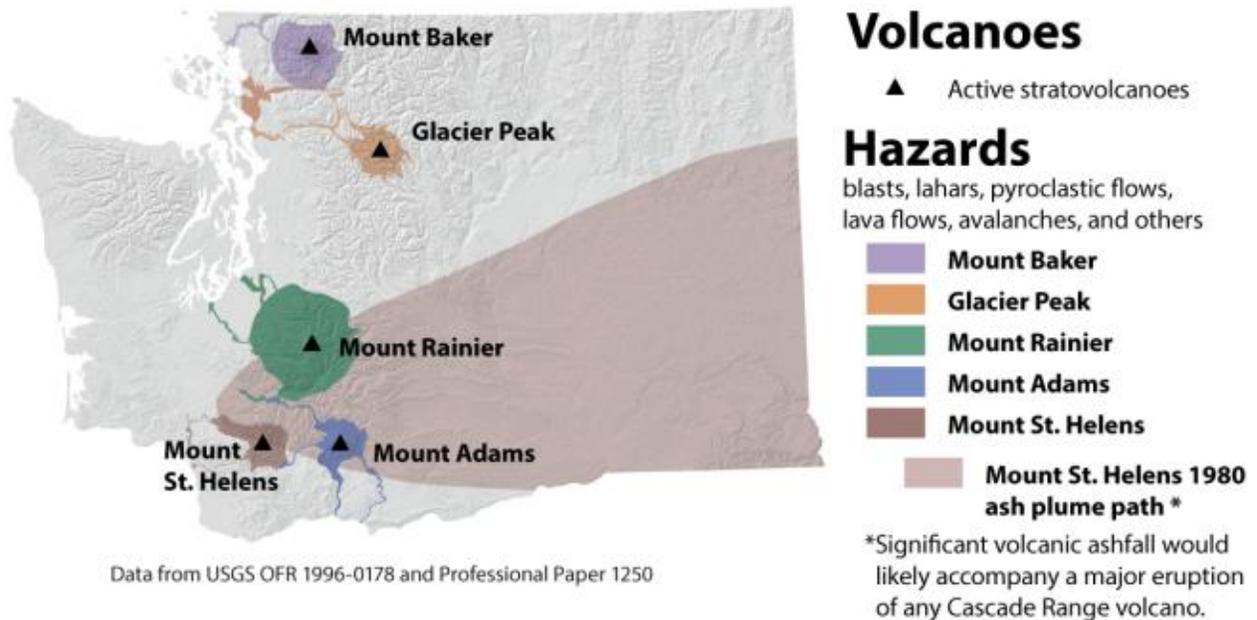

Data from USGS OFR 1996-0178 and Professional Paper 1250

Figure 20: Washington volcanoes and their hazards[xlvii]

Community Assets at Risk

While Marysville is outside the hazard zone for lahars, its Stillaguamish Ranney Well is located in the Stillaguamish River valley which is in a modeled lahar zone. The likelihood of a lahar in that fork of the river is considered low[xlviii]. Lahar flows have traveled down the Stillaguamish River before but are more likely to travel down the Sauk River instead. Lahars could also damage or block roads and bridges that provide critical routes throughout the region.

If ash were to fall over Marysville, all buildings, roads, parks, infrastructure, assets, businesses, residents, etc. would be affected. Ash can pile up and add weight to structures leading to potential collapse. If ash gets wet its weight will increase, leading to greater likelihood of damage.

Hazard Impacts

The effects of a volcanic eruption will depend on many factors, but could include:

- Harmful air quality
- Debris concerns (ash will need to be collected and removed)
- Building and infrastructure damage
- Blocked or damaged roads
- Damage to assets (vehicles, HVAC, etc.)
- Water and wastewater contamination

Active Assailant or Targeted Attack

An active assailant or other targeted attack has a potential to occur at large events or other gatherings of people (schools, workplaces, public spaces, etc.). An attack could also target critical infrastructure or utilities. The outcome depends on the nature of the attack, but impacts could include casualties, damaged buildings, increased demand for emergency and medical services, damaged infrastructure, or utility outages.

Hazard Description

An active assailant attack is when an individual or group attempt to kill or injure others in a violent attack. Attacks can involve firearms, knives, explosives, or other weapons. They may also involve non-weapons such as vehicles. Attacks can turn into multi-casualty events and can happen in any location with a gathering of people like a school, workplace, public event, etc. Active assailant attacks can be spontaneous or planned in advance and coordinated.

Hazard Probability

Any gathering of people has the potential to experience an attack. They happen all over the country and have happened in our state, county, and city previously. High profile events or events with large numbers of attendees could be a target for an attack. Marysville and nearby communities are home to several public gathering places that could experience an attack including schools, shopping centers, casinos, businesses, government facilities, and places of worship. Community events and festivals such as the Strawberry Festival and holiday celebrations can also be targets of an attack.

Hazard Risk

Community Assets at Risk

Individuals in the vicinity of an attack are in danger of being harmed when an attack occurs. Building and infrastructure could also be impacted depending on the nature of the attack.

Hazard Impacts

The impacts of an attack would vary depending on the nature of the attacks, but could include:

- Casualties
- Increased demand for emergency services
- Displaced businesses
- Building or infrastructure damage
- Traffic disruptions/blocked roads

Cyber Incidents or Technology Disruptions

Cyberattacks or other technology disruptions could impair critical systems, networks, and services in Marysville. Depending on severity, impacts may include communication failures, data loss, service interruptions, and disruption of essential public and private operations.

Hazard Description

Cyber incidents refer to intentional attacks to compromise digital systems, data, and network access. These incidents can range from minor to large scale depending on the type of attack. Common types of attacks include malware, phishing attacks, denial-of-service attacks, and data breaches. Cyber attacks are often financially or politically motivated. Some cyber criminals act alone but there are also larger organized groups that may target critical infrastructure or major corporations.

Other technology disruptions can be a result of other factors that make services, data, electrical grid, communications, and networks inaccessible or inoperative. Examples include space weather (solar flares or geomagnetic storms), power outages or surges, or other hardware failures. Technology disruptions can also be a secondary outcome from other hazards.

Hazard Probability

Intentional cyber attacks are becoming very common. Attempts to gain access to data and systems occur frequently and while many are thwarted through protective measures and education, many are successful. Tools and tactics will continue to evolve as cyber criminals develop different strategies.

Space weather events occur often but most are not large enough to cause significant damage or outages other than affecting radio communications. Larger events occur on average about 4 times per 11-year solar cycle.[xlix]

Hazard Risk

Community Assets at Risk

Communities have become very dependent on cyber systems both at an individual level and business or organizational level. Many community lifelines are reliant on power and internet systems. Anything that relies on digital systems can be compromised by a cyber attack or other technology disruption. Many utilities and critical infrastructure are operated through digital systems and could lead to failures if access is interrupted. Loss of communications (cell, satellite, internet, etc.) would impact the effectiveness of emergency response and critical infrastructure operations.

Hazard Impacts

The impacts will depend on the nature of the cyber attack or disruption but could include:

- Financial loss
- Disruption to critical operations
- Loss of communications
- Damage to infrastructure/utilities

Dam Failure

> Marysville can be affected by two high hazard potential dams if they were to fail. Culmback Dam located outside of Sultan can cause water inundation over almost 500 acres along Ebey Slough. North Marysville Regional Stormwater Ponds have the potential to inundate over 40 nearby businesses and residences in northern Marysville. Impacts from either dam failing could include injured or displaced residents or businesses, damaged infrastructure or roadways, and utility outages.

Hazard Description

There are two dams identified by the National Inventory of Dams (NID) within Marysville. Both of them are owned and maintained by the City. The wastewater treatment plant lagoon located along Ebey Slough is not classified as a high hazard potential dam. The other dam in the city surrounds the North Marysville Regional Stormwater Ponds. This dam is classified as a high hazard potential dam by the NID.

One other dam located in the County that has a potential to impact Marysville is the Culmback Dam. This dam is owned by Snohomish County PUD and is located in the Sultan River basin. It is classified as a high hazard potential dam.

Figure 21. North Marysville Regional Stormwater Ponds

Hazard Probability

Dams adhere to maintenance and safety standards and failure is uncommon. Other hazards, like an earthquake, can compromise the integrity of a dam and lead to a failure. The wastewater treatment lagoon is surrounded by earthen dams that were built in 1959. This area has a moderate to high liquefaction potential during an earthquake and is also located in tsunami and flood inundation zones. Any of those hazards occurring could increase the likelihood of damage to the dam.

The regional stormwater pond dams are surrounded by earthen dams that were constructed in 2004. While earthquake shaking could increase potential for damage, it is not located in a high liquefaction zone nor is it located in flood or tsunami zones.

Hazard Risk

Hazard Maps

If there was a failure of the regional stormwater pond dam, there would be a release of stormwater into the Hayho Creek and flooding in the surrounding flat area. Additional residential structures

further downstream could also be inundated if the Burlington-Northern Santa Fe railway berm were to also fail.

Figure 22. Dam Failure Inundation Map for North Marysville Regional Stormwater Ponds

The Culmback Dam is much larger than Marysville's dams and a failure would have far greater impacts particularly for nearby jurisdictions. A failure could result in flooding along the Snohomish River and inundate waterfront areas or damage transportation or utility infrastructure. The impact to Marysville would be flooding along the Ebey Slough.
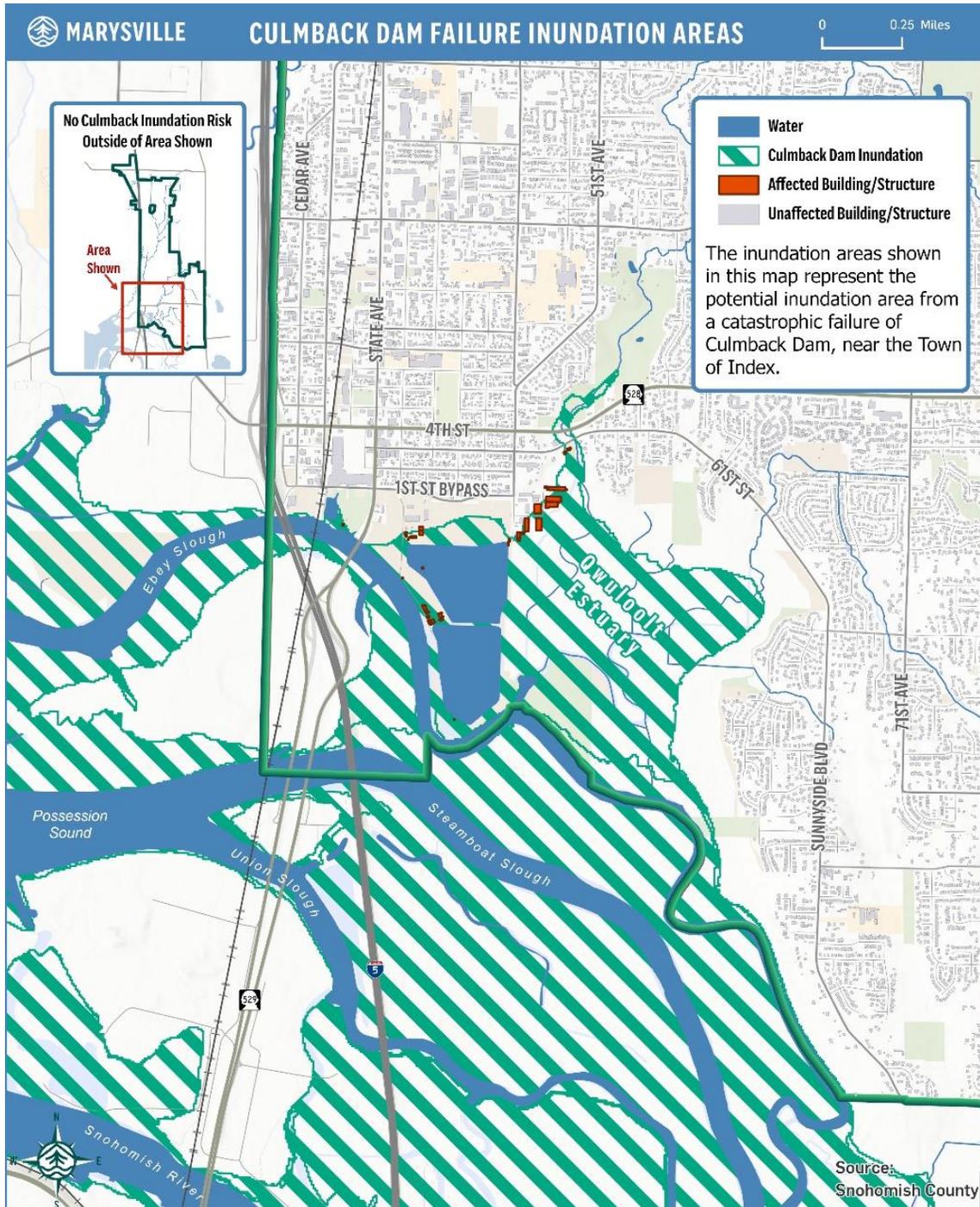

Figure 23. Dam Failure Inundation Map for Culmback Dam

Community Assets at Risk

A failure of the regional ponds could inundate business, government, and residential structures. It would also limit access by flooding local roadways. It could also spread contaminants it picks up from the flooded development to environmental areas. The flooding from a Culmback Dam failure in Marysville would be limited to the waterfront which includes several structures and a City-maintained park and trail. Modeled inundation from the North Marysville Regional Ponds includes areas of high social vulnerability so impacted residents have greater risk because they may have fewer resources to prepare or recover.

Table 11. Property in Dam Inundation Areas - Culmback Dam Failure

Property in Dam Inundation Areas – Culmback Dam Failure					
Land Use Type	Buildings	Building Assessed Value	Parcels	Affected Acres	Affected Land Value
Cultural, Entertainment, Recreation			2	1	$1,806,100
Goods/Products			2	4	$10,411,200
Manufacturing	9	$3,969,100	8	7	$4,260,300
Open Space-Common Area			4	3	$0
Other			4	1	$0
Residential	1	$445,900	16	3	$5,837,700
Services	6	$1,371,900	2	14	$2,519,800
Transportation/Utility	6	$178,640	4	99	$207,800
Undeveloped	2	$0	47	357	$6,313,400
Water			2	8	$11,400
Total	**24**	**$5,652,890**	**91**	**496**	**$31,367,700**

Table 12. Property in Dam Inundation Areas - North Regional Stormwater Ponds

Property in Dam Inundation Areas – North Regional Stormwater Ponds					
Land Use Type	Buildings	Building Assessed Value	Parcels	Affected Acres	Affected Land Value
Manufacturing	1	$55,069,500	4	21	$5,507,530
Open Space			1	5	$7,400
Water Retention			2	1	$0
Other			4	6	$0
Residential	36	$6,493,725	73	13	$11,466,660
Resource Production/Extraction			1	0	$10,452
Retail	2	$276,300	4	8	$655,322
Services	1	$702,027	10	9	$2,552,523
Undeveloped			6	17	$3,428,395
Total	**40**	**$62,541,552**	**105**	**79**	**$23,628,283**

Hazard Impacts

Depending on the severity, dam failure could result in:

- Injured and displaced residents/businesses
- Building and infrastructure damage
- Damaged roads/bridges and blocking debris
- Damaged rail infrastructure
- Utility outages (power, gas, water, wastewater, etc.)
- Waterway contamination

Epidemic/Pandemic

An epidemic occurs when an infectious disease is widespread throughout a community at a particular time. Pandemic refers to disease outbreak that occurs over a wider geographic area (across countries or worldwide). There are many different types of diseases that can cause outbreaks and can come from a variety of sources. Diseases can be spread between people, animals and insects or from contaminated sources (food, water, healthcare).

Hazard Description

Notable Past Events

The only disease-related Major Disaster Declaration was the COVID-19 pandemic in 2020.

Table 13. Marysville Biological Major Disaster Declarations

Hazard Event Type	FEMA Disaster Number	Date of Hazard Event	Public Assistance Reimbursement Amount
Covid-19 Pandemic	4481-DR-WA	January 2020	$32,191.77

Hazard Probability

Disease outbreaks can spread quickly especially when travel and import/export of goods is so readily available. It is harder for a disease to remain isolated when communities are so interconnected.

Efforts to mitigate against disease include vaccination, and lower immunization coverage can increase chances for disease outbreak in a community. Snohomish County's school immunization exemption rate for the 2024-2025 school year was 4.5% which is higher than the State (3.9%)[l] and national (3.6%)[li] averages.

Hazard Risk

Community Assets at Risk

All members of the community can be susceptible to disease outbreak. Even if someone does not get ill, the secondary impacts of a large-scale epidemic or pandemic can have impacts on the economy or access to community lifelines. Healthcare facilities and emergency responders will be heavily impacted and overwhelmed during an epidemic.

Some members of the community may be more vulnerable to disease outbreaks, including those with limited access to resources or healthcare, compromised immune systems or other health conditions, or are socioeconomically disadvantaged with limited resources or access to healthcare.

Hazard Impacts

Impacts from an epidemic/pandemic vary depending on the nature of the disease and could include:

- Casualties and overwhelmed healthcare systems and emergency response
- Supply shortages (loss of workforce, closure of facilities, etc.)
- School and workplace closures

Hazardous Materials Release

Hazardous materials are used for a variety of purposes and are stored and transported regularly through Marysville. Typically, they are controlled in safe environment and do not pose a threat. If they are released they can have negative effects and require emergency response. The type of hazardous material and sometimes the form (solid, liquid, or gas) will affect how dangerous a release would be and can cause casualties and damage to buildings, infrastructure and the environment.

Hazard Description

Hazard Probability

A hazardous materials release could be the result of an accident like a system malfunction, train or truck accident, or natural hazard incident (earthquake, flooding, landslide, etc.). Precautions are usually taken to prevent accidental releases, but there is still a chance that a release can occur as long as the materials are present. A release could also be intentional if it is a result of terrorist activity.

Hazard Risk

Community Assets at Risk

Hazardous materials are transported daily via rail and road networks in and around Marysville. There are homes, businesses, and other infrastructure along those same networks that could be affected by a hazardous materials release. Some businesses, utilities, or industrial facilities house hazardous materials. There were 90 facilities that submitted Tier II reports in Marysville for 2024. These are facilities that have 10,000 pounds or more of a hazardous chemical or 500 pounds or more of an extremely hazardous substance.[lii] These facilities are also located near homes and businesses in the community. There are also many natural areas that could be affected by a hazardous materials release including creeks, waterways, parks, and other vegetated areas.

Hazard Impacts

The impacts from a hazardous materials release would vary greatly depending on the material, the nature of the release, the size of the release, and the location. Generally, impacts could include:

- Casualties and health concerns
- Displaced residents and businesses
- Blocked or closed roadways
- Environmental damage

Stories From the Past

In 1981, a train carrying liquid chlorine and propane derailed. About 5,000 nearby residents were evacuated after the crash.
Source: Marysville Historical Society

Train Incident

A train incident could be a derailment or crash of the train itself or an event where the train is stopped due to another issue like a fire or leak. Train incidents could also involve other structures or vehicles depending on the nature of the accident. Train accidents could be the result of mechanical failure or human error. If the train incident involves a release of hazardous materials, the impacts can be much more severe and damaging.

Hazard Description

Notable Past Events

In 1969, a train collided with freight cars at the train depot in Marysville and derailed, killing two people and leading to a large cleanup effort.[liii]

In 1981, a train carrying tankers of liquid chlorine and propane derailed in Marysville prompting evacuation of nearby residences. No injuries or leaks were reported.[liv]

In 2023, a train derailed along the Padilla Bay waterfront and spilled an estimated 3,100 gallons of diesel requiring extensive cleanup efforts.[lv]

Hazard Probability

A train incident is possible as long as trains are running through the city. Marysville on average sees about 18 trains pass through each day. The chances of an accident are reduced when precautions are taken such as lower speeds, improved crossings, etc. Some train incidents are a result of an interaction with the train and another vehicle at a crossing. There are 20 crossings in Marysville that each have a potential for an accident between a train and vehicle to occur.

Hazard Maps

The following map shows the location of railways in Marysville and marks the crossings which show locations that could experience a collision between train and vehicle or where a train incident could block traffic.

Stories From the Past

On June 6, 1969 a speeding freight train ran into other freight cars and destroyed the train depot in Marysville.
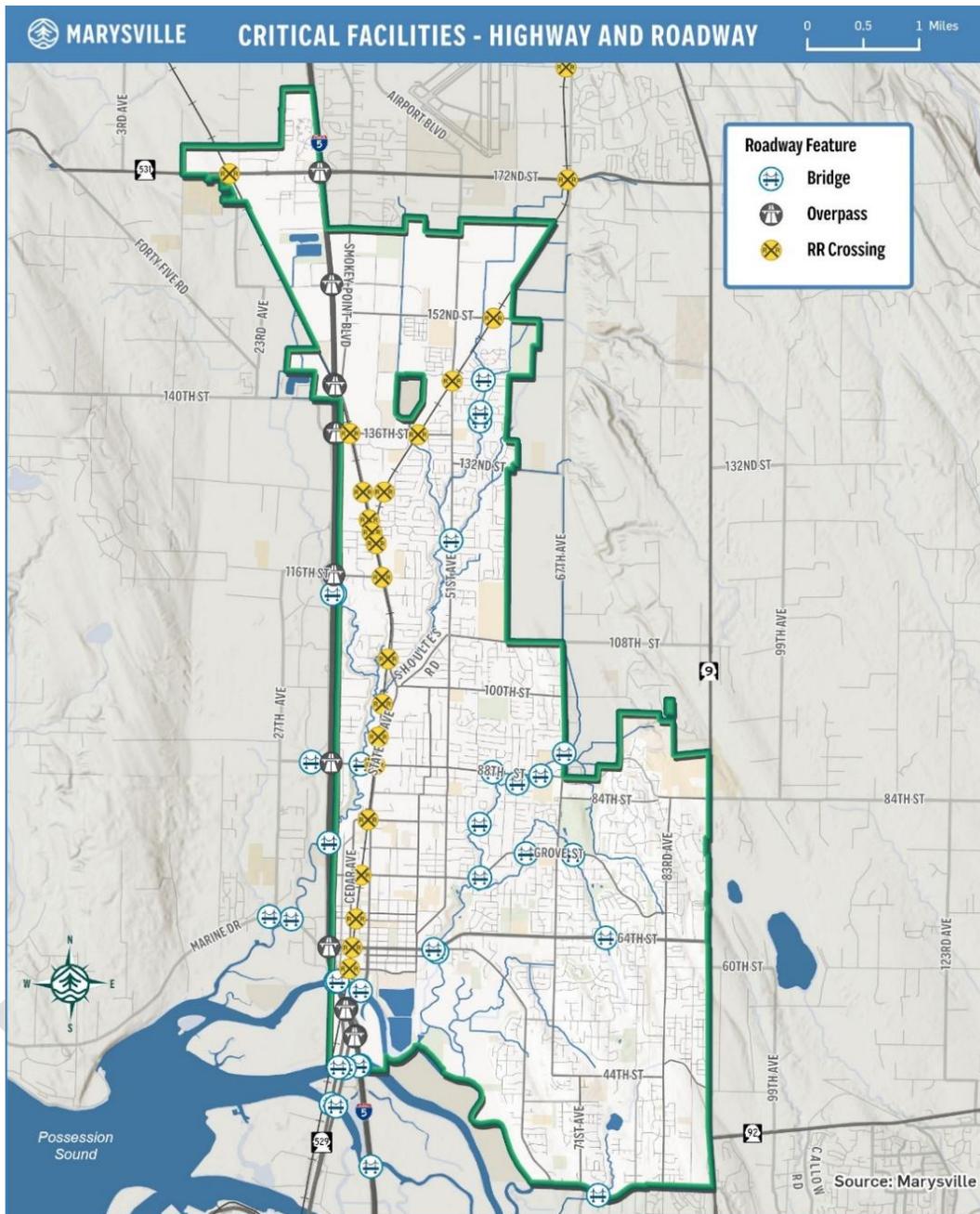
Source: Marysville Historical Society

Figure 24. Critical Facilities – Highway and Roadway

Hazard Risk

Community Assets at Risk

There are many businesses and residences located next to or near the railroad tracks. There are also communities that are only accessed by crossing the tracks which could be cut off if it were blocked. The railroad crosses over streams and waterways along its route through the city. There are also multiple critical facilities (government, law enforcement, utilities) located near railroad tracks.

Railways in Marysville run primarily through areas of medium or high social vulnerability. Populations in these areas have an increased risk because they may have fewer resources to prepare, mitigate, or recover.

Hazard Impacts

The impacts from a train incident would vary depending on the nature of the incident and could include:

- Casualties or injuries
- Displaced residents/businesses
- Building and infrastructure damage
- Damaged or blocks roads/bridges
- Utility outages

Capabilities

Capabilities are the tools that can be used to increase resilience and support the mitigation strategy. At the HMPW kick-off meeting, participants listed capabilities that support mitigation related to specific hazards. The capability list from the 2020 Snohomish County HMP Marysville Annex was also evaluated. Capabilities were discussed and evaluated at other partner meetings throughout the process in meetings and interviews. In this section, capabilities are separated into four categories: Planning and Regulatory, Administrative and Technical, Financial, and Education and Outreach.

Planning and Regulatory

Planning and regulatory capabilities are laws, regulations, policies, plans, and programs that guide growth and development. They can be used to support mitigation activities and reduce risk.

Table 14. Planning and Regulatory Capabilities

Capability	Description
Comprehensive Plan	Guides long-term growth and development and translates community values and vision into policies and regulations. Goals integrate with hazard mitigation strategies.
Subarea plans (ex. Downtown, Smokey Point, East Sunnyside, Lakewood Neighborhood, Gateway Master Plan)	Focuses on growth and development in specific areas. Plans can address local hazard risks with tailored strategies.
Shoreline Master Program	Regulates land use along waterways and can be used to reduce risks from flooding, erosion, and sea-level rise.
Housing Action Plan	Guides planning for housing availability and resilience and can address local hazards.
Climate Change Vulnerability and Risk Assessment	Guides the Environmental Element of the Comprehensive Plan and can be used to inform strategies related to climate change.
Utility-specific comprehensive plans (ex. sewer, water, stormwater management, and transportation)	Long-term strategies for City infrastructure and can incorporate hazard mitigation strategies that are specific to each type of utility.
Engineering Design and Development Standards	Technical standards for construction and can support hazard mitigation strategies.
Americans with Disabilities Act (ADA) Self-Evaluation and Transition Plan	Evaluates accessibility of public programs, services, facilities, and activities and can guide hazard mitigation strategies.

Capability	Description
Preliminary Capital Improvement Plan/Program	Prioritizes infrastructure investment and can support mitigation projects.
Transportation Improvement Program	Identifies transportation system needs and can include mitigation and resilience strategies.
Stormwater Management (Water Planning Basin Assessment and Prioritization, Stormwater Action Plan, and Stormwater Management Program Plan)	Describes stream conditions and guides stormwater retrofit projects. Identified projects can support hazard mitigation strategies.
National Pollutant Discharge Elimination System (NPDES) Permit/Western Washington Phase II Municipal Stormwater Permit	Regulates stormwater discharges and can support hazard mitigation strategies.
Parks, Culture, and Recreation Plan	Evaluates community needs and guides Parks, Culture, and Recreation programs. Can support hazard mitigation related to hazard areas and open space.
Police Functional Plan	Guides the growth of the police department to align with the vision for future service delivery. Can support hazard mitigation strategies related to public safety.
Comprehensive Emergency Management Plan	Framework for City preparedness efforts including prevention, protection, mitigation, response, and recovery.
Risk and Resilience Assessment and Emergency Response Plan	Evaluates water system vulnerabilities and consequences from potential hazards. Informs mitigation planning and strategies.
Community Wildfire Protection Plan	Snohomish County plan that identifies risks and guides wildfire mitigation strategies.
County, State, and Federal Mitigation Plans and Guidance	City mitigation strategies should align and support other jurisdiction plans and guidance.
Building Codes	Ensure structures meet safety and design standards and can incorporate hazard-specific elements.
Site Plan Review Requirements	Process for ensuring development meets certain standards and can be used to enforce hazard-resilient site design before approval.

Capability	Description
Zoning Ordinance	Regulates how land can be used and developed to support orderly growth and community goals and can support hazard mitigation.
Floodplain Ordinance	Regulates construction in flood-prone areas and can enforce elevation and floodproofing standards.
Critical Areas Ordinance	Protects environmentally sensitive areas (wetlands, steep slopes) and can be used to reduce hazard risks.
Flood Insurance Rate Maps	FEMA maps that identify flood-prone zones and can be used to guide land-use decisions, insurance, and mitigation projects.

Administrative and Technical Capabilities

Administrative and technical capabilities refer to the staff and resources that support mitigation activities.

Table 15. Administrative and Technical Capabilities

Capability	Description
Planning Commission	Advisory board to the Mayor and City Council regarding development, land use, and growth. Can support integration of mitigation efforts.
Hazard Mitigation Plan Workgroup	Workgroup to support development and implementation of the Hazard Mitigation Plan.
Maintenance Programs	Routine maintenance and inspection of City-owned properties and assistance to public for hazardous situations.
Mutual Aid Agreements	Multiple agreements with other agencies for emergency support (departmental MOUs, facilities of opportunity MOUs, Washington Water/Wastewater Agency Response Network).
Community Development	Staff to support development and building efforts as it relates to hazard mitigation strategies (building official, planning staff, inspectors).
Emergency Management	Staff to support City and community preparedness efforts including hazard mitigation.
Engineering Services	Capital engineering and transportation staff to support resilience and capital projects.
Utilities and Maintenance Services	Water, wastewater, surface water, parks maintenance, solid waste, fleet, and facilities staff that can support resilience.

Capability	Description
Information Services	Information Technology (IT) and Geographic Information Systems (GIS) staff to support City services and mitigation efforts.
Emergency Management Committee	Group of City officials from all departments to coordinate emergency management efforts.
Local Emergency Planning Committee (LEPC)	County-level coordination and planning body for hazardous materials with representatives from various disciplines and can support mitigation efforts.
Parks, Culture, and Recreation Advisory Board	Advisory board to Parks, Culture, and Recreation director and City Council on parks and recreation matters including improvements and long-range planning which can include Hazard Mitigation.
Finance	Staff to support funding for mitigation projects.
Grants Management	Departmental staff who have experience applying for and managing grants that can be used to fund mitigation projects.
Marysville Emergency Preparedness Partners	Group including Marysville volunteers, businesses, and community partners to coordinate on preparedness and can support hazard mitigation efforts.
Regional Response Teams	Regional teams who train and exercise together (ex. Hazmat response, SMART, etc.).
Redundancies in infrastructure	Investing in redundancies and backups for critical infrastructure (ex. communications, generators, etc.).
Warning Systems and Services	Alert and notification platform for internal and public opt-in alerting.
Hazard Data and Information	GIS-managed platforms which include hazard data for spatial analysis.
MyMarysville App	Public-facing app to engage with the public which can be used to share information about mitigation efforts.

Financial Capabilities

Financial capabilities include the funding sources that can support mitigation projects. They can come from a range our sources including private, local, state, and federal programs.

Table 16. Financial Capabilities

Capability	Description
Capital Improvement Project Funding	Funding for infrastructure projects that can include resilience upgrades.
General fund allocations	City budget could include funding for mitigation projects.
Authority to levy taxes for specific purposes	Voter-approved funding for mitigation projects.
Utility Fees	Revenue could be invested into mitigation or resiliency projects.

Capability	Description
Impact fees for new development	Funding from new development could be used to support resilient infrastructure.
Community Development Block Grant	Federal funding for projects supporting housing, infrastructure and community development.
Other Federal funding programs	Funding from other federal agencies (ex. EPA, DOT, USDA, DOE) could support mitigation projects.
State funding programs	Funding from state agencies (ex. WSDOT, Ecology, etc.) could support mitigation projects.
Hazard Mitigation Assistance Grant Programs	Federal funding for hazard mitigation projects.
Emergency Management Performance Grant (EMPG)	Federal funding to support emergency management organizations.
Public Assistance (PA)	Disaster reimbursement and funding for hazard mitigation projects.
Public-Private Partnerships	Collaborative funding for mitigation projects.

Education and Outreach Capabilities

Education and outreach capabilities can be used to share information on mitigation strategies and encourage resilience efforts throughout the community.

Table 17. Education and Outreach Capabilities

Capability	Description
Emergency Preparedness outreach program	Preparedness outreach efforts can incorporate mitigation education and projects (ex. presentations, printed materials, and events).
National Weather Service recognition	Inclusion in programs like StormReady and Weather Ready Nation demonstrate commitment to preparedness and resilience.
Marysville Ready Business	Business preparedness program that can include mitigation and resilience project opportunities.
Marysville Ready Neighbors	Neighborhood preparedness program that can include mitigation and resilience project opportunities.
Other City outreach programs	Other City department outreach efforts can incorporate mitigation and resilience into their messaging (ex. Police, Surface Water, Community Development).
City website and social media platforms	Mitigation information can be shared using the City's web and social media presence.
Event or incident-specific education opportunities	Sharing preparedness or mitigation information in response to a notable event (ex. severe weather, extreme heat, burn bans).

National Flood Insurance Program (NFIP)

The City participates in the NFIP and complies with its regulatory requirements. The NFIP is managed by FEMA and provides flood insurance to property owners, renters, and businesses. Participating in the NFIP to adopt and enforce floodplain management regulations helps to mitigate flooding impacts.

Chapter 22E.020 of the Marysville Municipal Code covers floodplain management. Flood insurance rate maps (FIRMs) dated June 19, 2020 were adopted by the City and included in the code. The Building Official is appointed to administer and implement floodplain management requirements. The City implements and enforces local floodplain management by requiring permits prior to development in any Special Flood Hazard Areas (SFHAs). Permit applications must include:

- Elevation in relation to mean sea level of the lowest floor (including basement) of all structures.
- Elevation in relation to mean sea level to which any structure has been floodproofed.
- Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in MMC 22E.020.170.
- Description of the extent to which a watercourse will be altered or relocated as a result of the proposed development.
- Where a development is proposed in a floodway, an engineering analysis indicating no rise of the base flood elevation.
- Any other such information that may be reasonably required by the floodplain administrator in order to review the application.

For substantially damaged residential structures, the floodplain administrator works with Department of Ecology for judgement in recommending repair, replacement, or relocation of substantially damaged structures consistent with WAC 173-158-076.

Expansion of Capabilities

By expanding on and improving the identified capabilities, the community will be better able to implement the mitigation strategy and increase resilience. Specific mitigation steps are covered in actions, but in general, the following describes ways to expand our capabilities:

- Policy and Regulatory Updates - Integrating hazard mitigation principles into comprehensive plans, zoning ordinances, subdivision regulations, building codes, and capital improvement programs.
- Intergovernmental Coordination - Strengthening regional partnerships, mutual aid agreements, and participation in interagency mitigation initiatives.
- Funding and Resource Expansion - Increasing capacity to pursue grants and other funding opportunities.
- Public and Stakeholder Engagement - Enhancing outreach and education efforts to build community awareness and support for mitigation actions.

Mitigation Strategy

The strategy for becoming a more resilient community is broken out into different elements. Each of the elements was evaluated by the HMPW to ensure it aligns with community priorities. The mitigation strategy includes goals, mitigation actions, and an action plan.

Figure 25. Mitigation Strategy (FEMA)

Mitigation Goals

The HMPW identified the following four long-term goals that will guide mitigation efforts to address the hazards faced by the community.

2026 Mitigation Goals:
1. Reduce hazard-related threats to life, safety, and public health.
2. Strengthen critical infrastructure and key facilities to better withstand the effects of hazards and threats.
3. Enhance preparedness and response capacity while addressing the specific needs of the community.
4. Align priorities across departments, agencies, and private entities for coordinated efforts toward a sustainable and resilient community.

These goals demonstrate the values of the community in terms of risk reduction. They are supported by the findings from both public and partner engagement and feedback. The mitigation goals identified in this plan also align with the goals of both Snohomish County and Washington State.

Mitigation Actions

This plan identifies actions that contribute toward achieving the mitigation goals. These actions are specific projects or work that reduce risk and improve resilience.

There were several steps in determining the final list of actions:

1. The planning team reviewed previous actions and collected status updates.
2. The planning team developed a list of potential actions utilizing risk assessment, capability assessment, public input, and conversations from meetings and interviews.
3. The HMPW reviewed actions and discussed how they could be implemented.
4. The HMPW conducted a cost-benefit evaluation.
5. The planning team reviewed all feedback to finalize list of actions.

Previous Actions Review

While this is not a plan update, the City had developed a list of actions as a part of their annex to the Snohomish County HMP (2020). The HMPW and other key staff provided feedback on the status of those actions and an evaluation of their relevance via email, interviews, and discussions during planning meetings.

Table 18. 2020 HMP Annex Action Items

Project	Status/Notes
Construct additional Regional Stormwater Detention Facilities to increase capacity for a disaster.	Completed the stormwater treatment plant in 2024.
Construct additional reservoirs to increase water capacity for a disaster.	No additional reservoirs were constructed. Not selected as a 2026 action.
Construct additional water main for additional water distribution routes for redundancy in a disaster.	No additional water main for such purposes was constructed. System is able to reroute water through existing infrastructure. Not selected as a 2026 action.
Replace and upgrade culverts throughout city to reduce vulnerability to severe flood events and earthquakes.	Occurring with other improvement projects. Not selected as a 2026 action.
Install generators at all lift stations, wells, treatment plants and critical facilities to maintain operations and critical resources.	No additional generators were installed. Selected as a 2026 action.
Upgrade and replace Lake Goodwin standpipe to protect redundant water sources from failing in a disaster.	Standpipe was replaced in 2024.
Upgrade State Avenue Quilceda Creek Crossing to prevent the roadway from collapsing during an earthquake.	Completed in January 2023.

Project	Status/Notes
Install earthquake valves at Cedarcrest, Getchell, Edward Springs and Highway 9 Reservoirs.	Seismic mitigation evaluation rather than specific project selected as a 2026 action.
Improve development standards to include regulations to mitigate natural hazards.	Included in Comprehensive Plan update.
Continue to maintain a good standing under the National Flood Insurance Program (NFIP).	Ordinance review completed on 1/9/24 and Community Assistance Visit conducted on 1/26/24.
Implement Infrastructure improvements on properties to mitigate flooding in redundant flood-prone locations throughout city.	Selected as a 2026 action.
Elevate city owned shoreline properties out of flood zone.	In the process of moving the Public Works site out of the floodplain. Selected as a 2026 action.
Replace aging storm and sewer pipes throughout city, including upsizing water main to meet required fire flow needs.	Ongoing, various projects were completed. Selected as a 2026 action.
Add additional Public Works storage yard that is not in the flood or earthquake zone.	In the process of moving Public Works site out of the floodplain.
Install battery back-up for city signals that are on designated emergency routes.	All City traffic signals now have a battery backup installed.
Install Edward Springs Booster Pump Station to convey water from the source to 240 pressure zone.	Not selected as a 2026 action.

In 2024, the City completed a stormwater treatment plant which treats water runoff before emptying into Ebey Slough. It reduces impacts that severe weather events with heavy precipitation can have on the system and environment while also fitting into the waterfront development vision.

Development of Potential Actions

The hazard identification and risk assessment information was shared at all public and partner planning meetings to provide context for mitigation discussions. At public meetings, maps and risk assessment information and problem statements were displayed and planning staff were available to answer questions. Each public meeting offered feedback forms for participants to share information and their thoughts.

In addition to public meetings, there were other planning meetings held with specific partners and the HMPW to review hazard information and discuss how to utilize identified capabilities to address the risks the community faces. As a follow-up to those meetings, the planning team also conducted a series of interviews with key departments and agencies to discuss mitigation strategy in more detail.

For more details on the outreach and meeting details, see Appendix B.

The planning team reviewed all public input, notes from meetings, and notes from interviews to develop a list of potential actions to support the mitigation strategy.

HMPW Review of Potential Actions

This initial list of actions was shared at a HMPW meeting where participants provided feedback on each action listing specific projects related to the action, who is involved, potential barriers, and other plans that support or conflict with the action. The planning team reviewed the input from the HMPW meeting to refine the list of actions by consolidating similar ones, removing ones that are not a priority, and adjusting wording.

Evaluation of Actions

The HMPW then conducted a cost-benefit evaluation of each action. They utilized the following rating criteria to assess how the benefits of completing an action compare to its cost. An online survey was sent to all members of the HMPW. The planning team used the results of the survey to give each action a cost-benefit score which can be used to prioritize actions within this plan. Each high benefit rating received 5 points, moderate ratings received 3 points, and limited ratings scored 1 point. For each action item, the average score of all entries for each criterion were added together to get a final cost-benefit score.

Table 19. Mitigation Action Cost- Benefit Evaluation Criteria

Mitigation Action Cost-Benefit Evaluation Criteria			
	High Benefit	Moderate Benefit	Limited Benefit
Cost: The estimated cost to implement the action item.			
	Low Cost (less than $100K)	Moderate Cost ($100K - $500K)	High Cost (more than $500K)
Hazards: How many hazards the action item addresses the impacts of.			
	Action addresses impacts from two or more hazards	Action addresses impacts from one hazard	Action does not address any hazard impacts
Life Safety: The anticipated benefits to the safety of residents, businesses, property, and community lifelines.			
	Action results in significant public safety benefits	Action results in some public safety benefits	Action results in limited or no public safety benefits
Geographic Impact: The amount of the affected area that would benefit from the action item.			
	Action results in benefits for a large portion of the affected area/community, especially those most at risk	Action results in benefits for some of the affected area/community	Action results in benefits for only a small portion of the affected area
Community Priorities: How well the action item aligns with community priorities from other plans and strategies.			
	Action aligns with and is supported by other community priorities or projects	Action does not interfere with other community priorities or projects	Action conflicts with other community priorities or projects
Future Conditions: How the action item accounts for anticipated long-term changes in development and the environment.			
	Action accounts for future changes in development and the environment	Action includes minimal measures that account for changes in development and the environment	Action does not account for future changes in development and the environment

2026 Mitigation Actions

The result of the mitigation strategy process is the following list of actions. These actions will guide the community's resilience efforts over the next five years.

The table below lists the actions that have been identified. More in-depth descriptions of the actions, including steps to contribute to their completion, can be found in the following section.

Table 20. 2026 Hazard Mitigation Plan Actions

2026 Hazard Mitigation Plan Actions
Infrastructure Actions
Install generators at all lift stations, wells, treatment plants and critical facilities to maintain operations and critical resources.
Replace and upgrade City utility infrastructure to reduce vulnerability to disasters.
Establish fiberoptic connections between critical City facilities and Snohomish County 911.
Conduct a seismic evaluation of water, wastewater, and stormwater utility systems to recommend retrofit and mitigation projects.
Establish redundant data and network access at the Marysville Civic Center through satellite and point-to-point connections.
Explore projects to incorporate Earthquake Early Warning into City operations.
Establish a new Public Works site outside of a flood zone.
Establish and follow wildfire protection standards at City facilities.
Implement infrastructure improvements on properties to mitigate flooding in redundant flood prone locations throughout the city.
Implement and support projects that improve safety measures along railways.
Explore and implement projects to limit impacts from a dam failure.
Local Planning Actions
Integrate hazard mitigation efforts with other City and regional plans and standards. Support policies and goals related to hazards and resilience.
Establish programs to address management of NGPAs to mitigate against hazards like wildfire, severe weather, and flooding.
Public Information and Outreach Actions
Enhance warning and public information capabilities for visitors and public areas along the waterfront.
Expand public education efforts and provide mitigation resources to residents, neighborhoods, and businesses.
Readiness Actions
Establish agreements with more local partners to enable faster assistance for emergency events.
Increase involvement in regional trainings and exercises from all City departments.
Identify additional warming, cooling, and cleaner air centers in the community to use during extreme temperature or poor air quality events.
Maintain StormReady status to practice severe weather resilience.
Establish a City emergency and disaster reserve fund policy.

Integration with Other Plans

Integrating with other plans and programs is an important piece of a successful mitigation strategy. This plan recognizes the following goals, policies, and actions from other plans that will also contribute to the community's disaster resilience. Supporting these projects is also a part of this plan's mitigation strategy.

City of Marysville Comprehensive Plan 2024-2044

Natural Emergency Preparedness

Figure 26. Marysville 2024-2044 Comprehensive Plan

- EN 0.40 – Improve capability to rapidly assess and repair damaged transportation infrastructure, in order to ensure rapid reopening of transportation corridors.
- EN 0.41 – Integrate local climate impacts risk assessment, as applicable, into hazard mitigation planning.
- EN 0.42 – Implement an urban heat resilience plan, incorporating heat mitigation and management actions, informed by heat island mapping, and involving cooling centers, early warning systems, and energy grid resilience.
- EN 0.43 – Revise land use codes to promote passive cooling, energy-efficient technologies, and green spaces to mitigate urban heat island effects.
- EN 0.44 – Prioritize equitable access to emergency preparedness resources for vulnerable populations and areas. Develop and distribute tools and resources for the community to stay safe during extreme heat events.

Wildfire Risk

- EN 0.45 – Develop short- and medium-term adaptation strategies for urban forests and other fire-prone habitats, and improve development standards.
- EN 0.46 – Collaborate with community partners to establish resilience hubs as clean air centers for public use during wildfire smoke events, especially in areas with poor air quality and limited air filtration access.
- EN 0.47 – Provide community education and outreach on wildfire smoke mitigation practices.
- EN 0.48 – Develop community wildfire preparedness, response, and recovery plans.

Shorelines and Flood Areas

- EN 0.51 – Collaborate with scientific community, agencies, and jurisdictions to develop science-based estimates of coastal flooding impacts, incorporating future climate conditions in land use, Flood Hazard Management, and comprehensive planning.
- EN 0.53 – Increase resilience to flooding, and protect, restore, and enhance existing flood storage, conveyance, and the ecological functions and values of floodplains, wetlands, and riparian corridors.

- EN 0.56 – Discourage construction in designated flood hazard areas, and prohibit it in floodway areas. Developments in designated flood hazards areas shall be adequately flood-proofed.
- EN 0.57 – Provide continued maintenance of established flood control facilities along rivers and creeks that protect existing populations and developments.
- EN 0.58 – Identify and reduce flooding through improvements to drainage systems and reductions in impervious surfaces and runoff.
- EN 0.59 – Conserve and utilize shoreline and flood plain areas within the City consistent with the City's Shoreline Management Master Program.

Air Quality

- EN 0.30 – Continue cooperative education efforts with the Marysville Fire District regarding burn bans and outdoor burning to promote air quality improvements.
- EN 0.38 – Develop a comprehensive approach to manage low flow conditions and drought response, taking into consideration the needs of the environment, agriculture, and vulnerable communities.
- EN 0.39 – Support enhanced data collection for hazard events to provide a fuller understanding of the community's hazard characteristics—including identifying demographic groups/community members most vulnerable to hazard events.

Tree Canopy Assessment

A tree canopy assessment was conducted in 2025 with the following recommendations:

- Increase the tree canopy by two (2) percent to 26 percent of the overall City by 2045.
- Maintain goals, policies, codes and standards that preserve or replace trees.
- Investing in tree planting in key areas such as Downtown.

Mitigation Action Plans

This section provides more detail on each of the mitigation actions. The details and information came from discussions in meetings, conversations with associated departments/agencies, and the cost-benefit evaluation.

The following definitions are used to describe cost, funding, and timeframe for the actions.

Cost:
Low Cost – less than $100,000
Moderate Cost - $100,000 - $500,000
High Cost – more than $500,000

Timeframe:
Short Term – 0-5 years
Long Term – 5-10 years
Ongoing – continuous and multi-phased projects

Funding Sources:
CIP – Capital Improvements Program
HMA – Hazard Mitigation Assistance
EMPG – Emergency Management Performance Grant
FMA – Flood Management Assistance
SHSP – State Homeland Security Program
HHPD – High Hazard Potential Dam
HSGP – Homeland Security Grant Program
I/Net – Institutional Network

Infrastructure Actions

Install generators at all lift stations, wells, treatment plants and critical facilities to maintain operations and critical resources	
Category: Infrastructure Actions **Hazard Priority Ranking Score:** 26 **Hazards:** Earthquake, Flooding, Cyber Incident, Severe Weather, Extreme Temperatures **Lead and Supporting Agencies:** Utilities and Maintenance Services (lead), Engineering Services, Information Services	**Cost:** Moderate **Funding Sources:** CIP, HMA Grants, Developers, Enterprise funds **Time Frame:** Short Term
Action Description: Provide reliable backup power to critical facilities to maintain water, wastewater, and emergency operations during power outages. Prevents service failures and contamination risks during prolonged outages, safeguarding public health and safety. Steps: • Inventory all critical facilities and identify those without backup power. • Develop specifications for generator capacity, fuel type, and connection type (permanent vs. portable). • Implement phased installation, starting with highest-priority sites. • Train staff on generator operation and maintenance. • Ensure integration with SCADA systems. • Incorporate design standards for backup power in new development.	

Replace and upgrade City utility infrastructure to reduce vulnerability to disasters

Category: Infrastructure Actions **Hazard Priority Ranking Score:** 25 **Hazards:** Earthquake, Flooding, Cyber Incident, Severe Weather, Extreme Temperatures **Lead and Supporting Agencies:** Engineering Services (lead), Utilities and Maintenance Services, Information Services	**Cost:** High **Funding Sources:** CIP Funds, HMA Grants, Enterprise funds **Time Frame:** Long term

Action Description:
Update aging water, wastewater, and stormwater systems with durable materials and designs that withstand flooding, earthquakes, and other hazards. Ensures essential services remain operational during and after disasters, reducing service interruptions and health risks. Supported by Capital Improvements Plan and utility-specific comprehensive plans.

Steps:
- Complete and implement Stormwater, Sewer, and Water Comprehensive plans.
- Conduct vulnerability assessments of existing utility infrastructure.
- Prioritize replacement of aging or high-risk assets (e.g., culverts, pipes, pumps, mains) in flood or seismic zones.
- Apply resilient design standards (e.g., flexible joints, corrosion-resistant materials).
- Integrate upgrades with scheduled maintenance and capital improvement projects.

Establish fiberoptic connections between critical City facilities and Snohomish County 911

Category: Infrastructure Actions **Hazard Priority Ranking Score:** 25 **Hazards:** Cyber Incidents, Severe Weather **Lead and Supporting Agencies:** Information Services (lead), Engineering Services, Utilities and Maintenance Services, Police, Marysville Fire District, Snohomish County 911	**Cost:** Moderate **Funding Sources:** CIP funds, HSGP, I/Net funds **Time Frame:** Long Term

Action Description:
Build a high-speed, redundant communications network linking key facilities with the regional emergency dispatch system. Strengthens emergency coordination and ensures reliable communication during disasters.

Steps:
- Complete mapping of existing and proposed pathways.
- Create redundant loops of communication between facilities.
- Identify phases of work, along with priorities, when building new projects.
- If funds are not available for fiber run lay conduit for future connectivity.

Conduct a seismic evaluation of water, wastewater, and stormwater utility systems to recommend retrofit and mitigation projects

Category: Infrastructure Actions **Hazard Priority Ranking Score:** 24 **Hazards:** Earthquake **Lead and Supporting Agencies:** Utilities and Maintenance Services (lead), Engineering Services Information Services, Emergency Management	**Cost:** Low **Funding Sources:** HMA Grants, CIP funds, Enterprise funds **Time Frame:** Long Term

Action Description:

Assess vulnerability of utility systems to earthquakes and identify priority upgrades to improve seismic performance. Reduces risk of catastrophic infrastructure failure and speeds recovery following seismic events.

Steps:
- Conduct an asset survey and seismic evaluation of utility systems.
- Use best available science to develop a list of recommendations to implement.
- Integrate results into the City's Capital Improvement Plan and Hazard Mitigation plan updates.
- Implement recommendations from the Flood Control Grant sea level rise study.

Establish redundant data and network access at the Marysville Civic Center through satellite and point-to-point connections

Category: Infrastructure Actions **Hazard Priority Ranking Score:** 24 **Hazards:** Cyber Incidents, Severe Weather **Lead and Supporting Agencies:** Information Services (lead)	**Cost:** Low **Funding Sources:** HSGP EMPG **Time Frame:** Short Term

Action Description:

Implement multiple, independent internet and network connections for continuity of government operations. Maintains communication and access to information systems if primary networks fail, ensuring uninterrupted operations.

Steps:
- Build out a response vehicle that supports emergency communications with satellite and redundant cellular services.
- Establish point-to-point connections for data network access to City facilities including the Emergency Operations Center.
- Expand amateur radio capabilities in City facilities for communications.

Explore projects to incorporate Earthquake Early Warning into City operations

Category: Infrastructure Actions **Hazard Priority Ranking Score:** 23 **Hazards:** Earthquake, Tsunami **Lead and Supporting Agencies:** Emergency Management (lead), Information Services, Engineering Services, Utilities and Maintenance Services	**Cost:** Low **Funding Sources:** HMA Grants, CIP, General fund, Enterprise funds **Time Frame:** Short Term

Action Description:

Integrate automated alerts and protocols tied to the regional Earthquake Early Warning system. Allows for immediate protective actions reducing injuries and damage (ex. shutting down utilities or securing equipment).

Steps:
- Partner with the U.S. Geological Survey (USGS) to incorporate ShakeAlert into City operations.
- Integrate with SCADA for utility automation.
- Develop alert protocols for public facilities, schools, and utilities.

Establish a new Public Works site outside of a flood zone.

Category: Infrastructure Actions **Hazard Priority Ranking Score:** 22 **Hazards:** Flooding, Tsunami, Earthquake, Dam Failure **Lead and Supporting Agencies:** Engineering Services (lead), Utilities and Maintenance Services, Community Development, Executive	**Cost:** High **Funding Sources:** CIP **Time Frame:** Short Term

Action Description:

Relocate or construct essential Public Works operations in a safe, elevated location. Protects vital City equipment and emergency response capacity from flood damage, ensuring continuity of services.

Steps:
- Complete the transfer of property with the Marysville School District.
- Perform assessments of the sites and structures to include hazards mitigation considerations.
- Develop the new site in order to function as a Public Works site and incorporate hazard mitigation measures.
- Consider adding fueling capabilities on the new site.

Establish and follow wildfire protection standards at City facilities

Category: Infrastructure Actions **Hazard Priority Ranking Score:** 22 **Hazards:** Wildfire **Lead and Supporting Agencies:** Emergency Management (lead), Utilities and Maintenance Services, Engineering Services, Parks, Culture, and Recreation, Community Development, Marysville Fire District	**Cost:** Low **Funding Sources:** HMA Grants, General Fund **Time Frame:** Long Term

Action Description:
Apply defensible space, fire-resistant materials, and vegetation management standards around City properties. Reduces the risk of facility loss and helps protect nearby neighborhoods from spreading wildfire.

Steps:
- Conduct a vegetation and landscaping assessment at City sites.
- Establish procedures and standards specific to City sites.
- Incorporate wildfire protection standards into landscaping, maintenance, and management procedures.

Implement infrastructure improvements on properties to mitigate flooding in redundant flood prone locations throughout the city

Category: Infrastructure Actions **Hazard Priority Ranking Score:** 20 **Hazards:** Flooding, Severe Weather **Lead and Supporting Agencies:** Utilities and Maintenance Services (lead), Community Development, Emergency Management	**Cost:** High **Funding Sources:** FMA Grants, CIP funds **Time Frame:** Long Term

Action Description:
Install drainage, elevation, or floodproofing measures in repeatedly flooded areas to prevent recurring damage. Lowers long-term flood risks, protects homes and businesses, and decreases recovery costs.

Steps:
- Engage property owners and City staff to evaluate site-specific solutions.
- Install improved drainage systems, retention basins, or green infrastructure.
- Elevate or floodproof key equipment and utilities.

Implement and support projects that improve safety measures along railways

Category: Infrastructure Actions **Hazard Priority Ranking Score:** 20 **Hazards:** Train Incident, Hazardous Materials Release **Lead and Supporting Agencies:** Engineering Services (lead), BNSF Railway, Washington State Department of Transportation	**Cost:** High **Funding Sources:** CIP **Time Frame:** Long Term

Action Description:

Collaborate with rail operators to upgrade crossings, barriers, and warning systems to reduce accident risks. Protects residents and first responders from hazardous materials incidents and transportation disruptions.

Steps:
- Improve safety measures at crossings.
- Implement projects for grade separation at appropriate crossings.
- Implement project towards establishing a Quiet Zone in Marysville.

Explore and implement projects to limit impacts from a dam failure

Category: Infrastructure Actions **Hazard Priority Ranking Score:** 19 **Hazards:** Dam Failure, Flooding **Lead and Supporting Agencies:** Utilities and Maintenance Services (lead), Emergency Management, Information Services	**Cost:** Moderate **Funding Sources:** HMA grants, HHPD **Time Frame:** Long Term

Action Description:

Identify vulnerable areas and invest in protective infrastructure or emergency planning for potential dam-related flooding. Minimizes potential loss of life and property damage from catastrophic dam events.

Steps:
- Continue engineering-level inspections and maintenance programs.
- Ensure vegetation and tree growth is properly managed.
- Enhance public alert and warning procedures for potentially-impacted residents and businesses.

Local Planning Actions

Integrate hazard mitigation efforts with other City and regional plans and standards. Support policies and goals related to hazards and resilience.

Category: Local Planning Actions
Hazard Priority Ranking Score: 26
Hazards: All Hazards
Lead and Supporting Agencies: Community Development (lead), Emergency Management, All Departments

Cost: Low
Funding Sources: General fund
Time Frame: Ongoing

Action Description:
Align hazard mitigation strategies with other planning efforts throughout the City and with partners. Creates a unified framework for decision-making that promotes safer growth and coordinated response.

Steps:
- Determine a strategy for further integration of planning efforts.
- Coordinate plan update schedules to optimize coordination.
- Embed hazard mitigation goals into land use and capital investment policies.
- Develop cross-department coordination protocols for project reviews.

Establish programs to address management of NGPAs to mitigate against hazards like wildfire, severe weather, and flooding

Category: Local Planning Actions
Hazard Priority Ranking Score: 23
Hazards: Flooding, Severe Weather, Wildfire
Lead and Supporting Agencies: Utilities and Maintenance Services (lead), Community Development, Emergency Management, Private entities

Cost: Low
Funding Sources: FMA grants, Ecology grants, DNR grants
Time Frame: Long Term

Action Description:
Implement vegetation and stormwater management practices in Native Growth Protection Areas (NGPAs) to reduce fuel loads and erosion. Enhances natural defenses, protects ecosystems, and reduces hazard impacts on nearby properties.

Steps:
- Conduct an assessment of NGPAs including a health inventory.
- Establish strategies for addressing management of NGPAs.
- Create a citywide vegetation management standard for hazard reduction.
- Partner with local conservation groups for maintenance support.
- Develop public education on responsible property management near NGPAs.

Public Information and Outreach Actions

Enhance warning and public information capabilities for visitors and public areas along the waterfront

Category: Public Information and Outreach Actions **Hazard Priority Ranking Score:** 25 **Hazards:** Tsunami, Flooding, Dam Failure, Earthquake, Hazardous Materials Incident **Lead and Supporting Agencies:** Emergency Management (lead), Communications, Police	**Cost:** Low **Funding Sources:** EMPG, HMA grants **Time Frame:** Long Term

Action Description:

Improve real-time communication systems for waterfront areas as they continue to be developed. Increase warning ability to provide information for visitors to the waterfront to take protective action.

Steps:
- Install all-hazard alert broadcast sirens or other warning systems in high-traffic areas.
- Provide public education on waterfront hazards including seasonal campaigns, handouts, and signage.

Expand public education efforts and provide mitigation resources to residents, neighborhoods, and businesses

Category: Public Information and Outreach Actions **Hazard Priority Ranking Score:** 25 **Hazards:** All Hazards **Lead and Supporting Agencies:** Emergency Management (lead), Communications	**Cost:** Low **Funding Sources:** EMPG, General fund **Time Frame:** Long Term

Action Description:

Promote preparedness and property-level mitigation for local residents, neighborhoods, and businesses. Builds a culture of readiness, empowering the community to take proactive steps before disasters occur.

Steps:
- Provide outreach materials, trainings, and deliver programs that encourage preparedness and mitigation actions.
- Tailor products to target audiences.
- Partner with other community organizations/groups to amplify messaging.
- Continue to support the Marysville Ready Neighbor and Marysville Ready Business programs.

Readiness Actions

Establish agreements with more local partners to enable faster assistance for emergency events

Category: Readiness Actions **Hazard Priority Ranking Score:** 26 **Hazards:** All Hazards **Lead and Supporting Agencies:** All Departments	**Cost:** Low **Funding Sources:** General funds **Time Frame:** Ongoing

Action Description:
Create mutual aid and resource-sharing agreements with nearby jurisdictions and private partners. Speeds up recovery and resource access during emergencies, reducing dependence on outside assistance.

Steps:
- Maintain and enhance existing partnerships.
- Identify new agreements and partners to fill gaps in capabilities.

Increase involvement in regional trainings and exercises from all City departments

Category: Readiness Actions **Hazard Priority Ranking Score:** 26 **Hazards:** All Hazards **Lead and Supporting Agencies:** All Departments	**Cost:** Low **Funding Sources:** General fund, EMPG, HSGP **Time Frame:** Ongoing

Action Description:
Expand participation in multi-agency drills to test and improve coordinated response. Builds staff readiness and strengthens relationships that are critical for efficient disaster response.

Steps:
- Increase coordination in planning between agencies.
- Provide more opportunities for training and exercise participation so a wider range of staff can be involved.

Identify additional warming, cooling, and cleaner air centers in the community to use during extreme temperature or poor air quality events

Category: Readiness Actions **Hazard Priority Ranking Score:** 24 **Hazards:** Extreme Temperatures, Wildfires **Lead and Supporting Agencies:** Emergency Management (lead), Snohomish County Human Services	**Cost:** Low **Funding Sources:** EMPG, HMA grants, Human services grants **Time Frame:** Short Term

Action Description:

Designate and equip safe spaces for residents to find relief during climate-related emergencies. Protects vulnerable populations from health impacts of heatwaves, cold snaps, and smoke events.

Steps:

- Recruit new facilities and support their efforts to operate the facility during an event.
- Identify funding opportunities for facility improvements to enable sites to operate.
- Expand outreach efforts to share sheltering information with the public.
- Increase supply and resource availability locally to support centers.

Maintain StormReady status to practice severe weather resilience

Category: Readiness Actions **Hazard Priority Ranking Score:** 24 **Hazards:** Severe weather, flooding, extreme temperatures **Lead and Supporting Agencies:** Emergency Management (lead), Engineering Services, Communications	**Cost:** Low **Funding Sources:** EMPG, General fund **Time Frame:** Ongoing

Action Description:

The National Weather Service (NWS) StormReady program establishes guidelines that help a community be better able to handle a weather-related event. By maintaining the requirements to be StormReady, the City can ensure that it is resilient to weather events.

Steps:

- Renew StormReady status in February 2027.
- Regularly utilize and test weather information sharing platforms (slack, weather radio, NWS Connect, etc.)
- Develop and/or review weather-specific procedures and emergency plans.
- Launch and use Damage Assessment Survey123 tools to maintain situational awareness during storm events.
- Promote weather readiness to community partners and businesses.

Establish a City emergency and disaster reserve fund policy.

Category: Readiness Actions **Hazard Priority Ranking Score:** 22 **Hazards:** All Hazards **Lead and Supporting Agencies:** Finance (lead), Executive, Emergency Management, All Departments	**Cost:** High **Funding Sources:** General fund **Time Frame:** Short Term

Action Description:

The fund ensures immediate access to financial resources following a disaster, reduces dependence on delayed reimbursements from state or federal programs, and strengthens the City's long-term resilience and financial stability.

Steps:
- Develop policy including funding thresholds, eligible uses, replenishment procedures, and oversight responsibilities.
- Allocate funds.
- Review annually, report fund status in budget documents, and replenish after use.

Plan Adoption and Maintenance

This plan is intended to be a living document that will be regularly referenced and updated as needed. This section describes how the planning team and HMPW will formally adopt the plan, continue to make progress on the mitigation goals identified, and monitor its effectiveness and applicability to the community and its hazard risks.

Plan Adoption

To complete the mitigation planning process, the City must formally adopt the HMP. Adoption demonstrates the commitment to the mitigation strategy outlined in the plan. The plan was submitted to Washington State EMD and FEMA for pre-adoption approval. Once the plan received an Approvable Pending Adoption status, it was brought to Marysville City Council for formal adoption.

Plan Implementation and Maintenance

Upon completion of the plan, focus will turn to implementing the mitigation strategy. Marysville Emergency Management will take the lead in monitoring the progress of the implementation. The HMPW will also be instrumental in advocating for the actions in this plan in their respective fields. The plan will be shared with all planning partners and stakeholders in addition to being available on the City website.

Partner Engagement

The HMPW will continue to exist and will be used as the main body for requesting action and goal updates throughout the five-year period. This group will also address any need to update the plan if there is a major event or significant change to hazard risk in addition to supporting the goals and actions within the plan.

Other existing groups can also be utilized to request updates to mitigation actions (ex. Marysville Emergency Management Committee or Marysville Emergency Preparedness Partners). This provides an opportunity to gather updates more regularly. This also provides an opportunity to find gaps or barriers that could limit the progress of an action.

Continued Public Engagement

To encourage continued public engagement, the HMP website will remain a hub for information on mitigation actions and progress. The planning team will work with City Communications to regularly share mitigation and HMP content on the City's social media accounts. Significant highlights from mitigation activities should be featured to bring mitigation awareness to the public. The HMPW can assist with public engagement by sharing mitigation information within their networks.

Progress Tracking

Marysville Emergency Management will maintain a record of significant updates that will be available on the website. It will be updated at least annually with input from lead and supporting agencies. The HMPW will meet midway through the plan cycle for a more in-depth progress update. This progress report will be shared with City leadership. The HMPW will also meet for an in-depth progress update at the start of the next plan development cycle (around year four of the plan cycle).

Plan Integration

This plan and the information in it should be used as a tool to help support and inform other plans and programs. Increasing familiarity and availability of the HMP with other City staff and community partners will help maintain commitment to the mitigation strategy and encourage utilizing it for plan development. Emergency Management staff are included in plan development processes and review panels for other departments and will use the HMP to inform their input and ensure alignment with mitigation strategies or identify the need to adjust if conflicts occur. Emergency Management participates in regional and cross-departmental groups which will help to identify opportunities for integration.

Local Planning Mechanism where Hazard Mitigation Information may be Integrated	
Community Development • 2024 Comprehensive Plan • Downtown Master Plan • Smokey Point Master Plan • East Sunnyside – Whiskey Ridge Subarea Plan along with Whiskey Ridge Design Guidelines and Whiskey Ridge Streetscape Standards • Lakewood Neighborhood Master Plan • Gateway Master Plan • Shoreline Master Program • Housing Action Plan • Climate Change Vulnerability and Risk Assessment	**Engineering Services and Utilities and Maintenance Services** • Sewer Comprehensive Plan • Water Comprehensive Plan • Surface Water Comprehensive Plan • Engineering Design and Development Standards • Americans with Disabilities Act (ADA) Self-Evaluation and Transition Plan • Preliminary Capital Improvement Plan/Program • Transportation Improvement Program • Transportation Comprehensive Plan • Water Planning Basin Assessment and Prioritization • Stormwater Management Action Plan • Stormwater Management Program (SWMP) Plan • National Pollutant Discharge Elimination System (NPDES) Permit/ Western Washington Phase II Municipal Stormwater Permit
Other Departments • Departmental Emergency Response Plans • Parks, Culture and Recreation Plan • Police Functional Plan	

Emergency Management will integrate the HMP into all of their planning efforts. The HMP will also help to inform where planning, training, and exercise efforts should be focused.

Plan Update

This plan is required to be updated within a five-year cycle from the date of adoption[5]. Updates to the plan will reflect changes in development, risk, and priorities of the community. It will include a review of the mitigation strategy and incorporate monitoring information collected throughout the plan cycle.

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[5] 44 CFR § 201.6

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Appendix A: Hazard Identification and Risk Assessment Methodology

This section describes in more detail the methodology used in the HMP hazard identification and risk assessment.

Hazard Identification

To determine the list of hazards to include in the hazard identification and risk assessment, the planning team started with the list used for the 2020 Snohomish County HMP (in which the City had an annex). The list of hazards was adjusted to be more representative of current concerns. Extreme temperatures, for example, have become a growing concern and both Snohomish County and the City have added them to their hazard list. The planning team decided not to rank hazards as some have wide variability in their risk. This plan uses a hazard matrix that displays comparative ranges of severity and likelihood for each hazard while also accounting for the variability within each hazard. This is meant to be a tool to provide context for the planning process. In addition to natural hazards, some human-caused and technological hazards are also included because they are a significant concern to the community based on meeting discussions and feedback.

Mapping and GIS Analysis

At the beginning of the risk assessment process, the planning team met with City Geographic Information System (GIS) staff to discuss hazard data sources and what maps and analyses to include in the assessment. Details including specifications and design themes were also discussed. Snohomish County was updating their HMP during the same time period and shared their data where applicable to be consistent between plans.

The GIS team developed preliminary hazard maps that were available at the kick-off meeting. These maps were used to provide context to guide discussion and were also reviewed by the HMPW members for effectiveness in displaying hazard information. Hazard maps were also available for review at all public meetings.

In addition to the maps for displaying hazard threats, GIS also utilized spatial data to determine what infrastructure and resources fall within hazard zones. This information is displayed in tables in the hazard identification and risk assessment section. The following section details the sources and process used to develop those tables.

Data Sources
- Snoco Parcels March, 2025 with assessed land and improvement values.
- Critical infrastructure points as determined by Emergency Management.
- Marysville buildings from Ecopia land cover modeling January, 2024. Analyses were done using building centroids to prevent single buildings being counted in multiple parcels.
- The hazard boundary sources from other maps.

Hazard Impact Tables

The following process using ArcGIS Pro was used to develop the table throughout the hazard identification and risk assessment section.

1. Flatten overlapping parcels- Many condo, commercial, and mobile home parcels have overlapping records in the parcel database. The GIS team flattened these and summed the values of the overlapping parcels to show total land and improvement values per horizontal area.

2. Designate any building under 80m^2 as an outbuilding and exclude it from the analysis.

3. Designate buildings as commercial or residential based on zoning and visual examination.

4. Spatial join buildings to parcels to determine the number of buildings on each parcel.

5. Spatial join parcels to building data to create a building dataset containing all of the parcel data and values.

6. In the joined building data, divide the improvement values by the number of buildings on each parcel to provide an apportioned value for each building on the parcel. *No attempt was made to differentiate improvement values between buildings where a parcel has multiple buildings. All buildings received an equal ratio of the improvement value for the parcel.

7. Merge hazard data sources and convert them to polygons if needed. A polygon-based approach was used based on the geometry of most hazard data.

8. Spatial join the merged hazard data with building data to create a master feature class showing which buildings are potentially affected by which hazards

9. Clip the parcel data by the merged hazard data to make feature layers of which parcels are potentially affected by which hazards.

10. Recalculate the acreage of the clipped parcels to show only the affected portions of each parcel. *Land improvement values were not recalculated as partial values.

11. Spatial join the merged hazard data with critical facilities data to create a master critical facilities feature class showing which are potentially affected by which hazards.

12. Export the processed parcel, building, and critical facility data to be summarized using Excel Pivot tables.

Risk Assessment Narratives

The planning team used the maps and data tables developed by GIS to build a narrative picture of what the impact of a particular hazard would be. Information on past events or similar hazards in other locations was also included. Hazard information was shared in meetings to help attendees describe the impact on their department, agency, or family. Notes from meetings and interviews were also used to describe what the impact of a hazard would be. The planning team reviewed other documents and plans to inform the risk assessment including other jurisdiction HMPs, utility risk assessments, and community development plans.

Problem statements were developed for each hazard to succinctly describe the impact to the community. These statements were shared with the HMPW for review.

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Appendix B: Meeting and Public Engagement Notes

This appendix includes notes from the public engagement efforts and various meetings throughout the plan development process. These notes are intended to provide an overview of the material covered as well as highlights from the discussions.

Outreach Efforts

The following images are examples of outreach efforts to promote public meetings and engagement opportunities.
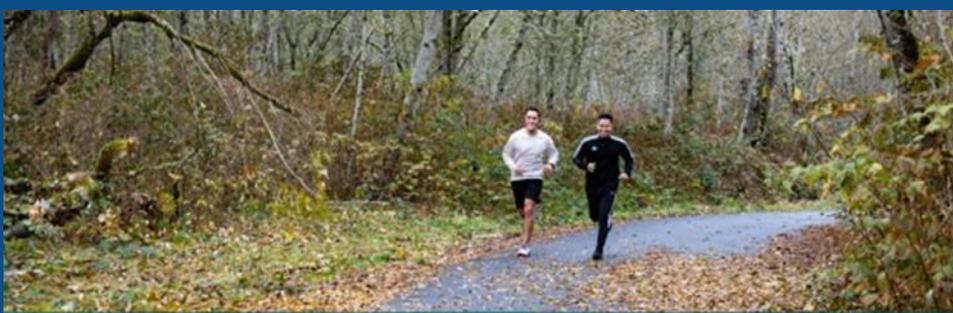
Printed Outreach

The following items were distributed to community partners and available at Marysville Emergency Management tables at outreach events.

Figure B-1. Postcard handout for HMP engagement.

Figure B-2. Meeting and engagement informational flyer.

Figure B-3. Printed quarterly newsletter mailed to Marysville residents.

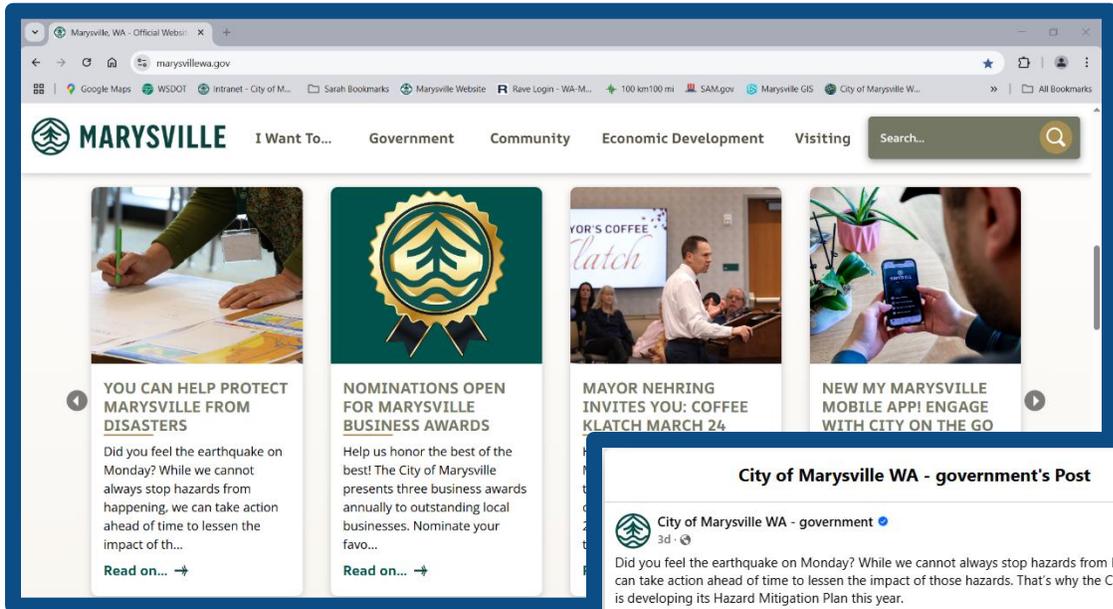# Website, Social Media, and Email Outreach

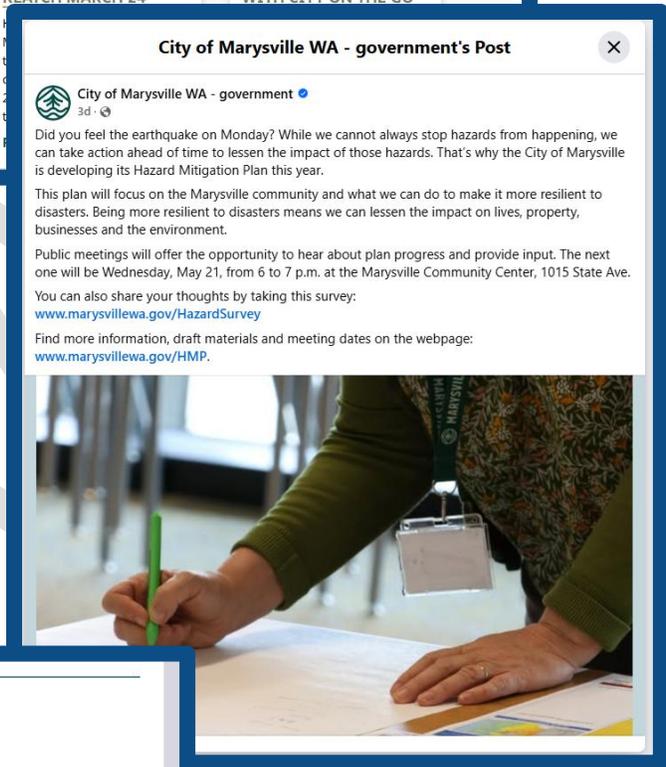**Figure B-4. Press release posted to the City website homepage.**

Figure B-5. Social media post promoting HMP engagement.

Figure B-6. Excerpt from City digital newsletter.

Meeting and Planning Discussions

Hazard Mitigation Plan Workgroup Kick-Off Meeting

February 26, 2025 – 1:00 – 2:30 p.m.

Marysville Civic Center

The HMPW had a kick-off meeting to introduce the plan process, discuss the importance of hazard mitigation, outline the planning process, and gather input to inform the plan. The HMPW also learned about their role in the process.

Attendees: 27

Introductory Presentation to City Council

March 3, 2025 – 7:00 p.m.

Marysville Civic Center

The planning team gave a presentation on the hazard mitigation planning process including an overview of previous action accomplishments and engagement strategy.

Business Open House

April 30, 2025 – 2:00 – 3:00 p.m.

Marysville Community Center

Risk assessment information was displayed for attendees to review as well as general plan information and updates. Attendees were encouraged to ask questions and fill out feedback forms specific to businesses.

Attendees: 2

Public Meeting #1

May 21, 2025 – 6:00 – 7:00 p.m.

Marysville Community Center

Risk assessment information was displayed for attendees to review as well as general plan information and updates. Attendees were encouraged to ask questions and fill out feedback forms.

Attendees: 6

High Hazard Potential Dam Workshop

June 25, 2025 – 10:00 – 12:00

Virtual hosted by Snohomish County Department of Emergency Management

Figure B-7. Business Open House Display

Discussion of risk and mitigation strategies specific to dams between dam owners and other stakeholders.

HMP City Services Meeting

June 26, 2025 – 9:30-11:00 a.m.

Marysville Civic Center

City of Marysville staff reviewed risk information and discussed mitigation strategies specific to services the City provides.

Attendees: 11

HMP Public Safety Meeting

July 9, 2025 – 10:00-11:00 a.m.

Marysville Civic Center

City of Marysville and Marysville Fire District staff reviewed risk information and discussed mitigation strategies specific to public safety services.

Attendees: 5

Marysville Emergency Preparedness Partners Meeting

July 17, 2025 – 2:00 – 3:00 p.m.

Marysville Community Center

The Marysville Emergency Preparedness Partners group is comprised of emergency management staff, community partners, businesses, and emergency volunteers. This group meets regularly to discuss and coordinate on preparedness topics. This meeting focused on the HMP by reviewing risk assessment information and collecting input from attendees.

Attendees: 12

HMPW Meeting #2

August 27, 2025 – 1:00 – 2:30 p.m.

Marysville Civic Center

The HMPW reviewed the progress of the plan, confirmed the mitigation goals, and completed an activity to gather information on implementing the identified mitigation actions.

Attendees: 21

Public Meeting #2

September 17, 2025 – 6:00 – 7:00 p.m.

Marysville Community Center

Risk assessment information and maps were displayed for attendees to review. A short presentation was given by the planning team which provided an overview of the plan progress and mitigation strategy. The plan actions were also shared and attendees were encouraged to provide feedback.

Attendees: 11

Marysville Emergency Management Committee Meeting

October 15, 2025 – 2:00 – 3:00 p.m.

Marysville Civic Center

The planning team discussed plan integration and implementation with City department representatives at a regularly scheduled meeting.

Attendees: 13

Marysville Emergency Preparedness Partners Meeting

October 30, 2025 – 2:00 – 3:00 p.m.

Marysville Community Center

The Marysville Emergency Preparedness Partners group is comprised of emergency management staff, community partners, businesses, and emergency volunteers. This group meets regularly to discuss and coordinate on preparedness topics. This meeting reviewed the mitigation strategy and discussed implementation and how community partners can support mitigation efforts. Attendees: TBD

Draft Plan Presentation to City Council

November 3, 2025 – 7:00 p.m.

Marysville Civic Center

The planning team discussed and collected feedback on the draft HMP at a City Council work session. This was also a kickoff for the public comment period.

Other Discussions and Interviews

The planning team also conducted interviews with specific departments and community partners to discuss mitigation topics specific to their agency or department.

- Snohomish County Department of Emergency Management
- Washington State Emergency Management Division
- Snohomish County PUD
- BNSF Railway
- Marysville School District
- Snohomish County Department of Emergency Management
- National Weather Service Seattle Office
- Other City Departments (Engineering Services, Utilities and Maintenance Services, Information Services, GIS, Community Development)
- Marysville Historical Society

Planning Meeting Notes

Notes from the following planning meetings were shared on the HMP website. Copies of those notes are included here.

Hazard Mitigation Plan Kickoff Meeting

February 26, 2025 – 1:00-2:30 p.m.

Marysville Civic Center

Notes

Participating Departments/Agencies

Center for Independence	City of Marysville - Parks, Culture, and Recreation
City of Everett	
City of Marysville - CD	City of Marysville - Police
City of Marysville - Communications	City of Marysville - Public Works
City of Marysville - Executive	Community Transit
City of Marysville - Finance	Marysville Fire District
City of Marysville - GIS	National Weather Service
City of Marysville - IS	Snohomish County DEM

Meeting Summary

Hazard Mitigation Plan Presentation

Marysville Emergency Management presented the process for developing the City of Marysville's Hazard Mitigation Plan. Attendees provided input and raised questions for discussion throughout the presentation.

Summary of discussion items and feedback:

- Washington State Emergency Management Division will be involved and can share hazard information (ex. tsunamis).

- Attention should be given to people in coastal flooding areas. Mitigation strategies will start looking locally to address what we can and identify if other strategies at other levels are needed.
- Snohomish County DEM shared the plan for their Hazard Mitigation Plan update. They have around 36 jurisdictions that will be an annex into their plan. They plan to focus on the base plan in the first year and then work on annexes. Marysville and the County are coordinating where appropriate.
- Suggested stakeholders and community leaders to include in the planning process: Community Emergency Response Team (CERT), Auxiliary Communications Service (ACS), Marysville Ready Businesses, Limited-English Proficiency groups, healthcare agencies, and schools.
- Hazard identification and risk assessment will include mapping, modeling, historical data, and narrative analysis. Suggested information to include in the assessments:
  - Hazard-specific vulnerable populations
  - Difference between daytime and nighttime risk
  - Cascading events
- The Hazard Mitigation Plan Workgroup was asked to support the plan by:
  - Sharing communications regarding the plan with their networks (survey, meeting invitations, etc.)
  - Attending meetings
  - Reviewing materials
  - Providing comments
  - Continuing to support mitigation after the plan is completed

Risk and Capability Identification Activity

Attendees identified assets at risk and potential capabilities to address the risks for each hazard. Draft maps and informational material were available to help provide context. This information will be used to inform the plan's risk assessment and mitigation strategies.

Mitigation Project Poll

A poll was taken that asked which 5 hazards attendees would most like to support mitigation projects for. This informal poll will be used when considering hazard assessment and mitigation strategies. Results from the 13 responses shown here.

Which hazards would you most like to support mitigation projects for?
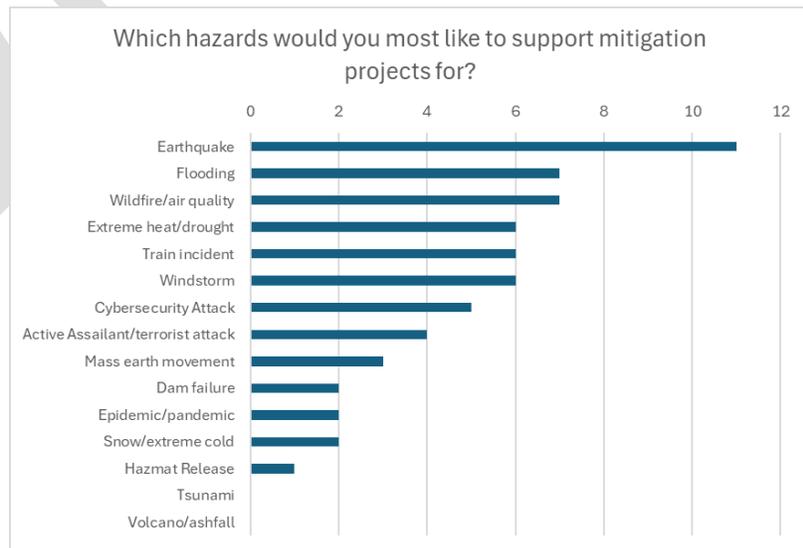
Hazard Mitigation Plan City Services Meeting

June 26, 2025 – 9:30-11:00 a.m.

Marysville Civic Center

Notes

Participants

Assistant Parks, Culture, and Recreation Director	Engineering Services Director
	Grants Coordinator
Building Official	Information Services Director
City Administrator	Interim Community Development Director
Emergency Preparedness Manager	Storm and Wastewater Utility Manager
Emergency Preparedness Specialist	Water Utility Manager

Meeting Summary

Hazard Mitigation Plan Presentation

The meeting began with a short description of the actions taken on the island of Heimaey during a volcanic eruption in 1973 to highlight a community's resilience. Marysville Emergency Management presented preliminary information from the risk assessments. This included hazard maps as well as the amount of land and buildings located in different hazards zones. The presentation also included a list of what may be at risk from hazards. This information was gathered from previous HMP meetings and Geographic Information Systems (GIS) analysis. Participants then discussed what a resilient community might look like and what capabilities there are to mitigate against hazards. Highlights from the conversation and copies of the presentation slides are listed below. Participants reviewed 2020 plan mitigation goals and discussed how they fit our current priorities.

Summary of discussion items on what would make a resilient community and how we could use our capabilities to support mitigation efforts:

- Focus on balancing different priorities from different entities/disciplines (ex. push to raise tree canopy and wildfire risk).
- Earthquake early warning system utilized by public and other entities.
- Robust cell system (and backups like cell on wheels).
- Identified reunification centers and other key locations.
- Map of where staff live and who might be isolated or unable to get to work.

- Knowledge of qualifications needed for local individuals to fill roles.
- Back up fuel supply and distribution.
- Access to remote sites without road damage.
- Recognizing that Marysville is the largest city in our population island, we should have backups.
- Identified landing zones for movement of supplies.
- Agreements with local resources (ex. big box stores, rental companies, National Guard).
- Investments in I-5 corridor and recognizing the role it plays in connecting communities.
- Redundant water system (ensuring drinking water, fire flow, etc.) and equipment/staffing to support it.
- Mapping of local healthcare providers when cut off from hospitals.
- Plans for how to provide services to healthcare centers.
- Plan for getting staff around when roads and bridges are out.
- More training for staff to provide support for critical operations (ex. building inspections after an earthquake).
- Emphasis in coordinating mitigation efforts with the Comprehensive Plan.
- Warning systems in public areas and businesses for tsunami/earthquake.
- Reserve policy in place for disaster costs.

Hazard Mitigation Plan Public Safety Meeting

July 9, 2025 – 10:00-11:00 a.m.

Marysville Civic Center

Notes

Participants

Communications Manager		Marysville Fire District PIO	
Emergency Preparedness Manager		Police Chief	
Emergency Preparedness Specialist			

Meeting Summary

Hazard Mitigation Plan Presentation

The meeting began with a short description of the actions taken on the island of Heimaey during a volcanic eruption in 1973 to highlight a community's resilience. Marysville Emergency Management presented preliminary information from the risk assessments. This included hazard maps as well as the amount of land and buildings located in different hazards zones. The presentation also included a list of what may be at risk from hazards. This information was gathered from previous HMP meetings and Geographic Information Systems (GIS) analysis. Participants then discussed what a resilient community might look like and what capabilities there are to mitigate against hazards. Highlights from the conversation and copies of the presentation slides are listed below. Participants reviewed 2020 plan mitigation goals and discussed how they fit our current priorities.

Summary of discussion items on what would make a resilient community and how we could use our capabilities to support mitigation efforts:

- Wildfire risk is higher along interstate, in empty fields and Native Growth Protection Areas, and around power lines.
- Reviewed the social vulnerability plan with patterns of emergency response needs. There are a high concentration of emergency calls in the Twin Lakes area of Marysville.
- More incidents of lithium-ion battery fires and consider car dealerships a risk.
- Concerns of mass casualty incidents at local casinos and shopping centers as well as large workplaces in the Cascade Industrial Center. More trainings and exercises would be beneficial to prepare.
- For alert and warning, the Police Department is building out a communications van and exploring how the MyMarysville app can help.

Hazard Mitigation Plan Workgroup Meeting

August 27, 2025 – 1:00 – 2:30 p.m.

Marysville Civic Center

Notes

Participants

BNSF Police	City of Marysville - Services and Solid Waste
Center for Independence	City of Marysville - Storm/Sewer
City of Everett	City of Marysville - Transportation
City of Marysville - Communications	Lake Stevens
City of Marysville - Community Development	Marysville Fire Department
City of Marysville - Emergency Management	Northwest Healthcare Response Network
City of Marysville - Engineering Services	Snohomish County Dept. of Emergency Management
City of Marysville - Finance	
City of Marysville - GIS	Snohomish County Human Services
City of Marysville - Information Services	Tulalip Tribes
City of Marysville - Police	

Meeting Summary

Hazard Mitigation Plan Presentation

The meeting began with a presentation from the planning team. The presentation included progress updates and a review of the online public survey results (see attached slides). The participants reviewed problem statements that were developed using the results of the risk assessment as well as a hazard matrix to visualize how various hazards compare in terms of severity and likelihood. The attendees then focused on the mitigation strategy.

They confirmed the updated goals for the plan:

- Reduce hazard-related threats to life, safety, and public health.
- Strengthen critical infrastructure and key facilities to better withstand the effects of hazards and threats.
- Enhance preparedness and response capacity while addressing the specific needs of the community.
- Align priorities across departments, agencies, and private entities for coordinated efforts toward a sustainable and resilient community.

Mitigation Strategy Activity

The attendees spent a majority of the meeting time reviewing and discussing the potential actions that were developed based on previous meetings and interview conversations. They worked in table groups to fill out worksheets requesting information related to each action. The information collected included: specific projects, which agencies/departments would be involved, potential barriers, and other plans that support or conflict with the action. The worksheets were collected by the planning team to review and use for plan development.

The planning team reviewed the input from worksheets to refine the list of actions by consolidating similar ones, removing ones that are not a priority, and adjusting wording.

Actions that were removed from the final list include:

- Increase number of qualified building inspectors for post-disaster damage assessment through agreements and training.
- Continue to maintain and good standing under the National Flood Insurance Program (NFIP).
- Expand outreach and provide more incentives for private property mitigation and preparedness.
- Expand public outreach and education efforts to better reach limited-English populations.
- Provide resources and information to help businesses of all sizes be more resilient to hazards.
- Upgrade crossings, signage, and other safety measures along railways.
- Support transportation projects that can improve emergency service access.
- Replace and upgrade culverts throughout city to reduce vulnerability to severe flood events and earthquakes.
- Replace aging storm and sewer pipes throughout city, including upsizing water main to meet required fire flow needs.
- Establish and exercise a damage assessment process and implement the use of a reporting and tracking tool.

Public Engagement Feedback and Results

The planning team provided multiple opportunities for public to provide feedback to inform the planning process. Results were considered in the development of the HMP. An overview of the results is included here.

Online Survey Results

A public online survey was available on the City's HMP website beginning March 4, 2025, and was closed on October 1, 2025. The survey was announced in a press release, posted to City social media accounts, shared in Emergency Management outreach and training events, and emailed to Emergency Management distribution lists. Hazard Mitigation Plan Workgroup members were also encouraged to share within their networks.

Total responses: 16

Question 1: What neighborhood do you live in?
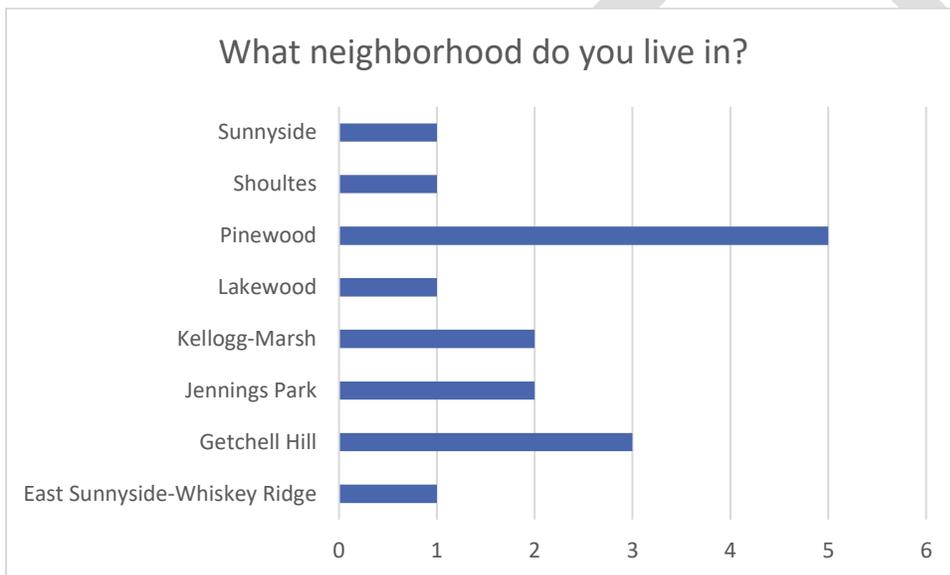
Question 2: Select the hazards that concern you the most. (Select all that apply)

Select the hazards that concern you the most.
(Select all that apply)

Hazard	Value
Tsunami	1
Snow	1
Drought	1
Dam failure	1
Volcano/ashfall	2
Mass earth movements	2
Extreme heat	2
Extreme cold	2
Wildfire	4
Terrorist attack	4
Flooding	4
Epidemic/pandemic	5
Cybersecurity attack	6
Active assailant	6
Windstorm	7
Train incident	7
Poor air quality	7
Hazardous materials release	7
Earthquake	12
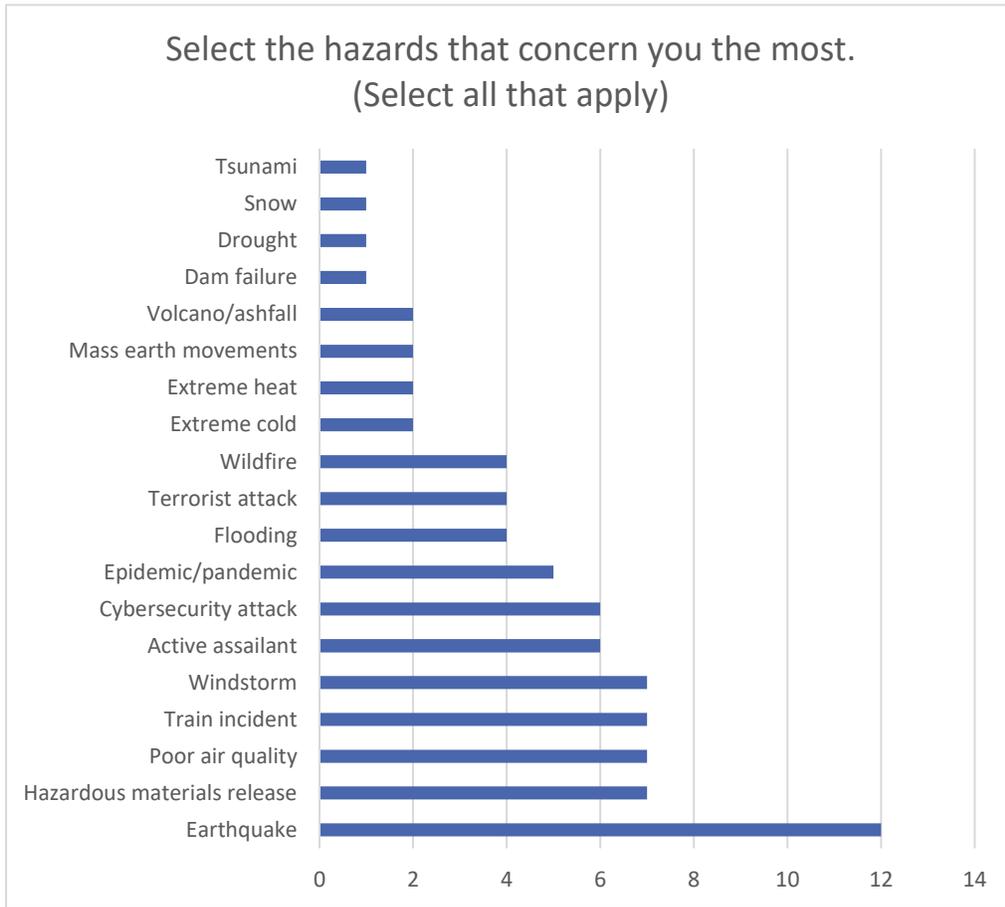
Other responses: *Speeding on 51st*

Question 3: Which of the following help you prepare for disasters? (Select all that apply)

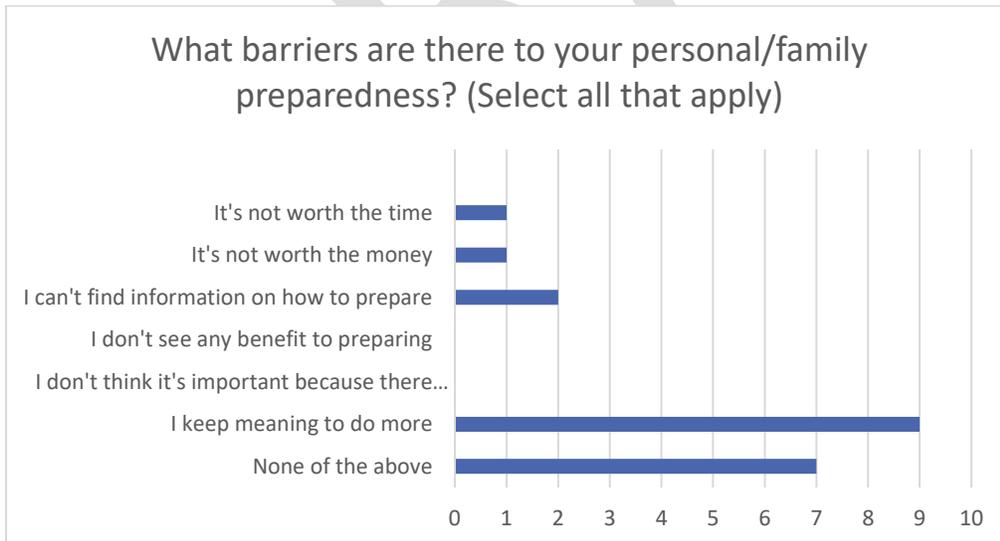**Which of the following help you prepare for disasters? (Select all that apply)**

| Category	Value
None of the above	1
Educational classes	5
Collaborating on preparedness efforts with others	5
Talking to someone at an information fair	6
Training courses on a particular topic	6
Printed materials	7
Hearing about and reflecting on how a disaster…	9
Learning from case studies and past disasters	10
Understanding local hazards	12
Online resources	14

Other responses: *Disaster preparation food packs/first aid packs, common sense, What Marysville is doing to minimize/prevent hazards.*

Question 4: What barriers are there to your personal/family preparedness? (Select all that apply)

What barriers are there to your personal/family preparedness? (Select all that apply)

Category	Value
It's not worth the time	1
It's not worth the money	1
I can't find information on how to prepare	2
I don't see any benefit to preparing	0
I don't think it's important because there…	0
I keep meaning to do more	9
None of the above	7

Other responses: *Expense, I do not have the finances to purchase items, lack of frequent and continued first responder (police & community/fire) coverage & visits to our neighborhood, City restrictions to building to be prepared.*

Question 5: Mitigation means taking steps before a disaster occurs in order to minimize its impacts (ex. seismic retrofit of a building to better withstand an earthquake). If funds were dedicated to hazard mitigation, which types of projects would you like to see? (Select all that apply)

If funds were dedicated to hazard mitigation, which types of projects would you like to see? (Select all that apply)
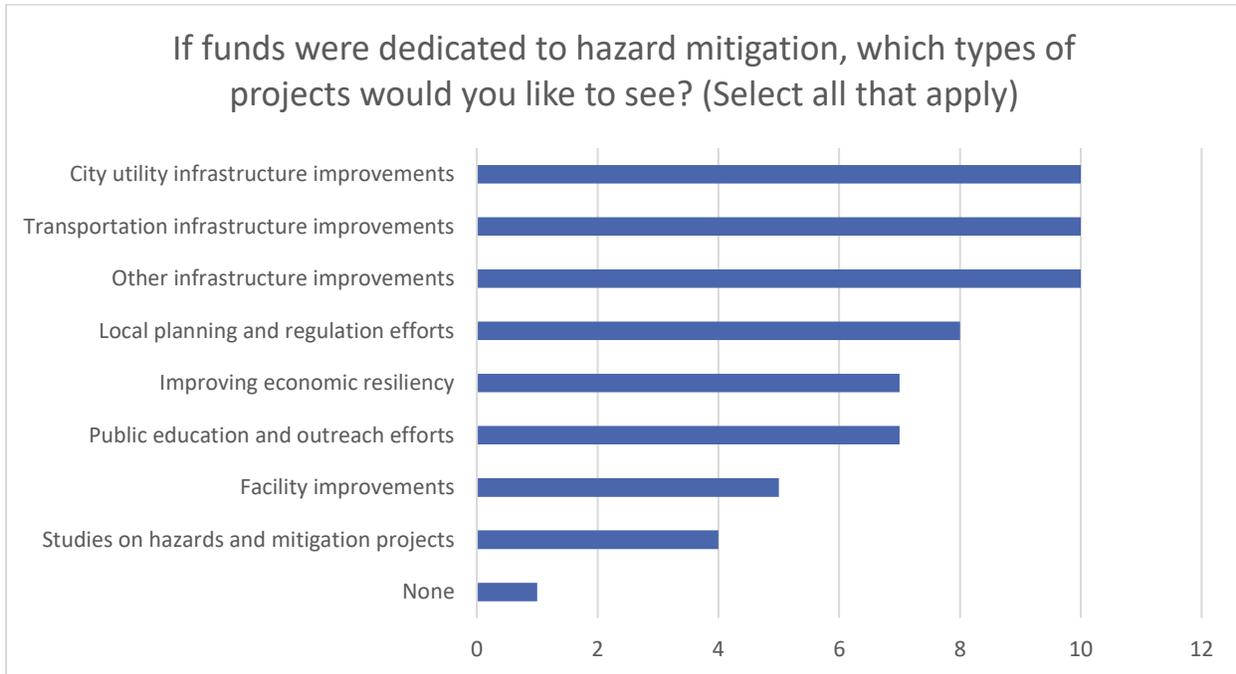
Other responses: *First responder safety and protection, Utility infrastructure Improvements need NOT be divided on a whim. Utilities are all utilities!, Stop wasting money on multiple studies for the exact same hazard and just make the improvements.*

Question 6: What qualities or features in Marysville do you most appreciate?

The waterfront!

I appreciate the measured steps our mayor and council take to build up our city with fiscal responsibility and balanced policing. I also appreciate the planning and efforts to get public input. Our parks, streets, government buildings are good without being extravagant. I like the partnership with the Tulalip tribe and all that is being done to protect the watershed and restoring the estuary. The walking/biking trails are good additions.

Friendly, hometown feel.

That even though there is an element of big city issues moving in, there are still the people with the small town caring attitude here to make it a nice place to live.

I believe the Marysville City staff and elected officials are very responsive and always trying to do their best. Whenever I contact anyone representing services in Marysville it is met with courtesy, concern and quick action. I really appreciate that. The recreation and activities are wonderful and the outreach to all is enthusiastic and full of variety.

The marysville community center and the robust opportunities for involvement.

I appreciate the public transportation ease of access.

Dont have to travel far for services, shopping, dining, etc.

Trails and parks, Parks and Recreation

Qualities and features are becoming fewer and fewer.

I feel that Marysville ignores residents that live in mid/north Marysville around 88th. Everything is being done at the south end (4th) and and north end (116th) and nothing in the middle (88th).

Waiting til I can retire and move out of Marysville and Washington.

Our mayor and city council are top notch. Unfortunately, the number and density of homes and apartments being built have destroyed the quality of life in Marysville. Traffic is out of control. Traffic noise is out of control. Loud mufflers and obnoxious car sound systems are illegal, but unfortunately, ignored. There are few redeeming qualities left in this city which is sad since I've lived here since 1958.

Understanding community members who are always willing to help each other out. Those who have trouble connecting with others can feel safe in the Marysville community.

Livability

Marysville has done a great job building community here. We have to keep getting folks involved.

I appreciate the efforts to improve the traffic flow and for the increase in community communication. I especially appreciate the open access to our local leadership team for community concerns.

Question 7: Any additional comments?

I know it must be really discouraging that many people living in Marysville avoid the State street area due to crime, homeless people, and probable druggies hanging around. There are very few private security on site of businesses to make people feel safer - most I know are concerned about parking their car and leaving it unattended in the lot. People buying new homes in the Getchell/Arlington area simply go to Arlington or Lake Stevens to shop, so downtown State St. will continue to lose business.

Curb appeal is seriously lacking and more needs to be done to get folks to clear the junk out of their front yards.

There are too many "massage" parlors in Marysville. You know, the ones with the neon signs that are open late at night. That and Ladybug Espresso make our town scummy.

Have lived here for sine 1998 and the city is growing so fast in population but the city infrastructure is doing nothing to deal with growth. Marysville used to be a safe place to live, now there are homeless that walk my streets at night, street racing EVERY DAY, yet police do nothing to stop it.

Most importantly the train crossings at 4th, 88th, and 116th. So many trains, no viable options to get to and from the freeway. Trains cause so many back-ups and lights at the freeway (mainly 88th), are not times properly to relive traffic problems, *the are deliberately set to hold traffic back). Would recommend making right south bound lane leading to 88th street a right turn only. This will also help congestion from one person blocking the next 50 from turning right just because do not want to wait in the long left straight through lane.

Would be great to make a freeway exit that runs over the train and businesses straight off state to 88th street overpass. 88th street would still access the freeway as well, give residents options because the 529 exit will get overwhelmed and still not do enough and is very inconvenient for those in North Marysville.

I think the average person in our community is not prepared or trained for any kind of emergency, but especially an evacuation. Do we have a city evacuation plan?

Public Meeting Feeback Forms

Each public meeting had a method for collecting feedback from attendees. The information gathered in these results was considered in the planning process and included here for reference.

Business Feedback

Feedback was collected from businesses during the Business Open House and the Marysville Emergency Preparedness Partners meeting.

Business Open House Feedback Worksheet
City of Marysville Hazard Mitigation Plan

The goal of a Hazard Mitigation Plan is to build a framework for becoming a more resilient community. The input and involvement from stakeholders like you are a key piece in the planning efforts. Use this sheet to guide you through the risk and mitigation information in the room. Please also provide your input below to inform the City's hazard mitigation strategies.

Station 1: Marysville Hazards

Learn about the different hazards Marysville could face and help yourself to any preparedness materials.

a. When it comes to your business, which of these hazards or impacts from hazards concern you the most? *Railway Blockage due to any disaster.*

Station 2: Hazard Mitigation Plan Overview

Check out the presentation on the screen to learn about what a hazard mitigation plan is and why it's important. More information, including upcoming events and draft materials can be found by scanning the below QR code.

Scan for the City of Marysville Hazard Mitigation Plan webpage which includes:
- Upcoming meeting dates
- Draft materials
- Link to the public survey

OVER

Station 3: Stakeholder Input

We want to hear from you! Provide your thoughts to help with the development of the City's mitigation strategies.

a. What are the reasons you operate your business in Marysville or why do you choose to work here? *Aerospace manufacturing - Love It*

b. What does your business rely on in order to stay open and operate? *Airplane Sales*

c. What happens if those are interrupted or not available? *we stop work*

d. What ideas do you have to make the City and community more resilient to disasters? *I am not sure if we can.*

e. What preparedness planning are you already doing at your business?
- ☒ Connecting with local emergency preparedness groups
- ☐ Lockdown/shelter in place procedures
- ☒ Methods of communicating closure information with staff
- ☐ Emergency food, water, or other supplies stored for staff
- ☐ Back up supplies or plans for vendor disruptions
- ☒ Practice emergency drills (earthquake, fire, etc.)
- ☒ Alternative work site locations identified
- ☐ Other: _____

Thank you for your input! Don't forget to turn in your form before you leave.

a. When it comes to your business, which of these hazards or impacts from hazards concern you the most? *TRAIN, WILDFIRE, EARTHQUAKE, CHEMICAL*

a. What are the reasons you operate your business in Marysville or why do you choose to work here? *Aerospace boo Available building space near BOEING*

b. What does your business rely on in order to stay open and operate? *Interstate PUD, PSE, WATER, SEWER, WASTE MNG EMG. SERVICES PORTS - WATER AIRPORTS*

c. What happens if those are interrupted or not available? *NO RAW MATERIALS, SHIPPING FINISHED PRODUCT, CLOSURE OF FACILITY*

d. What ideas do you have to make the City and community more resilient to disasters? *UPGRADE ROADS*

e. What preparedness planning are you already doing at your business?
- ☒ Connecting with local emergency preparedness groups
- ☒ Lockdown/shelter in place procedures
- ☒ Methods of communicating closure information with staff
- ☐ Emergency food, water, or other supplies stored for staff
- ☐ Back up supplies or plans for vendor disruptions
- ☒ Practice emergency drills (earthquake, fire, etc.)
- ☒ Alternative work site locations identified
- ☐ Other: _____

Thank you for your input! Don't forget to turn in your form before you leave.

Marysville Emergency Preparedness Partner Meeting | July 17, 2025

Hazard Mitigation Activity: For Businesses
City of Marysville Hazard Mitigation Plan

The goal of a Hazard Mitigation Plan is to build a framework for becoming a more resilient community. The input and involvement from stakeholders like you are a key piece in the planning efforts.

Marysville Hazards
Learn about the different hazards Marysville could face.

a. When it comes to the operations of your business, which of these hazards or impacts from hazards concern you the most?

access to medical care - supplies/food

We Want to Hear From You!
Please provide your thoughts to help with the development of the City's mitigation strategies.

a. What are the reasons you operate your business in Marysville or why do you choose to work here?

community - serving others

b. What does your business rely on in order to stay open and operate?

power - employees/staff - food/supplies

c. What happens if those are interrupted or not available?

might have to remove or displace occupants

d. What ideas do you have to make the City and community more resilient to disasters?

public education + outreach - power/gas/wastewater improvements

e. What preparedness actions does your business take already?

review + practice emergency plans on a regular basis -

Resident Feedback
Feedback forms were provided for non-business attendees at the first public meeting and the Marysville Emergency Preparedness Partners meeting.

Marysville Emergency Preparedness Partner Meeting | July 17, 2025

Hazard Mitigation Activity: For Residents
City of Marysville Hazard Mitigation Plan

The goal of a Hazard Mitigation Plan is to build a framework for becoming more resilient. The input and involvement from the community is a key piece in the planning efforts.

Marysville Hazards
Learn about the different hazards Marysville could face.

a. Which of these hazards or impacts from hazards concern you the most?

Earthquake loss of power

We Want to Hear From You!
Provide your thoughts to help with the development of the City's mitigation strategies.

a. How do you imagine a future hazard or disaster would affect you?

Get on my radio and listen for instruction

b. What services/resources would be most important to you after a disaster?

c. Mitigation means taking steps before a disaster occurs in order to minimize its impacts (ex. seismic retrofit of a building to better withstand an earthquake). If funds were dedicated to hazard mitigation, which types of projects would you like to see? (Select all that apply)

- [x] City utility infrastructure improvements (water, wastewater, storm water)
- [x] Transportation infrastructure improvements (streets, bridges, etc.)
- [x] Other infrastructure improvements (power, gas, etc.)
- [ ] Facility improvements
- [x] Studies on hazards and mitigation projects
- [ ] Public education and outreach efforts
- [ ] Local planning and regulation efforts
- [ ] Improving economic resiliency
- [ ] None

d. What other ideas do you have to make the City and community more resilient to disasters?

Marysville Emergency Preparedness Partner Meeting | July 17, 2025

Hazard Mitigation Activity: For Residents
City of Marysville Hazard Mitigation Plan

The goal of a Hazard Mitigation Plan is to build a framework for becoming more resilient. The input and involvement from the community is a key piece in the planning efforts.

Marysville Hazards
Learn about the different hazards Marysville could face.

a. Which of these hazards or impacts from hazards concern you the most?

Flood Risk
Steep slopes/ Landslide interfering with Roads/Bridges

We Want to Hear From You!
Provide your thoughts to help with the development of the City's mitigation strategies.

a. How do you imagine a future hazard or disaster would affect you?

Could affect family ability to help each other. And affect access to medical care/supplies.

b. What services/resources would be most important to you after a disaster?

Clean water Food
Communication Access medical care

c. Mitigation means taking steps before a disaster occurs in order to minimize its impacts (ex. seismic retrofit of a building to better withstand an earthquake). If funds were dedicated to hazard mitigation, which types of projects would you like to see? (Select all that apply)

- [x] City utility infrastructure improvements (water, wastewater, storm water)
- [x] Transportation infrastructure improvements (streets, bridges, etc.)
- [ ] Other infrastructure improvements (power, gas, etc.)
- [ ] Facility improvements
- [ ] Studies on hazards and mitigation projects
- [x] Public education and outreach efforts
- [ ] Local planning and regulation efforts
- [ ] Improving economic resiliency
- [ ] None

d. What other ideas do you have to make the City and community more resilient to disasters?

Hazard Mitigation Activity: For Residents
City of Marysville Hazard Mitigation Plan

The goal of a Hazard Mitigation Plan is to build a framework for becoming more resilient. The input and involvement from the community is a key piece in the planning efforts.

Marysville Hazards

Learn about the different hazards Marysville could face.

a. Which of these hazards or impacts from hazards concern you the most?

Flood – EarthQuake –

We Want to Hear From You!

Provide your thoughts to help with the development of the City's mitigation strategies.

a. How do you imagine a future hazard or disaster would affect you?

Getting into and out of City – 529 open as soon as possible

b. What services/resources would be most important to you after a disaster?

Water – Food – Liquidfaction areas

c. Mitigation means taking steps before a disaster occurs in order to minimize its impacts (ex. seismic retrofit of a building to better withstand an earthquake). If funds were dedicated to hazard mitigation, which types of projects would you like to see? (Select all that apply)

- ☐ City utility infrastructure improvements (water, wastewater, storm water)
- ☒ Transportation infrastructure improvements (streets, bridges, etc.)
- ☐ Other infrastructure improvements (power, gas, etc.)
- ☐ Facility improvements
- ☒ Studies on hazards and mitigation projects
- ☒ Public education and outreach efforts
- ☐ Local planning and regulation efforts
- ☐ Improving economic resiliency
- ☐ None

d. What other ideas do you have to make the City and community more resilient to disasters? *Get 529 from Everett to marysville up & running as fast as possible. Set up CPOD's & communicate ASAP.*

Hazard Mitigation Activity: For Residents
City of Marysville Hazard Mitigation Plan

The goal of a Hazard Mitigation Plan is to build a framework for becoming more resilient. The input and involvement from the community is a key piece in the planning efforts.

Marysville Hazards

Learn about the different hazards Marysville could face.

a. Which of these hazards or impacts from hazards concern you the most?

EarthQuake – WilD Fires

We Want to Hear From You!

Provide your thoughts to help with the development of the City's mitigation strategies.

a. How do you imagine a future hazard or disaster would affect you?

effect me major as being a senior we can't move as well as others and some need more help.

b. What services/resources would be most important to you after a disaster?

water

c. Mitigation means taking steps before a disaster occurs in order to minimize its impacts (ex. seismic retrofit of a building to better withstand an earthquake). If funds were dedicated to hazard mitigation, which types of projects would you like to see? (Select all that apply)

- ☒ City utility infrastructure improvements (water, wastewater, storm water)
- ☐ Transportation infrastructure improvements (streets, bridges, etc.)
- ☒ Other infrastructure improvements (power, gas, etc.)
- ☐ Facility improvements
- ☐ Studies on hazards and mitigation projects
- ☒ Public education and outreach efforts
- ☐ Local planning and regulation efforts
- ☐ Improving economic resiliency
- ☐ None

d. What other ideas do you have to make the City and community more resilient to disasters?

Hazard Mitigation Activity: For Residents
City of Marysville Hazard Mitigation Plan

The goal of a Hazard Mitigation Plan is to build a framework for becoming more resilient. The input and involvement from the community is a key piece in the planning efforts.

Marysville Hazards

Learn about the different hazards Marysville could face.

a. Which of these hazards or impacts from hazards concern you the most?

Severe weather, tsunami, Pandemic

We Want to Hear From You!

Provide your thoughts to help with the development of the City's mitigation strategies.

a. How do you imagine a future hazard or disaster would affect you?

supplies, transportation

b. What services/resources would be most important to you after a disaster?

communication – supplies · medical

c. Mitigation means taking steps before a disaster occurs in order to minimize its impacts (ex. seismic retrofit of a building to better withstand an earthquake). If funds were dedicated to hazard mitigation, which types of projects would you like to see? (Select all that apply)

- ☒ City utility infrastructure improvements (water, wastewater, storm water)
- ☒ Transportation infrastructure improvements (streets, bridges, etc.)
- ☒ Other infrastructure improvements (power, gas, etc.)
- ☐ Facility improvements
- ☐ Studies on hazards and mitigation projects
- ☒ Public education and outreach efforts
- ☐ Local planning and regulation efforts
- ☐ Improving economic resiliency
- ☐ None

d. What other ideas do you have to make the City and community more resilient to disasters?

Public Meeting #2 Actions Survey

Meeting participants were asked to provide feedback on which of the proposed actions they think are the most important. Each person was given eight sticker dots and asked to add them to a printed list of actions. They were allowed to put multiple stickers on a single action if they wanted. The results are included here. This information was used by the planning team as a sample of public interest in the proposed projects.

Table B-1. Survey of Actions from Public Meeting #2

Actions	# of Votes
Replace and upgrade City utility infrastructure to reduce vulnerability to disasters.	10
Establish agreements with more local partners to enable faster assistance for emergency events.	7
Install generators at all lift stations, wells, treatment plants and critical facilities to maintain operations and critical resources.	6
Conduct a seismic evaluation of water, wastewater, and stormwater utility systems to recommend retrofit and mitigation projects.	5
Implement and support projects that improve safety measures along railways	4
Establish and follow wildfire protection standards at City facilities	3
Establish programs to address management of NGPAs to mitigate against hazards like wildfire and flooding.	3
Expand public education efforts and provide mitigation resources to residents, neighborhoods, and businesses.	3
Identify additional warming, cooling, and cleaner air centers in the community to use during extreme temperature or poor air quality events.	3
Maintain StormReady status to practice severe weather resilience.	3
Explore projects to incorporate Earthquake Early Warning into City operations.	2
Establish fiberoptic connections between critical City facilities and Snohomish County 911.	2
Increase involvement in regional trainings and exercises from all City departments.	2
Establish a new Public Works site outside of a flood zone.	1
Explore and implement projects to limit impacts from a dam failure.	1
Install a siren at the waterfront to broadcast warnings and other emergency information to the public.	1
Implement infrastructure improvements on properties to mitigate flooding in redundant flood prone locations throughout the city.	0
Establish redundant data and network access at the Marysville Civic Center through satellite and point-to-point connections.	0
Integrate hazard mitigation efforts with other City and regional plans and standards. Support policies and goals related to hazards and resilience.	0