



PORT OF BELLINGHAM

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The Port of Bellingham is a Washington State special purpose municipal corporation serving all of Whatcom County. It is a unique organization that makes significant contributions to the local community through leveraging its resources by direct participation in revenue-earning lines of business, as well as by capitalizing on its strategic assets through special public agency powers. Special districts have a vested interest in reducing threat and hazard impacts, particularly if they provide services critical to recovery efforts.

By combining expertise in both the business and government sectors, the Port has a role in job preservation and job creation, as well as a role in the operation of transportation facilities for seaports and airports. This combination is distinct from that of either the private sector or other government entities.

The Port of Bellingham’s mission is:

“Promote sustainable economic development, optimize transportation gateways, and manage publicly owned land and facilities to benefit Whatcom County.”

Planning Process

The Port ensures that local and state building codes and land use laws are followed in a fair and equitable manner in all Port projects. Our Environmental and Planning Services division works closely with our Facilities and Engineering divisions to plan new developments with a focus on mitigating risk wherever practicable. One example is a former Georgia Pacific Mill property that the Port acquired in 2005. Demolition and cleanup of the 36-acre waterfront brown field was completed with the fronting waterway dredged of contaminated soils. Meanwhile the upland property was raised several feet to prepare it for further development and to mitigate against possible tsunami and sea-level rise.

The Port is a member of the Whatcom County Emergency Management Council and supports the Whatcom County Sheriff’s Office Division of Emergency Management (WCSD-DEM) with annual funding based on the budget needs of the Division. The Port supports and participates in



the Division’s on-going public education, planning, training, and exercise program, as appropriate, including presentations about various risks within the Port, including earthquake, tsunami, and flood risk and examination of other various natural hazard risks and risk mitigation models. This coordination allows the Port to collaborate with other jurisdictions on natural hazard mitigation efforts and provides additional outlets to reach visitors to Port facilities and reach County residents that may use Port asset areas.

Port properties and assets are located within the jurisdictional boundaries of the City of Bellingham, the City of Blaine, the City of Sumas, and unincorporated Whatcom County. As such, the Port is subject to the community plans and policies of that guide and influence land use, land development and population growth within each of these jurisdictions. Such existing plans and policies include local building codes, comprehensive plans, zoning ordinances and technical reports or studies. Land use and comprehensive and strategic plans are updated regularly and can adapt easily to changing conditions and needs. This Natural Hazard Mitigation Plan will be used to identify potential risks to Port properties and inform future development and mitigation efforts. It will also be used to ensure that Port tenants are aware of these natural hazard risks.

The 2021 update of the Port’s section of this Plan was conducted through a collaborative effort by the Port’s Emergency Management, Environmental and Planning Services, Engineering, and Facilities/Maintenance functions. This team reviewed and updated the Plan to reflect progress against, or completion of, Mitigation Actions since the last Plan update, as appropriate. It also evaluated potential future Mitigation Actions against updated natural hazard risk information, resulting in a list of Mitigation Actions for the period 2021-2025 that reflects jurisdiction risks, authorities, and priorities.

The Port’s section of this Plan update was also informed by participation in the Natural Hazard Mitigation Plan update process facilitated by the Whatcom County Sheriff’s Office Division of Emergency Management, which included a series of meetings of representatives from all Whatcom County jurisdictions represented in this Plan. Throughout the Plan update process, the WCSO-DEM’s website (whatcomready.org) maintained a virtual town hall related to the Natural Hazard Mitigation Plan, which allowed residents to leave feedback regarding the Port’s portion of the plan, as well as read the plan’s current iteration in its entirety. Port-specific comments were shared with the Port and incorporated into this Plan update. This collaborative county-wide update process facilitated the sharing of best practices and identification of multi-jurisdiction mitigation opportunities by all Whatcom County jurisdictions.

Key Contributor List

- Scott McCreery, Emergency Management/Security Officer



- Kurt Baumgarten, Environmental Planner
- Brian Gouran, Environmental & Planning Services Director
- Greg Nicoll, Senior Engineer
- Alex Hildreth, Maintenance Manager
- Alice Cords, Environmental Specialist
- Adrienne Hegedus, Environmental Specialist
- Dave Warter, Marine Terminals and Emergency Services Manager

The information contained in the Natural Hazards Mitigation Plan update regarding hazards, risks, vulnerability and potential mitigation is based on the best available science and technology currently available. This information and related data on natural hazards potentially impacting the Port of Bellingham will be used as a tool when creating or updating Port planning, strategic investment, and capital improvement documents and plans.

As additional information becomes available from other planning sources that can enhance this Plan, that information will be incorporated through the periodic update process.

Plan Maintenance for the Port of Bellingham

The WCSO-DEM is responsible for facilitating annual review of the Plan per the process and schedule reflected in Section 4 of this Plan. The Port participates in the WCSO-DEM's annual Plan maintenance process and in public meetings called as part of this process. Information regarding changes to the Plan as part of this annual review process are shared on the Port's social media outlets and through the WCSO-DEM website (whatcomready.org), as appropriate.

During the process of adopting and updating the Natural Hazard Mitigation Plan, the Bellingham Port Commission and Executive Director are provided with an Executive Summary of the plan and the Port's role in the plan. An Action Memo that goes to the Executive Director and Commission also outlines the history of the plan and why formal adoption is recommended. The Commission agenda, along with the Action Memo are published on the Port's website. The adoption process is recorded and is available for public review.



Public Outreach and Education

Natural Hazard education and outreach capabilities undertaken by the Port of Bellingham are typically done in conjunction with our local jurisdiction partners in the jurisdictions in which Port facilities are located, i.e., the City of Bellingham, City of Blaine, City of Sumas, and Whatcom County, and other community partners. include ongoing programs that local-to-federal government, nonprofit, and other organizations provide to communities which may be leveraged to implement hazard mitigation actions and build community resilience.

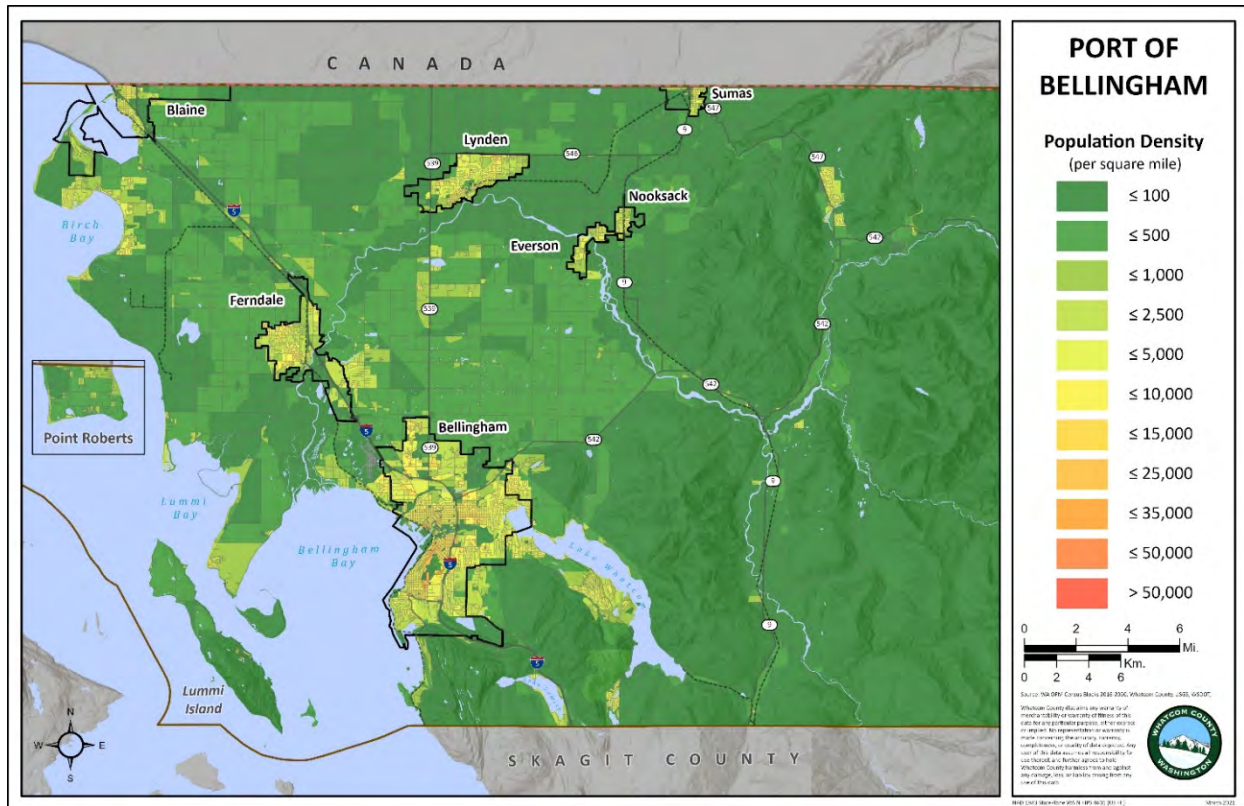
Program	Yes/No, Year Adopted	Description
Nonprofit organizations or local residents groups focused on hazard mitigation, emergency preparedness, vulnerable populations, etc.	No	N/A
Ongoing public education or information programs	Yes, 2019	Bellingham Tsunami Evacuation Walk Time maps and associated outreach.
School-related programs for natural hazard safety	No	N/A
Public education or information program	No	N/A
StormReady certification	No	N/A
Firewise Community certification	No	N/A
Public-Private Partnership initiatives addressing disaster-related issues	No	N/A
Other	No	N/A



Overview of Port of Bellingham, Hazards, and Assets

Geography of the Port of Bellingham

Port of Bellingham property lies within the political boundaries of several different Whatcom County governmental jurisdictions – the City of Bellingham, the City of Blaine, the City of Sumas, and unincorporated Whatcom County. Natural hazards identified as present within the Port reflect those with the potential to affect facilities critical to the Port’s continuity of operations. Refer to the Jurisdiction Overviews for the City of Bellingham, City of Blaine, and City of Sumas for a complete description of the natural hazard characteristics affecting Port properties within those jurisdictions.



Washington State Office of Financial Management (OFM) 2020 population and housing estimates for 2010-2020 census block data. This map uses the 2016-2020 average population to show population density per square mile.



Presence of Hazards and their Impacts in the Port of Bellingham

The Port of Bellingham includes infrastructure and facilities that are critical to maritime, air, and ground transportation between Whatcom County, the region, North America, and the world. These Port resources and critical services have not been impacted by natural hazards in the past.

Shoreline erosion mitigation was required in the area of the Fairhaven Station Multi-Modal Facility because of winter storm-induced coastal flooding during the winter of 2015-2016. These impacts did not disrupt the provision of critical transportation services by the Port.

Refer to the City of Bellingham, City of Blaine, City of Sumas, and Whatcom County jurisdictional Overviews regarding community change and natural hazard interface impacting Port facilities in these jurisdictions.

In the table below is a list of the major hazards that effect Whatcom County. The second column provides the percentage of the Port of Bellingham’s total area that is exposed to each hazard. The third column indicates the severity of anticipated impacts to community function, considering the credible worst-case hazard scenario. Severity of anticipated impacts considers effects on basic community function such as shelter, transportation, utilities, commerce, industry, agriculture, education, health, recreation, and cultural identity. Severity ranges from none to extreme, as shown in the key below the table. Finally, the last column of the table describes where the hazard impacts the community and which services the hazard would most significantly impact.



	Hazard	% area Exposed	Severity of Anticipated Impacts	Hazard Descriptions
Geological	Earthquake	86.4%	High	Subject to the intensity of seismic activity. The location of Critical Port Facilities on seismically sensitive soils and coastal fill make these community-wide transportation infrastructure assets vulnerable to earthquake hazards.
	Liquefaction	25.5%	High	Subject to the intensity of seismic activity. The location of Bellingham International Airport on seismically sensitive ancient lakebed soils and other Critical Port Facilities on coastal fill material make these community-wide transportation infrastructure assets vulnerable to earthquake hazards.
	Landslide	5.9%	Moderate	Breakwater structures that protect Squalicum Harbor and Blaine Harbor from heavy marine weather are subject to seismically induced landslide damage.
	Volcano	33.9%	Low	Depending on wind direction, ash fall could significantly impact Port operations especially at Bellingham International Airport over a period of days to weeks.
	Tsunami	1.2%	High	The Bellingham Cruise Terminal, Fairhaven Station Multi-Modal Transportation Facility, Bellingham Shipping Terminal, Squalicum Harbor, and Blaine Harbor are all located within the modeled tsunami inundation zone. Breakwater structures that protect Squalicum Harbor and Blaine Harbor from heavy marine weather are subject to tsunami-induced landslide/erosion damage.
	Mine Hazards	0%	None	While abandoned mine workings may be located beneath some Port properties, they are believed to be at depths that limit their potential risk to Port facilities and services.
H	Flooding	4.8%	Mod	The Port’s Sumas International Cargo Terminal



				is subject to Nooksack River flooding events. All Port of Bellingham facilities on Bellingham Bay and Blaine Harbor are subject to coastal flooding risk, with increasing risk associated with sea level rise
Meteorological	Wildfire	12.3%	Low	Wildfire risk is generally limited to the Bellingham International Airport and mitigated by buffers between surrounding forested areas and critical airport infrastructure; however, wildfire in these surrounding areas could impact general Port operations.

Severity Scale: **None** = no impact to port function
Low = minor degradation of port functions, not widespread
Moderate = moderate degradation over multiple weeks or widespread
High = degradation or loss over many weeks, widespread



Natural Hazard Maps

For natural hazards present within the Port of Bellingham, see the natural hazard maps for the following jurisdictions:

- Whatcom County
- City of Bellingham
- City of Blaine
- City of Sumas



Port of Bellingham Critical Facility List

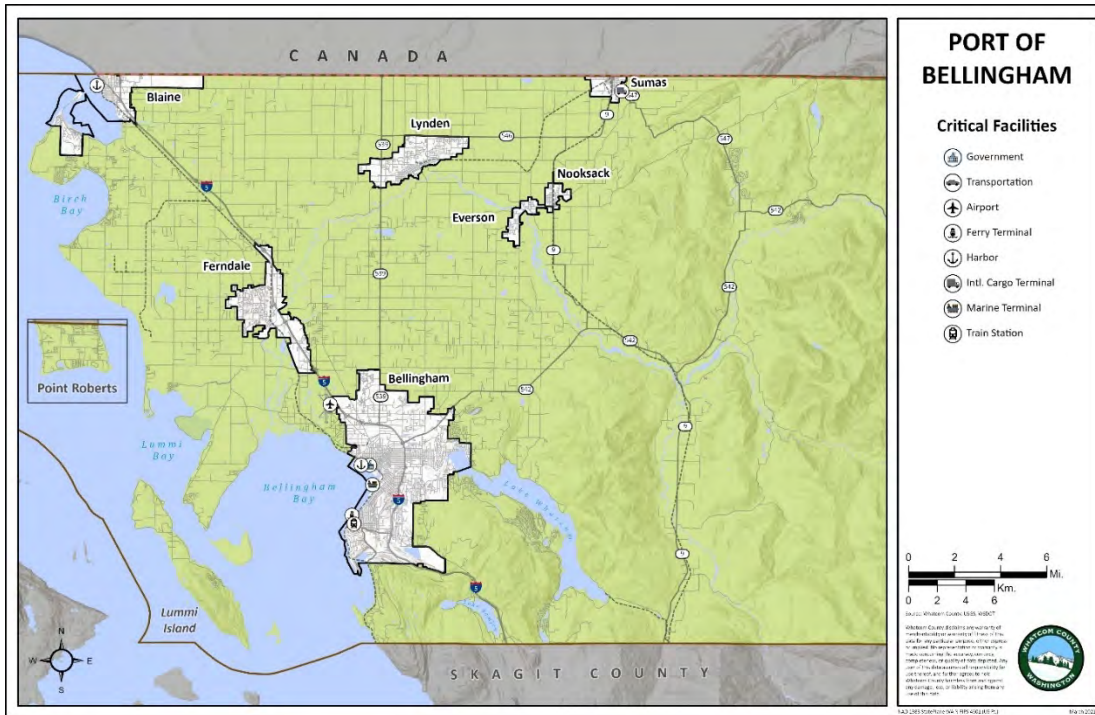
Facility Name	Facility Type	Significance	Location	Assessed Dollar Value	Notes
Bellingham Cruise Terminal	EF	2	355 Harris Ave. Bellingham, WA	\$22,823,000	BCT serves as the southern terminus of the Alaska Marine Highway System and is a critical transportation hub for personnel and goods between WA and AK. In the event that highways are damaged or unavailable, BCT, along with BST, provide the only facilities in Whatcom County capable of accommodating larger vessels and barges.
Bellingham International Airport	EF	2	4255 Mitchell Way Bellingham, WA	\$130,820,000	BLI is the only commercial aviation terminal located between Everett, WA and Vancouver, B.C.
Bellingham Shipping Terminal #1 & #2	EF	1	629 Cornwall Bellingham, WA	\$49,068,000	While nominally a bulk and break bulk shipping terminal, BST could be used, along with BCT, to accommodate larger vessels and barges in the event that I-5 was damaged or unavailable.
Blaine Harbor	EF	2	235 Marine Drive Blaine, WA	\$49,133,000	Marine harbor serving recreational and



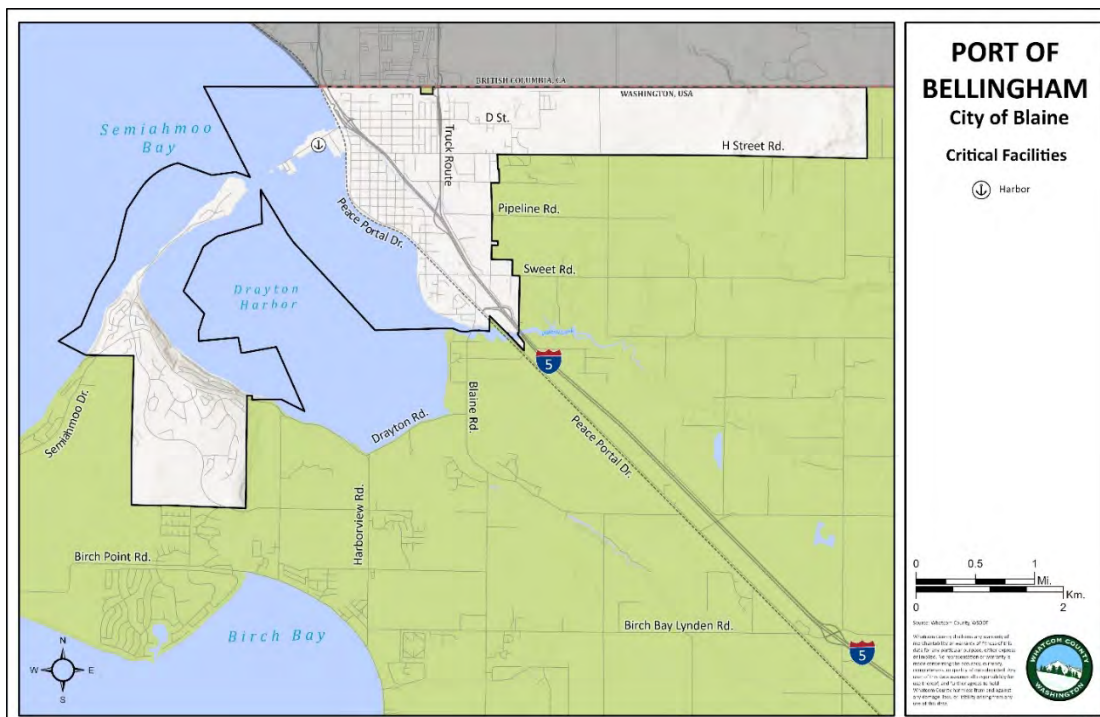
					commercial fishing vessels.
Fairhaven Station - Multi-Modal Facility	EF	2	401 Harris Ave. Bellingham, WA	\$33,917,000	Rail and bus transportation hub.
Harbor Center Building	EF	1	1801 Roeder Ave. Bellingham, WA	\$11,668,000	Building housing Port administrative functions.
Squalicum Harbor	EF	2	722 Coho Way Bellingham, WA	\$95,045,000	Marine harbor serving recreational and commercial fishing vessels
Sumas International Cargo Terminal	EF	1	530 Front Street Sumas, WA	\$10,282,000	Rail and truck trans-load facility.

Facility Type: EF = Essential Facility; HMF = Hazardous Materials Facility; HPL = High Potential Loss; LUS = Lifeline Utility System

Significance to community function: 1=Moderate; 2= High; 3 =Very High

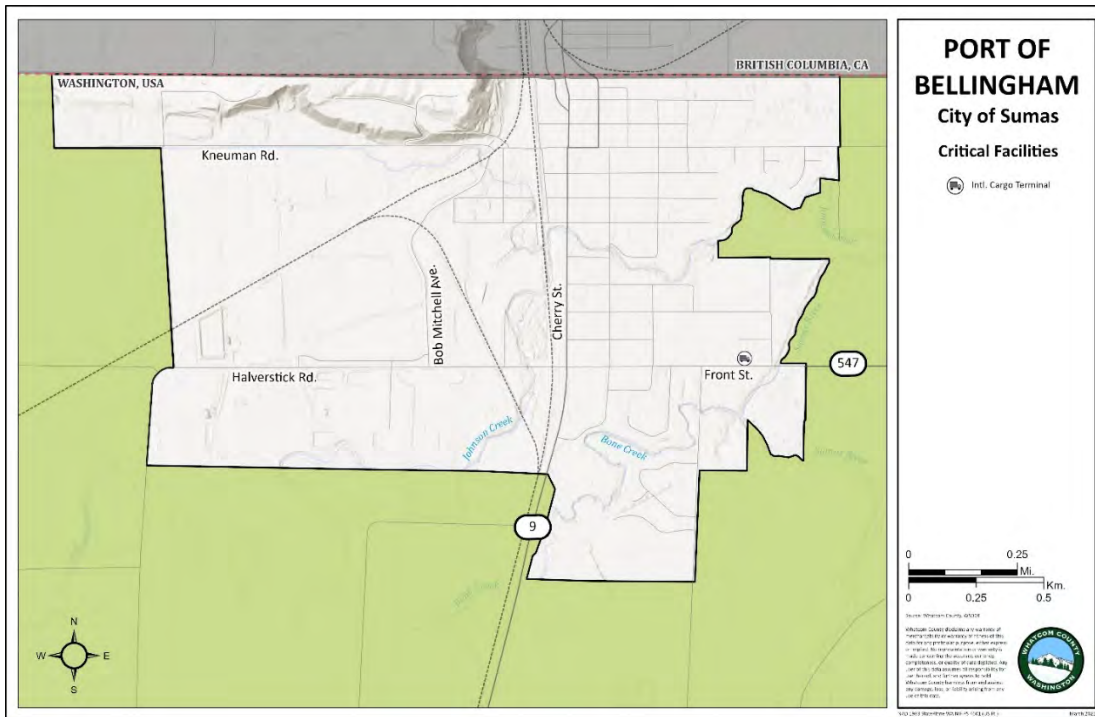


Map of critical facilities identified by the Port of Bellingham. Across Whatcom County, critical facilities fell into 6 categories. Facilities were categorized according to Port of Bellingham’s critical facility table, including: government, airport, ferry terminal, harbor, marine terminal, and train station. Not all jurisdictions identified or included critical facilities in each category.

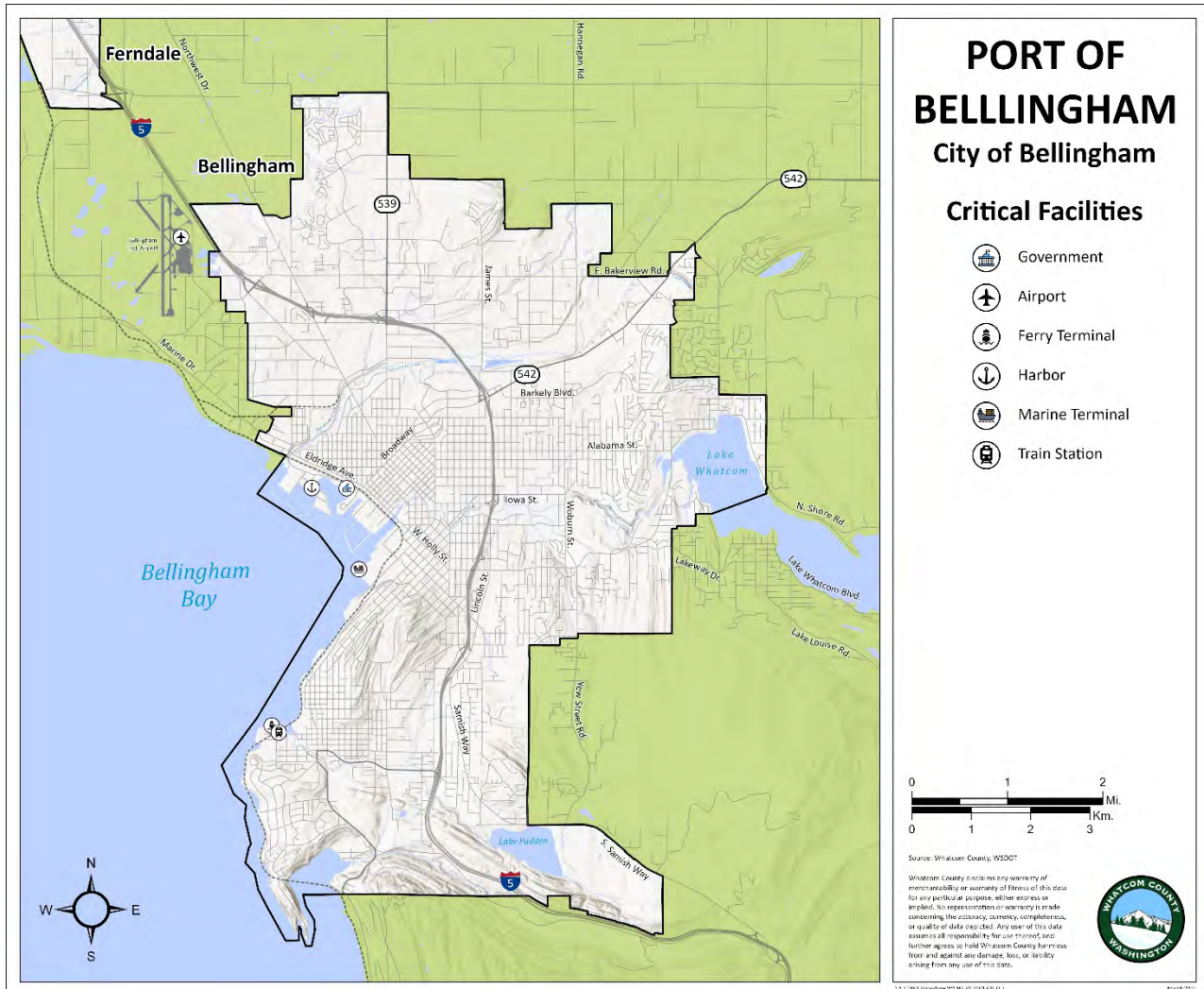




Location of critical facilities for the Port of Bellingham in Blaine.



Location of critical facilities for the Port of Bellingham in Sumas.



Location of critical facilities for the Port of Bellingham in the City of Bellingham.



Critical Facility Rankings for the Port of Bellingham

The table below indicates whether each critical facility falls within known hazard zones for earthquake, liquefaction, landslide, tsunami, volcano, riverine flooding, coastal flooding, and wildfire zones. A rank assessment in the last column indicates how the relative risk of community impact. This ranking considers the significance of the facility to the community and the number of hazard zones the facility is within. The frequency of each hazard is also considered, such that being in a low frequency hazard zone would receive a lower ranking than that same facility being in a high frequency hazard zone. Ranking is on a scale of 1 to 10, with 1 being the facility with the highest-ranking score, and 10 being a facility with the lowest ranking score in the jurisdiction.

$$\text{Rank} = \text{Significance} * \left[\frac{\text{EQ_Zone}}{\text{EQ_Freq}} + \frac{\text{LQ_Zone}}{\text{LQ_Freq}} + \frac{\text{LS_Zone}}{\text{LS_Freq}} + \dots + \frac{\text{WF_Zone}}{\text{WF_Freq}} \right]$$

Ranking value will be from 0.0 to 1.0, scaled to the highest ranking in the jurisdiction.

Significance: 1=moderate; 2=high; 3=very high, as assessed in the critical facilities list in the previous section

Zone: 0=facility not in hazard zone; 1 = facility in the hazard zone

Frequency (e.g. EQ_Freq, LQ_Freq) is the most difficult variable to which to assign a value. Frequency varies based upon the magnitude of a hazard event and varies from one place to another. It was not possible within the time constraints to assess frequency of hazard at each critical facility location. Instead, a qualitative assessment of the hazard frequency across the entire county was made, as shown in the chart below.

Description	Freq Value used in formula	Hazards
Frequent, occurring on the order of decades	3	Riverine flooding (FL); Coastal flooding (COA)
Rare, occurring on the order of centuries	2	Earthquake (EQ); Liquefaction (LQ); Landslide (LS); Wildfire (WF)
Very rare, occurring on the order of millennia	1	Tsunami (TSU); Volcano (VOL)

Note: Severe storm, a very frequent hazard, was omitted because it is ubiquitous and because no hazard map of storm severity was available.



Critical Facilities Ranking Table

Facility Name	Facility Type	Significance	EQ	LQ	LS	TSU	VOL	FL	COA	WF	Rank Assessment
Bellingham Cruise Terminal	EF - Transportation	2	1	0	0	1	0	1	1	0	0.93
Bellingham International Airport	EF - Transportation: Airport	2	1	1	0	0	0	0	0	0	0.43
Bellingham Shipping Terminal #1 & #2	EF - Transportation	1	1	1	0	1	0	0	0	0	0.43
Blaine Harbor	EF - Transportation	2	1	1	0	1	0	0	1	0	1
Fairhaven Station - Multi-Modal Facility	EF - Transportation	2	1	0	0	1	0	0	0	1	0.86
Harbor Center Building	EF – Transportation, Administrative	1	1	1	0	1	0	0	0	0	0.43
Squalicum Harbor	EF - Transportation	2	1	1	0	1	0	0	1	0	1
Sumas International Cargo Terminal	EF - Transportation	1	1	1	0	0	1	1	0	0	0.5

Notes: **EQ** = Earthquake; **LQ** =Liquefaction; **LS** = Landslide; **TSUN** = Tsunami; **VOL** = Volcano; **FL** = Riverine Flooding; **COA** = Coastal Flooding; **WF** = Wildland Fire



Areas and Assets Exposed, Per Hazard

Port of Bellingham Exposure to Natural Hazards			
Hazard Susceptibility	Asset County (% of Total)		Critical Facilities Appraised Value (Million)
	Area (sq.mi.)	Critical Facilities	
Earthquake, Shaking Intensity			
<i>MMI IV</i>	7.7%	-	-
<i>MMI V</i>	31.7%	12.5%	\$49 ¹
<i>MMI VI</i>	29.6%	75%	\$343 ¹
<i>MMI VII</i>	11.7%	-	-
<i>MMI VIII - IX</i>	5.7%	12.5%	\$10 ¹
TOTAL	86.4%	100%	\$402
Liquefaction			
<i>Very Low to Low</i>	14.6%	-	-
<i>Low to Moderate</i>	6.5%	12.5%	\$131 ¹
<i>Moderate</i>	-	-	-
<i>Moderate to High</i>	4.4%	12.5%	\$10 ¹
<i>High</i>	0.02%	50%	\$205 ¹
TOTAL	25.5%	75%	\$346
Landslide			
<i>Landslide Low</i>	0.7%	-	-
<i>Landslide Moderate</i>	1%	-	-



Hydro	<i>Landslide High</i>	2.9%	-	-
	<i>Fan Low</i>	0.1%	-	-
	<i>Fan Moderate</i>	0.3%	-	-
	<i>Fan High</i>	0.8%	-	-
	<i>Mine Hazard</i>	0.1%	-	-
	TOTAL	5.9%	-	-
	Volcanic Eruption			
	<i>Case 1 Debris Flows</i>	1.6%	12.5% ²	\$10 ^{1/2}
	<i>Case 2 Debris Flows</i>	0.9%	-	-
	<i>Case M Flows</i>	2.9%	-	-
	<i>Pyroclastic Flows, Lava Flows, and Ballistic Debris</i>	5.8	-	-
	<i>Lateral Blast Hazard Zone</i>	22.7%	-	-
	TOTAL	33.9%	12.5%	\$10
	Tsunami, Inundation Zone			
	<i>Low to Moderate Inundation Potential</i>	0.3%	-	-
	<i>Moderate to High Inundation Potential</i>	0.3%	-	-
	<i>High Inundation Potential</i>	0.6%	75%	\$262 ¹
	TOTAL	1.2%	75%	\$262
	Flooding			
	<i>100-year Flood</i>	3.5%	12.5%	\$10 ¹



	<i>500-year Flood</i>	0.4%	-	-
	<i>Floodway</i>	0.9%	-	-
	<i>Undetermined (Zone D)</i>	52.1%	-	-
	TOTAL	4.8%	12.5%	\$10
Meteorological	Wildfire Zones			
	<i>Interface Very Low-Low Structure Density</i>	0.9%	-	-
	<i>Interface Medium-High Structure Density</i>	1.4%	25%	\$57 ¹
	<i>Intermix Very Low-Low Structure Density</i>	5.9%	-	-
	<i>Intermix Medium-High Structure Density</i>	4.1%	-	-
	TOTAL	12.3%	25%	\$57

¹Shows the assessed dollar value provided by the community in their critical facilities list. Does not include the appraised total value.

²Some critical facilities located in multiple hazard zone



Status of Port of Bellingham’s 2016-2020 and Ongoing Hazard Mitigation Actions

This section describes the status of mitigation actions that were proposed in the 2016 Mitigation Plan and are now 1) currently being implemented and are ongoing, 2) are now completed, or 3) are now discontinued because they are no longer needed. The actions are organized by hazard and indicate the lead agency, funding source, and status.

Lead Agency	May be more than one lead agency indicating shared responsibility and coordination
Funding Source	Local; State; FEMA; Private; Other
Current Status	Action Discontinued / Action Completed / Action ongoing and expected completion date

Tsunami

TSU-a. Map and Assess Vulnerability to Tsunami – In 2019, the Port of Bellingham, in conjunction with jurisdictional partner the City of Bellingham and the Washington Military Department Division of Emergency Management, the Washington Department of Natural Resources, and the National Oceanic and Atmospheric Administration, developed tsunami inundation models and Tsunami Evacuation Walk Time Maps for the City of Bellingham and Port properties within Bellingham.

Lead Entity	WDNR, City of Bellingham
Funding Source	State, Federal, Local
Current Status	Ongoing

TSU-b. Increase Public Awareness of Tsunami Hazard – In 2017, All Hazards Alert Broadcast (AHAB) Warning Sirens were installed on Port of Bellingham property at Squaticum Harbor at geographic coordinates 48.7559 N, 122.50193 W, and on City of Blaine property at geographic coordinates 48.99449 N, 122.7602850193 W, adjacent to Blaine Harbor. An additional AHAB Siren was installed on Port of Bellingham property adjacent to the Bellingham Cruise Terminal at geographic coordinates 48.720249 N, 122.513427 W, in 2020.

Lead Entity	WDNR, Whatcom County, City of Bellingham, Port of Bellingham
Funding Source	State, Federal, Local
Current Status	Ongoing

Flooding



No actions ongoing, discontinued, or completed for this hazard.

Winter Storms/Freezes

No actions ongoing, discontinued, or completed for this hazard.

Severe Wind

No actions ongoing, discontinued, or completed for this hazard.

Multiple Hazards

MU-a. Increase Hazard Education and Risk Awareness – The Whatcom County Sheriff’s Office Division of Emergency Management and City of Bellingham Office of Emergency Management have adopted use of the AlertSense messaging system to notify the public and the media of emergency events throughout Whatcom County, including Port of Bellingham facilities and tenants. AlertSense allows a pre-formatted message to be sent to an email address, to a mobile phone as a text message, and/or as a voice message to a landline or mobile phone number. Messages can be sent to all individuals who voluntarily register in the system (free of charge), or to targeted groups for specific geographic areas (i.e. cities, towns or communities).

Lead Entity	City of Bellingham, Whatcom County
Funding Source	Local
Current Status	Ongoing

MU-b. Protect Structures – This Mitigation Action generally relies on the relocation of structures outside hazard areas. This Mitigation Action is now considered infeasible and, as such, has been discontinued.

Lead Entity	N/A
Funding Source	
Current Status	Discontinued

Earthquake

EQ-a. Conduct Outreach to Builders, Architects, Engineers and Inspectors – The Port of Bellingham relies on the jurisdictions with code establishment and enforcement authority within which Port facilities are located to implement this Mitigation Action. As such, this Mitigation Action is not considered applicable to the Port and has been discontinued.

Lead Entity	N/A
Funding Source	
Current Status	Discontinued



EQ-c. Design all Critical Facilities and Infrastructure for design earthquake event – The port follows the International Building Code adopted by the county, which includes design for seismic hazard.

Lead Entity	Facilities/E&PS
Funding Source	Local, State and Federal
Current Status	Ongoing

Landslide/Erosion

ER-a. Increase Awareness of Erosion Hazard – The Port of Bellingham relies on those jurisdictions with code establishment and enforcement authority within which Port facilities are located to implement this Mitigation Action. The only identified erosion hazard on Port properties is to Port-owned breakwater structures at Squalicum and Blaine Harbors and the appropriate Port Engineering and Facilities leads are aware of this hazard as part of their core functions. As such, this Mitigation Action is not considered applicable to the Port and has been discontinued.

Lead Entity	N/A
Funding Source	
Current Status	Discontinued



Port of Bellingham 2021-2025 Hazard Mitigation Strategy

Whatcom County Hazard Mitigation Goals

Whatcom County has identified five overarching hazard mitigation goals, which represent what a community seeks to achieve through mitigation actions.

- Goal 1.** Protect Life, Property and Public Welfare
- Goal 2.** Increase Public Awareness
- Goal 3.** Preserve and Enhance Natural Systems
- Goal 4.** Encourage Partnership for Implementation
- Goal 5.** Ensure Continuity of Emergency Services

These countywide goals help guide any prioritization and implementation of mitigation actions, ensuring that the actions contribute to a community's vision for the future.

Port of Bellingham-Specific Hazard Mitigation Goals

The Port of Bellingham supports the county-wide planning goals. No additional community-specific mitigation planning goals have been identified at this time.

Mitigation Action Options

Appendix E of the Whatcom County Natural Hazard Mitigation Plan provides a list of mitigation options. Port of Bellingham considered mitigation options related to earthquake, flooding, erosion, tsunami, winter storms, severe wind, especially those related to flooding because these hazards have the potential to cause the greatest loss and damage. Not all mitigation options in Appendix E were relevant or a strong priority for Port of Bellingham. Some options have already been implemented or are ongoing in Port of Bellingham, as documented in the section above on the status of 2016-2020 and ongoing hazard mitigation actions.

Mitigation Action Prioritization

The mitigation actions in this section are new actions that Port of Bellingham has prioritized for the 2021-2025 planning period and beyond. Mitigation options were prioritized based upon review of the following two criteria: 1) The action's Overall Feasibility based on engineering, environmental, financial and political considerations, 2) The Criticality of the action, based upon a consideration of which actions had the greatest potential to protect life, property and public welfare. Port of Bellingham is working in cooperation with the County and other participating communities and special districts to develop a systematic methodology that would use multiple



evaluation criteria to determine mitigation action prioritization. This new methodology will be used in future updates of this Plan.

In the following Identified Mitigation Actions 2021-2025 table, each priority action is listed by hazard. Each action is followed by planning goals, lead agency, the priority evaluation, timeline, funding source and estimated cost, where such information is available. This information can be used by local decision makers in pursuing strategies for implementation.

1	Goals	Indicates the hazard mitigation planning goal or goals this action addresses; countywide and/or community-specific
2	Lead Agency	May be more than one lead agency indicating shared responsibility and coordination
3	Priority	H (High); M (Medium); L (Low)
4	Timeline	Short-Range (less than 2 years); Mid-Range (2-5 years); Long-Range (more than 5 years)
5	Funding Source	Local; State; FEMA; Private; Other
6	Estimated Cost	Actual; Estimated



Port of Bellingham Identified Mitigation Actions 2021-2025

PORT OF BELLINGHAM IDENTIFIED MITIGATION ACTIONS 2021-2025							
MITIGATION ACTIONS		(1) Goals	(2) Lead Responsibility	(3) Priority	(4) Timeline	(5) Funding Source	(6) Estimated Cost
Hazard	Action Items						
GENERAL: ALL HAZARDS Education and Awareness Actions	These are actions that inform and educate citizens, elected officials, and property owners about hazards and ways to mitigate them.						
	G-1 Distribute Whatcom County Emergency Preparedness Guide.	2	Emergency Management	M	M	Local	15,000
Hazard Specific (Reference: Whatcom County Mitigation Ideas)	Actions communities should consider to identify and evaluate a range of potential mitigation actions for reducing risk to natural hazards and disasters.						
Droughts/Heat Waves	D-1 There are no new actions considered/all actions ongoing, discontinued, or completed						
Earthquakes	EQ-c. Design all Critical Facilities and Infrastructure for design earthquake event	1	Facilities/E&PS	M	O	Local, State, and Federal	
	EQ-1 Incorporate Earthquake Mitigation into Port Planning	1	Environmental and Planning	M	M	Local	unknown

Priority: H (High); M (Medium); L (Low)	Timeline: Short-Range (less than 2 years); Mid-Range (2-5 years); Long-Range (more than 5 years); Ongoing	Funding Source: Local; State; FEMA; Private; Other	Estimated Cost: Actual; Estimated
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			Services (E&PS)				
	EQ-2 Map and Assess Port Vulnerability to Seismic Hazards	1, 2	E&PS	M	M	Local, State & Federal	unknown
	EQ-3 Increase Earthquake Risk Awareness	2	Emergency Mgmt	M	M	Local	15,000
	EQ-4 Provide Information on Structural and Non-Structural Retrofitting	1	Emergency Mgmt/Real Estate	M	M	Local	15,000.
	EQ-5. Conduct Inspections of Building Safety –	1	Facilities	M	M	Local, State and Federal	Unknown
Extreme Temperatures	ET-1 There are no new actions considered/all actions ongoing, discontinued, or completed						
Flooding	FL-1 Participate in Partnerships to Support Floodplain Management	4, 1	E&PS	L	M	Local	unknown
	FL-2 Increase Awareness of Flood Risk and Safety	2	Emergency Mgmt	M	M	Local	15,000.
	FL-3. Incorporate Flood Mitigation in Local Planning	1, 2	Facilities/E&PS	M	M	Local, State and Federal	Unknown
	FL-4. Follow Current Building Codes and Development Standards	1	Facilities	M	M	Local	Unknown
	FL-5. Stormwater Management Planning	1, 2	Facilities/E&PS	M	M	Local, State	Cost of current staff
	FL-6. Adopt Polices to Reduce Stormwater Runoff	1	Facilities/E&PS	M	M	Local, State	Cost of Current staff
	FL-7. Conduct Regular Maintenance for	1	Facilities/E&PS	M	M	Local,	Unknown

Priority:
H (High); M (Medium); L (Low)

Timeline:
Short-Range (less than 2 years); Mid-Range (2-5 years); Long-Range (more than 5 years); Ongoing

Funding Source:
Local; State; FEMA; Private; Other

Estimated Cost:
Actual; Estimated



	Drainage Systems and Flood Control Structures					State	
	FL-8. Protect Infrastructure	1	Facilities	M	M	Local	Unknown
	FL-9. Design and construct Critical Facilities to prevent flooding and future sea level rise.	1, 5	Facilities	M	M	Local	Unknown
Landslide/ Erosion	ER-1 Manage Development in Erosion Hazard Areas	1, 3	E&PS	M	M	Local	Unknown
	ER-2. Stabilize Erosion Hazard Areas	1, 5	Facilities	M	M	Local	Unknown
Land Subsidence	LS-1 There are no new actions considered/all actions ongoing, discontinued, or completed						
Lightning	L-1 There are no new actions considered/all actions ongoing, discontinued, or completed						
Severe Storms	SS-1 There are no new actions considered/all actions ongoing, discontinued, or completed						
Severe Wind	SW-1. Apply Site and Building Design Standards that Minimize Wind Damage	1	Facilities and E&PS	M	M	Local	Unknown
	SW-2. Assess Vulnerability to Severe Wind	1,	Facilities	M	M	Local	Unknown
	SW-3. Protect Power Lines and Infrastructure	1, 5	Facilities	M	M	Federal, State and Local	Unknown
Tornadoes	T-1 There are no new actions considered/all actions ongoing, discontinued, or completed						
Tsunami	<i>TSU-a Ongoing -- Map and Assess Vulnerability to Tsunami</i>	1, 5	WDNR, City of Bellingham	M	O	Federal, State, and	

Priority:
H (High); M (Medium); L (Low)

Timeline:
Short-Range (less than 2 years); Mid-Range (2-5 years); Long-Range (more than 5 years); Ongoing

Funding Source:
Local; State; FEMA; Private; Other

Estimated Cost:
Actual; Estimated



						Local	
	<i>TSU-b Ongoing -- Increase Public Awareness of Tsunami Hazard</i>	2	WDNR, Whatcom County, City of Bellingham, Port of Bellingham	M	O	Federal, State, and Local	
	TSU-1 Manage Development of Port infrastructure in Tsunami Hazard Areas	1, 5	Environmental and Planning Services (E&PS)	M	M	Local	Unknown
Wildfires	WF-1 There are no new actions considered/all actions ongoing, discontinued, or completed						
Winter Storms/ Freezes (Severe Winter Weather)	WW-1 Conduct Winter Weather Risk Awareness Activities	2	Emergency Mgmt/Facilities	M	M	Local	15,000
	WW-2. Design and construct Buildings and Infrastructure to withstand design storm events	1	Facilities	M	M	Local	Unknown
	WW-3. Reduce Impacts to Roadways	1, 5	Facilities	M	M	Local	Unknown
Multiple Hazards	<i>MU-a Ongoing -- Increase Hazard Education and Risk Awareness</i>	2	City of Bellingham, Whatcom County	M	O	Local	
	MU-1 Increase Port Live Aboard Disaster Preparedness Awareness	1, 2	Emergency Mgmt	M	M	Local	15,000.
	MU-2 Promote Private Mitigation Efforts	4	Emergency Mgmt	M	M	Local	15,000.
	MU-3. Assess Community Risk	1, 2, 5	Emergency Management	M	M	Local and State	Current Staff

Priority:
H (High); M (Medium); L (Low)

Timeline:
Short-Range (less than 2 years); Mid-Range (2-5 years); Long-Range (more than 5 years); Ongoing

Funding Source:
Local; State; FEMA; Private; Other

Estimated Cost:
Actual; Estimated



	MU-4 Map Risk	1, 2, 5	Emergency Management	M	M	Local and State	Current Staff
	MU-5. Prevent Development in Hazard Areas	1, 2, 5	E&PS	M	M	Local and State	Current Staff
	MU-6 Integrate Mitigation into Local Planning	1, 2, 5	E&PS	M	M	Local	Current Staff
	MU-7. Monitor Mitigation Plan Implementation	1, 2, 5	Emergency Management	M	M	Local	Current Staff
	MU-8 Construct and improve Infrastructure and Critical Facilities to mitigate damage from multiple hazards.	1	Facilities	M	M	Local and State	Unknown
Advanced Mitigation Projects (Dream List)	International Cargo Terminal Flooding at Sumas	1	Port	M	L	Local	unknown
	Survey of existing mines – Bellingham International Airport	1	Port	L	L	State, Federal	Unknown
	Survey of existing mines- Bellingham Shipping Terminal	1	Port	L	L	State, Federal	Unknown
	Survey of existing mines-Squalicum Harbor	1	Port	L	L	State, Federal	Unknown
	Survey of existing mines- Fairhaven Station	1	Port	L	L	State, Federal	Unknown

Priority: H (High); M (Medium); L (Low)	Timeline: Short-Range (less than 2 years); Mid-Range (2-5 years); Long-Range (more than 5 years); Ongoing	Funding Source: Local; State; FEMA; Private; Other	Estimated Cost: Actual; Estimated
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Port of Bellingham Annual Review and Progress for Hazard-Specific Mitigation Actions 2021-2025

Progress monitoring means tracking the implementation of the hazard specific mitigation actions over time. Each jurisdiction must identify how, when, and by whom action items will be monitored. The responsible agency assigned to each mitigation action is responsible for tracking and reporting on each of their actions.

Annual review and progress reporting includes the following:

Step One: Identify mitigation actions that your planning team has identified for the annual review. The planning team has the option to address ALL action items, or only those that should be acted on during each review cycle.

Step Two: Use the table below to track annual progress. For each action item selected for annual review insert the appropriate letter that indicates the status of that action item.

Step Three: Complete a progress report form as illustrated in Appendix G for each mitigation action item selected for annual review

Step Four: Submit the completed form(s) to the Whatcom County DEM.

Port of Bellingham Hazard-Specific Action Items 2021-2025 – Annual Review and Progress						
Action Items	Status (Choose One & Enter Letter):					Notes on yearly progress
	2021	2022	2023	2024	2025	
GENERAL: ALL HAZARDS						
G-1 Distribute Whatcom County Emergency Preparedness Guide.						
<i>Add New Action Items if Applicable</i>						
DAM/LEVEE FAILURES						
<i>Add New Action Items if Applicable</i>						
DROUGHTS/HEAT WAVES						



Port of Bellingham Hazard-Specific Action Items 2021-2025 – Annual Review and Progress						
Action Items	Status (Choose One & Enter Letter): A. Completed; B. In Progress (on schedule); C. In Progress (delayed); D. Delayed Until Funding Available; E. Canceled					Notes on yearly progress
	2021	2022	2023	2024	2025	
<i>Add New Action Items if Applicable</i>						
EARTHQUAKES						
<i>EQ-a. Ongoing -- Conduct Outreach to Builders, Architects, Engineers and Inspectors</i>						
<i>EQ-c. Ongoing -- Design all Critical Facilities and Infrastructure for design earthquake event</i>						
EQ-1 Incorporate Earthquake Mitigation into Port Planning						
EQ-2 Map and Assess Port Vulnerability to Seismic Hazards						
EQ-3 Increase Earthquake Risk Awareness						
EQ-4 Provide Information on Structural and Non-Structural Retrofitting						
EQ-5. Conduct Inspections of Building Safety						
<i>Add New Action Items if Applicable</i>						
FLOODING						
FL-1 Participate in Partnerships to Support Floodplain Management						
FL-2 Increase Awareness of Flood Risk and Safety						
FL-3. Incorporate Flood Mitigation in Local Planning –						
FL-4. Follow Current Building Codes and Development Standards						
FL-5. Stormwater Management Planning						
FL-6. Adopt Polices to Reduce Stormwater Runoff						
FL-7. Conduct Regular Maintenance for						



Port of Bellingham Hazard-Specific Action Items 2021-2025 – Annual Review and Progress						
Action Items	Status (Choose One & Enter Letter): A. Completed; B. In Progress (on schedule); C. In Progress (delayed); D. Delayed Until Funding Available; E. Canceled					Notes on yearly progress
	2021	2022	2023	2024	2025	
Drainage Systems and Flood Control Structures						
FL-8 Protect Infrastructure						
FL-9. Design and construct Critical Facilities to prevent flooding and future sea level rise.						
<i>Add New Action Items if Applicable</i>						
LANDSLIDES/EROSION						
<i>ER-a. Ongoing -- Increase Awareness of Erosion Hazard</i>						
ER-1. Manage Development in Erosion Hazard Areas						
ER-2. Stabilize Erosion Hazard Areas						
<i>Add New Action Items if Applicable</i>						
LAND SUBSIDENCE						
<i>Add New Action Items if Applicable</i>						
TORNADOES						
<i>Add New Action Items if Applicable</i>						
TSUNAMI						
<i>TSU-a. Ongoing -- Map and Assess Vulnerability to Tsunami</i>						
<i>TSU-b. Ongoing -- Increase Public Awareness of Tsunami Hazard</i>						
TSU-1. Manage Development of Port infrastructure in Tsunami Hazard Areas						
<i>Add New Action Items if Applicable</i>						
WILDFIRES						



Port of Bellingham Hazard-Specific Action Items 2021-2025 – Annual Review and Progress						
Action Items	Status (Choose One & Enter Letter):					Notes on yearly progress
	2021	2022	2023	2024	2025	
<i>Add New Action Items if Applicable</i>						
WINTER STORMS/FREEZES (SEVERE WINTER WEATHER)						
WW-1 Conduct Winter Weather Risk Awareness Activities						
WW-2. Design and construct Buildings and Infrastructure to withstand design storm events						
WW-3 Reduce Impacts to Roadways						
<i>Add New Action Items if Applicable</i>						
EXTREME TEMPERATURES						
<i>Add New Action Items if Applicable</i>						
LANDSLIDE						
<i>Add New Action Items if Applicable</i>						
LIGHTNING						
<i>Add New Action Items if Applicable</i>						
SEVERE WIND						
SW-a. Ongoing -- Apply Site and Building Design Standards that Minimize Wind Damage						
SW-b. Ongoing -- Assess Vulnerability to Severe Wind						
SW-c. Ongoing -- Protect Power Lines and Infrastructure						
<i>Add New Action Items if Applicable</i>						
MULTIPLE HAZARDS						



Port of Bellingham Hazard-Specific Action Items 2021-2025 – Annual Review and Progress						
Action Items	Status (Choose One & Enter Letter): A. Completed; B. In Progress (on schedule); C. In Progress (delayed); D. Delayed Until Funding Available; E. Canceled					
	2021	2022	2023	2024	2025	Notes on yearly progress
MU-a. Ongoing -- Increase Hazard Education and Risk Awareness						
MU-b. Ongoing -- Protect Structures						
MU-1 Increase Port Live Aboard Disaster Preparedness Awareness						
MU-2 Promote Private Mitigation Efforts						
MU-3. Assess Community Risk						
MU-4. Map Community Risk						
MU-5. Prevent Development in Hazard Areas						
MU-6. Integrate Mitigation into Local Planning						
MU-7. Monitor Mitigation Plan Implementation						
MU-8. Construct and improve Infrastructure and Critical Facilities to mitigate damage from multiple hazards.						
<i>Add New Action Items if Applicable</i>						



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