

# Mount Baker Volcano Action Plan



Whatcom County Sheriff's Office  
Division of Emergency Management  
311 Grand Avenue  
Public Safety Building  
Bellingham, WA 98225

June, 2019

# Table of Contents

|           |   |             |
|-----------|---|-------------|
| <b>1.</b> | <b>INTRODUCTION.....</b>  | <b>1-4</b>  |
| <b>2.</b> | <b>OVERVIEW .....</b>   | <b>2-5</b>  |
| 2.1.      | PURPOSE .....   | 2-5         |
| 2.2.      | MISSION.....  | 2-5         |
| 2.3.      | SCOPE .....   | 2-5         |
| 2.4.      | PLANNING REGION .....   | 2-5         |
| <b>3.</b> | <b>BACKGROUND.....</b>  | <b>3-7</b>  |
| 3.1.      | THE MOUNT BAKER HAZARD .....  | 3-7         |
| 3.2.      | MOUNT BAKER'S ERUPTION HISTORY .....  | 3-8         |
| 3.3.      | VULNERABILITY ASSESSMENT .....  | 3-8         |
| 3.3.1.    | <i>Potential Volcanic Hazards</i> .....   | 3-10        |
| 3.3.2.    | <i>Mitigation Strategies</i> .....  | 3-10        |
| <b>4.</b> | <b>KEY STAKEHOLDERS .....</b>   | <b>4-12</b> |
| <b>5.</b> | <b>ALIGNMENT WITH OTHER PLANS.....</b>  | <b>5-2</b>  |
| 5.1.      | NATIONAL RESPONSE FRAMEWORK .....   | 5-2         |
| 5.2.      | WASHINGTON STATE COMPREHENSIVE EMERGENCY MANAGEMENT PLAN .....  | 5-2         |
| 5.3.      | WHATCOM COUNTY NATURAL HAZARDS MITIGATION PLAN.....   | 5-2         |
| 5.4.      | WHATCOM COUNTY DISASTER DEBRIS MANAGEMENT PLAN .....  | 5-2         |
| 5.5.      | WHATCOM COUNTY COMPREHENSIVE EMERGENCY MANAGEMENT PLAN .....  | 5-3         |
| 5.6.      | PLAN MAINTENANCE AND UPDATE .....   | 5-3         |
| <b>6.</b> | <b>CONCEPT OF OPERATIONS .....</b>  | <b>6-4</b>  |
| 6.1.      | GENERAL .....   | 6-4         |
| 6.2.      | UNITED STATES GEOLOGICAL SURVEY VOLCANO ALERT SYSTEM .....  | 6-4         |
| 6.3.      | VOLCANO ALERT LEVELS .....  | 6-4         |
| <b>7.</b> | <b>REPORTING OF VOLCANIC ACTIVITY.....</b>  | <b>7-6</b>  |
| 7.1.      | VOLCANIC ACTIVITY INFORMATION SOURCES .....   | 7-6         |
| 7.1.1.    | <i>United States Geological Survey</i> .....  | 7-6         |
| 7.1.2.    | <i>Recreational users on or near Mount Baker</i> .....  | 7-6         |
| 7.1.3.    | <i>Natural Resource users (Logging, Fishing, National Forest Service, Department of Natural Resources)</i><br>.....                               | 7-6         |
| 7.1.4.    | <i>Visual Observation from residents in Whatcom County, Skagit County, Vancouver Island, and the<br/>Lower Mainland of British Columbia</i> ..... | 7-6         |
| <b>8.</b> | <b>NORMAL ALERT LEVEL ACTIVITIES.....</b>   | <b>8-7</b>  |
| 8.1.      | WHATCOM COUNTY NORMAL ALERT LEVEL ACTIVITIES.....   | 8-7         |
| 8.1.1.    | <i>Notification from United States Geological Survey Cascades Volcano Observatory of confirmed<br/>volcanic activity at Mount Baker</i> .....     | 8-7         |
| 8.1.2.    | <i>Notification of unconfirmed activity at Mount Baker (Not from the United States Geological Survey<br/>Cascades Volcano Observatory)</i> .....  | 8-7         |
| 8.1.3.    | <i>Confirmed activity at Mount Baker (not from the United States Geological Survey Cascades Volcano<br/>Observatory)</i> .....                    | 8-8         |
| <b>9.</b> | <b>FROM NORMAL ALERT LEVEL TO ADVISORY ALERT LEVEL.....</b>   | <b>9-9</b>  |

9.1. AGENCY ACTIONS BASED ON NOTIFICATION FROM UNITED STATES GEOLOGICAL SURVEY CASCADE VOLCANO OBSERVATORY OF A CHANGE TO AN ADVISORY ALERT LEVEL FROM A NORMAL ALERT LEVEL ..... 9-9

- 9.1.1. *Whatcom County Sheriff's Office Division of Emergency Management Duty Officer*..... 9-9
- 9.1.2. *United States Geological Survey Cascade Volcano Observatory* ..... 9-9
- 9.1.3. *United States Forest Service* ..... 9-10
- 9.1.4. *Whatcom County Sheriff's Office Division of Emergency Management*..... 9-10
- 9.1.5. *Whatcom County Sheriff's Office*..... 9-11
- 9.1.6. *Whatcom County Information Services* ..... 9-11
- 9.1.7. *Whatcom County Public Works*..... 9-12
- 9.1.8. *Washington State Emergency Management Division (WEMD)*..... 9-12

**10. FROM ADVISORY TO WATCH LEVEL ALERT ..... 10-13**

10.1. AGENCY ACTIONS BASED ON NOTIFICATION FROM UNITED STATES GEOLOGICAL SURVEY CASCADE VOLCANO OBSERVATORY OF A CHANGE TO A WATCH ALERT LEVEL FROM AN ADVISORY ALERT LEVEL..... 10-13

- 10.1.1. *Whatcom County Sheriff's Office Division of Emergency Management*..... 10-13
- 10.1.2. *Whatcom County Incident Management Team Public Information Officers*..... 10-13
- 10.1.3. *Whatcom County Sheriff's Office Communications* ..... 10-13
- 10.1.4. *Whatcom County Sheriff's Office*..... 10-14
- 10.1.5. *United States Geological Survey Cascade Volcano Observatory* ..... 10-14
- 10.1.6. *United States Forest Service* ..... 10-15
- 10.1.7. *Washington State Emergency Management Division (WEMD)*..... 10-15

**11. WATCH LEVEL TO WARNING LEVEL ..... 11-17**

11.1. AGENCY ACTIONS BASED ON NOTIFICATION FROM UNITED STATES GEOLOGICAL SURVEY CASCADE VOLCANO OBSERVATORY OF A CHANGE TO A WARNING ALERT LEVEL FROM A WATCH ALERT LEVEL..... 11-17

- 11.1.1. *Whatcom County Sheriff's Office Division of Emergency Management*..... 11-17
- 11.1.2. *Washington Emergency Management Division*..... 11-17
- 11.1.3. *United States Geological Survey Cascades Volcano Observatory*..... 11-18
- 11.1.4. *National Weather Service* ..... 11-18
- 11.1.5. *United States Forest Service* ..... 11-18

## 1. Introduction

---

Whatcom County, Washington has prepared this *Comprehensive Emergency Management Plan Annex: Mount Baker Volcano Response Plan*, which sets forth the general policies and procedures for Whatcom County, cities and towns, supporting agencies and organizations to protect and ensure public safety, reduce damage to property, and avoid and limit economic disruption before, during, and after an emergency.

This plan complies with existing federal, state and local statutes and is consistent with the capabilities and resources of the various agencies and organizations involved. All individuals, agencies, and organizations assuming responsibility under this plan have developed and shall continue to improve upon detailed procedures necessary to carry out their respective responsibilities, describing how response and recovery functions shall be accomplished. In addition, this plan shall be revised and updated, and related training and exercise programs undertaken, as indicated herein.

The term “Whatcom County” as used in this plan encompasses the entire geographical boundary including the 7 incorporated cities, the Lummi Nation and the Nooksack Indian Tribe.

The Whatcom County Mount Baker Volcano Action Plan is a hazard specific plan that establishes a comprehensive framework for management of emergency events associated with the Mount Baker.

This plan assigns roles and delegates responsibilities to Whatcom County departments and other agencies and organizations that will provide support during activation of this plan. Agreement to this plan represents a major commitment by the leadership of these agencies and organizations to:

- ✓ Support the Whatcom County Mount Baker Volcano Action Plan concept of operations and carry out the roles and responsibilities assigned in the plan to ensure the orderly, timely delivery of assistance;
- ✓ Make maximum use of existing authorities, organizations, resources, systems, and programs to reduce emergency relief costs;
- ✓ Form partnerships with counterparts in municipal, adjacent county, and state emergency management offices, voluntary emergency relief organizations, and the private sector to take advantage of all existing resources; and
- ✓ Continue to develop and refine planning, exercise, and training activities specific to assigned roles and responsibilities and consistent with plan development and maintenance procedures identified herein to maintain necessary operational capabilities.

## 2. OVERVIEW

---

Mount Baker is an active volcano. While activity on Mount Baker has not occurred since 1975, homes, schools, and businesses have been built in the very area where lahars and debris flows have occurred, and could potentially occur again in an eruption. Therefore, it is prudent for Whatcom County to create an action plan that explains how the county would respond to any volcanic activity occurring at Mount Baker.

### 2.1. Purpose

The purpose of this plan is to identify actions Whatcom County would take in the event of volcanic activity on Mount Baker.

### 2.2. Mission

The Plan provides direction to facilitate and coordinate the management of actions with regards to a Mount Baker Volcano eruption and/or lahar.

- Identify and address planning and staff training needs prior to a Mount Baker Volcano eruption and/or lahar or debris flow.
- Mitigate against potential threats to lives, health, safety, welfare, and economic and environmental well-being of the impacted area
- Account for the various response requirements needed to address an eruption and/or lahar and debris flow
- Expedite recovery efforts in the impacted area
- Identify threats of significant damage to improved public or private property

### 2.3. Scope

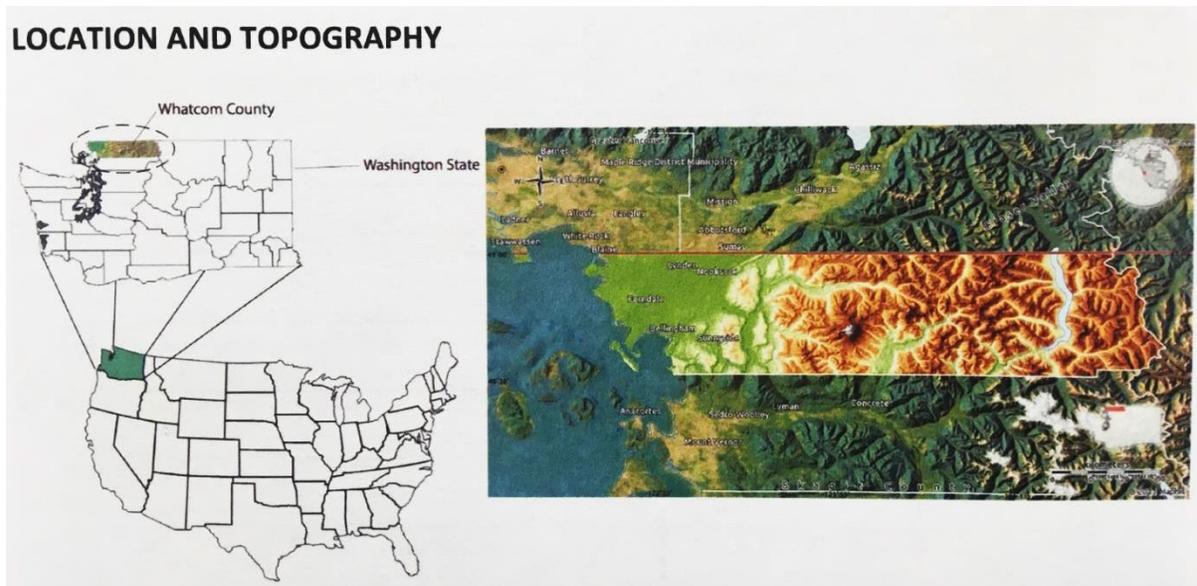
The Plan is intended to address the response and recovery needs of Whatcom and Skagit Counties during Mount Baker Volcanic activity. The plan is structured to allow for collaborative and cooperative work between agencies of the federal government, state, county, its cities, and the reservations.

This Mount Baker Volcano Response Plan is an important element in a coordinated effort to enhance Whatcom Counties and our region's preparedness for emergencies and disasters. The plan embraces the philosophy and vision of disaster resilience and should empower Whatcom and Skagit County local communities to minimize the impacts of volcanic activity on people, property, the environment, as well as the economy of the Pacific Northwest.

### 2.4. Planning Region

Whatcom County, the northwestern most county of Washington State, comprises an area of 2,120 square miles. It is bordered to the north by Canada and to the west by the Strait of Georgia and the

Rosario Strait containing Island County. The eastern half of Whatcom County is composed of the North Cascades Mountain range occupying roughly two-thirds of the entire County, which is controlled by the United States Forest Service and the National Parks Service. No Whatcom County roads that originate in the western half of the County connect to the eastern half; towns in eastern Whatcom County can only be accessed by driving more than 60 miles through Skagit County to the south. The 2016 United States Census Bureau estimated the population of Whatcom County at 216,800 residents. Only 4.5% of the land area is incorporated, while the majority is unincorporated. An unusual characteristic of Whatcom County is that not all of its populated areas are contiguous with the mainland part of the county; these areas include Point Roberts and Lummi Island. Whatcom County includes lowland river-deltas of the Fraser/Nooksack systems, Mt. Baker Foothills, more than 1,325 miles of river streams, 134 miles of coastline, and 245 lakes.



### 3. Background

Mount Baker is located in Whatcom County. While Mount Baker poses hazards both near volcano and downstream, past eruptions demonstrate the general hazards:

- ✓ Mount Baker has a near hazards zone where events can unfold quickly, leaving no time for evacuation;
- ✓ Mount Baker has lahar hazard zones where volcanic mudflows that start in valleys on the volcano can move far distances down valley from source; and
- ✓ Mount Baker has ash fall hazard, where particles that are expelled explosively into the atmosphere move downwind at atmospheric wind speeds.

Because Mount Baker is located within the bounds of the Mount Baker-Snoqualmie National Forest, the United States Forest Service has jurisdiction over much of the volcanic hazard zones in Mount Baker; and will likely be the overall lead agency during volcanic or volcano-related hazardous incidents. Their authority, however, will not supersede other jurisdictions' responsibilities and the United States Forest Service will work cooperatively with Whatcom County and other agencies in managing any incident at Mount Baker. Besides the United States Forest Service, Whatcom and Skagit Counties, along with the Washington Department of Natural Resources, tribes, and private owners have jurisdiction over significant areas within the volcanic hazard areas. Any sizeable incident has the potential to affect any or all of these areas.

The overriding principle in a volcanic emergency is that preservation of human life takes precedence over protection of lands and property.

#### 3.1. The Mount Baker Hazard



Mount Baker (3,285 meters; 10,778 feet) is an ice-clad volcano in the North Cascades of Washington State about 50 kilometers (31 miles) due east of the city of Bellingham. After Mount Rainier, it is the most heavily glaciated of the Cascades volcanoes: the volume of snow and ice on Mount Baker (about 1.8 cubic kilometers; 0.43 cubic miles) is greater than that of all the other Cascades volcanoes (excluding Mount Rainier) combined. Isolated ridges of lava and hydrothermally altered rock, especially in the area of Sherman Crater, are exposed between glaciers on the upper flanks of the volcano; the lower flanks are steep and heavily vegetated. The volcano rests on a foundation of non-volcanic rocks in a region that is largely non-volcanic in origin.

We know from geological evidence that Mount Baker has produced numerous volcanic events in the past that, were they to occur today, would place Whatcom County communities at risk. Volcanic hazards from Mount Baker result from a variety of different eruptive phenomena such as lahars, ash fall, tephra fall, and pyroclastic flows.

## 3.2. Mount Baker's Eruption History

Geologic evidence in the Mount Baker area reveals a flank collapse near the summit on the west flank of the mountain that transformed into a lahar, estimated to have been approximately 300 feet deep in the upper reaches of the Middle Fork of the Nooksack River and up to 25 feet deep 30 miles downstream. This lahar may have reached Bellingham Bay. A phreatomagmatic (water coming into contact with magma) explosion occurred near the site of present day Sherman Crater, triggering a second collapse of the flank just east of the Roman Wall. This collapse also became a lahar that spilled into tributaries of the Baker River.

An eruption deposited several inches of ash as far as 20 miles downwind to the northeast. Geologic evidence shows lahars large enough to reach Baker Lake have occurred at various times in the past. Historical activity at Mount Baker includes several explosions during the mid-19th century, which were witnessed from the Bellingham area.

Sherman Crater (located just south of the summit) probably originated with a large phreatomagmatic explosion. In 1843, explorers reported a widespread layer of newly fallen rock fragments and several rivers south of the volcano were clogged with ash. A short time later, two collapses of the east side of Sherman Crater produced two lahars, the first and larger of which flowed into the natural Baker Lake, raising its water level at least 10 feet.

In 1975, increased fumarolic activity in the Sherman Crater area caused concern an eruption might be imminent. Additional monitoring equipment was installed and several geophysical surveys were conducted to try to detect the movement of magma. The level of the present day Baker Lake reservoir (located to the east and south of the mountain) was lowered and people were restricted from the area due to concerns that an eruption-induced debris avalanche or debris flow might enter Baker Lake and displace enough water to either cause a wave to overtop the Upper Baker Dam or cause complete failure of the dam. However, few anomalies other than the increased heat flow were recorded during the surveys nor were any other precursory activities observed to indicate magma was moving up into the volcano. This volcanic activity gradually declined over the next 2 years but stabilized at a higher level than before 1975. Several small lahars formed from material ejected onto the surrounding glaciers and acidic water was discharged into Baker Lake for many months.

## 3.3. Vulnerability Assessment

Lahars are the primary threat from volcanic activity at Mount Baker. Originating from melted snow and ice, lahars could create torrents of ash, rock, and water. Flank collapses may also create volcanic landslides that may form into lahars. Lahars resulting from flank collapses can also be triggered by earthquakes, gravity, or increases in hydrothermal activity. Debris flows can remain hazardous for many years if the deposited material remobilizes from heavy rains.

Most cohesive debris flows will be small to moderate in volume and will originate as debris avalanches of altered volcanic rock, most likely from the Sherman Crater, Avalanche Gorge, or the Dorr Fumarole

area. Small volume debris flows will pose little risk to most people, but moderate volume debris flows could travel beyond the flanks of the volcano.

The probability of Mount Baker erupting, collapsing, or causing slides is low. However, volcanic activity from the mountain could result in destruction of property and probable loss of lives in or near the floods, lahars, earthquakes, landslides, and ash fall.

Examples of hazards and “worst-case scenarios” in Whatcom County, including adjacent counties and Canadian Provinces, as follows:

- Small to moderate collapse in the area of Sherman Crater may produce lahars flowing into Baker Lake and result in the following:
  - Raised level of Baker Lake
  - Baker Lake Dam failure
  - Flooding of the entire Skagit floodplain to Puget Sound
- Large flank collapses or pyroclastic flows could result in the following:
  - Inundation of Skagit River Valley by displacement of water in reservoirs by lahars
  - North Fork, Middle Fork, and Nooksack River to Bellingham Bay could be inundated, and enough debris flow could be deposited in the stretch of river between Lynden and Everson to raise the riverbed enough to spill into the Sumas River or to divert the Nooksack River into the Sumas River Basin
  - Floodwaters could extend from Sumas into Huntingdon and Abbotsford, B.C.
  - Flooding all the way to Bellingham Bay
- Ash fall: will depend on direction of the wind (prevailing winds are toward the East);
  - Ash may cause reduced visibility or darkness; air filters and oil filters in automobiles and emergency vehicles become clogged
  - Airports: All local airports may be impacted by ash fall
- Railroad tracks, power lines, radio towers, highways, campgrounds, natural gas pipelines, and water supplies in more remote areas closer to the volcano may be inundated by lahars.
- Impacts:
  - City of Bellingham’s Middle Fork water supply diversion dam, tunnel, and pipeline to Lake Whatcom possibly buried and/or destroyed
  - Farm animals, people, fish, and wildlife may be killed

Transportation Routes: I-5 flooded at Nooksack and/or Skagit Rivers; Highway 9 flooded at Deming and Sedro Woolley (Skagit County); Mount Baker Highway (SR 542) flooded

Those most vulnerable initially would be those nearest the pyroclastic, lahar, and lava flows, or heavy ash and rock fall during the eruption. Those people in this recreational area of forests and wildlife may be impossible to locate and rescue. Baker Lake and its dams are vulnerable and, if impacted, could cause extensive loss of property and lives downstream in Skagit County.

Lahars flowing down and flooding the Nooksack, Baker, and Skagit Rivers may provide very little warning for evacuation to nearby populations. Earthquakes accompanying an eruption may cause bridge or road damage and trigger landslides. Fine ash fall, even if only a few millimeters thick, may make asphalt road surfaces slippery, causing traffic congestion on steep slopes or accidents at corners and junctions. Whether the eruption is small, or large in scale, or even a period of unrest (like in 1975-76), there will be impacts on the population and the area’s economy.

### 3.3.1. *Potential Volcanic Impacts*

- Flooding: Baker Lake and Lake Shannon – possibly dams destroyed
  - Nooksack River from origins to Bellingham Bay
  - Skagit River from Baker River junction throughout Skagit River Valley to Puget Sound
- Transportation: severe disruption
- Water lines, water reservoirs: contaminated or broken and depleted
- Communication: landlines down, wireless phones overwhelmed
- Electric power: some or all power lost from Mount Vernon to Lynden and possibly further in all directions
- Gas and fuel pipelines: possibly broken
- Toxic waste, sewer, and household chemicals in flood areas

### 3.3.2. *Mitigation Strategies*

Generally, technology and tell-tale signs of eruptions from volcanoes allow experts to predict volcanic activity, such as the predictions of the 1980 Mount Saint Helen's eruption that saved many lives. However, the magnitude and timing of volcanic activities cannot be precisely predicted, giving the public little to no warning to prepare for a volcano emergency. Because of this, the best way to mitigate against volcanoes is to educate and raise awareness of affected citizens. In 2013 the Whatcom County Sheriff's Office Division of Emergency Management, United States Geological Survey, and the Washington State Emergency Management Division participated in the US/Columbia Volcanic Exchange, and in 2019 in the US/Ecuadorian Volcanic Exchange. Best practices concepts were brought back from the participants, and a focused effort led to a completion of a public information campaign for the Northern Cascade volcanos. According to FEMA, one of the best ways to generate awareness and preparedness of volcanoes is to use the media to spread important information to the community. FEMA suggests:

- In a volcano prone area, publish a special section in the local newspaper with emergency information on volcanoes. Localize the information by including the phone numbers of local emergency services offices, the American Red Cross, and hospitals.
- Feature an interview with a USGS representative, talking about how he/she determines the likelihood of a volcanic eruption.
- Conduct a television or radio series on how to recognize the warning signals of a possible volcanic eruption.
- Work with local emergency services and American Red Cross officials to prepare special reports for people with mobility impairments on what to do if an evacuation is ordered.
- Obtain 72-hour kits that include contacts and information during natural hazards.
- Develop Community Emergency Response Teams.
- Distribute neighborhood maps.

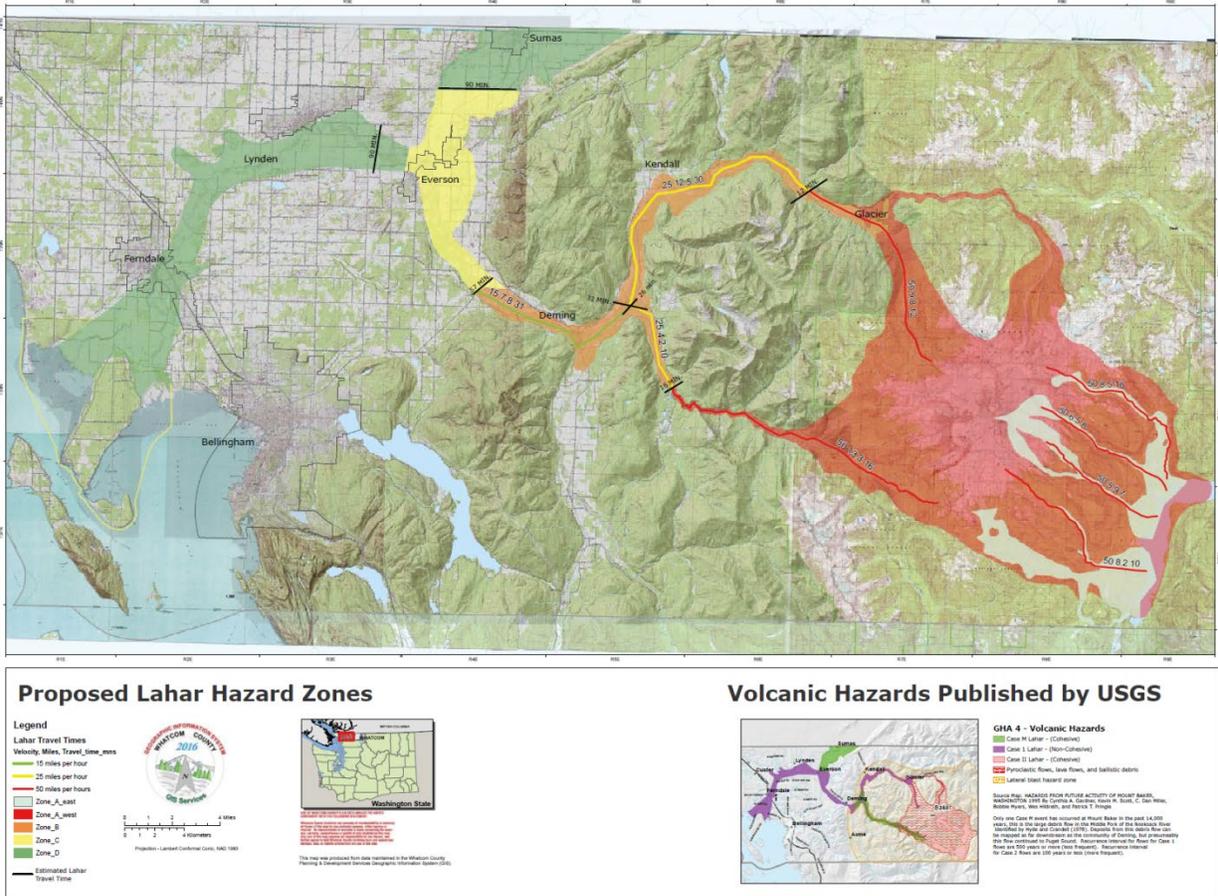


Figure 2 - Mount Baker Hazard Map

## 4. Key Stakeholders

Given its physical location and potential for impact to a larger area than just Whatcom and Skagit Counties, there are a number of key stakeholders who are considered as the Mount Baker Planning Team and who help to develop this response plan and the development, delivery, and evaluation of training and exercising of this plan. The group is made up of members from each jurisdiction, agency, and/or private business and provides subject matter expertise for plan updates.

### United States Federal

- Bonneville Power Administration
- Bureau of Indian Affairs
- Federal Emergency Management Agency
- Fish & Wildlife Service
- National Weather Service
- United States Army Corps of Engineers
- United States Customs and Border Protection
- United States Environmental Protection Agency
- United States Forest Service
- United States Geological Survey
- United States Park Service

### Native American Tribes

- Samish Nation
- Sauk-Suiattle Tribe
- Upper Skagit Tribe
- Lummi Nation
- Nooksack Tribe
- Semiahmoo First Nation (British Columbia)

### Washington State

Washington Emergency Management Division,  
Military Department

Washington Department of Natural Resources

Washington Department of Transportation

Washington State Patrol

Washington Department of Ecology

Washington Department of Fish and Wildlife

### Universities

University of Washington Pacific Northwest  
Seismic Network

Western Washington University

### County, and Local Government

- Whatcom County Sheriff's Office

- Whatcom County Sheriff's Office Division of Emergency Management
- Whatcom County Fire District #14
- Whatcom County Fire District #1
- Whatcom County Fire District #16
- Whatcom County Fire District #19
- Whatcom County Public Utility District #1
- Mount Baker School District
- Nooksack Valley School District
- City of Bellingham Office of Emergency Management
- Skagit County Emergency Management
- City of Seattle - Seattle City Light
- Island County Emergency Management
- San Juan County Emergency Management
- Chelan County Emergency Management
- Okanogan County Emergency Management

### Private Sector

- Mt Baker Ski Area
- Trans Mountain Pipeline
- Bellingham International Airport
- Williams Pipeline
- Cascade Natural Gas
- BP Pipelines
- Puget Sound Energy

### Canada

- Public Safety Canada
- Emergency Planning Canada
- Emergency Management British Columbia
- Abbotsford British Columbia Emergency Management
- Canadian Border Services Agency
- Royal Canadian Mounted Police
- Natural Resources Canada/Geological Survey of Canada

## 5. Alignment with Other Plans

---

### 5.1. National Response Framework

The National Response Framework (NRF) provides the concept of operations for federal response to events by listing the responsibilities for each federal agency and outlining how federal agencies will interact with other public-sector agencies at all levels, the private sector, and nongovernmental organizations (NGOs). The NRF also emphasizes the importance of personal preparedness by individuals and households. This plan aligns with the Long-Term Recovery Annex of the Department of Homeland Security's (DHS) NRF by providing for coordination of disaster debris operations through all levels of government using the National Incident Management System (NIMS) organization structure.

### 5.2. Washington State Comprehensive Emergency Management Plan

The State Comprehensive Emergency Management Plan (CEMP) provides the concept of operations for state agency response to disaster events by listing the responsibilities for each agency and outlining how state agencies will interact with each other and other regional and local public-sector agencies. This plan aligns with the CEMP ESF #3: Public Works and Engineering Annex, and ESF #14: Long-Term Recovery Annex, by providing operational instructions to organize disaster debris operations at the local level.

### 5.3. Whatcom County Natural Hazards Mitigation Plan

The Whatcom County Natural Hazards Mitigation Plan identifies specific hazards, including earthquakes, volcano, and flooding, that may cause significant increases in debris and damage to necessary routes for debris transportation. This plan acts to take into account all hazards as well as prepare for the worst case scenario. This plan should be integrated into the mitigation plan by highlighting resources and a clear plan for debris pick up after a natural hazard.

### 5.4. Whatcom County Disaster Debris Management Plan

This Disaster Debris Management Plan is written in coordination with FEMA's Debris Management Guidelines, including the June 28, 2013 Pilot Project Program. The plan is an Annex to the Whatcom County Comprehensive Emergency Management Plan.

## 5.5. Whatcom County Comprehensive Emergency Management Plan

The Whatcom County Comprehensive Emergency Management Plan provides the general policies and procedures for County departments and supporting agencies and organizations to protect and ensure public safety, reduce damage to property, and avoid and limit economic disruption before, during, and after an emergency.

## 5.6. Plan Maintenance and Update

The Plan was assembled by Whatcom County Sheriff's Office Division of Emergency Management. The Whatcom County Sheriff's Office is the Plan Manager and responsible for the ongoing maintenance of the Plan.

In the event of a revision outside of the normal review period, it is the responsibility of the Plan Manager to ensure that revised information is distributed. During the plan review process, specific attention will be directed towards key plan components, including specific assigned roles and responsibilities, reviewing and updating contracts, contact information for internal staff and external resources, and the location and status of identified Debris Management Sites.

---

## 6. CONCEPT of OPERATIONS

---

### 6.1. General

This plan is based on the premise that each agency with responsibilities for preparedness, response, or recovery activities has, or will develop, individual operations plans or procedures that cover its organization and emergency operations. This plan establishes a mechanism for communicating among and coordinating with the agencies, public or private, impacted by, responding to, or recovering from a volcanic eruption, or volcano-related hazardous incidents at Mount Baker.

### 6.2. UNITED STATES GEOLOGICAL SURVEY Volcano Alert System

The United States Geological Survey Cascades Volcano Observatory has the jurisdictional responsibility to give warning about activity at Mount Baker. One way they provide this warning information is through their Alert-level System, which uses terms such as **Normal**, **Advisory**, **Watch** and **Warning** (see Table 1 for detailed descriptions). These levels reflect conditions at a volcano and the expected or ongoing hazardous volcanic phenomena. Even in **Normal**, or background-level activity, United States Geological Survey Cascades Volcano Observatory may issue an **Information Statement** describing events at a volcano that may be of interest to the public and media.

United States Geological Survey Cascades Volcano Observatory will alert the Whatcom County Sheriff's Office Division of Emergency Management as well as other entities listed in this plan prior to the issuance of such statements. The information sharing may occur through e-mail and / or a conference call. Upon a change of an alert level or recognition of the start or cessation of volcanic activity, the United States Geological Survey Cascades Volcano Observatory will issue a formal Volcanic Activity Notice. The Volcanic Activity Notice consists of a formatted text message describing the current activity at Mount Baker, reasons for increasing or decreasing the alert level, or significant activity within an alert level. Following a telephone call-down, the Volcanic Activity Notice goes out via email and FAX to federal, state, county, local and tribal governmental agencies and the media. Volcanic Activity Notice messages are also pushed to subscribers of the United States Geological Survey Volcano Notification Service. The Volcano Notification Service is a subscription service available to anyone and is available at the following address: <http://volcanoes.usgs.gov/vns/>. The Volcanic Activity Notice is also immediately posted on the United States Geological Survey Cascades Volcano Observatory website.

### 6.3. Volcano Alert Levels

The United States Geological Survey employs a nationwide volcano alert-level system for characterizing conditions (quiet, unrest, eruption) at United States volcanoes. Notifications about the status of activity at United States volcanoes are issued through the five regional United States Volcano Observatories. Additional information on the alert-notification system can be found in the Fact Sheet United States Geological Survey's Alert-Notification System for Volcanic Activity.

The USGS alert-level system for volcanic activity has two separate parts – 1) ranked terms to inform

people on the ground about a volcano's status and 2) ranked colors to inform the aviation sector about airborne ash hazards.

Volcano Alert Levels have descriptions of what they mean for both increasing and decreasing volcanic activity levels. It is also important to note that volcanic activity does not have a prescribed speed, and the progression from an Advisory to a Warning level may take place over a period of several days, weeks, months, or possibly even years, all with periods of increasing and decreasing signs of unrest throughout this time. Additionally, an Advisory may immediately proceed to a Warning without the Watch step in between if a hazardous eruption begins.

| <b>ALERT-LEVEL TERMS.</b>   |   |
|---|---|
| When the volcano alert-level is changed, a Volcano Activity Notice (VAN) is issued. |   |
| <b>NORMAL</b>   | Volcano is in typical background, noneruptive state<br><i>or, after a change from a higher level,</i><br>volcanic activity has ceased and volcano has returned to noneruptive background state.   |
| <b>ADVISORY</b>   | Volcano is exhibiting signs of elevated unrest above known background level<br><i>or, after a change from a higher level,</i><br>volcanic activity has decreased significantly but continues to be closely monitored for possible renewed increase. |
| <b>WATCH</b>  | Volcano is exhibiting heightened or escalating unrest with increased potential of eruption, timeframe uncertain,<br><b>OR</b><br>eruption is underway but poses limited hazards.  |
| <b>WARNING</b>  | Hazardous eruption is imminent, underway, or suspected.   |

| <b>AVIATION COLOR CODES</b>  |  |
|--|--|
| When the volcano color code changes, a Volcano Observatory Notification for Aviation (VONA) is issued. |  |
| <b>GREEN</b>   | Volcano is in typical background, non-eruptive state<br><i>or, after a change from a higher level,</i><br>volcanic activity has ceased and volcano has returned to noneruptive background state.   |
| <b>YELLOW</b>  | Volcano is exhibiting signs of elevated unrest above known background level<br><i>or, after a change from a higher level,</i><br>volcanic activity has decreased significantly but continues to be closely monitored for possible renewed increase.  |
| <b>ORANGE</b>  | Volcano is exhibiting heightened or escalating unrest with increased potential of eruption, timeframe uncertain,<br><b>OR</b><br>eruption is underway with no or minor volcanic-ash emissions [ash-plume height specified, if possible].             |
| <b>RED</b>   | Eruption is imminent with significant emission of volcanic ash into the atmosphere likely<br><b>OR</b><br>eruption is underway or suspected with significant emission of volcanic ash into the atmosphere [ash-plume height specified, if possible]. |

**Figure 3 - Volcanic Alert-Levels**

---

## 7. Reporting of Volcanic Activity

---

### 7.1. Volcanic Activity Information Sources

It is highly likely Whatcom County will receive early warning about volcanic activity occurring on Mount Baker. Sources of information for activity on Mount Baker include:

#### 7.1.1. *United States Geological Survey*

- ✓ The United States Geological Survey has the scientific lead for monitoring Mount Baker from the Cascade Volcano Observatory in Vancouver, Washington.
- ✓ The United States Geological Survey distributes the results of activity on Mount Baker using a variety of products available to the public as well as communication with the Whatcom County Sheriff's Office Division of Emergency Management.

#### 7.1.2. *Recreational users on or near Mount Baker*

- ✓ Persons on, or near, Mount Baker may notice activity that is unusual such as excessive venting, high concentrations of gases, rockslides, earthquakes, or debris flow events.
- ✓ Recreational users who observe, feel or experience unusual activity are urged to report their observations to the Whatcom County Sheriff's Office Division of Emergency Management, 911 (if an emergency exists), or the United States Geological Survey Cascade Volcano Observatory in Vancouver, Washington.

#### 7.1.3. *Natural Resource users (Logging, Fishing, National Forest Service, Department of Natural Resources)*

- ✓ Natural resource users may notice activity from Mount Baker during their regular work such as excessive venting, high concentrations of gases, rockslides, earthquakes, or debris flow events.
- ✓ Natural Resource users who observe, feel or experience unusual activity are urged to report their observations to the Whatcom County Sheriff's Office Division of Emergency Management, 911 (if an emergency exists), or the United States Geological Survey Cascade Volcano Observatory in Vancouver, Washington.

#### 7.1.4. *Visual Observation from residents in Whatcom County, Skagit County, Vancouver Island, and the Lower Mainland of British Columbia*

- ✓ Mount Baker is visible to several million people and residents may notice increased or suspected increases, in steaming from the mountain.
- ✓ Residents who observe suspected unusual activity are urged to report their observations to the United States Geological Survey Cascade Volcano Observatory in Vancouver, Washington.

## 8. Normal Alert Level Activities

A **Normal** level of background activity generally requires no special activities by stakeholders in this volcanic region beyond the usual planning activities. However, the United States Geological Survey Cascades Volcano Observatory may issue an **Information Statement** in response to unusual but nonthreatening events or to an increase in interest by the public or media. For situational awareness, every effort will be made to alert the entities listed in this plan prior to the issuance of information statements. The information sharing may occur through e-mail and / or a conference call.

### 8.1. Whatcom County Normal Alert Level Activities

#### 8.1.1. *Notification from United States Geological Survey Cascades Volcano Observatory of confirmed volcanic activity at Mount Baker*

The Whatcom County Sheriff's Office Division of Emergency Management Duty Officer will take the following actions when the United States Geological Survey Cascades Volcano Observatory issues an Information Statement or makes the Division aware of unusual events:

- ✓ Create Incident in TRG Software with a 90 day operational period.
- ✓ Obtain an Incident Number from the State Emergency Operations Officer.
- ✓ Email notifications will be made to:
  - Whatcom County Sheriff's Office Duty Staff Officer
  - Whatcom County Fire Chiefs
  - Whatcom County Law Enforcement
  - Whatcom County Public Works Agencies
  - Skagit County Emergency Management
  - Whatcom County Fire District #14
  - Whatcom County Fire District #1
  - Whatcom County Fire District #16
  - Whatcom County Fire District #19
  - Emergency Management BC
  - Abbotsford Fire Department
  - Washington State Duty Officer
  - United States Forest Service
- ✓ Consider posting on social media with approval of the Deputy Director or Sheriff and the United States Geological Survey.

#### 8.1.2. *Notification of unconfirmed activity at Mount Baker (Not from the United States Geological Survey Cascades Volcano Observatory)*

The Whatcom County Sheriff's Office Division of Emergency Management Duty Officer will take the following actions when notified of unconfirmed unusual activity:

- ✓ Log all entries in 214A
- ✓ Notifications will be made regarding unconfirmed activity to:
  - United States Geological Survey Cascades Volcano Observatory
  - Whatcom County Sheriff's Office Duty Staff Officer

- United States Forest Service
- Skagit County Emergency Management
- ✓ Consider field verification of unconfirmed activity.

**8.1.3. *Confirmed activity at Mount Baker (not from the United States Geological Survey Cascades Volcano Observatory)***

The Whatcom County Sheriff's Office Division of Emergency Management Duty Officer will take the following actions when notified of confirmed unusual activity:

- ✓ Create Incident in TRG Software with a 90 day operational period.
- ✓ Obtain an Incident Number from the State Emergency Operations Officer.
- ✓ Telephone or text notifications will be made to the following.
  - United States Geological Survey Cascade Volcano Observatory
  - Whatcom County Sheriff's Office Duty Staff Officer
  - Skagit County Emergency Management
  - Washington State Duty Officer
  - United States Forest Service
- ✓ Email notifications will be made to the following.
  - Whatcom County Fire Chiefs
  - Whatcom County Law Enforcement
  - Whatcom County Public Works Agencies
  - Emergency Management BC
  - Abbotsford Fire Department
- ✓ Consider posting on social media or issuing a press release with approval of the Deputy Director or Sheriff.

## 9. From Normal Alert Level to Advisory Alert Level

---

### 9.1. Agency Actions Based on Notification from United States Geological Survey Cascade Volcano Observatory of a change to an Advisory Alert Level from a Normal Alert Level

#### 9.1.1. *Whatcom County Sheriff's Office Division of Emergency Management Duty Officer*

- ✓ Obtain an Incident Number from the State Emergency Operations Officer if not already in place.
- ✓ Create or update Incident in TRG Software.
- ✓ Text and Email notifications are to be made by the Duty Officer when notified by United States Geological Survey of change to an Advisory Level to the following.
  - Whatcom County Sheriff's Office Duty Staff Officer
  - Whatcom County Fire Chiefs
  - Whatcom County Law Enforcement
  - Whatcom County Public Works Agencies
  - Whatcom County Elected Officials
  - Local Washington State Agencies
  - Local US Federal Agencies
  - Tribes and Tribal Nations
  - Cross Border Working Group
  - Skagit County Emergency Management
  - Emergency Management BC
  - Abbotsford Fire Department
  - Washington State Duty Officer
  - United States Forest Service

#### 9.1.2. *United States Geological Survey Cascades Volcano Observatory (USGS CVO)*

- ✓ At the request of the USGS CVO scientist-in-charge (SIC), WA EMD initiates a conference call with the USFS, the Coordination Plan Working Group, and other potentially impacted jurisdictions, in conjunction with changed alert levels.
- ✓ Monitor the status of the volcano and determine the need for additional instrumentation in conjunction with the National Weather Service (NWS). This may include deploying and staffing an observatory more proximal to the volcano.
- ✓ Issue Volcanic Activity Notices and information updates.
- ✓ In coordination with the NWS, monitor atmospheric and hydrologic conditions around Mount Baker and issue daily winds aloft / potential ash fall forecasts, as needed
- ✓ Consider staffing (if appropriate) the Whatcom County Emergency Operations Center with a liaison.

**9.1.3. *United States Forest Service***

- ✓ Evaluate need for access control to areas around the volcano (i.e. “red zone”).
  - ✓ Evaluate facility, road and area closures needed to provide for employee and public safety with USGS CVO. Road and area closures to be coordinated with Sheriff's Offices, the State Patrol and other officials in the affected county or counties.
  - ✓ Evaluate need for air space controls and work with Federal Aviation Administration (FAA) to implement as needed.
  - ✓ Authorize placement of additional monitoring instrumentation as needed.
- ✓ Prepare to assume role of Federal incident command and coordinate unified command of field operations.

**9.1.4. *Whatcom County Sheriff's Office Division of Emergency Management***

- ✓ Change to Level II activation of the Whatcom County Comprehensive Emergency Management Plan and notify all agencies listed above of status of Emergency Operations Center.
- ✓ Assign appropriate personnel to staff a Planning Section
- ✓ Issue periodic Public Safety Officials Briefings as appropriate.
- ✓ Establish a separate section for the Incident Hotline for Mount Baker and update daily.
- ✓ Issue Press Release and post to social media with approval of the Deputy Director or Sheriff.
- ✓ Consider activation of the Call Center
- ✓ Request Whatcom County Search and Rescue to stand by for requests to escort scientists and other non-Whatcom County personnel to sites on or near Mount Baker.
- ✓ Request Whatcom County Sheriff's Office Auxiliary Communications Service to ensure the Communications Van is ready for deployment to sites on or near Mount Baker.
- ✓ Request Whatcom County Sheriff's Office Auxiliary Communications Service to develop an ICS 205 plan.
- ✓ Request Whatcom County Fire Chief's Association to assign a liaison to the Whatcom County Sheriff's Office Division of Emergency Management to coordinate fire resources operating in Whatcom County for potential response to Mount Baker.
- ✓ Request Whatcom County Sheriff's Office to assign a liaison to the Whatcom County Sheriff's Office Division of Emergency Management to coordinate law enforcement resources operating in Whatcom County for potential response to Mount Baker.
- ✓ Establish, as appropriate, regular Public Safety Officials update briefings at the Emergency Operations Center which will also be available via GotoMeeting for remote agencies.
- ✓ Evaluate situation to determine whether the Whatcom County emergency operations center (EOC) should be activated.
- ✓ Survey and poll shelter partners for capability and capacity
- ✓ Obtain Whatcom County Proclamation of Emergency if appropriate

- ✓ Notify via email Incident Management Team of potential for activation.
- ✓ Provide Office space and staging support to CVO and NWS field teams
- ✓ Activate Whatcom County Search and Rescue for providing escort for scientists and outside experts to Mount Baker.
- ✓ Recommend to potentially impacted small cities to issue an emergency proclamation
- ✓ Identify the need for warning systems for threatened areas.
- ✓ Collaborate with USFS and United States Geological Survey Cascades Volcano Observatory to determine the appropriate location and establish a JIC / JIS based on the level of need for incident information by the public and news media.

**9.1.5. *Whatcom County Incident Management Team Public Information Officers***

- ✓ Activate the Whatcom County Public Information Officers and set up the Joint Information Center in the Whatcom County Emergency Operations Center
  - Coordinate joint information center activities with other Joint Information Centers established by State and Federal agencies.
  - Work with healthcare professionals to message and encourage those who are part of vulnerable populations to evacuate and/or take protective action (e.g. dialysis, oxygen, mobility issues, etc.)
  - Coordinate joint public education programs on current volcano activity and possible escalating concerns/actions.

Chamber of Commerce to establish an information hotline or presence to answer questions

**9.1.6. *Whatcom County Sheriff's Office***

- ✓ Upon request, assign a dedicated liaison to the Whatcom County Sheriff's Office Division of Emergency Management to coordinate law enforcement resources operating in Whatcom County for potential response to Mount Baker.
- ✓ The Whatcom County Sheriff, or designee, will serve as the Whatcom County Incident Commander.
- ✓ Assign the Whatcom County Sheriff's Office Public Information Officer to the Whatcom County Sheriff's Office Division of Emergency Management to serve as the lead for the Whatcom County Joint Information Center and to coordinate with any other State or Federal Joint Information Centers as appropriate.
- ✓ Create News Flash and NotifyMe, Public Signup on AlertSense on Whatcom County Website

**9.1.7. *Whatcom County Information Services***

- ✓ Upon request assign a GIS specialist to the Planning Section.
- ✓ Upon request assign a web application specialist to the Planning Section.
- ✓ Whatcom County Planning and Community Development
- ✓ Evaluate potential impacts on Private Sector (e.g. Mount Baker Ski Resort, etc.)
- ✓ Evaluate potential impacts on Tribes (e.g. fishing, etc.)

- ✓ Evaluate potential impacts on Schools (e.g. Mt Baker School District, Nooksack Valley School District, etc.)
- ✓ Evaluate potential impacts on Agriculture/Farming/Dairy, etc.

**9.1.8. *Whatcom County Public Works***

- ✓ Evaluate potential impacts on utilities, roads, airports, US/CA, etc.)
- ✓ Prepare to have road crews on alert
- ✓ Public Works deploy “road closed” and other appropriate signage or reader boards.

**9.1.9. *Washington State Emergency Management Division (WEMD)***

- ✓ Support information sharing through hosting conference calls on schedule determined by Whatcom County Sheriff's Office Division of Emergency Management
- ✓ Assist federal, state and county officials, as needed, with the dissemination and broadcast of alert level notifications, updates, and public messaging.
- ✓ Issue alerts and warnings to local jurisdictions and tribal governments through the 24-hour State Emergency Operations Center Alert and Warning Center and notify specific state and federal agencies as appropriate.
- ✓ Alert liaison(s) of possible deployment to Whatcom County and other jurisdictional or agency EOCs.
- ✓ Deploy state liaison officers in support of affected Whatcom County at the Whatcom Unified Emergency Operations Center if requested.
- ✓ Activate and staff the State Emergency Operations Center to appropriate level.
- ✓ Coordinate resource requests to support Whatcom County, and other local, tribal and state agency response.
- ✓ Coordinate the acquisition and distribution of resources when Whatcom County resources have been exhausted.
- ✓ Act as the central point of contact for Whatcom County requests for specific state and federal disaster related assets and services.
- ✓ Coordinate with federal agencies and Whatcom County and support activation of the Whatcom County Joint Information Center.

## 10. From Advisory to Watch Level **Alert**

### 10.1. Agency Actions Based on Notification from United States Geological Survey Cascade Volcano Observatory of a change to a Watch Alert Level from an Advisory Alert Level

#### 10.1.1. *Whatcom County Sheriff's Office Division of Emergency Management*

- ✓ Review actions taken during an Advisory Level to ensure that all organizations are engaged, activated or in process.
- ✓ Declare Incident Command and/or Unified Command at the Whatcom County Emergency Operations Center.
- ✓ Create, implement and monitor Incident Action Plan(s) for each defined operational period.
- ✓ If not already in place, coordinate support requirements for United States Geological Survey Cascade Volcano Observatory field personnel to stage and work from Whatcom Unified Emergency Operations Center.
- ✓ Assign a Whatcom County Liaison to the Washington State Emergency Operations Center and include them in the Policy Group.
- ✓ Implement Level II activation of Whatcom County Emergency Operations Center
- ✓ Activate appropriate levels of the Whatcom County Incident Management Team based on conditions on Mount Baker.

#### 10.1.2. *Whatcom County Incident Management Team Public Information Officers*

- ✓ Coordinate joint information center activities with other Joint Information Centers established by State and Federal agencies.
- ✓ Work with healthcare professionals to message and encourage those who are part of vulnerable populations to evacuate and/or take protective action (e.g. dialysis, oxygen, mobility issues, etc.)
- ✓ Coordinate joint public education programs on current volcano activity and possible escalating concerns/actions.

#### 10.1.3. *Whatcom County Sheriff's Office Communications*

- ✓ Assess the necessary communications backbone and interoperability requirements for continuing and ongoing communication requirements between local, state, federal, international and tribal responders and planners.
- ✓ Create the ICS 205 Communications Plan
- ✓ Setup cameras and equipment for video teleconferencing from the Whatcom County Emergency Operations Center to external agencies and stakeholders
- ✓ Deploy, if appropriate, the Whatcom County Sheriff's Office Communications Van

**10.1.4. *Whatcom County Sheriff's Office***

- ✓ Provide liaison staffing for the Whatcom Unified Emergency Operations Center for Level II activation.
- ✓ Determine in conjunction with the liaison from the CVO for establishing Voluntary Evacuation orders.
- ✓ Coordinate access to areas that are closed
- ✓ Coordinate security patrols in communities that are in any closure area established by the United States Forest Service.
- ✓ Evaluate the need for road blocks and/or access control and implement as needed.
- ✓ Coordinate 24/7 security for the Whatcom Unified Emergency Operations Center.
- ✓ Coordinate with WA State Department of Agriculture to establish an information hotline or presence to answer questions
- ✓ Reunification Planning (Revisit School Evacuation Planning, WTA bus utilization for evacuation assist, etc.)
- ✓ Seasonal Consideration (Obtain National Weather Service Rep for Whatcom County EOC) Winter Conditions pose unique evacuation considerations.
- ✓ Have Public Works review with all downstream communities potential flood impacts due to lahar.

**10.1.5. *United States Geological Survey Cascade Volcano Observatory (USGS CVO)***

- ✓ Continue activities initiated under Advisory Alert Level Activities.
- ✓ At the request of the United States Geological Survey Cascade Volcano Observatory scientist-in-charge, WEMD initiates a conference call with the USFS, the Coordination Plan Working Group, and other potentially impacted jurisdictions, in conjunction with changed alert levels.
- ✓ Monitor the status of the volcano and determine the need for additional instrumentation in conjunction with the National Weather Service.
- ✓ Collaborate with the Whatcom County Public Information Officers and Whatcom County Joint Information Center and the United States Forest Service to determine the appropriate location and establishment of a consolidated Joint Information Center based on the level of need for incident information by the public and news media if not already done.
- ✓ Assign Public Information Officers to the Whatcom County Joint Information Center, as needed or requested.
- ✓ Issue Volcanic Activity Notices and information updates.
- ✓ In coordination with the National Weather Service, monitor atmospheric and hydrologic conditions around the affected volcanic region and issue required winds aloft potential ash fall forecasts for potentially affected areas as needed.
- ✓ Staff (if not already done) the Whatcom County Emergency Operations Center with a liaison from the United States Geological Survey Cascade Volcano Observatory.

**10.1.6. United States Forest Service (USFS)**

- ✓ Continue activities initiated under Advisory Alert Level Activities.
- ✓ Continue to evaluate need for access control to areas around the volcano.
- ✓ Evaluate facility, road and area closures needed to provide for employee and public safety. Road and area closures to be coordinated with the Whatcom County Sheriff's Office, the State Patrol and other officials in other affected county or counties.
- ✓ Evaluate need for air space controls and work with Federal Aviation Administration to implement as needed.
- ✓ Coordinate with federal agencies and Whatcom County and assist with the staffing of the Whatcom County Joint Information Center.
- ✓ Authorize placement of additional monitoring instrumentation as needed.
- ✓ Assume the role of Federal Incident Commander (if not already in place) in the Whatcom Unified Emergency Operations Center.

**10.1.7. Washington State Emergency Management Division (WEMD)**

- ✓ Deploy state liaison officers to affected Whatcom County at the Whatcom Unified Emergency Operations Center or continue liaison support as requested
- ✓ In consultation with lead federal and state agencies determine if and when the Mount Baker Multi-Agency Coordination Group (MACG) should be activated.
- ✓ Assist federal, state and county officials, as needed, with the dissemination and broadcast of alert level notifications and updates.
- ✓ Coordinate with federal agencies and Whatcom County and assist with the staffing of the Whatcom County Joint Information Center.
- ✓ Deploy liaison(s) to Whatcom County and other jurisdictional or agency EOCs.
- ✓ Issue alerts and warnings through the 24-hour State Emergency Operations Center Alert and Warning Center and notify specific state and federal agencies as appropriate.
- ✓ Continue to staff the State Emergency Operations Center to appropriate level.
- ✓ Coordinate resource requests to support Whatcom County, other local, tribal and state agency response.
- ✓ Provide the central point of contact for Whatcom and Skagit County requests for specific state and federal disaster related assets and services.
- ✓ Request and coordinate federal disaster assistance necessary to preserve lives and property.
- ✓ Evaluate drafting a Governor's Proclamation of Emergency.
- ✓ Coordinating with Whatcom County and CVO, continue broader preparedness outreach to larger community

**10.1.8. National Weather Service (NWS)**

- ✓ Mobilize all necessary personnel
- ✓ Dispatch National Weather Service forecaster to Whatcom County Emergency Operations Center.

- ✓ Issue ash fall advisories and flash floods watches / warnings and updates.
- ✓ Provide technical representatives to the MACG.

---

## 11. Watch Level to Warning Level

---

### 11.1. Agency Actions Based on Notification from United States Geological Survey Cascade Volcano Observatory of a change to a Warning Alert Level from a Watch Alert Level

#### 11.1.1. *Whatcom County Sheriff's Office Division of Emergency Management*

- ✓ Review actions taken during a Watch Level to ensure that all organizations are engaged, activated or in process.
- ✓ Create, implement and monitor Incident Action Plan(s) for each defined operational period.
- ✓ If not already in place, coordinate support requirements for United States Geological Survey Cascade Volcano Observatory field personnel to stage and work from Whatcom Unified Emergency Operations Center.
- ✓ Assign additional personnel to serve as Whatcom County Liaison's to the Washington State Emergency Operations Center
- ✓ Implement 24 Hour Level III activation of Whatcom County Emergency Operations Center
- ✓ Activate appropriate levels of the Whatcom County Incident Management Team based on conditions on Mount Baker.
- ✓ Evaluate the need for and consider requesting state or federal standby mobilization of a Type I or Type II Incident Management Team.
- ✓ Using the Joint Information Center, continually broadcast coordinated emergency public information.
- ✓ Assign and deploy operational staff to field command posts, as required.

#### 11.1.2. *Washington Emergency Management Division (WEMD)*

- ✓ Continue activation of State Emergency Operations Center to appropriate level.
- ✓ Continue to support situational awareness and a Common Operating picture through hosting conference calls with involved agencies.
- ✓ Coordinate interstate mutual aid.
- ✓ Coordinate resource requests to support Whatcom County, other local, tribal and state agency response.
- ✓ Help coordinate observed and reported activities with Volcanic Ash Advisory Center (VAAC), Aviation Weather Center, and the Center Weather Service Unit at the Auburn Air Route Traffic Control Center (ARTCC).
- ✓ Help ensure that FAA and other entities are issuing timely airspace alert warning of restricted or prohibited space and that federal and local jurisdictions are coordinating use of affected airspace by aircraft involved in emergency response.
- ✓ Draft the Governor's Proclamation of Emergency, and submit if necessary.

**11.1.3. *United States Geological Survey Cascades Volcano Observatory (USGS CVO)***

- ✓ In conjunction with the National Weather Service monitor atmospheric and hydrologic conditions around the volcanoes and issue winds aloft forecast as needed.
- ✓ Monitor the status of seismic, geologic, and hydrologic activity in the hazard area.
- ✓ Continue to issue Volcanic Activity Notices, Information Statements, alert-level notifications, and updates about volcanic activity.
- ✓ Provide technical representatives to the MACG.
- ✓ In coordination with National Weather Service, issue ash fall advisories, flash flood or lahar alerts and flood alerts, as needed.
- ✓ Continue to provide liaisons to EOCs as requested.
- ✓ Support communications and public messaging activities at the JIC and through the JIS.

**11.1.4. *National Weather Service (NWS)***

- ✓ Mobilize all necessary personnel
- ✓ Dispatch National Weather Service forecaster to Whatcom County Emergency Operations Center.
- ✓ Issue ash fall advisories and flash floods watches / warnings and updates.
- ✓ Provide technical representatives to the MACG.

**11.1.5. *United States Forest Service (USFS)***

- ✓ Implement its emergency response plan and mobilize all necessary personnel
- ✓ Based on USGS CVO assessment of volcanic conditions, provide any needed facility and road and area closures to provide for employee and public safety. Implementation to be coordinated with state and county law enforcement in the potentially affected volcanic region.