

Flood - Carver Lake Release

Activation

A failure of the Carver Lake moraine dam could occur suddenly. Activation of the Greater Sisters Area ECC should follow this sequence:

1. The public entities within the Greater Sisters Area ECC should be consulted for consensus regarding the activation of the ECC. The Sisters-Camp Sherman Fire District will take the lead in this process.
2. If Deschutes County activates its EOC/MAC, the Greater Sisters ECC should be activated.
3. When activated, it should be determined if the ECC will be activated on a daily basis for planning or on a 24 hour basis for operations activity.

Assumptions

1. Whychus Creek is subject to flooding along its entire waterway
2. A Carver Lake dam failure could release any quantity of the lake contents up to and including release of the entire lake simultaneously.
3. Impacts to communities and infrastructure below the lake will vary with the amount and type of release. These impacts are currently unknown and require additional study.
4. A major transportation route passes through the Greater Sisters Area that may be subject to damage from a dam release.
5. Advance information regarding a dam release/flood event may be available to emergency responders. This advanced warning will depend on time of day, time of year, and the ability of observers to report the event.
6. When a dam release event has taken place, there may be a need to rescue injured people, recover bodies, demolish unsafe structures, and remove debris.
7. Additional research will be done in order to better determine the threat as well as the course the dam release floodwater will take once it is released onto the alluvial plain.
8. A Carver Lake dam failure will be a short duration event with undetermined impacts and recovery requirements.

Legal Authorities

- Each political subdivision in the Greater Sisters Area has the authority to declare a State of Emergency and request action of the Deschutes or Jefferson County Commissioners. The County Commissioners have the authority to declare a State of Emergency within their respective counties and the responsibility to request a state or federal declaration if appropriate.
- Law enforcement – Deschutes and Jefferson County Sheriff's – has the authority to order evacuations and enforce perimeters.
 - Under federal law, no one has the legal authority to force citizens to evacuate their homes against their will unless they are obstructing emergency operations. Officials can, however, enforce an evacuation of public facilities or places of business. In addition, law enforcement officers may arrest, or take into protective

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custody, persons who have violated an established perimeter or who interfere with responders.

- Public utilities and health – Deschutes and Jefferson County Health departments have the authority to enforce health regulations
- The City of Sisters and County building department officials have the authority to condemn a building as unsafe to occupy.
- The City of Sisters and the Counties' public works departments have authority to close streets and bridges within their jurisdiction.
- The Oregon Department of Transportation has the authority to close state and federal highways and bridge structures.

Incident Priorities

Basic Priorities

- 1. Life safety**
- 2. Incident Stabilization**
- 3. Property conservation**
- 4. Environment**

The following list is meant to be a general guideline for continuity of government services before, during, and after a glacial moraine dam release event. Specific items may change based on the situation facing decision-makers at any given moment.

Hazard-Specific Priorities

1. Life safety
 - a. Response personnel
 - b. Evacuation of affected citizens and pets
 - c. Rescue of stranded or isolated citizens and pets
 - d. Condemnation of damaged structures
 - e. ECC, fire station, medical clinic, and shelter security
 - f. Communication system
 - g. Appropriate deployment of equipment on both sides of Whychus Creek
2. Property conservation
 - a. Water system repair
 - b. Waste water system repair
 - c. Re-establishment of primary arterials that effect emergency response and evacuation
3. Environment
 - a. Potable water
 - b. Sanitation

Damage Assessment

Damage assessment in the Greater Sisters Area will take place in three phases:

- A pre-assessment or *windshield* assessment will take place in the Greater Sisters Area that is initiated by the Greater Sisters ECC.
- An initial assessment that is initiated by the County.
- A subsequent, in-depth assessment initiated by the County.

Pre-Assessment

The pre-assessment determines the general impact and damage to critical facilities and resources, and provides a brief overview of impact on citizens and businesses. Priorities in the initial assessment will be the restoration of emergency response, direction and control capability, and the saving of lives.

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The pre-assessment will take place under the direction of the Planning Section of the ECC, with assistance from the Operations Section. This survey should be completed as soon as possible, as it will provide the County with information leading to a disaster declaration, if needed.

During this assessment, the following activities should be completed:

- The location of structures containing people in need of rescue should be immediately communicated to the ECC for triage and response priority. The following information should be included in the communication:
 - Location
 - Condition of structure
 - Number of persons trapped and their condition if known
- City of Sisters building officials or county building officials (depending on jurisdiction) have the authority to condemn a structure as unsafe for occupation following a flood.
- A quick survey of damage to utility systems should be completed, especially water and sanitation services.
- A quick survey of transportation routes and bridges

The Greater Sisters ECC Finance Section should begin gathering rough dollar figures associated with the damage to support requests for disaster declarations and assistance. Resources and facilities, which will be vital to the economic recovery of the Greater Sisters Area, should be surveyed.

The Initial & Secondary Damage Assessments

The initial and secondary damage assessments are the responsibility of the County and will be coordinated through the County Emergency Operations Center/Multi Agency Commands (EOC/MAC).

Special Considerations

Stream Flow Monitoring – Data can be obtained quickly regarding the rise in stream flow in the City of Sisters by accessing the Locust Street gage data at:

http://apps2.wrd.state.or.us/apps/sw/hydro_near_real_time/display_hydro_graph.aspx?station_nbr=14076050

Strategic Placement of Public Works and Public Safety Equipment – It is critical to ensure that equipment is strategically placed on both sides of Whychus Creek early in the event to ensure

effective deployment and public safety

Stream Flow Management – The Three Sisters Irrigation District is responsible for managing the flow of water diverted from Whychus Creek into their water distribution system

Sandbagging and Runoff Containment – Deschutes County and City of Sisters public works departments are a source of sand and sandbags. The public is often a willing workforce to assist with the construction and maintenance of a sandbag barrier.

Bridge Evaluation – Floating debris on a stream or river can collect on bridge footings and supports that can cause structural damage. The Oregon Department of Transportation and the Counties' road departments have the responsibility and the technical expertise to inspect all suspect bridges to determine whether they are safe for transit. If unsafe, they may be temporarily or permanently closed.

Road Closures and Emergency Transportation Routes – Rising flood waters may necessitate closure of roads due to unsafe driving conditions caused by fast water running across a road or damage to a bridge as a result of the flooding. State, county, or municipal law enforcement agencies working in conjunction with the Oregon Department of Transportation can enforce the closure of roads.

Debris Removal – Removal of flood-deposited debris from public roads/highways and associated culverts is the responsibility of the agency that is responsible for its maintenance. Care should be taken to ensure that debris removal efforts are coordinated with other agencies that may have an associated responsibility, such as the DEQ, Division of State Lands, Fish and Wildlife, the Natural Resource Conservation Service, United States Forest Service, or the Army Corps of Engineers. Removal of debris from private property is the responsibility of the property owner. The removal and/or cleanup of hazardous waste must be coordinated through the Department of Environmental Quality.

Public Health & Waste Water – Glacial moraine dam flood water can become polluted from a variety of sources, and in turn, can foul drinking water sources. Consideration must be given to the restoration of clean drinking water in order to avoid additional public health problems. The Deschutes and Jefferson County Health Departments are the lead agencies.

Flood waters may overrun the Sisters waste water plant or piping system causing the release of untreated sewage into waterways. In addition, agricultural operations often collect animal waste for fertilization that can be released into waterways. The County Health departments should evaluate the impact of a release and work with DEQ to determine the best method for mitigation.

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Figure 1: Glacial Moraine Flood Event Check List

	Activities	In Progress	Done
	<p>Activate ECC</p> <ul style="list-style-type: none"> • Implement the Incident Command System • Determine extent of activation • Read ECC job descriptions and functional checklists • Initiate activity tracking logs • Ensure that the ECC is not threatened by flooding 		
	<p>Determine viability of communication systems and seek repair of systems if damaged</p> <ul style="list-style-type: none"> • Telephone (land-line) • Cellular telephone • Radio (public safety radio systems) • Internet 		
	<p>Establish contact w/ Deschutes/Jefferson Co. Sheriff's Office/ Emergency Management or EOC/MACs.</p>		
	<p>Determine affected jurisdictions and establish liaison w/ agency representatives as needed. Notifications should be made by telephone, radio, and through Deschutes 9-1-1.</p> <ul style="list-style-type: none"> • City of Sisters • Fire Districts • Oregon Department of Transportation • Three Sisters Irrigation District • U.S. Forest Service (local offices notified via 9-1-1 and COID) • Oregon Department of Forestry (local offices) • Deschutes County Emergency Management • Red Cross • Sisters School District 		
	<p>Establish contact w/ National Weather Service (http://www.wrh.noaa.gov/pdt/) to monitor stream and weather conditions.</p>		
	<p>Determine evacuation areas in advance of local flooding. Evacuate affected areas as soon as possible.</p>		
	<p>Obtain a status report on nearby highways and roads. Develop plan for traffic flow. Ensure adequate ingress and egress for emergency vehicles.</p>		
	<p>Ensure supplies, such as communication devices, sand, and sandbags, are prepared and ready for use.</p>		
	<p>Prepare and monitor a community sandbag site from which community volunteers can fill and distribute sandbags.</p>		
	<p>Request a status report and stream observations from all Greater Sisters Area public agencies.</p>		

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	Engage field units in an assessment of flood damage potential. Initiate a general area survey following critical facilities checks. Units should note: <ul style="list-style-type: none"> • Citizens that will need rescue • Special populations affected by the event 		
	Obtain a status report on local highways and roads. Develop a plan for traffic flow. Evaluate bridges. Ensure adequate traffic control is in place to assist emergency vehicles with ingress and egress to incident scenes.		
	Prepare an evacuation plan and coordinate with the County Emergency Managers or EOC/MACs. Refer to the Evacuation Planning Resources section in the Appendix.		
	Establish public information officer and coordinate with County EOC/MAC if activated <ul style="list-style-type: none"> • Prepare public warnings and informational releases for local distribution. • Activate appropriate warning/alert systems. 		
	Determine if the event will require evacuation and sheltering. If yes: <ul style="list-style-type: none"> • Estimate <ul style="list-style-type: none"> ○ the extent of the evacuation, number of persons and length of time shelter will be required ○ number of service animals to be sheltered ○ pets to be sheltered ○ farm animals to be relocated • If flood is a local event, <ul style="list-style-type: none"> ○ contact the American Red Cross with human sheltering request ○ Contact the Central Oregon Pet Evacuation Team for pet and farm animal sheltering assistance • If the County EOC/MAC has been activated, request all sheltering resources through county 		
	Provide crisis counseling services at shelters and field sites, as requested		
	Determine the need for Critical Incident Stress Debriefings (CISD) and crisis counseling for response personnel, provide if needed		
	Determine need for additional resources. Activate mutual aid as needed.		
	Coordinate with private sector parties as needed. Inform utility companies of any known complications and dispatch through Deschutes 911, as needed.		
	City of Sisters Public Works and Building Departments to assist with coordination of damage assessments.		

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	Declare State of Emergency as appropriate and inform the appropriate County authorities.		
	Determine need for debris removal from: <ul style="list-style-type: none"> • Storm drains • Bridges • Main arterial routes • Public right-of-ways • Other structures as needed 		

Recovery Activities

	Coordinate with Deschutes County to develop a damage cost estimate for each of the Greater Sisters Area agencies. <ul style="list-style-type: none"> • If flooding is confined to the Greater Sisters Area, a damage cost estimate should be compiled by each affected agency and submitted to the Finance Section Chief. • The Greater Sisters ECC should seek assistance from the respective County Emergency Manager regarding submission of their request 		
	Determine when people and animals are able to return to their homes.		
	Conduct public information activities.		
	Assist with the traffic control required by the return of citizens to their homes.		
	Prepare after-action report.		
	Convene a Greater Sisters Area EOP steering committee post incident meeting.		
	Implement revisions to the Greater Sisters Area Emergency Operations Plan and supporting documents based on lessons learned and best practices adopted during this response.		
	Activate and implement applicable mitigation efforts.		