Sweetwater County/Local Governmental Agencies

Dam Failure and Flood Hazard Annex

Revised

August 2016

SWEETWATER COUNTY/LOCAL
GOVERNMENTAL AGENCIES
DAM FAILURE AND FLOOD HAZARD ANNEX

I. HAZARD CHARACTERISTICS

A. Descriptions of Dam Failure Conditions

1. Controlled Release

a) Controlled release by use of gate(s) at the principal spillway, outlet works or possibly emergency spillways. Amount of water released could range from a little to the entire amount impounded by the dam

b) May be used to preserve the integrity of the dam

c) May result in some downstream flooding so a flood watch may need to be issued

2. Watch

a) Slowly Developing Condition: the hazard does not pose an immediate threat to residents or property, and warning or evacuation response may be adjusted to meet changing conditions. Time period involved is 48 hours or more.

b) Rapidly Developing Condition: the hazard does not pose an immediate threat to residents or property, and warning or evacuation response may be adjusted rapidly to meet changing conditions. Time period involved is from 6 to 48 hours.

3. Warning

a) Practically instantaneous failure: the hazard requires an immediate response to preserve life and minimize damage to property. Immediate warning and evacuation is essential because of the incident's unpredictable nature and short time lapse (less than 6 hours) prior to flood waters arriving.

B. Classification of dam hazard potential (does not indicate degree of structural safety or lack of structural safety).

Three classification levels are as follows: LOW, SIGNIFICANT and HIGH, listed in order of increasing adverse incremental consequences. The classification levels build on each other, i.e., the higher order classification levels add to the list of consequences for the lower classification levels.

This hazard potential classification system should be utilized with the understanding that the failure of any dam or water-retaining structure, no matter how small, could represent a danger to downstream life and property. Whenever there is an uncontrolled release of stored water, there is the possibility of someone, regardless of how unexpected, being in its path.

1. Low Hazard Potential

a) Failure or mis-operation results in no probable loss of human life; no permanent structures for human habitation and is principally limited to the owner's property.

b) Dam failure has minimal economic and/or environmental loss; undeveloped to occasional structures or agriculture.

2. Significant Hazard Potential

a) Failure or mis-operations results in no probable loss of human life, disruption of lifeline facilities, or can impact other concerns.

b) Failure can cause economic loss, environmental damage, notable agriculture or industry loss. Dams of this type are often located in predominately rural or agricultural areas but could be located in areas with population and significant infrastructure.

3. High Hazard Potential

a) Failure or mis-operation will probably cause loss of human life.

b) Failure will cause excessive economic loss, extensive community, industry or agriculture loss.

II. DAM CHARACTERISTICS

A. Fontenelle Dam

1. Located in Lincoln County about 28 miles northeast of Kemmerer.

2. Fontenelle Reservoir impounds water from the Green River.

3. In the event of a failure of Fontenelle Dam, Jamestown, RioVista and Green River could each sustain damage. There would be approximately 9-12 hours before flood waters reach Jamestown and RioVista and 10-13 hours before flood waters would reach Green River.

4. For more specific information on Fontenelle Dam – see the Bureau of Reclamation's Emergency Operations Plan on file in the County Emergency Management office.

B. Big Sandy Reservoir

1. Located 10 miles north of Farson and 50 miles north of Green River.

2. Dam failure discharge could produce significant flooding (property damage and hazard to human life) at both Farson and Green River. Maximum Probable Flood Discharge would not produce a flood hazard at Farson or Green River. In the event of a dam breach at Big Sandy, there would be approximately 2-4 hours before flood waters reach Farson and 15-20 hours before flood waters reach Green River.

3. The most severe natural storm and flood that might be expected on the contributory drainage above the dam is called Probable Maximum Flood (PMF).

4. For more specific information on Big Sandy Reservoir – see the Bureau of Reclamation's Emergency Operations Plan on file in the County Emergency Management office.

C. Little Sandy Reservoir

1. Located north of Farson off 191 North about mile marker 47 about nine miles in.

2. Reservoir failure could result in flooding of area ranches and possible flooding in the Farson, Jamestown, and Green River areas. There would be approximately 2.5 hours to

4 hours for flood waters to reach Farson. 17 hours and 15 minutes to reach Jamestown and 18 hours to reach Green River.

3. For more specific information on Little Sandy Reservoir – see the Bureau of Reclamation's Emergency Operations Plan on file in the County Emergency Management office.

D. Pacific Power & Light Viva Naughton Dam (Hams Fork)

1. Located about 14 miles from Kemmerer on the Hams Fork Creek

2. In the event of a dam breach at Viva Naughton, there would be approximately 8 hours before flood waters would reach Granger

E. Meeks Cabin Dam

1. Located approximately 23 miles from Fort Bridger on the Blacks Fork River

2. In the event of a dam breach, there would be approximately 10-12 hours before flood waters reach Granger.

3. For more specific information on Meeks Cabin Dam contact the Bureau of Reclamation or Uinta County Emergency Management.

F. Stateline Dam

1. Located in the same general area as Meeks Cabin Dam. It is 21 miles from Mountain View on the East Fork of the Smith's River.

2. In the event of a dam breach, there would be approximately 10-12 hours before flood waters reach Granger.

3. For more specific information on Stateline Dam contact the Bureau of Reclamation or Uinta County Emergency Management.

G. Joint Powers Water Board Storage Reservoir

1. Located in the same general area as the water treatment facility in Green River

2. In the event of a dam breach, there would be approximately .5 hours before flood waters reached Green River.

3. For more specific information on Joint Powers Water Board Storage Reservoir contact the Joint Powers Water Board or Sweetwater County Emergency Management.

H. Hoop Lake Reservoir

1. Located 32 miles 14 miles from Lonetree on Henry's Fork.

2. In event of a dam breach, there would be approximately 1 hour before reaching the Lonetree area.

3. For more specific information on the Hoop Lake Reservoir contact The US Forest Service Supervisor at 857 West South Jordan Parkway, South Jordan, UT 84095.

I. Multiple on-site holding ponds and reservoirs

1. Located on private mine or company property and does not affect the general public. i.e., surge pond at Jim Bridger Power plant or Simplot evaporation ponds.

2. Also includes tailing ponds at the various Trona mines and facilities.

III. FLOOD OR FLASH FLOOD WARNINGS

Advisories, Watches and Warnings are issued by the National Weather Service.

A. Flood **ADVISORY**

1. An Urban and Small Streams Flood Advisory is issued when flooding of small streams, streets, and low-lying areas, such as railroad underpasses and urban storm drains, is imminent or occurring.

B. Flood **WATCH**

1. A Flood Watch is issued when conditions are possible for widespread general flooding over an area within the next 36 hours.

C. Flash Flood **WATCH**

1. Flash Flood Watch is issued when conditions are favorable for flash flooding. Flash Flood watch covers widespread urban and small stream, and headwater flood events. They are issued generally when there is the possibility of flash flooding or urban flooding over an area within the next 1 to 3 hours. This is usually based on observed heavy rainfall (measured or radar estimated), but may also be issued for significant dam breaks that have occurred or are imminent.

2. Individuals should remain alert and be prepared for the possibility of a flood emergency which will require immediate action.

D. Flood **WARNING**

1. Flood Warnings are advance notices issued that a flood is imminent or occurring at a specified location or drainage system**.** Flood Warnings are issued when the rain that has fallen is sufficient to cause rivers or streams to overflow their banks, or when melting snow produces similar effects.

E. Flash Flood **WARNING**

1. Flash Flood Warnings are notices issued that flash flooding is imminent or occurring in a specified area within 1 to 3 hours.. Situations resulting in a Flash Flood include but are not limited to locally heavy rainfall, a dam or levee failure, or water released from an Ice Jam rapidly flooding nearby land.

2. Flash Flood Warnings is issued when inundation of a normally dry area near a stream or other watercourse is expected, OR unusually severe ponding of water is expected. Flooding of rivers or streams doesn't always require rain to be overhead in the area but can come from heavy rain upstream.

3. Individuals should move themselves and any livestock that can be rapidly moved to safe ground immediately.

IV. DRAINAGES **PLEASE SEE ATTACHED MAPS

A. Drainages for Rock Springs

1. Bitter Creek
2. Dead Horse Canyon Creek
3. Killpecker Creek
4. Sweetwater Creek
5. Various Tributaries

B. Drainages for Green River

1. Green River
2. Green River above confluence with Bitter Creek

C. Other waterways that may create flood hazards

1. Blacksfork and Hamsfork in and around Granger
2. Henry's Fork in and around McKinnon and Washam
3. Horse Thief Canyon in and around Superior
4. Drainages in and around Wamsutter, Bairoil, Farson, and other areas where population and or property could be affected. Not all drainages have names.

V. FLOOD CONTROLS

A. Flood Control for Rock Springs

1. A joint flood control project between Sweetwater County and the City of Rock Springs begins north of Rock Springs along White Mountain and extends into the city limits through the Clearview Acres development and down to the Bitter Creek.
2. Rock Springs City has built surge ponds on Dead Horse Canyon and near Highway 430 to catch flash flooding.

B. Flood Control for Green River

1. Permanent dikes have been built along the Green River

2. The Fontenelle Dam helps regulate the flow of high water and delays in peak flows.

VI. ADDITIONAL INFORMATION

A. Significant Flood History

1. See All Hazards Wyoming Region 4 Mitigation Plan

B. Risk Areas

1. Risk areas have been identified above using US Department of Interior, Bureau of Reclamation Risk Maps, National Flood Insurance Program Flood Insurance Rate Maps, Sweetwater County, Rock Springs and Green River Zoning and Land Use Maps.

VII. NOTIFICATION TO THE PUBLIC

Utilizing all of the appropriate notification devices available and with instructions from the Incident Commander, the Public Information Officer should begin announcing appropriate information.

A. Sample announcements can be found in the Emergency Scripts notebooks in the Joint Communication Center and the Sweetwater County Emergency Management office.

B. With instructions from the Incident Commander, the Public Information Officer should keep the public apprised of the status of the flooding along with information on where to seek help throughout the event.

C. Venues for notifications should include the Sweetwater Combined Communications Center via CodeRED and the various social media pages of the entities in Sweetwater County to include but not limited to local internet news providers and social media such as Facebook, Twitter, and others.