

HAZARD IDENTIFICATION AND VULNERABILITY ANALYSIS (HIVA)

Walla Walla County, Washington

MILL CREEK DAM FAILURE

Hazard Overview

This project is managed by the U.S. Army Corps of Engineers. This dam is located in a drainage off Mill Creek west of the City of Walla Walla. A diversion on Mill Creek sends water to be impounded behind the dam for flood control and recreation purposes. The dam is an earth-filled structure with a heavy gravel face. The dam is 800 feet wide at the base and 125 feet high; and 20 feet wide at the top and 3,200 feet long at the crest. A concrete cutoff wall, 2260 feet long, extends two feet into bedrock.

The dam forms Bennington Lake. This off-stream reservoir contains the diverted floodwaters of Mill Creek. The reservoir has a maximum storage capacity of 8,300 acre-feet at elevation 1265, with a five-foot freeboard.

Construction of the dam and its associated works was completed in 1942. An auxiliary outlet channel from the dam to Russell Creek, and the construction of additional drainage facilities at the toe of the dam, were completed in 1944. The sealing of the lake bottom, additional work on the drainage system in the foundation, and the installation of an upstream outlet gate were completed in 1950.

History and Probability of Occurrence

U.S. Army Corps of Engineers takes extensive care in the design, construction and operation of dams. As a result, the Corps record for dam safety is excellent. Nevertheless, dam failures in the past twenty years have focused needed attention on dam safety and response planning. The U.S. Army Corps of Engineers dam projects receive safety inspections on a three-year cycle.

The Corps has prepared an Emergency Response Plan for the Mill Creek Projects.

Since 1918, 14 major dam failures have been recorded in Washington State. Four have occurred since 1986. However, none of these were U.S. Army Corps of Engineers dams.



Walla County HIVA – MILL CREEK DAM FAILURE

There is little likelihood that a failure of Mill Creek Dam will occur in the next 25 years. A probability of occurrence of LOW is assigned.

Vulnerability

A failure of the dam at maximum capacity would send flood water traveling southwest flooding the low lying areas adjacent to the outlet canal southwest of the dam, along Caldwell Creek, Russell Creek, Yellowhawk Creek and along the Walla Walla River to its confluence with the Columbia River near Wallula. The extent of the flooding along these waterways would depend on the size of the breach, the amount of water in Bennington Lake and the terrain along the waterways. The U.S. Army Corps of Engineers has prepared an Emergency Response Plan for the Mill Creek Project.

This floodwater would destroy or damage numerous homes and businesses located in the flooded area. Without warning to evacuate, loss of life is possible. Infrastructure would be damaged or destroyed. Roads, bridges, and other infrastructure may be damaged or destroyed. In April 2001, approximately 557 structures were in the inundation area.

A limited area or segment of population, property, commerce, infrastructure and services of Walla Walla County would be exposed to the effects of this hazard. In a worse case scenario there could be a disaster of minor to moderate proportions. A LOW vulnerability rating is assigned.

Risk Rating

A LOW risk rating is assigned because of LOW vulnerability and LOW probability. There is little potential for a mill creek dam failure disaster during the next 25 years. The threat is such as to warrant little special effort to prepare for, respond to, recover from, or mitigate against this hazard. This hazard need not be specifically addressed in the county's emergency management training and exercise program except as generally dealt with during hazard awareness training.