



Mill Creek Storage Dam Dam Safety Update

U.S. ARMY CORPS OF ENGINEERS

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Mill Creek Project's Two Dams Divert and Store Flood Water

The Mill Creek Flood Control Project contains two dams—1) a “Diversion Dam” to divert water from the Mill Creek mainstem to a storage reservoir, and 2) a 3,050-foot long, 120-foot high “Storage Dam” to safely hold water in the Bennington Lake storage reservoir. Diverting flood water helps reduce potential flood damage to the city of Walla Walla and adjacent downstream areas bordering Mill Creek, Yellowhawk Creek and Garrison Creek.

Public Safety is Our Highest Priority

The U.S. Army Corps of Engineers’ highest priority is public safety. Since 2007, the Corps has used a risk-informed process to prioritize addressing dam safety deficiencies on a nationwide basis. All Corps dams nationwide have been given a “Dam Safety Action Classification” (DSAC) rating on a scale of I to V (one to five) with a DSAC-I being “urgent and compelling” or least safe. The DSAC rating assists the U.S. Congress and the Corps in prioritizing funding for dam safety infrastructure improvements.



Mathematically, the ratings are based on a calculation of the 1) likelihood of failure times the 2) consequences of failure. All DSAC classifications or ratings have been assigned since 2007, and are assigned by a Corps headquarters “Senior Oversight Group,” which also periodically reviews updated information about dam safety improvements.

When DSAC ratings were initially assigned to each Corps dam, the Walla Walla District developed, prepared, and began implementing what are known as “interim risk reduction measures” (IRRM) at each of the District’s dams and appurtenant (dam-related) levees to reduce risk of damage to property and prevent loss of life. Interim risk reduction measures are short-term efforts to reduce dam safety risks while long-term solutions are pursued.

Mill Creek Storage Dam Safety Action Classification Improved Since 2008

The Mill Creek Storage Dam holding Bennington Lake was initially rated as DSAC-I or “urgent and compelling” in May 2008 based on a brief one-day, records-only review. The rating was primarily due to potential dam seepage and piping issues within the foundation of the dam when Bennington Lake is more than 17 percent full for an extended period of time.

Subsequently, in October 2009, the Storage Dam was upgraded to DSAC-II or “unsafe or potentially unsafe” by the Corps headquarters Senior Oversight Group after additional data gathering and a preliminary Issues Evaluation Studies (IES) report showed the risk for dam failure under normal operations was not as high as originally estimated. An Issues Evaluation Studies report evaluates the potential modes of failure to quantify overall public risk.

In May 2011, Mill Creek Storage Dam received a more favorable or safer DSAC-III or “conditionally unsafe” rating from the Senior Oversight Group based on a completed Issues Evaluation Studies report. To assess risk to the public, the final IES report considered the likelihood of significant potential failure modes and potential consequences of failure to life and property downstream. A Risk Analysis (RA) and Potential Failure Modes Analysis (PFMA) identified both 1) low likelihood of dam failure and 2) low estimated loss of human life due to dam failure. Another factor supporting an improved rating was the District’s efforts to implement interim risk reduction measures.

Completed Interim Risk Reduction Measures (as of July-2011)

- Temporarily modified operating procedures.
 - Modified diversion operations to reduce the frequency of reservoir levels above 1214 feet elevation (above top of concrete cutoff wall inside the dam).
 - Modified outlet conduit operations to leave 54-inch sluice gate in open position for all operations.
 - Improved operations of Intake Canal Headworks: installed electric motors on gates; increased gate height. Storage Dam procedures may become permanent upon completion of the Mill Creek Diversion Dam Issues Evaluation Study, contingent upon having no unintended consequences or conflicts with the operation of the Diversion Dam and the system as a whole.
- Increased monitoring and surveillance for pools above 1214 feet elevation (above top of concrete cutoff wall inside the dam).
- Performed a potential failure modes analysis (PFMA).
- Completed a hydrologic re-evaluation of a site-specific Standard Project Flood (SPF).
- Stockpiled emergency materials including coordinating with Walla Walla County on pre-positioning emergency supplies and contracts.
- Revised/Updated Emergency Action Plan.
- Conducted three emergency exercises on basis of DSAC I rating.
- Obtained portable floodlights and generator to assist with emergency operations at night.
- Completed inundation maps revision.
- Improved Upstream Gauge System.

Ongoing/Remaining Interim Risk Reduction Measures (as of July-2011)

- Continue to update and test the Dam Safety Emergency Action Plan as needed.
- Working with Walla Walla County to develop a flood response plan including support for a county emergency alert system. A joint agency flood exercise was held in March 2011.
- Conducting comprehensive dam seepage and stability analysis.
- Evaluate increased channel capacity.
- Verifying dam and project elevations. Survey is complete; evaluation to be completed.

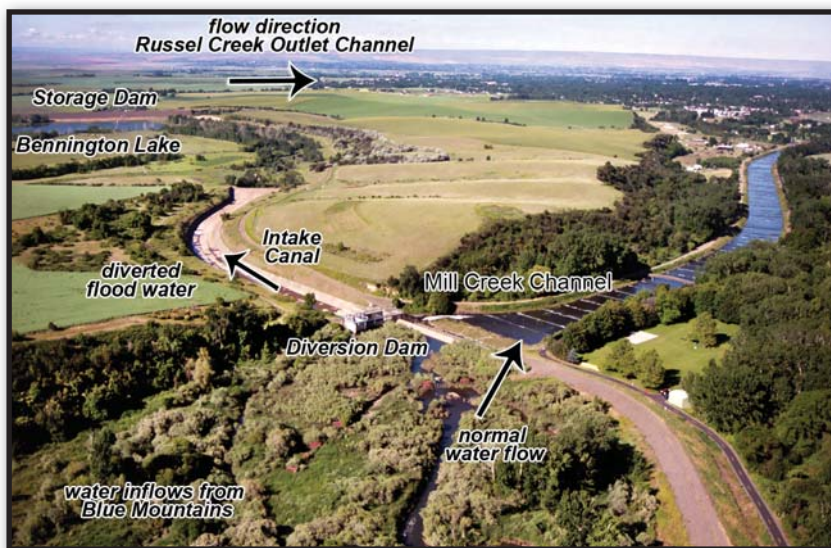
The interim measure to install a seepage filter and pressure test the outlet conduit is on hold as of mid-2011 because it may not be required pending the outcome of Dam Safety Modifications Study (after Diversion Dam IES). Also on hold pending the same study are the evaluation of intake tower stability and evaluation of additional options for releasing floodwater from Bennington Lake.

The Corps will continue to diligently pursue public risk reduction. The Walla Walla District will continue to keep the public informed of Mill Creek Storage Dam safety issues and progress.

Mill Creek System includes separately rated Mill Creek Diversion Dam

The separately rated Mill Creek Diversion Dam has carried a DSAC-II rating since its initial classification in January 2009, and it is undergoing further review. The Diversion Dam Issues Evaluation Studies report is scheduled to begin in fiscal year 2012 and planned to be complete by fiscal year 2014.

Following completion of the IES for the Diversion Dam, the Mill Creek System—including both the Storage Dam and the Diversion Dam—is expected to be advanced into a Dam Safety Modification Report phase to address uncertain performance of the system at high pools.



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