DAM SAFETY UPDATE
MILL CREEK PROJECT

U.S. ARMY CORPS OF ENGINEERS **BUILDING STRONG®**

What residents near dams should know

Living with flood risk-reduction infrastructure such as dams and levees comes with risk. Know your risk. Dams do not eliminate all flood risk, so it is important that residents downstream from the dam are aware of the potential consequences should the dam breach, not perform as intended, or experience major spillway or outlet works flows.

Living with dams is a shared responsibility of residents, local emergency management, and the Corps (USACE). Know your role. Listen to and follow instructions from local emergency management officials. Contact your local officials to learn about flood risk management decisions in your area. Consider purchasing flood insurance.

For additional information, see:
http://www.damsafety.org/media/Documents/DownloadableDocuments/LivingWithDams_ASDSO2012.pdf.
http://www.usace.army.mil/Missions/CivilWorks/DamSafetyProgram.aspx.
http://www.nww.usace.army.mil/Missions/DamSafety.aspx.

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

The Mill Creek Flood Control Project is located approximately 2.5 miles east of Walla Walla, Washington, at stream mile 11 on Mill Creek, a tributary of the Walla Walla River. The Mill Creek Flood Control Project provides flood risk reduction, recreation, and fish and wildlife conservation.

The Mill Creek Flood Control Project contains two dams: 1) a "Diversion Dam" to divert water from the Mill Creek mainstem to an off-stream storage reservoir (Bennington Lake), and 2) a "Storage Dam" to safely hold water in Bennington Lake. The Mill Creek Flood Control Project achieves flood risk reduction for the city of Walla Walla and adjacent downstream areas by using the Diversion Dam to divert Mill Creek flow into Bennington Lake where it is stored during flood events.

The main components of the Mill Creek Diversion Dam are a diversion dike, a concrete spillway and headworks for diversion of flows to the Storage Dam. The diversion dike is a rolled earthfill embankment, 2,200 feet long with a maximum height of 23 feet. The concrete spillway is a hollow, or Ambursen type, structure that is 250 feet long, and 14 feet high. The intake head works leading from the Diversion Dam to Bennington Lake consists of four radial gates and a 1,800-foot long concrete lined canal leading from the headworks to the storage reservoir.

The Mill Creek Storage Dam consists of an earth fill embankment that is 3,200 feet long with a maximum height of 145 feet. The outlet works consist of a concrete intake tower built in the upstream toe of the Storage Dam and a 42-inch conduit that extends through the embankment. Discharge from the 42-inch outlet conduit is controlled by a butterfly valve system at the downstream toe of the dam that routes flow to either the Russell Creek Canal or the Mill Creek Return Canal.

Risks Associated with Dams in General

Dams reduce but do not eliminate the risk of economic and environmental damages and loss of life from flood events. When a flood exceeds a reservoir's storage capacity, large amounts of water may have to be released that could cause damaging flooding downstream. A fully-functioning dam could be overtopped when a rare, large flood occurs, or a dam could breach because of a deficiency, both of which pose risk of property damage and loss of life. This means there will always be flood risk that has to be managed. To manage these risks, USACE has a routine program that inspects and monitors its dams regularly. USACE implements short- and long-term actions on a prioritized basis when unacceptable risks are found at any of its dams.

Risk Associated with the Mill Creek Project

Based upon the most recent risk assessment of the Mill Creek Project in 2016, USACE considers both the Diversion and Storage Dams to be “Low Risk” dams among its more than 700 dams. The risks are primarily driven by overtopping and erosion of the diversion dike during an extreme flood event and internal erosion of the Storage Dam embankment and foundation due to sustained high pool events. The potential for loss of life is highest within the city of Walla Walla with the loss of life concerns decreasing substantially beyond 48 miles downstream of the Project. Advance warning of problems and events plays a major role in protecting life and property.

The recent change to Low Risk eliminates the need for an Interim Risk-Reduction Measures Plan (IRRMP). Low Risk dams are not required to have an IRRMP, but the Walla Walla District may determine some risk reduction measures are still appropriate. In the past, the District reduced risk by revising the dam safety emergency action plan, conducting emergency exercises with Walla Walla county emergency management, and stockpiling emergency supplies and equipment.