DAM SAFETY UPDATE
LOWER MONUMENTAL LOCK AND DAM

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

What residents near dams should know

Living with dams and along rivers comes with risk. Know your risk. One of USACE's primary missions is to ensure that the inland navigation traffic can move safely, reliably, and efficiently and with minimal impact on the environment.

Living with locks and dams is a shared responsibility of residents, local emergency management, and the Corps. Know your role. Listen to and follow instructions from local emergency management officials. The Corps doesn't normally issue evacuation instructions. 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.

Project Description

Lower Monumental Lock and Dam is a run-of-river dam that maintains a navigable pool for river traffic but does not store flood waters. It is located six miles south of Kahlotus, Wash., on the Snake River 41.6 miles above its confluence with the Columbia River and at the upper end of Lake Sacajawea (Ice Harbor Reservoir). It provides navigation, hydroelectric power generation, recreation, and incidental irrigation. Lower Monumental consists of a spillway, powerhouse, navigation lock, two earth fill embankments, and fish passage facilities. Construction began in June 1961 and was completed in 1976. The powerhouse generates 810 megawatts of electricity.

The dam is 3,791 feet long with a normal operating hydraulic height of 100 feet. Lake Herbert G. West, with a drainage area of 108,500 square miles, extends from Lower Monumental Dam up the Snake River 28.7 miles to Little Goose Lock and Dam. The lake has a surface area of 6,590 acres.

Public Safety is the Corps' Highest Priority

The U.S. Army Corps of Engineers' highest priority is public safety. While we cannot completely eliminate risk, we can reduce risk. The objective of the Corps' Dam Safety Program is to maintain public safety, make Corps dams safer and minimize risks. Since 2007, the Corps has used a risk-informed process to prioritize addressing dam safety deficiencies on a nationwide basis. Walla Walla District dams and appurtenant (dam-related) levees were screened and assessed for dam safety issues and deficiencies and their potential risk to the public. This led to a better understanding of specific conditions at dams, which has led to safety improvements. After dams and dam-related levees were assessed, the Corps categorized dams into five Dam Safety Action Classifications (DSAC) based on individual dam safety risk:

- DSAC 1: Very High Urgency
- DSAC 2: High Urgency
- DSAC 3: Moderate Urgency
- DSAC 4: Low Urgency
- DSAC 5: Normal

The dam safety classifications assist the U.S. Congress and the Corps in prioritizing funding for dam safety infrastructure improvements.

Lower Monumental Lock and Dam Status

Lower Monumental Lock and Dam was screened and classified as DSAC 3 “Moderate Urgency” in September 2009, primarily due to potential embankment overtopping or erosion and navigation lock wall overtopping during maximum flood conditions.

The Lower Monumental DSAC 3 means for confirmed and unconfirmed dam safety issues, the combination of life, economic or environmental consequences with likelihood of failure is moderate. The Corps considers this level of life-risk to be unacceptable except in unusual circumstances. Currently there is no evidence to suggest an emergency situation exists or is about to occur.

Risks Associated with Dams in General

Every day, thousands of vessels move people, animals, and products across the country via the nation's inland rivers and harbors. This water traffic is a vital component of the nation's economy. However, the navigation infrastructure is aging. Over half of the locks and dams are over 50 years old, and the consequences of this aging infrastructure are increasing incidents of downtime, with disruption to river navigation, and a higher risk of major component failures. Both of which have significant economic risks. To manage these risks, the Corps routinely inspects and monitors its locks and dams. The Corps implements short- and long-term actions such as interim risk reduction measures (IRRM), on a prioritized basis, when unacceptable risks are found at any of its dams. Lower Monumental Lock and Dam IRRM include:

Completed/Resolved Interim Risk Reduction Measures (as of February 2015)

- Perform spillway tainter gate fit-for-service evaluation: Evaluation completed June 2012. Updates will be required as future inspections and data collection warrant.
- Update the probable maximum flood: Update completed and approved August 2013.
- Complete a spillway hydraulic study: Cancelled; no significant risk reduction benefit.
- Conduct a spillway (service) bridge study: Cancelled; no significant risk reduction benefit.

Ongoing/Remaining Interim Risk Reduction Measures (as of February 2015)

- Develop a navigation lock operation plan for maximum flood event.
- Develop navigation lock equipment flood damage mitigation plan.
- Stockpile emergency material such as sand and gravel.
- Conduct an upstream lock gate reliability analysis.
- Perform potential failure mode analysis: tentatively planned for FY2016.
- Develop a dam surveillance plan for high water events.
- Update emergency action plan inundation maps and generate water surface profile.
- Conduct emergency exercises.
- Update the dam safety emergency action plan.

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