



# 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 the Corp's (USACE) primary missions is to ensure that 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 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.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, upstream of Ice Harbor Lock and Dam. Lake Herbert G. West, with a drainage area of 108,500 square miles, extends upstream from Lower Monumental Dam on the Snake River 28.7 miles to Little Goose Lock and Dam. Lower Monumental 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 of Lower Monumental began in June 1961 and the project was placed in operation in May 1969. The dam is 3,791 feet long with a normal operating hydraulic height of 100 feet. The powerhouse has 810 megawatts of electrical generation capacity.

### 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, USACE has a routine program that inspects and monitors its locks and dams regularly. USACE 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. The status of Lower Monumental Lock and Dam IRRM is provided below.

### Risk Associated with Lower Monumental Lock and Dam

Based upon the most recent risk assessment of Lower Monumental Lock and Dam in 2009, USACE considers this dam to be a moderate to high risk dam, among its more than 700 dams. The risks are primarily driven by potential embankment overtopping or erosion and navigation lock wall overtopping during maximum flood conditions. If one of these rare events occurs, loss of life risk would be low, but the economic consequences would be moderate to high.

## Status of Interim Risk Reduction Measures

### Completed/Resolved Interim Risk Reduction Measures (as of January 2016)

- 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 life safety risk reduction benefit.
- Conduct a spillway (service) bridge study: Cancelled; no life safety risk reduction benefit.
- Develop navigation lock equipment flood damage mitigation plan: Cancelled, no life safety risk reduction benefit.

### Ongoing/Remaining Interim Risk Reduction Measures (as of January 2016)

- Develop a navigation lock operation plan for maximum flood event.
- Stockpile emergency material such as sand and gravel.
- Conduct an upstream lock gate reliability analysis.
- Perform potential failure mode analysis: 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: planned for FY2016.