



DAM SAFETY UPDATE

LITTLE GOOSE 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 Corps' (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.usace.army.mil/Missions/CivilWorks/DamSafetyProgram.aspx>.

<http://www.nww.usace.army.mil/Missions/DamSafety.aspx>.



Project Description

Little Goose 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 on the Snake River 70.3 miles above its confluence with the Columbia River. The dam is at the upper end of Lake Herbert G. West (Lake West), upstream of Lower Monumental Lock and Dam. Lake Bryan, with a drainage area of 103,900 square miles, extends upstream of Little Goose 37.2 miles to Lower Granite Lock and Dam. Little Goose provides navigation, hydroelectric power generation, recreation, and incidental irrigation.

Little Goose consists of a spillway, powerhouse, navigation lock, earth fill embankment, and fish passage facilities. Construction of Little Goose began in June 1963 and the project was placed in operation in May 1970. The dam is 2,655 feet long with a normal operating hydraulic height of 98 feet. The powerhouse has 810 megawatts of electrical generation capacity. The Corps manages or holds easements to 5,398 acres surrounding Lake Bryan utilized for public recreation, wildlife habitat, wildlife mitigation, and water-connected industrial development. Approximately 150 acres are licensed to Washington state or the local port for recreation.

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 Little Goose Lock and Dam IRRM is provided below.

Risk Associated with Little Goose Lock and Dam

Based upon the most recent risk assessment of Little Goose Lock and Dam in 2013, USACE considers this dam to be a moderate to high risk dam, among its more than 700 dams. The risks are primarily driven by powerhouse and navigation lock failure modes, such as a navigation lock gate failure or structural failure of a powerhouse component. 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 a tainter gate fit-for-service evaluation: Evaluation completed June 2012. Updates will be required as future inspections and data collection warrant.
- Perform potential failure mode analysis: Completed May 2013.
- Update the probable maximum flood: Update completed and approved August 2013.
- Complete spillway hydraulic study: Cancelled, no life safety risk reduction benefit.
- Develop a navigation lock equipment flood damage mitigation plan: Cancelled, no life safety risk reduction benefit.
- Dam safety emergency action plan revised in March 2015.

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

- Develop a navigation gate and floating bulkhead placement and operation plan.
- Update emergency action plan inundation maps and generate water surface profile.
- Stockpile emergency material such as sand and gravel.
- Recoat the tainter gate trunnion anchor caps with epoxy coating.
- Develop dam surveillance plan to address high water and emergency-related events.
- Conduct emergency exercises.