



# Little Goose Lock & Dam Interim Risk Reduction Measures

U.S. ARMY CORPS OF ENGINEERS

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## Project Description

Little Goose Lock and Dam 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 10,025 acres surface area, extends behind Little Goose 37.2 miles to Lower Granite Lock and Dam. Little Goose provides navigation, hydroelectric generation, recreation, and incidental irrigation.



Little Goose is a large multipurpose project and includes the dam, powerhouse, navigation lock, and fish passage facilities. It provides navigation, hydroelectric generation, recreation, and incidental irrigation. Construction of the Little Goose dam began in June 1963 and the project was placed in operation in May 1970. The dam is 2,655 feet long and 98 feet tall. The powerhouse generates 810 megawatts of electricity. 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.

## Dam Safety Program & Public Safety

The U.S. Army Corps of Engineers owns and operates 635 dams nationwide. These dams serve a variety of purposes including navigation, flood risk management, water supply, irrigation, hydropower, recreation, and environmental enhancement. As part of the responsibility for managing these dams, the Corps has a comprehensive Dam Safety Program with public safety as its primary objective.

In 2005, the Corps initiated the Dam Safety Action Classification (DSAC) System as part of its overall dam safety program to optimize public safety. The DSAC system is a method of screening Corps dams to identify dam safety issues and deficiencies and establish a relative ranking of their potential risk to the public. The Corps then uses this rating system to establish a nationwide prioritization to focus funding first on dams and navigation locks that pose the greatest risks to the public.

## Dam Safety Screening & Interim Risk Reduction Measures

The Corps is screening all its dams and assigning safety classification ratings based on two key factors: 1) an assessment of the probability (high, medium, low) of dam failure (based on confirmed or unconfirmed dam safety issues), and 2) the consequences if failure were to occur.

In May 2007, the Corps released Engineering Circular (EC) 1110-2-6064, *Interim Risk Reduction Measures (IRRM) for Dam Safety*. The circular includes a Dam Safety Action Classification Table to rate critical aspects of the dam based on known or suspected dam safety issues and engineering judgment. Using the DSAC rating system, each dam is classified from I to V, with DSAC-V being the “most safe” and DSAC-I posing the “most urgent” risk. The rating system also describes a policy for developing and implementing Interim Risk Reduction Measures (IRRM) to reduce the probability or consequences of unacceptable performance. These risk reduction measures may be either structural or non-structural. These interim measures are designed to minimize short-term risk to public safety while pursuing long-term, permanent solutions or further investigation reveals a potential failure mode is not probable.

## Little Goose Lock and Dam Status

Little Goose Lock and Dam was classified as a DSAC-III “High Priority (Conditionally Unsafe)” primarily due to potential overtopping at the navigation lock wall, right side at the railroad cut, and the dam under maximum flood conditions. Implementation of interim measures will reduce the probability and consequences of dam failure until long term remediation is complete. Although the probability of dam failure is low, the consequences of failure are potentially high. Currently there is no evidence to suggest an emergency situation exists or is about to occur. However, the Corps identified conditions that don’t meet industry dam safety standards, and the risk to public safety is unacceptable. Therefore, we are taking priority actions to address potential dam failure.

## Response to the DSAC Rating

In response to Little Goose’s DSAC-III rating, the Walla Walla District assessed the lock and dam’s safety and developed an Interim Risk Reduction Measures Plan to address high priority risks identified in that assessment.

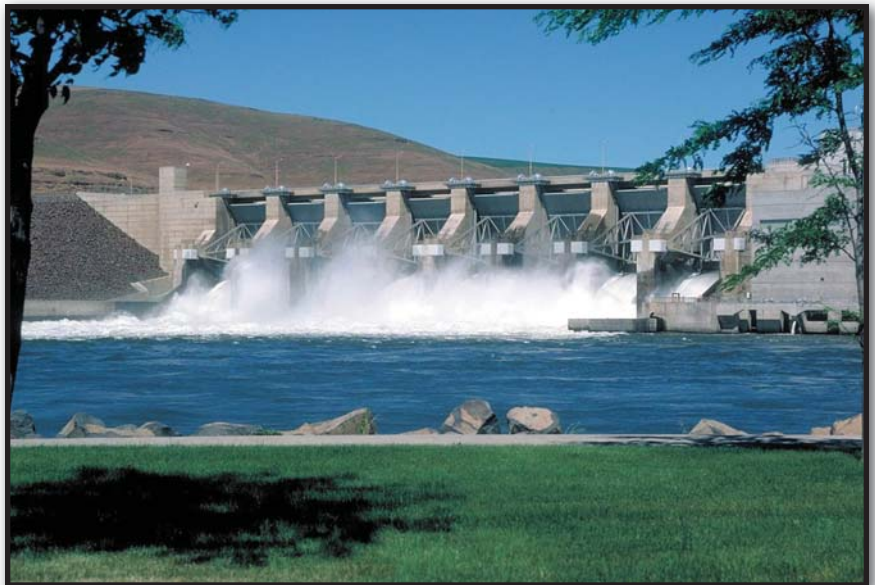
Interim measures include immediate, short-term and ongoing initiatives to minimize public risk. They are designed to better evaluate and reduce the probability of dam failure as well as reduce consequences of a failure. Prevention of loss of life is the first and foremost objective, followed by prevention of economic and environmental losses.

## What the Corps is Doing Now

To optimize public safety, we are taking the following steps to reduce the potential of dam failure, loss of life, and economic and environmental impacts:

1. Update the emergency action plan.
2. Develop a navigation gate and floating bulkhead placement and operation plan.
3. Create inundation maps in electronic format.
4. Develop stockpile placement procedure – right side.
5. Complete spillway hydrology / hydraulic study.
6. Develop a navigation lock equipment flood damage mitigation plan.
7. Perform a stilling basin hydrographic inspection.
8. Recoat the tainter gate trunnion anchor caps with epoxy coating.
9. Perform a tainter gate fit-for-service evaluation.
10. Update the dam surveillance plan to address high water and emergency-related event monitoring.
11. Conduct emergency exercises.
12. Perform potential failure mode analysis.

These and other short-term actions allow us to operate the dam, meet our public safety objectives, and continue to review the lock and dam and pursue long-term repairs as appropriate.



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