



FACT SHEET - Howard Hanson Dam Pool Restriction

U.S. ARMY CORPS OF ENGINEERS

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Situation:

Following a record high level of water behind Howard Hanson Dam in January 2009, the U.S. Army Corps of Engineers became concerned after discovery of two depressions on the right abutment, increased water levels in groundwater monitoring wells, and the appearance of sediment-laden water entering the abutment drainage tunnel. While the dam itself is not in immediate danger of failing, there is increased risk to downstream communities until seepage issues with the right abutment have been addressed. The Corps is in the process of evaluating the condition of the earthen right abutment of the Corps' Howard Hanson Dam, which provides flood risk reduction and water storage on the Green River. Until that assessment and a solution can be completed, the Corps of Engineers determined it would be prudent to place restrictions on the pool level for flood storage. Preparations for the upcoming flood season include constructing an interim seepage barrier wall and improving the drainage of the right abutment to direct seepage into the drainage tunnel. This work is scheduled to be substantially complete by Nov. 1. The Corps has installed additional monitoring equipment and continues tests to determine with more certainty to what elevation the pool can be raised without significant adverse impacts to the abutment. Potential impact of the restrictions on the flood storage capacity is increased flood risk to the Green River valley below the dam. Should a major flood event occur with the current temporary restrictions on the pool level, it is possible that levees in the lower valley could be overtopped. The Corps will continuously reassess the pool restriction as conditions change and may raise or change the restriction on pool elevation after careful deliberation.

Key Points:

- Public safety is the Army Corps' number one priority.
- At this time, Howard Hanson Dam presents no immediate danger due to failure to people and property below the dam.
- The Corps of Engineers is constructing an interim seepage barrier to reduce seepage and improving the drainage of the right abutment by directing seepage into the drainage tunnel. This work is expected to be substantially complete by Nov. 1 and is designed to increase confidence in being able to store water behind the dam in a flood event and thus reduce the current high level of risk of flooding downstream.
- Engineers continue inspecting, testing and evaluating the dam to determine if large flood pools can be stored without significant adverse impacts to the abutment.
- The Corps is working with local communities to prepare for the increased flood risk to downstream areas using the best available information.
- Engineers will re-evaluate the restrictions on pool elevation as more data are collected and the situation is more fully understood.
- The Corps of Engineers will continuously reassess the pool restrictions as conditions change and may change the restrictions on pool elevation after careful deliberation.
- The Corps has informed King County and the downstream cities of this situation, and will notify these entities as soon as possible should higher than standard flows be required this flood season. Should higher than standard flows become necessary, the Corps and local communities have in place a levee monitoring plan to have experts on the ground walking levees and providing immediate information to local and federal officials about any impacts or potential impacts to levee protection.

Background:

Howard Hanson Dam is located on the upper reach of the Green-Duwamish River in King County, 63.76 river miles above the mouth. It is in the city of Tacoma's municipal watershed 35 road miles east of Tacoma, 6 miles upstream from Palmer, and 24 miles from Mud Mountain Dam. This project is protected from public access.

The Howard A. Hanson project serves multiple purposes by providing both flood risk reduction and water storage for river flow regulation and municipal water supply. The project also provides summer low flow augmentation for fish spawning. Flood risk reduction in the Green-Duwamish River Basin is accomplished by capturing excessive water runoff from the upper drainage area of the river and releasing the water under controlled conditions. After the end of the annual winter flood season, water is gradually stored in the reservoir beginning about 1 March. The stored water is used for municipal water supply and to augment the river flow for the benefit of fish.

Flood damage prevented by Howard Hanson Dam from the January 2009 flood is estimated at about \$4 billion.

The dam is an earth and rockfill structure with inclined impervious core and filters. Outlet works on the left bank consist of an approach channel, an intake structure providing upstream control, a 19-foot diameter horseshoe concrete-lined tunnel, a stilling basin, and an auxiliary 48-inch diameter bypass pipe. A gated spillway on the left abutment with two 45 by 30-foot tainter gates permits reservoir storage to elevation 1,206 without utilizing the spillway for discharge. The paved spillway chute is 656 feet long.

Preparedness Information for King County residents:

http://www.kingcounty.gov/safety/prepare/FloodPlan_GRiverBasin.aspx

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