



# DAM SAFETY UPDATE

## McNARY LEVEE SYSTEM

U.S. ARMY CORPS OF ENGINEERS

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### What residents near dam-related levees should know

Living with flood risk-reduction infrastructure such as dams and levees comes with risk. Know your risk. Levees do not eliminate all flood risk, so it is important that residents behind levees are aware of the potential consequences should the levee breach, or not perform as intended. Living with dam-related levees is a shared responsibility of residents, local emergency management and the Corps (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

The McNary Levee System, also known as the “Tri-Cities Levees,” is an appurtenant or dam-related structure to McNary Lock and Dam, and consists of three groups of levee segments along the banks of the Columbia River that provide flood risk reduction for portions of Kennewick, Pasco, and Richland, Washington. The levee group names are based on location and are identified as the Kennewick Levees, Pasco Levees, and Richland Levees. Lake Wallula behind McNary Lock and Dam is about 63 miles long and includes 242 miles of shoreline and a drainage area of 214,000 square miles. The McNary Levee System consists of about 16.8 miles of earthen levees and 11 operational pump plants that remove agricultural runoff, groundwater migration, and rainfall runoff. Construction of the McNary Levee System began in 1950 and was completed in 1954.

### Risks associated with all levees

Levees reduce but do not eliminate the risk of economic and environmental damages and loss of life from flood events. When a flood exceeds the levee’s level of protection, large amounts of water may inundate the areas landward of the levees. A fully-functioning levee could be overtopped when a rare, large flood occurs, or a levee could breach because of a deficiency, both of which pose risk of property damage and life loss. This means there will always be flood risk that has to be managed. To manage these risks USACE has a routine program that inspects and monitors its dams and levees 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 and levees. The status of McNary Levee System IRRM is provided below.

### Risk Associated with McNary Levee System

Based upon the most recent risk assessment of the McNary Levee System in 2009, USACE considers these levees to be high risk dam-related levees because of the risk associated with internal erosion of embankment materials into and along conduits, and water overtopping the embankments during infrequent flood events. Currently there is no evidence to suggest an emergency situation exists or is about to occur.

### Status of Interim Risk Reduction Measures

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

- Inspect and maintain levee system culverts: Completed for the Pasco Levee System.
- Create inundation maps: Completed. Maps are incorporated into updated emergency action plan.

- Update emergency action plan: Revision finalized March 2014 and distributed to local emergency management officials.

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

- Develop surveillance plan for high water events.
- Inspect and maintain levee system culverts for Kennewick and Richland Levee Systems.
- Complete vegetation maintenance (Richland Levee System only).

### **Ongoing Risk Management**

An Issue Evaluation Study (IES) began in late FY2015 and is planned to be completed late FY2016/early FY2017. The purpose of an Issue Evaluation Study is to focus on significant potential failure modes when evaluating risk, and guide the selection of and gauge the effectiveness of interim risk reduction measures, and justify the need to pursue or not pursue a Dam Safety Modification Study.