

**Standard Operating Guideline**

**Canal Levee Failure**



District Name:

Date Prepared: Date Revised:

**OBJECTIVE:**

* Ensure effective system-wide preventive, predictive, and rapid response actions.
* Ensure periodic task accomplishment.
* Identify potential/actual system problems.
* Maintain canal/ditch water delivery.
* Protect adjacent property.

**RATIONALE/PURPOSE:**

* Ensure mission capability.
* Ensure system reliability.
* Develop predictive maintenance programs.
* Determine capital improvement budgeting.
* Develop loss trend analysis.
* Reduce property, liability, and injury/illness loss exposures.
* Reduce revenue loss and/or O&M costs.
* Ensure compliance with appropriate governmental regulations.

**METHODS/PROCEDURES:**

***(Note: Listed procedures are intended as guidelines only and may not be applicable for all districts or situations).***

**Before Incident**

* Develop an Emergency Management Plan (EMP) to address the following:
  + How to coordinate with emergency management authorities to respond to canal incidents or failures.
  + How to respond to an uncontrolled release of water from the canal.

**This model form/template must be customized to meet your Agency’s needs.**

* Develop and implement a call out system for personnel available to respond as needed.
* Keep equipment prepared and staged to respond quickly.
* Keep emergency equipment available as needed for response.

**During Incident**

Follow the Districts Emergency Management Plan.

Road washout/hazard:

* Notify proper agency or road hazard/closure.
* Close road if necessary, follow proper traffic control procedures.
* Document hazard control procedures on site of incident (including notes, photos, and traffic control inspections).
* Report to district, request equipment for bank repair.
* Notify affected operations nearby (farmers, homeowners, and businesses).
* Notify the JPIA of the incident as soon as possible.
* Collect data/photos as needed for the accident report.
* Determine the cause of the incident.
* Document what was done to stop or reduce water flow from canal breach, reduce damages.
* Document what warnings/notifications were done.
* Perform repairs following district standards for soil compaction and setback requirements.

**After Incident**

* Notify the JPIA of the incident and possible claims.
* Review incident at safety meeting for improvements.
* Modify procedures and make improvements to avoid similar incidents.
* Updated Emergency Management Plan.

**SAFETY CONSIDERATIONS:**

An effective maintenance program can help to prevent damage to property, the environment, injury to employees and the public, and will help to:

* Preclude system and equipment damage.
* Preclude property and environmental damage.
* Facilitate operations and maintenance personnel safety.

Identification of safe work practices among employees should include:

* Traffic control on job sites in the field.
* Fall protection on construction and excavation projects.
* Employee training and associated documentation.

**COST/BENEFIT:**

* Reduce water and associated revenue losses.
* Preventive maintenance and loss trend data would reduce facility, equipment, and system failures.
* Avoid costly liability, property, and injury/illness losses.
* Create a manageable capital improvement budget to effectively address canal failures.
* Reduce preventable expenditures.

**INSPECTION FORMS/CHECKLISTS/DOCUMENTATION:**

* Leak/Break/DamageChecklist
* Canal Inspection Items
* Canal Breach Report
* Canal Structure Inspection Form
* Canal and Levee Self-Audit Checklist

**REFERENCES:**

* [U.S. Bureau of Reclamation, Canal Operator Manual, January 2018](https://www.usbr.gov/assetmanagement/docs/Canal%20Operator%20Manual.pdf)
* [U.S. Army Corps of Engineers, Levee Owner’s Manual for Non-Federal Flood Control Works, March 2006, Section 2.6.](https://www.nae.usace.army.mil/Portals/74/docs/Emergency%20Operations/USACE_NonFed%20Levee%20Owner's%20Manual_Mar06.pdf)