



# Texas Dam Safety Program

- Trina Lancaster, PE, Team Leader

# Program Overview

- 26 staff
  - 15 Professional Engineers
  - 3 Engineers-in-Training
- What do we do?
  - Inspect dams (generally every 5 years)
  - Review Hydrologic and Hydraulic studies
  - Review Breach studies
  - Review Plans and specifications
  - Review Emergency Action Plans

# Program Overview

- Effects from Pandemic
  - TCEQ is still working from home
  - Dam Safety traveling less

# Program Overview

- Hazard Classification
  - Based on the potential loss of human life or property downstream
  - NOT based on the condition of the dam

# Program Overview

- High Hazard Dams
  - Loss of life expected (3 or more habitable structures)
  - Excessive economic loss expected and extensive damage to
    - Public facilities
    - Agricultural, industrial, or commercial facilities
    - Public utilities
    - Main highways (TXDOT classified as arterials)
    - Railroads used as a major transportation system

# Program Overview

- Significant Hazard Dams
  - Loss of life possible (1 or 2 habitable structures)
  - Appreciable economic loss
    - Damage to isolated homes
    - Damage secondary highways (TXDOT classified Collector roads)
    - Damage to minor railroads
    - Interruption of service or use of public utilities

# Program Overview

- Low Hazard Dams
  - No loss of human life expected (no habitable homes)
  - Minimal economic loss
    - Local roads
    - Limited agricultural improvements/farm buildings

# Program Overview

- State-Regulated Dams in Texas – 7,315 (as of 5/13/21)
  - Non-exempt -4,048
  - Exempt – 3,265
- Non-Exempt
  - High hazard – 1,501
  - Significant hazard - 304
  - Low Hazard – 2,237
  - Not classified - 6



# Program Overview

- Regulations
  - Texas Water Code 12.052
  - 30 Texas Administrative Code Chapter 299



# Emergency Action Plans

# Emergency Action Plans

- EAPs are required for non-exempt high and significant dams.
- EAPs are recommended for exempt significant dams

# Emergency Action Plans

- EAP Guidelines
  - Last Updated December 2019
  - Available Online:
    - Guidelines (PDF)
    - Fillable Templates (Microsoft Word)

<https://www.tceq.texas.gov/compliance/investigation/damsafetyprog.html>



## Guidelines for Developing Emergency Action Plans for Dams in Texas

Dam Safety Program  
Critical Infrastructure Division  
Texas Commission on Environmental Quality

GI-394  
Revised December 2019

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## Emergency Action Plans

In accordance with [Title 30 Texas Administrative Code \(TAC\) Chapter 299, Dams and Reservoirs, §299.61\(b\)](#), owners of significant and high hazard dams were required to submit an Emergency Action Plan, which may be a draft version, to the executive director for review by January 1, 2011. If you have any questions about the preparation and submittal of EAPs, please contact the Dam Safety Section at **(512) 239-0326** for assistance.

The [Guidelines for Developing Emergency Action Plans \(EAPs\)](#) for Dams in Texas publication was revised in December 2019. The revised publication includes updates to the notification flowchart, EAP templates, inundation map guidance, and a glossary of dam safety terms.

Emergency Action Plans must be delivered to either: Warren D. Samuelson, P. E., Manager, Dam Safety Section or to Denice McCalley, P.E, Dam Safety Section at the following address:

Texas Commission on Environmental Quality  
MC-177  
P.O. Box 13087  
Austin, TX 78711-3087

# Emergency Action Plans



**Why do you need an EAP?**

- Dams fail

# Emergency Action Plans

## 4.2. Emergency Evaluation and Classification

This section lists the conditions and actions which may be used to classify the level of emergency response, as a guide for the [Owner's Emergency Planning Manager]. Specific dam observations and corresponding emergency classification levels can be found in the Evidence of Distress table in Tab 5.

- **Watch Condition:** A problem has been detected at the dam which requires constant monitoring or immediate action to repair or correct. At this time, the distress condition is manageable by dam personnel.

The [Owner's Emergency Planning Manager] will be responsible for monitoring and repair as soon as possible and implementing the appropriate Notification Flowchart. The following is a list of conditions which constitute "watch" conditions:

- cloudy or dirty seepage or seepage with an increase in flow, boils, piping, or bogs
- seepage around conduits
- large sinkholes with corresponding seepage anywhere on the embankment or downstream from the toe
- any slide that degrades the crest of the embankment or that is progressively increasing in size
- cracking or movement of any concrete structure
- the engagement of the emergency spillway

## Why do you need an EAP?

- Dams fail
- Identify emergency conditions

# Emergency Action Plans



## Why do you need an EAP?

- Dams fail
- Identify emergency conditions
- Expedite an effective response

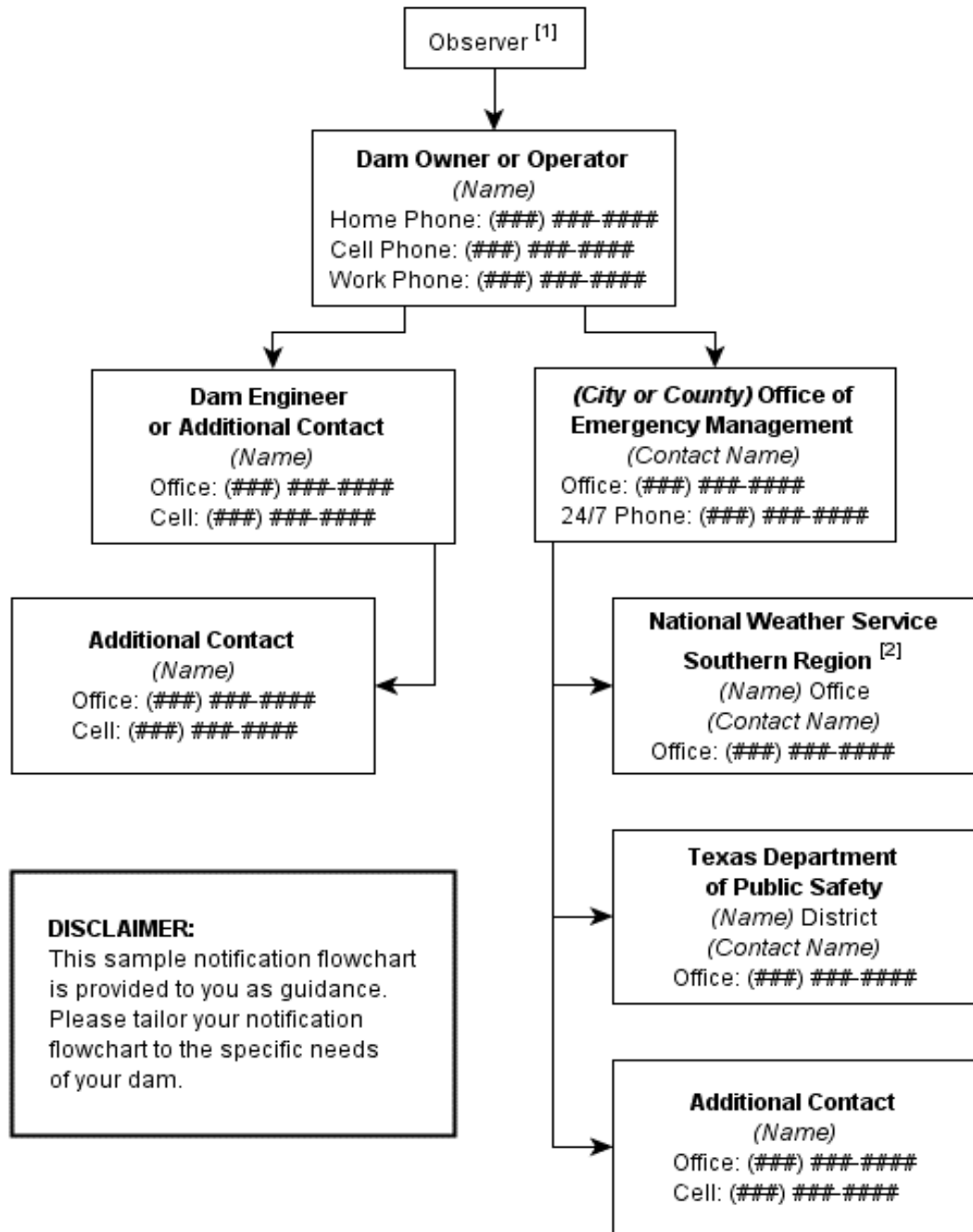


# Emergency Action Plans



## Why do you need an EAP?

- Dams fail
- Identify emergency conditions
- Expedite an effective response
- Prevent or reduce loss of life and property



## Notification Flowcharts

- Make sure all info is up to date
- Day time and after-hours numbers
- Media Contact
- Update as often as needed

# EAP Annual Updates

- Review at least annually [30 TAC 299.61(g)]
- Update as often as necessary
- Don't forget to fill in:
  - Log sheet of changes
  - Annual EAP review checklist
  - Plan Review and Update
  - Training Records
- Ensure Approval & Implementation Page is current

# EAP – Inundation Maps

- Ensure maps:
  - Are up to date
  - Include enough detail
  - Are easy to understand
- EMCs may request maps for different scenarios

# Emergency Action Plans

- Build a relationship with your Emergency Management Coordinator
- Emergency Management Coordinator should:
  - Review and acknowledge the EAP
  - Participate in the Tabletop

# Tabletop Exercises

- 30 TAC 299.61 (h) requires an owner to conduct a tabletop exercise at least once every 5 years.
- Meeting with people involved in the notifications
- Inform TCEQ of the day/time

# Tabletop Exercises

- Discussions among participants
- Evaluate the EAP
- Resolve any concerns
- Follow up
  - Update the EAP as necessary
  - Provide a summary of the exercise

# EAP – misc.

- EAPs are confidential
- National Weather Service will issue flash flood warnings based on info provided by dam owners
- New TCEQ EAP Coordinator
  - Dee McCalley, [dee.mccalley@tceq.texas.gov](mailto:dee.mccalley@tceq.texas.gov)





# Legislation Update

# HB 26, 86<sup>th</sup> Texas Legislature

- Amended Water Code 12.052(a)
- Affects dams with gated spillways used to regulate flood water
- Dam Owner must provide notice of spillway releases made to regulate flood waters
- Requires updates to EAPs by June 1, 2020

# HB 137, 86<sup>th</sup> Texas Legislature

- Amended Water Code 12.052
- Requires TCEQ to provide biannual reports
- Report must include
  - High and Significant dams
  - Condition status
- These reports are confidential

# SB 600, 87<sup>th</sup> Texas Legislature

- Adds Water Code Section 12.053
- Requires River Authorities to provide information to TCEQ annually
- TCEQ must post the information on a website

# HB 1606, 87<sup>th</sup> Texas Legislature

- Companion Bill: SB 588
- Applies to the Upper Brushy Creek WCID
- States that the District is not required to follow municipal regulations regarding dams.



# Potential Funding

# Rehabilitation of High Hazard Potential Dams Grant

- Objective:
  - Reduce or eliminate risk of dams of highest consequence
  - Increased understanding and management of risks posed by eligible dams

# HHPD

- Overview:
  - Provide financial assistance for eligible High Hazard dams
  - Risk Informed Decision Making
  - Consider Dam Risks in mitigation planning
  - Community Preparedness



# HHPD

- FY2019 Grant
  - 26 states applied
  - Texas awarded \$574,647 (out of \$10,000,000 nationwide)
  - Funded engineering and studies for 3 dams
- FY2020 Grant
  - 29 states applied
  - Texas awarded \$987,217 (out of \$10,000,000 nationwide)
  - Funding engineering, studies, design, and construction for 8 dams

# HHPD

- FY2021
  - \$11,640,000 available nationwide
  - TCEQ will submit initial application (due 6/25/21)
  - TCEQ has notified eligible dam owners to apply
  - Texas award expected in Fall of 2021

# HHPD

- Eligible Dams
  - High hazard
  - EAP on file with the state
  - Fails to meet state dam safety standards
  - Cannot be a dam built under the Secretary of Agriculture
  - Cannot be a licensed hydroelectric dam

# HHPD

## HHPD Eligibility Matrix

Likelihood of Failure	<b>Very High</b> NID = unsatisfactory				
	<b>High</b> NID = Poor				
	<b>Moderate</b> NID = Fair				
	<b>Low</b> NID = Satisfactory				
		<b>Low</b> PAR = 1-10	<b>Medium</b> PAR = 11-100	<b>High</b> PAR = 101 -1000	<b>Very High</b> PAR = 1001+

Consequences: Population at Risk (PAR)

# HHPD

- Requirements
  - Subrecipients must be non-federal governmental organizations or non-profits
  - Must have in place a FEMA approved hazard mitigation plan that **includes all dam risks.**
  - Floodplain management plan
    - Prepared within 2 years of award
    - Implemented within 2 years of rehabilitation completion
  - Requires a 35% local match

# HHPD

- Eligible Projects
  - Planning
  - Design
- Ineligible Projects For FY21
  - Construction
  - Operation and Maintenance costs

# HHPD

- For more information:
  - <https://www.fema.gov/emergency-managers/risk-management/dam-safety/grants/resources>
  - Email questions to Trina:  
[trina.lancaster@tceq.texas.gov](mailto:trina.lancaster@tceq.texas.gov)

# Corps Water Infrastructure Financing Program (CWIFP)

- Long-term, low-cost credit assistance for water resource infrastructure projects
- FY21 appropriations provides funding for “safety projects to maintain, upgrade, and repair dams” owned by non-Federal entities and included in the National Inventory of Dams.



# Corps Water Infrastructure Financing Program (CWIFP)

- **ELIGIBLE BORROWERS:**
  - Local, state, and Tribal entities
  - Partnerships and joint ventures
  - Corporations and trusts
  - State infrastructure financing authority

# Corps Water Infrastructure Financing Program (CWIFP)

- Available to projects or a group of projects with eligible costs in excess of \$20 million
- Funding of up to 49% of project costs
- For more info: <https://www.usace.army.mil/Missions/Civil-Works/Infrastructure/revolutionize/CWIFP/>



# Owner Resources

# Association of State Dam Safety Officials

- DamOwner.org
  - Dam Owner Academy Videos
  - Fact Sheets



# Questions??

Contact Info:

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512-239-4283