An Audit Report on

The Dam Safety Program at the Commission on Environmental Quality

July 2020

Report No. 20-036

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Overall Conclusion

The Commission on Environmental Quality's (Commission) Dam Safety Program implemented processes to identify the condition of dams it regulates and concentrated its efforts on the most hazardous dams in the state as required by statute. Specifically, the Commission:

- Implemented processes that align with key requirements to identify the condition of dams it regulates through inspections.
- Concentrated its efforts on the most hazardous dams in the state as required by statute, by focusing inspections on dams that have the potential to cause the greatest amount of loss and damage in the case of malfunction or failure.
- Maintained accurate data for its regulated dams, including inspection data and records of emergency action plan submissions.

Additionally, it completed 88 percent of inspections within the required time frame of five years, and during inspections it revisited deficiencies identified during previous inspections to determine if those were corrected by dam owners.

However, in responding to dam deficiencies, it did not consistently communicate with dam owners through dam inspection exit interviews and requests for corrective action plans, and it had not updated its enforcement policy to include current enforcement procedures. Additionally, the Commission did not have a complete and current emergency action plan for all dams required to have one.

Table 1 on the next page presents a summary of the findings in this report and the related issue rating. (See Appendix 2 for more information about the issue rating classifications and descriptions.)

Background Information

The Dam Safety Program monitors and regulates both private and public dams in Texas as a part of the Commission on Environmental Quality's Critical Infrastructure Division.

The program inspects dams and makes recommendations in inspection reports provided to dam owners to help them maintain safe facilities. The Commission monitors 7,315 state-regulated dams in Texas.

In addition, the Commission works with dam owners and local officials to prepare emergency action plans to help respond to a dam failure.

The program is required to perform inspections once every five years and gather emergency action plans, for the following number of dams:

- 1,475 high-hazard dams.
- 310 significant-hazard dams.

The Commission is not required to inspect low-hazard dams, unless they are large. Texas has three large low-hazard dams.

Additionally, the Commission does not inspect or require emergency action plans from significant-hazard dams that are exempted based on Texas Water Code, Section 12.052(e-1). (See Appendix 4 for additional information.)

Sources: Texas Administrative Code, Title 30, Chapter 299; and the Commission.

This audit was conducted in accordance with Texas Government Code, Section 321.0132.

For more information regarding this report, please contact Cesar Saldivar, Audit Manager, or Lisa Collier, First Assistant State Auditor, at (512) 936-9500.

Table 1

Summary of Chapters/Subchapters and Related Issue Ratings		
Chapter/ Subchapter	**Title**	**Issue Rating [a]**
1-A	The Commission Implemented an Inspection Function That Aligns With Applicable Requirements and Best Practices	Low
1-B	The Commission Should Ensure That All Required High- and Significant-Hazard Dams Are Inspected Within a Five-year Period and Document How Inspections Are Prioritized	Medium
2-A	The Commission Implemented Procedures to Follow up on Deficiencies During Inspections	Low
2-B	The Commission Should Strengthen Its Enforcement Function	Medium
3	The Commission Should Ensure That It Has Current Finalized Emergency Action Plans for All High-and Non-exempt Significant-Hazard Dams	Medium
4	The Commission Maintained Accurate and Complete Data on Regulated Dams, Including Inspection Data	Low

[a] A chapter/subchapter is rated **Priority** if the issues identified present risks or effects that if not addressed could critically affect the audited entity's ability to effectively administer the program(s)/function(s) audited. Immediate action is required to address the noted concern and reduce risks to the audited entity.

A chapter/subchapter is rated **High** if the issues identified present risks or effects that if not addressed could substantially affect the audited entity's ability to effectively administer the program(s)/function(s) audited. Prompt action is essential to address the noted concern and reduce risks to the audited entity.

A chapter/subchapter is rated **Medium** if the issues identified present risks or effects that if not addressed could moderately affect the audited entity's ability to effectively administer program(s)/function(s) audited. Action is needed to address the noted concern and reduce risks to a more desirable level.

A chapter/subchapter is rated **Low** if the audit identified strengths that support the audited entity's ability to administer the program(s)/function(s) audited or the issues identified do not present significant risks or effects that would negatively affect the audited entity's ability to effectively administer the program(s)/function(s) audited.

Auditors communicated other, less significant issues separately in writing to Commission management.

Summary of Management's Response

At the end of certain chapters in this report, auditors made recommendations to address the issues identified during this audit. The Commission agreed with the recommendations in this report.

Audit Objectives and Scope

The objectives of this audit were to determine whether the Commission on Environmental Quality's (Commission) Dam Safety Program:

- Prioritizes and inspects high- and significant-hazard dams in accordance with applicable requirements and best practices.

- Ensures that dam owners take corrective action to address deficiencies identified during an inspection, and enforces program requirements to help ensure that dam owners make needed repairs.
- Ensures that all high- and significant-hazard dams have emergency action plans.
- Maintains accurate and complete data on regulated dams and dam inspections.

The scope of this audit covered the Commission's Dam Safety Program processes and relevant controls related to the oversight of state regulated high- and non-exempt significant-hazard dams as of January 17, 2020. The audit covered:

- Inspections completed from September 1, 2018, through December 31, 2019, including any corrective action plan identified during testing those inspections.
- Corrective action plans received from dam owners in association with inspections completed from September 1, 2016, through August 31, 2017.
- High- and non-exempt significant-hazard dams based on the status of dams as of January 17, 2020.

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Chapter 1

The Commission Implemented Requirements for Inspections that Align with Best Practices; However, It Should Ensure That It Inspects All Dams Within the Required Five-year Period

To implement dam safety best practices, the Commission has revised provisions in the Texas Administrative Code, implemented policies and procedures, and performed inspections to identify the condition of dams. The Commission prioritized inspections of the most hazardous dams in the state as required by statute; however, the Commission should document its approach to prioritize inspections to ensure consistency and inspect certain dams within five years as required.

Chapter 1-A

The Commission Implemented an Inspection Function That Aligns With Applicable Requirements and Best Practices

Chapter 1-A Rating:

Low [1]

The Commission has implemented an inspection function that aligns with key requirements in statute and best practices outlined in the *Model State Dam Safety Program*[2] (Model Program). The Model Program states that on-site inspections are the most important means by which an agency can determine the level of dam owners' compliance in the maintenance and operation of their dams. On-site inspections allow inspectors to determine a dam's condition by performing a visual inspection of a dam's surface and all parts of the structure, including its adjacent environment. Since the publication of *An Audit Report on the Dam Safety Program at the Commission on Environmental Quality* (State Auditor's Office Report 08-032, May 2008), the Commission has established inspection requirements, offered training to

[1] The risk related to the issues discussed in Chapter 1-A is rated as Low because the audit identified strengths that support the audited entity's ability to administer the program(s)/function(s) audited or the issues identified do not present significant risks or effects that would negatively affect the audited entity's ability to effectively administer the program(s)/function(s) audited.

[2] *The National Dam Safety Program – Model State Dam Safety Program*, is a document published by the Association of State Dam Safety Officials and the Federal Emergency Management Agency in July 2007, as a guide for state officials initiating or improving state dam safety programs. The *Model State Dam Safety Program* outlines the key components of an effective dam safety program and provides guidance on the development of more effective and sustainable state programs to reduce the risks created by unsafe dams.

dam owners, and consistently conducted inspections. (See Appendix 5 for more information on the prior SAO report.) Specifically, the Commission:

- Determined the acceptable frequency of inspections as five years[3] for all high- and significant-hazard dams and large low-hazard dams and updated the Texas Administrative Code accordingly (see text box for more information on hazard classifications).
- Revised Texas Administrative Code provisions to require dam owners to submit a copy of all engineering inspection reports prepared by the owner's professional engineer.
- Established inspection policies and procedures and updated its inspection template utilized by inspectors. The template aligns with Model Program standards and assists in ensuring consistency among inspectors when determining whether a dam was hydraulically[4] and structurally adequate.

Hazard Classification

A hazard classification is a measure of the potential for loss of life, property damage, or economic impact in the area downstream of the dam in the event of a failure or malfunction of the dam. It does not represent the physical condition of the dam.

- High-hazard dams have the potential to cause a loss of seven or more lives, or three or more habitable structures downstream and/or excessive economic loss.
- Significant-hazard dams have the potential to cause a loss of one to six lives or two habitable structures downstream and/or appreciable economic loss.
- Low-hazard dams have no loss of human life expected, no habitable structures downstream, and minimal economic loss.

Source: Texas Administrative Code, Title 30, Sections 299.14 and 299.2.

Condition Definitions

Good condition means that only minor maintenance deficiencies were observed, and there were no visible structural or hydraulic deficiencies that could lead to possible failure of one of the features of the dam.

Fair condition means that moderate maintenance, structural, and/or hydraulic deficiencies were observed, which, if not corrected, could eventually lead to failure of one of the features of the dam.

Poor condition means that major maintenance, structural, and/or hydraulic deficiencies were observed that could threaten the integrity of the dam, or the dam could not be inspected due to the deficiencies.

Source: The Commission.

For all 25 inspections tested, the Commission ensured inspections were performed, documented, and reviewed and approved consistently by licensed engineers with the requirements set by the Commission's inspection policies and procedures and the Texas Administrative Code. The inspectors documented the condition of each dam and assigned them a condition of "good", "fair", or "poor" (see text box for condition definitions). The Commission's process is to provide inspection reports to dam owners after the inspections.

As of January 17, 2020, the Commission had assessed and recorded the condition of 1,741 dams (98 percent) of the 1,785 Commission-regulated,

[3] The National Dam Safety Program Act of 1996 lists the inspection frequency as at least once every five years to ensure dams' continued safety.

[4] Hydraulic adequacy is a measure of a dam's ability to experience a particular storm without being overtopped or suffering damage or failure.

high- and significant-hazard dams that required inspections[5]. According to the Commission, dams that did not have an inspection completed or condition identified either (1) were recently added to its inventory, (2) were still under construction, (3) had a hazard classification that recently changed, or (4) were scheduled for inspection, or an inspection was conducted but not yet completed.

Chapter 1-B

The Commission Should Ensure That All Required High- and Significant-Hazard Dams Are Inspected Within a Five-year Period and Document How Inspections Are Prioritized

Chapter 1-B Rating:

Medium [6]

Frequency of Inspections

Exempt Dams

Under Texas Water Code, Section 12.052(e-1), a dam is exempt from Dam Safety Program requirements if it meets all of the following criteria:

- Is located on private property.
- Impounds less than 500 acre-feet at maximum capacity.
- Is classified low- or significant-hazard.
- Is located in a county with a population of less than 350,000.
- Is not located inside the corporate limits of a municipality.

The Commission has determined the frequency of inspections and has followed statutory requirements to concentrate its efforts on the most hazardous dams in the state. Title 30, Texas Administrative Code, Section 299.42, requires the Commission to inspect high- and significant-hazard dams every five years. Texas Water Code, Section 12.052, has exempted certain significant-hazard dams from Dam Safety Program requirements, including inspections (see text box for exemption criteria).

The Commission is not always meeting the five-year requirement for conducting inspections.

The Commission performed timely inspections of 88 percent of the high- and non-exempt significant-hazard dams identified in its records as of January 17, 2020 (see Figure 1 on the next page for inspections performed on high-hazard and non-exempt significant-hazard dams and dams that were not inspected within the five year period).

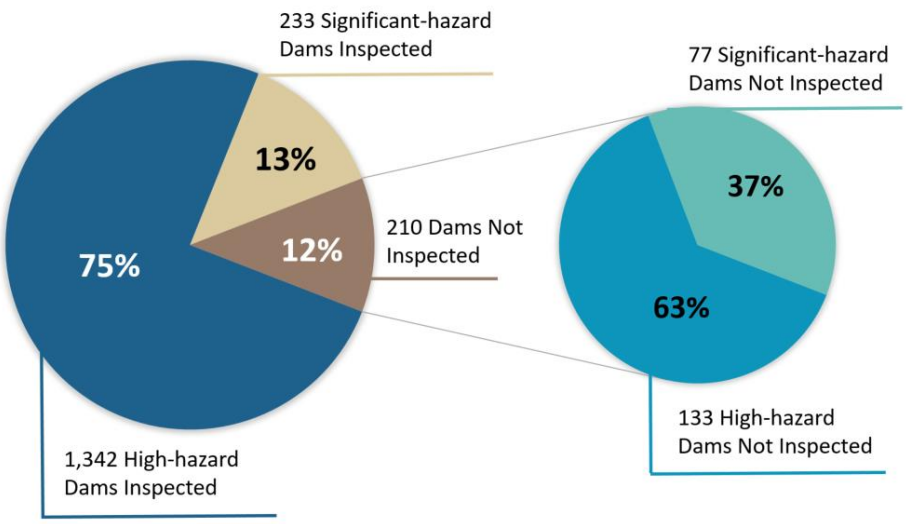
The number of dams that the Commission is required to inspect is increasing due to updates to hazard classifications, construction, and dams being identified and added to the inventory. The number of high-hazard and non-exempt significant-hazard dams that required inspections within a five-year period totaled 1,785 as of January 17, 2020. Without current inspections, the Commission may not maintain accurate and complete data on regulated dams, possibly increasing the risk to lives and property.

[5] While the Commission has assessed a condition for each of the 1,741 dams, some of the conditions may be outdated. See Chapter 1-B for current inspection rates.

[6] The risk related to the issues discussed in Chapter 1-B is rated as Medium because the issues identified present risks or effects that if not addressed could moderately affect the audited entity's ability to effectively administer program(s)/function(s) audited. Action is needed to address the noted concern and reduce risks to a more desirable level.

Figure 1

Status of High- and Non-exempt Significant-hazard Dam Inspections from January 18, 2015, through January 17,2020



Source: Based on the Commission's data.

Prioritizing Dams for Inspection

Texas Water Code, Section 12.052(a), requires the Commission to identify and prioritize the most hazardous dams in Texas. The Commission accomplishes this by focusing its inspections on high-hazard dams. High-hazard dams, which have the potential to cause the greatest amount of loss and damage in the case of malfunction or failure, accounted for between 80 percent and 90 percent of all inspections conducted per calendar year from 2015 through 2019.

The Commission should document its method for prioritizing dam inspections.

While the Commission has stated it considers several factors consistently regarding dam inspection priority, such as the next required inspection date, hazard classification, condition, location, and available staffing, it does not document the method it uses to prioritize dam inspections. The Commission should document the importance of each factor considered and its rationale for prioritization decisions. The Commission could also document how it prioritizes complaints. Having a documented process would (1) reduce the risk a dangerous dam would not be inspected or not be inspected timely, (2) ensure continuity of operations, and (3) enable the Commission to consistently consider selection criteria.

Recommendations

The Commission should:

- Ensure that all required dams are inspected within the required five-year period.
- Document its inspection prioritization criteria, methods, and decisions.

Management's Response

Recommendation: *Ensure that all dams are inspected within the required five-year period.*

Management Response: *TCEQ will conduct a comprehensive review of the Dam Safety Program resources to identify any challenges impacting the agency's ability to inspect dams within the required five-year inspection cycle. This review will include:*

- *Reviewing established process goals and performance standards for the Dam Safety Program.*
- *Identifying the challenges in meeting the inspection cycle goals.*
- *Identifying the additional resources that need to be allotted to meet the inspection cycle goals and standards.*
- *Identifying a strategy for sustaining program resources as the number of dams designated as high-hazard and significant-hazard continues to increase.*

Timeline for completion: *December 1, 2020.*

Person Responsible: *Director of the TCEQ Critical Infrastructure Division*

Recommendation: *Document its inspection prioritization criteria, methods, and decisions.*

Management Response: *The Dam Safety Standard Operating Procedure (SOP) will be updated to include how the inspection schedule is developed and the factors used for prioritizing the inspections. Additional program resources are not needed to complete this task.*

Timeline for Completion: *December 1, 2020*

Person Responsible*: Director of the TCEQ Critical Infrastructure Division*

Chapter 2

While the Commission Follows Up on Deficiencies Identified in Inspections, It Should Strengthen Its Enforcement Function

When conducting inspections, the Commission revisits deficiencies identified during prior inspections. The Commission has provided guidance to inspect dams identified to have major maintenance, structural, and/or hydraulic deficiencies more often than the required five year period. However, the Commission should strengthen its enforcement function to ensure that dam owners make needed repairs.

Chapter 2-A

The Commission Implemented Procedures to Follow up on Deficiencies During Inspections

Chapter 2-A Rating:

Low [7]

Inspections are the main enforcement function of the Commission's Dam Safety Program. The Commission's inspection process includes following up on prior deficiencies to determine if dam owners have addressed them. For all 16 tested dams that received an additional inspection by the Commission since fiscal year 2017, the Commission reviewed the deficiencies previously identified and reissued those deficiencies to the dam owner in an inspection report if still present.

The Commission has instructed inspectors to assign a two-year inspection frequency, exceeding the five-year requirement established in its administrative rules, to dams classified in "poor" condition. This is to ensure that dams that are most in need of follow-up inspections are prioritized. Poor condition dams are those with major maintenance, structural, and/or hydraulic deficiencies observed at the time of the inspection that could threaten the integrity of the dam or prevent inspection of the dam.

[7] The risk related to the issues discussed in Chapter 2-A is rated as Low because the audit identified strengths that support the audited entity's ability to administer the program(s)/function(s) audited or the issues identified do not present significant risks or effects that would negatively affect the audited entity's ability to effectively administer the program(s)/function(s) audited.

Chapter 2-B

The Commission Should Strengthen Its Enforcement Function

Chapter 2-B Rating:

Medium [8]

Texas Water Code, Section 12.052, requires the Commission to make and enforce rules to ensure the safe operation, maintenance, repair, removal, and emergency management of dams. The Commission should strengthen its procedures to ensure that it is enforcing those rules effectively.

The Commission should communicate with dam owners consistently.

As discussed in Chapter 2-A, the Commission informs dam owners of deficiencies identified during inspections and evaluates dam owners' compliance. These practices include conducting exit interviews after inspections and sending a request for a corrective action plan after the completion of the inspection report. However, the Commission did not follow those practices consistently. Specifically:

- **Exit Interviews.** For 9 (47 percent) of the 19 inspections tested, there was no record of an exit interview. The Commission's policies and procedures state an exit interview will be conducted at the close of any inspection when deficiencies are identified. The Commission established exit interviews as an opportunity to discuss potential deficiencies with the dam owner prior to sending the inspection report to the owner.

- **Requests for Corrective Action Plans.** Out of 25 inspections of high-hazard, poor condition dams tested, only 9 (36 percent) dam owners responded to the Commission's request for a corrective action plan. The Commission's administrative rules require dam owners to respond to requests with a corrective action plan. The Commission's staff reviews plans and provide feedback if the dam owner responds. The Commission's policies and procedures include procedures to follow up with unresponsive owners, but this practice is no longer in place. Instead, the Commission's practice is to follow up on deficiencies during the next inspection.

[8] The risk related to the issues discussed in Chapter 2-B is rated as Medium because they present risks or effects that if not addressed could moderately affect the audited entity's ability to effectively administer the program(s)/function(s) audit. Action is needed to address the noted concern and reduce risks to a more desirable level.

The Commission should create a comprehensive enforcement policy to identify when it should pursue enforcement action.

The Commission's enforcement policy outlines procedures no longer in practice and does not mention any of the dam safety enforcement measures that the Commission has the authority to use (see text box for more information).

The Commission's Enforcement Authority

Texas Administrative Code, Title 30, Section 299.71, allows the Dam Safety Program to take enforcement action for dam safety and maintenance violations. Remedies include seeking an emergency order or referring a case to the Office of the Attorney General for civil judicial action, including the assessment of civil penalties and injunctive relief. Owners who do not take appropriate action within time frames addressed are liable for a penalty of not more than $5,000 a day for each day the violation continues.

Additionally, Texas Water Code, Section 12.052, gives the Commission the authority to enter into an agreement with a dam owner, which may include timelines to achieve compliance and authorizing deferral of compliance as appropriate.

The Commission has asserted that civil judicial action is an effective means of enforcement for the Dam Safety Program. At the referral of the Commission, the Office of the Attorney General has pursued legal action for enforcement on two noncompliant dams. The cases sought to ensure that the dam owners complied with requirements. One case resolved successfully for the Commission, and one had not yet been resolved. Although the Commission referred those cases, the Commission's enforcement policy does not identify the specific circumstances when civil judicial action would be effective, including the conditions the Commission has identified as necessary for a case to be pursued by the Office of the Attorney General.

Having a comprehensive policy that includes criteria for pursuing enforcement through legal action would assist the Commission in ensuring that cases that could be pursued are brought forward and supported throughout the life of the case. Since deficiencies are not re-evaluated until the next follow-up inspection, evaluating an owner's responsiveness can take several years, and inspectors of a dam may change over time, it is important to document these criteria to assist in tracking noncompliant dams.

The Commission should review and update its administrative rules and policies and procedures.

The Commission's administrative rules do not align with the provisions established in the Texas Water Code, Section 12.502(e-1) that exempt certain dams from state regulation. In addition, the Commission's Dam Safety Program policies and procedures have not been updated since implementation in 2012. The Model Program states that policies and procedures should be reviewed and updated at least once every five years.

Recommendations

The Commission should:

- Ensure that inspections include exit interviews with dam owners.
- Update policies and procedures to document current practices for following up with dam owners on the status of deficiencies.
- Update its dam safety enforcement policy to ensure that enforcement is pursued consistently, including establishing criteria on when legal action would be appropriate.
- Review its dam safety procedures at least once every five years to ensure procedures are consistent with practices and working as intended.
- Update the Texas Administrative Code to identify applicability for exempt dams, aligning with provisions in the Texas Water Code.

Management's Response

Recommendation: *Ensure that inspections include exit interviews with dam owners.*

Management Response: *TCEQ will emphasize to the Dam Safety Program staff that exit interviews must be undertaken with dam owners through meetings with the staff and documented in the TCEQ files. The Dam Safety SOP will be revised as necessary. Additional program resources are not needed to complete this task.*

Timeline for Completion: *September 1, 2020*

Person Responsible: *Director of the TCEQ Critical Infrastructure Division*

Recommendation: *Update policies and procedures to document current practices for following up with dam owners on the status of deficiencies*

Management Response: *The Dam Safety SOP will be updated to include language for following up with dam owners on the status of deficiencies listed in the Routine Dam Safety Inspection Reports they are issued after an inspection. Additional program resources are not needed to complete this task.*

Timeline for Completion: *December 1, 2020*

Person Responsible: *Director of the TCEQ Critical Infrastructure Division*

Recommendation: *Update its dam safety enforcement policy to ensure that enforcement is pursued consistently, including establishing criteria on when legal action would be appropriate.*

Management Response: *The Dam Safety SOP will be updated to include the program's enforcement policy which will identify the criteria for the appropriate enforcement action to take in order to ensure consistency in its enforcement activities within the authority provided by statute/rule. Additional program resources are not needed to complete this task.*

Timeline for completion: *December 1, 2020*

Person Responsible: *Director of the TCEQ Critical Infrastructure Division*

Recommendation: *Review its dam safety procedures at a minimum of once every five years to ensure procedures are consistent with practices and working as intended.*

Management Response: *The Dam Safety SOP will be updated to include a section for future reviews and updates to occur at a minimum of once every five years.*

Timeline for Completion: *December 1, 2020*

Person Responsible: *Director of the TCEQ Critical Infrastructure Division*

Recommendation: *Update the Texas Administrative Code (TAC) to identify applicability for exempt dams, aligning with provisions in the Texas Water Code.*

Management Response: *TCEQ will update the Texas Administrative Code in the summer of 2021. Additional program resources are not needed to complete this task.*

Timeline for Completion: *December 1, 2021*

Person Responsible: *Director of the TCEQ Critical Infrastructure Division*

Chapter 3

The Commission Should Ensure That It Has Current Finalized Emergency Action Plans for All High- and Non-exempt Significant-Hazard Dams

Chapter 3 Rating:

Medium [9]

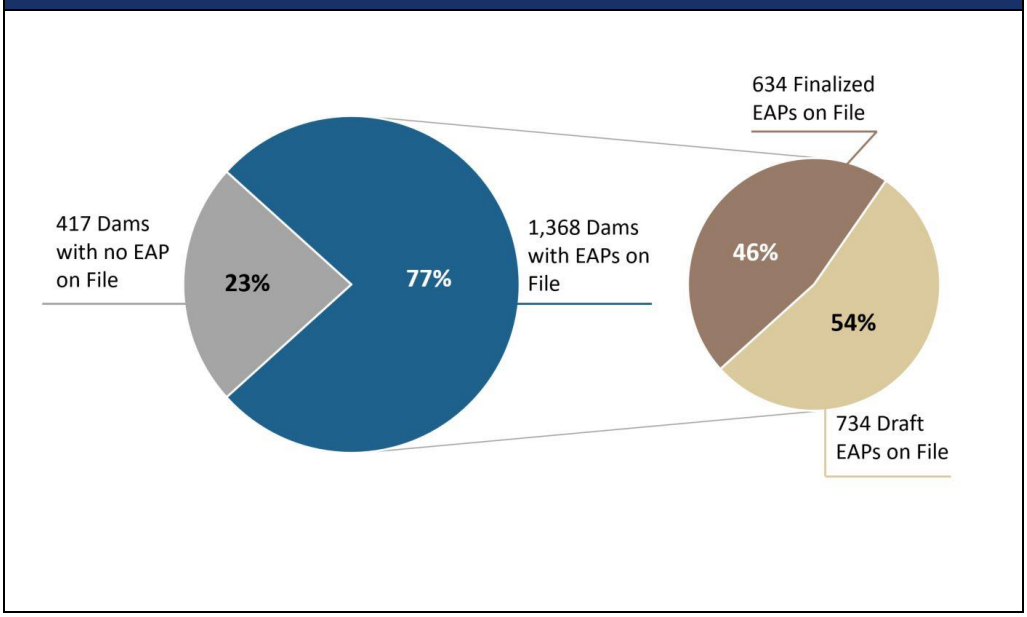
The Commission does not have emergency action plans for all dams required to have them.

As of January 17, 2020, the Commission had received submissions for emergency action plans (EAPs) for 77 percent of the high- and non-exempt significant-hazard dams that are required to have an EAP (see Figure 2 below). Of the 1,785 dams required to have an EAP, 1,368 dam owners submitted an EAP, and 54 percent of those submissions were still in draft form. Those draft EAPs may contain information that is incomplete and outdated (see text box on the next page for EAP requirements).

The Commission established the requirement for dam owners to submit an EAP for high- and significant-hazard dams on January 1, 2009, and a due date of two years after that date unless it approved a request for extension of the time frame.

Figure 2

Emergency Action Plans Submissions for High- and Non-exempt Significant-Hazard Dams as of January 17,2020



Source: Based on the Commission's data.

[9] The risk related to the issues discussed in Chapter 3 is rated as Medium because they present risks or effects that if not addressed could moderately affect the audited entity's ability to effectively administer program(s)/functions(s) audited. Action is needed to address the noted concern and reduce risks to a more desirable level.

If a high- or significant-hazard dam fails, the failure can cause extensive property damage – and potential harm to people living downstream of the dam. An EAP establishes means to minimize the risk of loss of life and reduce property damage.

Dam owners are not consistently updating their Emergency Action Plans or conducting required reviews of their plans with local emergency management personnel.

The Commission requires that dam owners update their EAPs annually and conduct a table top exercise at least once every five years (see text box). A table top exercise is a meeting of the owner and the state and local emergency management personnel to review the EAP.

Emergency Action Plans

Texas Administrative Code, Title 30, Section 299.61, requires the owners of high- and significant-hazard dams to prepare an emergency action plan using guidelines provided by the Dam Safety Program, to be followed by the owner in the event or threat of a dam emergency. Owners must review the plan annually and submit updated portions. If no updates were necessary, owners must submit written notification that no updates have been implemented. The owner also must review the emergency action plan with local emergency management personnel at least once every five years in a table top exercise.

Effective September 1, 2013, significant-hazard dams that met the requirements for exemptions from dam safety regulations in Texas Water Code, Section 12.052, are not required to submit EAPs.

Sources: Texas Administrative Code, Title 30, Section 299.61; and the Commission's *Guidance on Implementing Dam Safety Legislation*, September 2013.

- **Annual Update.** The majority of owners did not submit an annual update or written notification that no updates were necessary. For 11 (85 percent) of 13 finalized EAPs tested, the dam owner had not submitted a response for the annual update. Updates ensure that emergency contact information is current and changes to the structure of the dam are included in the EAP.

- **Table top Exercise.** For 4 (40 percent) of 10 applicable finalized EAPs tested, the owner did not provide evidence of a required table top exercise. Table top exercises include a description of a simulated event and allow participants to evaluate the EAP and response procedures.

- **Drafts.** The Commission asserted that if the EAP is still in draft form, it does not require an annual update or table top exercise, which is 54 percent of the required EAPs the Commission had on record as of January 17, 2020. However, for 13 drafts tested by auditors, the average time between the Commission receiving those initial drafts to the date that this information was tested (January 17, 2020) was 7.8 years; the earliest draft was submitted on October, 1, 2010, and the most recent was November 17, 2017.

While the Commission has instituted requirements for EAPs through Texas Administrative Code, Title 30, Section 299.61 (30 TAC 299.61), that rule does not provide an effective way for the Dam Safety Program to ensure that the dam owners are adhering to the requirements. Without creating, updating,

and reviewing EAPs that comply with guidelines and requirements, dam owners may not be prepared for emergencies and could be liable for loss of life and economic damage.

The Commission implemented processes to educate dam owners of EAP requirements.

The Commission has published EAP guidelines on its website that align with key guidelines in the Model Program.[10] The guidelines (1) educate owners about the minimum requirements of EAPs and requirements to work with emergency management personnel when reviewing the plan, and (2) provide templates for owners and engineers to review and follow.

The Commission had reviewed all 27 EAP submissions that auditors tested, and 12 (92 percent) of the 13 finalized EAPs on record that were tested contained all of the required information. For the EAPs still in draft form, the Commission identified missing portions or inaccurate information and sent a letter to the dam owner identifying what they should correct to have their plan accepted.

For 24 (96 percent) of 25 dams tested that did not have an EAP submitted, the Commission informed the dam owner of the requirement to submit an EAP. A total of 18 of those dams had received an additional inspection since the Commission first informed of the owners of the requirement; those owners were informed again in the request for corrective action.

By not fulfilling these requirements, dam owners could be increasing the risk of harm resulting from a dam failure, such as loss of life or property damage.

Recommendations

The Commission should:

- Increase its follow up with dam owners who are not fulfilling EAP requirements to improve dam owners' compliance with those requirements, including required annual updates.
- Determine if there is a way to implement an effective enforcement measure for dam owners that do not comply with the EAP requirements in 30 TAC 299.61.

[10] The Commission' EAP guidelines also follow the Federal Emergency Management Agency's *Federal Guidelines for Dam Safety: Emergency Action Planning for Dams,* July 2013.

Management's Response

Recommendation: *Increase its follow-up with dam owners who are not fulfilling EAP requirements to improve dam owners' compliance with those requirements, including required annual updates.*

Management Response: *The Dam Safety SOP will be updated to include a requirement for staff to follow up with dam owners who are not meeting rule requirements related to EAPs. The commission requires all dam owners to meet the submission requirements for EAPs as stated in Texas Administrative Code, Title 30, Section 299.61. Additional program resources are not needed to complete this task.*

Timeline for Completion: *December 1, 2020*

Person Responsible: *Director of the TCEQ Critical Infrastructure Division*

Recommendation: *Determine if there is a way to implement an effective enforcement measure for dam owners that do not comply with the EAP requirements in 30 TAC 299.61.*

Management Response: *TCEQ will explore possible enforcement measures related to EAPs and will update the program's enforcement policy as appropriate. Additional program resources are not needed to complete this task.*

Timeline for Completion: *December 1, 2020*

Person Responsible: *Director of the TCEQ Critical Infrastructure Division*

Chapter 4

The Commission Maintained Accurate and Complete Data on Regulated Dams, Including Inspection Data

Chapter 4 Rating:

Low [11]

Since the publication of the State Auditor's Office report mentioned previously, the Commission created and implemented the Dam Safety Module (Module) to maintain an inventory of dams. The Commission documents required information (see text box) from the physical copy of the inspection into the Module. For all 25 inspections tested, an inspector recorded required information into the Module and a supervisor reviewed and approved that information within the Module as required by the Commission's policies and procedures.

While the inspectors made some input errors, the effect of those errors did not have a significant impact on the accuracy of the Module.

Regulated dams. For regulated dams, which the Commission has identified and documented in the Module, it maintained dam and inspection data that is accurate and complete. The Commission also maintained accurate data on the EAPs associated with each dam.

Dam Inventory

The Commission is required to maintain an inventory of dams that includes information on: (1) ownership; (2) physical dimensions of the dam; (3) hazard classification; (4) normal and maximum storage capacity; (5) use of reservoir, including the water rights permit, if applicable; (6) inspection date; (7) location; and (8) condition of the dam.

The Commission's dam inventory, the Dam Safety Module (Module), can help the Commission comply with performance goals. For example, the Commission can retrieve inspection reports from the Module to determine if it is meeting its five-year inspection goals. Additionally, the Module contains processes to identify updated information on dams to determine if they are exempt based on criteria from Texas Water Code, Section 12.052.

Sources: Texas Administrative Code, Title 30, Section 299.7; and the Commission.

Additionally, the Commission has implemented controls over the Module to ensure data integrity is maintained and has processes in place to ensure the continuity of the Module.

Identification of dam-like structures. The Commission asserted that it works to identify other potential dams in the state by reviewing geographic information systems (GIS) and complaints sent to the Commission, and it has identified approximately 20,000 dam-like structures through GIS. The Commission stated that it adds a potential dam to its inspection schedule if the potential dam appears to be a high- or significant-hazard dam.

Identification of downstream development. The Commission also asserted that it uses GIS and complaints to identify if downstream development has occurred

[11] The risk related to the issues discussed in Chapter 4 is rated as Low because the audit identified strengths that support the audited entity's ability to administer the program(s)/function(s) audited or the issues identified do not present significant risks or effects that would negatively affect the audited entity's ability to effectively administer the program(s)/function(s) audited.

on low-hazard dams. If the downstream development raises the dam hazard level, the Commission would add the dam to the inspection schedule.

Appendices

Appendix 1

Objectives, Scope, and Methodology

Objectives

The objectives of this audit were to determine whether the Commission on Environmental Quality's (Commission) Dam Safety Program:

- Prioritizes and inspects high- and significant-hazard dams in accordance with applicable requirements and best practices.
- Ensures that dam owners take corrective action to address deficiencies identified during an inspection, and enforces program requirements to help ensure that dam owners make needed repairs.
- Ensures that all high- and significant-hazard dams have emergency action plans.
- Maintains accurate and complete data on regulated dams and dam inspections.

Scope

The scope of this audit covered the Commission's Dam Safety Program processes and relevant controls related to the oversight of state regulated high- and non-exempt significant-hazard dams as of January 17, 2020. The audit covered:

- Inspections completed from September 1, 2018, through December 31, 2019, including any corrective action plan identified during testing those inspections.
- Corrective action plans received from dam owners in association with inspections completed from September 1, 2016, through August 31, 2017.
- High- and non-exempt significant-hazard dams based on the status of dams as of January 17, 2020.

Methodology

The audit methodology included reviewing statutes, rules, best practices, and the Commission's policies and procedures; collecting information and documentation; performing selected tests and other procedures; analyzing

and evaluating the results of those tests; and interviewing Commission management and staff.

Data Reliability and Completeness

Auditors reviewed information on dams including information from inspections and emergency action plans maintained in the Commission's Dam Safety Module as of January 17, 2020. Auditors' procedures to review the data for completeness included (1) generating reports from the Commission's Dam Safety Module; (2) observing the data extract for the reports; (3) reviewing the parameters used to extract the data; and (4) comparing the results of the report. In addition, auditors tested certain general and application controls in the Dam Safety Module. Auditors determined that the data was sufficiently reliable for the purposes of this audit.

Sampling Methodology

The following nonstatistical samples were tested for compliance with requirements. They were primarily selected through random selection to ensure that the sample included a specific cross section of the population. Auditors also selected additional items to ensure the sample included items with specific characteristics.

- To test dam inspections, auditors selected a sample of 25 dams to include a cross section of inspections on high- and significant-hazard dams from September 1, 2018, through December 31, 2019. Auditors selected one additional item to get coverage of a complaint inspection.

- To test corrective action plans, auditors selected a sample of 25 dam inspections to include a cross section of inspections on "poor" condition dams from September 1, 2016, through August 31, 2017. Auditors selected four additional corrective action plans identified during inspection testing.

- To test Emergency Action Plans (EAPs), auditors selected a sample of 25 dams to include dams whose owners had submitted an EAP. Auditors selected two additional items for testing to include dams with different descriptions in the Dam Safety Module.

The test results as reported do not identify which items were randomly selected or selected using professional judgment; therefore, it would not be appropriate to project the test results to the population.

Additionally, to test whether the Commission had informed dam owners of their requirement to submit EAPs, auditors selected a nonstatistical sample of 25 dams primarily through random selection. This sample design was

chosen so the sample could be evaluated in the context of the population. The test results may be projected to the population, but the accuracy of the projection cannot be measured.

To test change management, auditors identified a population of three application changes that were implemented during fiscal year 2019. Auditors selected a nonstatistical sample of one change for testing. The sample item was not necessarily representative of the population; therefore, it would not be appropriate to project the test results to the population.

Information collected and reviewed included the following:

- The Commission's dam safety related rules, policies, and procedures.
- Dam inspections and communications with dam owners, including corrective action plans, from the Commission's Dam Safety Module.
- Dam inventory data from the Commission's Dam Safety Module for the period September 1, 2014, through January 17, 2020, extracted January 17, 2020.
- Physical copies of EAPs from the Commission's files.

Procedures and tests conducted included the following:

- Interviewed the Commission's Critical Infrastructure Division management and staff assigned to the Dam Safety Program.
- Reviewed the Commission's dam safety policies and procedures for compliance with applicable state requirements and alignment with Model State Dam Safety Program guidelines.
- Used data analysis to determine whether the Commission conducted all required dam safety inspections between January 18, 2015, and January 17, 2020.
- Tested whether inspections performed between September 1, 2018, and December 31, 2019, were performed according to requirements.
- Used data analysis to identify whether the Commission prioritized the inspection of the most hazardous dams between January 1, 2015, through December 31, 2019.
- Tested processes regarding corrective action plans requested on inspections performed on "poor" condition dams from September 1, 2016, through August 31, 2017.

- Used data analysis to determine if the Commission had EAPs for all high- and non-exempt significant-hazard dams.
- Tested processes regarding EAPs on file as of January 17, 2020.
- Tested whether the Commission was requesting EAPs from dam owners that had not submitted an EAP but were required to (as of January 17, 2020).

Criteria used included the following:

- Texas Administrative Code, Title 30, Chapter 299.
- Texas Water Code, Chapter 12.
- The Commission's policies and procedures, including its *Dam Safety Manual*.
- *The National Dam Safety Program - Model State Dam Safety Program*, Federal Emergency Management Agency and the Association of State Dam Safety Officials, July 2007.

Project Information

Audit fieldwork was conducted from December 2019 through May 2020. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The following members of the State Auditor's staff performed the audit:

- Anna Howe, CFE (Project Manager)
- Arnton Gray, CPA (Assistant Project Manager)
- Nimita Azam, M.Sc.
- Jerel Deacon
- Rebecca Franklin, CISA, CGAP, CFE
- Ryan Walther
- Mary Ann Wise, CPA, CFE (Quality Control Reviewer)
- Cesar Saldivar, CFE, CGAP (Audit Manager)

Appendix 2

Issue Rating Classifications and Descriptions

Auditors used professional judgment and rated the audit findings identified in this report. Those issue ratings are summarized in the report chapters/sub-chapters. The issue ratings were determined based on the degree of risk or effect of the findings in relation to the audit objective(s).

In determining the ratings of audit findings, auditors considered factors such as financial impact; potential failure to meet program/function objectives; noncompliance with state statute(s), rules, regulations, and other requirements or criteria; and the inadequacy of the design and/or operating effectiveness of internal controls. In addition, evidence of potential fraud, waste, or abuse; significant control environment issues; and little to no corrective action for issues previously identified could increase the ratings for audit findings. Auditors also identified and considered other factors when appropriate.

Table 2 provides a description of the issue ratings presented in this report.

Table 2

Summary of Issue Ratings	
Issue Rating	**Description of Rating**
Low	The audit identified strengths that support the audited entity's ability to administer the program(s)/function(s) audited or the issues identified do not present significant risks or effects that would negatively affect the audited entity's ability to effectively administer the program(s)/function(s) audited.
Medium	Issues identified present risks or effects that if not addressed could moderately affect the audited entity's ability to effectively administer program(s)/function(s) audited. Action is needed to address the noted concern(s) and reduce risks to a more desirable level.
High	Issues identified present risks or effects that if not addressed could substantially affect the audited entity's ability to effectively administer the program(s)/function(s) audited. Prompt action is essential to address the noted concern(s) and reduce risks to the audited entity.
Priority	Issues identified present risks or effects that if not addressed could critically affect the audited entity's ability to effectively administer the program(s)/function(s) audited. Immediate action is required to address the noted concern(s) and reduce risks to the audited entity.

Appendix 3

Internal Control Components

Internal control is a process used by management to help an entity achieve its objectives. Government Auditing Standards require auditors to assess internal control when internal control is significant to the audit objectives. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) established a framework for five integrated components and seventeen principles of internal control which are listed in Table 3.

Table 3

Internal Control Components and Principles		
Component	**Component Description**	**Principles**
Control Environment	The control environment sets the tone of an organization, influencing the control consciousness of its people. It is the foundation for all other components of internal control, providing discipline and structure.	▪ The organization demonstrates a commitment to integrity and ethical values. ▪ The board of directors demonstrates independence from management and exercises oversight of the development and performance of internal control. ▪ Management establishes, with board oversight, structures, reporting lines, and appropriate authorities and responsibilities in the pursuit of objectives. ▪ The organization demonstrates a commitment to attract, develop, and retain competent individuals in alignment with objectives. ▪ The organization holds individuals accountable for their internal control responsibilities in the pursuit of objectives.
Risk Assessment	Risk assessment is the entity's identification and analysis of risks relevant to achievement of its objectives, forming a basis for determining how the risks should be managed.	▪ The organization specifies objectives with sufficient clarity to enable the identification and assessment of risks relating to objectives. ▪ The organization identifies risks to the achievement of its objectives across the entity and analyzes risks as a basis for determining how the risks should be managed. ▪ The organization considers the potential for fraud in assessing risks to the achievement of objectives. ▪ The organization identifies and assesses changes that could significantly impact the system of internal control.
Control Activities	Control activities are the policies and procedures that help ensure that management's directives are carried out.	▪ The organization selects and develops control activities that contribute to the mitigation of risks to the achievement of objectives to acceptable levels. ▪ The organization selects and develops general control activities over technology to support the achievement of objectives. ▪ The organization deploys control activities through policies that establish what is expected and procedures that put policies into action.
Information and Communication	Information and communication are the identification, capture, and exchange of information in a form and time frame that enable people to carry out their responsibilities.	▪ The organization obtains or generates and uses relevant, quality information to support the functioning of internal control. ▪ The organization internally communicates information, including objectives and responsibilities

Internal Control Components and Principles		
Component	**Component Description**	**Principles**
		for internal control, necessary to support the functioning of internal control. ▪ The organization communicates with external parties regarding matters affecting the functioning of internal control.
Monitoring Activities	Monitoring is a process that assesses the quality of internal control performance over time.	▪ The organization selects, develops, and performs ongoing and/or separate evaluations to ascertain whether the components of internal control are present and functioning. ▪ The organization evaluates and communicates internal control deficiencies in a timely manner to those parties responsible for taking corrective action, including senior management and the board of directors, as appropriate.

Source: Internal Control – Integrated Framework, Committee of Sponsoring Organizations of the Treadway Commission, May 2013.

Appendix 4

Additional Information on Dams in Texas

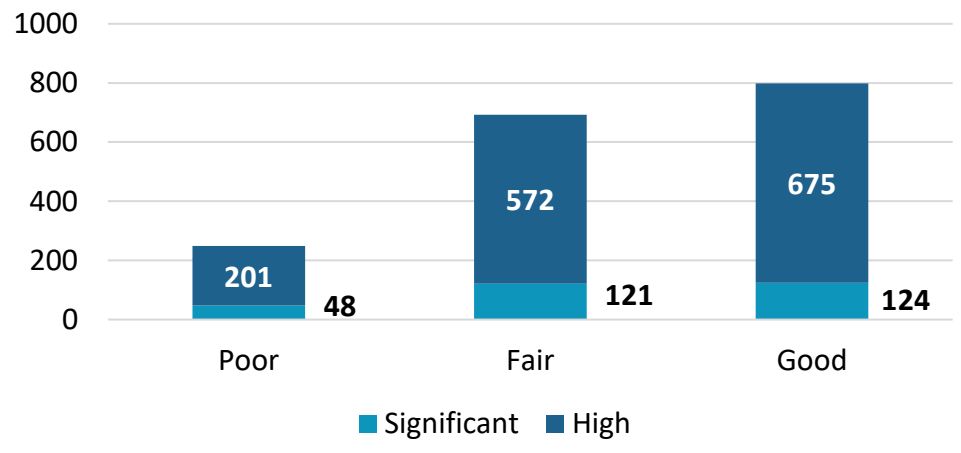
Regulation of Dams in Texas

According to the Association of State Dam Safety Officials (ASDSO), Texas has more dams than any other state and the highest number of state-regulated dams classified as high hazard. In 2018, Texas had 7,324 dams registered in the National Inventory of Dams. This was 921 (14 percent) more dams than the state with the second highest number of dams reported (Kansas with 6,403 dams). [12]

As of January 17, 2020, the Commission on Environmental Quality (Commission) tracked 8,678 dams in its Dam Safety Module. A total of 7,315 (84 percent) of the dams tracked by the Commission were state regulated. The Commission tracks more dams than those subject to its regulation to evaluate and update the regulatory status of those dams, such as federally regulated, breached, removed, and not constructed dams. Of the 7,315 dams under state regulation, only 1,788 of those dams required Commission inspections. Those 1,788 dams included 1,475 high-hazard dams, 310 non-exempt significant-hazard dams, and 3 large low-hazard dams. Figure 3 shows the distribution of state-regulated dams by condition and hazard classification.

Figure 3

Distribution of Dams That Require Inspections as of January 17, 2020 by Condition and Hazard Classification [a]



[a] Dams not shown in the figure but are inspected include (1) 17 significant- and 27 high-hazard dams that do not have a condition recorded and (2) 3 low hazard dams classified as "good" condition.

Source: The Commission's Dam Safety Module.

[12] State dam safety performance reports obtained from National Inventory of Dams data from 2018.

The Commission has determined that small- and intermediate-sized, low-hazard dams should only be inspected:

- At the request of the owner.
- As a result of a complaint.
- At the request of someone other than the owner.
- Following an emergency such as a flooding event.
- For determining the hazard classification.

Regulation of dams includes dams owned by private and public entities. Of the 8,678 recorded dams, 4,524 are owned by private entities, and 2,759 are owned by public entities; the ownership of the other 1,395 dams was unknown as of January 17, 2020.

Dam Failures

The Commission also tracks dam failures in the state. The Commission asserted there have been 29 dam failures since 2008. These failures did not result in any deaths or injuries.

Dam Rehabilitation Costs

The average age of a dam in Texas is 56 years. According to the Association of State Dam Safety Officials (ASDSO), many dam owners, especially private dam owners, find it difficult to finance rehabilitation projects.[13] In 2019, the ASDSO estimated that it would cost $65.89 billion to rehabilitate non-federally owned dams nationwide *in The Cost of Rehabilitating Our Nation's Dams*. The most recent ASDSO estimate for rehabilitating Texas dams was $4.7 billion in 2012.[14]

Examples of Federal Funding

The Dam Safety Program is working with Federal Emergency Management Agency (FEMA) on implementing the provisions of the 2016 National Dam Rehabilitation Program Act (Act), a grant program created to assist local communities to rehabilitate, repair, or remove a high-hazard dam before it fails. FEMA and the respective state dam safety programs will determine which dams receive the grant funding. Eligible dams include high-hazard dams with an approved EAP that fail to meet minimum dam safety standards or pose an unacceptable risk to the public.

[13] Association of State Dam Safety Officials, *State Performance and Current Issues.*

[14] Association of State Dam Safety Officials, *The Cost of Rehabilitating Our Nation's Dams.*

The Act authorized $10 million in grant funding for fiscal years 2017 and 2018, $25 million for fiscal year 2019, $40 million for fiscal year 2020, and $60 million for fiscal years 2021 through 2026, for a total of $445 million over ten years. The first one-third of the total available funding will be equally distributed among participating states. The remaining two-thirds of the funds will be distributed based on need.

Examples of State Funding

The Texas State Soil and Water Conservation Board Flood Control Program consists of grants to cover the costs of dam maintenance and construction for soil and water conservation districts, counties, cities, water control and improvement districts, and other special purpose districts.

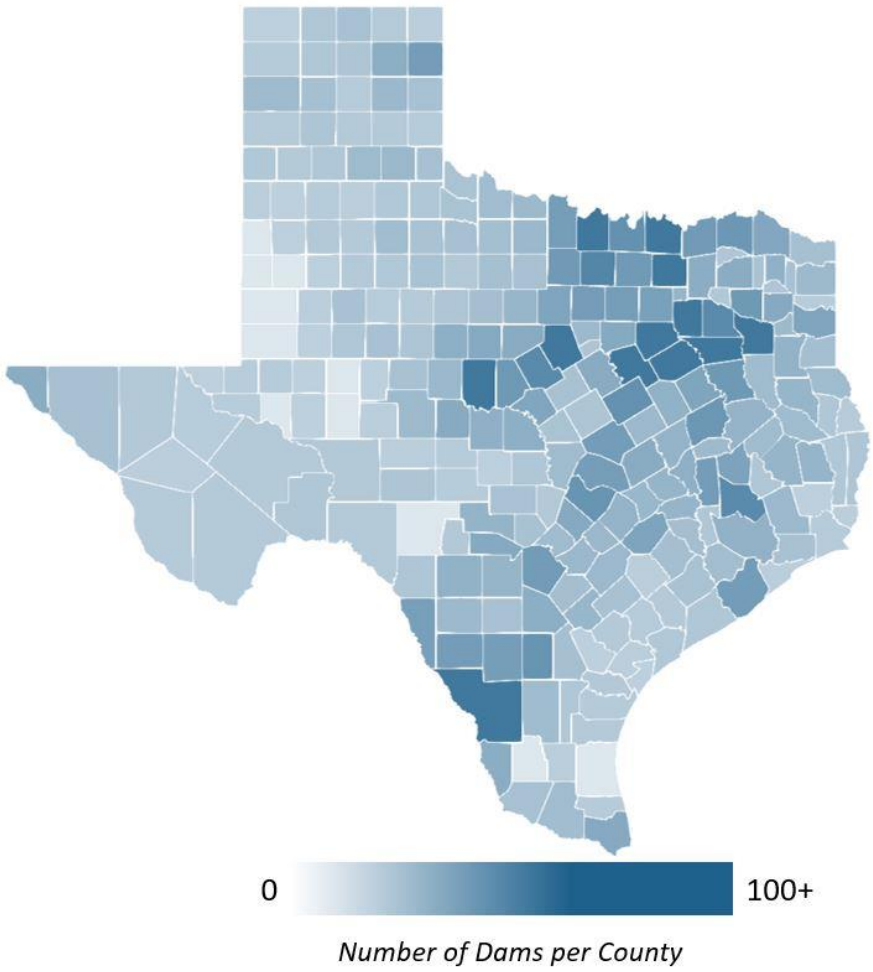
For the 2020 –2021 biennium, $17.7 million was appropriated for the maintenance and construction of these dam maintenance and construction projects. An additional $150 million was appropriated from the Economic Stabilization Fund for dam infrastructure projects.

Density of State Regulated Dams

Using data provided by the Commission as of January 17, 2020, auditors produced the map on the next page (Figure 4) showing the approximate distribution and density of state regulated dams in the state by county.

Figure 4

Approximate Density of State Regulated Dams by County as of January 17 ,2020



Source: Based on information from the Commission's Dam Safety Module.

Appendix 5

Implementation Status of Recommendations from Prior SAO Dam Safety Audit

The Commission on Environmental Quality (Commission) has made progress in implementing recommendations the State Auditor's Office made in *An Audit Report on the Dam Safety Program at the Commission on Environmental Quality (*State Auditor's Office Report No. 08-032, May 2008).

Table 4 shows the implementation status of recommendations significant to the current report. The Commission fully implemented four of the seven subchapters' significant recommendations. (See text box for implementation status definitions.)

Definitions of Implementation Status

The definition of each implementation status is as follows:

- **Fully Implemented**: Successful development and use of a process, system, or policy to implement a recommendation.
- **Substantially Implemented**: Successful development but inconsistent use of a process, system, or policy to implement a recommendation.
- **Incomplete or Ongoing**: Ongoing development of a process, system, or policy to address a recommendation.
- **Not Implemented**: Lack of a formal process, system, or policy to address a recommendation.

Source: State Auditor's Office instructions for submitting implementation status of recommendations.

Table 4

Status of Implementation of Audit Recommendations in *An Audit Report on the Dam Safety Program at the Commission on Environmental Quality* (State Auditor's Office Report No. 08-032, May 2008)[15]				
Chapter	**Recommendation**	**Self-reported Implementation Status**	**Implementation Status as Determined by Auditors During This Audit**	**Auditor Comments**
2-A	The Commission should: ▪ Determine the acceptable frequency of inspections in light of best practices and giving sufficient consideration to the public's safety. ▪ Develop clear, detailed, written criteria for each condition classification—good, fair, and poor. ▪ Develop specific criteria for the acceptance of inspection reports submitted by dam owners and other governmental agencies.	Fully Implemented	Fully Implemented	

[15] The recommendations reviewed for implementation status are limited to those that are relevant to the scope of the current audit.

Status of Implementation of Audit Recommendations in *An Audit Report on the Dam Safety Program at the Commission on Environmental Quality* (State Auditor's Office Report No. 08-032, May 2008)[15]				
Chapter	**Recommendation**	**Self-reported Implementation Status**	**Implementation Status as Determined by Auditors During This Audit**	**Auditor Comments**
2-B	The Commission should: Develop formal risk-assessment criteria to ensure it identifies the highest risk dams and prioritizes its inspections. These criteria should include, but not be limited to: ▪ Date of the most recent inspection of a dam. ▪ Downstream hazard classification of a dam. ▪ Condition information on a dam, or lack thereof. ▪ Hydraulic adequacy information on a dam, or lack thereof. ▪ Maximum storage capacity of a dam's impoundment. ▪ Progress by a dam owner in implementing recommendations from prior inspection reports. ▪ Location of a dam in a high-growth area. ▪ Purpose of the dam's impoundment. ▪ Security risks posed by a dam.	Fully Implemented	Substantially Implemented	While the Commission asserted it considers several factors consistently regarding dam inspection priority, it has not documented the method it uses to prioritize dam inspections.
2-B	The Commission should: Develop a strategy for updating the downstream hazard classification of low-hazard dams. This strategy should include: ▪ Developing and using criteria to prioritize re-evaluations of low hazard dams' downstream hazard classifications. ▪ Considering the use of geographic information system (GIS) software to assist in an evaluation of changes in downstream conditions.	Fully Implemented	Fully Implemented	
4-A	The Commission, in conjunction with recommendations regarding administrative rule revisions in Chapter 5, should: Establish written policies and procedures that provide guidance regarding: ▪ The circumstances under which the Commission should request a corrective action plan from dam owners. ▪ The format and timeframes for dam owners to submit and implement a corrective action plan. ▪ Follow-up activities that Commission staff should perform based on the seriousness of the deficiencies identified. ▪ Required documentation that dam owners must submit demonstrating the corrective action(s) taken.	Fully Implemented	Substantially Implemented	The Commission has established policies and procedures for this recommendation; however, the Commission's practices have changed and the policies and procedures do not reflect changes.

Status of Implementation of Audit Recommendations in *An Audit Report on the Dam Safety Program at the Commission on Environmental Quality* (State Auditor's Office Report No. 08-032, May 2008)[15]				
Chapter	Recommendation	Self-reported Implementation Status	Implementation Status as Determined by Auditors During This Audit	Auditor Comments
4-A	The Commission should utilize an automated process to monitor corrective action plans submitted by dam owners, ensure that important recommendations made in inspection reports are implemented, and ensure that rule violations are appropriately resolved.	Fully Implemented	Substantially Implemented	The Commission reviews and maintains corrective action plans and reviews prior deficiencies during inspections to identify if rule violations have been resolved or still exist. These processes are not automated.
4-B	The Commission should develop and adhere to an enforcement policy for its dam safety program.	Fully Implemented	Substantially Implemented	The commission developed an enforcement policy; however, the policy does not reflect current enforcement practices.
5	The Commission should update its administrative rules to address best practices. Specifically, the Commission should consider revising its rules to: ▪ Require owners of all high- and significant-hazard dams to develop emergency action plans. ▪ Define who is considered a dam owner and identify which parties are responsible for violations of regulations and laws. ▪ Require dam owners to submit inspection reports completed by other government entities, private contractors, and dam owners' own inspectors. ▪ Require dam owners to notify the Commission in writing of any ownership changes. ▪ Clearly define key terms relating to dam safety requirements.	Fully Implemented	Fully Implemented	
6-A	The Commission should: ▪ Ensure it has formal written data entry, data collection, and data documentation guidelines for its databases. ▪ Clearly define all data fields, such as condition of dam. ▪ Communicate the guidelines to its staff to improve consistency in data entry. ▪ Ensure that information in its dam inventory database completely and accurately reflects the information contained in the Commission's hard copy files. ▪ Ensure that it maintains complete information on dam failures, including information regarding any loss of life and economic loss resulting from the failure. ▪ Ensure that supporting documentation is retained for the calculation of the Percent of High- and Significant-hazard Dams Inspected within Established Time Frames performance measure.	Fully Implemented	Fully Implemented	

Status of Implementation of Audit Recommendations in *An Audit Report on the Dam Safety Program at the Commission on Environmental Quality* (State Auditor's Office Report No. 08-032, May 2008)[15]				
Chapter	Recommendation	Self-reported Implementation Status	Implementation Status as Determined by Auditors During This Audit	Auditor Comments
6-B	The Commission should ensure, either through the implementation of a new system or modifications to its existing one, that: ▪ Its automated systems and disaster recovery plan are compliant with the requirements in Title 1, Texas Administrative Code, Chapter 202. ▪ Its dam safety program coordinates all planned new database work with the Commission's Information Resources Department in the development, security, and maintenance of the system. ▪ Any new databases developed track and store the history of data entered and who entered the data.	Fully Implemented	Fully Implemented	

Appendix 6

Related State Auditor's Office Work

Related State Auditor's Office Work		
Number	**Product Name**	**Release Date**
08-032	An Audit Report on the Dam Safety Program at the Commission on Environmental Quality	May 2008

Copies of this report have been distributed to the following:

Legislative Audit Committee

The Honorable Dan Patrick, Lieutenant Governor, Joint Chair
The Honorable Dennis Bonnen, Speaker of the House, Joint Chair
The Honorable Jane Nelson, Senate Finance Committee
The Honorable Robert Nichols, Member, Texas Senate
The Honorable Giovanni Capriglione, House Appropriations Committee
The Honorable Dustin Burrows, House Ways and Means Committee

Office of the Governor

The Honorable Greg Abbott, Governor

Commission on Environmental Quality

Members of the Commission on Environmental Quality
- Mr. Jon Niermann, Chair
- Mr. Bobby Janecka, Commissioner
- Ms. Emily Lindley, Commissioner

Mr. Toby Baker, Executive Director