

**Virtual Public Meeting  
Pre-Recorded Presentation**

FM 1082 Fort Phantom Hill Lake Dam Project

West of Cheyenne Cove Road  
To 0.5 mile east of Dam  
Jones County, Texas  
July 7, 2022

CSJ: 0972-03-021

Welcome to the Texas Department of Transportation Abilene District's second virtual public meeting for the FM 1082 project at Fort Phantom Lake Dam. This is a pre-recorded presentation. My name is Bryce Wade with the Texas Department of Transportation. I would like to welcome you and thank you for participating in this virtual public meeting.



November 7, 2000, was the last deathless day on roadways in Texas. That means for nearly 22 years, at least one person has died every single day. We all have a part to play to change that. This message is that reminder – to End the Streak of deaths on Texas highways. We need drivers and passengers to act more responsibly and help us reach our goal of zero deaths by 2050. Texans can play a major role in ending fatal crashes with a few simple driving habits: wear seatbelts, drive the speed limit, put away the phone and other distractions, and never drive under the influence of alcohol or drugs. So please do your part and share this message with your friends and family.

### **NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) ASSIGNMENT TO THE TEXAS DEPARTMENT OF TRANSPORTATION**

*The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated Dec. 9, 2019, and executed by the Federal Highway Administration (FHWA) and TxDOT.*

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 United States Code 327 and a Memorandum of Understanding dated Dec. 9, 2019, and executed by the Federal Highway Administration and TxDOT.

## NEPA Process



Environmental Documentation will be prepared in accordance with the National Environmental Policy Act (NEPA).



**Air Quality &  
Traffic Noise**



**Social &  
Community Impacts**



**Hazardous Materials**



**Biological Resources**



**Water Resources**



**Historic &  
Archaeological Resources**

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TxDOT must follow all aspects of the National Environmental Policy Act, better known as “NEPA”.

NEPA ensures that agencies, such as TxDOT, consider the environmental impacts of proposed actions and provides a process for informing the public. This is accomplished by identifying, analyzing, and documenting the environmental impacts of proposed improvements to both natural and man-made resources.

During the environmental process, the project team will analyze and document impacts to natural resources including biological and water, cultural resources including archaeological and historic, community resources, air quality, traffic noise, and the presence of hazardous materials and utilities in the proposed project area. These are called “environmental constraints”.

The information gathered during the environmental process about environmental constraints will influence the proposed project’s design with an emphasis on avoiding and minimizing impacts.

## Virtual Public Meeting Purpose



1. Inform the public of project status and present results of the alternatives analysis.
2. Describe the alternatives so the public can determine how they may be affected.
3. Provide the public the opportunity to provide input.
4. Develop a record of public participation.



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The purpose of this virtual public meeting is to:

1. Inform the public of project status and present results of the alternatives analysis that was requested at the first meeting.
2. Describe the alternatives so the public can determine how they may be affected.
3. Provide the public the opportunity to provide input.
4. And develop a continued record of public participation.

## Project History, Need & Purpose



### Project History:

- Dam completed in 1938
- Roadway was added to crest in 1953

### Project Need:

- Existing roadway is too narrow
- Roadway is difficult to maintain
- Intermittent closures due to safety concerns

### Project Purpose:

- Update roadway to current standards
- Make maintenance more feasible
- Reduce need for roadway closures



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The construction of the dam was completed in 1938. TxDOT constructed the roadway on the crest of the dam in 1953.

Since that time, maintenance of the existing roadway and guardrail have been challenging, and subsequent repairs have been unable to address the recurring safety issues.

The roadway's current width does not meet today's standards, and the distress to the pavement also causes the roadside barrier to be insufficient for consistent safe operations.

This has created the need to intermittently close one or both lanes of the roadway over the past several years.

The goal of the project is to alleviate these issues and produce a more reliable, and safe roadway that continues to serve as a vital connection to both sides of the lake.

## Proposed Improvements at First Public Meeting



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At the previous public meeting we presented a design that would re-align the roadway, shown in blue, off the crest of the dam and relocate the roadway to the downstream side north of the lake. This would require a bridge be built over Elm Creek near the east-end of the dam.

## Previous Studies



**Freese & Nichols**  
Infrastructure Solutions  
Planned Projects  
Continued Service

**Fort Phantom Hill Dam  
Crest Road Evaluation**

Prepared for:  
**City of Abilene**

August 30, 2013

Prepared by:  
**Freese and Nichols, Inc.**  
4055 International Plaza, Suite 200  
Fort Worth, Texas 76109  
817-735-7300

**EVALUATION OF ALTERNATIVES  
FOR  
LAKE FORT PHANTOM HILL DAM  
ROADWAY IMPROVEMENTS  
CITY OF ABILENE, TEXAS**

Prepared for:  
**CITY OF ABILENE  
555 WALNUT STREET  
ABILENE, TEXAS 79904**

**DECEMBER 2020**

PREPARED BY:  
**eht**  
**Enprotec / Hibbs & Todd**  
402 Collier, Abilene, Texas 79901  
Phone: (254) 699-1800 / Fax: (254) 699-3240  
Website: eht.com  
P.E. Firm Registration No. 1511  
P.O. Firm Registration No. 52103  
RPLS Firm Registration No. 10211800

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This design stemmed from two evaluation & analysis studies that were conducted on behalf of the city of Abilene in 2013 by Freese & Nichols, and 2020 by Enprotec/Hibbs & Todd. Copies of the 2020 study, shown on the right, were made available at the last meeting. This study concluded that re-aligning the roadway off the dam was the recommended alternative.



## Previous Studies



Construction Estimate (2020 by EH&T)  
\$ 5.6 Million

Construction Estimate (2022 by TxDOT)  
\$ 7.6 Million



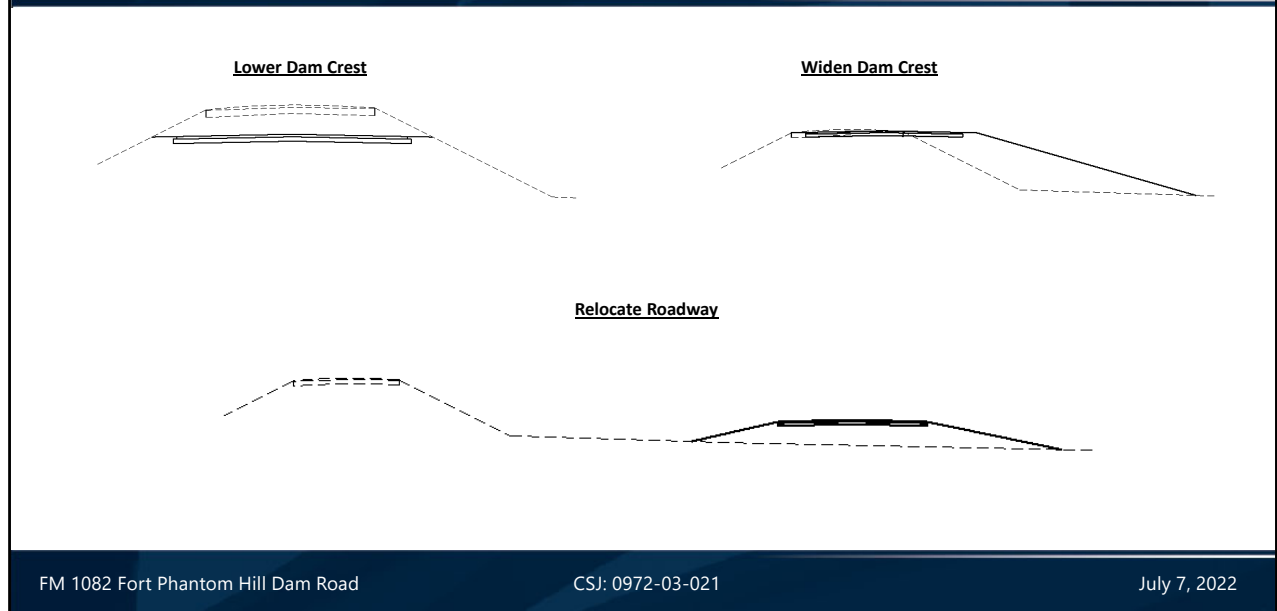
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After preliminary estimates by TxDOT to re-align the roadway showed significantly higher cost than the estimate from the 2020 study, several members of the public voiced concern that other alternatives presented in the study were not also re-evaluated to see if they now would be more cost effective when compared to re-alignment of the roadway. Concerns were also raised about environmental impacts, and a higher potential for trespassing on private land downstream of the dam if the road were to be relocated and a bridge built over Elm Creek. It is important to note that the dollar values shown on this slide are construction estimates only, and do not include estimated values for right-of-way acquisition or utility relocation. The total estimated cost including these elements will be summarized on a later slide.

## Alternatives Considered



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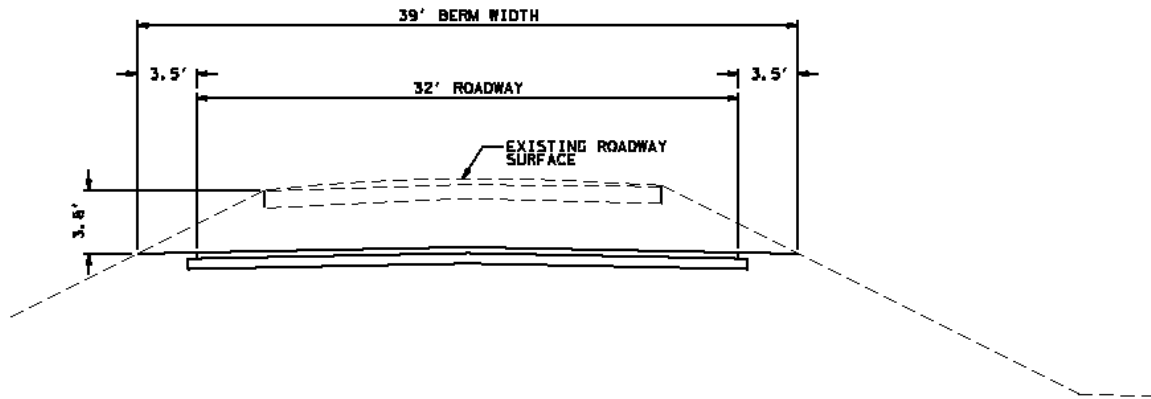
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After discussion in the first public meeting, TxDOT agreed to go back and re-evaluate and compare three main alternatives that could feasibly meet the project goals. These alternatives are:

- 1) Lowering the crest of the dam to meet the required standard for roadway width.
- 2) Widen the crest of the dam to the downstream side to achieve the standard roadway width.
- 3) Relocate the roadway below the dam and build to current standards.

## Lowering The Crest



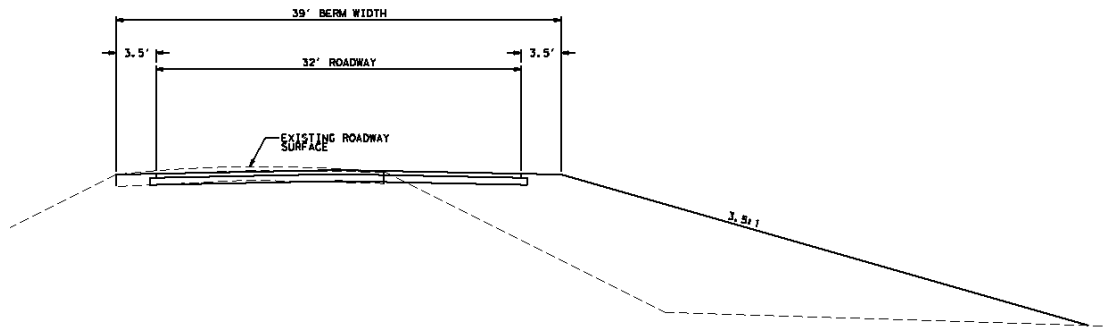
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The first alternative we'll present is lowering of the dam crest. The required roadway width is 32 feet, but the total berm width required is 39 feet to accommodate guard rail along both sides of the roadway. The distance required to lower the roadway to meet the 39-foot width is approximately 3.8 feet. According to the study conducted in 2013, the existing dam crest has approximately 2.5 feet of clearance above the PMF or probable maximum flood. The dam for Lake Fort Phantom is classified as a large, high hazard dam, and is therefore required to contain 100% of the PMF according to the TCEQ's Hydrologic and Hydraulic Guidelines for Dams in Texas. This makes lowering the crest of the dam infeasible.

## Widening The Crest



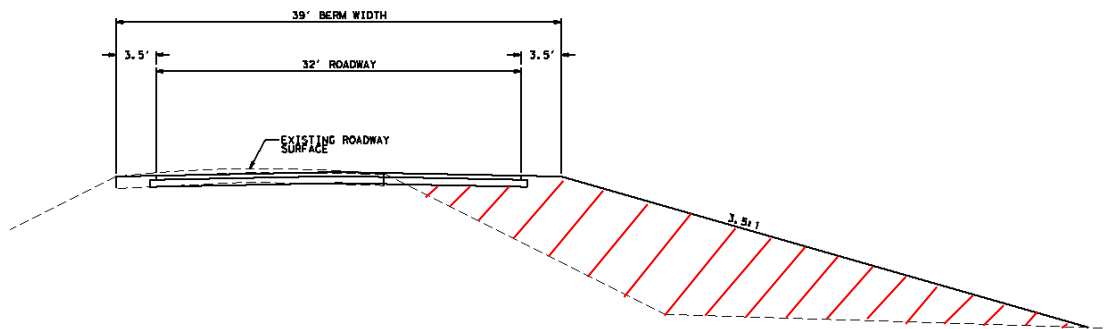
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The next option considered was widening the crest of the dam. The crest width required would still be 39 feet, but this option leaves the crest elevation at or above the PMF elevation to satisfy TCEQ requirements. This option also includes changing the existing, 2:1 slope to a flatter, 3.5:1 slope on the downstream side as indicated in the 2020 report.

## Widening The Crest



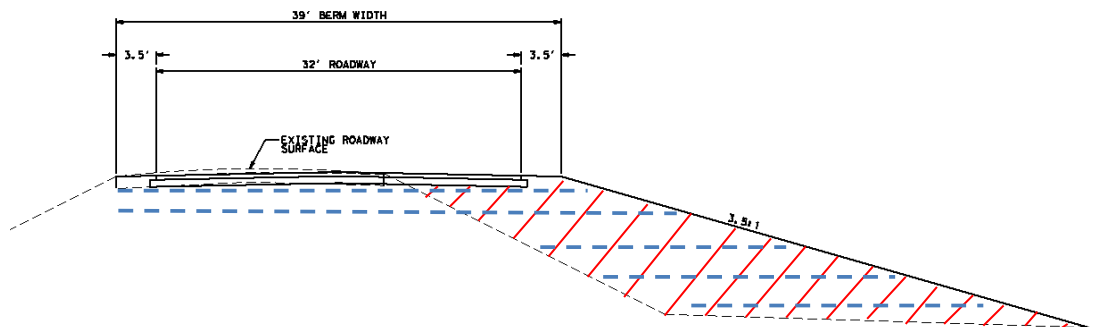
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A major drawback to this option is the large amount of embankment shown here with red hatch lines. The height of fill above existing ground will create a zone of settlement that will lead to much of the same issues that we face with the existing roadway today.

## Widening The Crest



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To help mitigate this, layers of reinforcing geogrid, shown here by the blue, dashed lines, can be installed to minimize the impacts of settlement, but some localized settlement can still be expected.

## Widening The Crest



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Another major drawback to the crest widening option is the slope will fill in a portion of Elm Creek. The red line in the drawing shows the approximate limits of earthwork where the slopes tie into existing ground below the dam. This would require us to complete what is called Stream Bank Mitigation where a specially certified team of environmental consultants would need to identify a stream, creek, or river somewhere in the Abilene District that could be improved to offset the permanent loss at Elm Creek. The process would take approximately 2 years and add an additional estimated 1.5 million dollars in consulting fees and construction costs. This option also creates a large amount of embankment that will have to be transported from another location to the project site and will increase the cost of earthwork.

## Widening The Crest



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This will also require that the outlet pipe, circled in blue, be extended where it will intersect with the new slope. This will require removal of a rocky hillside, shown here in yellow hatching, to allow for equipment and materials to reach the confined outfall channel that runs just East of the main creek.



## Widening The Crest



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This also impacts a portion of the overhead electrical transmission line as you can see here circled in green.

## Widening The Crest



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For comparison, we also looked at a combination of lowering the crest to minimize the amount of embankment to the downstream slope as was suggested in the 2020 study. Lowering the crest to the maximum amount and still meet the probable maximum flood results in earthwork limits as approximated by this blue line. For scale, the difference between the red and blue lines in the area of Elm Creek is about 14 to 15 feet. As shown, the impacts to the drainage structure and utility remain. This reduction in fill around the Elm Creek area lowers the risk of needing stream bank mitigation. This does, however, greatly increase the risk of dam failure due to overtopping from flooding and is not a risk that TxDOT will take responsibility for.

# Relocate Roadway



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The last option, which was presented in the first public meeting, would relocate the roadway off the crest of the dam to the north.

## Relocate Roadway



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This option would require a bridge be built over Elm Creek. Again, the red lines show the approximate limits of earthwork, and the orange lines show the limits of concrete that would be placed under each end of the bridge. Though the bridge will be spanning over the creek area, the trees in the immediate vicinity of the bridge would be removed.

The disadvantages to this option are:

- 1) Increased cost to purchase about 23 acres of land from the city of Abilene
- 2) Removes a large quantity of trees
- 3) Impacts a large portion of the overhead electric transmission line near the dam further increasing cost
- 4) Increased potential for trespassers

## Relocate Roadway



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To construct the set of columns on the east side of Elm Creek, a small, temporary cofferdam, shown by this dashed line, would be constructed to provide access to column locations. This impact to the creek is temporary and does not require stream bank mitigation. Aside from tree removal, the remainder of the creek area can be left unchanged.

# Estimated Cost Comparison



RELOCATION	
ROADWAY CONSTRUCTION	\$ 7,605,000.00
UTILITY ADJUSTMENTS	\$ 1,618,000.00
ROW & FENCING	\$ 420,000.00
<b>TOTAL</b>	<b>\$ 9,643,000.00</b>
WIDEN CREST	
ROADWAY CONSTRUCTION	\$ 8,676,000.00
UTILITY ADJUSTMENTS	\$ 650,000.00
STREAM BANK MITIGATION	\$ 1,500,000.00
<b>TOTAL</b>	<b>\$ 10,826,000.00</b>

Bid in August '23

Bid in January '25

These are current estimated costs and are subject to change.

When comparing the estimated cost for the two remaining feasible options, relocation of the roadway is approximately 1.2 million dollars less. Considering the activities to prepare either option for construction, the dates the projects could be ready to bid are August of 2023 for relocation of the roadway, and January of 2025 to widen the crest of the dam. Accounting for time, cost, risk, environmental constraints, and long-term maintenance considerations, relocation of the roadway is the recommended alternative.

## We Request Your Feedback



Please submit your comments regarding the proposed FM 1082 Forth Phantom Hill Dam Road project presented in this Virtual Public Meeting by using any of the three methods below. Comments must be received or postmarked by **Friday July 22, 2022**.



### Email Us

[Michael.Haithcock@txdot.gov](mailto:Michael.Haithcock@txdot.gov)



### Mail-In Comments

TxDOT Abilene District Office  
Director of TP&D  
Michael Haithcock, PE  
4250 N. Clack St.  
Abilene, Texas 79601



### Comment Online

Attend the Virtual Public Meeting and Click on the Comment Button

For general questions about the presentation or the project, please contact Michael Haithcock, P.E., TP&D Director at [Michael.Haithcock@txdot.gov](mailto:Michael.Haithcock@txdot.gov) or call (325) 676-6810.

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Please submit your comments regarding the proposed FM 1082 Fort Phantom Hill Dam Road project presented in this Virtual Public Meeting by using any of the three methods listed on the slide. Comments must be received or postmarked by July 22, 2022.

- You may email us at: [Michael.Haithcock@txdot.gov](mailto:Michael.Haithcock@txdot.gov)
- You may mail written comments to:
  - TxDOT Abilene District Office
  - Director of TP&D
  - Michael Haithcock, PE
  - 4250 N Clack St.
  - Abilene, Texas 79601
- Or you may attend the Virtual Public Meeting and Click on the Comment Form link

For general questions about the presentation or the project, please contact Michael Haithcock, P.E., TP&D Director at [Michael.Haithcock@txdot.gov](mailto:Michael.Haithcock@txdot.gov) or call (325) 676-6810.

# THANK YOU FOR ATTENDING!

*Please remember to submit your comments.*

Thank you for attending the virtual public meeting for the FM 1082 project. Please remember to submit your comments by July 22, 2022.

This concludes the pre-recorded presentation. Thank you.