I-20 RANGER HILL RECONSTRUCTION

BROWNWOOD DISTRICT

Project Location

PROJECT OVERVIEW

Location

Ranger Hill is located on Interstate 20 in eastern Eastland County, between the city of Ranger and State Highway 16. The hill is approximately halfway between Abilene and Fort Worth.

Project Need

Design improvements are necessary in the Ranger Hill area to enhance and improve safety and mobility, specifically addressing the following issues:

- Roadway safety and operational concerns due to functional roadway deficiencies that contribute to high frequency and severity of traffic incidents and congestion
- Constrained mobility of vehicles due to crashes and increasing traffic demand
- Incident management concerns and access limitations for first responders

A substantial reconstruction of I-20 was approved through an environmental study completed in fall 2016, receiving strong support from local citizens, state and local elected officials, area law enforcement and first responders, and frequent travelers of I-20 along Ranger Hill.

Project Features

Reconstruction will greatly enhance the safe and efficient movement of the traveling public on the hill:

- A more gradual 3.5% grade and approximately 1° curve will allow for the safe and efficient movement of traffic at a design speed of 75 mph.
- The new/reconstructed westbound (uphill) pavement section will accommodate three mainlanes, allowing large trucks to use the outside lane for climbing without impeding smaller vehicles traveling at higher speeds. The eastbound (downhill) pavement section will initially accommodate two mainlanes, with room to add a third lane in the future.
- A minimum of 10-feet-wide inside and outside shoulders will be maintained in both directions to allow refuge for stranded or stalled vehicles.
- Continuous two-way frontage roads will improve access and incident response capabilities throughout the length of the project.

TxDOT Photo

PROJECT TIMELINE

- Summer 2017: Begin reconstruction
- Summer 2017 - Fall 2019: Excavate and raise/lower the roadway base as needed to prepare for future paving on the south (eastbound) side of Ranger Hill
- Spring 2019 - Spring 2020: Construct new frontage road and mainlanes on the south (eastbound) side of Ranger Hill, including new exit ramp to SH 16
- Summer 2019 - Fall/Winter 2020: Add new westbound mainlanes and reconstruct safety rest area entrance and exit ramps, including adjacent westbound frontage road improvements
- Fall/Winter 2020 - Spring 2021: Construct new frontage road on the north (westbound) side of Ranger Hill
- Spring 2021: Open all frontage roads, mainlanes and entrance/exit ramps, and permanently shift traffic to ultimate designated lanes

**Traffic will be shifted several times during the construction phasing, though at least two lanes of traffic will remain open at all times. Traffic changes will be announced via local news media, TxDOT Brownwood District Twitter feed (@TxDOTBWD), and Dynamic Message Signs located along I-20.*

I-20 AT A GLANCE

Major East-West Corridor

Interstate 20 is one of the primary east-west corridors in Texas, running 636 miles from the Texas-Louisiana border near Marshall to I-10 in far West Texas. I-20 serves the following metropolitan areas:

- Tyler-Longview-Marshall
- Dallas-Fort Worth Metroplex
- Abilene
- Midland-Odessa

Traffic Volume and Incidents

- Over 21,000 vehicles travel through the Ranger Hill area daily
- Trucks account for almost half (9,000) of the traffic volume
- Average daily traffic is predicted to grow from 22,400 vehicles in 2018 to 34,700 vehicles in 2048, representing a 55% increase
- Trucks are projected to account for nearly 43% of the projected increase
- Approximately 130 traffic incidents occurred from 2008-2015

Functional Design Issues

Although TxDOT has made several safety enhancements that have reduced the number and frequency of incidents in recent years, the roadway still does not meet current design and safety standards.

Notable functional design issues include:

- 6% grade, one of the steepest grades on the Texas interstate system
- Sharp curve with 8% banking (incline towards the inside of the curve)
- Lack of frontage roads, limiting first responder access to traffic incidents on the hill, and contributing to lengthy traffic backups when incidents do occur

Reconstruction Overview

I-20 reconstruction will address remaining safety, mobility, and design issues by:

- Reducing the grade from 6% to approximately 3.5%
- Straightening the horizontal curves
- Adding a third westbound climbing lane to accommodate slower vehicles
- Adding frontage roads on both sides

Texas Department of Transportation

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