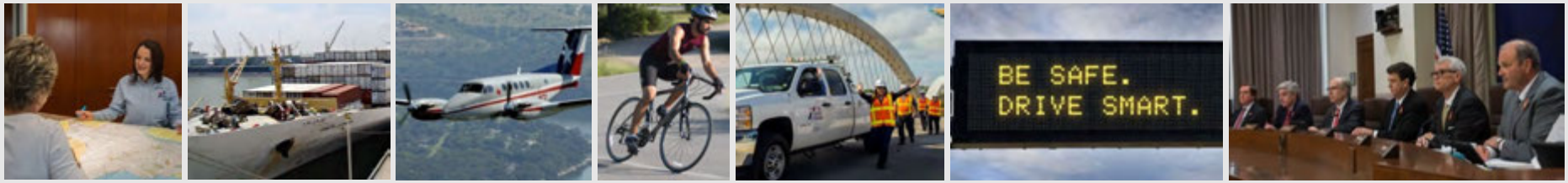
TEXAS DEPARTMENT OF TRANSPORTATION



IH 20 RANGER HILL PUBLIC MEETING

AUGUST 25, 2015

IH 20, Eastland County, TX – CSJ 0007-06-084

IH 20 from 3.5 mi. East of LP 254 to SH 16 (Ranger Hill)

Agenda

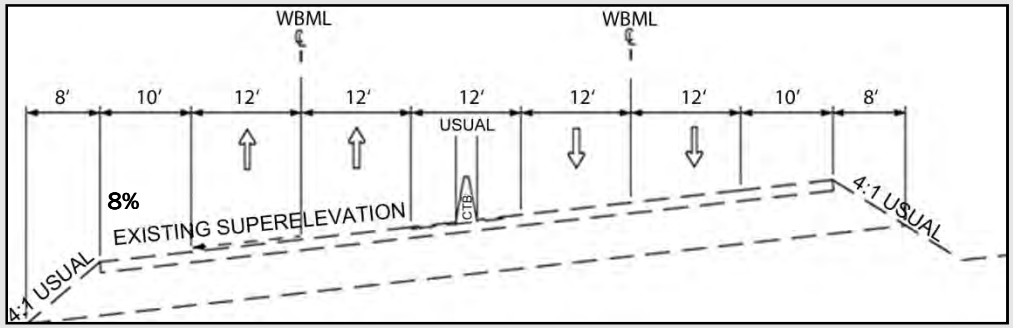
- Introductions
- Purpose of the Public Meeting
- Project Background
- Project Description
- Environmental Process
  - Defined Process for Proposed Project
  - Purpose and Need
- Preliminary Design
  - Design Goals and Objectives
  - Alternatives Considered
  - Proposed Alternatives for Further Analysis
- Next Steps
- Comment Period

Purpose of the Public Meeting

- Introduce the project to the general public
- Provide information on the current preliminary design
- Obtain public input
- Involve the public in the environmental process

Project Background

- Why the concern for this portion of IH 20
- Three main safety concerns
  - Steep grade
  - Sharp curve
  - Steep superelevation (8% banking)
- Need to update to current design standards



Project Background

- IH 20 at Ranger Hill has one of the steepest grades in Texas on interstate system
  - 127 traffic incidents since 2008
  - Petitions for safety improvements submitted to TxDOT
- TxDOT's safety improvements in 2013 and 2014
  - Resurfaced main lane pavement
  - Reduced speed limit from 75 to 65 MPH
  - Constructed 54-inch concrete barrier
  - Installed "high mast" safety lighting
- TxDOT has further evaluated public input and is proposing long-term modifications to improve safety and mobility

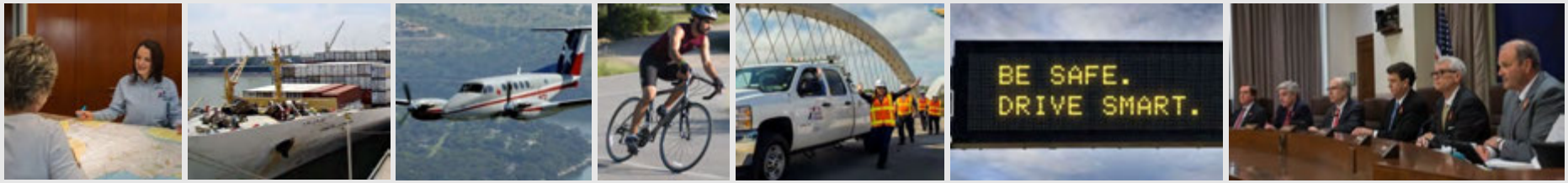
Roadway Prior to Safety Improvements

Roadway with Safety Improvements

Project Description

- Project limits:
  - Located in Eastland County, Texas
  - From approximately 3.5 miles east of Loop 254 to State Highway (SH) 16 in Eastland County
  - Length: approximately 3 miles
- Project would realign and reconstruct IH 20 main lanes to reduce steep vertical grade, flatten horizontal curves, and flatten superelevation (banking)
- Project details:
  - Reduce grade from approximately 6% to 3.5%
  - Reconstruct east and westbound lanes
  - Add westbound climbing lane
  - Add continuous two-way frontage road in both directions
  - Maintain access to the safety rest area

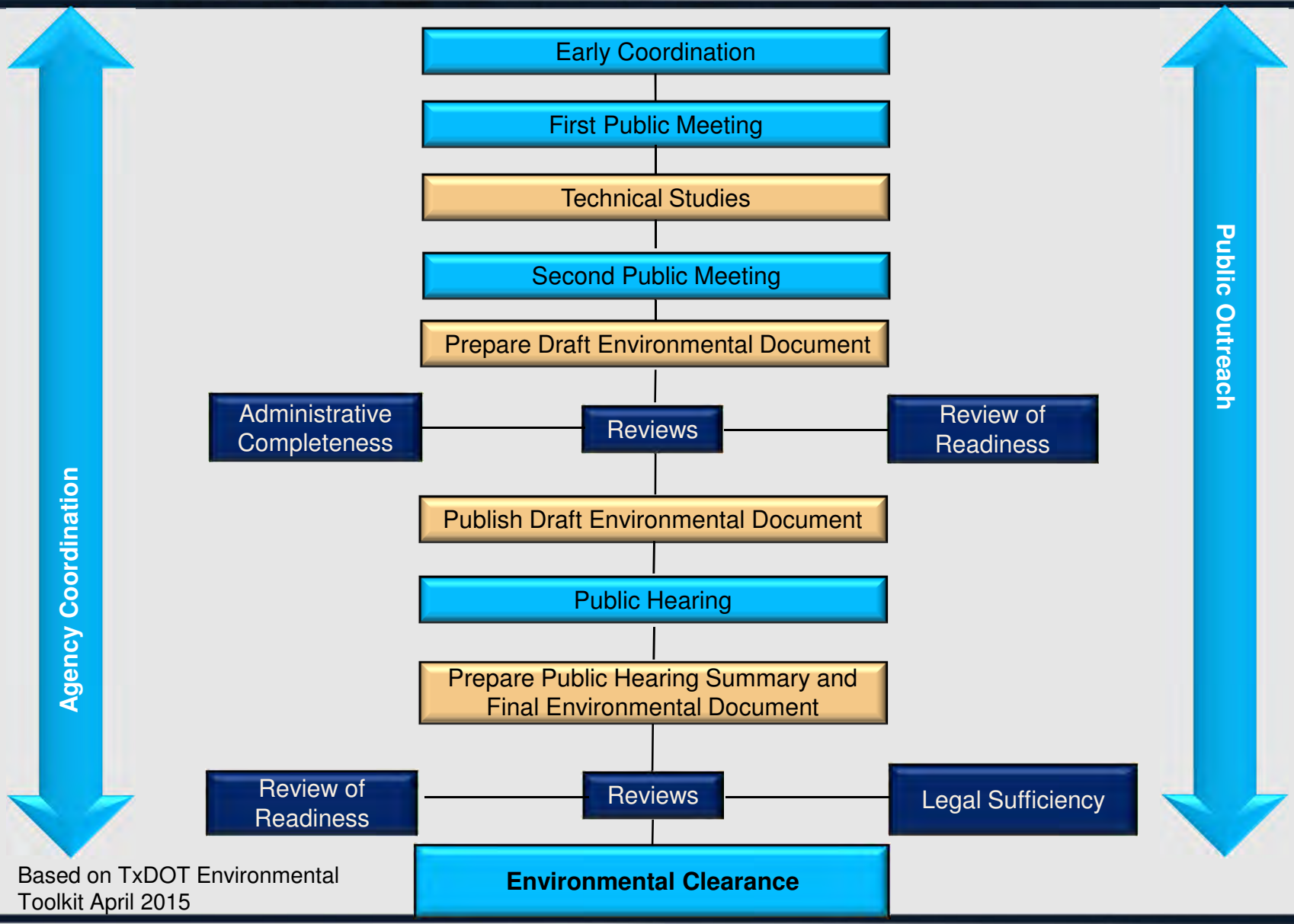
TEXAS DEPARTMENT OF TRANSPORTATION



ENVIRONMENTAL PROCESS

August 25, 2015

Defined Process for Proposed Project

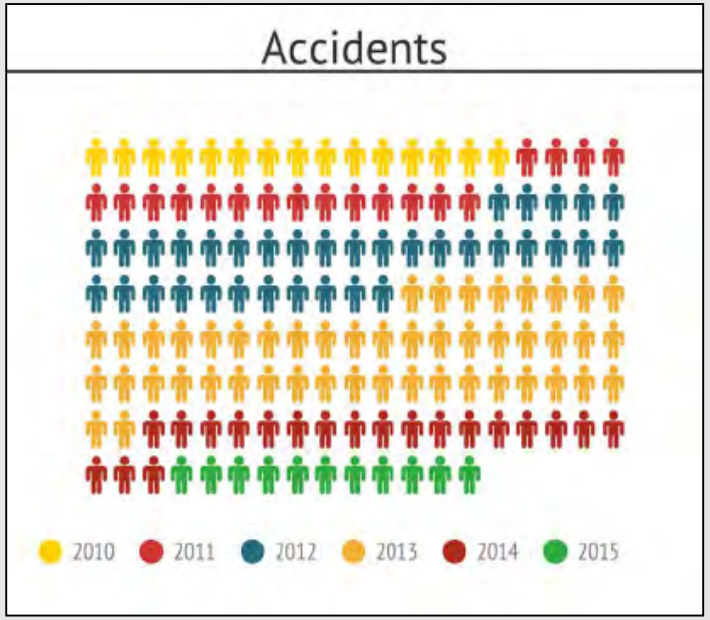


Based on TxDOT Environmental Toolkit April 2015

Purpose and Need

- Safety
- Mobility
- Access

Purpose and Need: Safety



6% Grade is one of the Highest in TX on Interstate System

50% of traffic consists of trucks

Approximately 9,000 a day!

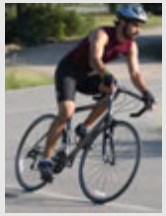
Purpose and Need: Mobility

- Over 18,000 vehicles travel this portion of IH 20 each day; approximately 9,000 (50%) are trucks
- Accident Delay
  - 30 minutes to 8 hours
  - Traffic backed up to Eastland (west) and Weatherford (east)
  - Back-ups worse on holidays
- Lack of emergency staff/resources to manage traffic for major incidents

Purpose and Need: Access

- Lack of frontage roads
  - When incident occurs traffic diverted to limited number of roadways in the area
- Access to IH 20 incidents by emergency responders
  - First responders park as close as possible
  - Then walk/wheel equipment to crash site
  - In some instances crash site may be a long distance from roadway access points

TEXAS DEPARTMENT OF TRANSPORTATION



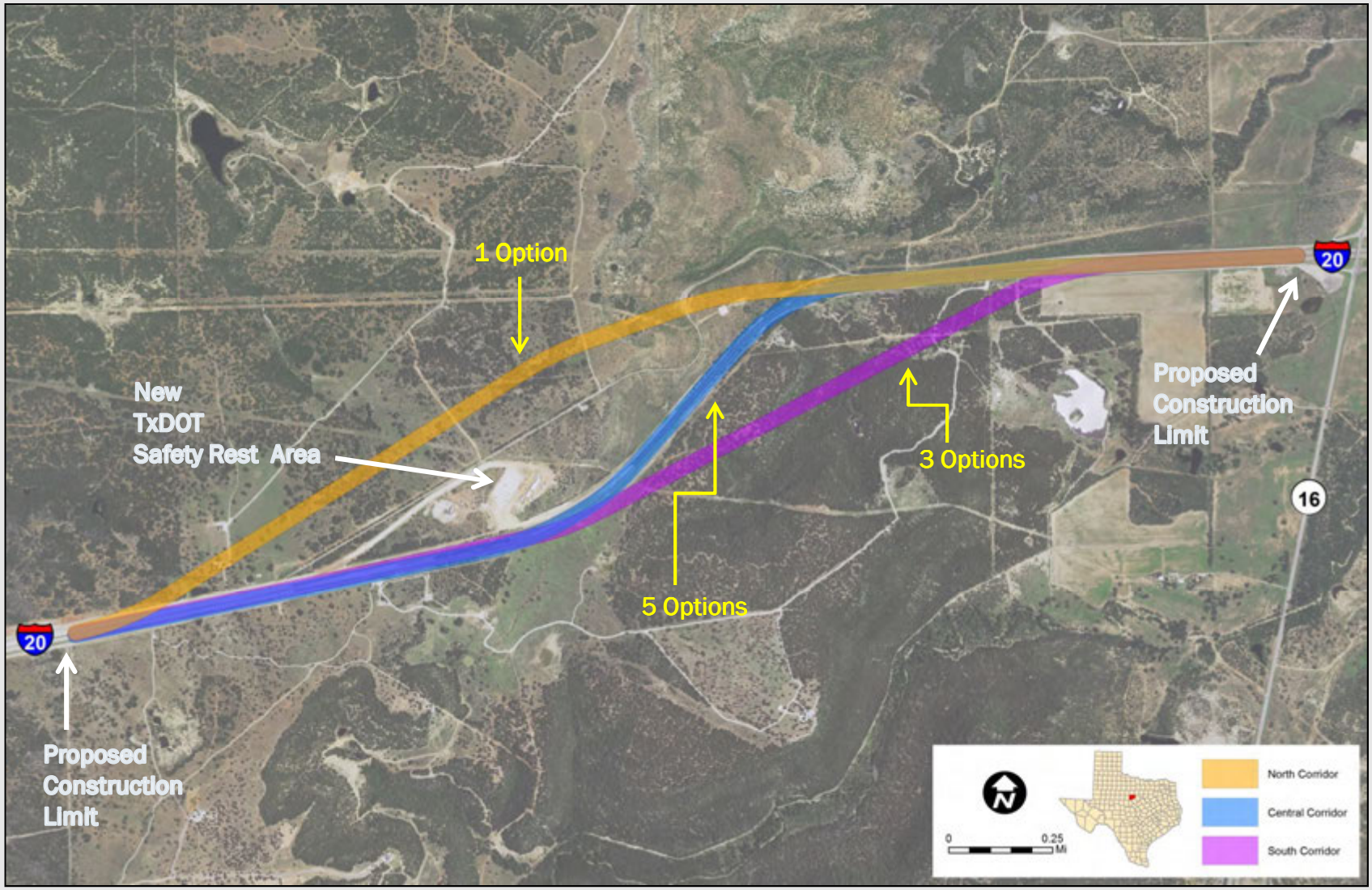
PRELIMINARY DESIGN

August 25, 2015

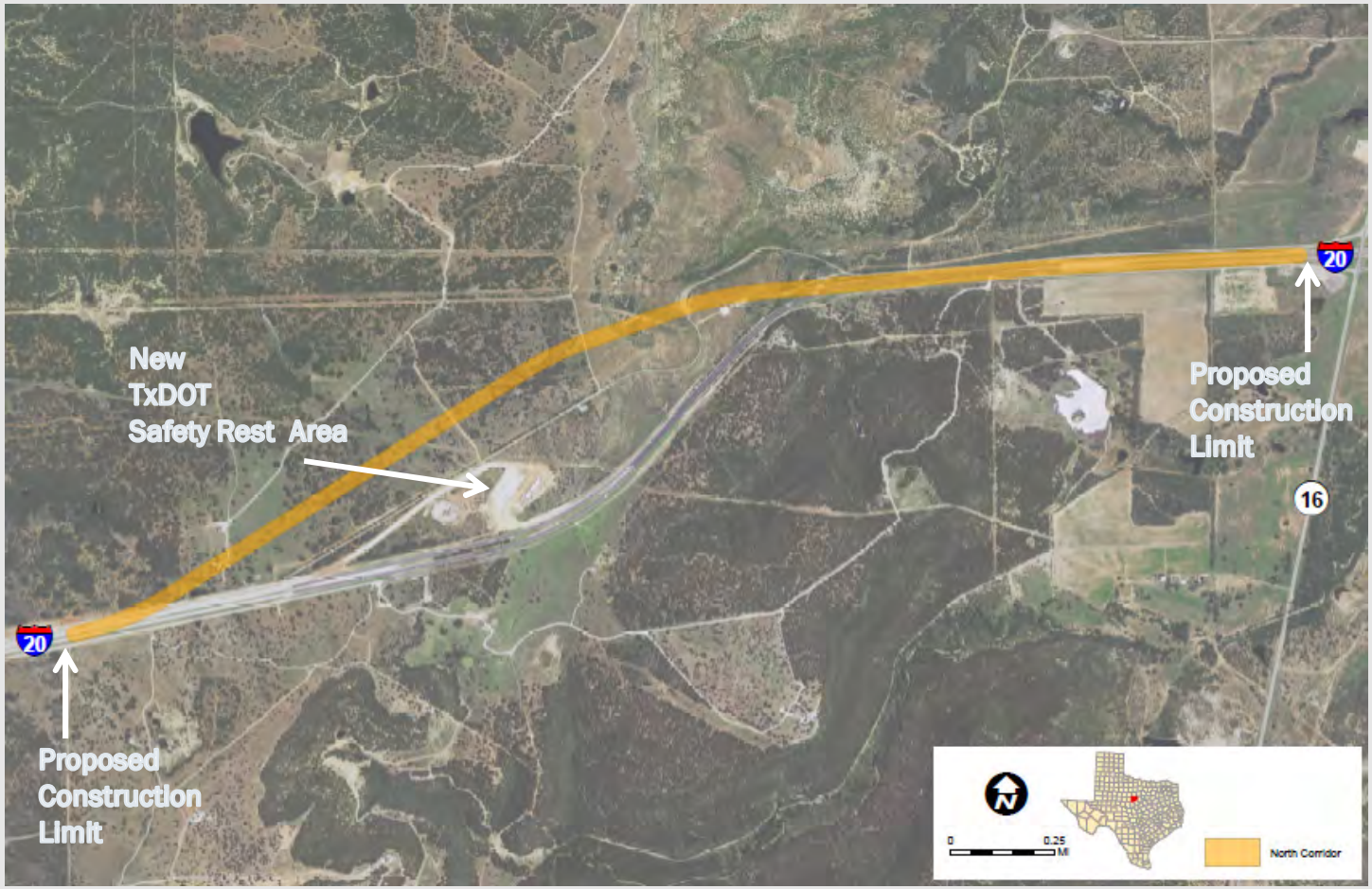
Design Goals and Objectives

- Enhance Safety
  - Reduce roadway grade
  - Straighten curves
  - Reduce roadway superelevation (banking)
- Optimize ROW
- Addition of frontage roads for better incident management
- Improve freight movement
- Accommodate future expansion
- Minimize constructability challenges

Alternatives Considered



North Corridor



North Corridor Constraints

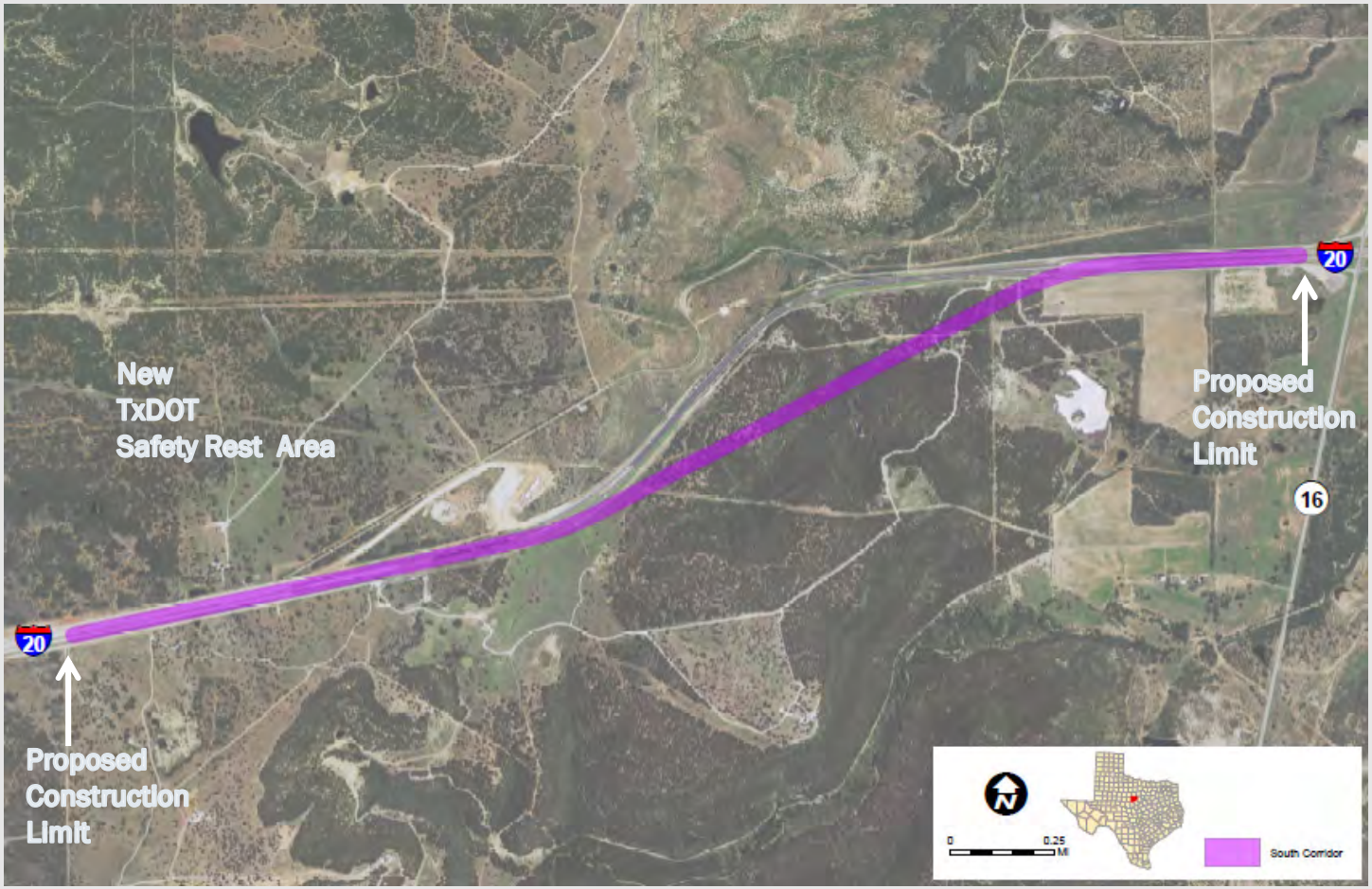
- Substantial ROW needed to the north of the existing highway and safety rest area
- Requires significant utility relocation
- Substantial earth work and heavy rock excavation
- New interchange to access the safety rest area from the interstate

Central Corridor

Central Corridor Constraints

- ROW impacts due to frontage roads north of the safety rest area
- Does not provide the optimal safety improvements to grade, curve and superelevation (banking)
- Difficulty in maintaining existing four lanes of traffic during construction
- Constructability challenges

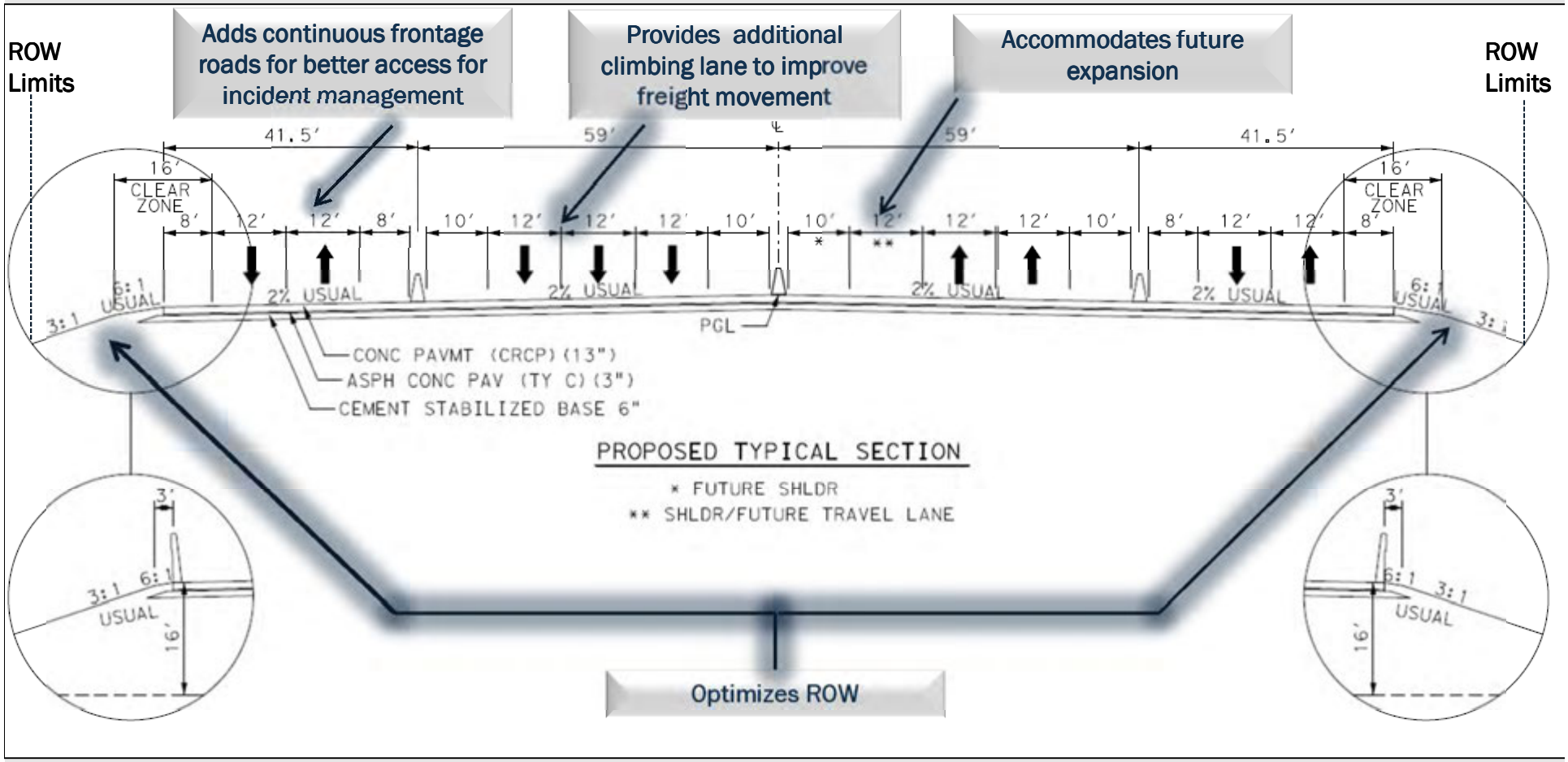
South Corridor



South Corridor Constraints

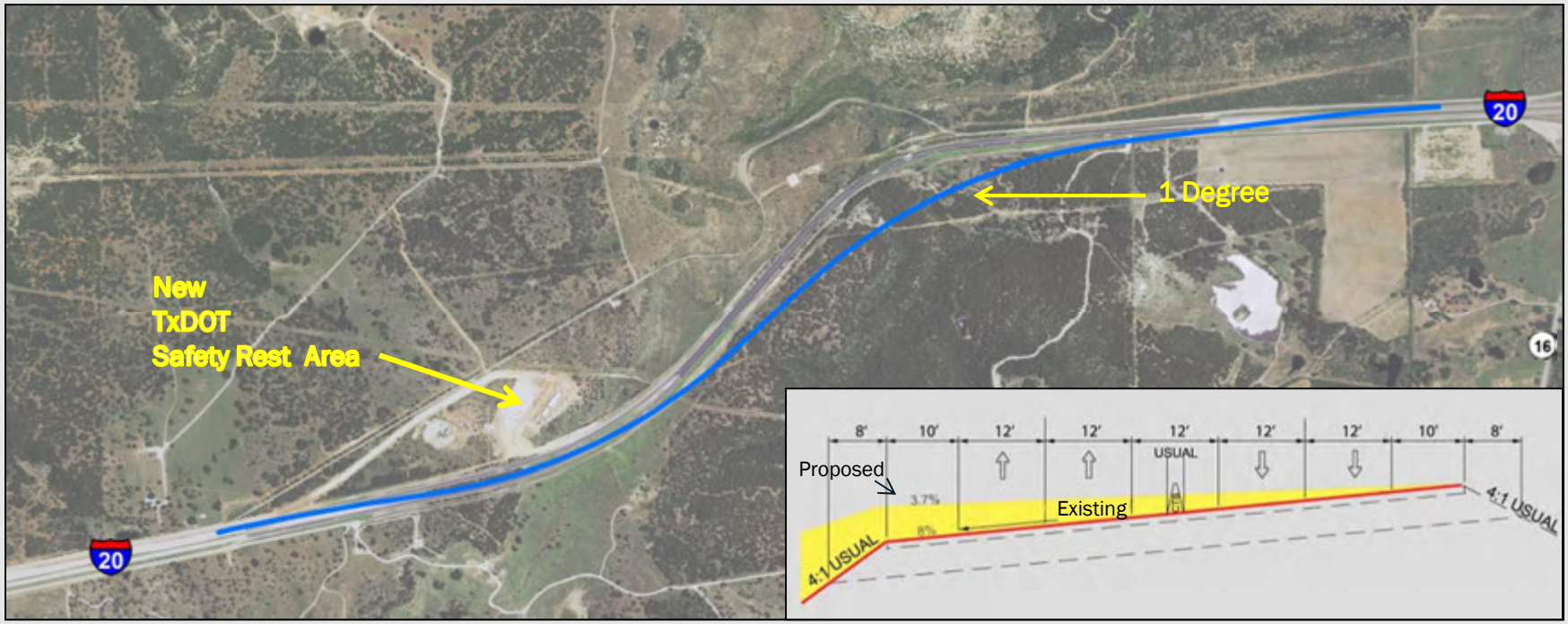
- Substantial ROW impacts to the south and to the north due to frontage road extending around safety rest area
- Significant earth work to the north and south of existing alignment

Proposed IH 20 at Ranger Hill



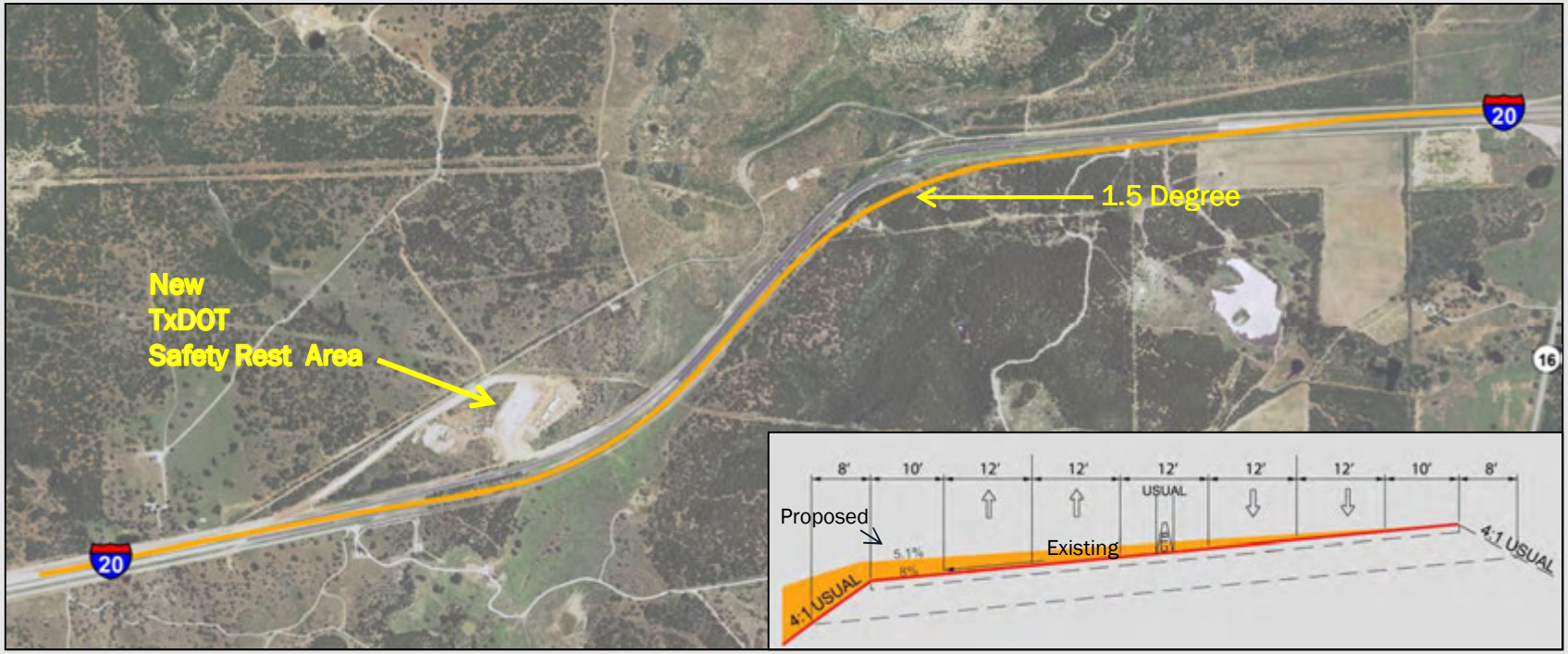
- Proposed frontage road and main lane configuration for current alternatives
- Consistent with identified design goals and objectives

Proposed Alternative 1



- Alternative Details
  - Passing lanes for westbound traffic
  - Continuous frontage roads
  - Access to rest area/braided ramps
  - Median barrier (54-inch)
- Pros
  - Flatter horizontal curve
  - Flatter superelevation (banking)
  - Keeps existing travel lanes open during construction
  - Drainage and stormwater runoff
  - Minimize constructability challenges
- Cons
  - Preliminary estimate of approximately 100 acres of ROW

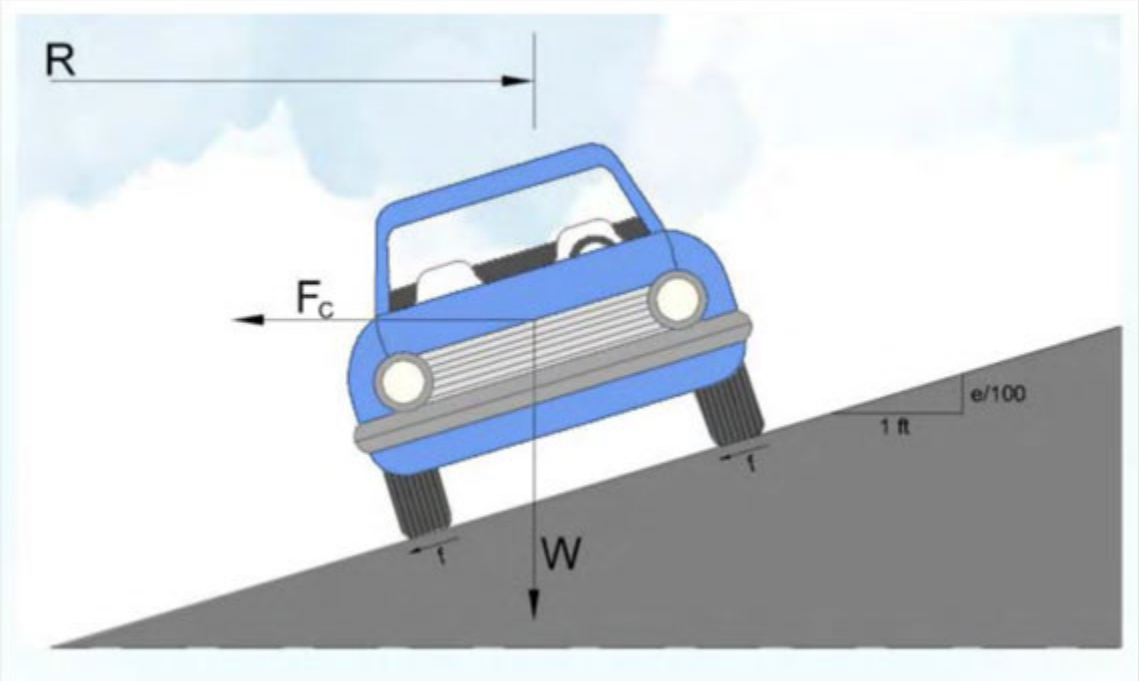
Proposed Alternative 2



- Alternative Details
  - Passing lanes for westbound traffic
  - Continuous frontage roads
  - Access to rest area/braided ramps
  - Median barrier (54-inch)

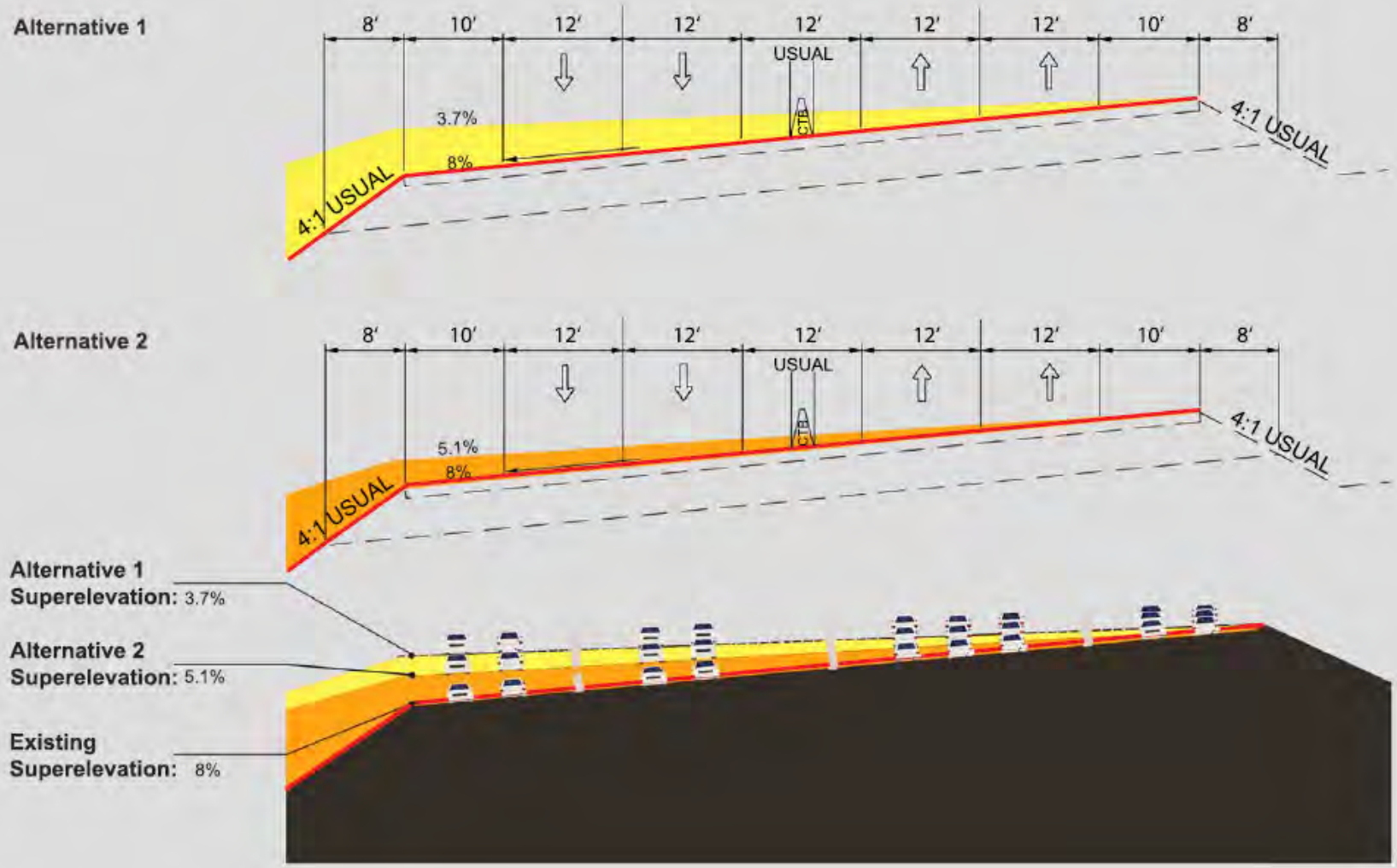
- Pros
  - Preliminary estimate of approximately 80 acres of ROW
  - Keeps existing travel lanes open during construction
- Cons
  - Steeper superelevation (banking)
  - Sharper horizontal curve
  - Drainage and stormwater runoff
  - Greater constructability challenges

Superelevation (Banking)



- Superelevation (banking) is a function of the horizontal curve design
  - Roadway banking/pavement rotation
  - Balances vehicles along with friction
- Steeper superelevation (banking)
  - Ideal for dry pavement conditions
  - Potentially hazardous during rain and winter events
- Minimal roadway superelevation (banking) and flatter horizontal curves improve safety

Superelevation (Banking) Comparison

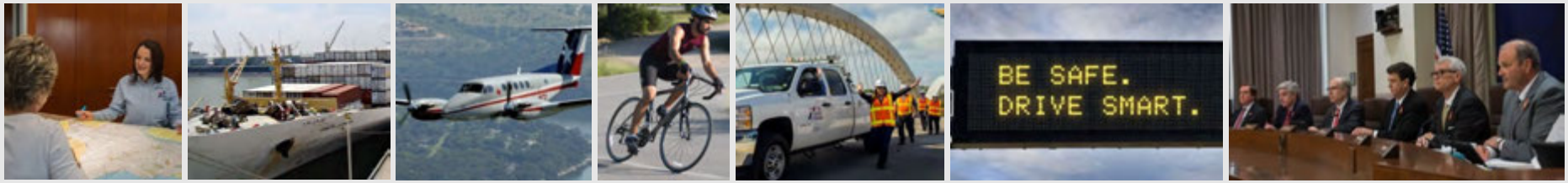


Summary: Alternatives 1 and 2

	Alternative 1	Alternative 2
No. of Parcels	▪ 5	▪ 5
Design Speed	▪ 75 MPH	▪ 75 MPH
Profile Grade	▪ 3.5%	▪ 3.5%
Constructability Challenges	▪ Large amounts of cut/fill ▪ Access to existing driveways	▪ Large amounts of cut/fill ▪ Access to existing driveways ▪ Construction Staging/steeper slopes
Pros	▪ Flatter horizontal curve (1 degree) ▪ Keeps existing travel lanes open during construction ▪ Flatter superelevation (3.7%) ▪ Better drainage and runoff ▪ Flatter construction slopes	▪ Preliminary estimate is approximately 80 acres of ROW ▪ Keeps travel lanes open during construction
Cons	▪ Preliminary estimate is approximately 100 acres of ROW	▪ Steeper superelevation (5.1%) ▪ Sharper horizontal curve (1.5 degrees) ▪ Drainage and runoff ▪ Steeper construction slopes

Next Steps

- Select Alternative for further evaluation
- Value Engineering Study September 2015
- Public Involvement
  - Ongoing meetings with Affected Property Owners
  - First Public Meeting – August 25, 2015
  - Second Public Meeting – Fall 2015
  - Public Hearing – Spring 2016
- Draft EA – Spring 2016
- Final EA/FONSI – Summer 2016



THANK YOU

Comment period ends September 4, 2015