Ports-to-Plains Corridor Feasibility Study (HB 1079)

Segment #2, Committee Meeting #3

Conference Call/Web-Ex

Welcome

TxDOT Leadership

Caroline Mays,
Director, Freight, Trade and Connectivity, TxDOT

Honorable Dan Pope, Mayor, City of Lubbock,
Ports-to-Plains Advisory Committee Chair

Honorable Brenda Gunter,
Mayor of San Angelo, Segment 2 Committee Chair

Agenda Review

1. Welcome
2. Recap of Previous Meeting
3. Determination of Areas Preferable and Suitable for Interstate Designation
4. Preliminary Cost Estimates
5. Break
6. Preliminary Committee Recommendations
7. Funding Sources
8. Review and Discussion of Report Chapters 3 and 4
9. Open Discussion
10. Adjourn

Segment #2

Recap of Previous Meeting

Caroline Mays, TxDOT

Mayor Brenda Gunter, Segment 2 Committee Chair

Changes in Alternatives Studied

ORIGINAL SCENARIOS

- Baseline (No Build)
- 4-Lane Divided
- Interstate Highway

BASELINE SCENARIOS

- Baseline (No Build)
- 4-Lane Divided
- 4-Lane Divided with Locally Preferred Route
- Interstate Highway

REVISED SCENARIOS

- Baseline (No Build)
- Interstate Highway

Overview of Segment Meeting #2 – February 5, 2020

- **Held in San Angelo, TX**
- **Members attended via in-person or via online conference due to inclement weather**
- **Agenda**
  - Forecasted conditions
  - Planned and programmed projects
  - Identification of gaps
  - Preliminary Corridor Feasibility Analysis
  - Review and discussion of Report Chapters 1 and 2

Online Conference

Segment #2 Forecasted Total Population 2020 and 2050

1,046,558 (2020)

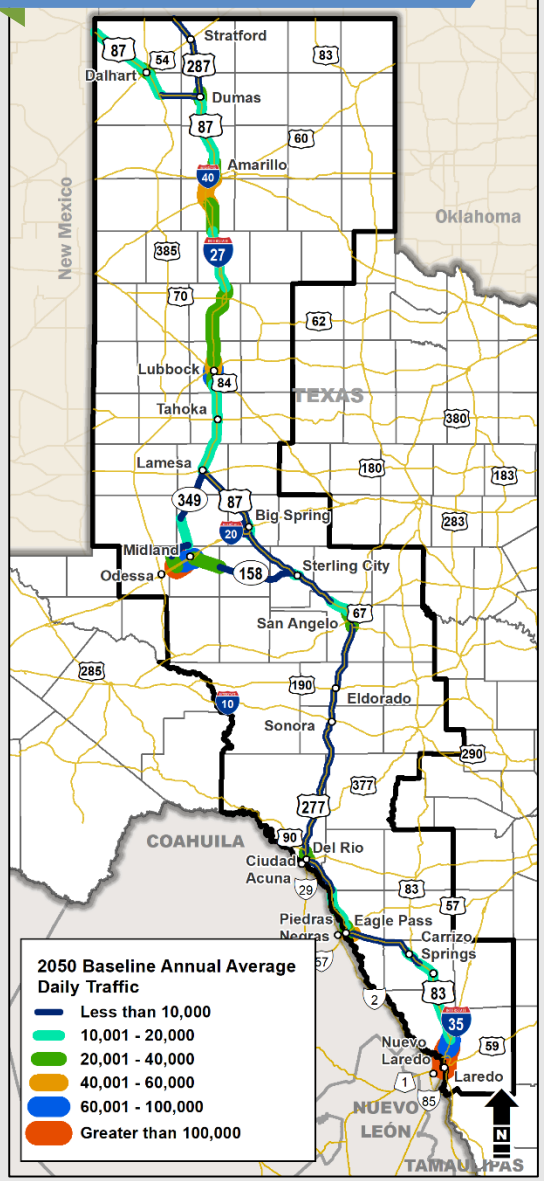
2,104,479 (2050)

- Total population for the 31 counties is projected to **increase by 1,057,921** persons.
- **Andrews County** (352%) and **Midland County** (206%) and have the highest projected population growth.
- **Lynn County** (-25%) and **Kimble County** (-24%) have the largest projected population declines.
- Overall Segment #2 population is projected to **grow by 101%**.

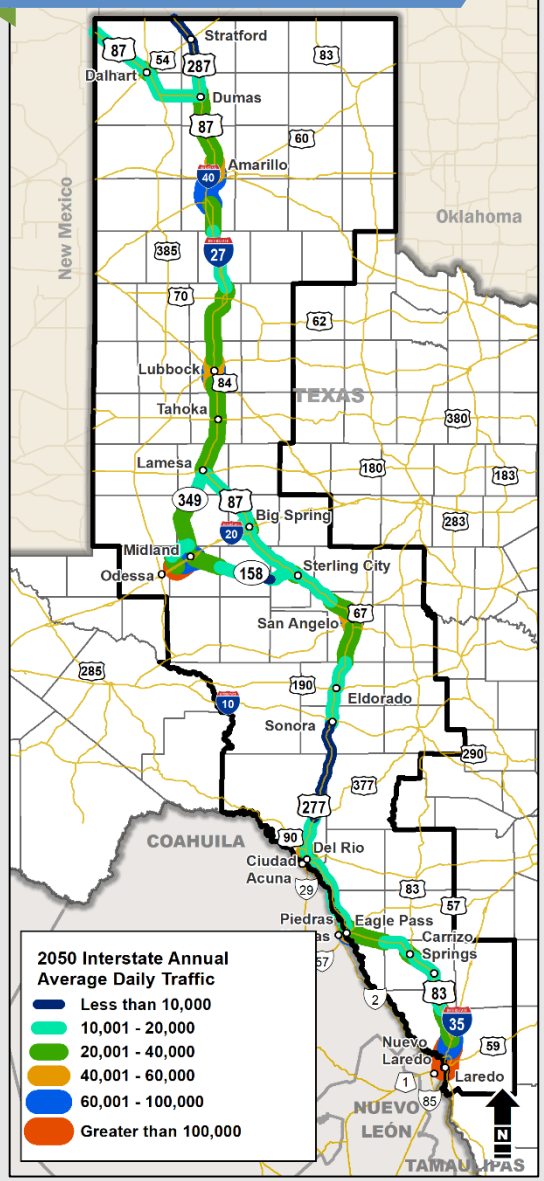
Source: Texas Demographic Center

Forecasted Traffic Conditions

2050 Traffic – No Build



2050 Traffic – Interstate

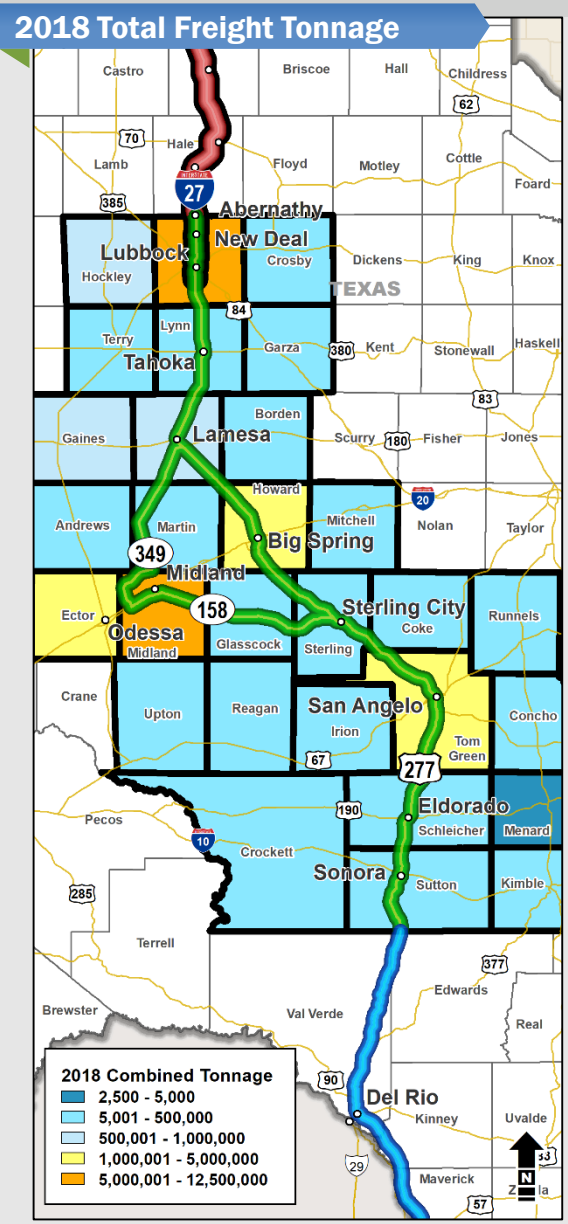


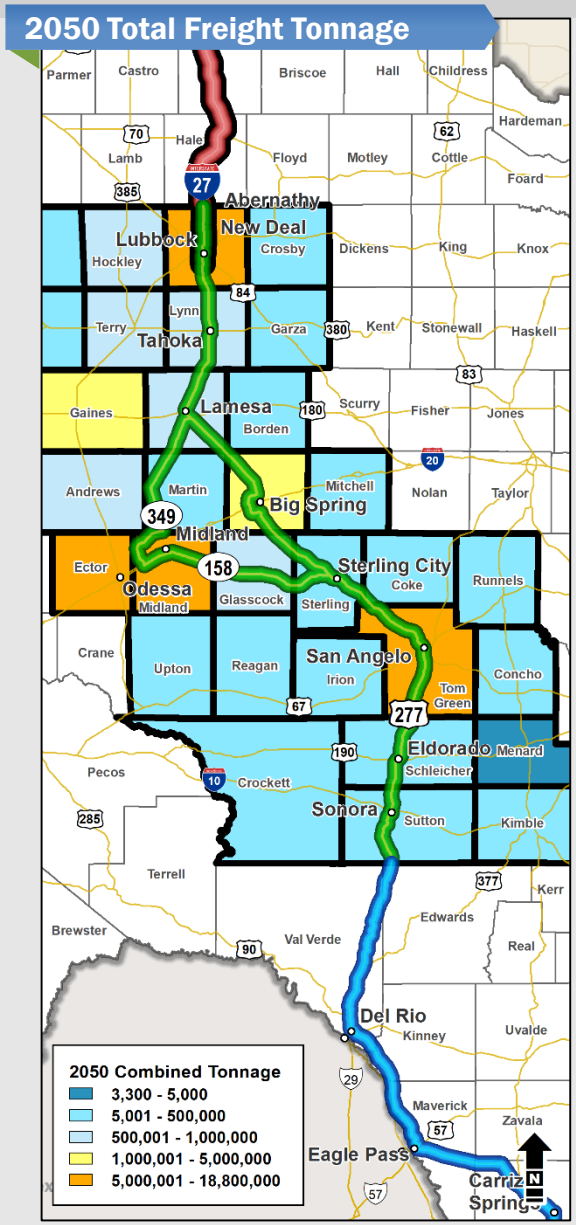
Overview of Findings

- **Interstate Highway Growth**
  - 100-200% growth over 2018 volumes found in all three segments on arterial sections
  - US-87 provides path to I-25
  - US-287 route unimproved in Oklahoma
- **Interstate Highway Diversions**
  - Fills in National Grid
  - Most diversions from within 100 miles
  - Diversions also traced on national and statewide basis

Source: TXDOT SAM and TxDOT 2018 RID

Segment #2 Total Freight Growth by County - 2050

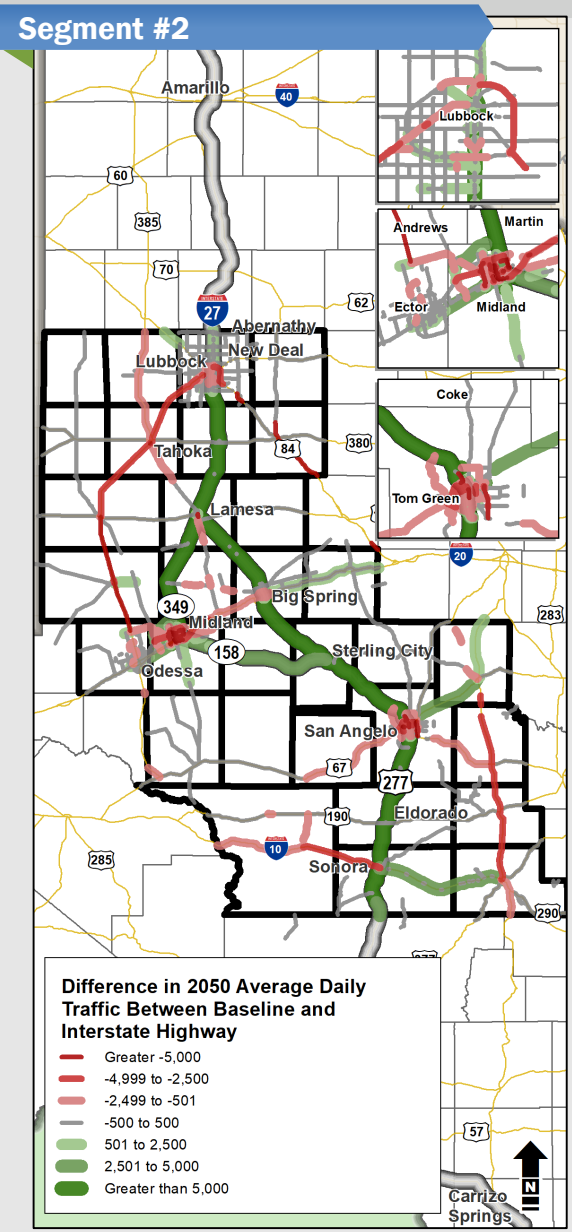




- Segment #2 total truck tonnage is projected to **grow 87%** through 2050
  - 30 million tons added, for 41% of the new tons on the corridor
  - Total volume 66 million tons
- Fastest county growth:
  - **Ector** - 182%
  - **Howard** - 124%
  - **Borden** - 119%
- Largest county growth:
  - **Midland** + 9.3 mil. tons
  - **Ector** + 7.5 mil. tons
  - **Lubbock** +6.3 mil. tons

Source: TXDOT SAM and TRANSEARCH database

Interstate Option – Anticipated Total Traffic Diversions



Diversions – Segment #2

- South of Lubbock, the corridor draws trips from US 84/I-20, US 62/US-385
- SH 349 segment will attract trips from SH 137 and US 385 to Odessa
- SH 158 segment will attract trips from I-20
- South of San Angelo, the corridor attracts national trips drawn to the I-44 corridor as well as local trips from US 83

Source: TXDOT SAM and TxDOT 2018 RID

Overview of Public Meeting #1 – February 4, 2020

- **Held in San Angelo**
- **52 Attendees**
  - 27 General Public
- **Use of Mentimeter**
- **Comments/Input**

Top goals included:

- Safety and mobility
- Economic development
- Freight movement

Key needs and challenges:

- Safety
- Economic development and benefits
- Cost for construction and maintenance

Potential opportunities:

- Economic development
- Safety and mobility
- Growth along the corridor

Overview of Public Meeting #2 – February 19, 2020

- **Held in San Angelo**
- **48 Attendees**
  - 24 General Public
- **Use of Mentimeter**
- **Comments/Input**

  Factors influencing future economic, traffic, and freight conditions:
  - Water availability
  - Energy production
  - Workforce development and availability

What changes will occur to the local population, economy, and land use if changes are made to the Corridor:

- More economic development will spur growth
- Growth will likely occur in populated areas
- Not all change will be positive

Segment Committee Report Outline

- Executive Summary
- Letter from the Segment Committee Chair

1. Introduction
2. Existing Conditions and Needs Assessment
3. Forecasting and Future Conditions
4. Segment Feasibility Analysis
5. Economic Development Impacts of the Segment
6. Segment Improvement Strategies
7. Public Involvement and Stakeholder Engagement
8. Segment Committee Findings and Recommendations
9. Financial Plan
10. Implementation Plan

- Figures, Tables, and Appendices

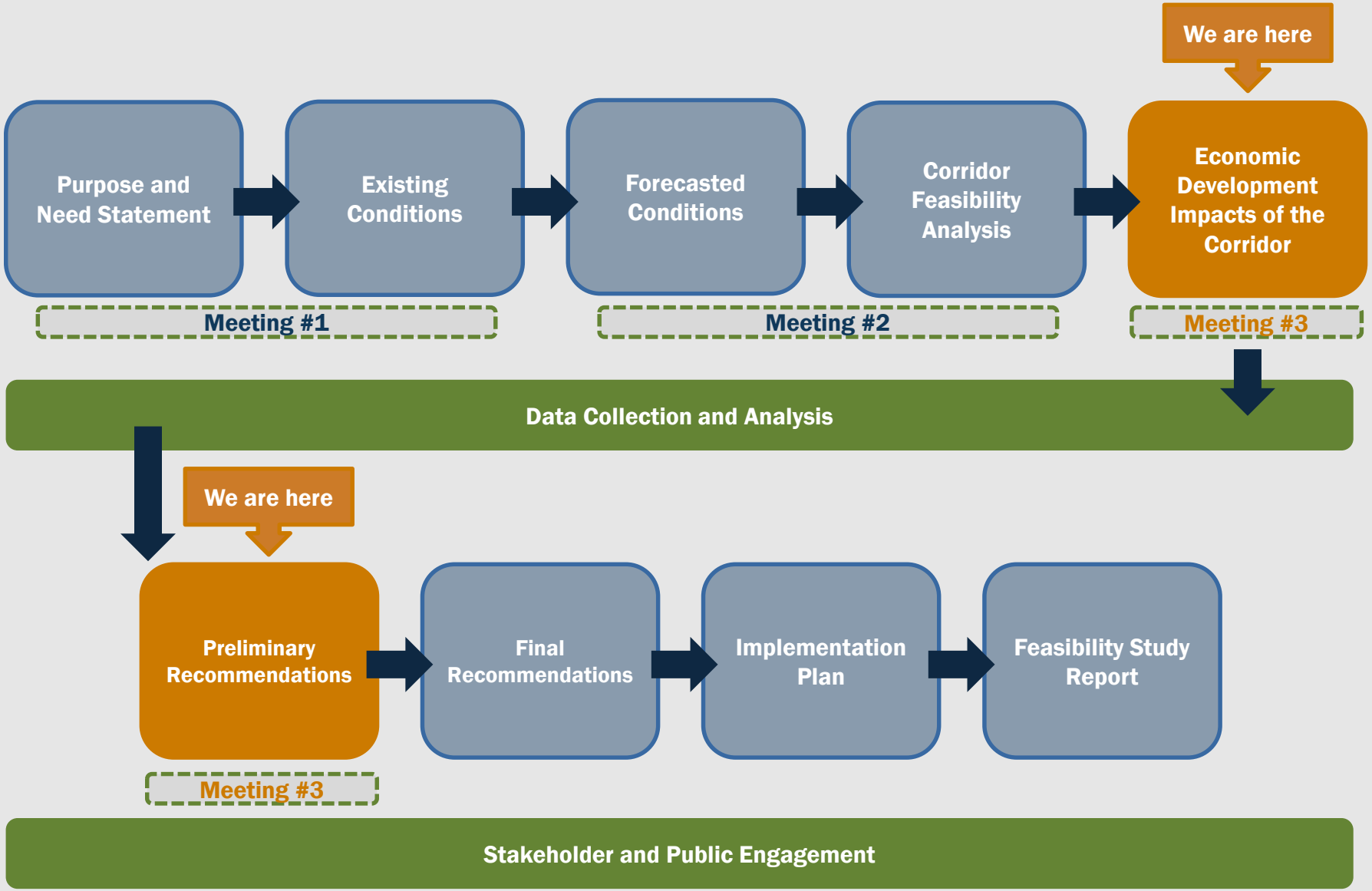
- Executive Summary
- Letter from the Segment Committee Chair

1. Introduction*
2. Existing Conditions*
3. Forecasted Conditions
4. Segment Interstate Feasibility Analysis and Findings
5. Public Involvement and Stakeholder Engagement
6. Segment Committee Recommendations and Implementation Plan

- Figures, Tables, and Appendices

***Reviewed with Committee**

Ports-to-Plains Corridor Feasibility Study Scope



Segment #2

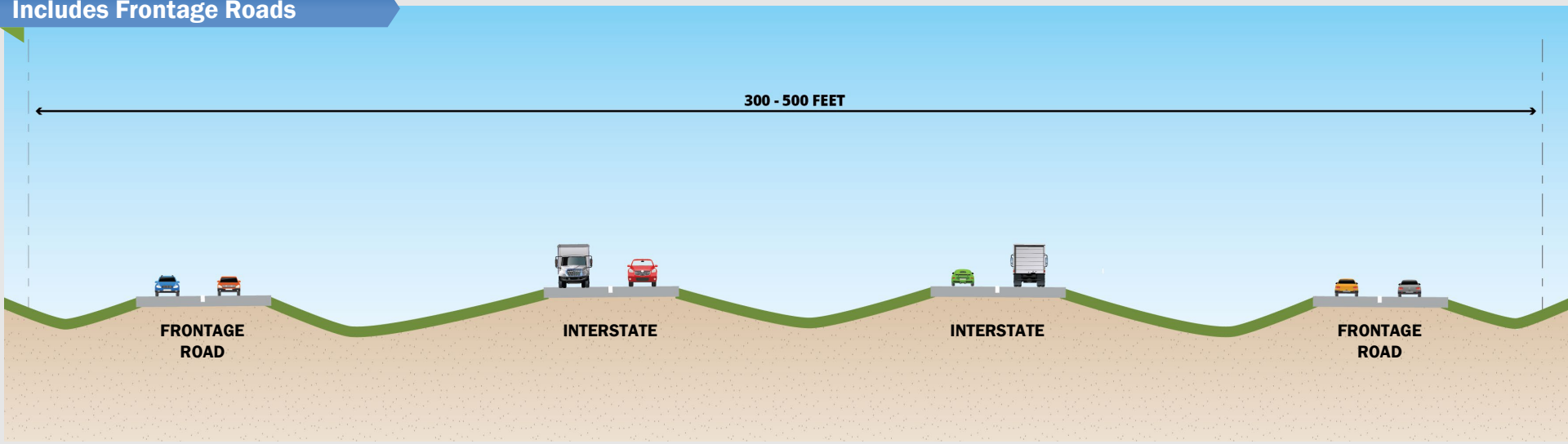
Determination of Areas Preferable and Suitable for Interstate Designation

Akila Thamizharasan, TxDOT

Consultant Team

Interstate with Frontage Roads Cross Section

Includes Frontage Roads



No driveways connecting to main lanes.

No stop signs or traffic signals on main lanes.

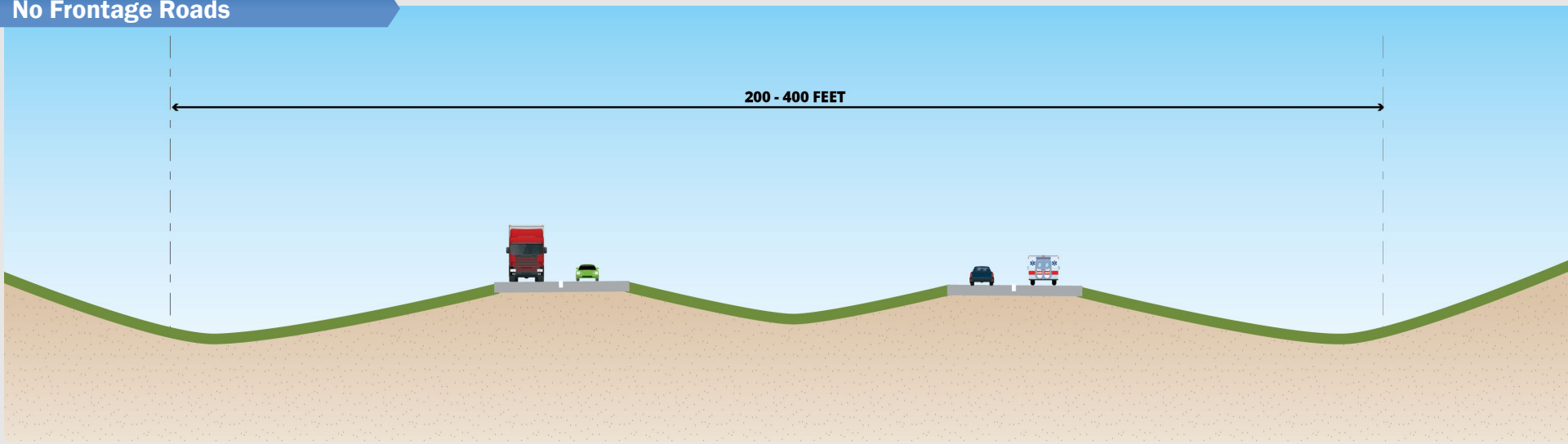
Higher design **speeds**

Traffic will flow uninterrupted from one end of the facility to the other. To accomplish this, **overpasses are necessary**.

Larger right-of-way **widths**

Interstate Without Frontage Roads Cross Section

No Frontage Roads



No driveways connecting to main lanes.

No stop signs or traffic signals on main lanes.

Higher design **speeds**

Traffic will flow uninterrupted from one end of the facility to the other. To accomplish this, **overpasses are necessary**.

Larger right-of-way **widths**

Federal Guidance on Interstate Designation

- **FHWA has approval authority**

- **Three methods to obtain interstate designation**
  - Method 1: The US DOT Secretary may designate, if the corridor currently meets standards
  - Method 2: TxDOT may submit a proposal requesting designation as a future interstate
  - Method 3: By congressional act

- **Within the scope of this study, Methods 1 and 2 are being assessed**

Method 1 – Segment #2 Eligibility under 23 USC 103(c)(4)(A)

Corridor Characteristics

- Evaluation
  - Part of the corridor, I-27 (25 miles), and I-20 (7 miles), is already designated interstate
  - Remaining Corridor (27 miles of access-controlled freeway and 383 miles uncontrolled access) evaluated for:
    - Planned and programmed projects
    - Horizontal and vertical sight distance
    - Right-of-way widths
    - Number of existing lanes
    - Median widths
- Method 1 Key Takeaway
  - Twenty-seven miles of access-controlled freeway meets interstate standards but does not meet criteria for interstate designation under 23 USC 103(c)(4)(A)
  - Remaining 383 miles of corridor does not meet interstate standards and is not eligible for interstate designation under 23 USC 103(c)(4)(A)

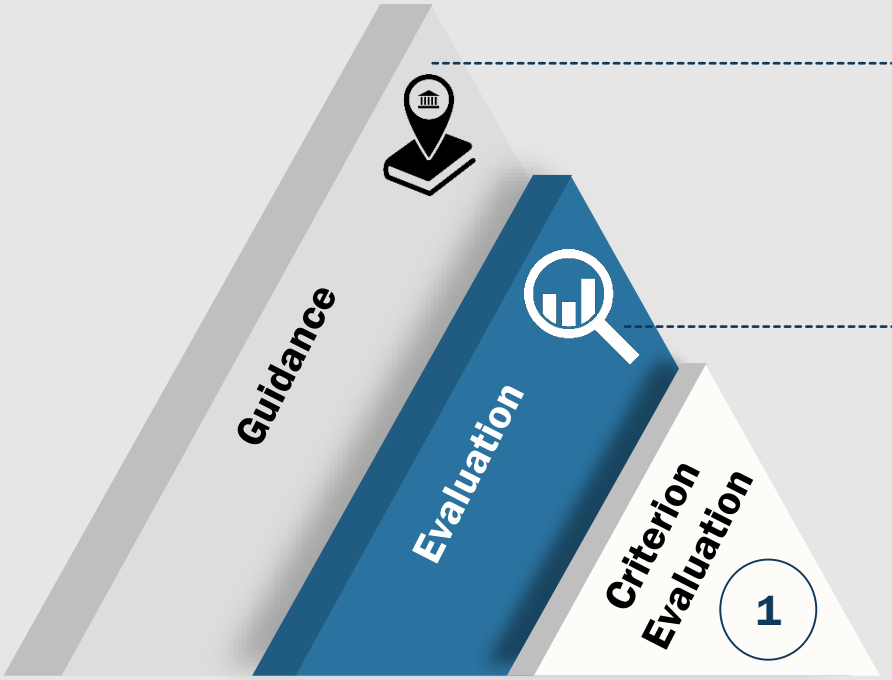
Method 2 – Segment #2 Eligibility under 23 USC 103(c)(4)(B)

Proposals must be submitted by TxDOT. If the route is not yet complete, TxDOT may request designation as a future part of the Interstate System.

Proposals must include:

- Route description and **statement of justification**
- **Statements regarding coordination** with adjoining states, responsible local officials, and officials of areas under Federal jurisdiction
- Consideration based on **six evaluation criteria**
- **A highway:**
  - Must be a logical addition or connection to the Interstate System
  - Have affirmative recommendation of TxDOT
  - Have written agreement of TxDOT that corridor will be constructed to meet interstate standards within 25 years of the agreement with FHWA Administrator
  - Must be on the National Highway System

Criterion Evaluation #1 (a & b)



a. **Be of sufficient length**

b. **Serve long-distance interstate travel**
   - Connecting routes between principal metropolitan cities, or
   - Industrial centers important to national defense and economic development

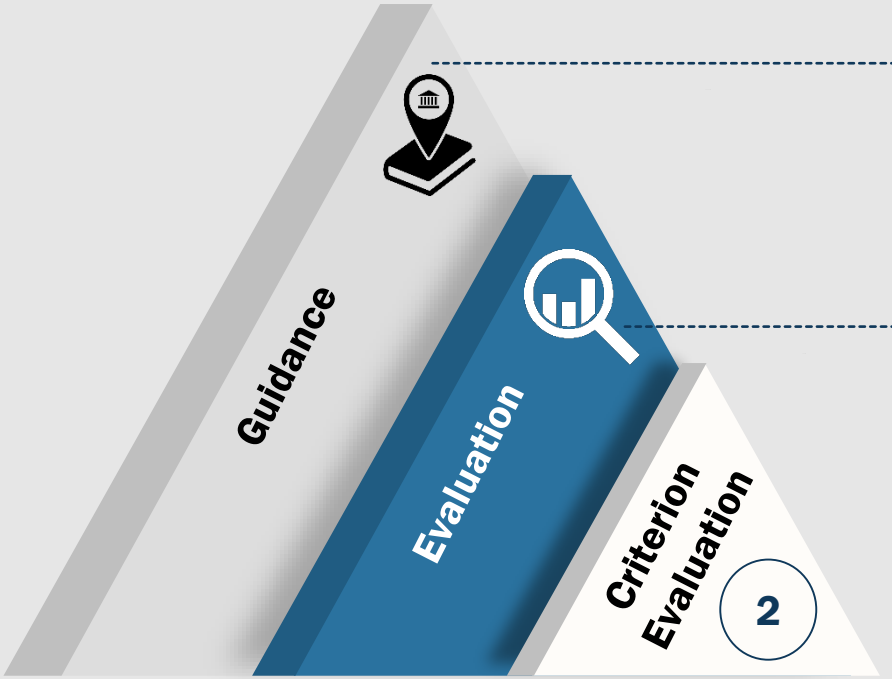
a. **Meets**

b. **1) Existing I-27 (25 miles) and I-20 (7 miles):** Meets

2) Remaining Corridor (410 miles):

Considerations:
   - Subsegment #1: connects I-27 in Lubbock, Texas to I-20 in either Big Spring, Texas, or Midland, Texas, or both.
   - Subsegment #2: connects I-20 in either Big Spring Texas, or Midland, Texas, or both to San Angelo, Texas.
   - Subsegment #3: connects San Angelo, Texas to I-10 in Sonora, Texas.

Method 2

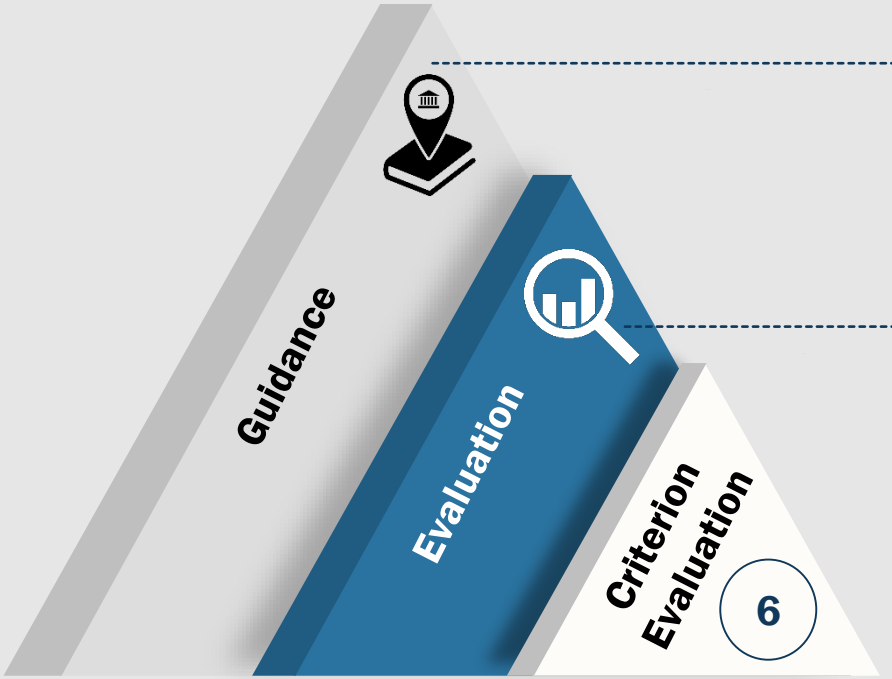


Criterion Evaluation #2

Should not duplicate other interstate routes. Should serve interstate traffic movement not provided by another interstate route.

Meets

1. 200 miles to I-35 (at nearest point)
2. 300 miles to I-25 (at nearest point)



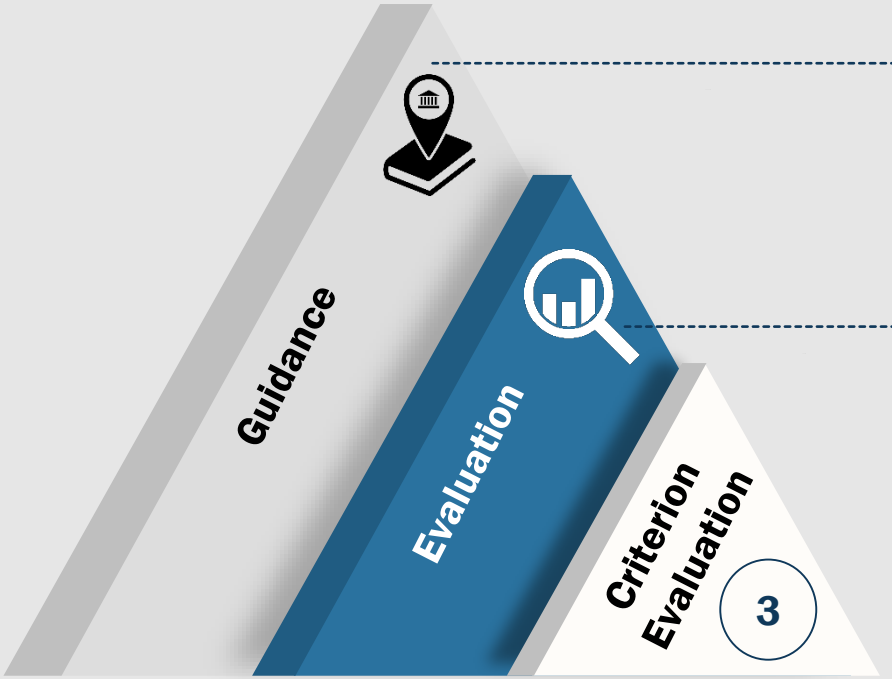
Criterion Evaluation #3

Should directly serve major highway traffic generators

- Urbanized area with a population over 100,000, *or*
- Similar major concentrated land use activity that produces and attracts long-distance Interstate and statewide travel of persons and goods.

1) **Existing I-27 (25 miles) and I-20 (7 miles):** Meets
2) **Remaining Corridor (410 miles):** considerations include providing trip reliability to freight traffic, and relief to other routes.

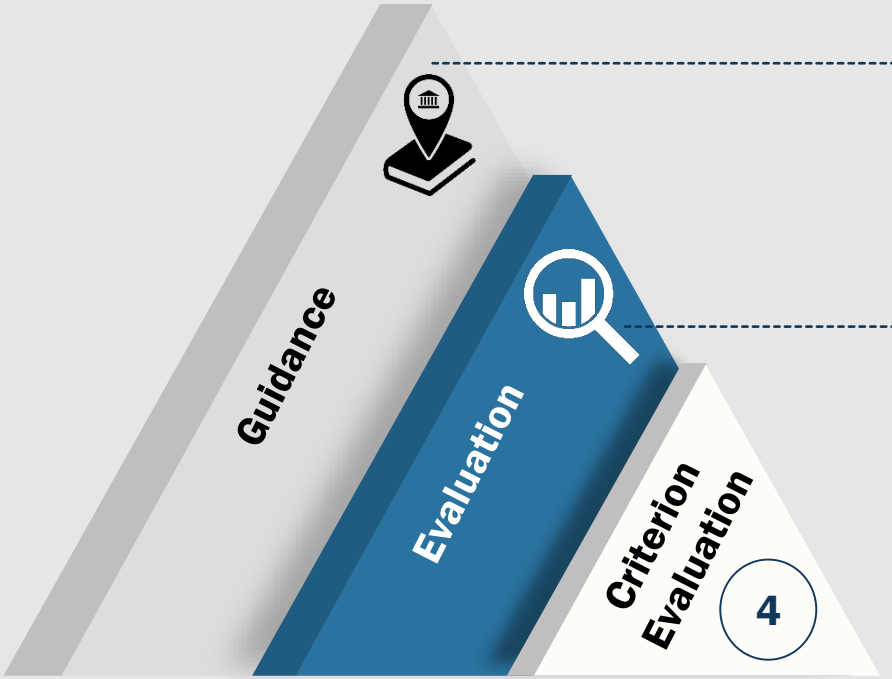
Criterion Evaluation #4



Should connect to the Interstate System at each end, or an international border, or terminate in a "major highway traffic generator" that is not served by another Interstate route

1) **Existing I-27 (25 miles) and I-20 (7 miles):** Meets
2) **Remaining Corridor (410 miles):** Meets

Method 2

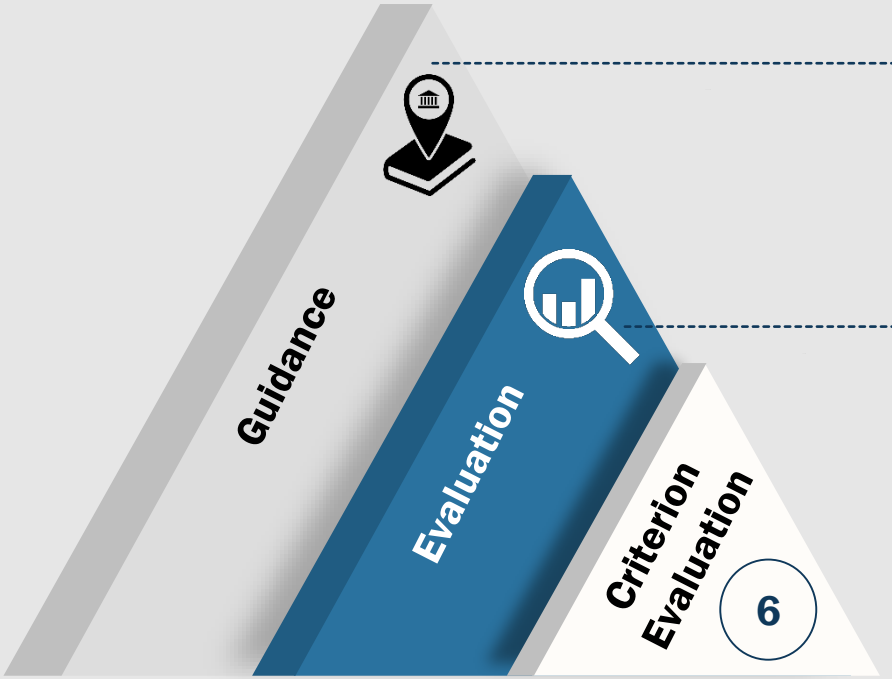


Criterion Evaluation #5

1) **Must meet current interstate standards,** *or*
2) **A formal agreement to construct the route to standard within 25 years** must be executed between the States and the Federal Highway Administration.

1) **Existing I-27 (25 miles) and I-20 (7 miles):** Meets
2) **Remaining Corridor (410 miles):** TxDOT would have to enter into an agreement with FHWA committing to construction within 25 years.

Method 2



Criterion Evaluation #6

Must have an approved **final environmental document** and project action must be **ready to proceed with design** at the time of designation

1) **Existing I-27 and I-20 (32 miles):** Meets
2) **Remaining Corridor (410 miles):** TxDOT would have to complete an environmental document.

Method 2 – Eligibility under 23 USC 103(c)(4)(B)

Key Takeaways:

- Existing I-27 (25 miles) and I-20 (7 miles) already designated interstate.
- Remaining corridor (410 miles) would need to meet criteria 1 through 6 under Method 2 and be subject to TxDOT and FHWA approval.

Segment #2

Preliminary Cost Estimates

Akila Thamizharasan, TxDOT

Consultant Team

Assumptions for Preliminary Interstate Cost Estimates

- Costs in today's dollars (2020)
- Advances in preliminary design software
- Assumes 75 miles per hour design speed
  - Removes sharper turns
  - Flattens steeper grades
  - Removes hills that may be hard to see over
  - This applies to 4-lane divided areas too
- Uses TxDOT bids from each district to account for changes in material and labor prices
- Does not include costs for existing I-27 and I-20

Assumptions for Preliminary Interstate Cost Estimates

- Assumes locally preferred routes
- Provides two estimates; one for frontage roads throughout and one for frontage roads in cities and towns
- Right-of-way estimated as a percentage of the construction costs
- Adjusts for planned and programmed projects
- Includes major utilities
  - Parallel pipelines
  - Oil and gas wells
  - Water wells
  - Parallel railroad

Methodology for Preliminary Interstate Cost Estimates

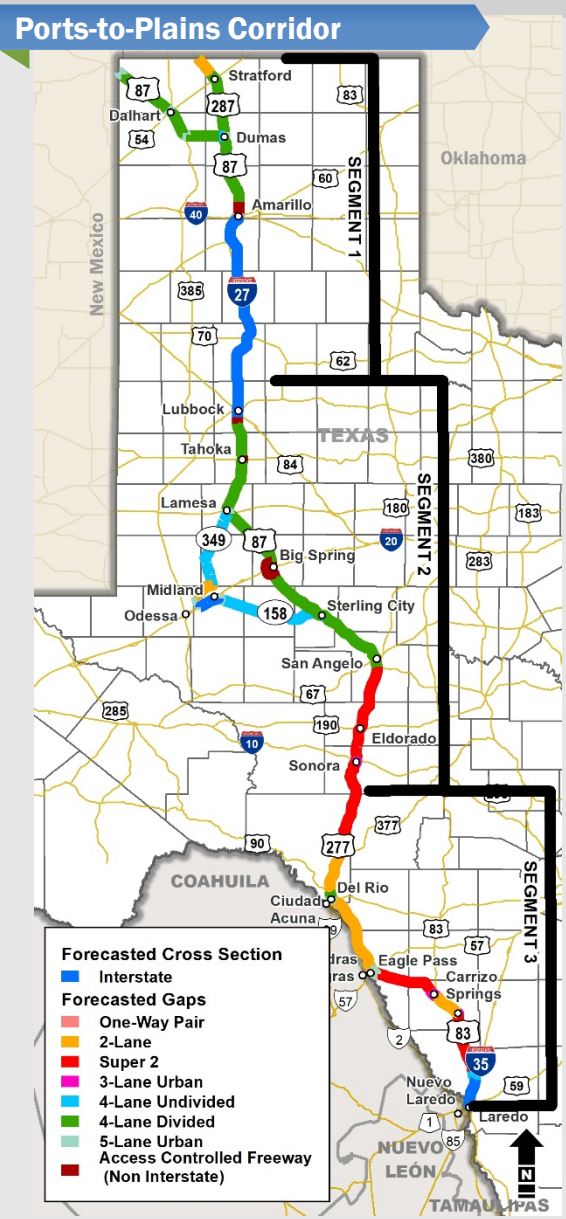
Previous Report

- Year: 2015
- Planning-level estimate using national per-mile costs
- Not indexed to Texas or shale play areas
- Not adjusted for differences in terrain
- Made percentage assumptions regarding right-of-way and utility relocation costs
- Shale play areas in midst of 2-year slump
- Frontage roads on all except 205 miles
- Inflation 2015-2020
  - TxDOT Highway Cost Index – 2%
  - FHWA Highway Construction Cost Index – 18%
  - Bureau of Labor and Statistics CPI Inflation Calculator – 8.6%

Current Study

- Year: 2020
- Planning-level estimate using project-specific data
- Concept Station software
- Calculated quantities and prices for major costs
- ROW estimated as a percentage of the construction costs
- Calculated preliminary major utility relocation costs for parallel pipelines, oil and gas wells, and water wells, and railroad relocation based on available data
- Uses bids from each district
- Two estimates; one for frontage roads throughout and one for frontage roads in cities and towns

Preliminary Interstate Cost Estimates for Corridor



Total (811 miles*)

(Frontage roads in urban and rural areas):

Construction	$24.471 billion ($30.17 M/mi)
Right of way	$2.447 billion
Major Utilities	$0.968 billion
TOTAL	**$27.886 billion**

Total (811 miles*)

(Frontage roads only in urban areas):**

Construction	$16.434 billion ($20.3 M/mi)
Right of way	$1.643 billion
Major Utilities	$0.780 billion
TOTAL	**$18.857 billion**

*Miles do not include I-27, I-20, and I-35

** Estimate includes approximately 100 miles of frontage roads in urban areas.

Preliminary Interstate Cost Estimates for Segment #2

Segment #2 Cost Estimate (410 miles)

(Frontage roads in urban and rural areas):

Construction	$12.800 billion
Right of Way	$1.280 billion
Major Utilities	$0.506 billion
TOTAL	**$14.586 billion**

(Frontage roads only in urban areas):**

Construction	$8.643 billion
Right of Way	$0.864 billion
Major Utilities	$0.411 billion
TOTAL	**$9.918 billion**

*Miles do not include I-27 and I-20

** Estimate includes approximately 100 miles of frontage roads in urban areas.

P2P Segment #2 Cost Comparison to I-69 and I-35

Segment #2 construction cost average (410 miles):

- $21.1 million per mile (frontage roads only in urban)
- $31.2 million per mile (frontage roads in urban and rural)

I-69 Corridor (Remaining* I-69 system to be constructed) (828 miles)**:

- $21.8 million per mile

I-35 Statewide Corridor Plan (564 miles)**:

- $47.6 million per mile (I-35 Northeast Expressway = $163.3 million per mile)

*98.9 miles of I-69 already constructed or under construction; including major metros Houston, Corpus Christi, Laredo, McAllen and Brownsville. The majority of the remaining projects are in rural areas or relatively smaller towns.

**Adjusted for inflation

Segment #2

Preliminary Committee Recommendations

Caroline Mays, TxDOT

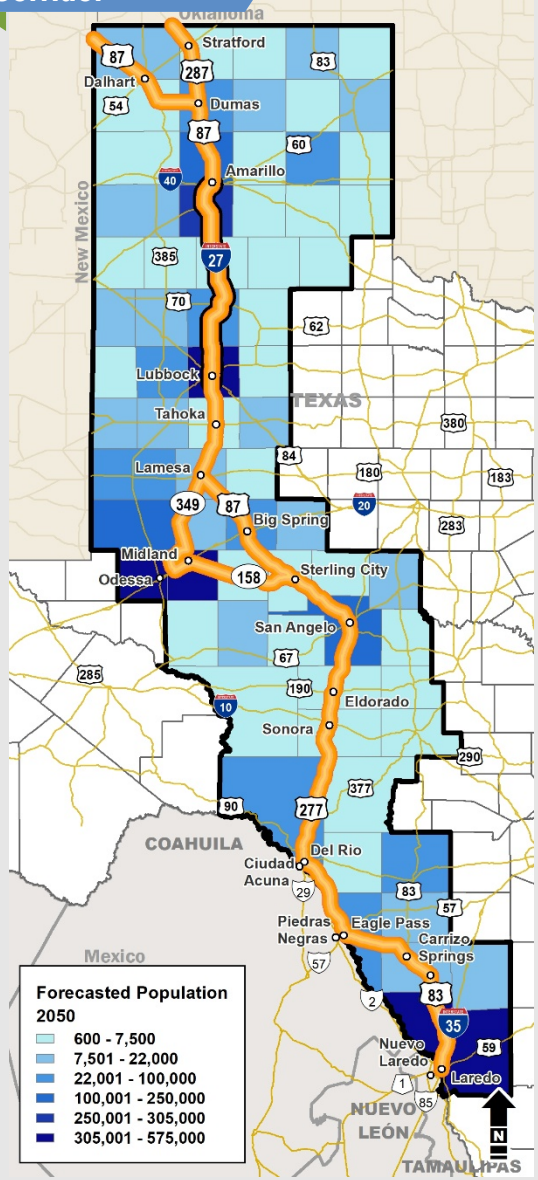
Consultant Team

Overview and Discussion

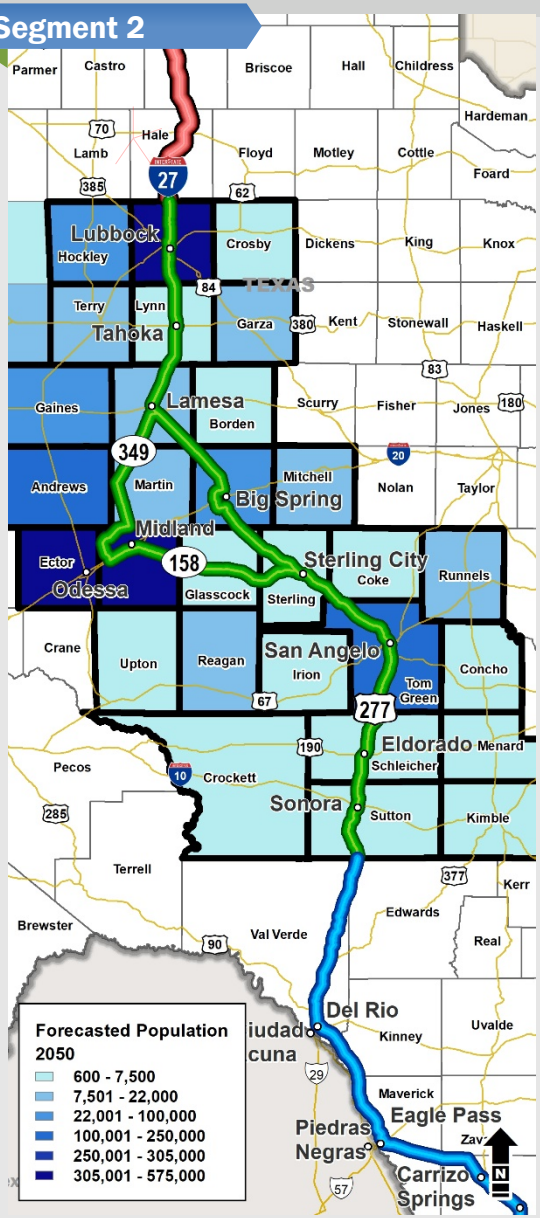
- Data to consider
- Recommendations from previous meeting
- Discussion of committee preliminary recommendations

Data to Consider – Forecasted Population (2050)

Corridor



Segment 2



Corridor

- Corridor total population for all 69 counties is projected to **increase by 1,211,288 persons**
- Overall corridor population is projected to **grow by 61%**

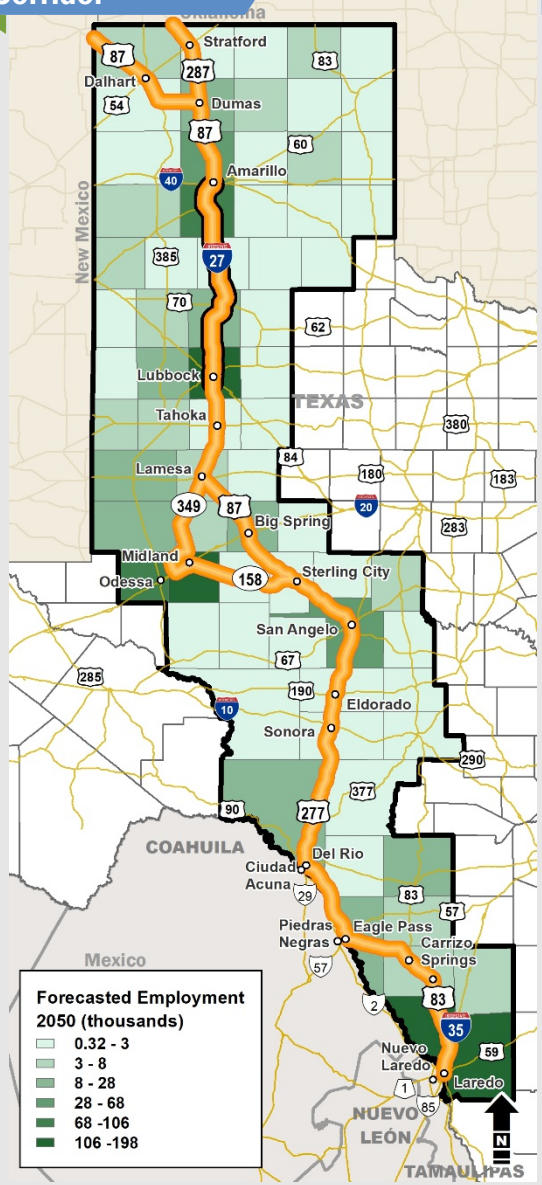
Segment 2

- Segment #2 total population for the 31 counties is projected to **increase by 1,057,921 persons** from 1,046,558 to 2,104,479.
- Overall Segment #2 population is projected to **grow by 101%.**

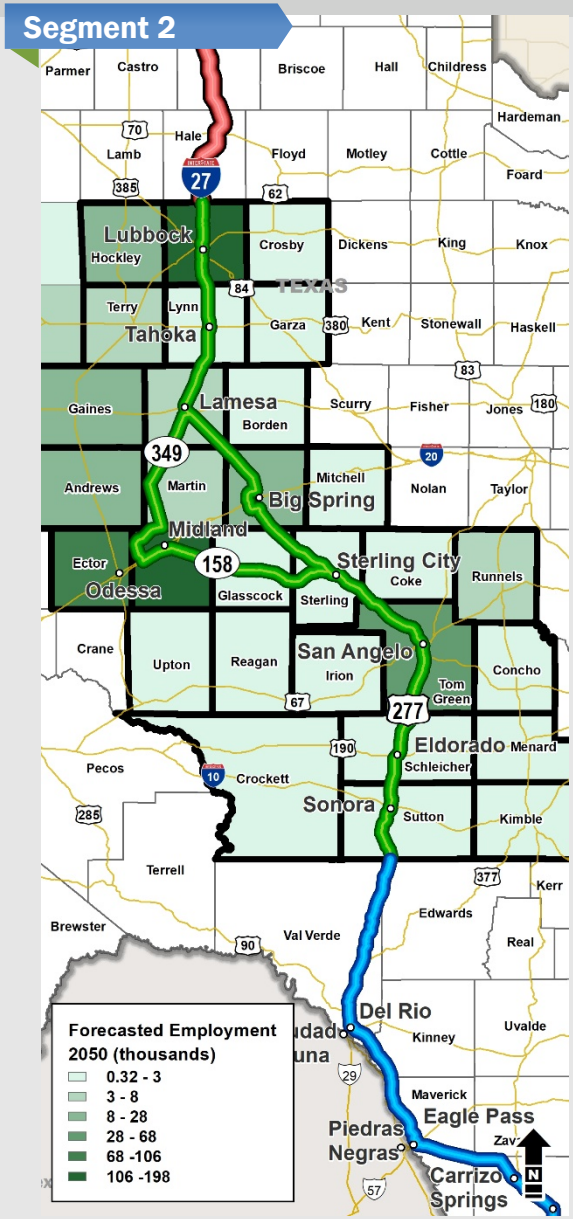
Source: Texas Demographic Center

Data to Consider – Forecasted Employment (2050)

Corridor



Segment 2



Corridor

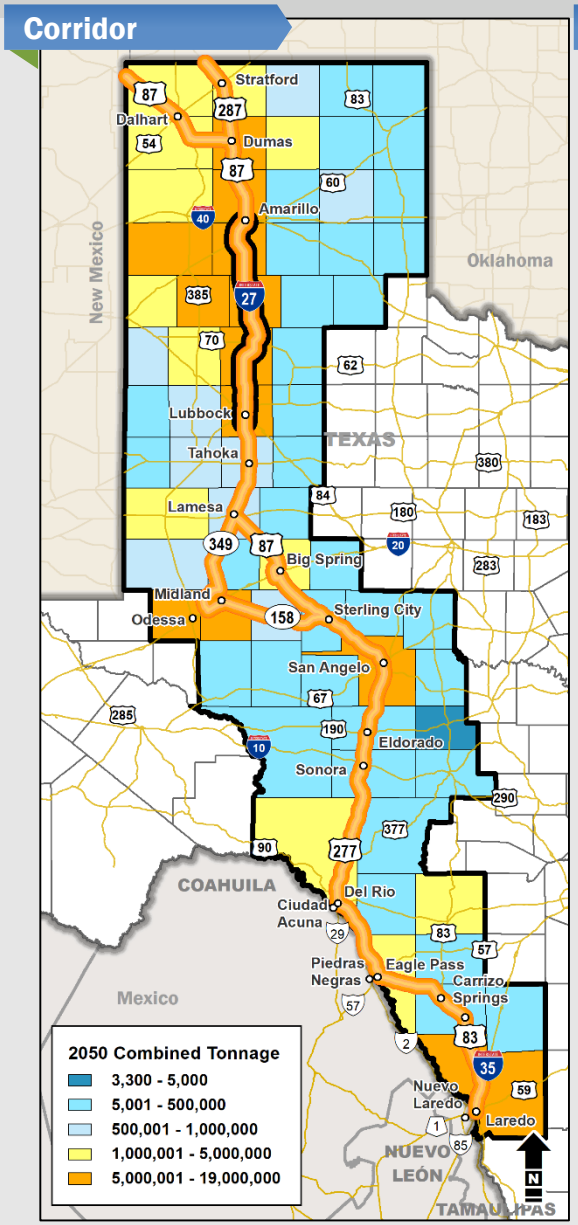
- Corridor total employment is **projected to increase by 149,372 persons**
- Overall corridor employment **is projected to grow by 17%**

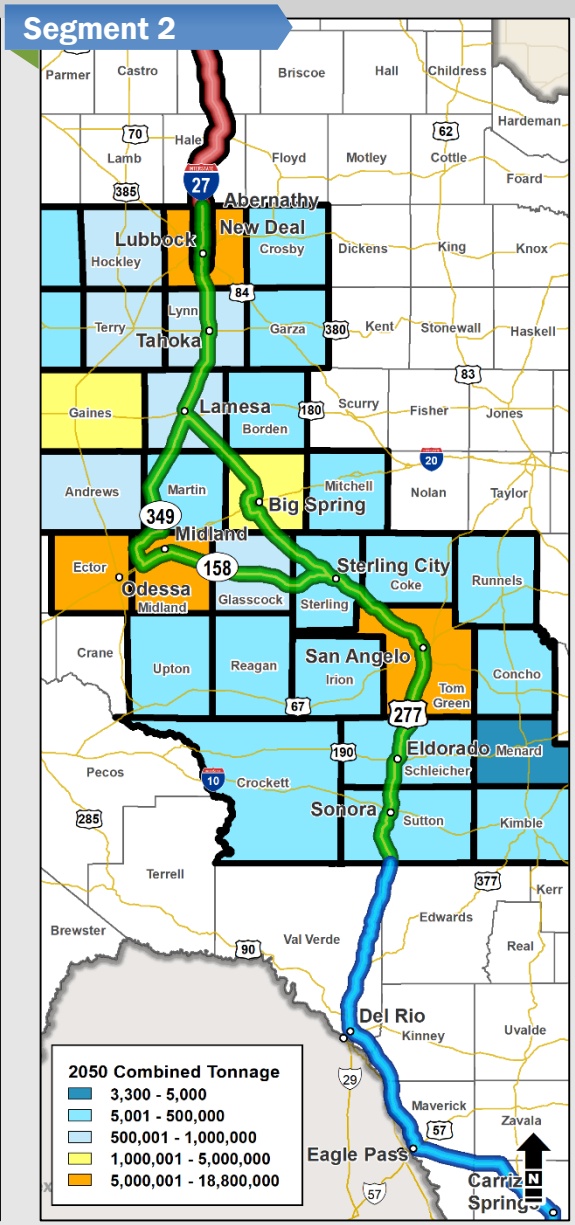
Segment 2

- Segment #2 total employment is **projected to increase by 104,713 persons**
- Overall Segment #2 employment is projected to **grow by 22%.**

Source: Moody's Analytics Forecasted Data

Data to Consider - Forecasted Freight (2050)





Corridor

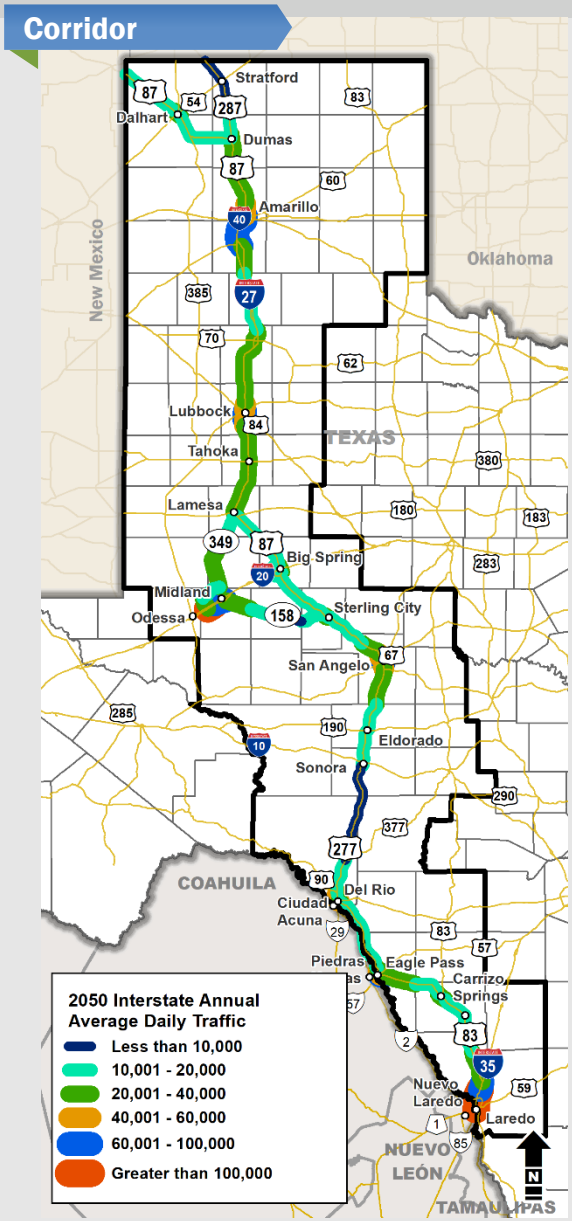
- Corridor total truck tonnage is forecast to **grow 78%** through 2050
  - **73 million tons added**
  - **Total volume reaches 167 million tons**

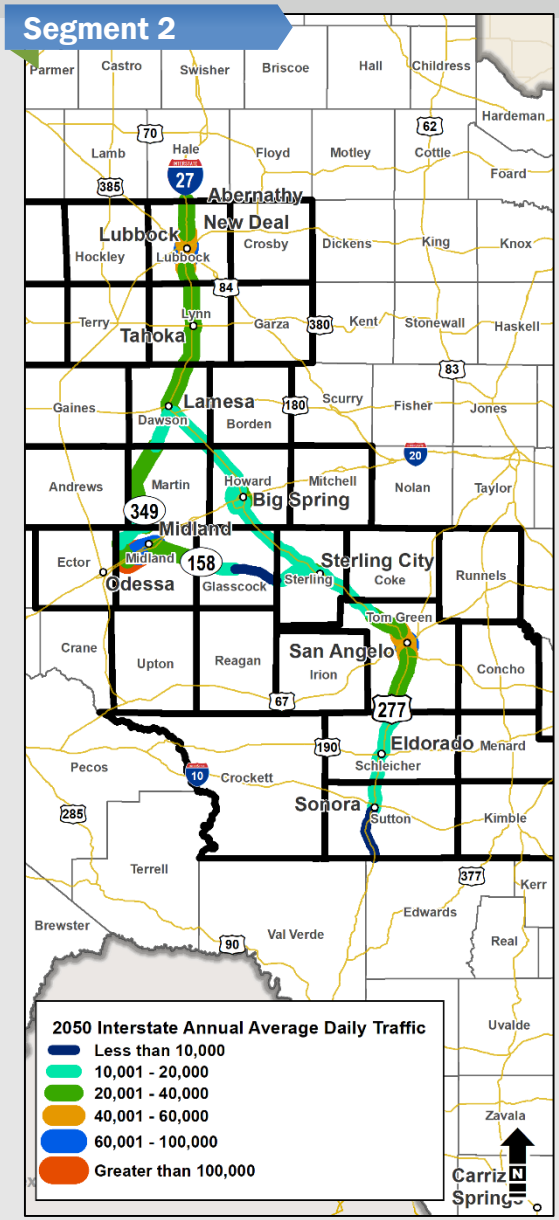
Segment 2

- Segment #2 total truck tonnage is projected to **grow 87%** through 2050
  - **30 million tons added, for 41% of the new tons on the corridor**
  - **Total volume 66 million tons**

Source: TXDOT SAM and TRANSEARCH database

Data to Consider – Forecasted Interstate Traffic (2050)





Corridor

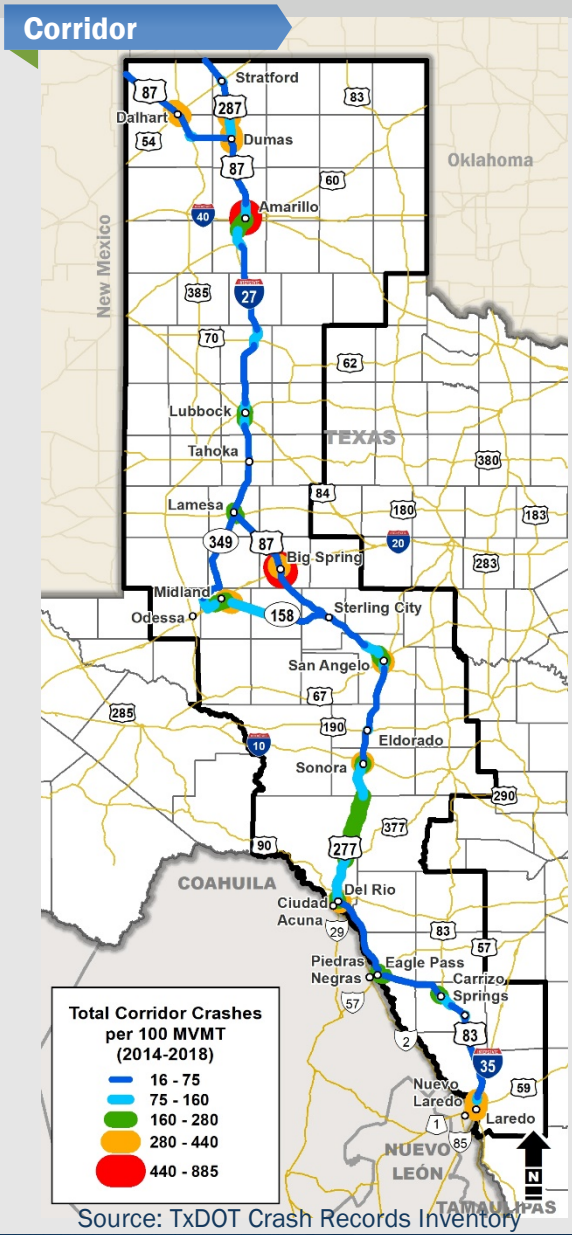
- **100-200% growth** over 2018 volumes found in all three segments on arterial sections
- **US-87** provides path to I-25
- **US-287** route unimproved in Oklahoma

Segment 2

- **US-277 north of Sonora**
  - 2050 No Build: 4,600
  - 2050 Interstate: 16,500
- **SH-158 near Midland**
  - 2050 No Build: 31,000
  - 2050 Interstate: 38,000
- **US 87 south of Lubbock**
  - 2050 No Build: 18,600
  - 2050 Interstate: 36,600

Source: TXDOT SAM and TxDOT 2018 RID

Data to Consider - Safety Data (2014-2018)



Source: TxDOT Crash Records Inventory

Corridor

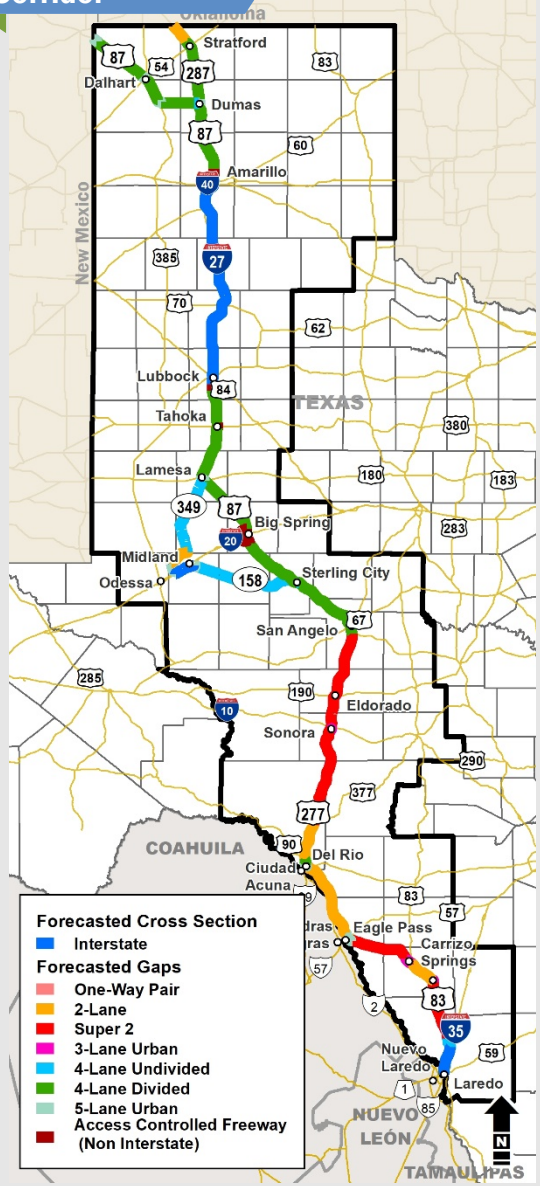
- Corridor total crashes is **17,741**
- Highest rates in cities **(Midland, Big Spring, Amarillo)**
- Lower rates in **south end of corridor**

Segment 2

- Segment #2 total crashes is **7,647**
- Highest rates in **Midland and Big Spring**
- Lower rates in rural areas, **San Angelo, Lubbock**

Data to Consider - Forecasted Cross Sections

Corridor



Segment 2

Corridor

- Corridor total miles of **corridor gaps is 811 miles** (total miles is 963)

Segment 2

- Segment #2 total miles of **corridor gaps is 410 miles** (including 27 miles of access-controlled freeway)
- Total miles of Segment #2 is **442 miles** (including **32 miles** of interstate)

Segment #2 Recommendations from Previous Meetings

Safety Projects

- Fix sight-distance issues – trim vegetation – north of Sonora
- Improve intersection
  - Venado Drive and US 277
  - I-20 and US 87 in Big Spring
  - US 87/US 277/LP 306 in San Angelo
  - I-20 and SH 158 in south Midland
- Develop high-speed intersection
  - I-27 at US 82, at US 62, and at SH 289 in Lubbock
- Add or improve overpass
  - US 87 at US 67 in San Angelo
  - SH 158 at SH 137 southeast of Midland
  - US 87 at SH 41 – 11 miles south of Lubbock
  - US 87 at FM 1317 – 20 miles south of Lubbock
  - US 87 at FM 2053 – 13 miles south of Tahoka
- Access around roadside park north of Tahoka

Relief Routes

- Sonora, Carlsbad, Sterling City, Lamesa, and Tahoka

Committee Feedback

What added capacity improvements and locally preferred routes would you recommend from Abernathy to Lamesa?

Committee Feedback

What added capacity improvements and locally preferred routes would you recommend from Lamesa to south of Sterling City?

Committee Feedback

What added capacity improvements and locally preferred routes would you recommend from north of San Angelo to south of Sonora?

Committee Feedback

What safety/operational improvements would you recommend?

Segment #2

Funding Sources

Caroline Mays, TxDOT

Consultant Team

Public Funding Sources

Public Funding

Federal

- Federal-Aid Highway Program
  Supports state highway systems
- USDOT Build Grant Program
  Max award is $25M. Projects should have significant local and/or regional impacts.
- Infrastructure for Rebuilding America Grant Program
  Grant to rebuild aging infrastructure. May be used for up to 60% of project's eligible cost.

State of Texas

- Proposition 1
  Tax based to construct, maintain, or acquire ROW for public roadways
- Proposition 7
  Tax based to construct, maintain, or acquire ROW for public roadways; or repay bonds
- State Infrastructure Bank
  At or below market rate loans for ROW acquisition, utility relocation, etc.
- State Highway Fund
  Primary source of transportation funding for Texas
- 2019 Legislative Session
  SB 500 and HB 1 fund county roads in energy sectors. Grant process. Local match.

Local

- Metropolitan Planning Organization
  Lubbock MPO; San Angelo MPO; and Permian Basin MPO

Private Funding Sources

Private Funding

Permian Strategic Partnership

Collaboration between local communities and coalition of energy companies in Permian Basin Region. One of the five focus areas is safer roads.

County Energy Transportation Reinvestment Zone

A zone that lies within one contiguous area within a county affected by oil and gas exploration. Purpose of zone is to garner an increase in property taxes generated by oil and gas projects. May be used for transportation projects.

Public-Private Partnerships

USDOT encourages use of P3s, a contractual agreement between public and private entity. However, State of Texas has legislatively prohibited creation of new P3s.

Segment #2

Review and Discussion of Report Chapters 3 and 4

Caroline Mays, TxDOT

Mayor Brenda Gunter, Segment 2 Committee Chair

Segment Committee Report Outline

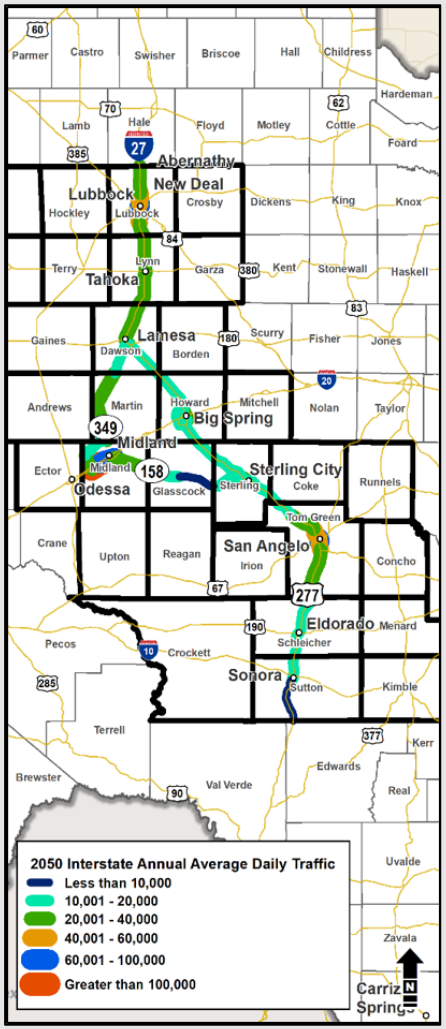
- Executive Summary
- Letter from the Segment Committee Chair

1. Introduction
2. Existing Conditions
3. Forecasted Conditions
4. Segment Interstate Feasibility Analysis and Findings
5. Public Involvement and Stakeholder Engagement
6. Segment Committee Recommendations and Implementation Plan

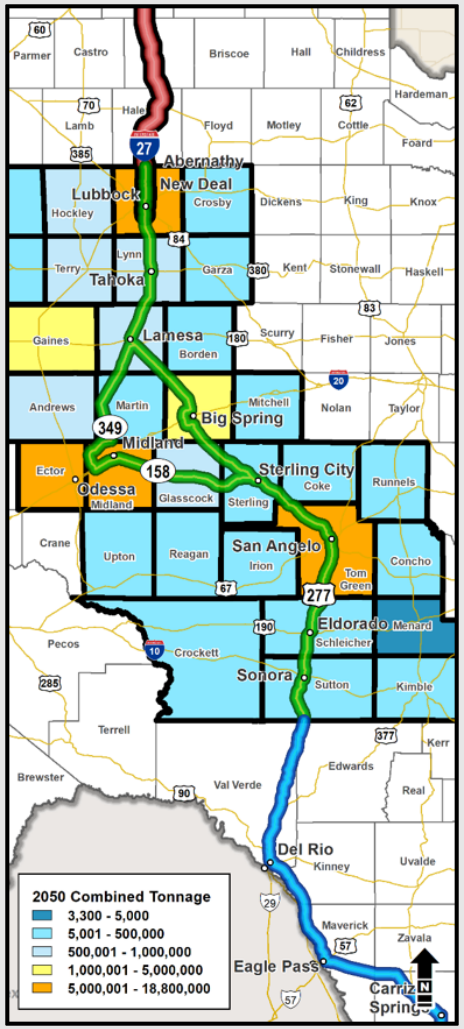
- Figures, Tables, and Appendices

Review with Committee

The purpose of this Chapter is to provide a summary of Forecasted Conditions to the year 2050.



Source: TXDOT SAM and Stars II



Source: TXDOT SAM and Transearch

The Segment #2 data showed:

- Population - 101% Growth
- Economics - 137% Growth in Income
- Freight Production - 87% Growth
- Planned and Programmed Projects
- Total Traffic Volumes (2050)
  - Baseline: 69% Corridor Growth
  - Interstate: 135% Corridor Growth
- Freight Flow
  - Heavy Demand on Ports-to-Plains Corridor, I-20, I-10, US-83, and US-67

Summary of Chapter 4: Interstate Feasibility Analysis & Findings

This Chapter provides an analysis of the feasibility of an Interstate Facility within the Corridor, including findings on the requirements of HB 1079:

- **Ability of Energy Industry to Transport Products to Market**
  - Interstate Scenario would increase diverted truck tons by 135 percent over Baseline Scenario
- **Examination of Freight Movement**
  - Interstate Scenario would create full access-controlled facility and attract more truck trips demonstrating an increase in freight mobility
- **Determination of Traffic Congestion Relief**
  - Interstate Scenario shows higher free-flow speeds and a stronger traffic diversion capability over the Baseline Scenario indicating the ability to reduce traffic congestion from nearby corridors in Segment #2 and from other corridors in the state and nationally.
- **Determination of Ability to Promote Safety and Mobility**
  - Interstate Scenario is estimated to reduce the current Segment #2 crash rate by approximately 30 percent, and an average travel time savings of 44 minutes over Baseline Scenario.

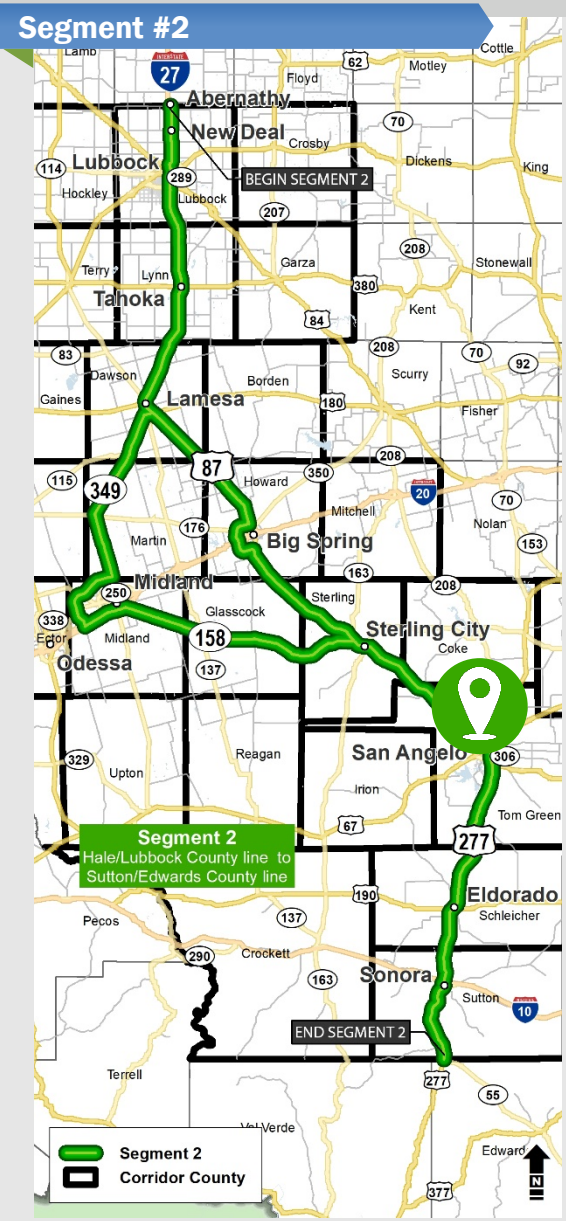
Summary of Chapter 4: Interstate Feasibility Analysis & Findings

- **Determination of Areas Preferable and Suitable for Interstate Designation**
  - 410 miles of Segment #2 currently does not meet interstate standards.
  - The corridor is not designated as “future interstate”, therefore must meet criteria for interstate designation in 23 U.S.C. 139 Appendix A .
- **Examination of Project Costs**
  - Estimated cost of developing Segment #2 to interstate standards is $9.918B (with frontage roads only in urban areas) or $14.586B (with frontage roads in urban and rural areas).
- **Evaluation of Economic Development Impacts, Including Job Creation**
- **Assessment of Federal, State, Local and Private Funding Sources**

Open Discussion

Mayor Brenda Gunter, Segment 2 Committee Chair

Segment #2 Meetings – Round #4



San Angelo

- **Segment Committee Meeting**
  Thursday, May 13, 2020

- **Location / Online**
  Howard College - West Texas Training Center

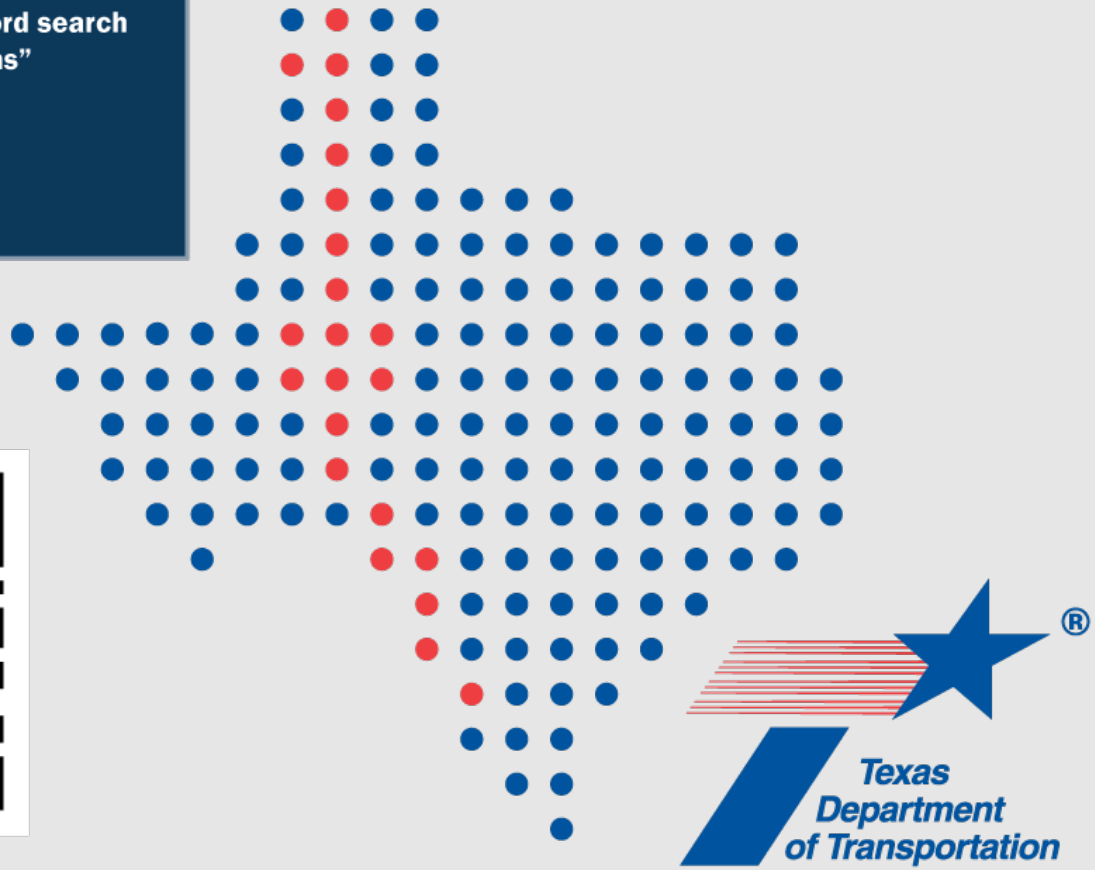
Segment Committee Meeting Agendas

May 2020
Meeting #4

- Implementation Plan
- Report Chapters 5 and 6
- Draft Segment Committee Report

June 2020
Meeting #5

- Public Meetings Round 3 Summary
- Finalize Segment Committee Report and Executive Summary

Questions

For more information visit
www.txdot.gov keyword search
"Ports to Plains"