



# Welcome and thank you for joining the Ports-to-Plains Corridor Feasibility Study Segment 2 Committee Meeting.

The meeting will begin in a few minutes.

## Mentimeter

The Mentimeter tool will be used during this meeting.  
Visit [www.menti.com](http://www.menti.com) and enter the code **20 79 42**.

## Mic Check

To reduce microphone feedback during the meeting, please mute your devices, including phones and computer microphones and speakers unless you are speaking.



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

Segment #2, Committee Meeting #4  
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 Economic Analysis
- 4 Revised Cost Estimates
- 5 Break
- 6 Prioritization of Recommendations
- 7 Review and Discussion of Draft Report Chapters
- 8 Open Discussion
- 9 Adjourn



Segment #2

# Recap of Previous Meeting

Caroline Mays, TxDOT

Mayor Brenda Gunter, Segment 2 Committee Chair



- **Members attended via online conference due to COVID-19**
- **Agenda**
  - Determination of Areas Preferable and Suitable for Interstate Designation
  - Preliminary Cost Estimates
  - Preliminary Committee Recommendations
  - Funding Sources
  - Review and Discussion of Report Chapters 3 and 4



**Online Conference**



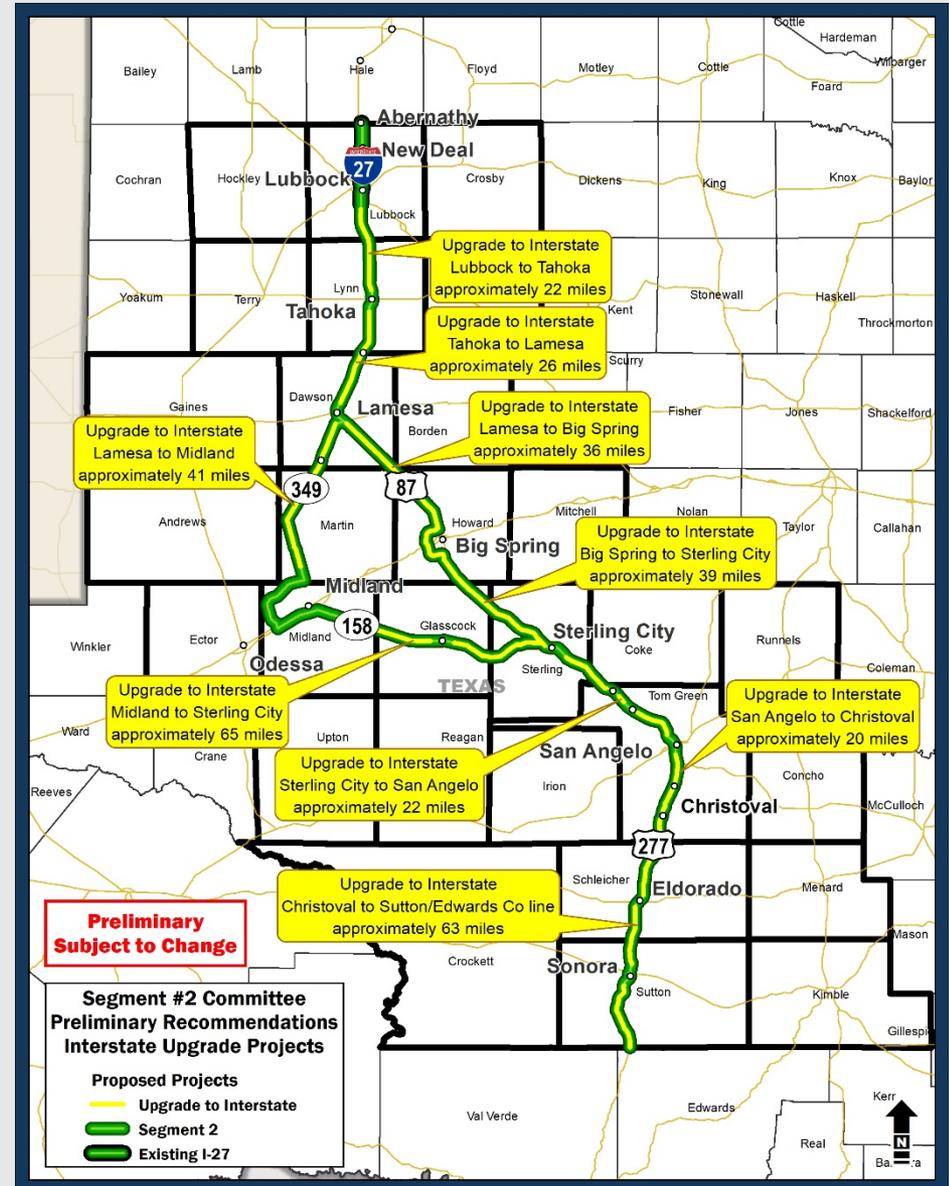
- **FHWA has approval authority**
  
- **Three methods to obtain interstate designation**
  - **Method 1:** The US DOT Secretary may designate, if the corridor currently meets standards
  - **Method 2:** TxDOT may submit a proposal requesting designation as a future interstate
  - **Method 3:** By congressional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

# Interstate Upgrade Projects



Committee members suggested these preliminary recommended projects during a meeting held on April 2, 2020.

Roadway	From	To	Description of Work
US 87	Lubbock	Tahoka	Upgrade to Interstate (approx. 22 miles)
US 87	Tahoka	Lamesa	Upgrade to Interstate (approx. 26 miles)
SH 349	Lamesa	Midland	Upgrade to Interstate (approx. 41 miles)
US 87	Lamesa	Big Spring	Upgrade to Interstate (approx. 36 miles)
US 87	Big Spring	Sterling City	Upgrade to Interstate (approx. 39 miles)
SH 158	Midland	Sterling City	Upgrade to interstate (approx. 65 miles)
US 87	Sterling City	San Angelo	Upgrade to Interstate (approx. 22 miles)
US 277	San Angelo	Christoval	Upgrade to Interstate (approx. 20 miles)
US 277	Christoval	Sutton/Edwards Co. Line	Upgrade to Interstate (approx. 63 miles)

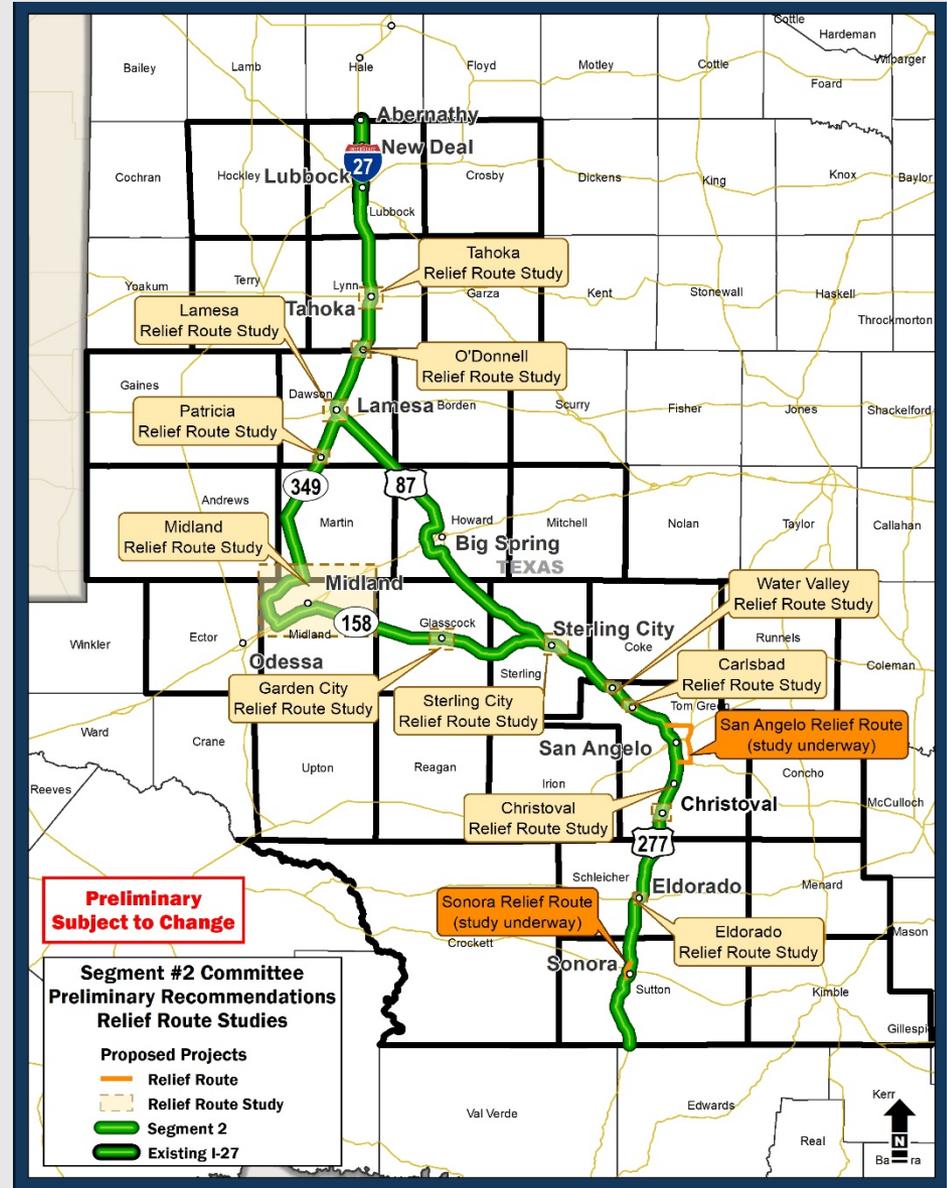


# Relief Route Studies



Committee members suggested these preliminary recommended projects during a meeting held on April 2, 2020.

Description	Location
Tahoka Relief Route Study	Around City of Tahoka
O'Donnell Relief Route Study	Around City of O'Donnell
Lamesa Relief Route Study	Around City of Lamesa
Patricia Relief Route Study	Around City of Patricia
Midland Relief Route Study	Around City of Midland
Garden City Relief Route Study	Around City of Garden City
Sterling City Relief Route Study	Around City of Sterling City
Water Valley Relief Route Study	Around City of Water Valley
Carlsbad Relief Route Study	Around City of Carlsbad
Christoval Relief Route Study	Around Christoval
San Angelo Relief Route (study underway)	East side of San Angelo
Eldorado Relief Route Study	Around City of Eldorado
Sonora Relief Route (study underway)	Around Sonora

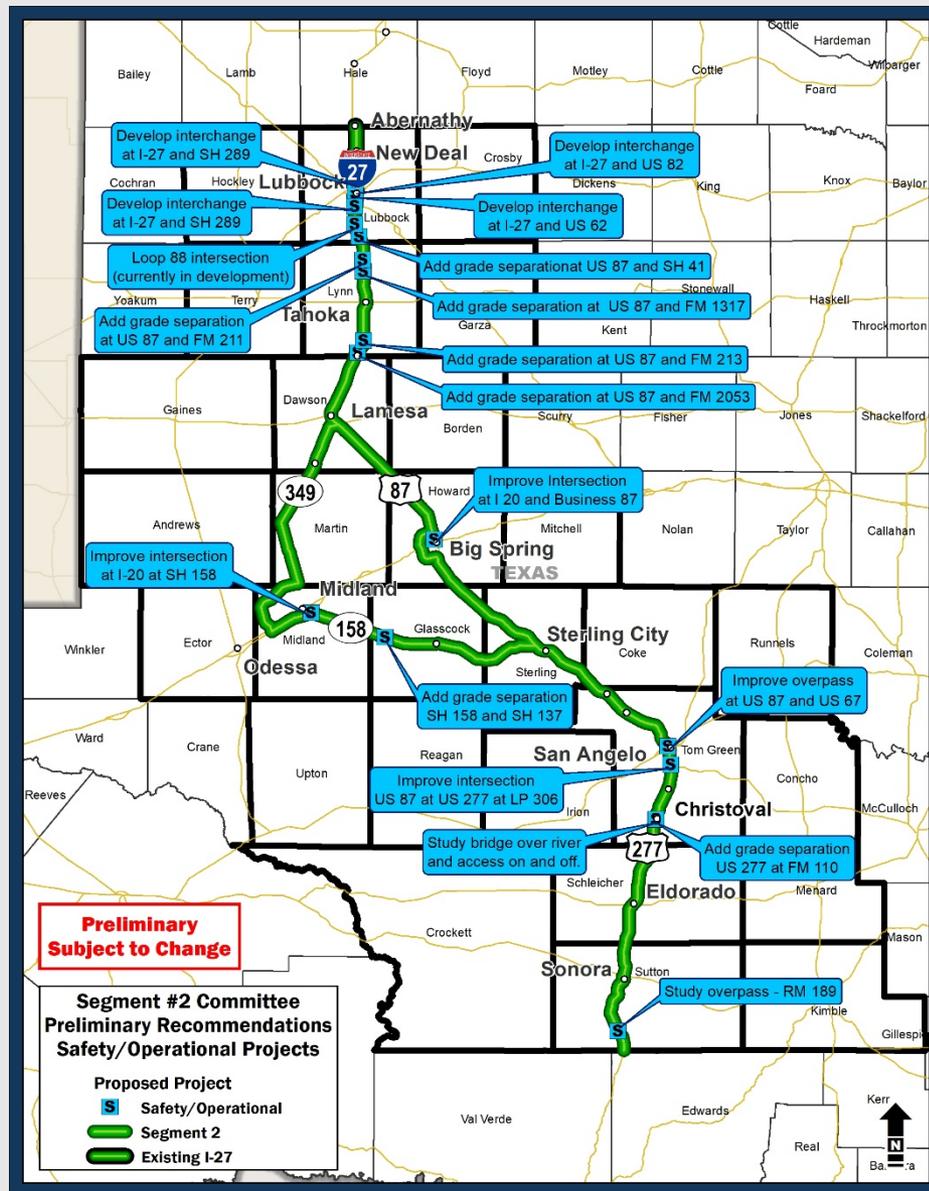


# Safety and Operational Projects



Committee members suggested these preliminary recommended projects during a meeting held on April 2, 2020.

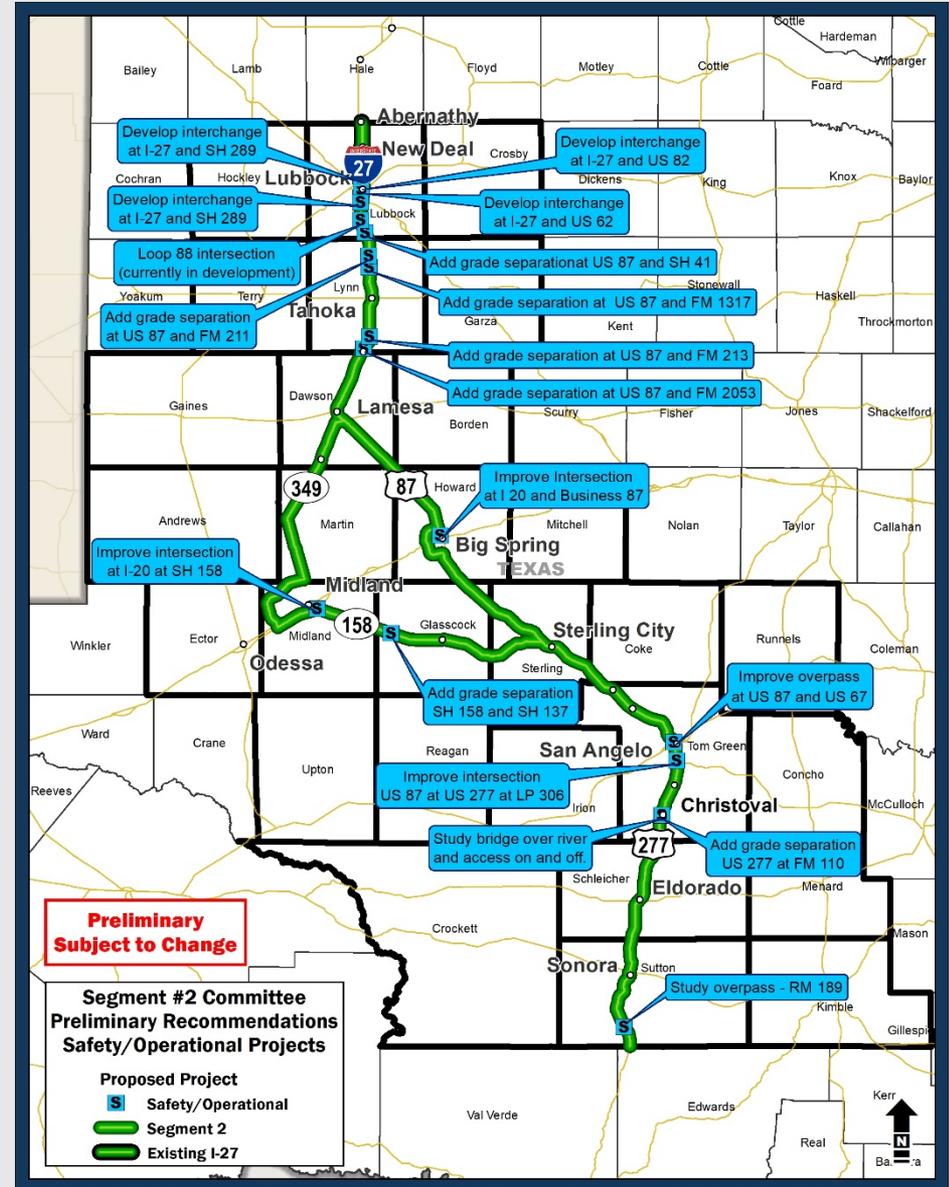
Roadway	Description of Work
I-27 and SH 289 (north end)	Develop interchange
I-27 and US 82	Develop interchange
I-27 and US 62	Develop interchange
I-27 and SH 289 (south end)	Develop interchange
Loop 88	Intersection (currently in development)
US 87 and SH 41	Add grade separation
US 87 and FM 211	Add grade separation
US 87 and FM 1317	Add grade separation
US 87 and FM 213	Add grade separation
US 87 and FM 2053	Add grade separation
I-20 at SH 158	Improve intersection
SH 158 and SH 137	Add grade separation

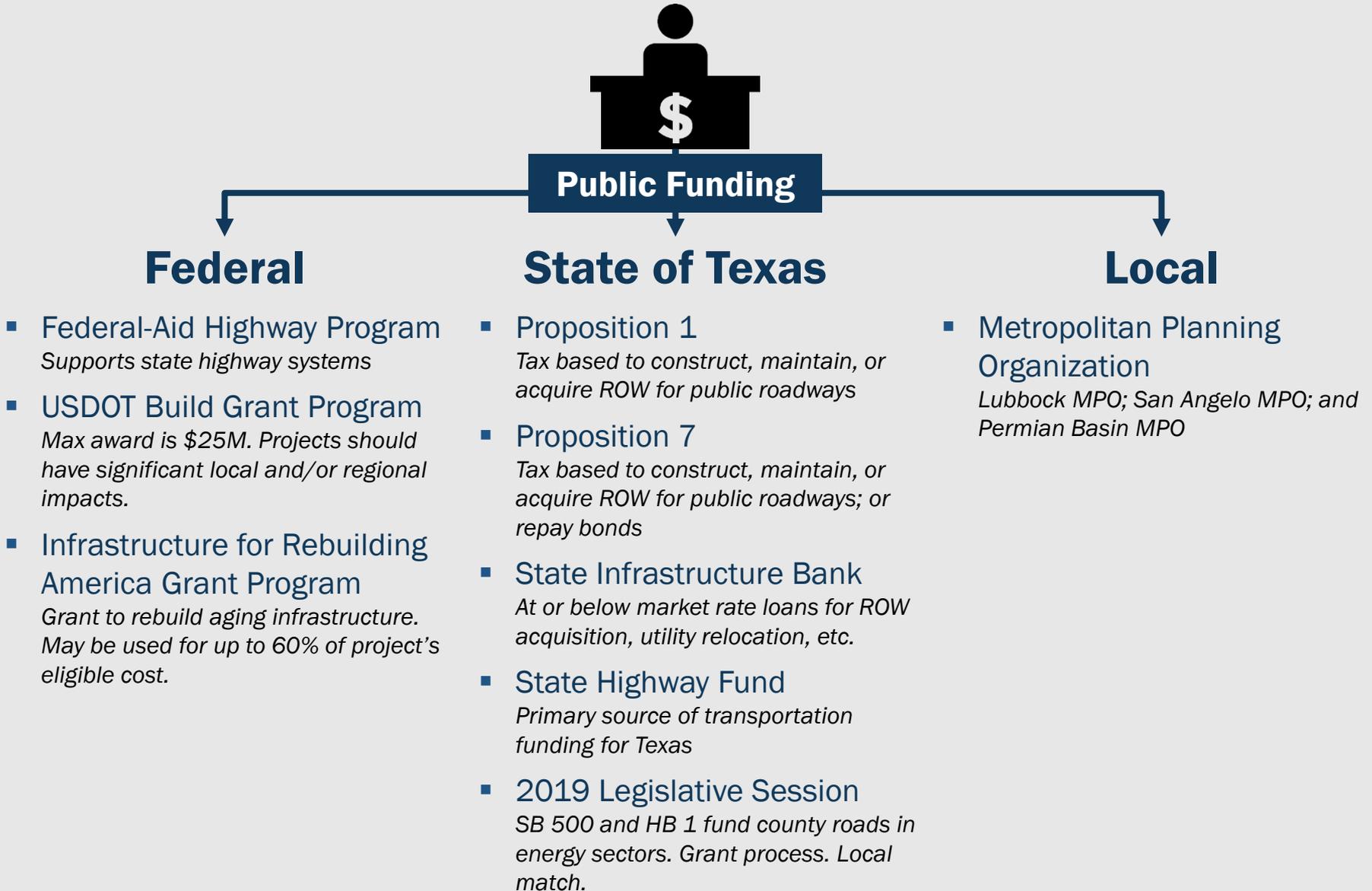


# Safety and Operational Projects (continued)



Roadway	Description of Work
I-20 and Business 87	Improve intersection
US 87 and US 67	Add grade separation
US 87 at US 277 at LP 306	Improve intersection
Along US 277	Study bridge over river and access on and off
US 277 at FM 110	Add grade separation
US 277 at RM 189	Study overpass







- The Texas Transportation Commission and TxDOT use the Unified Transportation Program (UTP) as TxDOT's **10-year plan to guide transportation project development**.
- The **UTP authorizes projects for construction, development and planning activities** and includes projects involving highways along with planning and project selection processes for state funding in modal areas of aviation, rail, public transportation, and state and coastal waterways.
- The UTP is **neither a budget nor a guarantee that projects will or can be built**. However, it is a critical tool in guiding transportation project development within the long-term planning context.



The Texas Transportation Commission sets funding levels in the 12 categories based on the goals, performance measures, and targets established in the Statewide Long-Range Transportation Plan.

Category	Common Project Types
Category 1 – Preventative Maintenance and Rehabilitation	Roadway surfacing and rehabilitation
Category 2 – Metropolitan and Urban Area Corridor Projects	Urban road capacity, interchanges
Category 3 – Non-Traditionally Funded Transportation Projects	Various
Category 4 – Statewide Connectivity Corridor Projects	Regional corridor capacity
Category 5 – Congestion Mitigation and Air Quality Improvement	Intersection and interchange improvements
Category 6 – Structure Replacement and Rehabilitation (Bridge)	Bridge replacement and repair
Category 7 – Metropolitan Mobility and Rehabilitation	Urban transportation improvements
Category 8 – Safety	Medians, shoulders, signals, guard rails, rumble strips, grade separation, etc.
Category 9 – Transportation Alternatives Set-Aside Program	Bike and pedestrian infrastructure
Category 10 – Supplemental Transportation Programs	Border infrastructure, state park roads
Category 11 – District Discretionary	Roadway resurfacing, passing lanes
Category 12 – Strategic Priority	Urban and rural road capacity



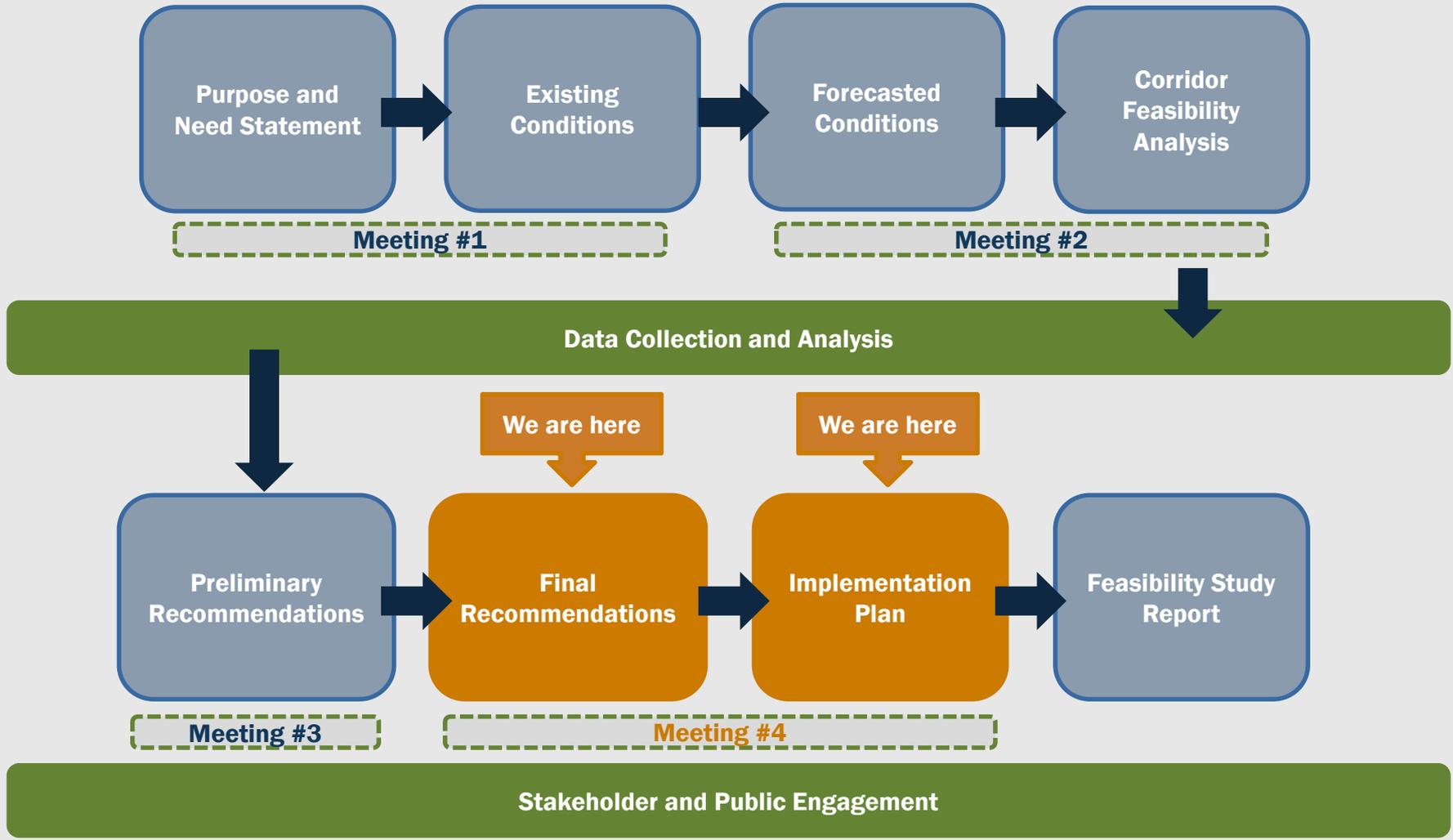
- Executive Summary
- Letter from the Segment Committee Chair
- 1. Introduction
- 2. Existing Conditions
- 3. Forecasted Conditions
- 4. Segment Interstate Feasibility Analysis and Findings
- 5. Public Involvement and Stakeholder Engagement
- 6. Segment Committee Recommendations and Implementation Plan
- Figures, Tables, and Appendices

Reviewed  
with  
Committee



— Reviewed with Committee  
— To Be Reviewed

# Ports-to-Plains Corridor Feasibility Study Scope





## Segment #2

# Economic Analysis

Akila Thamizharasan, TxDOT

Consultant Team



## HB 1079 Requires:



An evaluation of the **economic development impacts** of the Ports-to-Plains Corridor, including whether the improvement or expansion of the Ports-to-Plains Corridor would create **employment opportunities** in this state

- Analysis compares **Interstate Scenario** to **Baseline Scenario** for **2050** horizon year
- Presents quantitative estimates of the corridor's **direct, indirect and induced economic impacts**, including the net increase in jobs, GDP, labor income, and other metrics
- Incorporates **competitive effects on key Corridor industries**: Food & Agriculture, Energy - plus trade access, warehouse & distribution development



## Travel Changes

- Changes in trips, vehicle miles traveled (VMT) and vehicle hours traveled (VHT)
- Changes in crash rates
- Assumptions regarding average cost values

## Market Access

- Change in access to international gateways
- Change in size of market accessible within one day
- Change in access to labor markets

## New Development

- Assumptions regarding expected levels of development contingent on the Interstate

## Cost Savings and Other Benefits

- Travel Time and Cost Savings
- Safety Benefits

## Economic Impacts

- Employment
- GDP
- Labor income
- Population



- The interstate would reduce average end-to-end travel times across the Corridor from 962 minutes to 873 minutes, **save 89 minutes in travel time.**
- Within Segment #2, the interstate would reduce end-to-end travel times from 420 minutes to 394 minutes, **saving 26 minutes in travel time.**

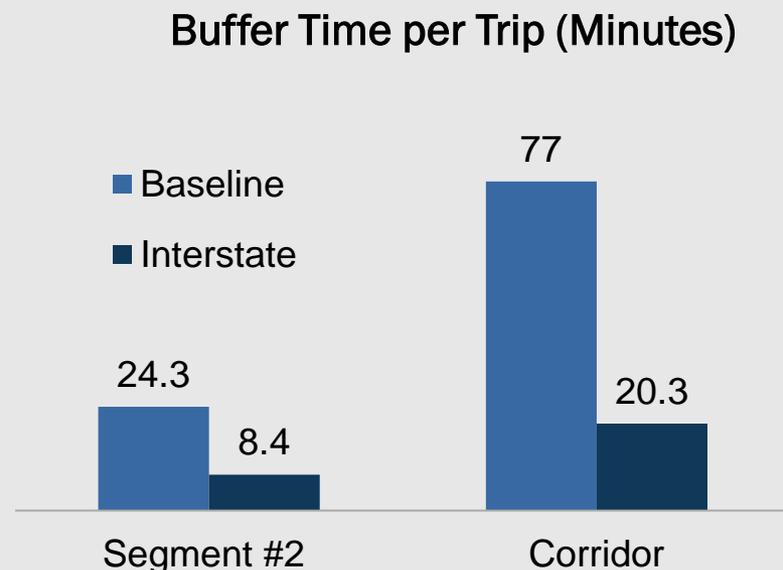
## Travel Inputs to TREDIS

	Segment #2			Corridor		
	<i>Baseline</i>	<i>Interstate</i>	<i>Change</i>	<i>Baseline</i>	<i>Interstate</i>	<i>Change</i>
Daily Trips	50,400	80,500	30,100	181,500	266,200	84,700
Daily VMT	4,982,900	5,991,800	1,008,900	16,938,800	22,806,700	5,867,900
Daily VHT	85,400	95,800	10,400	292,900	355,700	62,800

- Trucks make up ~22% of Corridor and Segment VMT under Baseline and Interstate scenarios



- With the interstate, **buffer time per trip is projected to decline by 57 minutes** along the whole Corridor, including by 16 minutes within Segment #2

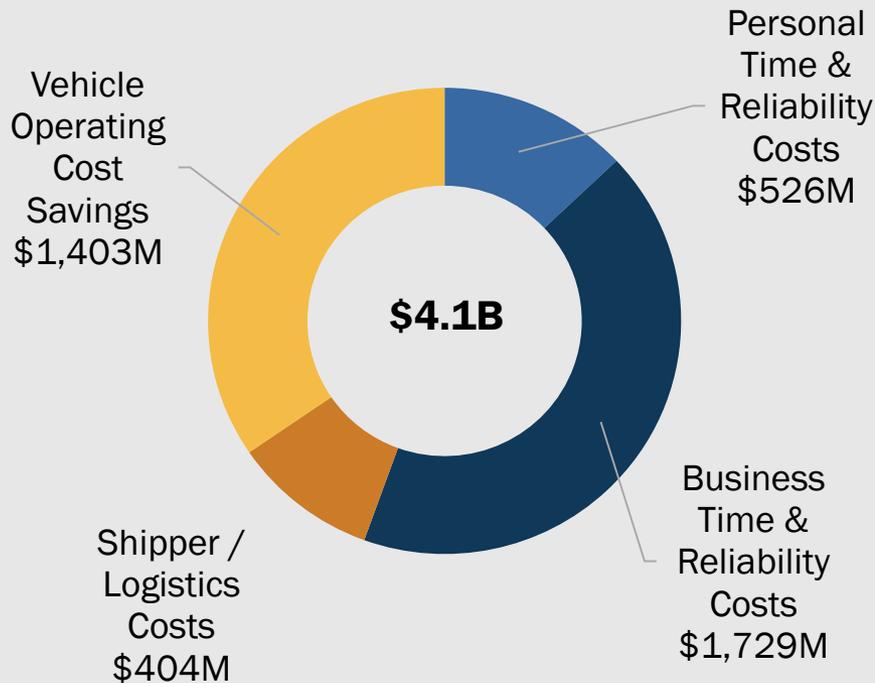


- Buffer time = difference between “likely worst-case” and average travel time, or the time drivers add to their journey to ensure a punctual arrival
  - Reflects padding built into freight schedules, reducing productivity to protect reliability
  - Valued at \$160 per hour for trucks; ½ wage rate for passengers
- Standard, best-practice values used to monetize travel benefits

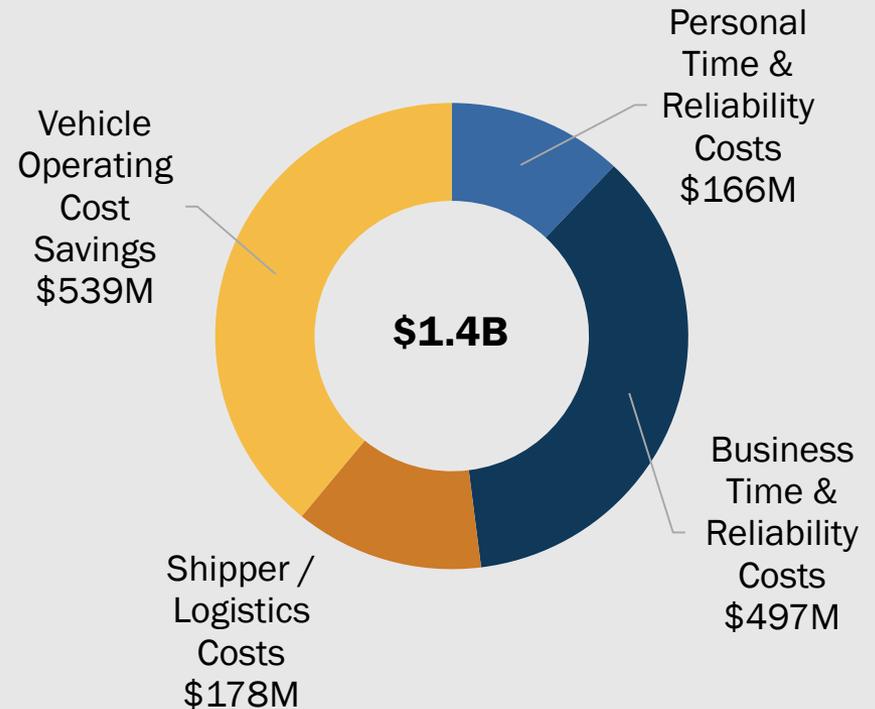


- Interstate creates annual Corridor-wide **travel cost savings of \$4.1 billion** (including \$1.4 billion on Segment #2) relative to baseline, representing a **37% reduction in travel costs** on the Corridor

### Corridor-wide Cost Savings



### Segment #2 Cost Savings



Source: WSP Analysis, using TREDIS



- Interstate **is anticipated to improve safety and reduce crash rates**, leading to approximately **8% fewer fatal collisions, 7% fewer injury collisions, and 11% fewer property damage crashes** throughout the corridor each year

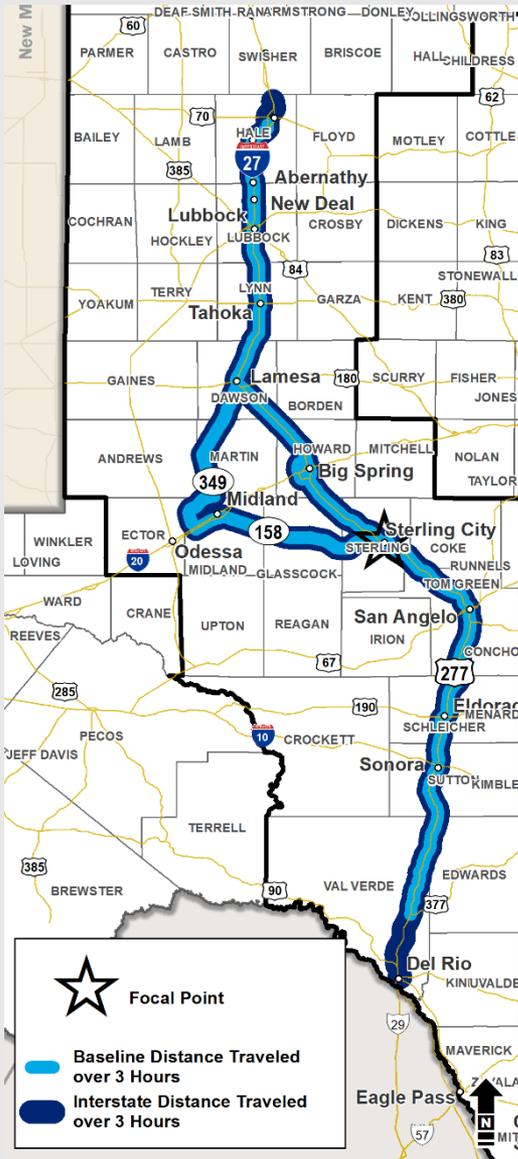
## Safety Inputs to TREDIS: Crash Rates per 100 VMT

	Segment #2		Corridor	
	<i>Baseline</i>	<i>Interstate</i>	<i>Baseline</i>	<i>Interstate</i>
Fatal Crash Rate	1.66	1.22	1.33	1.07
Injury Crash Rate	29.97	22.48	26.23	21.22
Non-Injury Crash Rate	55.15	39.90	58.85	45.56
Total Crash Rate	86.77	63.60	86.4	67.9

- Based on federal monetization values, these safety improvements are equivalent to **\$457 million** per year

Source: WSP Analysis, using TREDIS

# Freight Market Access Assumptions

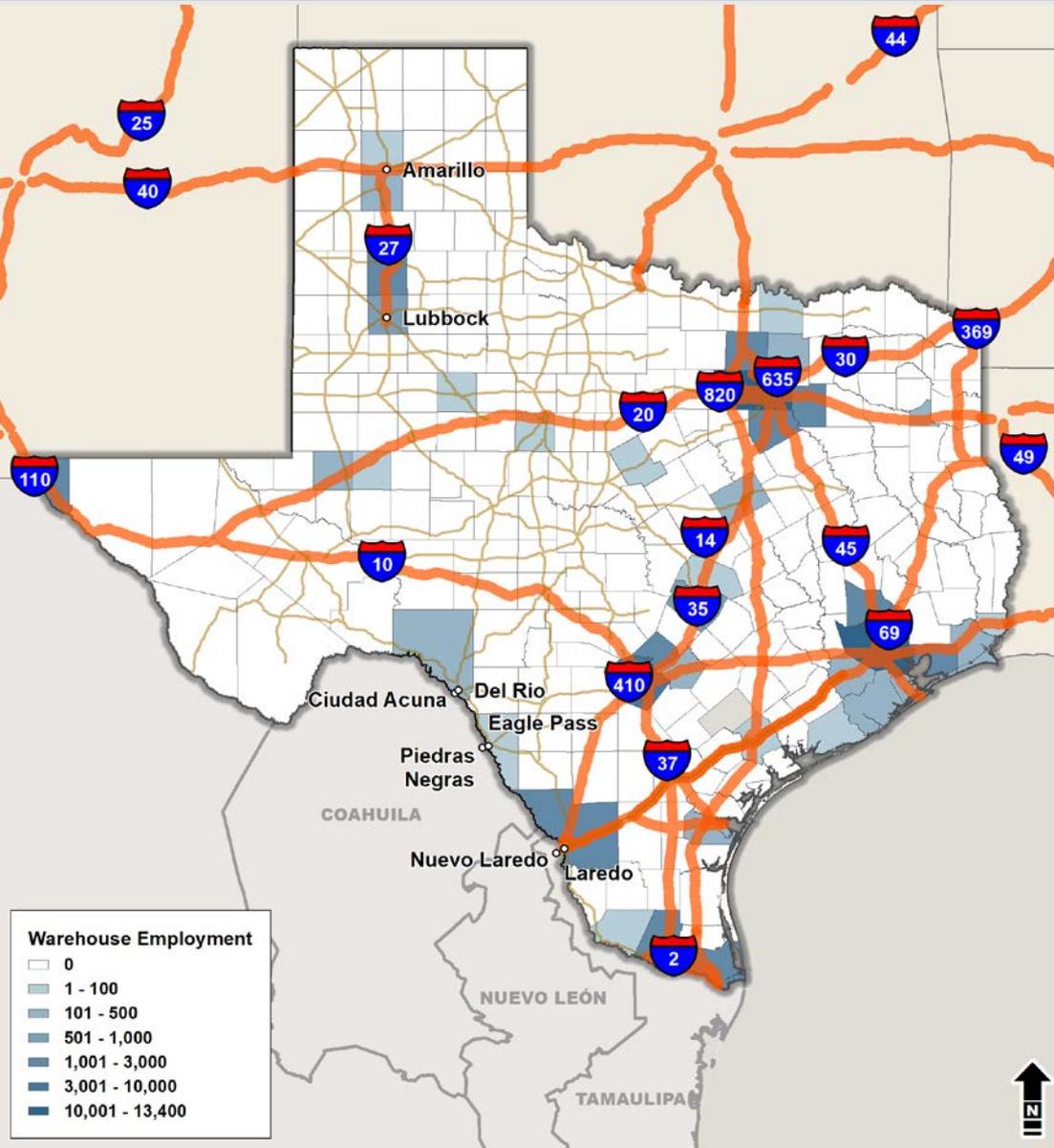


- Trucks will be able to **access major international gateways** more quickly
  - Calculated based on change in average travel time with Interstate relative to Baseline: **more than a half-hour savings** for Segment #2. The corridor-wide average is 44 minute savings
- Time savings mean trucks can **reach a wider range of customers** within one day, saving shippers money
  - Same-day market access defined as delivery market reachable within 3 hour drive, enabling completion of a round trip within the same day: **7.7% improvement** for Segment #2 and 8.7% average improvement across the corridor



- Commuters also save time, allowing businesses and employees to find **better job matches**
  - Local market access defined as population reachable within 1 hour: **7.0% improvement** for Segment #2 and 13.4% average improvement across the corridor
- Labor and freight market access impacts anticipated to grow over first 10-15 years, as industry changes decision-making in response to Interstate, and then stabilize
  - Analysis assumes Interstate opens in 2035

# Warehouse & Distribution Development

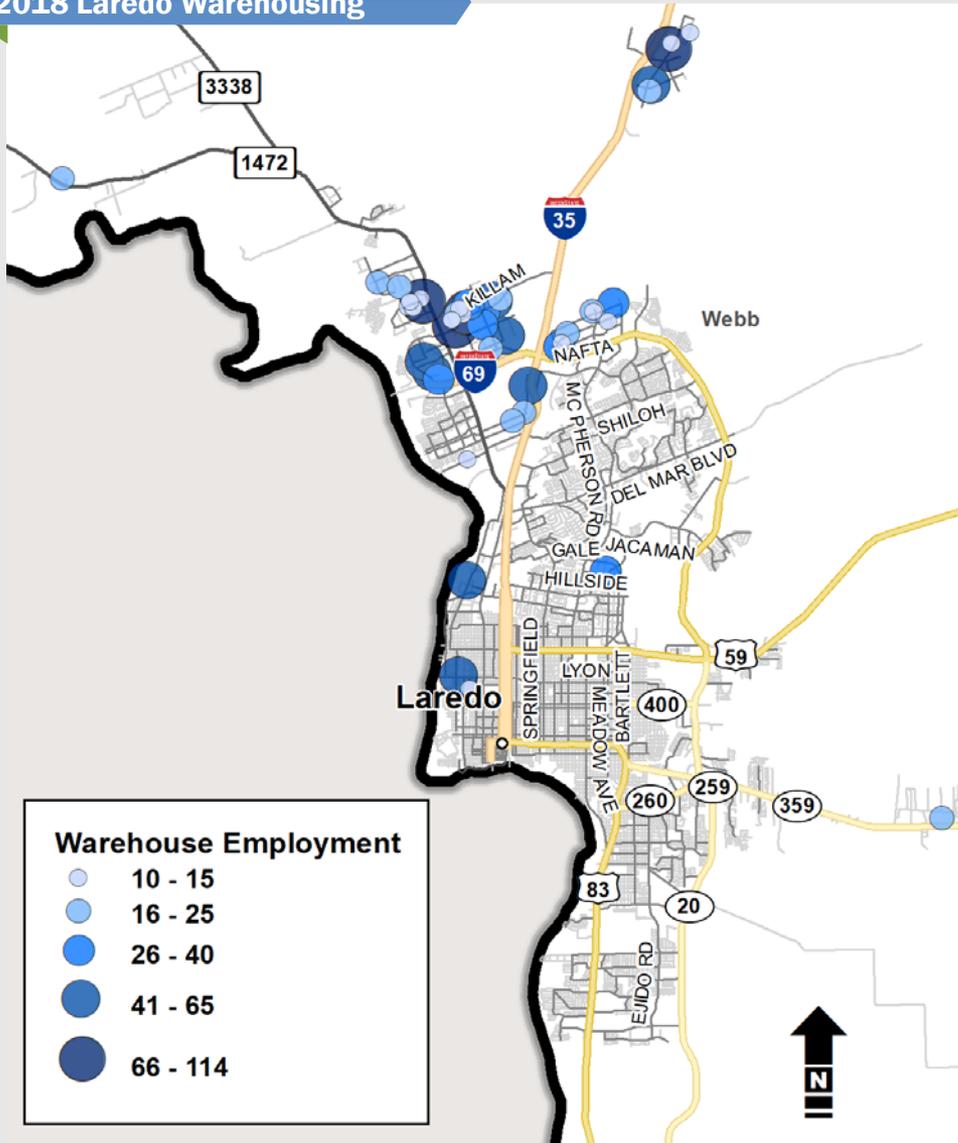


- Warehouse & distribution sector development is driven by access to Interstate highways
  - Demonstrated by national research (NCFRP Report 13)
  - Clear pattern in Texas site location

Source: WSP Analysis of US BEA data



## 2018 Laredo Warehousing



- Interstate influence reflected by experience on Ports to Plains Corridor
  - Warehouse employment growth in Lubbock County added an extra 0.7 percent per year after I-27 completed in 1992 (2.2% annual growth before 1992, 2.9% after)
  - By comparison, Tom Green County (San Angelo) with no interstate continued at same growth rate (1.3% before and after 1992)
  - I-35 a major advantage to Laredo gateway (4.1% annual growth after 1993/NAFTA)

Source: WSP Analysis of IHS Markit Freight Finder



- With I-27 experience as benchmark, the sector grows an additional 10% from Interstate access starting in 2035
  - Over \$600 million additional product value distributed
  - Builds on forecast growth in Segment 2

Segment	Warehouse & Distribution Outbound Volume (\$mil.)					
	Baseline 2018	Baseline 2050	Baseline Growth	2050 with Interstate	2050 Added Growth	2050 Total Growth
Segment 1	\$ 838	\$ 775	-7%	\$ 852	9.9%	2%
Segment 2	\$ 1,102	\$ 1,920	74%	\$ 2,109	9.9%	91%
Segment 3	\$ 1,442	\$ 3,700	156%	\$ 4,065	9.9%	182%
<b>P2P Total</b>	<b>\$ 3,383</b>	<b>\$ 6,395</b>	<b>89%</b>	<b>\$ 7,027</b>	<b>9.9%</b>	<b>108%</b>

Source: WSP Analysis of Moody's and TRANSEARCH data

# Review: Corridor Baseline Growth



## Employment

**894,770**

(2020)

**1,044,140**

(2050)

- Corridor employment is **projected to increase by 149,370.**
- Overall corridor employment **is projected to grow by 16.7%.**

## Labor Income

**\$95.0B**

(2020)

**\$161.8B**

(2050)

- Corridor labor income is **projected to increase by \$66.7 billion**
- Overall corridor labor income **is projected to grow by 70.2%**

## GDP

**\$155.4B**

(2020)

**\$263.2B**

(2050)

- Corridor GDP is projected to **increase by \$108 billion**
- Overall corridor GDP is projected to **grow by 69.4% .**

## Population

**1,996,680**

(2020)

**3,207,970**

(2050)

- Corridor population is projected to **increase by 1.2 million**
- Overall corridor population is projected to **grow by 60.7%.**

# Corridor Economic Impacts



## Employment

**1,044,140** (Baseline 2050)     **1,061,850** (Interstate 2050)

- **17,710 more jobs** across corridor with interstate
- Corridor **employment growth of 18.7%**, 2.0% higher than baseline.

## Labor Income

**\$161.8B** (Baseline 2050)     **\$163.1B** (Interstate 2050)

- **\$1.4 billion more labor income** within Corridor with interstate
- Corridor **labor income growth of 71.6%**, 1.4% higher than baseline.

## GDP

**\$263.2B** (Baseline 2050)     **\$265.4B** (Interstate 2050)

- **\$2.2 billion more GDP** across corridor with interstate
- Corridor **GDP growth of 70.8%**, 1.4% higher than baseline.

## Population

**3,207,970** (Baseline 2050)     **3,236,280** (Interstate 2050)

- **28,310 higher population** within Corridor with interstate
- Corridor **population growth of 62.1%**, 1.4% higher than baseline.

Source: WSP Analysis, using TREDIS

# Review: Segment #2 Baseline Growth



## Employment

**485,820**  
(2020)      **590,530**  
(2050)

- Segment #2 employment is **projected to increase by 104,710**
- Overall Segment #2 employment is **projected to grow by 21.6%**

## Labor Income

**\$61.6B**  
(2020)      **\$107.8B**  
(2050)

- Segment #2 labor income is **projected to increase by \$46.2 billion**
- Overall Segment #2 labor income is **projected to grow by 75.1%**

## GDP

**\$99.8B**  
(2020)      **\$175.1B**  
(2050)

- Segment #2 GDP is projected to **increase by \$75.3 billion**
- Overall Segment #2 GDP is projected to **grow by 75.5%**.

## Population

**1,046,560**  
(2020)      **2,104,480**  
(2050)

- Segment #2 population is projected to **increase by 1,057,920**
- Overall Segment #2 population is projected to **grow by 101.1%**.

# Segment #2 Economic Impacts



## Employment

**590,530**

(Baseline 2050)

**597,810**

(Interstate 2050)

- **7,280 more jobs** within Segment #2 with interstate
- Segment #2 **employment growth of 23.1%**, 1.5% higher than baseline.

## Labor Income

**\$107.8B**

(Baseline 2050)

**\$108.4B**

(Interstate 2050)

- **\$0.6 billion more labor income** within Segment #2 with interstate
- Segment #2 **labor income growth of 76.1%**, 1.0% higher than baseline.

## GDP

**\$175.1B**

(Baseline 2050)

**\$176.0B**

(Interstate 2050)

- **\$0.9 billion more GDP** within Segment #2 with interstate
- Segment #2 **GDP growth of 76.4%**, 0.9% higher than baseline.

## Population

**2,104,480**

(Baseline 2050)

**2,114,100**

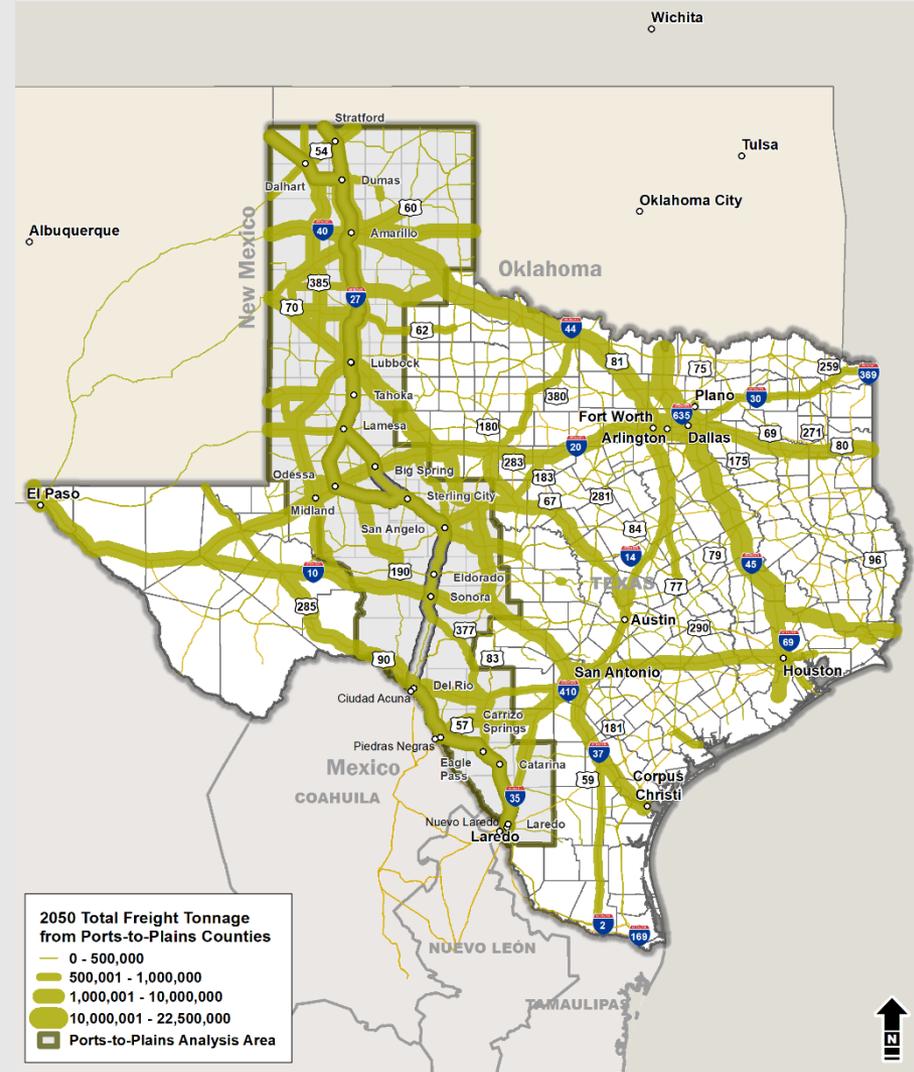
(Interstate 2050)

- **9,620 higher population** within Segment #2 with interstate
- Segment #2 **population growth of 102.0%**, 0.9% higher than baseline.

Source: WSP Analysis, using TREDIS

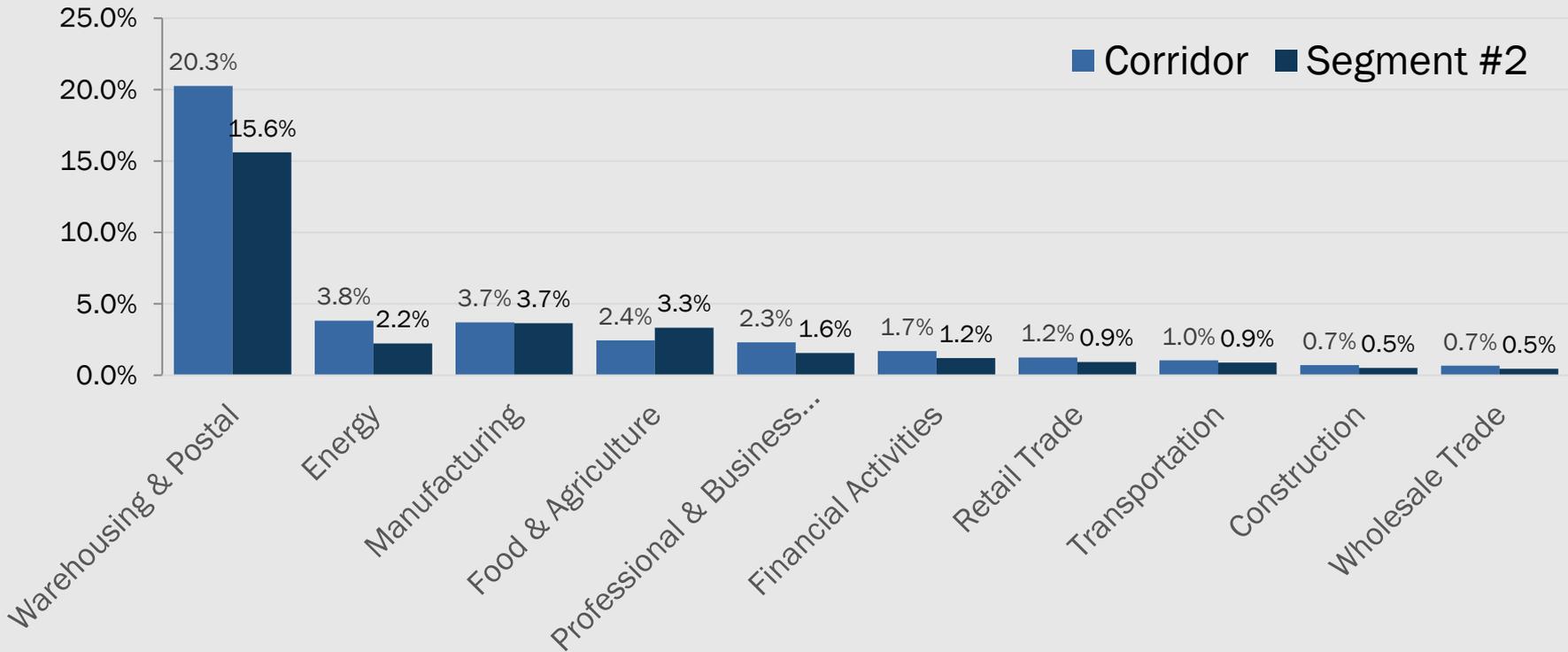


- Rest of Texas expected to see economic gains, including:
  - **\$690 million in cost savings** for trucks and passengers driving on the corridor to/from the Rest of Texas
  - **4,400 additional jobs and \$640 million more in GDP** relative to Baseline due to cost savings and multiplier impacts of new economic activity along Corridor





## Employment Growth, Baseline 2050 vs. Interstate 2050



- Employment growth resulting from the Interstate is most robust for the Warehousing industry, followed by Energy and Manufacturing industries

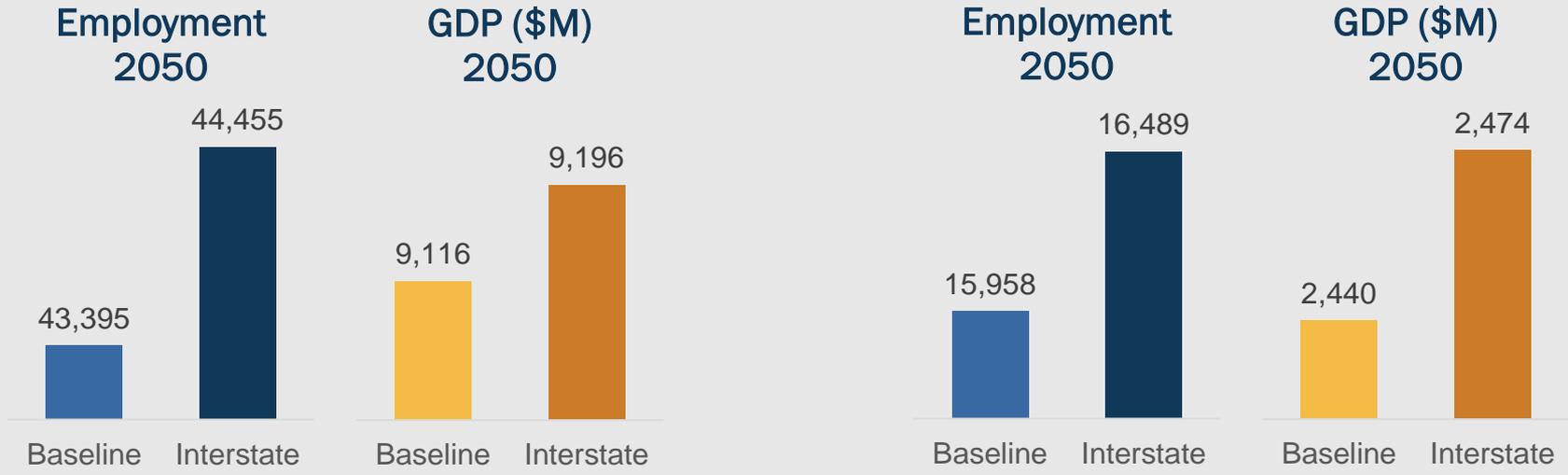
Source: WSP Analysis, using TREDIS

# Food and Agriculture Industry Impacts



## Corridor

## Segment #2



- The Food and Agriculture industry will experience significant benefits from the Interstate, including via **reduced annual travel costs** of \$295M across the corridor (including \$105M for Segment #2), making it easier to **compete in the global market**
- The enhanced transportation network will **create nearly 1,050 jobs and \$80M in GDP** in the Food and Agriculture industry across the corridor, including **530 jobs and \$34M in GDP within Segment #2**

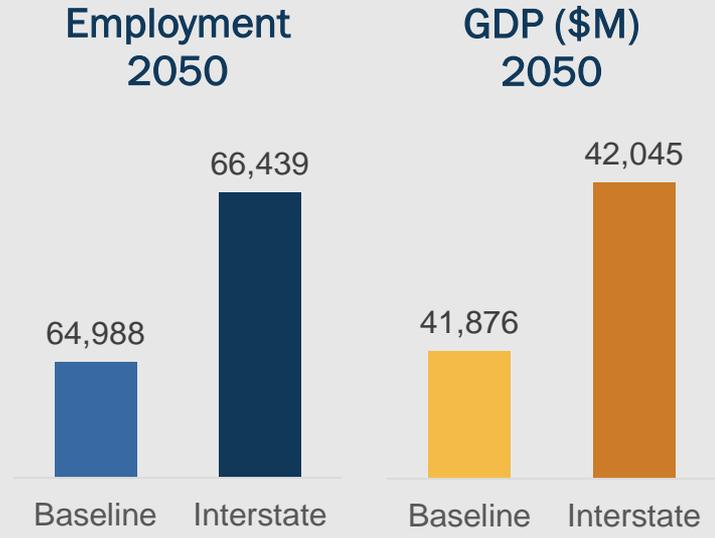
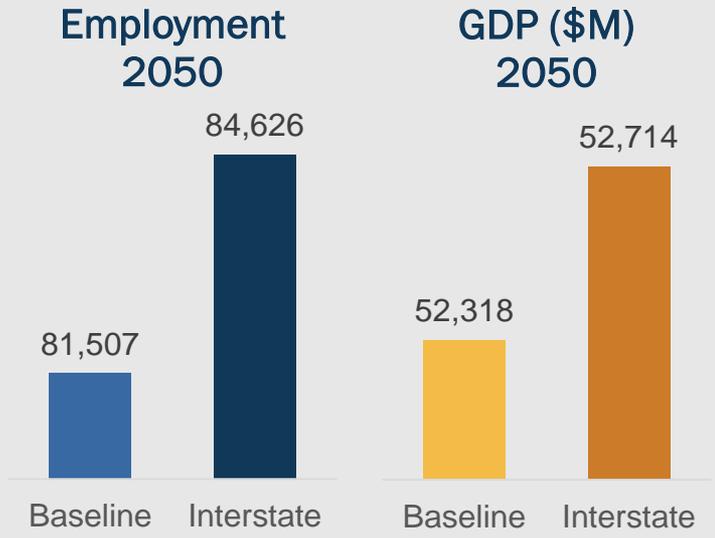
Source: WSP Analysis, using TREDIS

# Energy and Extraction Industry Impacts



## Corridor

## Segment #2



- The Interstate will **reduce annual travel costs** for Texas' Energy and Extraction industry by \$505M corridor-wide, including a \$189M reduction within Segment #2. These travel benefits will also **support access to global markets**
- Due to these improvements, the Energy and Extraction industry is projected to experience an increase of **approximately 3,120 jobs and \$400M in GDP** relative to the Baseline scenario, including more than 1,450 jobs and nearly \$170M in GDP in Segment #2.

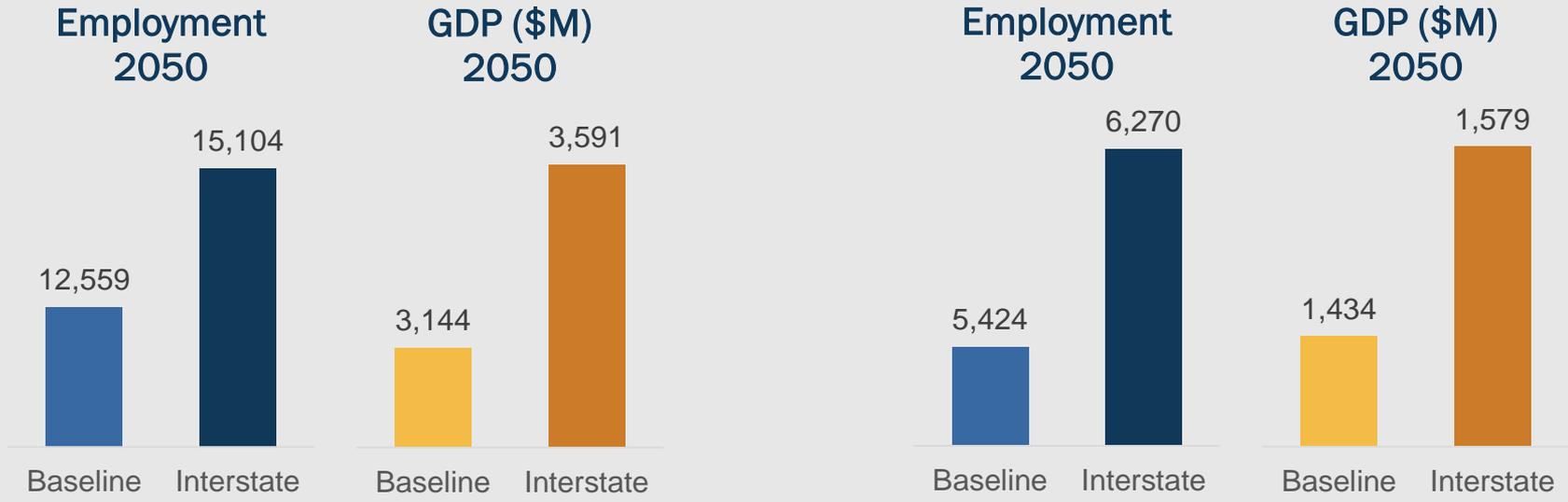
Source: WSP Analysis, using TREDIS

# Warehousing and Distribution Industry Impacts



## Corridor

## Segment #2



- The projected increase in Warehousing development, alongside improvements in market access and **reductions in travel costs** of \$197 million annually across the corridor and \$59 million in Segment #2 will generate significant economic impacts.
- Top-level economic impacts include the addition of **approximately 2,550 jobs and \$450M in GDP corridor-wide** relative to the Baseline scenario, including **850 jobs and \$150M in GDP in Segment #2.**

Source: WSP Analysis, using TREDIS

# Summary: Corridor



<b>Metric</b>	<b>Baseline 2020</b>	<b>Baseline 2050</b>	<b>Interstate</b>	<b>Change</b>
<b>Employment</b>	894,770	1,044,140	1,061,850	17,710
<b>Employment Growth</b>	N/A	16.7%	18.7%	2.0%
<b>GDP (\$B)</b>	\$155.4	\$263.2	\$265.4	\$2.2
<b>GDP Growth</b>	N/A	69.4%	70.8%	1.4%
<b>Labor Income (\$B)</b>	\$95.0	\$161.8	\$163.1	\$1.4
<b>Labor Income Growth</b>	N/A	70.2%	71.6%	1.4%
<b>Population</b>	1,996,680	3,207,970	3,236,280	28,310
<b>Population Growth</b>	N/A	60.7%	62.1%	1.4%

Source: WSP Analysis, using TREDIS

# Summary: Segment #2



<b>Metric</b>	<b>Baseline 2020</b>	<b>Baseline 2050</b>	<b>Interstate</b>	<b>Change</b>
<b>Employment</b>	485,820	590,530	597,810	7,280
<b>Employment Growth</b>	N/A	21.6%	23.1%	1.5%
<b>GDP (\$B)</b>	\$99.80	\$175.1	\$176.0	\$0.9
<b>GDP Growth</b>	N/A	75.5%	76.4%	0.9%
<b>Labor Income (\$B)</b>	\$61.6	\$107.8	\$108.4	\$0.6
<b>Labor Income Growth</b>	N/A	75.1%	76.1%	1.0%
<b>Population</b>	1,046,560	2,104,480	2,114,100	9,620
<b>Population Growth</b>	N/A	101.1%	102.0%	0.9%

Source: WSP Analysis, using TREDIS



- Economic impacts of the interstate have thus far been presented relative to the baseline for the **2050 horizon year**
- In reality, these impacts will continue for many years afterward, representing an **ongoing improvement** relative to the baseline scenario
- Over first 20 years of interstate operations, statewide GDP gains total \$55.6B, or **\$41.3B in new GDP** once time value of money (3% discount rate) is taken into account
- Compared to capital costs of \$23.5B, this represents a net **return on investment of \$17.8B—a 76% return**



- BCA focuses on economic benefits—like travel cost savings and crash reductions—and compares these to capital and operating & maintenance (O&M) costs
- Statewide economic benefits of the Interstate accumulate to \$104.1B over 20-years of operations, or the equivalent of **\$76.7B in benefits** when discounted using 3% rate
- **Total costs equal \$27.4B** discounted, including capital and O&M (or \$28.7B before discounting)
- The **benefit-to-cost ratio (BCR) is 2.8**
  - Anything > 1 is considered worthwhile
- The **net present value (NPV) is \$49.4B**
  - Anything > 0 is considered worthwhile



- Though the primary benefits of the Interstate would arise once it is built and operating, its construction would also support **178,600 job-years** and **\$17.2B in cumulative GDP gains** across Texas
  - One job year = one job held for one year = 2 jobs held for ½ year, etc.
  - These impacts spread out over ~30 years of design and construction
- Ongoing maintenance of Interstate will also support **2,090 long-term jobs** and **\$185M in annual GDP** statewide
- These jobs would primarily support the construction industry, but through multiplier effects would also provide opportunities in countless other industries



## Key Takeaways:

- Interstate would **reduce travel times and travel costs**, saving businesses and individuals **\$4.1 billion** per year across the corridor
- Interstate would **enhance access to markets** for businesses across the Ports-to-Plains Corridor: domestic, USMCA, global
- Interstate would **attract new business**, particularly in key industries:

<i>Industry</i>	<i>2050 Increase with Interstate Relative to Baseline</i>		
	<i>Employment</i>	<i>GDP</i>	<i>Travel Cost Savings</i>
<i>Food &amp; Agriculture</i>	1,050	\$80M	\$295M
<i>Energy &amp; Extraction</i>	3,120	\$400M	\$505M
<i>Warehousing &amp; Distr.</i>	2,550	\$450M	\$197M

- Corridor-wide economic gains of more than **17,000 jobs** and **\$2 billion** in annual GDP projected
- Return on investment of **\$17.8B**, representing a **76% return**
- **Benefit cost ratio of 2.8**, with **net-present value of \$49.4B**



## Key Takeaways:

- Interstate would **reduce travel times and travel costs**, saving businesses and individuals **\$1.4 billion** in Segment #2
- Interstate would **enhance access to markets** for businesses across the Ports-to-Plains Corridor: domestic, USMCA, global
- Interstate would **attract new business**, particularly in key industries:

<i>Industry</i>	<i>2050 Increase with Interstate Relative to Baseline</i>		
	<i>Employment</i>	<i>GDP</i>	<i>Travel Cost Savings</i>
<i>Food &amp; Agriculture</i>	530	\$34M	\$105M
<i>Energy &amp; Extraction</i>	1,450	\$170M	\$189M
<i>Warehousing &amp; Distr.</i>	850	\$150M	\$59M

- Segment #2 economic gains of more than **9,600 jobs** and approximately **\$900 million** in annual GDP projected

# Summary of Corridor Benefits



<b>Total Annual Travel Cost Savings*</b>		<b>\$4.79B</b>
<b>Corridor Annual Travel Cost Savings</b>		\$4.1B
<b>Food &amp; Agriculture</b>	\$295M (7.2%)	
<b>Energy &amp; Extraction</b>	\$505M (12.3%)	
<b>Warehousing &amp; Distribution</b>	\$197M (4.8%)	
<b>Rest of Texas Travel Annual Cost Savings</b>		\$690M
<b>Total Annual Increase in GDP</b>		<b>\$2.84B</b>
<b>Corridor Annual Increase in GDP</b>		\$2.2B
<b>Food &amp; Agriculture</b>	\$80M (3.6%)	
<b>Energy &amp; Extraction</b>	\$400M (18.2%)	
<b>Warehousing &amp; Distribution</b>	\$450M (20.5%)	
<b>Rest of Texas Annual Increase in GDP</b>		\$640M
<b>Total Increase in Employment</b>		<b>22,110</b>
<b>Corridor Annual Increase in Employment</b>		17,710
<b>Food &amp; Agriculture</b>	1,050 (5.9%)	
<b>Energy &amp; Extraction</b>	3,120 (17.5%)	
<b>Warehousing &amp; Distribution</b>	2,550 (14.4%)	
<b>Rest of Texas Annual Increase in Employment</b>		4,400
<b>Total Capital Costs</b>		<b>\$23.5B</b>
<b>Return on Investment</b>		<b>76%</b> <b>\$17.8B</b>
<b>Benefit-Cost Ratio / Net Present Value</b>		<b>2.8</b> <b>\$49.4B</b>

\*Travel cost savings includes:

- Vehicle Operating Cost Savings
- Personal Time and Reliability Costs
- Shipper Logistics Costs
- Business Time and Reliability Costs

Other benefits include:

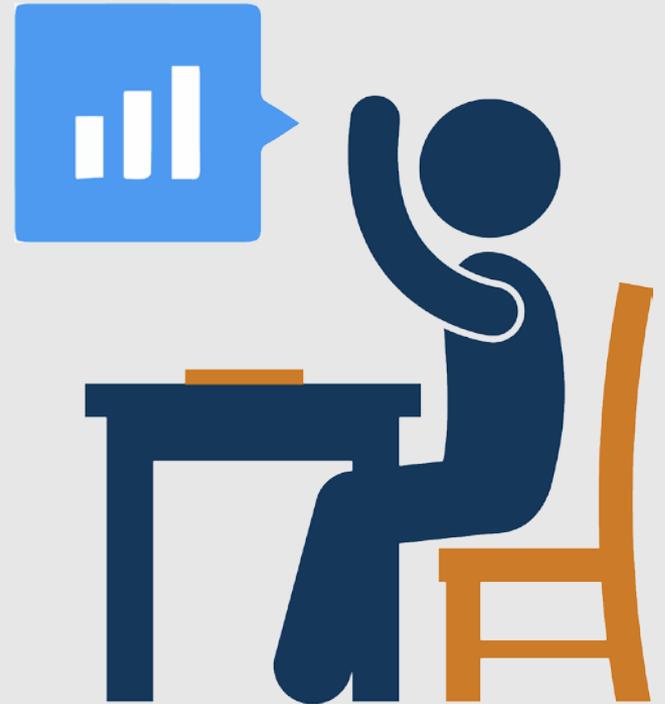
- \$450M in annual safety benefits
- Improved access to major international gateways
- Wider range of shipper customers within one day

Source: WSP Analysis, using TREDIS



## Committee Feedback

- What future trends may impact the economic profile of this corridor in the future?
- How does increased connectivity of the interstate factor into any changes?





Segment #2

# Revised Cost Estimates

Caroline Mays, TxDOT

Consultant Team

# Preliminary Interstate Cost Estimates for Segment #2



	<b>Preliminary Interstate Estimate</b> <i>(No Rural Frontage Roads)</i>	<b>Preliminary Interstate Estimate</b> <i>(All Rural Frontage Roads)</i>	<b>Preliminary Interstate Estimate</b> <i>(Some Rural Frontage Roads)</i>
Interstate	<i>4-Lane Divided: 410 miles*</i>	<i>4-Lane Divided: 410 miles*</i>	<i>4-Lane Divided: 410 miles*</i>
Frontage Roads in Urban Areas**	<i>All (2-lane)</i>	<i>All (2-lane)</i>	<i>All (2-lane)</i>
Frontage Roads in Rural Areas**	<i>None</i>	<i>All (1-lane)</i>	<i>236 out of 351 miles (1 lane)</i>
<b>Construction</b>	<b>\$8.643 billion</b> (\$21.1 M/mi)	<b>\$11.466 billion</b> (\$28.0 M/mi)	<b>\$10.540 billion</b> (\$25.7 M/mi)
<b>Right of Way</b>	<b>\$0.864 billion</b>	<b>\$1.147 billion</b>	<b>\$1.054 billion</b>
<b>Utilities</b>	<b>\$0.411 billion</b>	<b>\$0.475 billion</b>	<b>\$0.454 billion</b>
<b>Total</b>	<b>\$9.918 billion</b>	<b>\$13.088 billion</b>	<b>\$12.048 billion</b>

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

\*\*Number of lanes shown are in each direction. Frontage roads are assumed to be on both sides of the interstate.

# Preliminary Interstate Cost Estimates for Corridor



	<b>Preliminary Interstate Estimate</b> <i>(No Rural Frontage Roads)</i>	<b>Preliminary Interstate Estimate</b> <i>(All Rural Frontage Roads)</i>	<b>Preliminary Interstate Estimate</b> <i>(Some Rural Frontage Roads)</i>
Interstate	<i>4-Lane Divided: 811 miles*</i>	<i>4-Lane Divided: 811 miles*</i>	<i>4-Lane Divided: 811 miles*</i>
Frontage Roads in Urban Areas***	<i>All** (2-lane)</i>	<i>All** (2-lane)</i>	<i>All** (2-lane)</i>
Frontage Roads in Rural Areas***	<i>None</i>	<i>All (1-lane)</i>	<i>533 out of 718 miles (1-lane)</i>
<b>Construction</b>	<b>\$16.434 billion</b> (\$20.3 M/mi)	<b>\$21.911 billion</b> (\$27.0 M/mi)	<b>\$20.584 billion</b> (\$25.4 M/mi)
<b>Right of Way</b>	<b>\$1.643 billion</b>	<b>\$2.191 billion</b>	<b>\$2.058 billion</b>
<b>Utilities</b>	<b>\$0.780 billion</b>	<b>\$0.904 billion</b>	<b>\$0.874 billion</b>
<b>Total</b>	<b>\$18.857 billion</b>	<b>\$25.006 billion</b>	<b>\$23.516 billion</b>

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

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

\*\*\*Number of lanes shown are in each direction. Frontage roads are assumed to be on both sides of the interstate.



# Meeting Break



Segment #2

# Prioritization of Recommendations

Caroline Mays, TxDOT

Consultant Team



# PRELIMINARY RECOMMENDATIONS

Interstate Upgrade Projects

Relief Route Studies

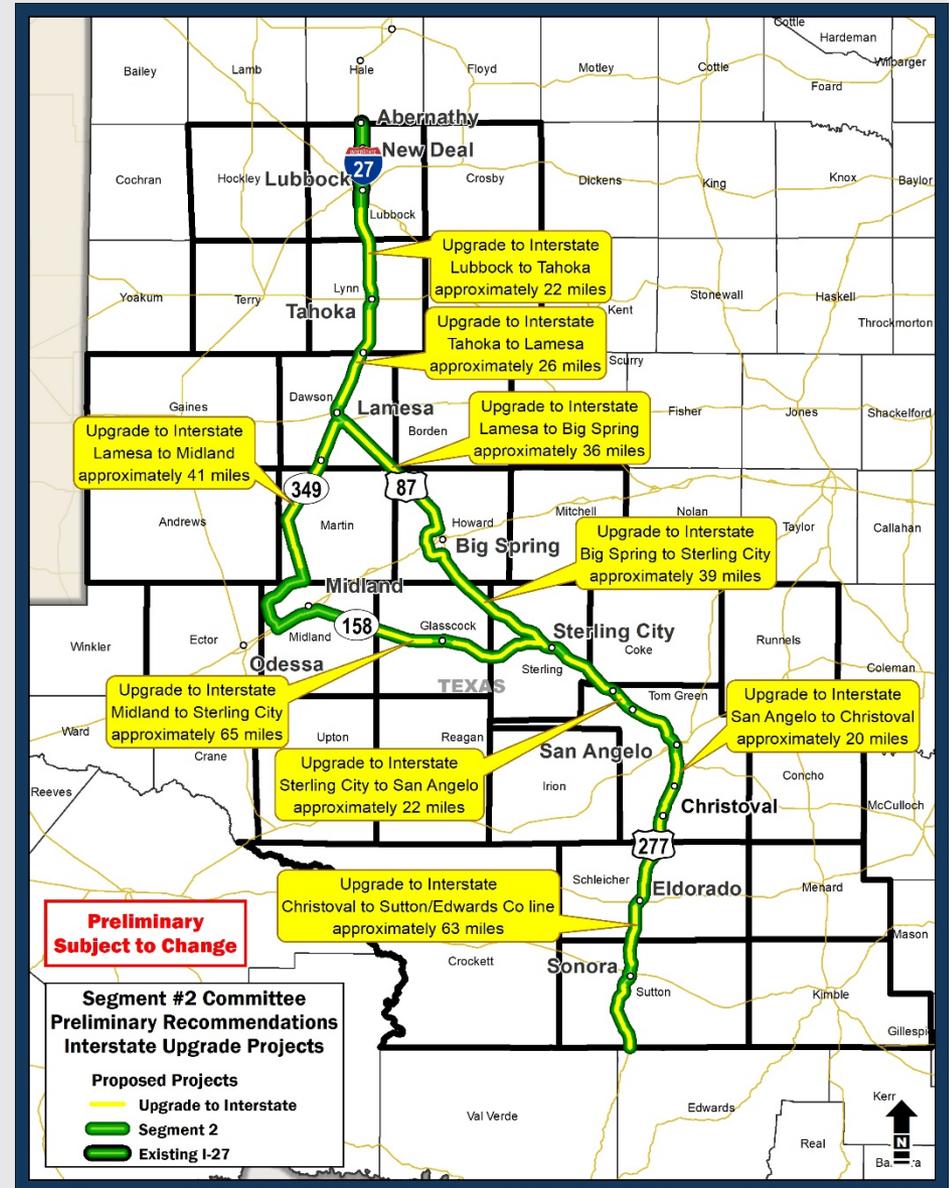
Safety and Operational Projects

# Interstate Upgrade Projects



Committee members suggested these preliminary recommended projects during a meeting held on April 2, 2020.

Roadway	From	To	Description of Work
US 87	Lubbock	Tahoka	Upgrade to Interstate (approx. 22 miles)
US 87	Tahoka	Lamesa	Upgrade to Interstate (approx. 26 miles)
SH 349	Lamesa	Midland	Upgrade to Interstate (approx. 41 miles)
US 87	Lamesa	Big Spring	Upgrade to Interstate (approx. 36 miles)
US 87	Big Spring	Sterling City	Upgrade to Interstate (approx. 39 miles)
SH 158	Midland	Sterling City	Upgrade to interstate (approx. 65 miles)
US 87	Sterling City	San Angelo	Upgrade to Interstate (approx. 22 miles)
US 277	San Angelo	Christoval	Upgrade to Interstate (approx. 20 miles)
US 277	Christoval	Sutton/ Edwards Co. Line	Upgrade to Interstate (approx. 63 miles)

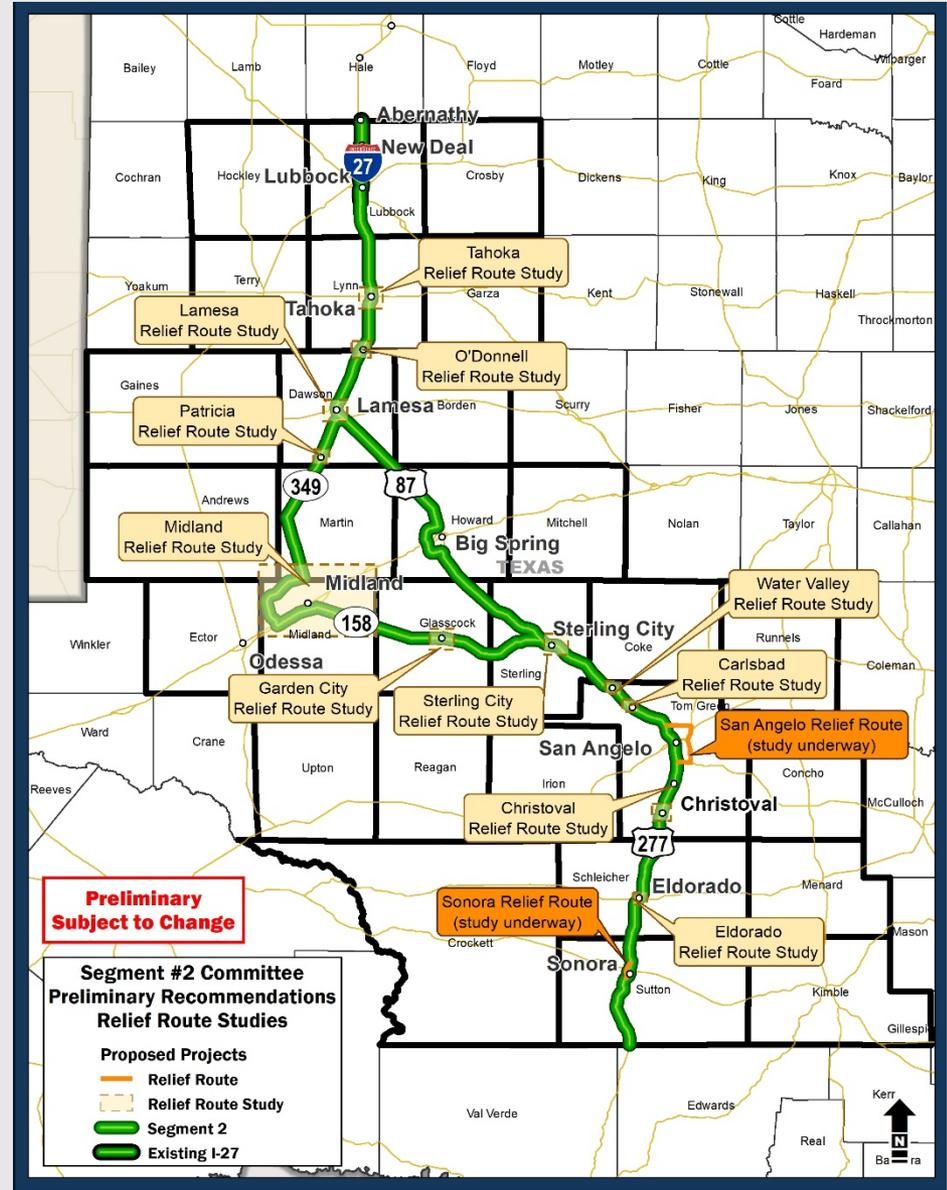


# Relief Route Studies



Committee members suggested these preliminary recommended projects during a meeting held on April 2, 2020.

Description	Location
Tahoka Relief Route Study	Around City of Tahoka
O'Donnell Relief Route Study	Around City of O'Donnell
Lamesa Relief Route Study	Around City of Lamesa
Patricia Relief Route Study	Around City of Patricia
Midland Relief Route Study	Around City of Midland
Garden City Relief Route Study	Around City of Garden City
Sterling City Relief Route Study	Around City of Sterling City
Water Valley Relief Route Study	Around City of Water Valley
Carlsbad Relief Route Study	Around City of Carlsbad
Christoval Relief Route Study	Around Christoval
San Angelo Relief Route (study underway)	East side of San Angelo
Eldorado Relief Route Study	Around City of Eldorado
Sonora Relief Route (study underway)	Around Sonora

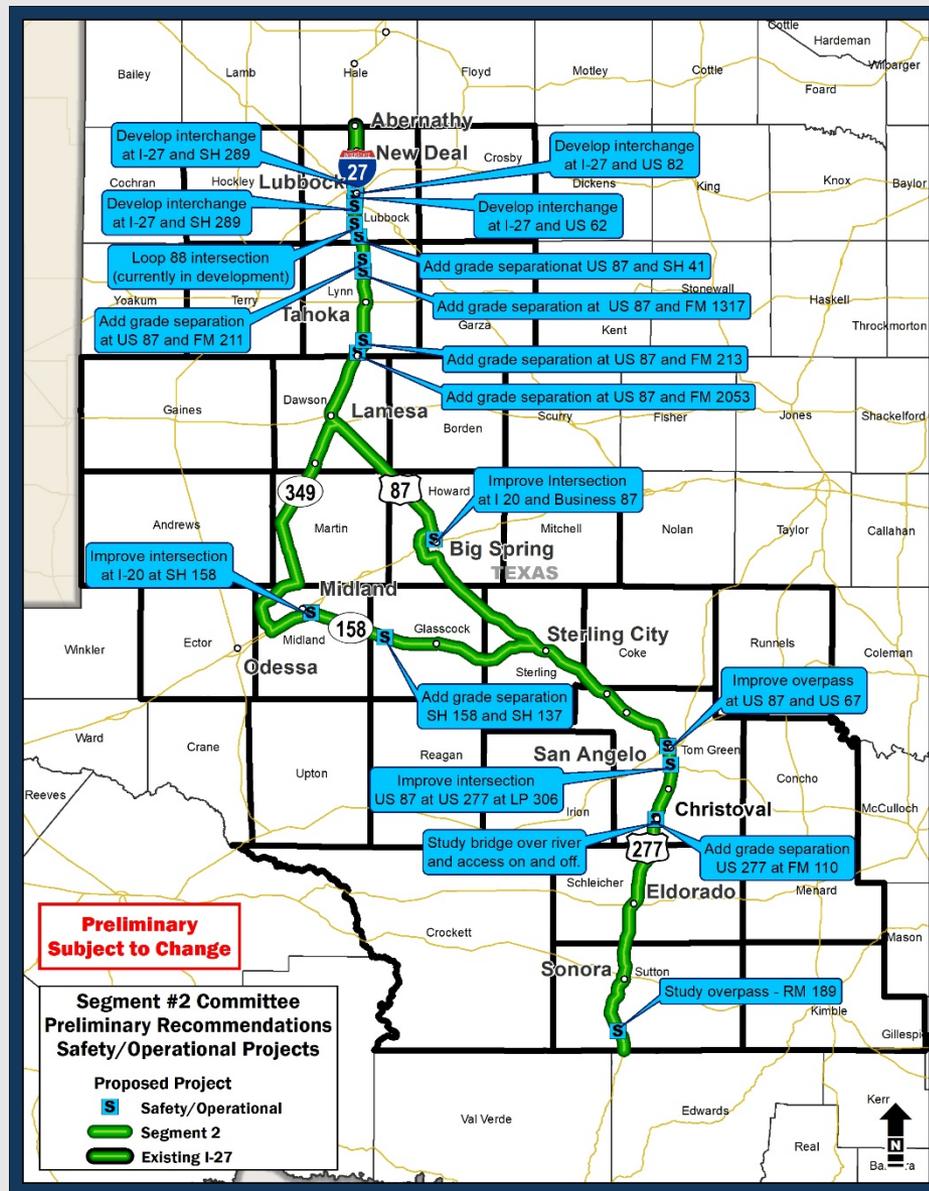


# Safety and Operational Projects



Committee members suggested these preliminary recommended projects during a meeting held on April 2, 2020.

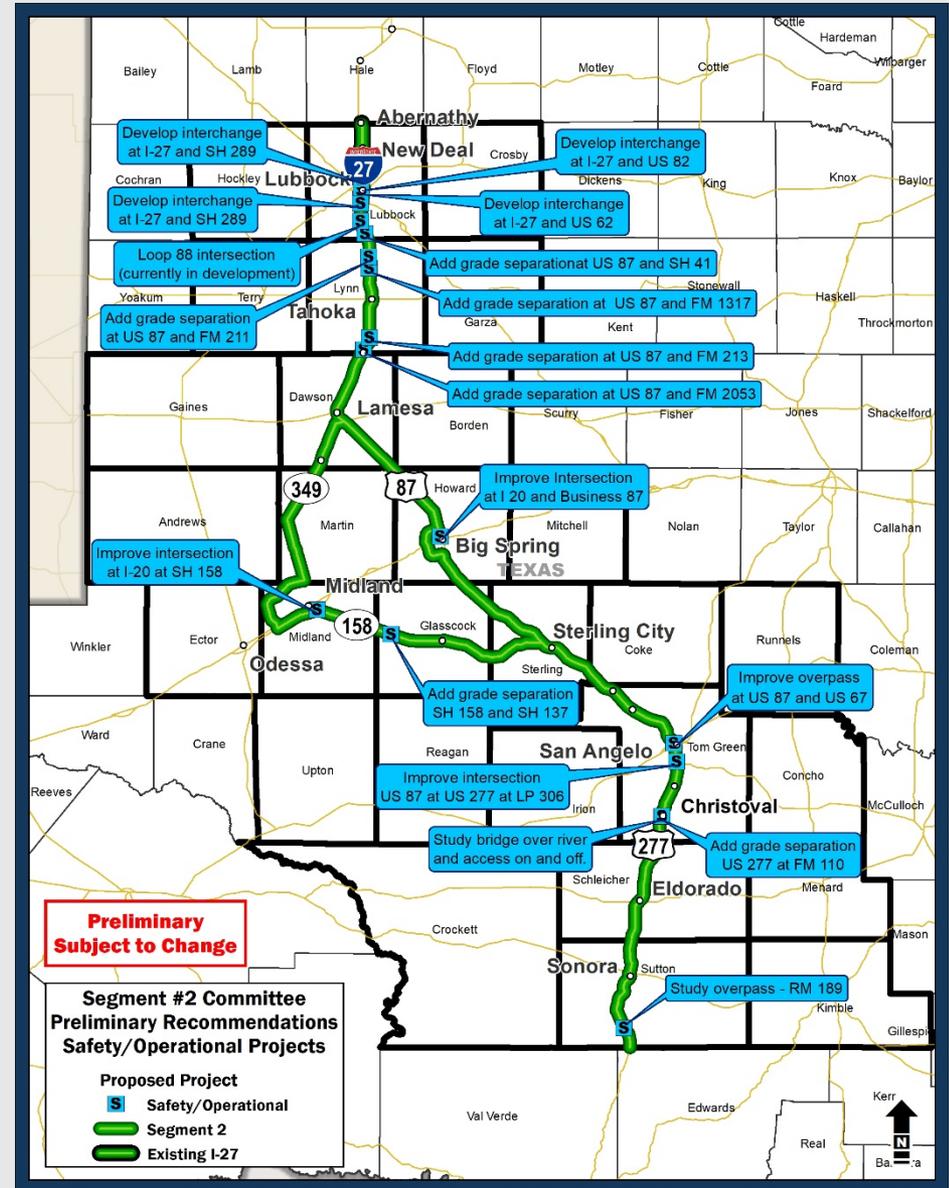
Roadway	Description of Work
I-27 and SH 289 (north end)	Develop interchange
I-27 and US 82	Develop interchange
I-27 and US 62	Develop interchange
I-27 and SH 289 (south end)	Develop interchange
Loop 88	Intersection (currently in development)
US 87 and SH 41	Add grade separation
US 87 and FM 211	Add grade separation
US 87 and FM 1317	Add grade separation
US 87 and FM 213	Add grade separation
US 87 and FM 2053	Add grade separation
I-20 at SH 158	Improve intersection
SH 158 and SH 137	Add grade separation



# Safety and Operational Projects (continued)



Roadway	Description of Work
I-20 and Business 87	Improve intersection
US 87 and US 67	Add grade separation
US 87 at US 277 at LP 306	Improve intersection
Along US 277	Study bridge over river and access on and off
US 277 at FM 110	Add grade separation
US 277 at RM 189	Study overpass





# PRELIMINARY PRIORITIZATION RESULTS

Segment Committee #2 members provided input via a survey between April 27 and May 3, 2020.

Short-Term (0-5 years)

Mid-Term (6-10 years)

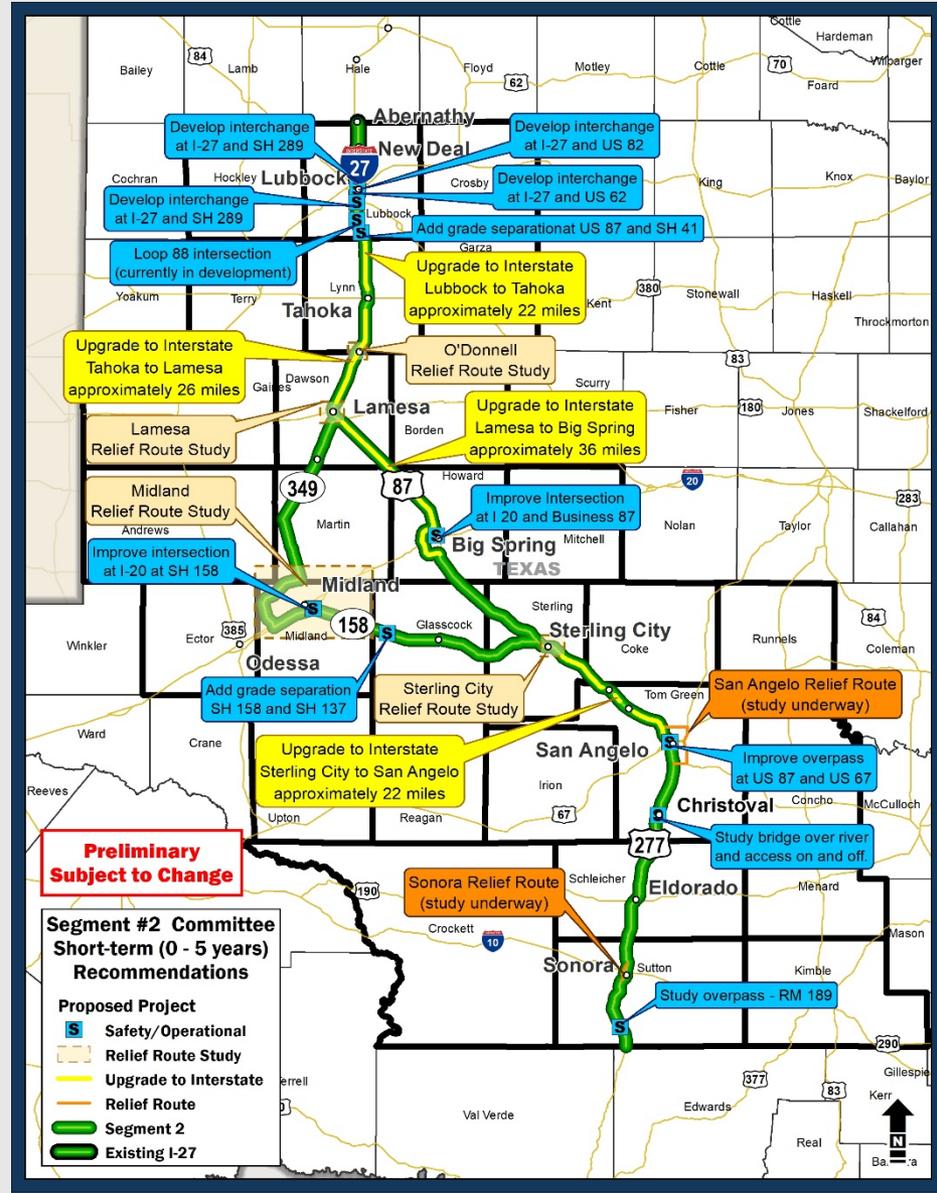
Long-Term (11+ years)

# Committee Short-Term (0-5 years) Recommendations



Project Type	Roadway	Description of Work
Interstate Upgrade (approx. 22 miles)	US 87 from Lubbock to Tahoka	Upgrade to Interstate
Interstate Upgrade (approx. 26 miles)	US 87 from Tahoka to Lamesa	Upgrade to Interstate
Interstate Upgrade (approx. 36 miles)	US 87 from Lamesa to Big Spring	Upgrade to Interstate
Interstate Upgrade (approx. 22 miles)	US 87 from Sterling City to San Angelo	Upgrade to Interstate
Relief Route	O'Donnell Relief Route Study*	Around City of O'Donnell
Relief Route	Lamesa Relief Route Study	Around City of Lamesa
Relief Route	Midland Relief Route Study	Around City of Midland
Relief Route	Sterling City Relief Route Study	Around City of Sterling City
Relief Route	San Angelo Relief Route	East side of City of San Angelo (study underway)
Relief Route	Sonora Relief Route	Around City of Sonora (study underway)
Safety/Operational	I-27 and SH 289 (north end)	Develop interchange
Safety/Operational	I-27 and US 82	Develop interchange

\*This project was rated the same between Short and Mid-Term Improvement

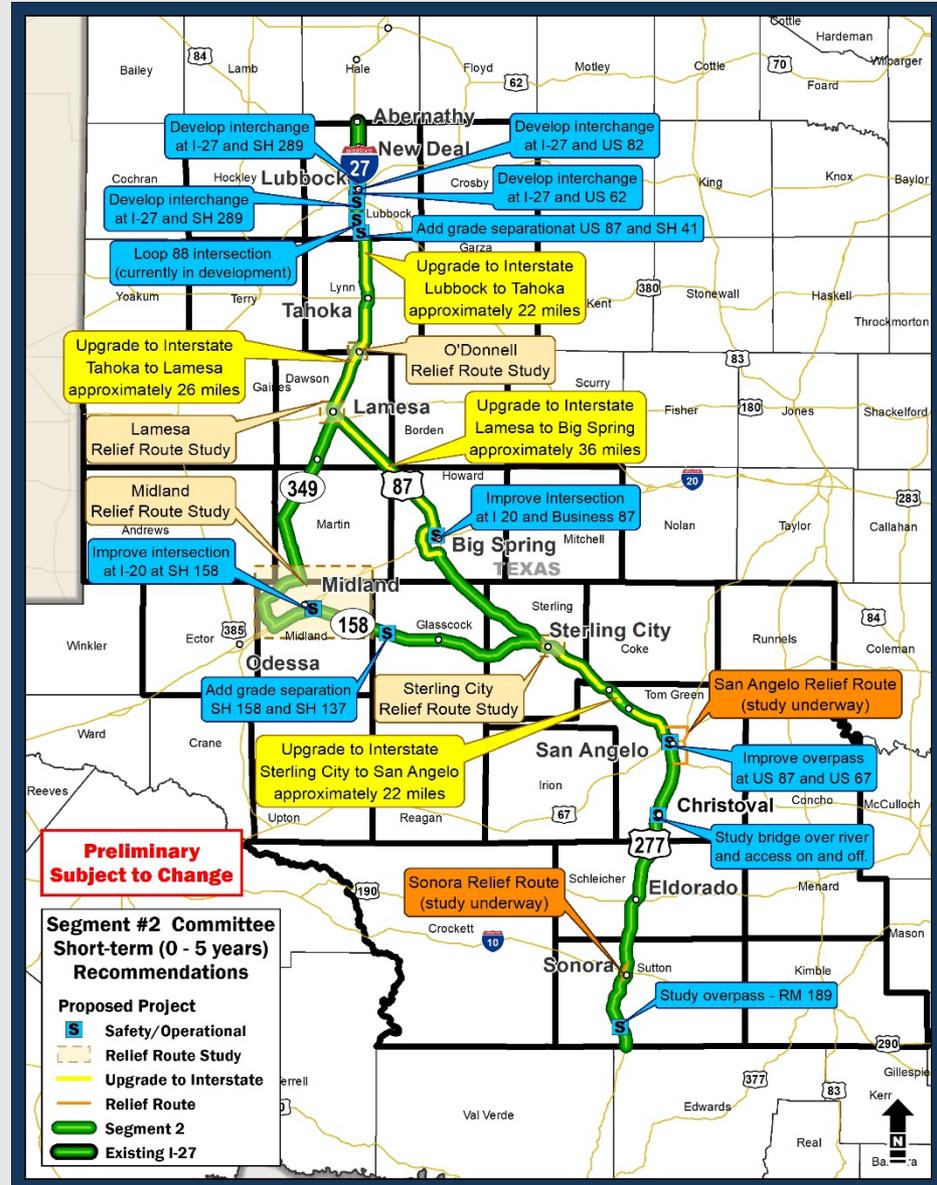


# Committee Short-Term (0-5 years) Recommendations



Project Type	Roadway	Description of Work
Safety/Operational	I-27 and US 62	Develop interchange
Safety/Operational	I-27 and SH 289 (south end)	Develop interchange
Safety/Operational	Loop 88	Intersection (currently in development)
Safety/Operational	US 87 and SH 41	Add grade separation
Safety/Operational	I-20 at SH 158	Improve intersection
Safety/Operational	SH 158 and SH 137*	Add grade separation
Safety/Operational	I-20 and Business 87	Improve intersection
Safety/Operational	US 87 and US 67	Improve overpass
Safety/Operational	Along US 277	Study bridge over river and access on and off
Safety/Operational	US 277 at RM 189*	Study grade separation

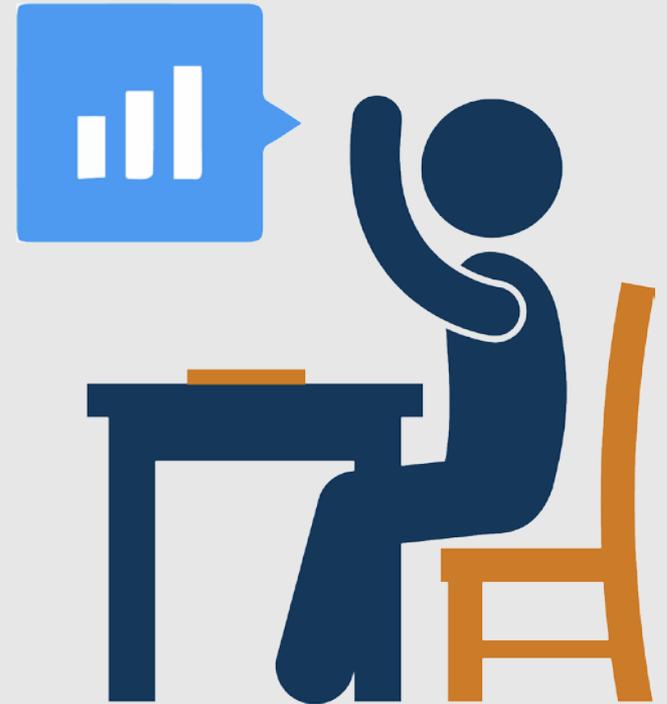
\*This project was rated the same between Short and Mid-Term Improvement





## Committee Feedback

- Do you agree with the Committee's Short-term priority rankings?
- Are there any you would consider moving to Mid-term or Long-term priorities?



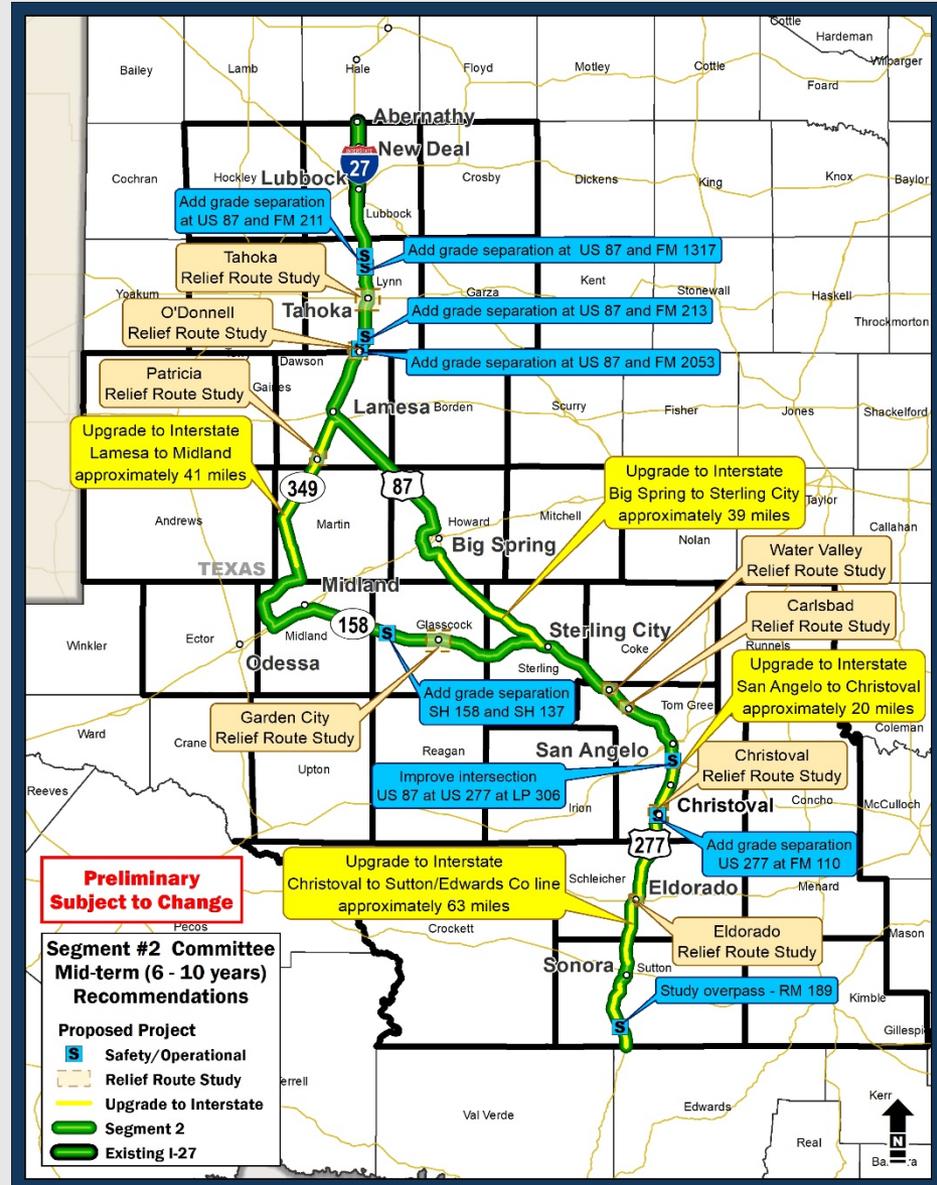
# Committee Mid-Term (6-10 years) Recommendations



Project Type	Roadway	Description of Work
Interstate Upgrade (approx. 41 miles)	SH 349 from Lamesa to Midland	Upgrade to Interstate
Interstate Upgrade (39 miles)	US 87 from Big Spring to Sterling City	Upgrade to Interstate
Interstate Upgrade (20 miles)	US 277 from San Angelo to Christoval	Upgrade to Interstate
Interstate Upgrade (approx. 63 miles)	US 277 from Christoval to Sutton/Edwards County Line	Upgrade to Interstate
Relief Route	Tahoka Relief Route Study	Around City of Tahoka
Relief Route	O'Donnell Relief Route Study*	Around City of O'Donnell
Relief Route	Patricia Relief Route Study**	Around City of Patricia
Relief Route	Garden City Relief Route Study	Around City of Garden City
Relief Route	Water Valley Relief Route Study	Around City of Water Valley
Relief Route	Carlsbad Relief Route Study	Around City of Carlsbad

\*This project was rated the same between Short and Mid-Term Improvement

\*\*This project was rated the same between Mid and Long-Term Improvement

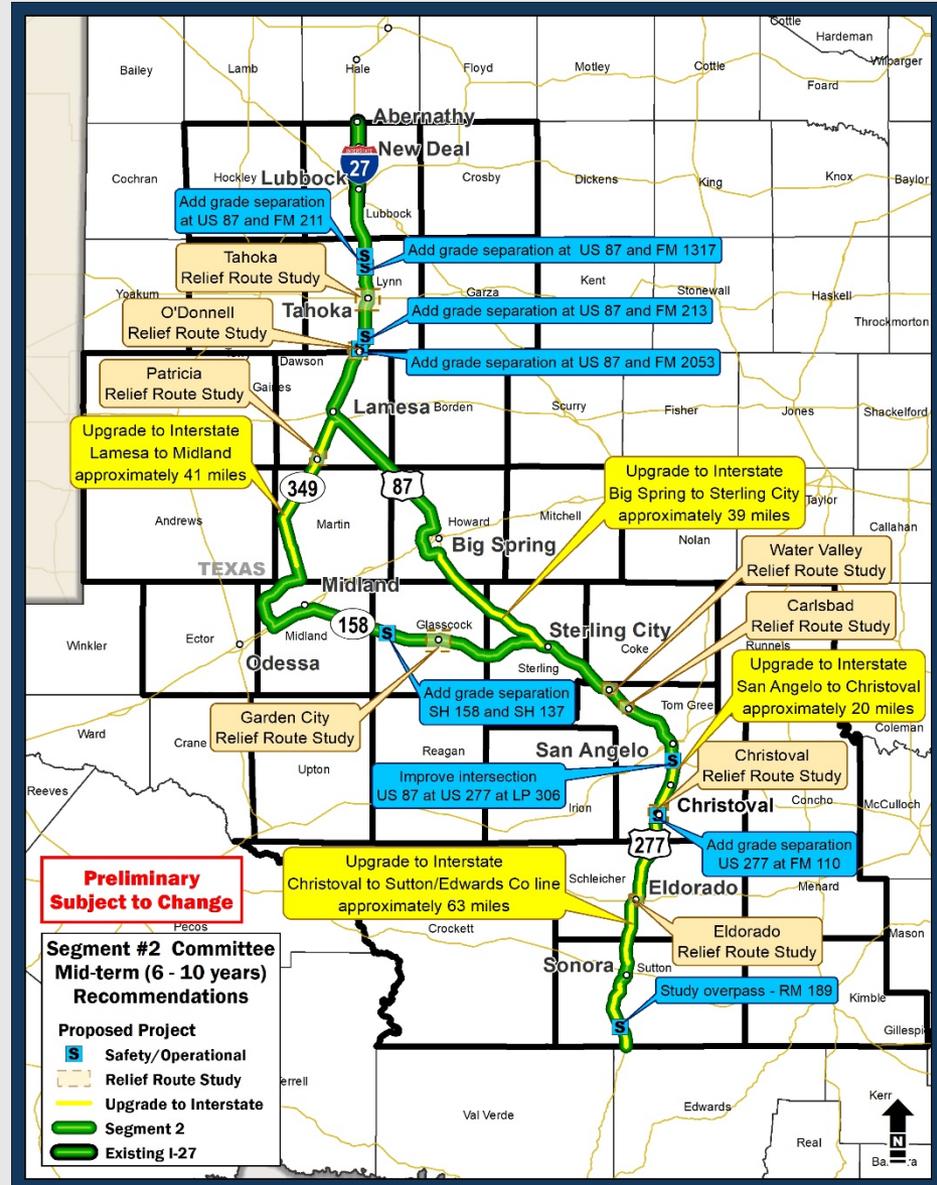


# Committee Mid-Term (6-10 years) Recommendations



Project Type	Roadway	Description of Work
Relief Route	Christoval Relief Route Study	Around Christoval
Relief Route	Eldorado Relief Route Study**	Around City of Eldorado
Safety/Operational	US 87 and FM 211	Add grade separation
Safety/Operational	US 87 and FM 1317	Add grade separation
Safety/Operational	US 87 and FM 213	Add grade separation
Safety/Operational	US 87 and FM 2053	Add grade separation
Safety/Operational	SH 158 and SH 137*	Add grade separation
Safety/Operational	US 87 at US 277 at LP 306	Improve intersection
Safety/Operational	US 277 at FM 110	Add grade separation
Safety/Operational	US 277 at RM 189*	Study grade separation

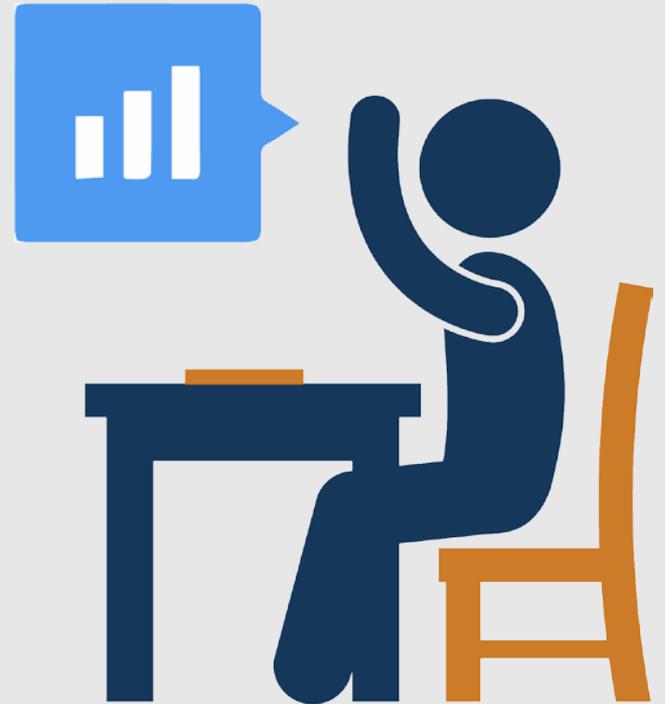
\*This project was rated the same between Short and Mid-Term Improvement  
 \*\*This project was rated the same between Mid and Long-Term Improvement





## Committee Feedback

- Do you agree with the Committee's Mid-term priority rankings?
- Are there any you would consider moving to Short-term or Long-term priorities?

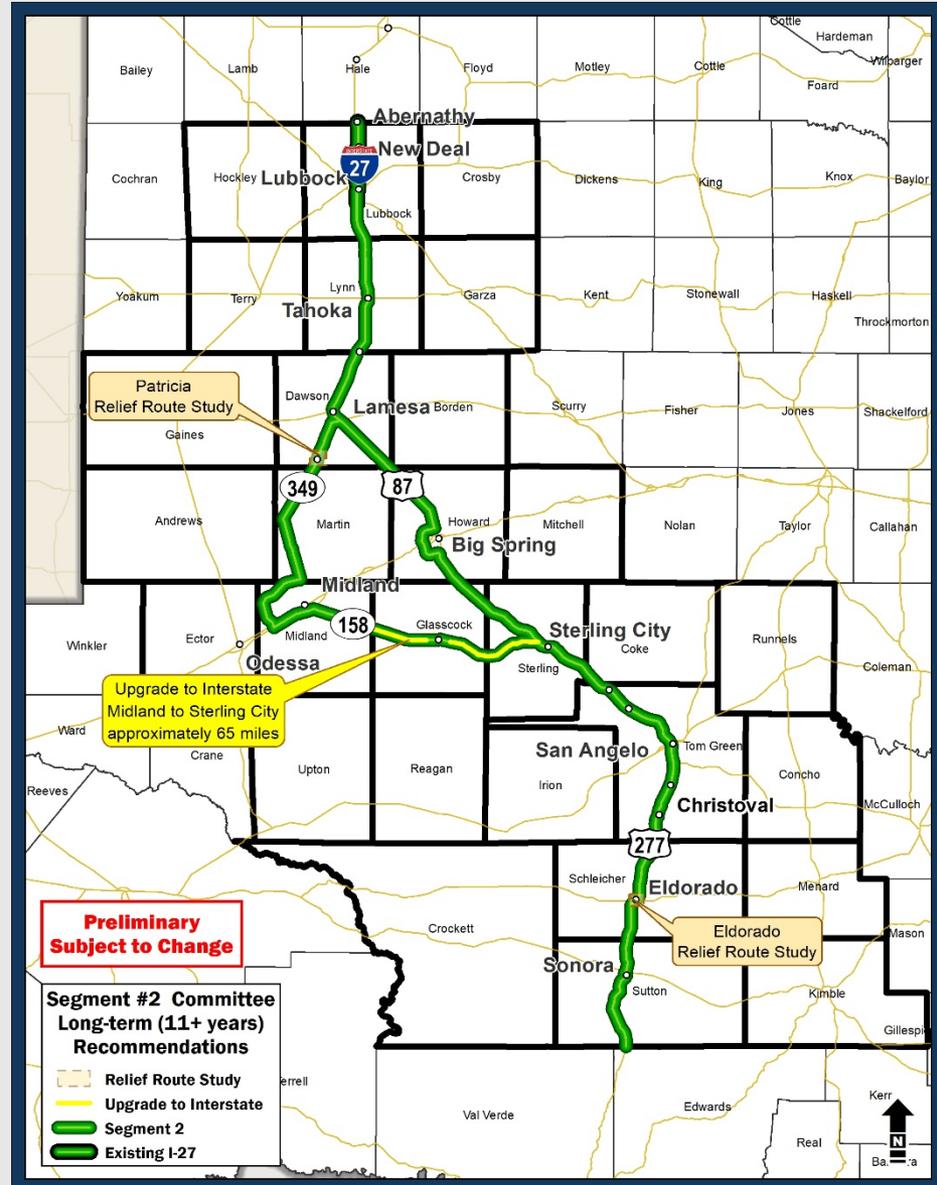


# Committee Long-Term (11+) Recommendations



Project Type	Roadway	Description of Work
Interstate Upgrade (approx. 65 miles)	SH 158 from Midland to Sterling City	Upgrade to Interstate
Relief Route	Patricia Relief Route Study**	Around City of Patricia
Relief Route	Eldorado Relief Route Study**	Around City of Eldorado

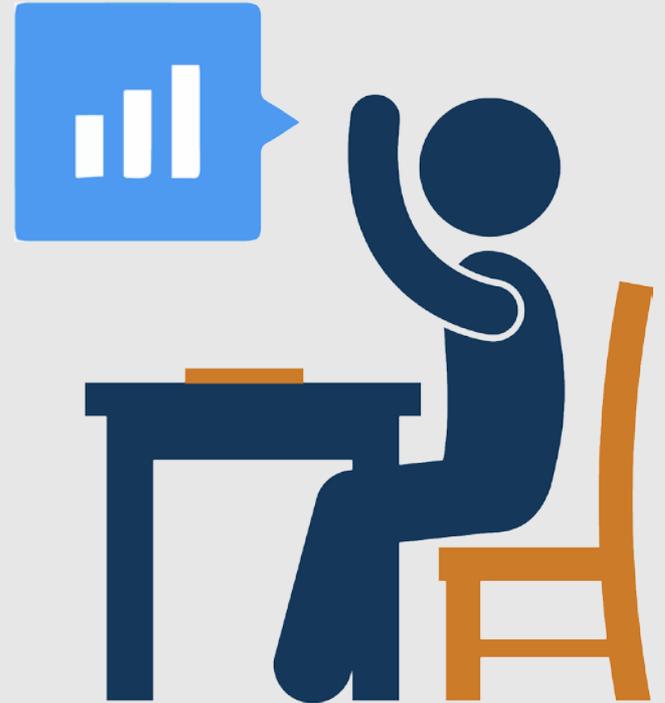
\*\*This project was rated the same between Mid and Long-Term Improvement





## Committee Feedback

- Do you agree with the Committee's Long-term priority rankings?
- Are there any you would consider moving to Short-term or Mid-term priorities?





Segment #2

# Review and Discussion of Draft Report Chapters

Caroline Mays, TxDOT

Mayor Brenda Gunter, Segment 2 Committee Chair

# Segment Committee Report Outline



Review  
Outline  
with  
Committee

- 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

— Reviewed with Committee  
— To Be Reviewed



## ■ Chapter 5

- Review of public involvement and stakeholder engagement that occurred during the study process.

## ■ Public Involvement

- Dates of public meetings
- Public involvement process followed
- Topics discussed
- Attendance and comments

## ■ Segment Committee Meetings

- Recap of segment committee meetings
- Bill requirements
- Topics presented



## ■ Chapter 6

### – Key Issues Considered for Recommendations:

- Energy Impacts, Freight Movement, Congestion Relief, Safety and Mobility

## ■ Committee Recommendations

- Interstate Upgrade for Entire Segment #2 Corridor
- Interstate Upgrade Projects
- Relief Route Studies
- Safety and Operational Improvements



## ▪ Executive Summary Outline

- High-level stand-alone document
  1. Introduction
  2. Purpose the Study
  3. Stakeholder and Public Engagement
  4. Existing and Future Corridor Conditions
  5. Feasibility Analysis of an Interstate and Findings
  6. Recommendations and Implementation Plan
  7. Next Steps



# Open Discussion

Mayor Brenda Gunter, Segment 2 Committee Chair

# Segment #2 Committee Next Steps



## Segment #2



- Draft Report Sent to Committee for Review  
*Tuesday, May 19*
- Draft Report Committee Comments Due  
*Tuesday, May 26*
- Draft Final Report Sent to Committee for Review  
*Wednesday, June 4*
- Committee Meeting #5  
Draft Final Report Page Turn  
*Wednesday, June 10 (WebEx /Online)*



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