



US 67 CORRIDOR **MASTER PLAN**

EXECUTIVE SUMMARY

FEBRUARY 2020



US 67 CORRIDOR
MASTER PLAN

This study provides a framework for continuing dialogue for short-, mid-, and long-term mobility and safety enhancements for vehicles, pedestrians, bicyclists and freight that will benefit the communities along the US 67 corridor for years to come.



A special thank you to the residents, businesses and agencies of Presidio, Pecos and Brewster Counties who provided input to this plan

Acknowledgments



Steering Committee Members

County Judges

- Cinderela Guevara, Presidio County Judge
- Eleazar R. Cano, Brewster County Judge
- Joe Shuster, Pecos County Judge

City Mayors

- John Ferguson, Mayor of Presidio
- Andres Ramos, Mayor of Alpine
- Manny Baeza, Mayor of Marfa

City Managers/Administrators

Corridor Working Group

- Agencies, Non-Profits, Media, and Interest Group/Individuals

Focus Group Members

- Art Community, Landowners, Ranchers, Environmental Groups, and others

Local Government

- City of Presidio
- City of Marfa
- City of Alpine
- City of Fort Stockton
- Presidio County
- Brewster County
- Pecos County
- Law Enforcement & Emergency Management
- Jeff Davis County
- Town of Valentine
- City of Balmorhea
- Town of Van Horn

Radio / Newspaper / TV

- KRTS-Marfa Public Radio
- Alpine Radio (KVLF & KALP)
- Valentine Radio
- Alpine Avalanche
- Fort Stockton Pioneer
- Jeff Davis County Mountain Dispatch
- Big Bend Now (Big Bend Sentinel, Presidio International)
- Big Bend Gazette
- KWES NewsWest9
- KOSA-TV CBS 7
- KPEJ FOX 24

Advocacy Groups

- Big Bend Regional Sierra Club
- Big Bend Conservancy (Friends of Big Bend)
- Lone Star Chapter Sierra Club
- Big Bend Defense Coalition
- Defend Big Bend
- Big Bend Conservation Alliance
- Rio Grande Council of Governments
- Texas A&M Agri-Life Extension
- Big Bend Leadership
- Big Bend Community Action Committee
- Alpine Big Bend 'Save Amtrak'
- Alpine Downtown Association

State & Federal Government

- TxDOT
- Texas Department of Public Safety
- U.S. Customs and Border Protection
- International Boundary and Water Commission
- Big Bend National Park
- Davis Mountains State Park
- Presidio Port of Entry
- Texas Parks and Wildlife Department

Chambers of Commerce

- Big Bend Chamber of Commerce
- Presidio Municipal Development District
- Marfa Chamber of Commerce
- Alpine Chamber of Commerce
- Fort Davis Chamber of Commerce
- Fort Stockton Chamber of Commerce

Freight

- Bullet Transport Services
- Biad Chili Company
- Classic Transportation (Alpine)
- Highland Concrete (Alpine)
- Presidio International Port Authority
- R&G Trucking (Presidio)
- Samuel Sanchez Trucking (Presidio)
- Texas Trucking Association
- Texas-Pacifico Transportation
- Union Pacific Railroad
- American Trucking Association
- Solitaire Homes
- FedEx
- UPS

Independent School Districts

- Presidio Independent School District
- Marfa Independent School District
- Alpine Independent School District
- Marathon Independent School District
- Fort Stockton Independent School District

U.S. Senate

- The Honorable John Cornyn
- The Honorable Ted Cruz

U.S. House

- The Honorable Will Hurd

State Senate

- The Honorable José Rodríguez
- The Honorable Carlos Uresti

State House

- The Honorable Poncho Nevárez

Others

- Cibolo Creek Ranch
- Mexican Consulate
- El Cosmico
- H. Cowan Associates, Inc.
- Nevarez Law Group
- Big Bend Telephone
- Sul Ross State University
- Chinati Foundation
- McDonald Observatory
- Big Bend Regional Hospital District
- Big Bend Regional Medical Center



Overview

US 67 between Interstate 10 (I-10) west of Fort Stockton and the Port of Entry (POE) in the City of Presidio is one of the most distinct highway corridors in the state of Texas, with unique and varied landscapes, long travel distances between towns, and travel patterns driven by tourism and the growth of the Permian Basin energy industry.

The US 67 corridor runs 142 miles north to south and provides access to the cities of Alpine, Marfa, and Presidio as well as Big Bend National Park, Sul Ross State University, the Marfa Lights viewing area, Big Bend Ranch State Park, Fort Leaton State Park, and Fort Davis. Most of the US 67 corridor was built in the 1930s and 1940s.

The US 67 corridor is experiencing traffic growth due to multiple factors, including population growth, increased tourism, growth in truck traffic, and Permian Basin oil field activity. Due to the low population along the US 67 corridor, traffic volumes are relatively low but growing.

By 2045, WEEKDAY TRAFFIC IS ESTIMATED TO GROW
as high as **6,600** vehicles near the Presidio/Ojinaga POE,
3,900 vehicles in Presidio **7,000** vehicles in Marfa
24,800 vehicles in Alpine

Reasons for the study include:

- Preventing deadly crashes
- Rising amount of traffic
- Back-ups around the Port of Entry
- Tourism
- Permian Basin oilfield development

Study Goal:

Identify short-, mid-, and long-term improvements for current and future travel and safety needs



PUBLIC OUTREACH ACTIVITIES BETWEEN

2017-2019



US 67 CORRIDOR
MASTER PLAN

EARLY ADOPTION OF
PROJECT LOGO



9 FOCUS
GROUP
INTERVIEWS



MASTER
CONTACT LIST



3 BUS
TOURS



4 BRAIN
DUMP
WORKSHOPS



7 CORRIDOR
WORKING GROUP
(CWG) MEETINGS



9 STEERING
COMMITTEE
MEETINGS



12 TOTAL
PUBLIC MEETINGS

Public and Stakeholder Engagement

Corridor Working Group (CWG)



The CWG consisted of agency representatives, focus group members, and public officials who provided insight into the study area. There were roughly 213 participants for these meetings and approximately 102 comments were submitted.

Focus Groups

Meetings were held with representatives from groups focused on: Environmental/Natural Resources, Economic Development/Business, Private Landowners, Community Organizations/Non-Profits, Local Media, Safety, School Districts, Border Trends and Issues, and Regional and International Coordination.

Public Meetings

Public meetings allowed residents, visitors, and the local workforce to voice their concerns for the US 67 corridor. Roughly 875 participants attended public meetings and provided over 750 comments.

Additional Outreach



**MULTIPLE MEETINGS &
BRAINDUMP SESSIONS**
WITH LOCAL OFFICIALS

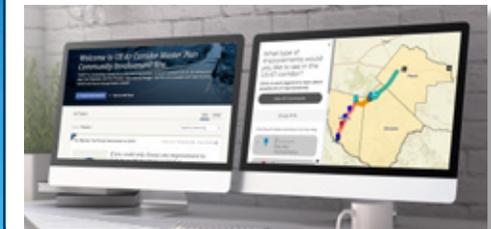
**FESTIVAL
& FAIR
BOOTHs**

OVER **1,200** PARTICIPANTS

OVER **900** COMMENTS SUBMITTED

The study used online tools (MindMixer and ViewPro) for early and ongoing public engagement and dialogue.

Online input helped match public needs and priorities to specific sections of the corridor.



Stakeholder & Public Engagement Details

Strategies for Meaningful and Continuing Stakeholder Engagement

- Multiple avenues for public outreach effort
- Virtual meetings accessible through the US 67 CMP website gave the public another way to participate in each meeting series
- Bi-lingual meetings and materials
- Boots on the ground – local project team ownership in the communities
- Building trust by making quick-fix improvements along corridor to address public concerns

The public identified their top priorities as:

- Safety - #1 priority
- Emergency response/management
- Sustainability
- Maintaining a state of good repair
- Economic development

Plan Maestro del Corredor US 67

Síntesis

La carretera US 67 recorre 142 millas desde la Autopista Interestatal 10, al oeste de Fort Stockton hasta el Puente Internacional de Presidio/Ojinaga en la frontera de E.E.U.U./México. La vía US 67 tiene acceso a las ciudades de Marfa, Alpine, Presidio y otras comunidades aledañas, así como a la Reserva Natural de Big Bend, la Universidad Estatal de Sul Ross, el observatorio de las Luces de Marfa, El Parque Estatal del Rancho de Big Bend, al igual que a las atracciones del Parque Estatal de Fort Leaton y Fort Davis. Sirve a varias comunidades con diversas prioridades y necesidades. Esta zona rural ha experimentado un crecimiento significativo en los últimos años y el Departamento de Transporte de Texas (TxDOT, por sus siglas en inglés) ha iniciado un estudio sobre este corredor, que ayudará a determinar necesidades actuales y futuras en el transporte en cada una de las comunidades que se ubican a lo largo de la vía US 67.



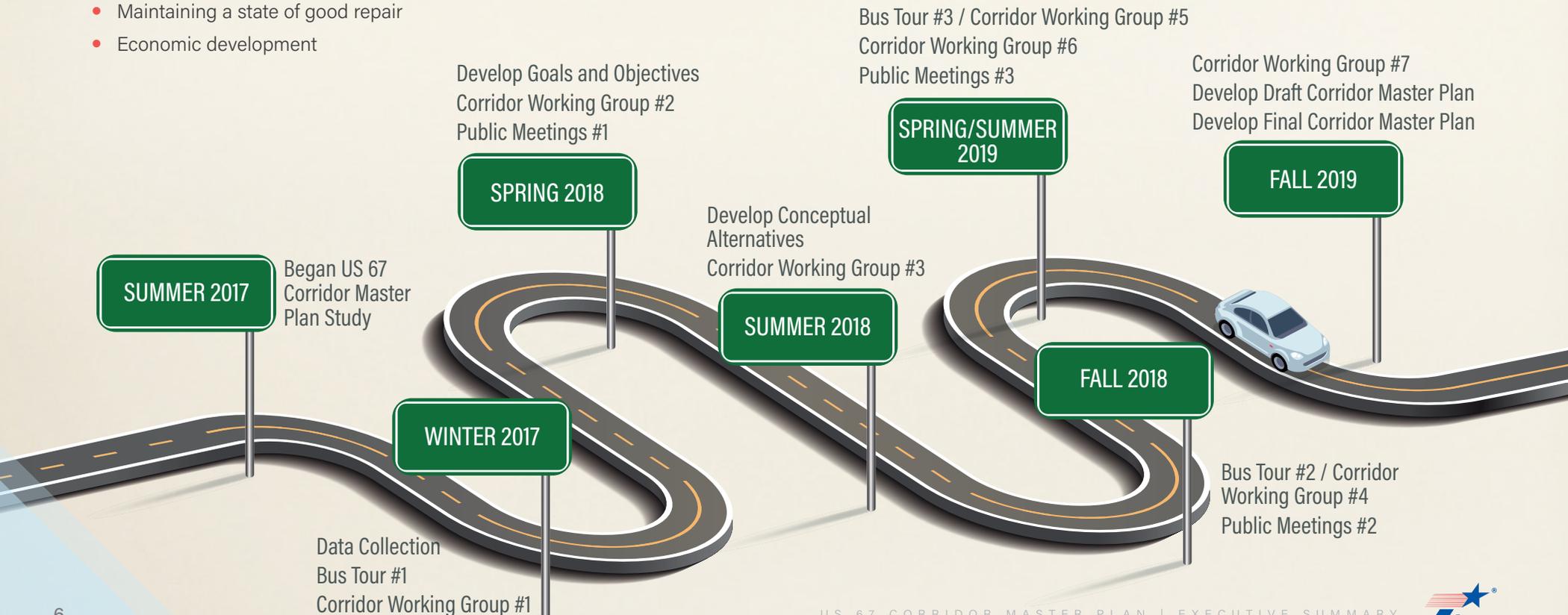
¿Cómo puedo participar?

TxDOT tiene un plan extenso de alcance al público y anunciará sobre las reuniones a través de los medios de comunicación y otros mercados mediáticos. Con el fin de desarrollar el mejor plan, necesitamos su opinión. Pondremos al alcance múltiples medios para entablar un enlace con el público con el fin de cerciorar que el plan incorpore las necesidades o inquietudes de las comunidades locales y provea recomendaciones adecuadas.

- TxDOT llevará a cabo un plan extenso de alcance público durante el proceso del estudio, efectuando reuniones públicas y de grupos de enfoque durante los logros significativos del estudio.
- TxDOT trabajará de cerca con las comunidades y titulares públicos para obtener ideas sobre como proceder con la intervención del público y para entender las necesidades del corredor basado en la opinión de las comunidades.
- El estudio seguirá un proceso definido en consulta cercana con comunidades colindantes al corredor y grupos de enfoque.
- Dado el carácter diverso de esta carretera, se llevará a cabo comunicación y enlace eficiente durante el estudio.

Programa

Actualmente, las reuniones con la comunidad se planean para la primavera y el otoño de 2016, así como la primavera de 2019. Se espera que este estudio concluya en el otoño de 2019.



Analysis of Public and Stakeholder Concerns

Safety

- More than half of the crashes involved a single vehicle running off the road.
- The crashes were evenly split between rural and urban areas,
- All fatal crashes and 75% of severe crashes occurred on rural segments.
- Almost two-thirds (61%) of the US 67 corridor experiences more crashes compared to similar roadways elsewhere in the state.

ALONG THE CORRIDOR BETWEEN 2010-2018



PURPOSE OF US 67 CORRIDOR MASTER PLAN AIMS TO

-  INCREASE SAFETY
-  IMPROVE MOBILITY

Source: TxDOT Crash Records Information System (CRIS) database

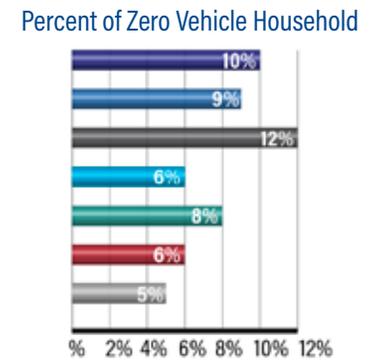
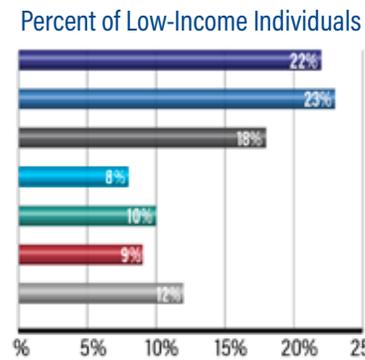
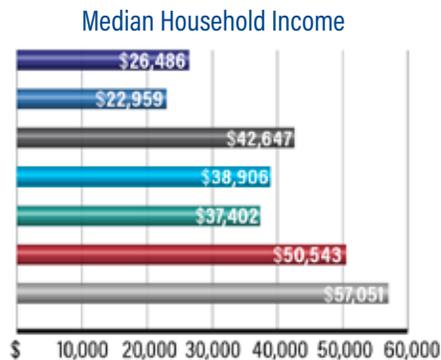


Complete Streets

There was overwhelming response from the public, stakeholders and agencies for improved pedestrian and bicycle infrastructure in the cities and along the corridor.

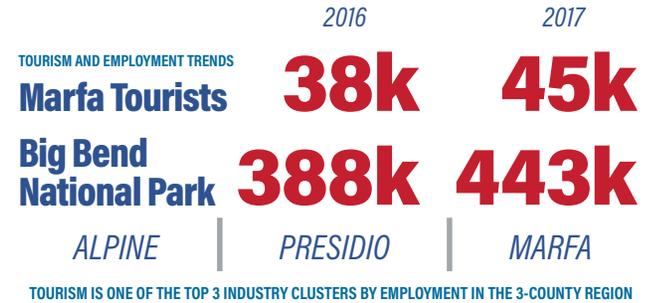
Because of the higher poverty levels and relatively low automobile ownership levels, improving non-motorized transportation options along the corridor is important for residents and workers.

With tourism being the 3rd highest employment cluster in the region, there is a strong demand for safe bicycling and walking facilities.



Tourism Growth

Tourism is growing rapidly on the US 67 Corridor. This is an important economic driver to the 3-county area.



Addressing Concerns About Increasing Traffic

Future Forecasting

By 2045, weekday traffic is expected to grow as high as 6,600 vehicles near the Presidio/Ojinaga Port of Entry (POE), 3,900 vehicles in Presidio, 7,000 in Marfa, and 24,800 in Alpine.

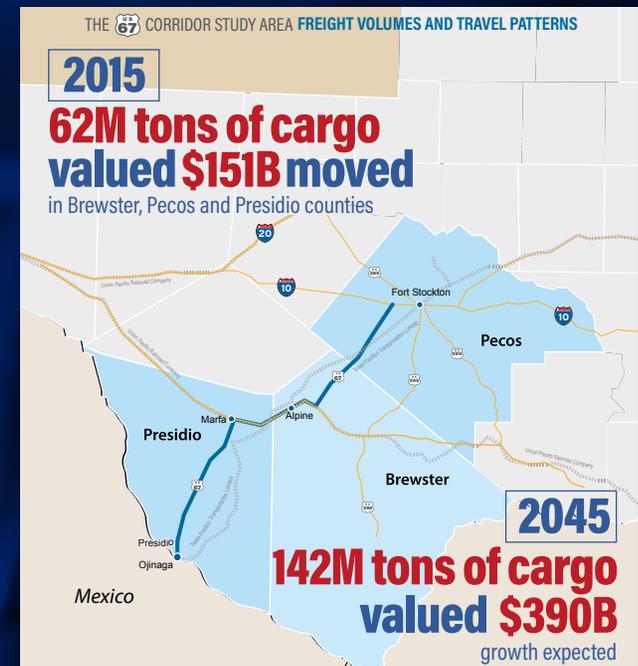
This growth will cause nine intersections in Alpine to experience significant delays and unstable traffic flows in the future.

Using the future traffic estimates, concepts were developed to reduce delay at these locations.

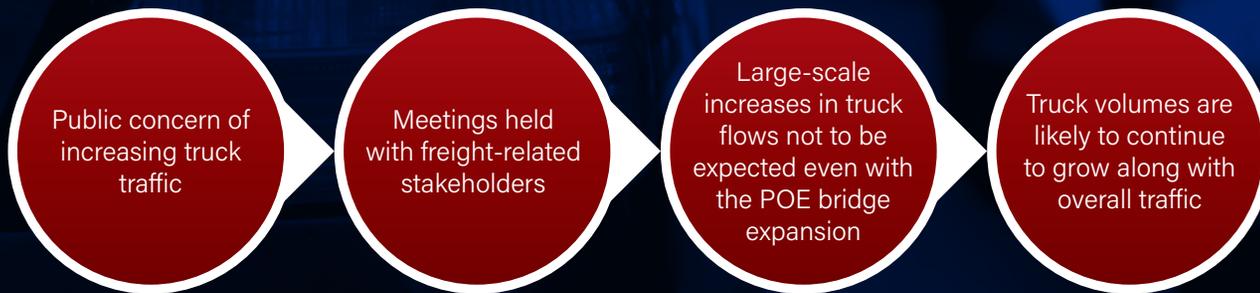
Traffic Growth at POE

Traffic backups at the POE can extend past Presidio on weekends, holidays and traffic incidents. Emergency response times suffer during these backups. A recommended demand-responsive parking/queueing facility at the POE can relieve approximately 4 miles of congestion.

Truck Traffic



Using public and stakeholder input to refine forecasting



Freight is part of the traffic mix and must be considered when developing improvement options. Corridor communities have expressed concern about potential negative safety, emissions, and traffic impacts of increasing truck flows on US 67. Alpine and Marfa have seen tremendous tourism growth and wish to retain their small-town feel. Presidio is experiencing traffic backups at the POE driven not by freight but by larger economic trends like the Permian Basin shale boom. This requires solutions that strike the appropriate balance between accommodating commercial needs while preserving quality of life and community character.

Using Goals to Identify Concepts

The goals and objectives for the US 67 corridor are the guiding principles for the development of the Corridor Master Plan. All concepts were evaluated using the goals and objectives before becoming recommendations.

Each conceptual alternative was subjected to a fatal flaw analysis, alternatives evaluation and feasibility analysis, and comparison to public input to determine recommended conceptual improvements.

FINAL GOALS



CORRIDOR MASTER PLAN CONCEPT DEVELOPMENT PROCESS



Development of Recommended Improvements

All proposed projects were evaluated based on the goals and objectives identified during the planning process. This led to the most feasible projects to implement and best meet the communities' and TXDOT's objectives.



The circular figure shows how needs were paired with potential solutions identified through public input, technical analyses, and best practices.

Intelligent Transportation System Improvements

Recommended improvements were developed as part of an Intelligent Transportation Systems assessment and plan.

Pull Out/Rest Area Improvements

The need for pull out and rest areas along the corridor between the communities was highlighted as a need by the public.

Operational Improvements

Traffic projections were used to determine when traffic signals or conversion to All-Way Stop Control may be warranted in the future.

Complete Streets Improvements

Complete streets improvements, including bicycle and pedestrian facilities, were identified as a significant need within the communities along the corridor. Complete streets improvements are included where contextually appropriate.

Intersection Improvements

Alternative intersection improvements were developed at key intersections along the corridor.

Safety-related Improvements

(e.g. curve treatments, signage and striping, guardrails, slope treatments)

Safety-related improvements were developed as part of a safety analysis of the corridor.

Port of Entry-related Improvements

Several creative ideas for how to address and manage congestion at the Presidio Port of Entry were developed by the study team.

Intersection Improvements

Alternative intersection improvements were developed at key intersections along the corridor.

Seven improvement concept types were considered during the US 67 Master Plan process.

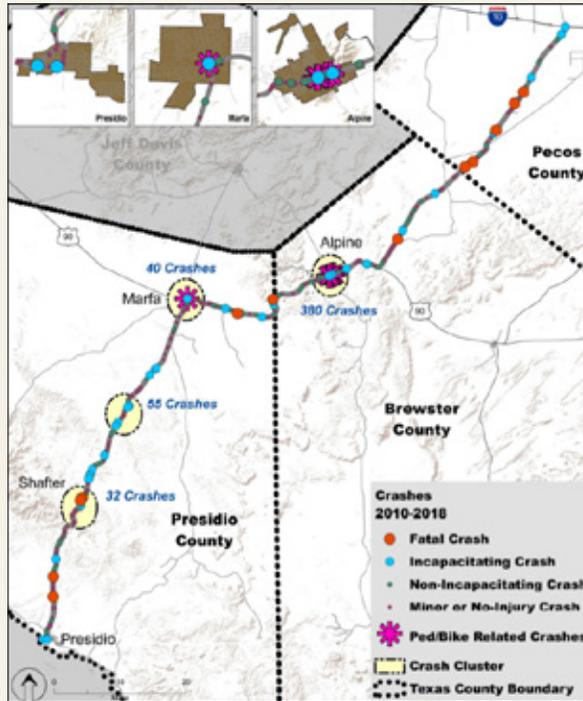
Creating a Safer US 67 Corridor

Addressing Safety Issues

The study team combined public input and data analysis to identify key safety issues on the US 67 Corridor.

Safety Issues Contributing to Crashes

- High speeds and distracted driving
- Poor weather including fog, ice, and snow
- Limited cell phone service
- Steep and/or uneven side slopes
- Absence of lighting at intersections
- Animal on the road
- Lack of pedestrian/bicycle safety systems
- Deficient Super-elevation



Crashes were mapped on the corridor to discover the characteristics of the most crash-prone locations to develop solutions to prevent future crashes.

18 INTERSECTIONS were identified for **SAFETY IMPROVEMENTS**

Intelligent Transportation System Projects to Improve Safety

 1 \$500.0K <small>Project Total Cost Estimates</small>	 2 \$1.5M <small>Projects Total Cost Estimates</small>	 3 \$8.3M <small>Projects Total Cost Estimates</small>	 3 \$1.4M <small>Projects Total Cost Estimates</small>	 3 \$1.3M <small>Projects Total Cost Estimates</small>
 3 \$1.7M <small>Projects Total Cost Estimates</small>	 4 \$2.1M <small>Projects Total Cost Estimates</small>	 25 \$12.2M <small>Projects Total Cost Estimates</small>	 44 \$29.0M <small>Projects Total Cost Estimates</small>	

The safety analysis revealed the most severe crashes in the corridor are rural roadway departures and intersection crashes.

Many roadway departure crashes are caused by vehicles traveling too fast to safely negotiate sharp curves.

Rumble strips and adequate paved shoulders enable drivers to correct themselves when leaving the roadway. However these are present on only 30% of the corridor and are recommended throughout the corridor.

Providing passing lanes and climbing lanes is an effective way to reduce roadway departure and head-on crashes. The corridor has only 22 miles of passing lanes, concentrated between I-10 and Marfa. The corridor has 9 miles of climbing lanes, mostly in the mountainous area where roadway elevation changes.

Corridor residents and stakeholders would like more passing and climbing lanes along the corridor, in addition to more advance signage for existing climbing/passing lanes.

TxDOT has already installed "Passing Lane 2 Miles Ahead" signs as a result of the study.

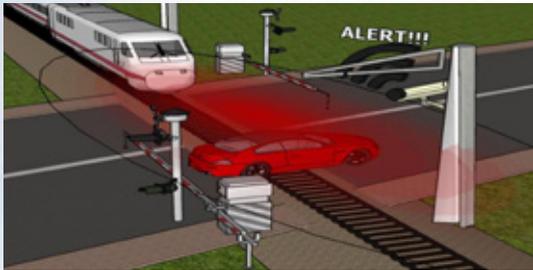
Crash rates within the towns of Marfa, Presidio, and Alpine are higher than the statewide average and could benefit from the recommended intersection safety improvements.

Intelligent Transportation Systems (ITS) Solutions

Intelligent Transportation Systems (ITS) incorporate modern telecommunications and computing technology into transportation systems to improve safety and enhance the driver experience.

The concepts proposed in the US 67 Corridor Master Plan utilize rural ITS best practices.

ITS may be especially useful for locations where safety issues persist after physical improvements have been made.



ITS Highway-Rail Crossing Safety System can help detect stopped vehicles at grade crossing.



Overheight-vehicle warning system at low bridges.



Dynamic Message Signs warn of major incidents and delays.

Other Technology Application Opportunities Include:

- Dynamic message signs entering and leaving all communities to provide weather and incident information. These signs can also advise travelers of border crossing delays and backups.
- Overheight vehicle warning systems, rail safety crossing systems
- Sequential Dynamic Curve Warning System detects fast-approaching vehicles and activates sequential curve warning signs.

Port of Entry (POE) Smart Parking System

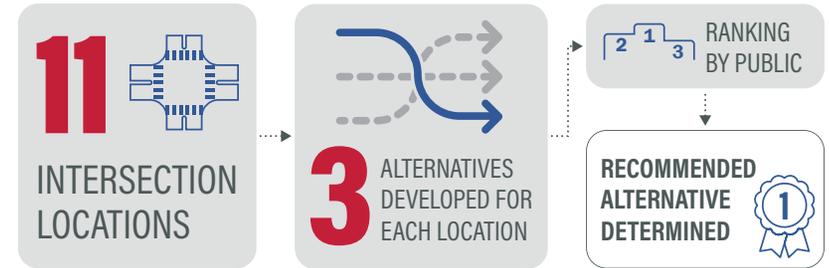


Traffic would approach the POE as normal, but slightly before the POE would be diverted to the parking facility. This would remove the traffic from US 67, allow drivers to turn off their vehicles saving fuel and improving air quality, and eliminate the issues with emergency vehicles/employee access.



Selecting Intersection Improvements

Eleven intersection locations were selected by the public, stakeholders and TxDOT for a rigorous alternative analysis, where three solutions were developed for discussion and refinement. Ultimately these were ranked by the public and rough cost estimates were developed for each solution. These locations are displayed in the table below along with the recommended concept and implementation time frame.



CONCEPT LOCATION	RECOMMENDED INTERSECTION CONCEPT	IMPLEMENTATION TERM
Presidio Location 1: US 67 and BU 67 Intersection	T-Intersection (Alternative A)	Short-term
Presidio Location 2: O'Reilly St and Erma Ave Intersection	Y-Intersection (Alternative A)	Mid-term
Presidio Location 3: FM 170 and Utopia St at US 67 Intersection	Two-Way Left-Turn Lane (Alternative B)	Long-term
Presidio Location 5: Port of Entry (POE) Congestion Relief	Parking Capacity at POE (Alternative A)	Mid-term
Marfa Location 1: San Antonio St and Highland Ave Intersection	With Bicycle Lanes Alternative (Alternative A)	Mid-term
Marfa Location 2: Lincoln St and Highland Ave Intersection at Marfa Court House	Roundabout (Alternative A)	Short-term
Alpine Location 1: FM 1703 and US 67 Intersection	Two-Way Left-Turn Lane Alternative (Alternative A)	Mid-term
Alpine Location 2: Orange St and Sul Ross Ave Intersections at US 67	Closing Orange St and Sul Ross Ave Alternative (Alternative A)	Short-term
Alpine Location 3: Intersection at Sul Ross University and US 67	Pedestrian Ring (Alternative A)	Short-term
Rural Location 1: US 67/US 90 Intersection	Free Flow Y-Intersection (Alternative A)	Short-term

*Please note that Presidio Location 4 was removed through the fatal flaw analysis

Developing Recommended Alternatives Using Mixed Reality Visualization

Based on public and stakeholder input, intersection improvements were developed and refined. To aid in communicating these alternatives, the US 67 planning and design team used InfraWorks, a planning and design platform that enables real-world, three-dimensional renderings of concepts. These three-dimensional renderings of alternatives were imported into HoloLens, a mixed virtual reality smart glasses system. HoloLens enabled the user to experience the alternatives at real-world scale within the mixed virtual reality environment. An Infracworks 3D rendering in Marfa is shown below.



InfraWorks Rendering in Marfa at San Antonio and Highland Ave

“Complete Streets” Recommendation Examples

“Complete Streets” principles center on providing the best roadway facility to serve user needs in a specific location.

A “Complete Street” in a rural area will look quite different from a “Complete Street” in a highly urbanized area, but both are designed to balance safety and convenience for everyone using the road.

Urban complete streets alternatives were tempered by available right-of-way (ROW), the level of accommodation requested by each community, and the priorities for each of the modes in each project location.

Urban Solutions



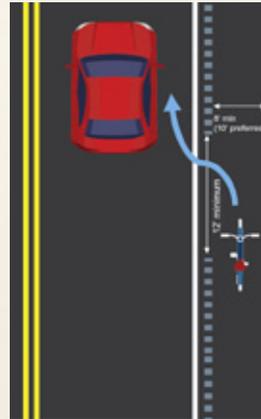
A striped buffered bicycle lane is recommended on the existing paved shoulder along with sidewalk and crosswalk improvements in Presidio.



A two-way cycle track physically separated from traffic with flexible delineators and a parking lane is recommended in Marfa.

Rural Solutions

The public identified a need for rural area solutions for bicyclists traveling between the communities. Rumble strips reduce roadway departure crashes for motor vehicles, but the pavement depressions can cause a bicyclist to fall. Gaps are needed to avoid hazards and debris.



Bicyclist on shoulder with rumble strip on US 67.

Network Solutions



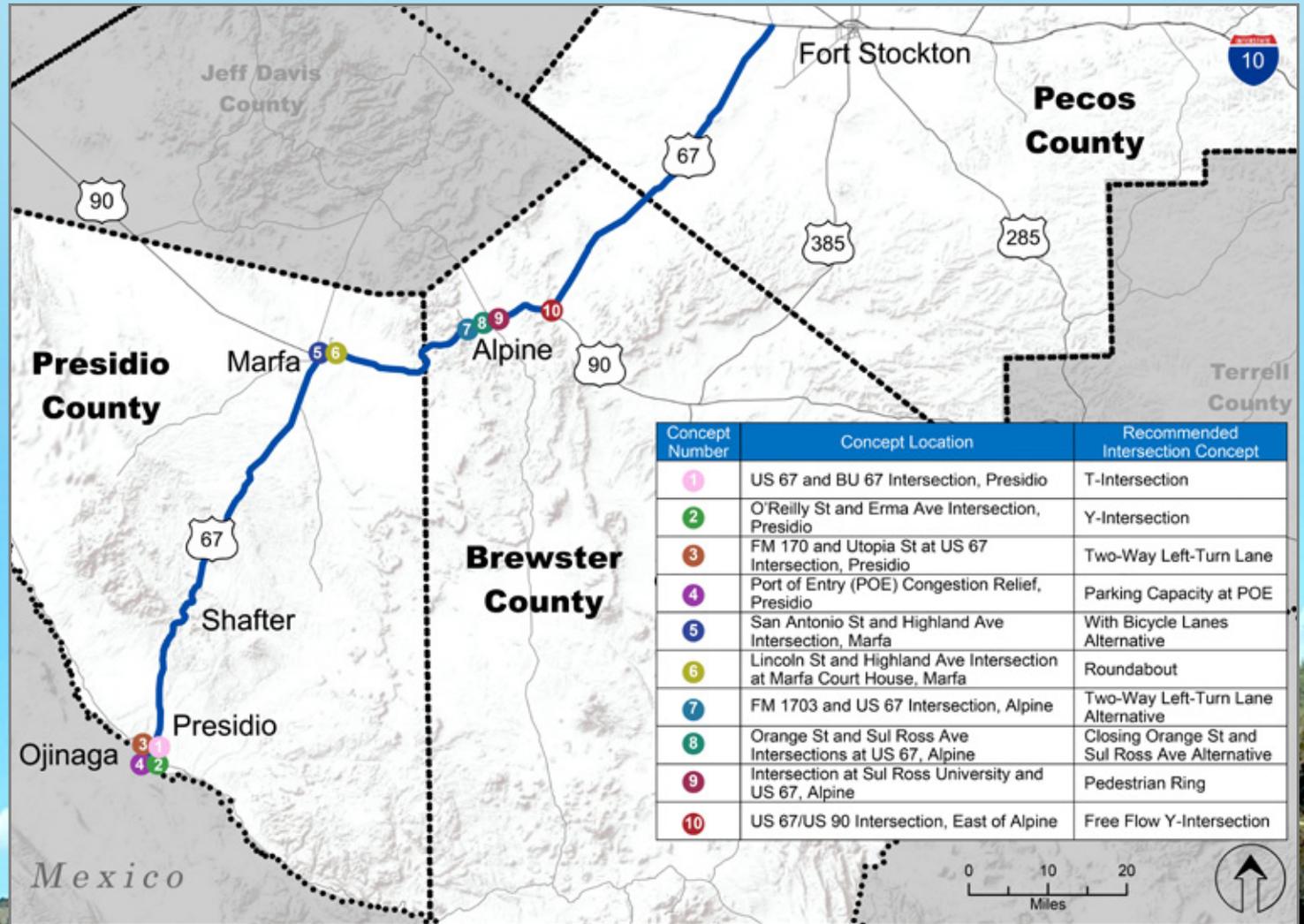
This map illustrates potential bicycle network improvements off US 67 in Presidio. There are similar recommendations for all three communities.

Recommended List of Alternative Intersection Concepts

The Study Team created planning level cost estimates for all concepts identified. These cost estimates provide a high-level assessment of project costs for planning purposes only. If the project continues into the design phase, a more refined and accurate cost estimate would be developed. All planning estimates were made in present year (2019) dollars and would rise with inflation if concepts are constructed in the future. The planning level cost estimates can be reviewed in Appendix D – Safety Analysis, Appendix G – Intelligent Transportation Systems (ITS) Plan, and Appendix O – Preliminary Level Cost Estimates. A summary of the planning cost estimates by concept type are shown in the table below.

54% OF THE PRIORITIES WERE IDENTIFIED FOR **SAFETY IMPROVEMENTS**

37% OF THE PRIORITIES WERE IDENTIFIED FOR **PAVEMENT IMPROVEMENTS**



Implementing the US 67 Corridor Master Plan

Project Development

Once conceptual improvements are chosen for implementation, they will move through the rest of the project development process, including environmental permitting, design, right-of-way (ROW) appraisal and acquisition, utility realignment, letting, and construction.

Health Impacts of Corridor Improvements

Transportation improvements can affect the health of nearby communities. A Health Impact Assessment (HIA) was conducted as part of the US 67 Corridor Master Plan to estimate the likely health impacts of recommended improvements using the indicators in the circle below. Improvements were then modified to reduce negative impacts. Two examples are given below.

CONCEPT TYPE	PLANNING LEVEL COST ESTIMATE
Intelligent Transportation Systems (ITS) Core Concepts	\$29,000,000
Safety Core Concepts	\$332,100,000
Core Intersection Concepts	\$6,500,000
Pavement	\$232,100,000
Complete Streets	\$6,500,000
Alternative Intersection Concepts	\$13,600,000
TOTAL (rounded)	\$620,000,000



Examples

Marfa Complete Streets

Provide adequate handicapped parking to allow those with disabilities to access key destinations, due to parking reductions.

Presidio POE Parking

Provide shade and electrification, so vehicles don't have to idle when parked, which reduces heat and air pollution.



Finding the Funding

Funding and other implementation actions are required to bring a concept to fruition. TxDOT's Unified Transportation Program (UTP) is a 10-year plan that guides statewide transportation investments through 12 funding categories. The most likely categories for funding are illustrated below.

PREVIOUS FUNDED STUDIES & PROJECTS ALONG THE US 67 CORRIDOR

CATEGORY 1 - PREVENTATIVE MAINTENANCE & REHABILITATION

TxDOT is planning to **add sealcoat to six segments** of the US 67 corridor to maintain the pavement condition in a state of good repair



TxDOT's El Paso and Odessa Districts implemented **roadway rehabilitation projects on two segments** in Brewster County

CATEGORY 4 - STATEWIDE CONNECTIVITY CORRIDOR PROJECTS

There are projects underway in the US 67 Corridor to **install periodic passing lanes at three segments**



CATEGORY 8-SAFETY

TxDOT is planning to improve **road marking and striping** along three segments of the US 67 corridor in Presidio County



CATEGORY 9 - TRANSPORTATION ALTERNATIVES SET-ASIDE PROGRAM

Several **sidewalk and bicycle lane projects** in the City of Marfa and the City of Presidio have been funded to enhance multimodal transportation on the US 67 corridor



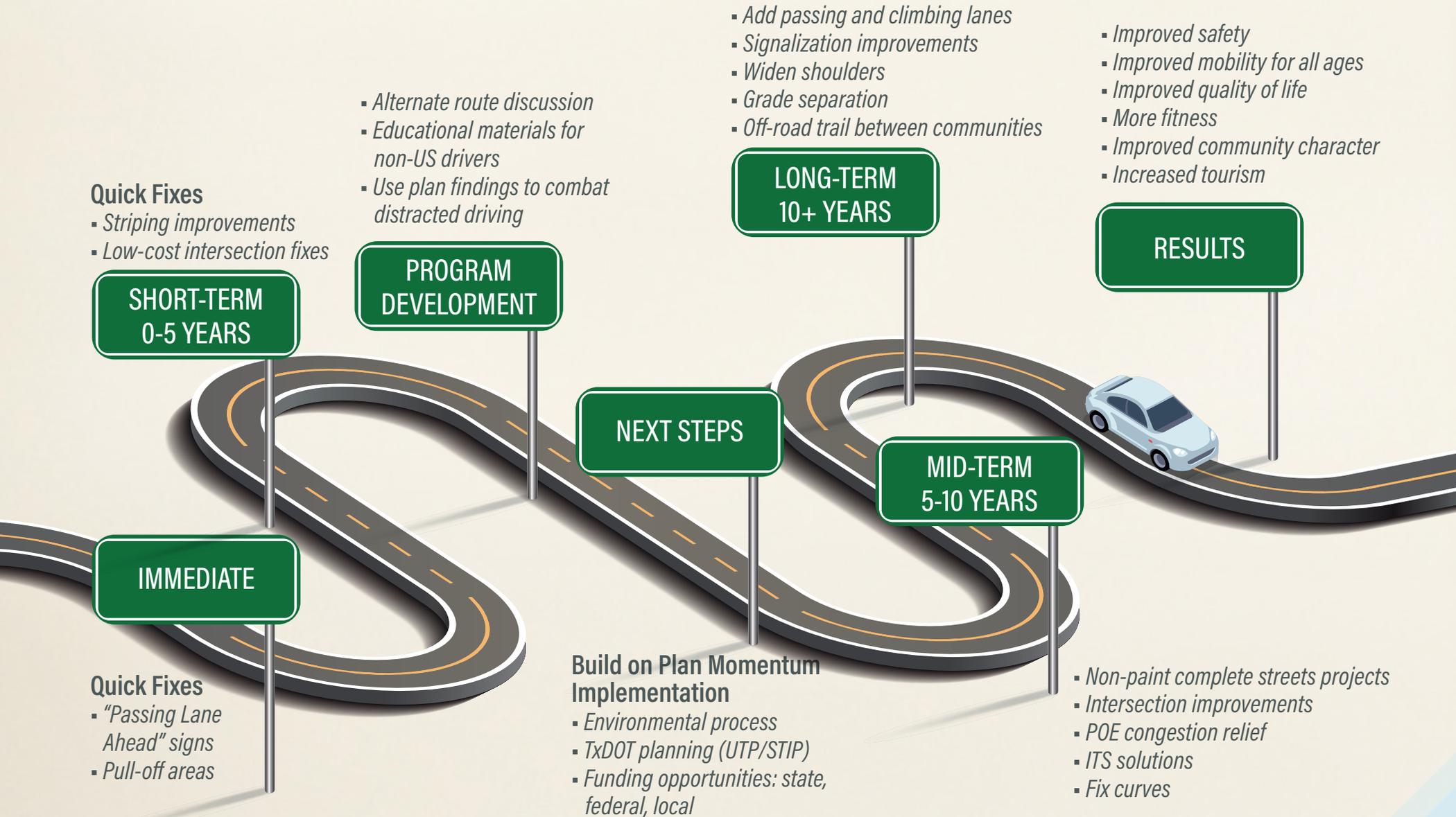
RIDER 11(B) FUNDING UNDER CATEGORY 11-DISTRICT DISCRETIONARY

The addition of a bridge adjacent to the existing **Port of Entry (POE) bridge in Presidio** has been planned for construction along a 0.6-mile stretch from Puerto Rico Street to the International Demarcation line along the US 67 corridor



TxDOT is proposing projects at **four segments to remove, relocate, or safety treat fixed objects** in addition to the **18.8 mile stretch along the corridor 9 miles south of RM 169-22.9 miles north of FM 170**

Timeline for Implementation





Study Team Activities and Conditions Along the US 67 Corridor





Howard Petroleum
Select Fuels





PREPARED BY
**CDM
Smith**