



Technical Work Group Meeting #2 Summary Report

SH 16 (Bandera Road)

Project limits: From I-410 to Loop 1604
CSJs 0291-10-099, 0291-10-100
Bexar County, Texas

May 2019
Texas Department of Transportation, San Antonio District

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 237 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

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Appendices

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Acronyms and Abbreviations

AACOG	Alamo Area Council of Governments
AADT	Average annual daily traffic
AAMPO	Alamo Area Metropolitan Planning Organization
ADT	Average daily traffic
CRIS	Crash Records Information System
DLT	Displaced left turn
ISD	Independent School District
O-D	Origin-Destination
RMA	Regional Mobility Authority
TWG	Technical Work Group
TxDOT	Texas Department of Transportation
VIA	VIA Metropolitan Transit
vpd	Vehicles per day



1. Introduction

The Texas Department of Transportation (TxDOT) is studying potential improvements along SH 16 (Bandera Road) between I-410 and Loop 1604, within the cities of Leon Valley and San Antonio. The 6.5-mile stretch of SH 16 (Bandera Road) within the project limits is the eighth most congested roadway in the San Antonio region and is one of the top 100 most congested roads in Texas (Texas A&M Transportation Institute, 2018). The corridor carries over 60,000 vehicles daily.

The SH 16 (Bandera Road) Project involves the collection and analysis of traffic data, the consideration of potential improvements including bicycle and pedestrian accommodations, and the preparation of various environmental studies. TxDOT is working closely with officials from Leon Valley, San Antonio, and regional and state representatives to gather data and identify community values and concerns.

Input from community members and project stakeholders is an important part of the SH 16 (Bandera Road) project. As part of the project's community engagement efforts, a Technical Work Group (TWG) was formed, which is composed of city and county engineers and planners, as well as representatives from the Alamo Area Council of Governments (AACOG), Alamo Area Metropolitan Planning Organization (AAMPO), Alamo Regional Mobility Authority (RMA), Northside Independent School District (ISD), and VIA Metropolitan Transit (VIA). The TWG is instrumental in being engaged and providing feedback; providing TxDOT with information regarding regulations, concerns, upcoming projects/developments and relaying project information back to administration and elected officials.

On Wednesday, April 24, 2019, TxDOT held the second TWG meeting in a series of meetings that will continue to occur throughout the project development process. The meeting was held at the TxDOT San Antonio District Office located at 4615 Northwest Loop 410 in San Antonio, Texas, 78229. The meeting was held from 3:00 and 4:30 p.m. A total of 16 individuals from nine organizations were invited to participate as members of the TWG. Ten (10) individuals from seven organizations attended the second TWG meeting in addition to seven project team members. The complete list of TWG invitations and a representative email invitation can be found in **Appendix A**. This report provides a summary of the meeting, including feedback received.



2. Attendance

TWG Members

Name	Organization
1. Linda Vela	Alamo Area Metropolitan Planning Organization
2. David Wegmann	Bexar County
3. Brandon Melland	City of Leon Valley
4. Bianca Maldonado	City of San Antonio, District 7
5. Rudy Nino	City of San Antonio, Planning Department
6. Bianca Thorpe	City of San Antonio, Transportation & Capital Improvements
7. Byron Sanoerfer	LNV, Inc.
8. Jonathan Bean	Texas Department of Transportation
9. Clayton Ripps	Texas Department of Transportation
10. Pete Arguello	VIA Metropolitan Transit



Project Team Members in Attendance

Name	Organization
1. Bill Loudon	Alliance Transportation Group, Inc.
2. Michael Wagoner	Alliance Transportation Group, Inc.
3. Matt Bucchin	Halff Associates, Inc.
4. Chad Gardiner	Halff Associates, Inc.
5. Kevin Lipnicky	Halff Associates, Inc.
6. Justin Clark	Pape-Dawson Engineers
7. Jackie Lopez*	Poznecki-Camarillo, Inc.

*Attended, but did not sign in to the meeting.



3. Meeting Structure

A sign-in table was set up at the entrance to the meeting and multiple handouts were given to attendees, including a presentation handout, a map showing SH 16 (Bandera Road) traffic volumes, and a preliminary survey results infographic. These handouts are included in **Appendix D**. As mentioned above, 10 TWG members attended the meeting; the sign-in sheets are included in **Appendix B**.

A presentation was given to TWG members and attendees were encouraged to ask questions or provide comments throughout the presentation. A copy of the PowerPoint presentation is included in **Appendix C**.

The agenda for the presentation included:

- ❖ Introductions
- ❖ TWG Meeting #1 Summary
- ❖ Community Outreach Summary
- ❖ Traffic Data
- ❖ Origin-Destination (O-D) Study
- ❖ Crash Data
- ❖ Next Steps

4. Presentation

4.1 Introductions

Mr. Jonathan Bean, Director of Transportation, Planning, and Development for TxDOT San Antonio District, welcomed TWG attendees and initiated introductions. He explained that the purpose of the TWG is to solicit input and feedback on the SH 16 (Bandera Road) Project from agency/municipal technical staff.

4.2 TWG Meeting #1 Summary

Mr. Chad Gardiner, Consultant Project Manager with Halff Associates, Inc., facilitated the remainder of the presentation. He began by providing a summary of the first TWG Meeting, which was held on February 12, 2019. Thirteen (13) TWG members from six organizations attended the first meeting.

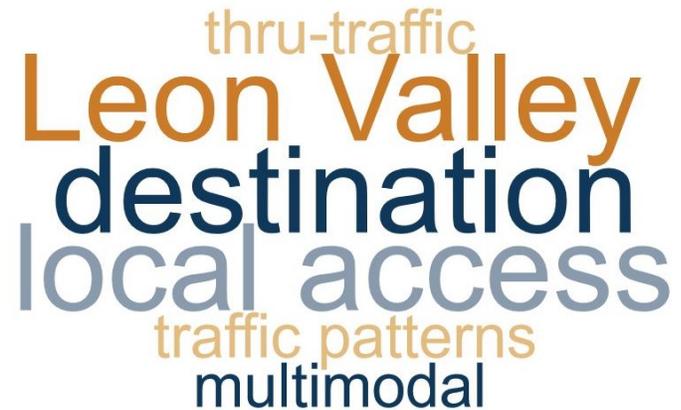


(a) Open Discussion

An open discussion was held at TWG Meeting #1 to solicit input on priorities and challenges of the SH 16 (Bandera Road) corridor within the project limits. This discussion led to the following key takeaways:

❖ **Goals/Priorities:**

- Understand traffic patterns of the corridor
- Balance local access versus thru-traffic needs
- Facilitate Leon Valley as a destination
- Incorporate multimodal accommodations
- Consider context sensitive solutions



A word cloud containing the following terms: thru-traffic, Leon Valley, destination, local access, traffic patterns, and multimodal. The words are arranged in a cluster, with 'Leon Valley' and 'destination' being the largest and most prominent.

❖ **Key Community Challenges**

- Communication of project data/analysis
- Buy-in on a comprehensive solution
- Communication of trade-offs with adjacent businesses and the community at large



A word cloud containing the following terms: trade-offs, communication, buy-in, and comprehensive solution. The words are arranged in a cluster, with 'trade-offs' and 'communication' being the largest and most prominent.

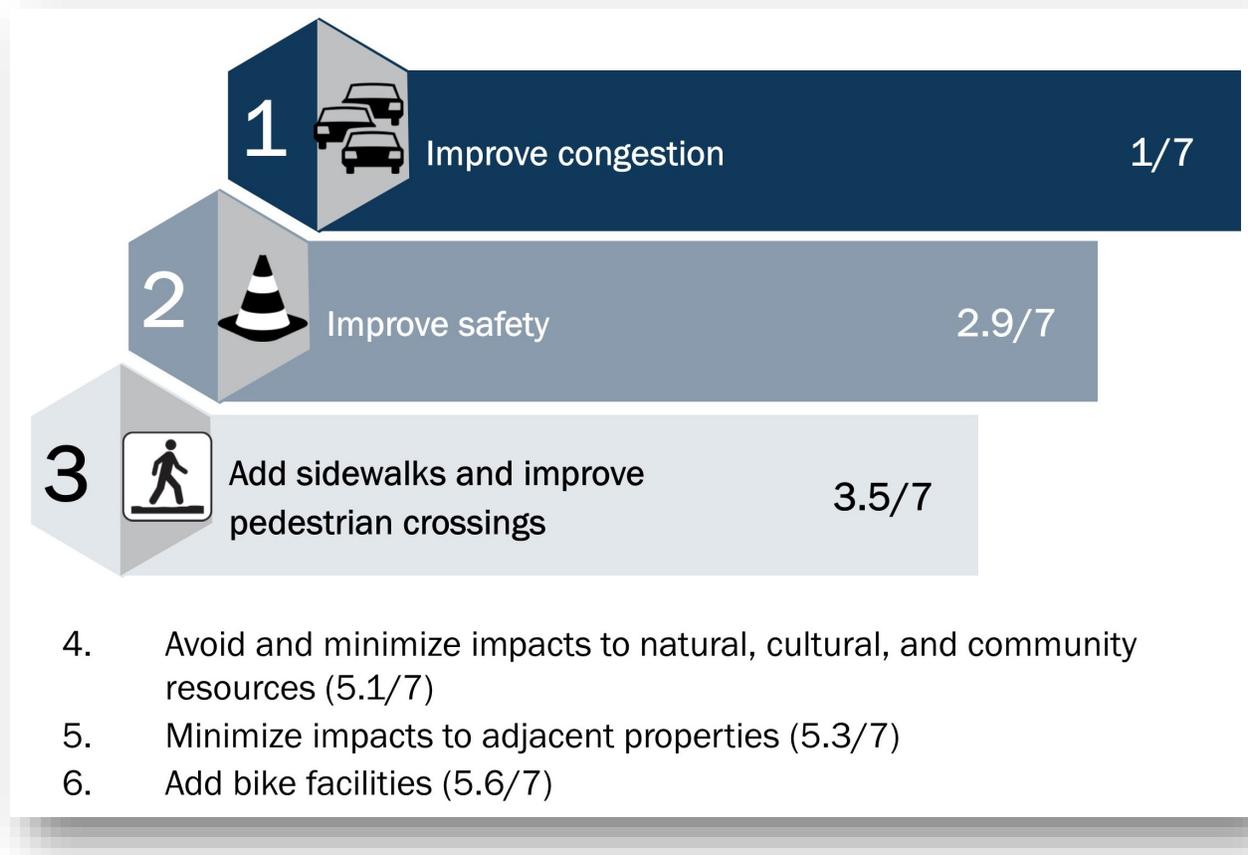


(b) Survey Results

TWG members completed a survey at TWG Meeting #1, which asked questions to help the Project Team better understand SH 16 (Bandera Road) priorities, desired design features, and reasons for traveling along the corridor. A summary of the survey responses received by TWG members is presented below.

Priorities

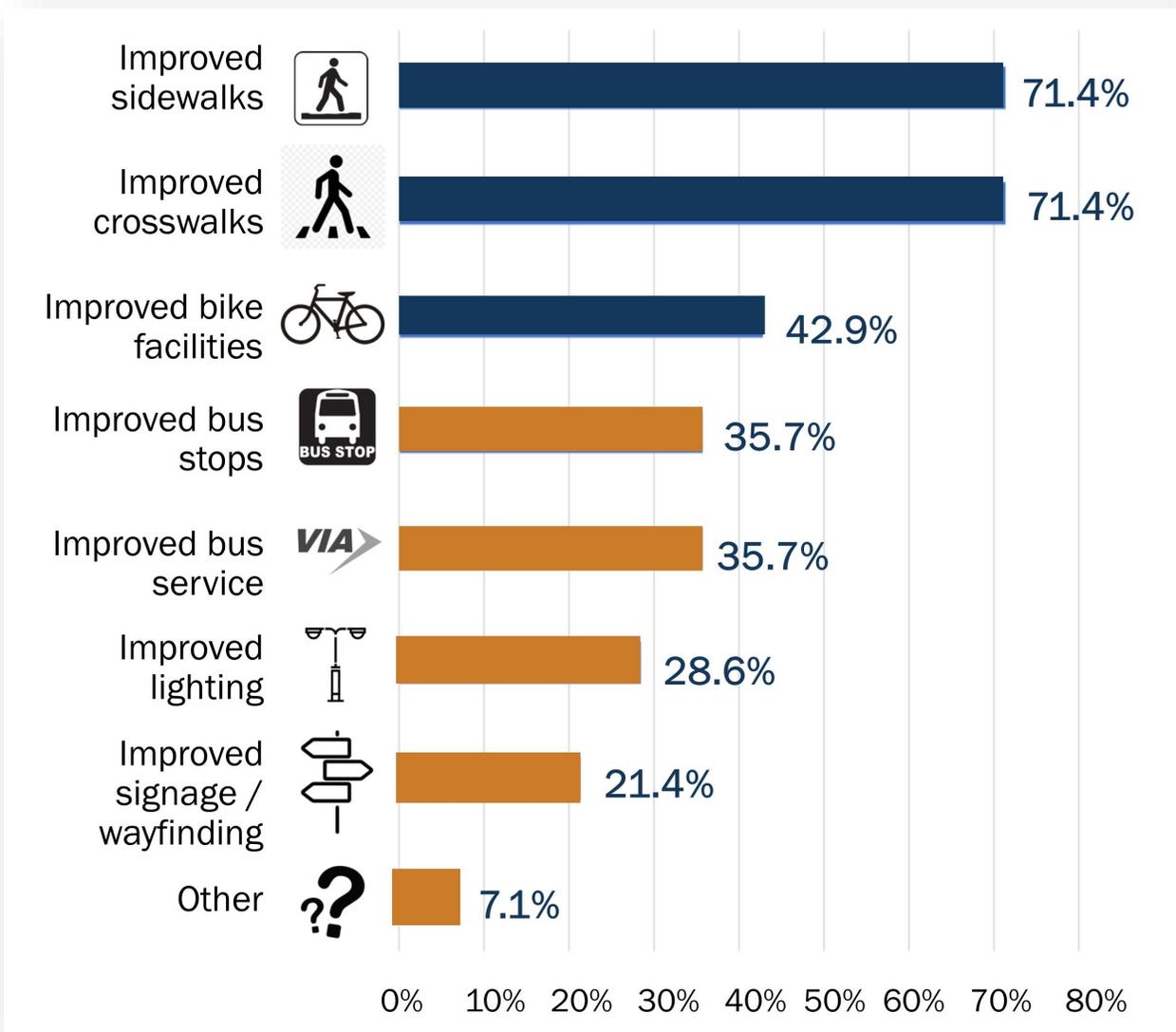
When asked to “please rank your priorities for the SH 16 (Bandera Road) Project, from most important to least important”, TWG members said improving congestion was the most important priority for the project, followed by improving safety, and adding sidewalks and improving pedestrian crossings.



TWG Members' Ranked Priorities for the SH 16 (Bandera Road) Project

Corridor Design Needs

When asked what design features they would like to see within the SH 16 (Bandera Road) corridor, the majority (approximately 71 percent) said they would like to see improved sidewalks and crosswalks. Approximately 43 percent said they would like to see improved bike facilities, and approximately 36 percent said they would like to see improved bus stops and bus service.



Design Features TWG Members Would Like to See within the SH 16 (Bandera Road) Corridor

4.3 Community Outreach Summary

Mr. Gardiner provided an update on recent community outreach activities that have been conducted for the project, including a series of pop-up events and an online survey (the same survey that was completed by TWG members in TWG Meeting #1).

(a) “Pop-Up” Event Summary

The Project Team participated in four “pop-up” events as part of the community engagement effort of the SH 16 (Bandera Road) Project. For these events, the project team “piggy-backed” on other events and initiatives already scheduled along the corridor. At each of the events, members of the Project Team were available to discuss and provide information on the project, and attendees could sign up to receive project updates or complete a survey.

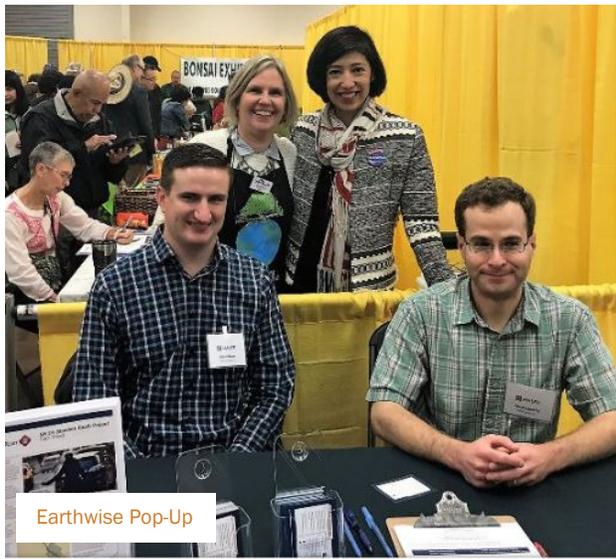
Pop-up events were held on:

- ❖ February 15, 2019, 5:00 to 7:00 p.m., Raymond Rimkus Park - Movies in the Park (sponsored by Senator Menendez and Commissioner Rodriguez)
- ❖ February 24, 2019, 7:00 to 9:00 a.m., O.P. Schnabel Park - C.R.Y. San Antonio Run/Walk for Child Rights (endorsed by San Antonio Mayor Nirenberg’s Fitness Council)
- ❖ March 2, 2019, 9:30 a.m. to 1:30 p.m., Leon Valley Community and Conference Center – Earthwise Living Day
- ❖ March 5, 2019, 6:30 to 7:30 p.m., John Igo Public Library – SH 16 @ Loop 1604 Displaced Left Turn (DLT) Informational Meeting

Community input received during these events included:

- ❖ 111 completed surveys
- ❖ 29 mailing list sign-up requests
- ❖ 34 mailing list requests via the survey
- ❖ **TOTAL: 174 community “touches”**





Earthwise Pop-Up



SH 16 DLT Pop-Up



Movies in the Park Pop-Up



Earthwise Pop-Up



C.R.Y. Pop-Up



Movies in the Park Pop-Up

Representative Photographs from the Pop-Up Events



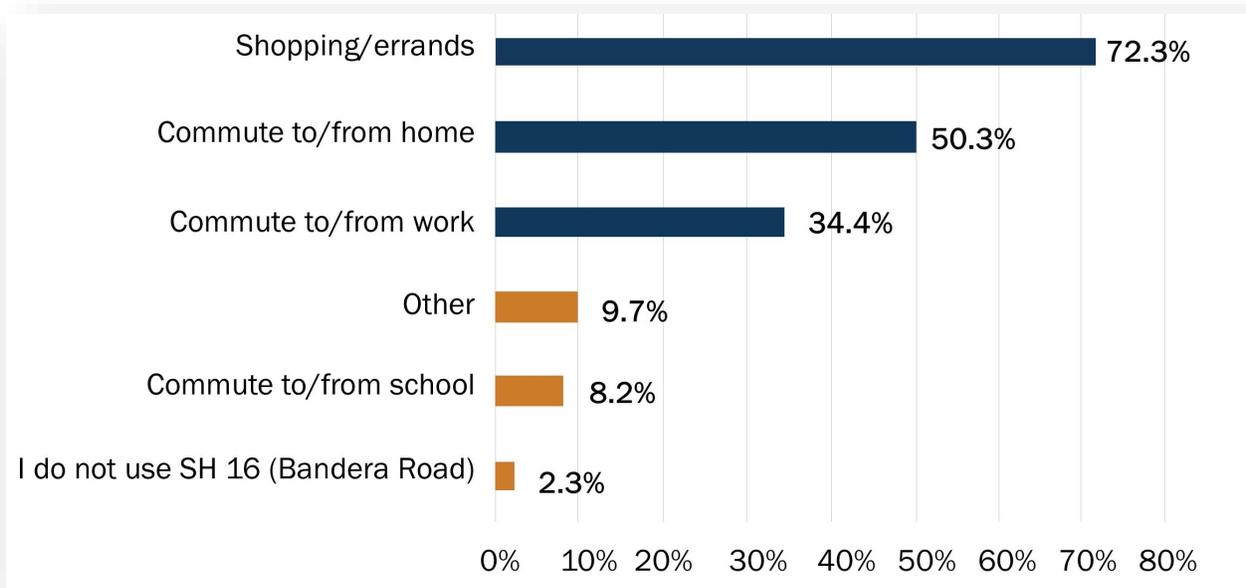
(b) Survey #1

As mentioned above, the same survey that was taken by TWG members at TWG Meeting #1 and that was available at the pop-up events was also available online beginning on February 15, 2019. The survey is tentatively scheduled to close on June 1, 2019; complete results of this survey will be provided after it closes under separate cover.

Mr. Gardiner provided TWG members with a summary of preliminary survey results, per surveys completed through April 15, 2019. As of this date, 362 surveys had been completed by community members, 63 percent of which were completed by residents of Leon Valley and 26 percent of which were completed by residents of San Antonio (with 12 percent in Council District 7 and six percent in Council District 8).

Primary Reason for Using SH 16 (Bandera Road)

When asked what their primary reason is for traveling within the SH 16 (Bandera Road) corridor, the majority of respondents (approximately 72 percent) said they use the corridor to go shopping or run errands. Approximately half (50 percent) said they use the corridor to commute to/from home, while approximately 34 percent said they use it to commute to/from work. Respondents were not limited to selecting only one primary reason, but could select all that apply.

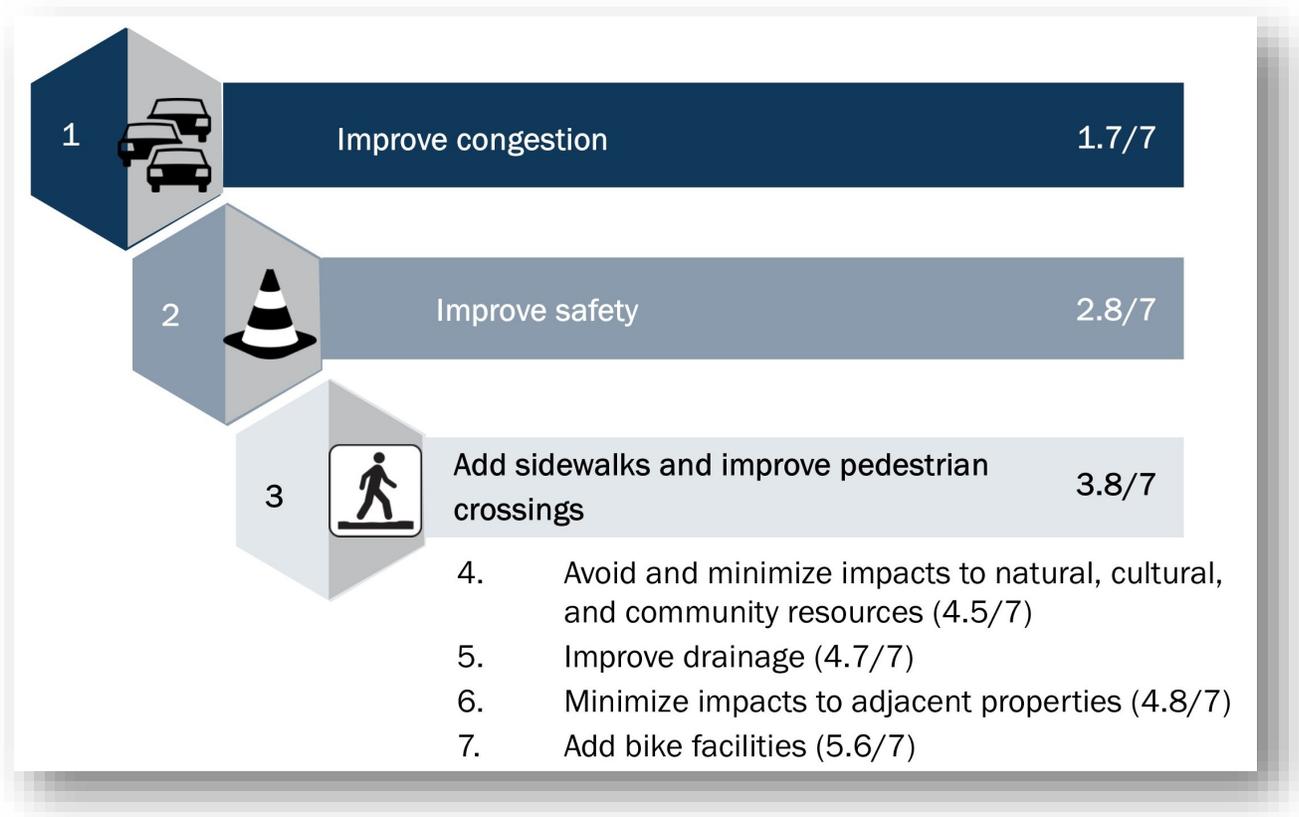


Primary Reason for Traveling on SH 16 (Bandera Road)



Priorities

When asked what their priorities are for the SH 16 (Bandera Road) Project, community members had the same top three priorities as TWG members – improve congestion, improve safety, and add sidewalks and improve pedestrian crossings.



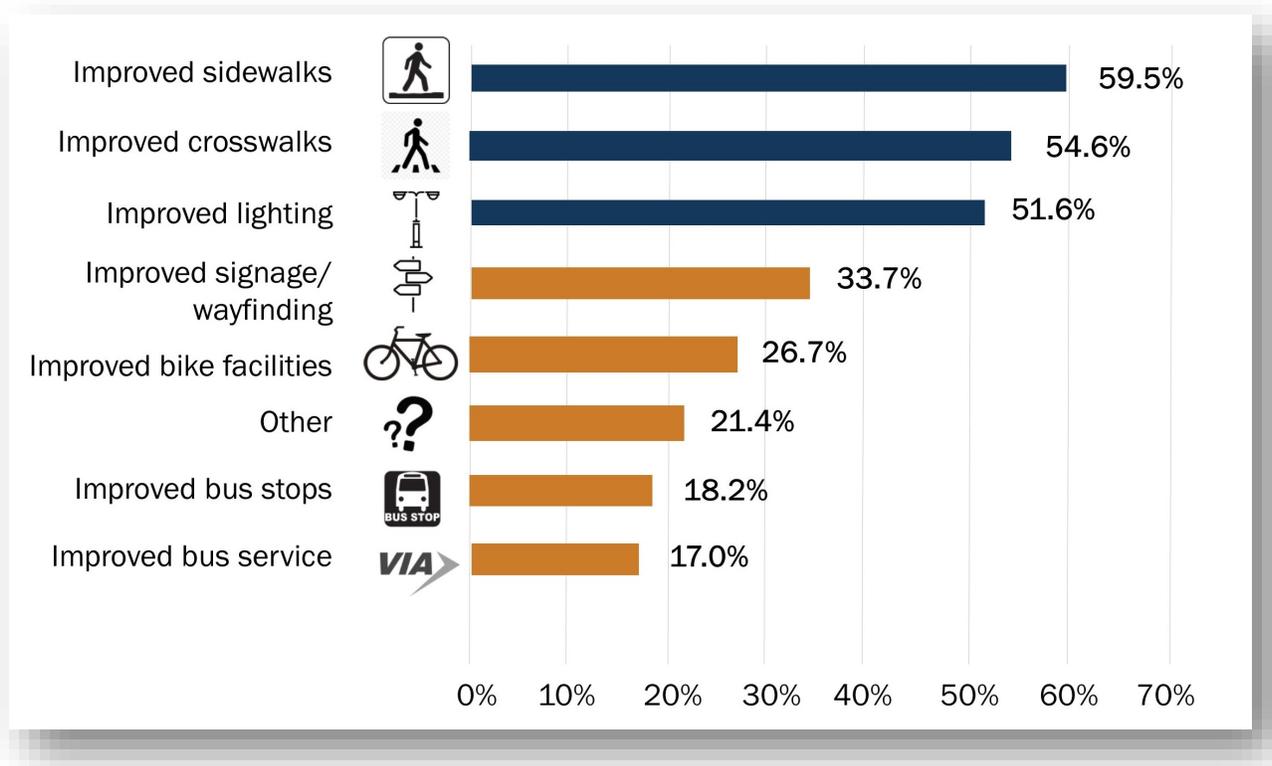
Community Members' Ranked Priorities for the SH 16 (Bandera Road) Project

Corridor Design Needs

Also similar to the responses received from the TWG, community members said the top two design features they would like to see within the SH 16 (Bandera Road) corridor are improved sidewalks and improved crosswalks.

However, whereas the third top selected design feature (selected by approximately 43 percent) of TWG members was improved bike facilities, only approximately 27 percent of the community at-large selected this design feature, ranking as the fifth most desired feature. Alternatively, approximately 52 percent of the community said they would like to see improved lighting, coming in as the third most desired feature, while only approximately 29 percent of TWG members (ranked sixth out of eight features) said they would like to see improved lighting.

Another difference noted between input received by the community and TWG was that the TWG said they would like to see improved bus stops and improved bus service, coming in as fourth and fifth respectively, while these two design features were chosen by the least amount of community members, ranking seventh and eighth.



Design Features the Community Would Like to See within the SH 16 (Bandera Road) Corridor

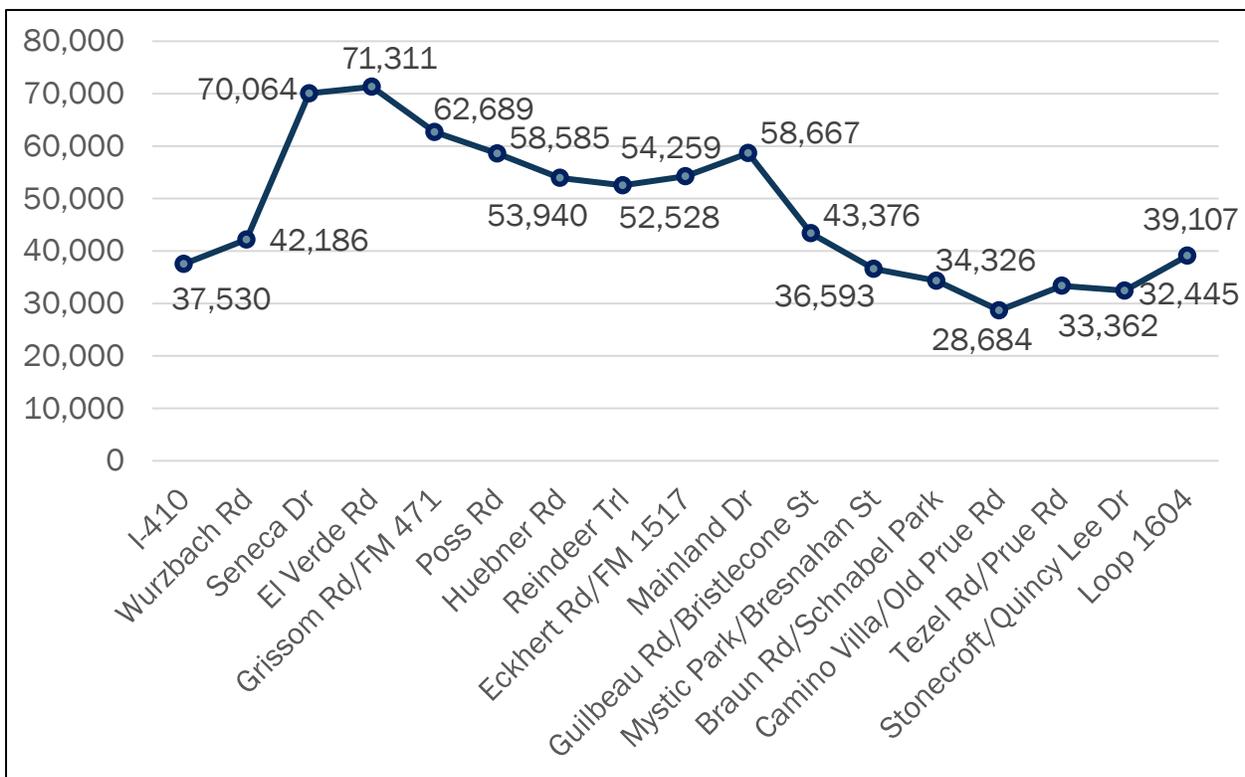


4.4 Traffic Data

Mr. Gardiner then gave an update on the traffic data collection and traffic analysis efforts for the SH 16 (Bandera Road) Project.

(a) Current Traffic Counts

The Project Team collected traffic data along the project corridor in December 2018 and January 2019. This data shows that approximately 37,000 vehicles per day (vpd) travel northbound on SH 16 (Bandera Road) at I-410. This number quickly jumps up to approximately 70,000 vpd between Wurzbach Road and Seneca Drive, which is largely due to the I-410 direct connectors. Traffic volumes then drop to approximately 53,000 vpd between El Verde Road and Reindeer Trail, and then increase to approximately 59,000 vpd at Mainland Drive. North of Mainland Drive, traffic volumes continually decrease to a low of approximately 29,000 vpd at Camino Villa/Old Prue Road, and then increase to approximately 39,000 vpd at Loop 1604.



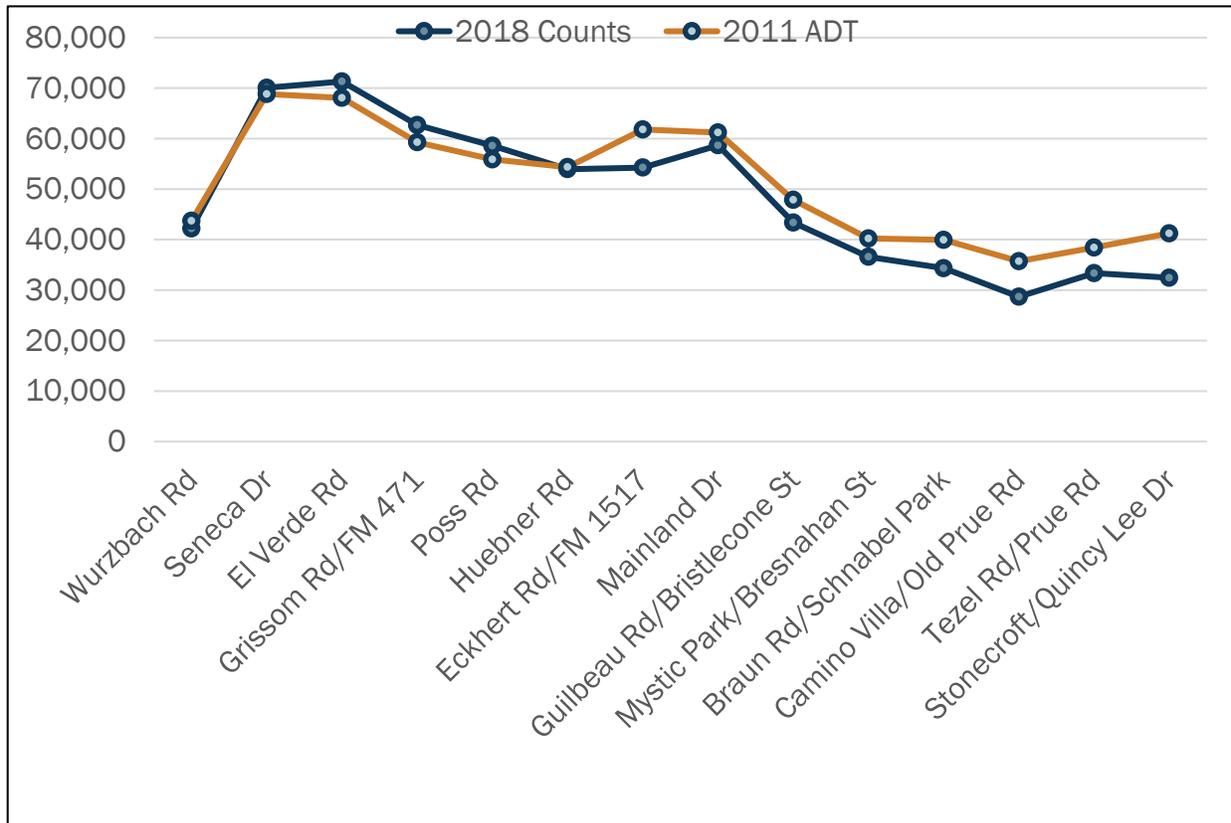
Note: Daily traffic volumes shown are raw counts based on the December and January data collection.

SH 16 (Bandera Road) Daily Traffic Flow



(b) Current Traffic vs. Historic Traffic

The December 2018 and January 2019 traffic volumes were compared to historic (2011) traffic counts along the corridor. The 2011 traffic counts were obtained from TxDOT's previous SH 16 (Bandera Road) study. Comparison of these counts shows that current traffic counts are slightly higher than 2011 counts in the southern portion of the project limits (from Seneca Drive to Poss Road). Alternatively, north of Huebner Road, current traffic volumes are below 2011 historic volumes.



SH 16 (Bandera Road) Traffic Volumes

Historical traffic data depicts a “roller coaster” growth pattern over the past 20 years. Current counts in the northern portion of the project limits (north of Quincy Lee Drive) are abnormally low and compare closely to historic traffic volumes in 2000. Farther south (north of Grissom Road), current traffic counts exceed historical volumes. The Project Team believes the abnormally low volumes in the northern portion of the corridor may be related to people utilizing alternate routes in order to avoid construction at Loop 1604. To accommodate this, the Project Team will adjust northern counts based on historical data prior to developing traffic projections.



Traffic Volume Comparison

Year	N of Grissom Rd	S of Eckhert Rd	N of Braun Rd	N of Quincy Lee Dr
	Location ID: 15H50	Location ID: 15H51	Location ID: 15H53	Location ID: 15H37
2000 ¹	48,000	47,000	26,000	27,000
2005 ¹	57,640	51,080	28,270	33,320
2010 ¹	54,000	45,000	29,000	35,000
2011 ²	55,467	52,873	38,808	39,153
2015 ¹	56,911	49,407	32,898	40,681
2018 ³	58,689	48,400	30,633	30,735

Notes:

1. AADT from TxDOT Statewide Traffic Analysis and Reporting System (STARS II)
2. ADT from 2011 TxDOT Study
3. 2018 traffic counts from Current Study

(c) AAMPO Model – Potential Latent Demand

The Project Team analyzed average daily traffic (ADT) volumes included in the AAMPO’s Travel Demand Model to identify potential latent demand along the SH 16 (Bandera Road) corridor. Various models were analyzed, as described below:

- ❖ **2015 AAMPO Model Volumes** – base volumes
- ❖ **Standard 2045 AAMPO Model Volumes** (aka “No-Build Alternative”) – projected volumes assuming all planned regional improvements are constructed, not including construction of the SH 16 (Bandera Road) Project
- ❖ **Maximum 2045 AAMPO Volumes** (model modified by design team) – projected volumes assuming two additional lanes in each direction were constructed on SH 16 (Bandera Road) within the project limits



Potential Latent Demand along SH 16 (Bandera Road)

Location	2015 AAMPO Model Volume	Standard 2045 AAMPO Model Volume	Maximum 2045 AAMPO Model Volume	Increased 2045 Volume Maximum vs. Standard Model
Between I-410 and Wurzbach (including direct connectors)	87,272	95,556	108,463	12,907
Between Eckhert Rd and Mainland Dr	71,146	91,377	106,552	15,175
Between Braun Rd and Camino Villa	31,134	37,851	53,420	15,569
Between Quincy Lee Dr and Loop 1604	44,390	68,330	81,424	13,094

Note: Traffic volumes represent average daily traffic.

Volumes from the Standard 2045 model (No-Build Alternative) include approximately 68,330 vpd in the northern section of the corridor (between Quincy Lee Drive and Loop 1604), which is similar to traffic volumes seen today in the southern section (from Seneca Drive to El Verde Road). Under this scenario, traffic volumes in the southern section (between I-410 and Mainland Drive) exceed 90,000 vpd.

Volumes from the Maximum 2045 model, which considers additional capacity (i.e. travel lanes) on SH 16 (Bandera Road), show an even further increase in traffic volumes compared to the base model; under the Maximum 2045 model, traffic volumes are projected to increase along the corridor by an additional 12,000 to 16,000 vpd from the Standard 2045 model projections, which indicates that there is potential latent demand along the corridor. The results from this scenario indicate that if additional lanes were added to SH 16 (Bandera Road), more vehicles would use it. This model adjustment was incorporated as an analysis to quickly estimate potential latent demand and is not currently a recommended concept.

4.5 Origin-Destination (O-D) Study

In December 2018, the Project Team set out 20 Bluetooth sensors along the SH 16 (Bandera Road) corridor and collected O-D data to understand travel patterns of the corridor. Subsequently, in January 2019, the Project Team moved the 20 sensors to key areas further removed from the corridor to collect O-D data to understand regional travel patterns.

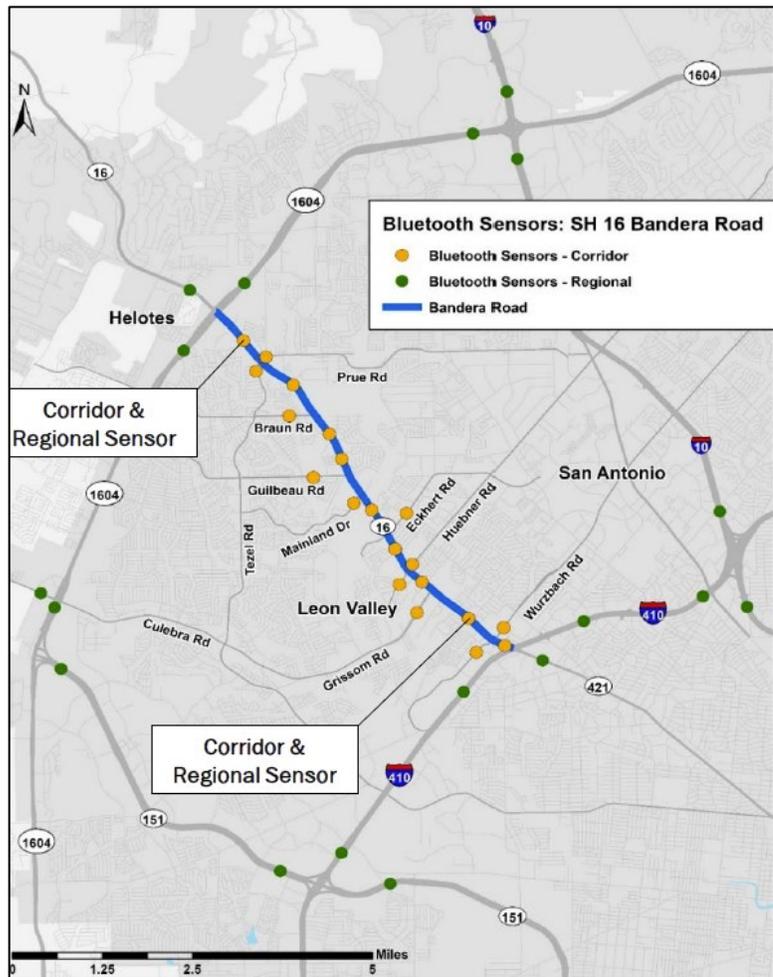


The application of Bluetooth technology allows the Project Team to collect data on vehicle trips between passed points on a roadway network. When a vehicle that is equipped with a Bluetooth-enabled device travels past a Bluetooth sensor, its location and timestamp are recorded. When the same vehicle is recorded at a different sensor, information about the vehicle's trip can be analyzed.

The application of Bluetooth technology is limited in that only vehicles with an enabled Bluetooth device are recorded, and the Bluetooth device must be within a certain distance from the sensor. Therefore, this data collection method does not provide comprehensive data for all vehicles traveling along the corridor, rather only the percentage of vehicles meeting these parameters. O-D data

collected for the SH 16 (Bandera Road) Project was estimated to represent approximately eight percent of the total traffic along the corridor and six percent of the total traffic in the region. Other assumptions made by the Project Team included a maximum travel time of one hour (i.e. if a vehicle was picked up on one sensor but not again on another sensor after a one-hour period, this trip was not counted). Also, data was "cleaned" by the Project Team in order to develop a matrix of true O-D trips.

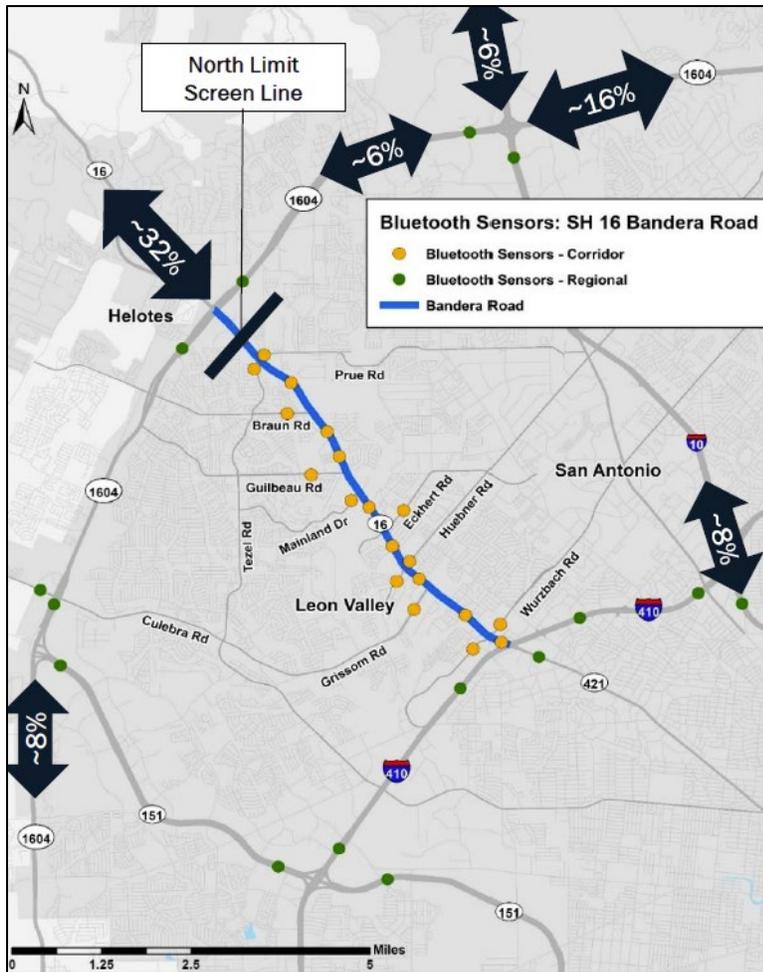
A draft O-D report for the SH 16 (Bandera Road) Project has been prepared by the Project Team and will be submitted to TxDOT for review and approval.



Locations of Bluetooth Sensors

(a) Regional Analysis

Regional Daily Trips Entering or Exiting SH 16 (Bandera Road) from the Northern Project Limit



Regional Daily Trips Entering the Northern Project Limit

A Bluetooth sensor was placed at the northern project limits to identify regional trips entering or exiting SH 16 (Bandera Road) from the north. The largest percentage of trips (approximately 32 percent) involved vehicles either entering or exiting SH 16 (Bandera Road) north of Loop 1604.

The next largest percentage of trips (approximately 16 percent) were vehicles either coming or going from Loop 1604 east of I-10.

Another noteworthy trend was that approximately eight percent of trips entering or exiting the SH 16 (Bandera Road) northern limit came from or were going to I-10 south of Loop 1604. This could be explained by people avoiding either SH 16 (Bandera Road) or I-410 traffic.

Other trips identified included:

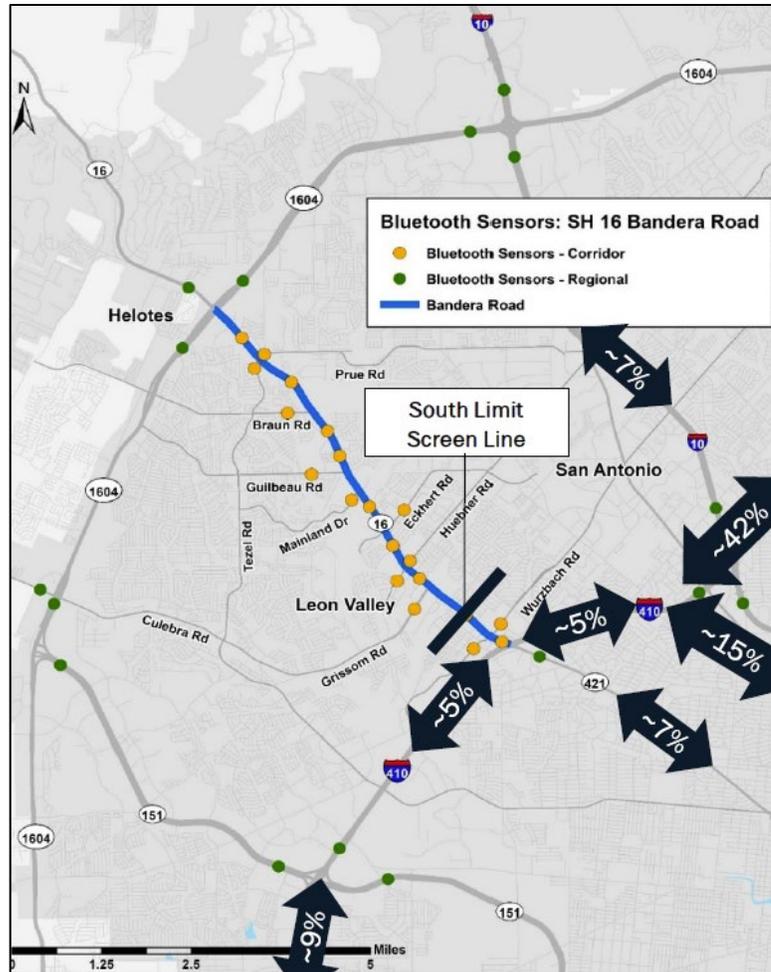
- ❖ Approximately 6 percent to/from I-10 north of Loop 1604
- ❖ Approximately 6 percent to/from Loop 1604 between SH 16 (Bandera Road) and I-10
- ❖ Approximately 8 percent to/from Loop 1604 south of SH 151

Regional Daily Trips Entering or Exiting SH 16 (Bandera Road) from the Southern Project Limit

A Bluetooth sensor was also placed at the southern project limit to identify regional trips entering or exiting SH 16 (Bandera Road) from the south. Almost half of the trips (approximately 42 percent) involved vehicles either entering or exiting SH 16 (Bandera Road) from I-410 east of I-10.

The next largest percentage of trips (approximately 15 percent) were vehicles either coming or going from I-10 south of I-410.

Approximately nine percent of trips entering or exiting the SH 16 (Bandera Road) southern limit came from or were going to I-410 west of SH 151.



Regional Daily Trips Entering the Southern Project Limit

Other trips identified included:

- ❖ Approximately 7 percent to/from Bandera Road (Spur 421) south of I-410
- ❖ Approximately 7 percent to/from I-10 north of I-410
- ❖ Approximately 5 percent to/from I-410 between SH 16 (Bandera Road) and I-10
- ❖ Approximately 5 percent to/from I-410 between SH 16 (Bandera Road) and SH 151

(b) Corridor Analysis

As mentioned above, traffic data was also analyzed to identify travel patterns of the corridor.

SH 16 (Bandera Road) – North Limit, Between Prue Road and Loop 1604

A Bluetooth sensor was placed between Prue Road and Loop 1604 to represent the northern project limits for the corridor analysis. The majority of daily trips (approximately 65 percent) that enter or exit the northern project limits travel to/from points south of Braun Road. Approximately 15 percent of trips travel along the entire SH 16 (Bandera Road) project limits (from Loop 1604 to I-410), representing thru-traffic.

SH 16 (Bandera Road) – South Limit, Between I-410 and Wurzbach Road

The southernmost Bluetooth sensor for the corridor analysis was placed between I-410 and Wurzbach Road. Traffic data collected indicates that the majority of daily trips (approximately 55 to 60 percent) that enter or exit this southern project limit travel to/from locations on Huebner Road and farther north. Approximately nine percent of trips travel from I-410 to Loop 1604 and represent the thru-traffic movement.

Side Street Major Movements

Data from sensors placed along side streets in the project limits indicate that approximately half of the trips (approximately 50 percent) traveling on Grissom Road west of SH 16 (Bandera Road) travel to/from I-410 and points further south, a majority of which access the I-410 direct connector ramps. Approximately 25 percent of trips on Mainland Drive, Guilbeau Road, and Braun Road travel to/from I-410 and points farther south. This data shows a large west-to-south or south-to-west movement for trips coming to/from side streets west of SH 16 (Bandera Road).

Approximately half of daily trips (approximately 50 percent) at Prue Road east of SH 16 (Bandera Road) travel to/from Loop 1604 and points farther north. As described previously in the regional analysis, approximately a third of trips entering/exiting SH 16 (Bandera Road) at the northern project limit come from or go to points north of Loop 1604. A portion of these regional trips likely use Prue Road as a bypass facility to avoid SH 16 (Bandera Road) and to access I-10.

Lastly, O-D data indicates that Wurzbach Road may be utilized as a bypass alternative to I-410.

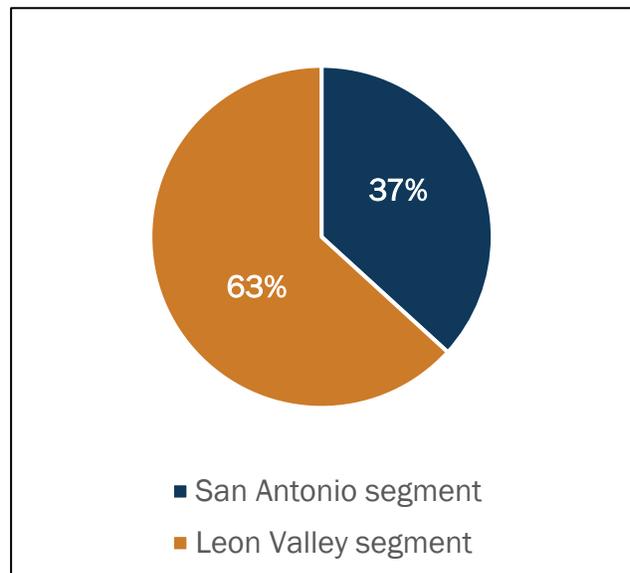


Side Street Major Movements Across SH 16 (Bandera Road)

Side street movements across SH 16 (Bandera Road) were also analyzed to determine cross connectivity (i.e. how much traffic is traveling from west of the SH 16 (Bandera Road) corridor to east of the corridor, and vice versa). According to this analysis, approximately one-third of cross-street trips move from one side of SH 16 (Bandera Road) to the other; this includes “dog-leg” movements that utilize short trips on the corridor. For example, approximately 30 percent of daily trips originating at Mainland Drive and Guilbeau Road west of SH 16 (Bandera Road) have a destination along Eckhert Road east of SH 16 (Bandera Road). This major shift of east-west traffic crossing SH 16 (Bandera Road) is a contributing factor to the heavy turning movements seen along the corridor.

4.6 Crash Data

Mr. Gardiner provided an update on the crash data analysis for the SH 16 (Bandera Road) Project. The Project Team collected crash data from the City of San Antonio’s Crash Records Information System (CRIS) database, as well as from the Leon Valley Police Department. Due to differences in reporting procedures, available crash data for the corridor differs for the portion within San Antonio versus the portion within Leon Valley. Historically, Leon Valley has not uploaded all crash data to the CRIS database, and most records indicate crash locations only.



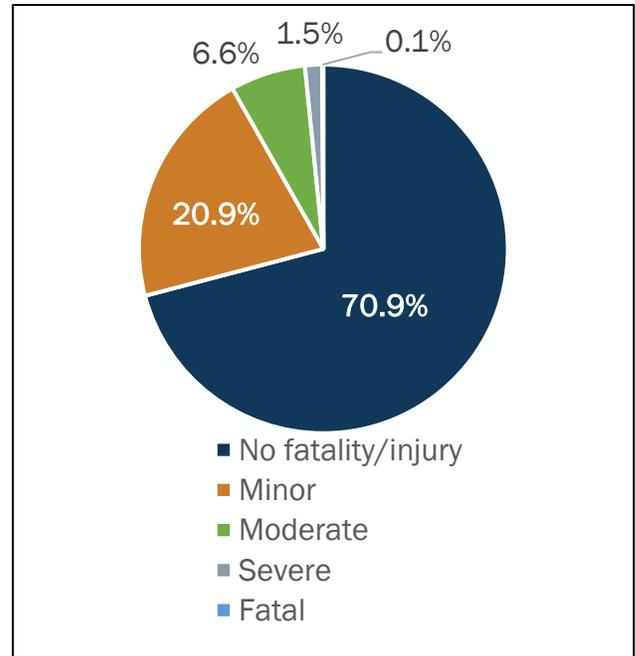
Percentage of Crashes within San Antonio and Leon Valley within the Project Limits

The Project Team analyzed crash data for a 5-year period (2014 to 2018). A total of 5,842 crashes were recorded within this period, broken down as follows:

- ❖ San Antonio segment (4 miles) – 2,149 crashes (approximately 37 percent)
 - Crash rate around 4 times higher than statewide average
- ❖ Leon Valley segment (2.5 miles) – 3,693 crashes (approximately 63 percent)
 - Crash rate around 7 times higher than statewide average

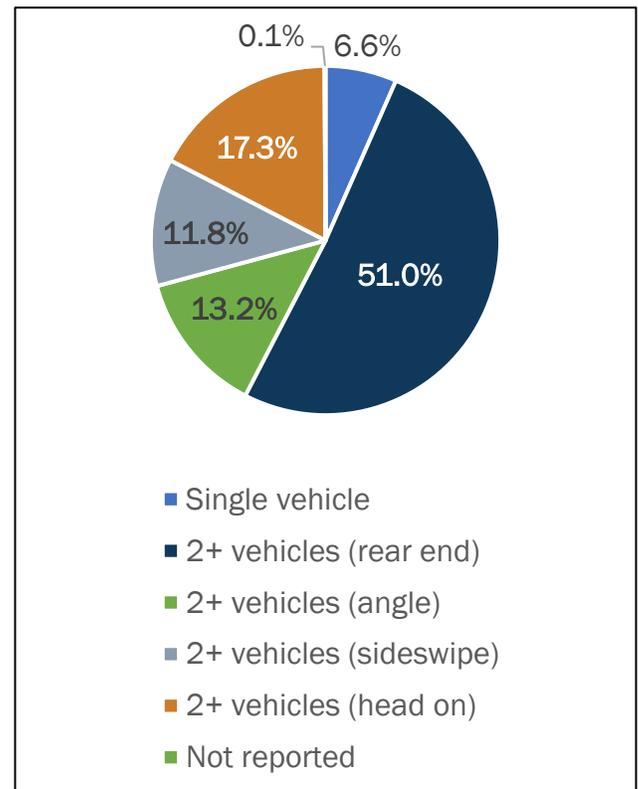
(a) San Antonio Segment

Crash data included in the CRIS database for the San Antonio segment categorizes each crash by its severity, from no fatality/injury, minor, moderate, severe, and fatal. Approximately 71 percent of crashes within the San Antonio segment resulted in no fatality or injury, while another 21 percent were considered minor; these two categories combined represent approximately 92 percent of all crashes within the five-year period. Slower travel speeds on SH 16 (Bandera Road) due to congestion could explain the small percentage of fatal or severe crashes on the corridor.



Crashes by Severity in San Antonio Segment

Crashes are also categorized in the CRIS database per type, including: single-vehicle, rear-end, angle, sideswipe, and head on. More than half (approximately 51 percent) of crashes were rear-end crashes, which could be a result of traffic congestion and related to the unexpected queue spillback and sudden decrease in travel speeds. Another approximate 17 percent were head-on crashes.



Crashes by Type in San Antonio Segment

Approximately 59 percent of all crashes were logged as intersection related, with high “hot spots” at SH 16 (Bandera Road) intersections with Loop 1604 frontage roads, Stonecroft/Quincy Lee Drive, and Braun Road. The construction of the DLT Interchange at SH 16 (Bandera Road) and Loop 1604 could decrease crash rates at this intersection.

Another ten percent of crashes were recorded as driveway access related.



(b) Leon Valley Segment

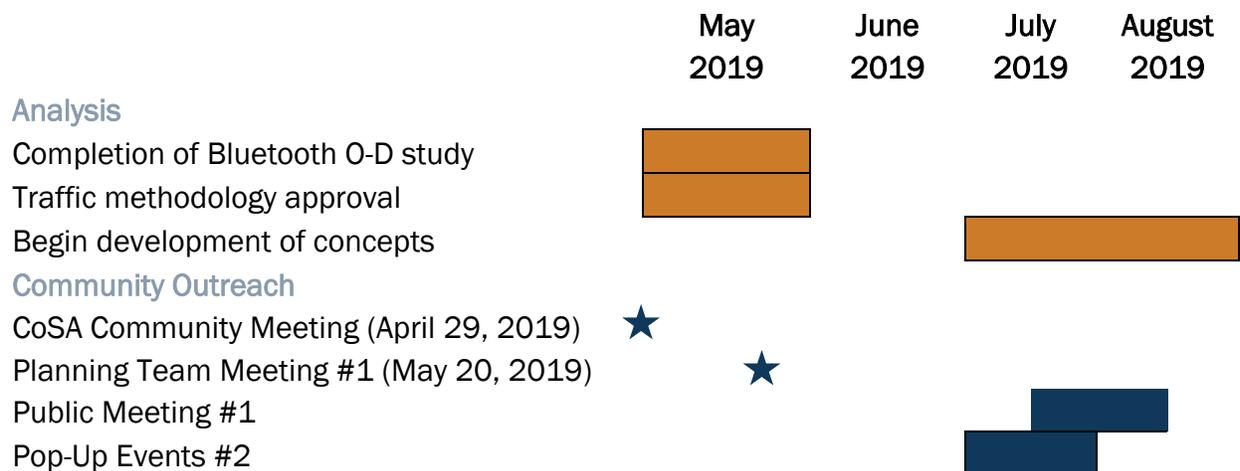
As mentioned above, Leon Valley crash data is not always included in the CRIS database; therefore, crash data by severity and type are not available for the portion of SH 16 (Bandera Road) within Leon Valley.

Crash data within the Leon Valley segment shows crash hot spots at SH 16 (Bandera Road) intersections with Huebner Road, I-410 frontage roads, and Wurzbach Road. The crash data for this segment is approximately seven times higher than the statewide average, compared to the San Antonio segment that has a crash rate approximately four times higher than the statewide average. Potential causes for the higher crash rate in Leon Valley could be related to:

- ❖ Different approach to crash reporting threshold
- ❖ Heavier traffic volumes
- ❖ Increased driveway and intersection density
- ❖ Narrower lanes and shoulder widths

4.7 Next Steps

Next steps for the SH 16 (Bandera Road) Project include completing O-D analysis, getting traffic methodology approved by TxDOT, beginning the development of concepts, and continued community outreach, as depicted below.



5. Open Discussion

Throughout the presentation, TWG members asked questions and provided input on the information presented, which is summarized below:



Linda Vela
AAMPO

It is important to note that the Standard 2045 and Maximum 2045 AAMPO Models have limitations and may not completely portray the amount of potential latent demand of the corridor.



Bianca Thorpe
City of San Antonio, TCI

Has the Project Team analyzed the crash data to determine if there are certain factors causing the high amount of crashes, and to see if there are simple or short-term solutions to the safety problem?



Linda Vela
AAMPO

Online crash data in the CRIS database provides information on contributing factors of crashes, including time of day.



Chad Gardiner
Halff Associates

Crash data indicates a lot of crashes during the peak hours, but also during the early morning hours (e.g. 1:00 to 2:00 a.m.).



Linda Vela
AAMPO

The number of head-on crashes is concerning. What were the causes for these crashes?



Chad Gardiner
Halff Associates

The head-on crashes were primarily intersection related and likely involved people turning on the wrong side of the median.



Justin Clark
Pape-Dawson Engineers

Based on the historical traffic volumes presented, traffic has remained relatively constant in recent years. Does the crash data correlate with this and also remain relatively constant, or are there increases or decreases in the five-year period?



Kevin Lipnicky
Halff Associates

For the 2014 to 2018 period, 2017 experienced the highest crash rate. Also, there were many more crashes between 2015 and 2017 than those reported in 2014.



Chad Gardiner
Halff Associates

The Project Team is currently working on a report that will break down and provide detailed analysis of crash data.



Linda Vela
AAMPO

Are cities such as Leon Valley not required to report crash data to the CRIS database?



Clayton Ripps
TxDOT

Cities are not always consistent in reporting data to CRIS.



Chad Gardiner
Halff Associates

We are thankful to the Leon Valley Police Chief who gave us crash data since this wasn't available in CRIS.



Jonathan Bean
TxDOT

The SH 16 (Bandera Road) Project includes a regional analysis of the roadway network. We know that traffic will find a way to their destination. We understand that any improvements that are made on SH 16 (Bandera Road) will have a regional effect.



Chad Gardiner
Halff Associates

As we mentioned, we have noted a strong trend in the region from west to east. As Loop 1604 continues to develop, this traffic pattern may shift.





Linda Vela
AAMPO

Population data indicates an increase in development in the far west part of Bexar County, past Loop 1604. There are some indications that growth may happen even faster than what is being projected. It is important that the SH 16 (Bandera Road) Project consider people that are coming in the future and how they will get into San Antonio.

Also, a challenge for the corridor is that it has been a local road, but we cannot let its geographic location affect the bigger picture. There are only so many ways to accommodate the west-east traffic movement.



Chad Gardiner
Halff Associates

Yes, we agree. As per directed by TxDOT, the project will look at parallel roadways and improvements that are proposed to be in place by 2045; these will be considered ultimate improvements for our design year.

6. Key Takeaways

On April 24, 2019, TxDOT held the second TWG meeting for the SH 16 (Bandera Road) Project. Key takeaways from this meeting included:

Community Outreach

- ❖ Continual community outreach including four pop-up events and online survey
- ❖ Preliminary survey results from the community indicate:
 - 63 percent of surveys were completed by residents of Leon Valley
 - 12 percent of surveys were completed by residents of San Antonio
 - 72 percent of respondents use the corridor for shopping/errands
 - 50 percent of respondents use the corridor to commute to/from home
 - 55 percent of respondents would like improved crosswalks in the corridor
 - 52 percent of respondents would like improved lighting in the corridor
 - Top three priorities for the project are (1) improve congestion, (2) improve safety, and (3) add sidewalks and improve pedestrian crossings

Traffic Data

- ❖ Current traffic counts show approximately 70,000 vpd in the southern portion of the corridor (Wurzbach Road to Seneca Drive).
- ❖ North of Mainland Drive, current traffic counts continually decrease to a low of 29,000 vpd at Old Prue Road, then increase to approximately 39,000 vpd at Loop 1604.



- ❖ Current traffic counts in the northern portion of the project limits (north of Quincy Lee Drive) are abnormally low compared to historical traffic counts and may be related to traffic avoiding the Loop 1604 DLT interchange construction.
- ❖ Various AAMPO model scenarios support potential latent demand along the corridor.

O-D Analysis

- ❖ Regional Analysis:
 - 32 percent of trips that enter or exit the northern project limit are coming from or going to areas north of Loop 1604
 - 42 percent of trips that enter or exit the southern project limit are coming from or going to I-410 east of I-10
- ❖ Corridor Analysis:
 - 65 percent of trips that enter or exit the northern project limit travel to/from points south of Braun Road
 - 55 to 60 percent of trips that enter or exit the southern project limit travel to/from points on Huebner Road and farther north
 - Thru-traffic along the project limits includes approximately 15 percent of southbound traffic and nine percent of northbound traffic
 - 30 percent of cross-street trips move from one side of the corridor to the other (west-east movement)

Crash Data

- ❖ San Antonio segment:
 - Crash rate is four times higher than the statewide average
 - 92 percent of crashes resulted in no fatality or injury or were minor
 - 51 percent of crashes were rear-ends
 - 59 percent of crashes were intersection related
 - Crash “hot spots” at SH 16 (Bandera Road) intersections with Loop 1604 frontage roads, Stonecroft/Quincy Lee Drive, and Braun Road
- ❖ Leon Valley segment:
 - Crash rate is seven times higher than the statewide average
 - Crash “hot spots” at intersections with Huebner Road, I-410 frontage roads, and Wurzbach Road



Subject: SH 16 (Bandera Road) Corridor Study - Technical Work Group Meeting #2 Invitation
Location: TxDOT San Antonio District, 4615 NW Loop 410, San Antonio, TX 78229

Start: Wed 4/24/2019 3:00 PM
End: Wed 4/24/2019 4:30 PM

Recurrence: (none)

Meeting Status: Accepted

Organizer: Gardiner, Chad

Categories: Bandera

The Texas Department of Transportation (TxDOT) San Antonio District would like to reconvene a meeting with the Technical Work Group (TWG) for TxDOT's SH 16 (Bandera Road) Corridor Study. TxDOT is requesting you or a representative from your organization participate in the 2nd TWG meeting. The intent of this meeting will be to provide an update on recent project analysis of existing conditions and facilitate open discussion of the study. The 2nd TWG meeting for the project is scheduled for:

Wednesday, April 24, 2019
3:00 p.m. to 4:30 p.m.
TxDOT San Antonio District
4615 NW Loop 410
San Antonio, TX 78229

Please respond to this email/meeting request by Wednesday, April 17th to let us know if you or your representative can attend. Your active participation will greatly contribute to the successful completion of this project. If you would like additional information regarding the project or this meeting, please contact Fernando Flores, P.E. at (210) 615-5869 (TxDOT Project Manager).

Thank you

Name	Attendance	Response	
Gardiner, Chad	Meeting Organizer	None	
Jackie Lopez	Required Attendee	None	
rudy.nino@sanantonio.gov	Required Attendee	None	None
Arguello,Pete	Required Attendee	None	
Bianca.Thorpe@sanantonio.gov	Required Attendee	None	None
Joseph Arteritano	Required Attendee	None	
Linda Alvarado-Vela	Required Attendee	None	
jdevine@aacog.com	Required Attendee	None	
leroy.alloway@viainfo.net	Required Attendee	None	None
Fernando Flores	Required Attendee	None	
dwegmann@bexar.org	Required Attendee	None	
m.moritz@leonvalleytexas.gov	Required Attendee	None	None
wloudon@emailatg.com	Required Attendee	None	None
chris.ryerson@sanantonio.gov	Required Attendee	None	None
lcamarillo@pozcam.com	Required Attendee	None	None
Bucchin, Matt	Required Attendee	None	
imartinez@alamoareampo.org	Required Attendee	None	None
Lipnicky, Kevin	Required Attendee	None	
rgreen@bexar.org	Required Attendee	None	
Justin Clark @PD	Required Attendee	None	
clayton.ripps@txdot.gov	Required Attendee	None	None
jonathan.bean@txdot.gov	Required Attendee	None	None
b.melland@leonvalleytexas.gov	Required Attendee	None	None
Michael Wagoner	Optional Attendee	Noner	



SIGN-IN SHEET

SH 16 (Bandera Road) Project
 Technical Work Group Meeting #2
 April 24, 2019
 3:00 – 4:30 p.m.
 TxDOT San Antonio District

FIRST NAME	LAST NAME	ORGANIZATION	EMAIL	INITIALS
James	Devine	Alamo Area Council of Governments	jdevine@aacog.com	
Sid	Martinez	Alamo Area Metropolitan Planning Organization	imartinez@alamoareampo.org	
Linda	Vela	Alamo Area Metropolitan Planning Organization	alvarado-vela@alamoareampo.org	LV
Renee	Green	Alamo Regional Mobility Authority / Bexar County	rgreen@bexar.org	
Bill	Loudon	Alliance Transportation Group, Inc.	wloudon@emailatg.com	WLL
Michael	Wagoner	Alliance Transportation Group, Inc.	mwagoner@emailatg.com	MW
David	Wegmann	Bexar County	dwegmann@bexar.org	DRW
Brandon	Melland	City of Leon Valley	b.melland@leonvalleytexas.gov	BM
Melinda	Moritz	City of Leon Valley	m.moritz@leonvalleytexas.gov	
Anthony	Chukwudolue	City of San Antonio	Anthony.chukwudolue@sanantonio.gov	





SIGN-IN SHEET

SH 16 (Bandera Road) Project
 Technical Work Group Meeting #2
 April 24, 2019
 3:00 – 4:30 p.m.
 TxDOT San Antonio District

FIRST NAME	LAST NAME	ORGANIZATION	EMAIL	INITIALS
Joshua	Jaeschke	City of San Antonio	joshua.a.jaeschke@sanantonio.gov	
Bianca	Maldonado	City of San Antonio	bianca.maldonado@sanantonio.gov	BMM
Rudy	Nino	City of San Antonio	rudy.nino@sanantonio.gov	RNS
Chris	Ryerson	City of San Antonio	chris.ryerson@sanantonio.gov	
Bianca	Thorpe	City of San Antonio	Bianca.Thorpe@sanantonio.gov	BT
Keith	Dewey	Halff Associates, Inc.	kdewey@Halff.com	
Chad	Gardiner	Halff Associates, Inc.	CGardiner@Halff.com	CG
Kevin	Lipnicky	Halff Associates, Inc.	kLipnicky@Halff.com	KL
Joseph	Arteritano	LNV, Inc.	jarteritano@lvinc.com	
Rafael	Salazar	Northside ISD		
Justin	Clark	Pape-Dawson Engineers	jclark@pape-dawson.com	JCL
Lena	Camarillo	Poznecki-Camarillo, Inc.	lcamarillo@pozcam.com	

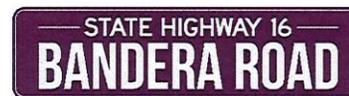




SIGN-IN SHEET

SH 16 (Bandera Road) Project
 Technical Work Group Meeting #2
 April 24, 2019
 3:00 – 4:30 p.m.
 TxDOT San Antonio District

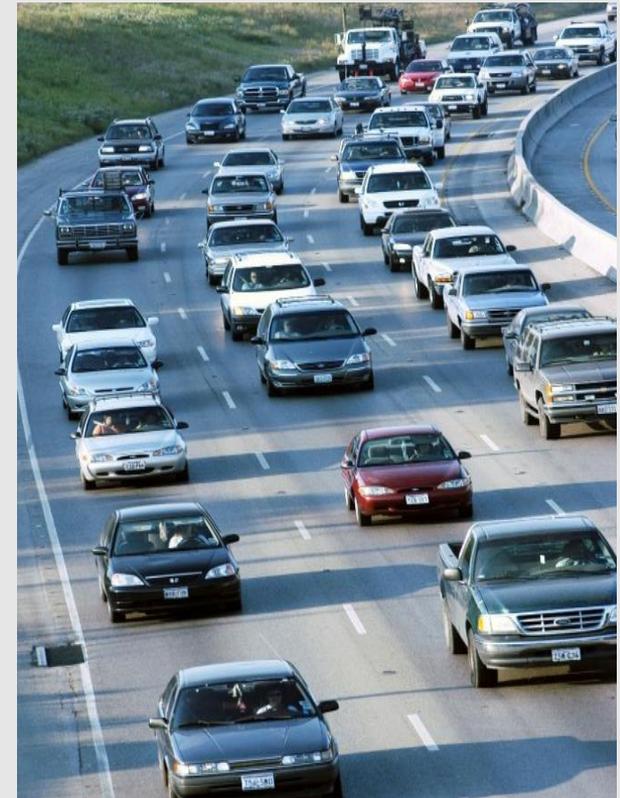
FIRST NAME	LAST NAME	ORGANIZATION	EMAIL	INITIALS
Jackie	Lopez	Poznecki-Camarillo, Inc.	jlopez@pozcam.com	
Jonathan	Bean	TxDOT	jonathan.bean@txdot.gov	
Fernando	Flores	TxDOT	fernando.flores@txdot.gov	
Clayton	Ripps	TxDOT	clayton.rippe@txdot.gov	
Leroy	Alloway	VIA Metropolitan Transit	leroy.alloway@viainfo.net	
Pete	Arguello	VIA Metropolitan Transit	pete.arguello@viainfo.net	
BYRON	SANDERFER	LNV, INC.	BSANDERFER@LNVINC.COM	BGS
MATT	Bucchin	HALFF	MBUCCHIN@HALFF.COM	





SH 16 (BANDERA ROAD) I-410 TO LOOP 1604

Technical Work Group Meeting #2



Agenda

1	Introductions	3
2	TWG Meeting #1 Summary	4-6
3	Community Outreach Summary	7-10
4	Traffic Data	11-14
5	Origin & Destination (O-D) Study	15-20
6	Crash Data	21-24
7	Next Steps	25

Introductions

- Technical Work Group
- TxDOT San Antonio District
- Consultant Team



TWG Meeting #1 Summary

- Occurred on February 12, 2019
- 13 TWG members from 6 organizations attended
- Key Takeaways
 - Goals/Priorities:
 - Understand traffic patterns of the corridor
 - Balance local access vs. thru-traffic needs
 - Facilitate Leon Valley as a destination
 - Incorporate multimodal accommodations
 - Consider context sensitive solutions
 - Key Community Challenges
 - Communication of project data/analysis
 - Buy-in on a comprehensive solution
 - Communication of trade-offs with adjacent businesses and the community at large

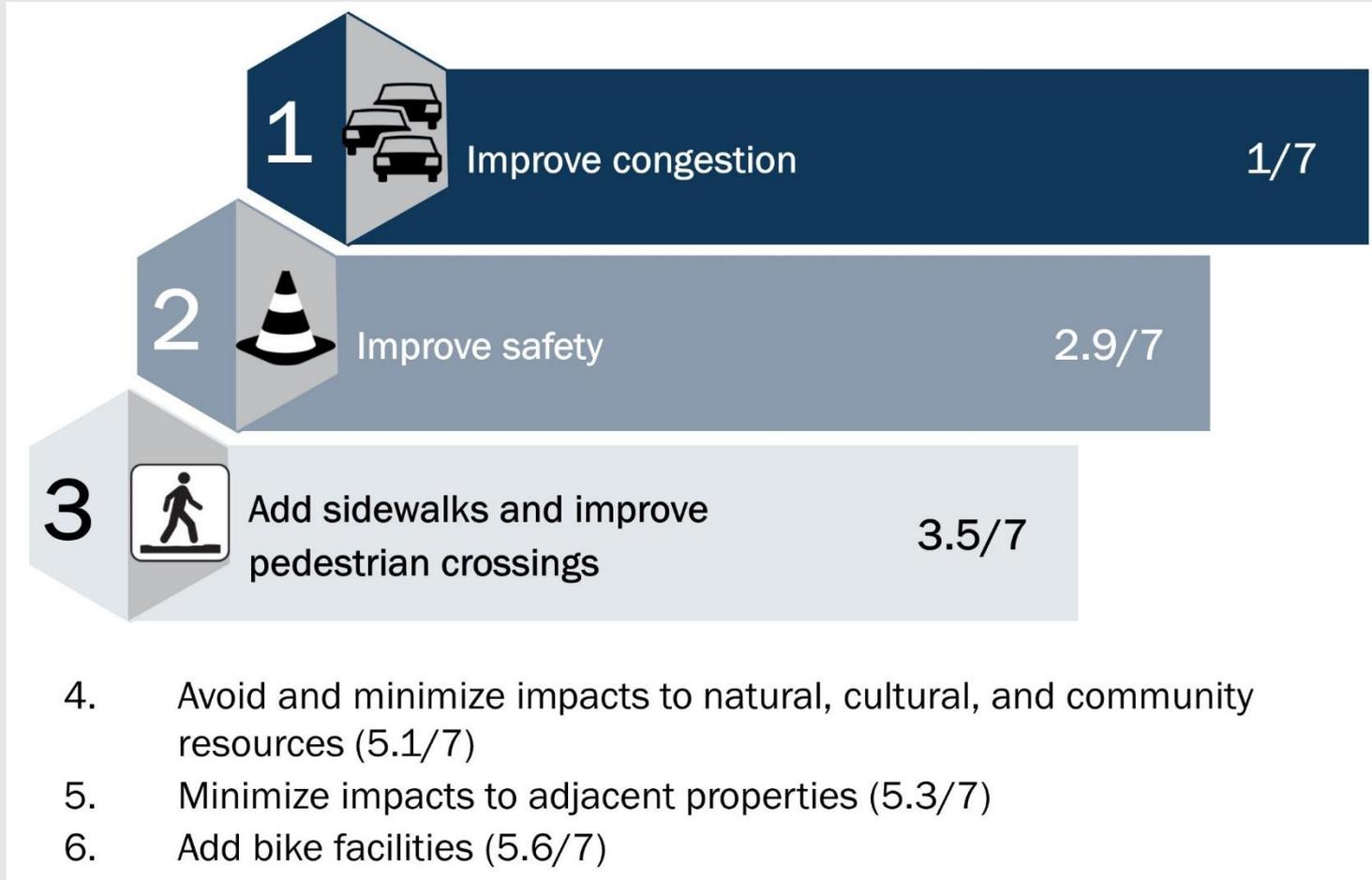
Participants



Other Organizations Invited

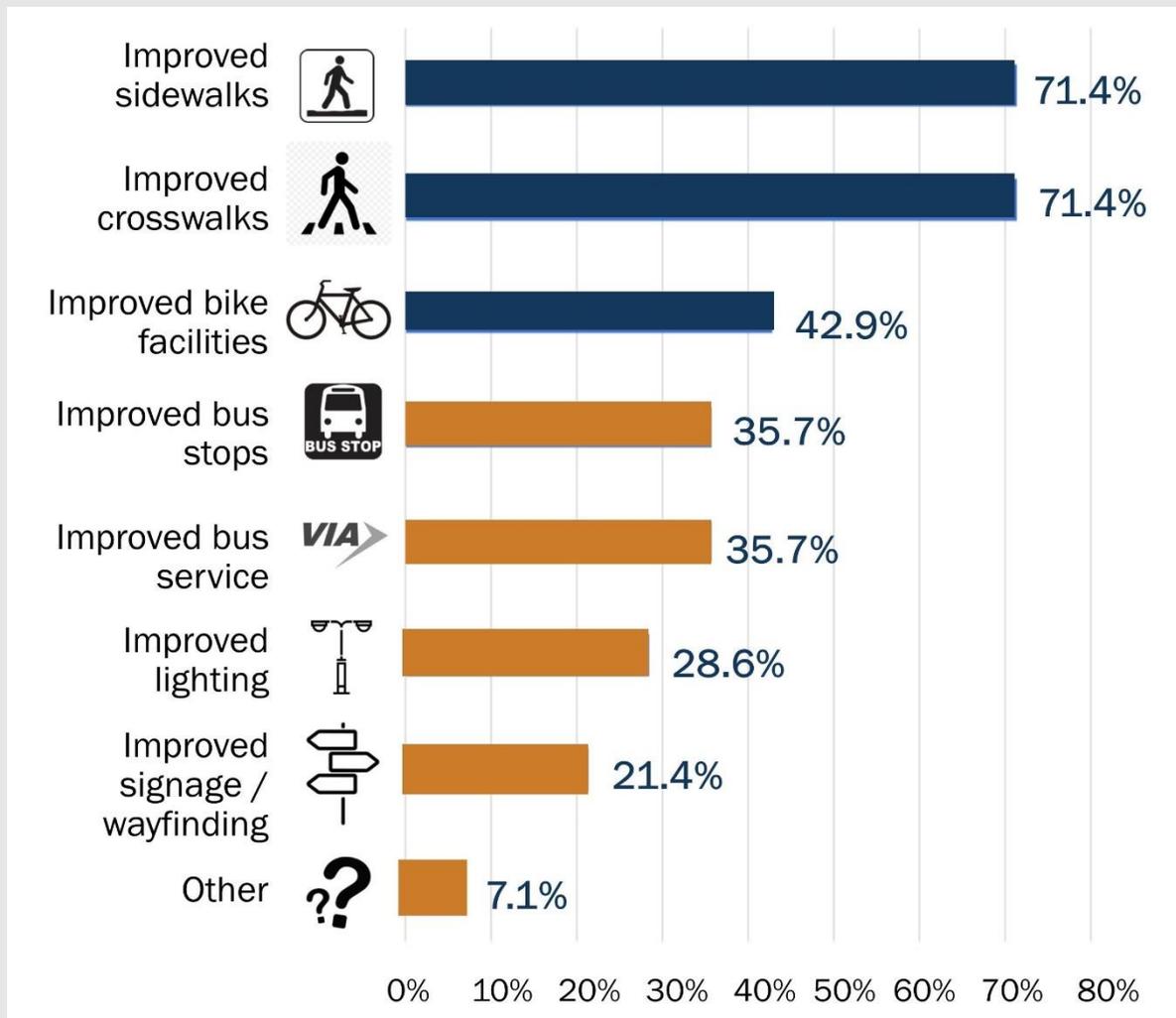


Priorities



Note: Ranked on a 1 to 7 scale, with 1 representing the most important priority and 7 representing the least important priority.

Corridor Design Needs



“Pop-Up” Event Summary

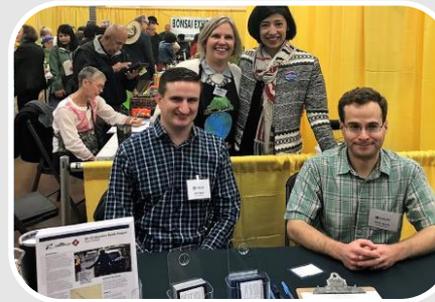
- 4 events (February – March)
- 111 completed surveys
- 29 mailing list sign-up requests
- 34 mailing list requests via survey



Movies in the Park
(February 15, 2019)



C.R.Y. San Antonio
Run/Walk for Child Rights
(February 24, 2019)



Earthwise Living Day
(March 2, 2019)



SH 16 @ Loop 1604
Displaced Left Turn (DLT)
Informational Meeting
(March 5, 2019)

Community Survey #1 – Status Summary

- Survey
 - Opened February 15, 2019
 - Planned Closing May 30, 2019
- Availability
 - English: <https://www.surveymonkey.com/r/QCRLNSH>
 - Spanish: <https://www.surveymonkey.com/r/MRXS8XG>
 - Community outreach events
- 362 surveys through April 15, 2019
 - 63% reside in Leon Valley
 - 26% reside in San Antonio
 - 12% Council District #7
 - 6% Council District #8

SH 16 (Bandera Road) Survey February – March 2019

The Texas Department of Transportation (TxDOT) is studying potential improvements along SH 16 (Bandera Road) between I-410 and Loop 1604, within the cities of Leon Valley and San Antonio. SH 16 (Bandera Road) between I-410 and Loop 1604 is the eighth most congested roadway in the region and one of the top 100 most congested roads in Texas (Texas A&M Transportation Institute, 2018).

The SH 16 (Bandera Road) Project involves the collection and analysis of traffic data, the consideration of potential improvements including bicycle and pedestrian accommodations, and the preparation of various environmental studies. TxDOT is working closely with officials from Leon Valley, San Antonio, and regional and state representatives to gather data and identify community values and concerns.

Input from community members is an important part of the project. Please take a moment to tell us what you think and help us better understand SH 16 (Bandera road) issues that are important to you. We appreciate your input!

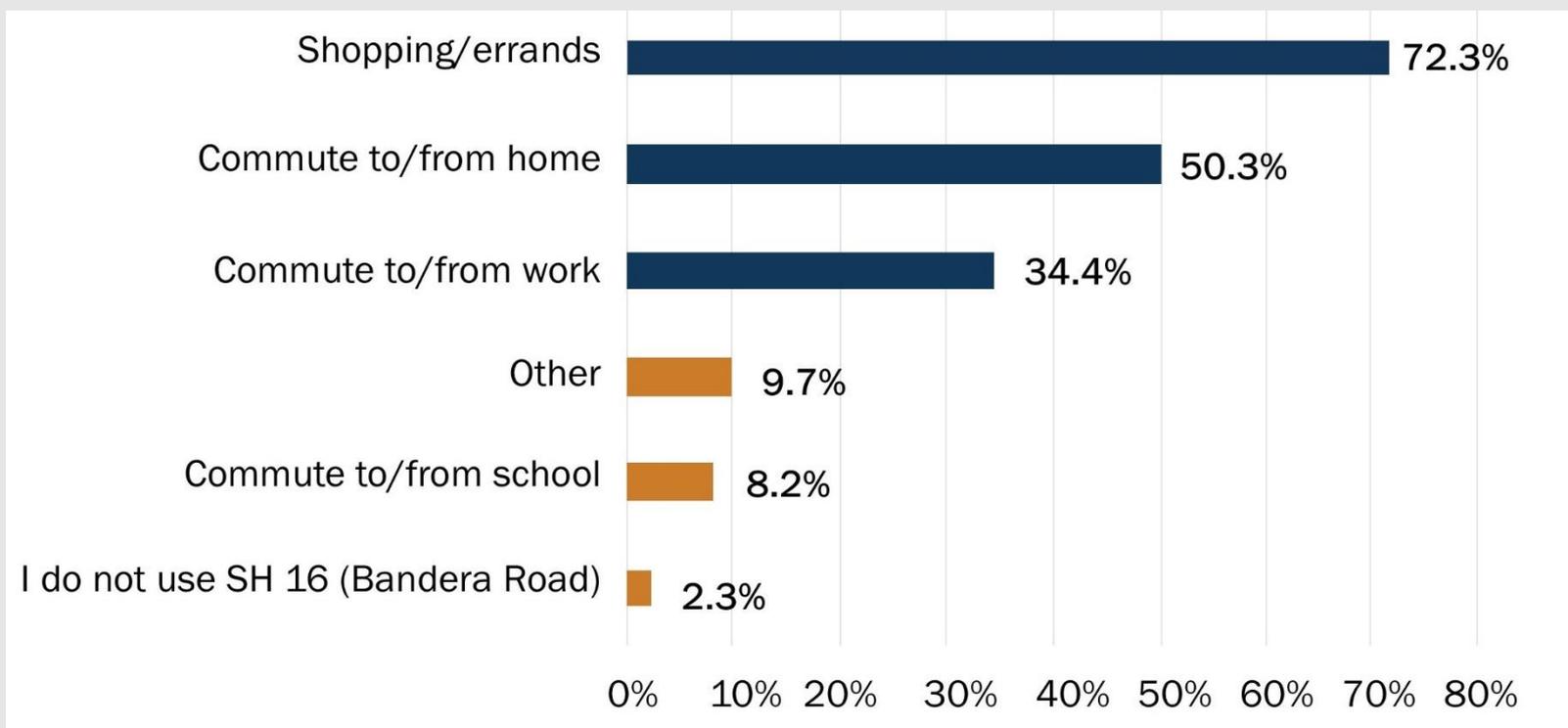
1. Please rank your priorities for the SH 16 (Bandera Road) Project, from most important to least important. (1 = most important; 7 = least important)

- Improve congestion
- Improve safety
- Improve drainage
- Add sidewalks and improve pedestrian crossings
- Add bike facilities
- Minimize impacts to adjacent properties
- Avoid and minimize impacts to natural, cultural, and community resources

Other priorities (please describe) _____

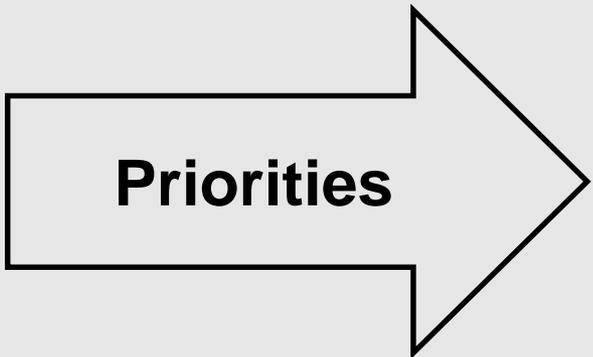


Primary Reason for Using SH 16 (Bandera Road)

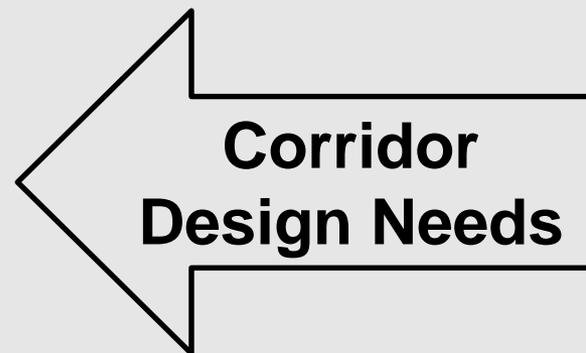
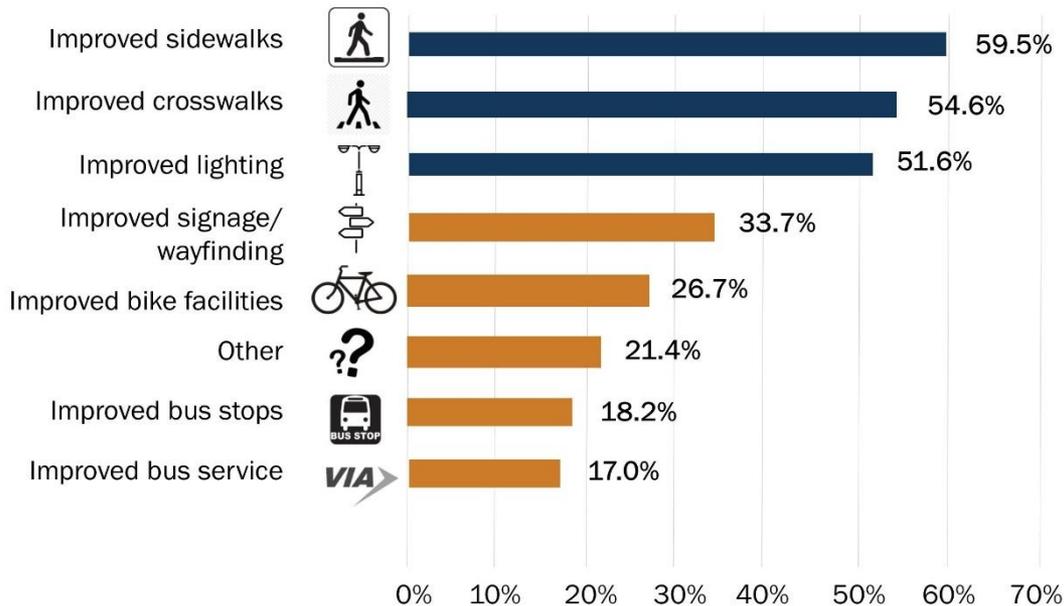


Survey allows for multiple reasons to be selected

Community Survey #1 – Status Summary

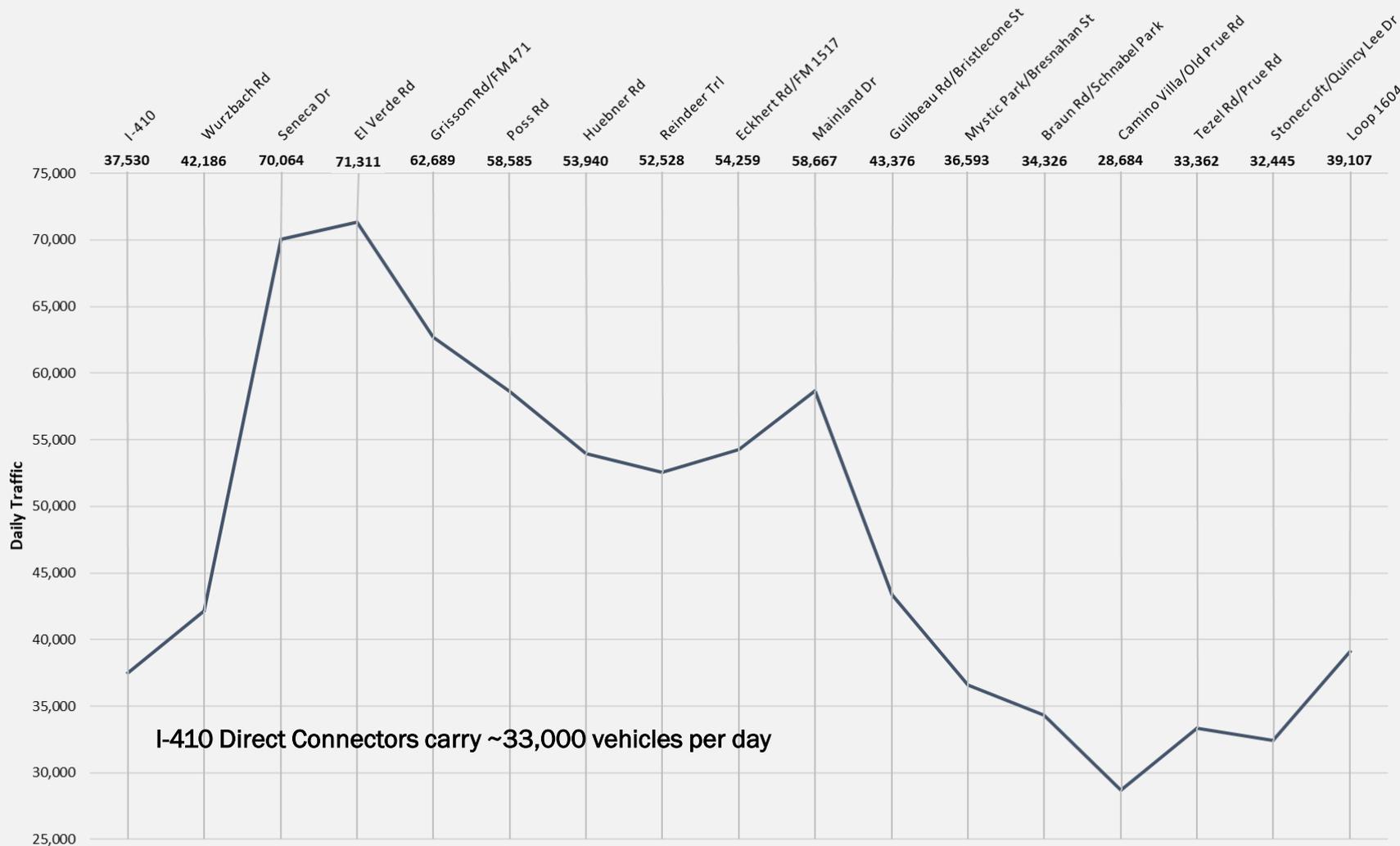


4. Avoid and minimize impacts to natural, cultural, and community resources (4.5/7)
5. Improve drainage (4.7/7)
6. Minimize impacts to adjacent properties (4.8/7)
7. Add bike facilities (5.6/7)



SH 16 (Bandera Road) Current Traffic Counts

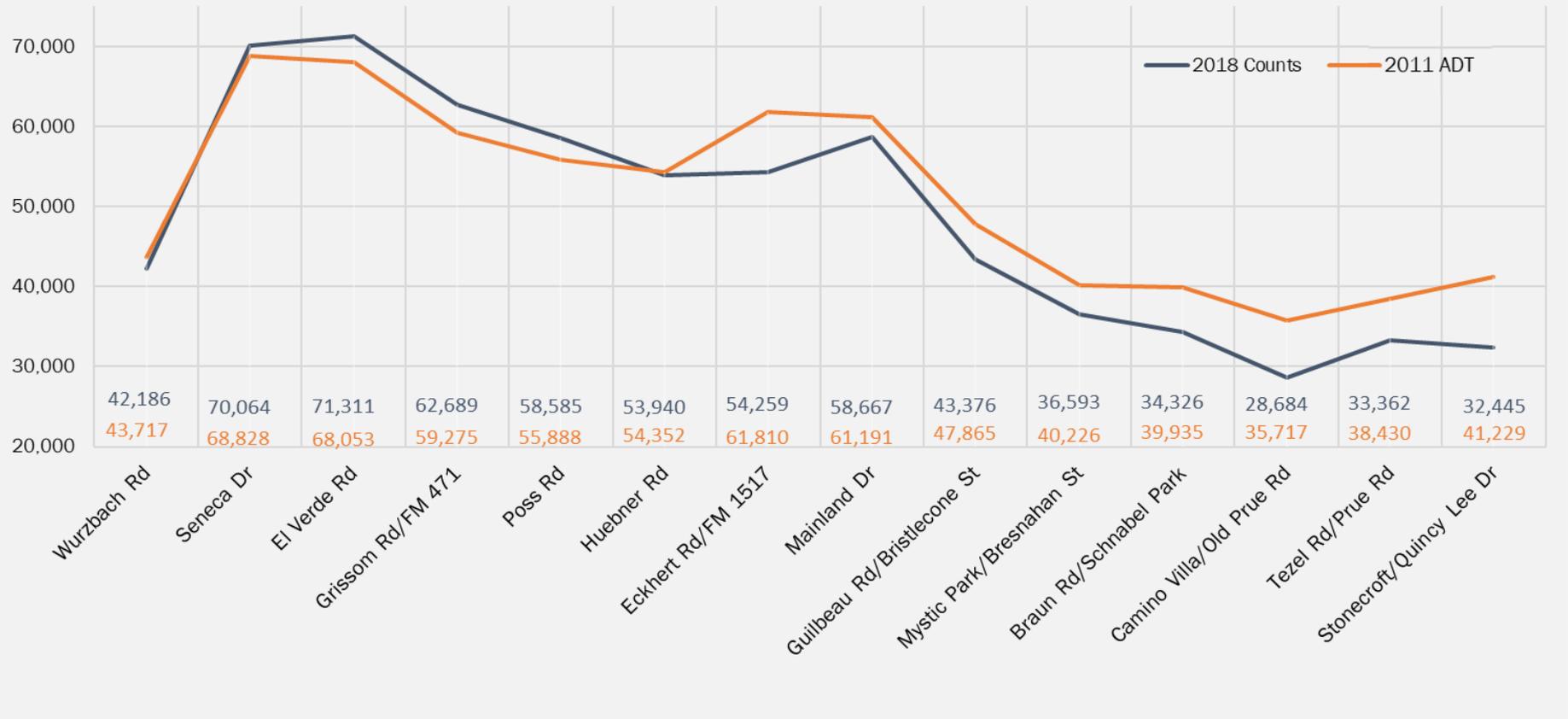
SH 16 (BANDERA ROAD) - DAILY TRAFFIC FLOW SOUTH TO NORTH



Note: Daily traffic volumes shown are raw counts based on the December and January data collection.

SH 16 (Bandera Road) Current Traffic vs. Historic Traffic

SH 16 (BANDERA ROAD) TRAFFIC VOLUMES



SH 16 (Bandera Road) Current Traffic vs. Historic Traffic

Traffic Volume Comparison

Year	N of Grissom Rd	S of Eckhert Rd	N of Braun Rd	N of Quincy Lee Dr
	Location ID: 15H50	Location ID: 15H51	Location ID: 15H53	Location ID: 15H37
2000 ¹	48,000	47,000	26,000	27,000
2005 ¹	57,640	51,080	28,270	33,320
2010 ¹	54,000	45,000	29,000	35,000
2011 ²	55,467	52,843	38,808	39,153
2015 ¹	56,911	49,407	32,898	40,681
2018 ³	58,689	48,400	30,633	30,735

Notes:

1. AADT from TxDOT Statewide Traffic Analysis and Reporting System (STARS II)
2. ADT from 2011 TxDOT Study
3. 2018 traffic counts from Current Study

- Historical traffic data depicts “roller coaster” growth pattern over past 20 years
- Current counts in the northern segment abnormally low (likely due to construction)
- Will adjust northern counts based on historical data prior to developing projections

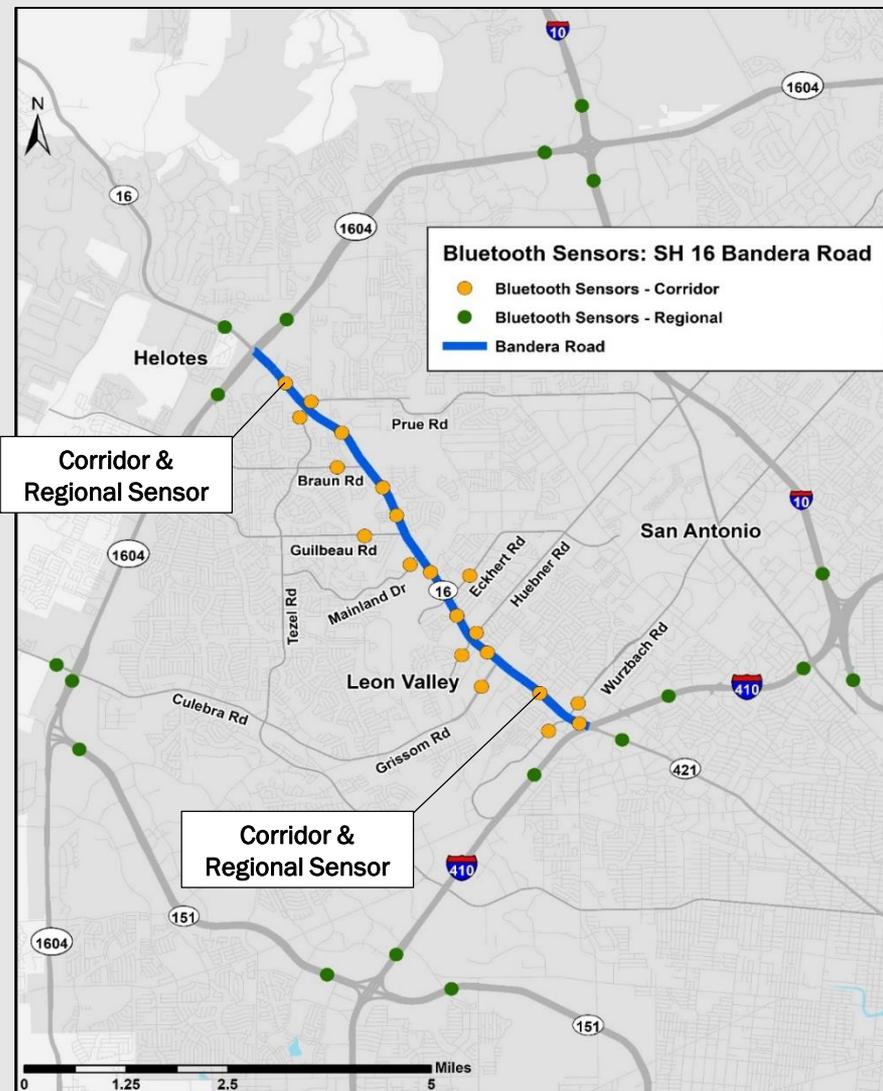
AAMPO Model – Potential Latent Demand

SH 16 (Bandera Road) Location	2015 AAMPO Model Volume	Standard 2045 AAMPO Model Volume	Maximum 2045 AAMPO Model Volume	Increased 2045 Volume Maximum vs. Standard Model
Between I-410 & Wurzbach (Including DCs)	87,272	95,556	108,463	12,907
Between Eckhert Rd & Mainland Dr	71,146	91,377	106,552	15,175
Between Braun Rd & Camino Villa	31,134	37,851	53,420	15,569
Between Quincy Lee Dr & LP 1604	44,390	68,330	81,424	13,094

- The Standard 2045 AAMPO volumes reflect the SH 16 (Bandera Road) no-build alternative
- The Maximum 2045 AAMPO volumes reflect 2 added lanes/direction
 - Concept to test latent demand along the corridor (modified by design team)
- Traffic volumes represent average daily traffic

Bluetooth Origin & Destination (O-D) Data Study

- Corridor O-D analysis
 - 20 Bluetooth readers
 - Captured ~8% of total traffic
- Regional O-D analysis
 - 20 Bluetooth readers
 - Captured ~6% of total traffic
- Assumptions
 - Max travel time of one hour
 - “Cleaned” data to develop matrix of true O-D trips
- Draft Bluetooth O-D report to be submitted to TxDOT by end of April



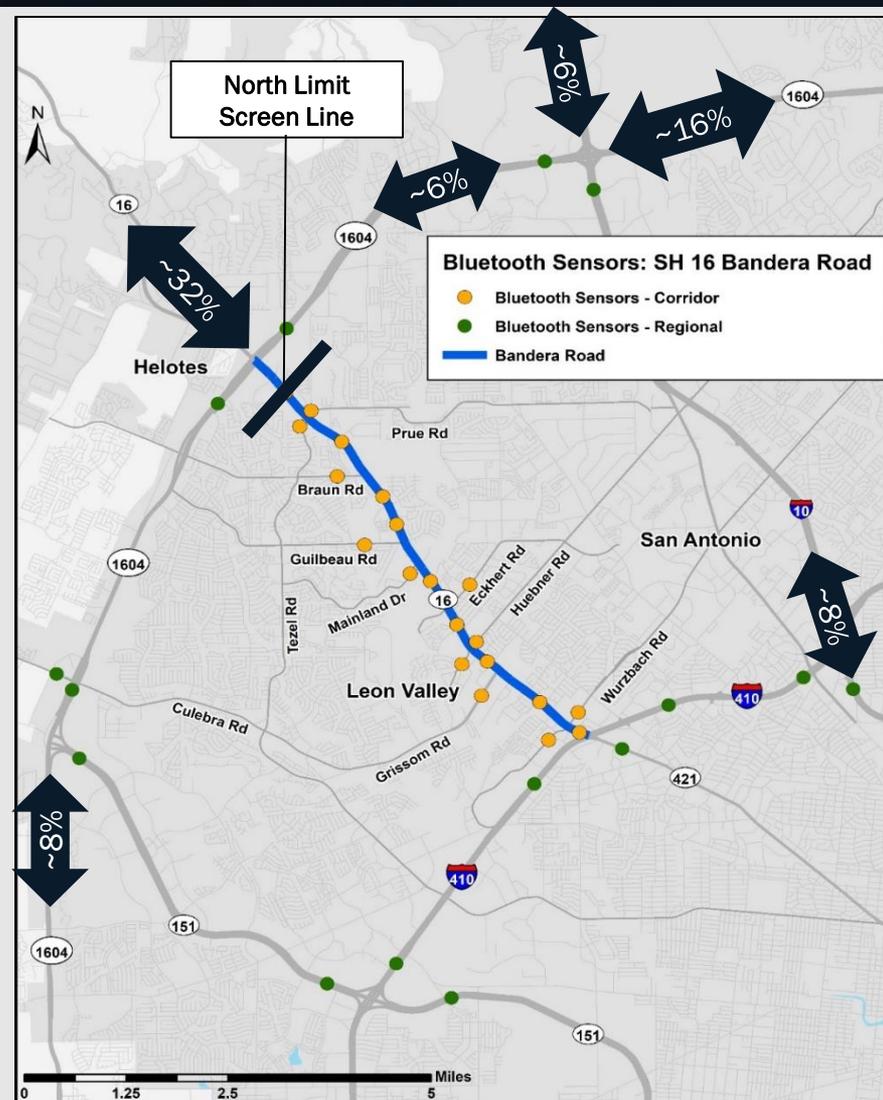
PRELIMINARY & SUBJECT TO CHANGE

Origin & Destination (O-D) Study – Regional Analysis

Regional Daily Trips Entering or Exiting SH 16 North Project Limit*

- ~6% to/from I-10 north of LP 1604
- ~8% to/from I-10 south of LP 1604
- ~6% to/from LP 1604 between SH 16 and I-10
- ~8% to/from LP 1604 south of SH 151
- ~16% to/from LP 1604 east of I-10
- ~32% to/from SH 16 north of LP 1604

*Regional trip distributions < 5% not shown



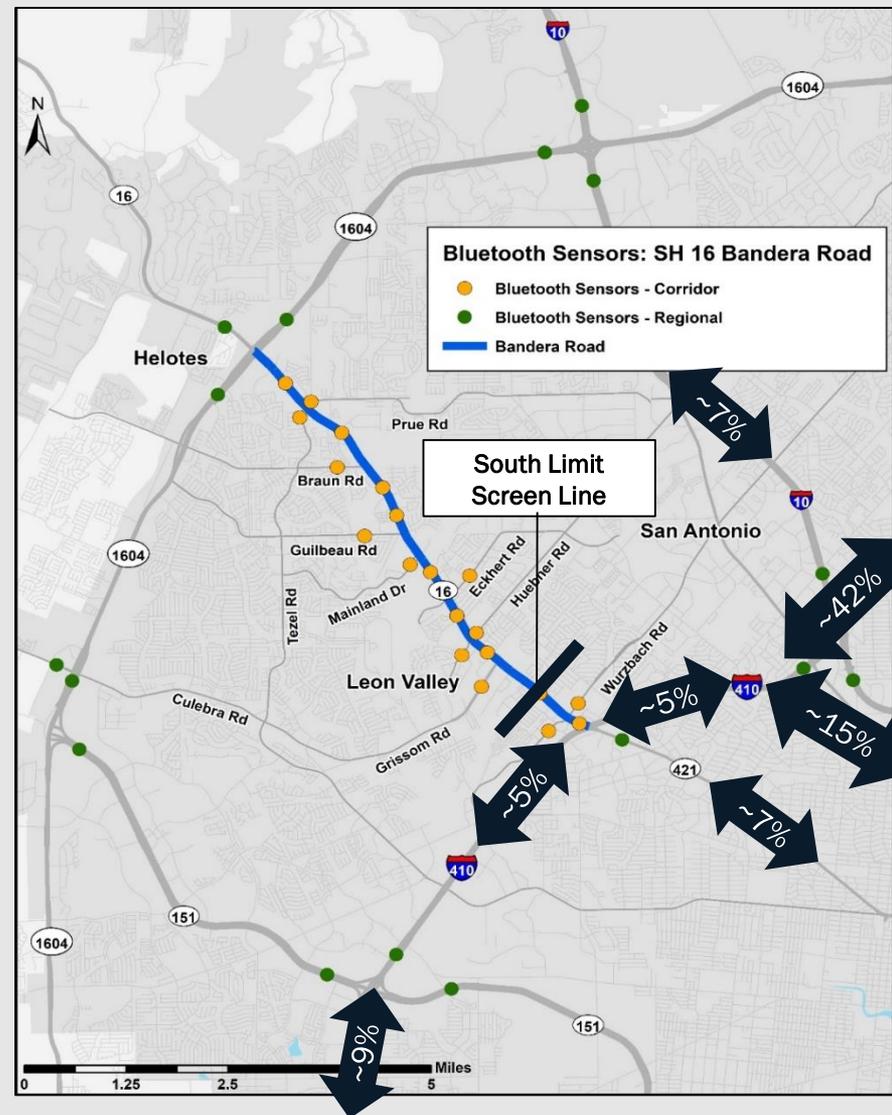
PRELIMINARY & SUBJECT TO CHANGE

Origin & Destination (O-D) Study – Regional Analysis

Regional Daily Trips Entering or Exiting SH 16 South Project Limit*

- ~7% to/from Bandera Road south of I-410
- ~7% to/from I-10 north of I-410
- ~15% to/from I-10 south of I-410
- ~5% to/from I-410 between SH 16 and I-10
- ~5% to/from I-410 between SH 16 and SH 151
- ~9% to/from I-410 west of SH 151
- ~42% to/from I-410 east of I-10

*Regional trip distributions < 5% not shown



PRELIMINARY & SUBJECT TO CHANGE

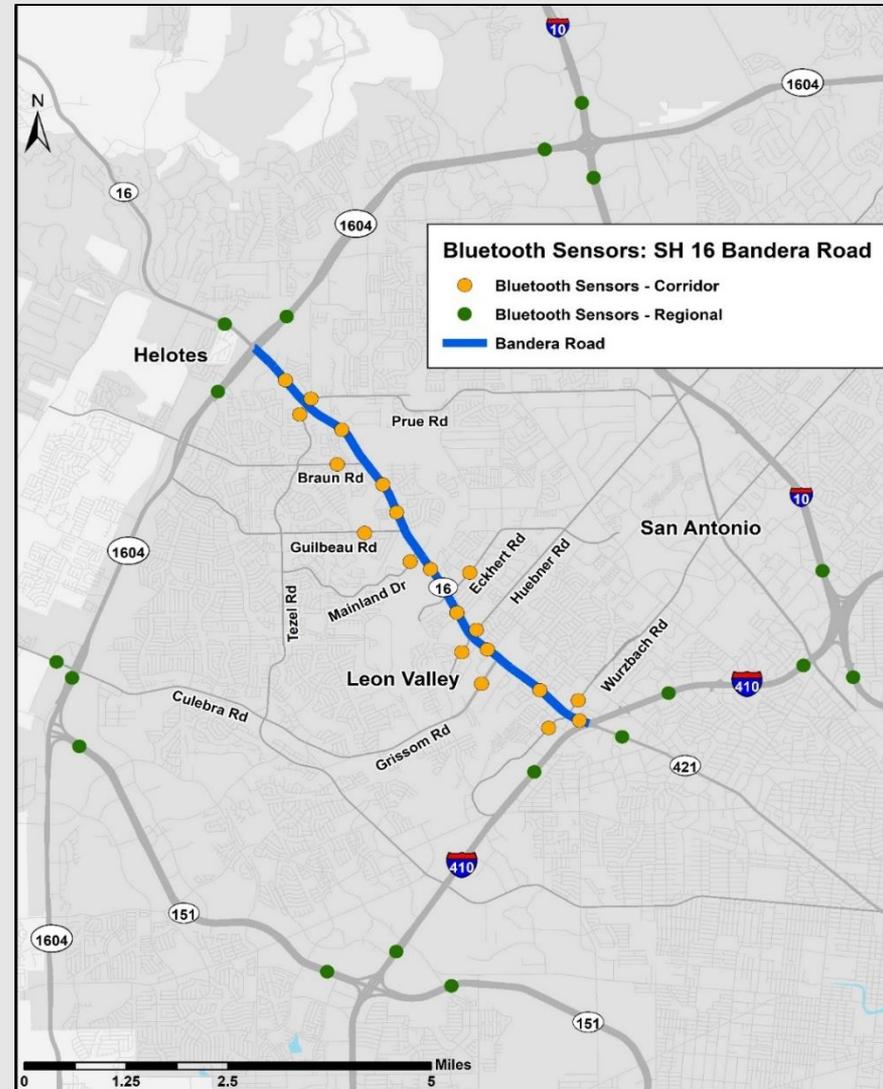
Origin & Destination (O-D) Study – Corridor Analysis

SH 16 (Bandera Road) – North Limit Between Prue Road and Loop 1604

- ~65% of daily trips travel to/from points south of Braun Road
- ~15% of daily trips are through trips that travel from Loop 1604 to I-410

SH 16 (Bandera Road) – South Limit Between I-410 and Wurzbach Road

- ~55% to 60% of daily trips travel to/from locations on Huebner Road and beyond (north)
- ~9% of daily trips are through trips that travel from I-410 to Loop 1604

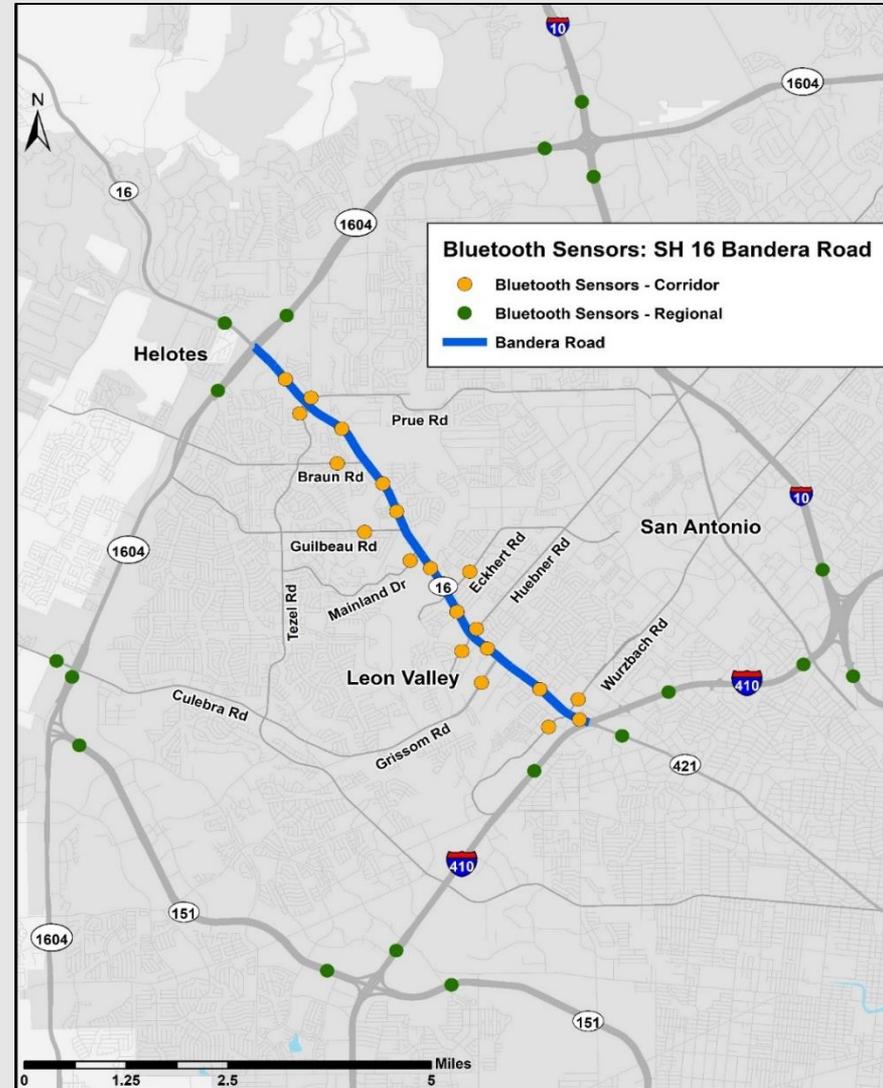


PRELIMINARY & SUBJECT TO CHANGE

Origin & Destination (O-D) Study – Corridor Analysis

Side Street Major Movements

- ~50% of daily trips on Grissom Road (west of SH 16) travel to/from I-410 and points south
 - Majority access I-410 DC ramps
- ~25% of daily trips at Mainland Drive, Guilbeau, and Braun Road travel to/from I-410 and points south
- ~50% of daily trips at Prue Road travel to/from Loop 1604 and points north
- O-D indicates that Wurzbach Road may be utilized as a bypass alternative to I-410

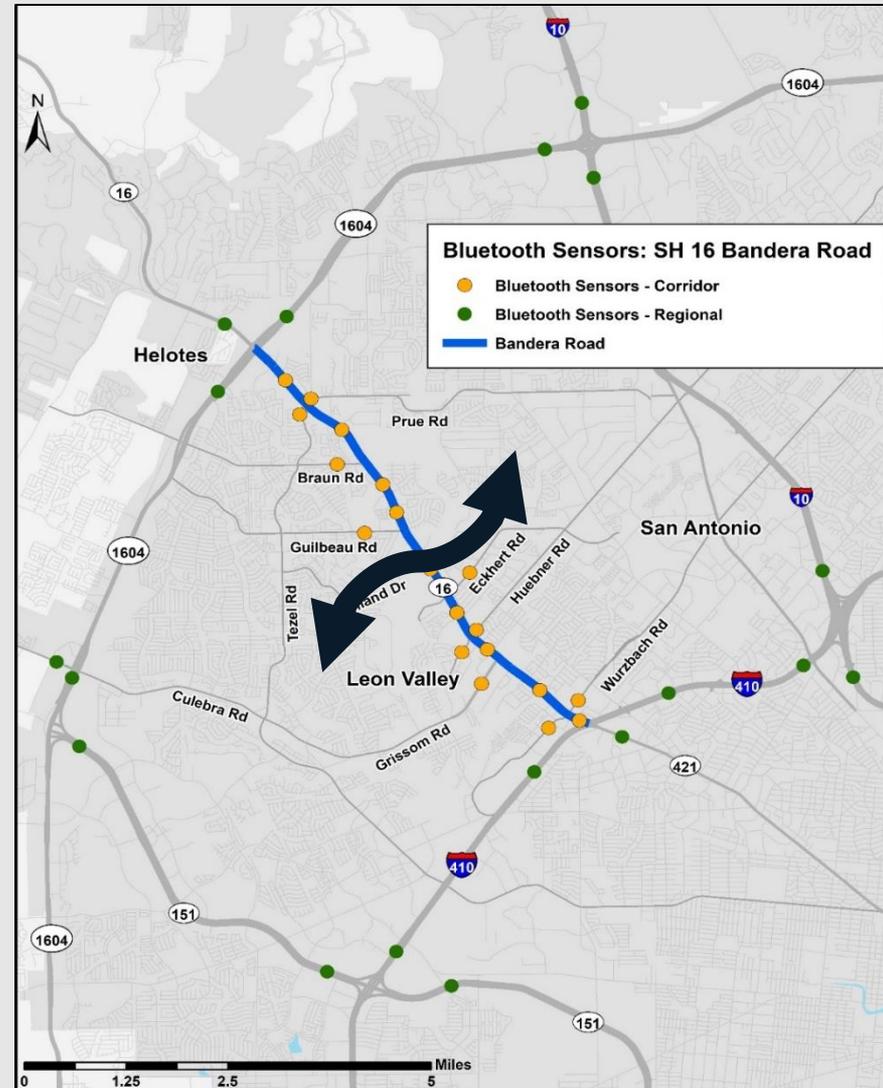


PRELIMINARY & SUBJECT TO CHANGE

Origin & Destination (O-D) Study – Corridor Analysis

Side Street Major Movements Across SH 16

- Typically, ~1/3 of the cross street traffic moves from one side of SH 16 to the other
- This includes “dog-leg” movements that utilize short trips on SH 16
 - Ex. ~30% of daily trips originating at Mainland Drive and Guilbeau Road (west of SH 16) have a destination along Eckhert Road (east of SH 16)



PRELIMINARY & SUBJECT TO CHANGE

Crash Data Analysis

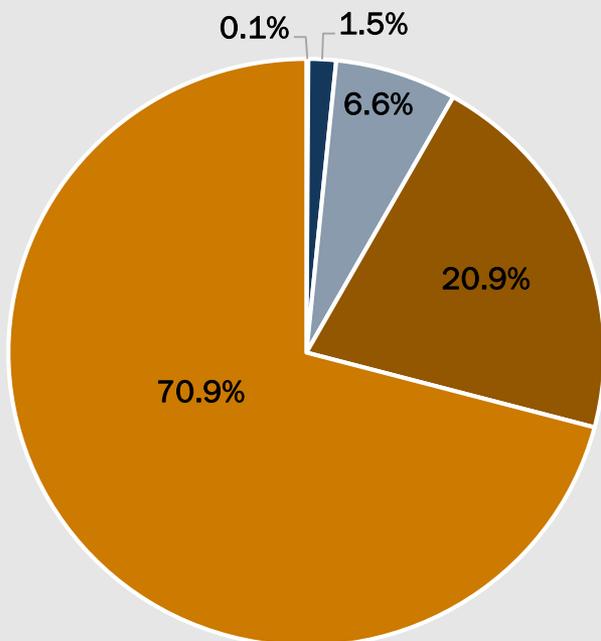
- Source of crash data:
 - San Antonio: Crash Records Information System (CRIS) database
 - Leon Valley: Provided by the Leon Valley Police Department
 - Leon Valley historically has not uploaded all crash data to CRIS database
 - Records indicate crash location only

- 5 year period analyzed (from 2014 to 2018)

- A total of 5,842 crashes recorded within project limits over 5 year period
 - Leon Valley segment (2.5 miles): 3,693 crashes (~63%)
 - San Antonio segment (4 miles): 2,149 crashes (~37%)

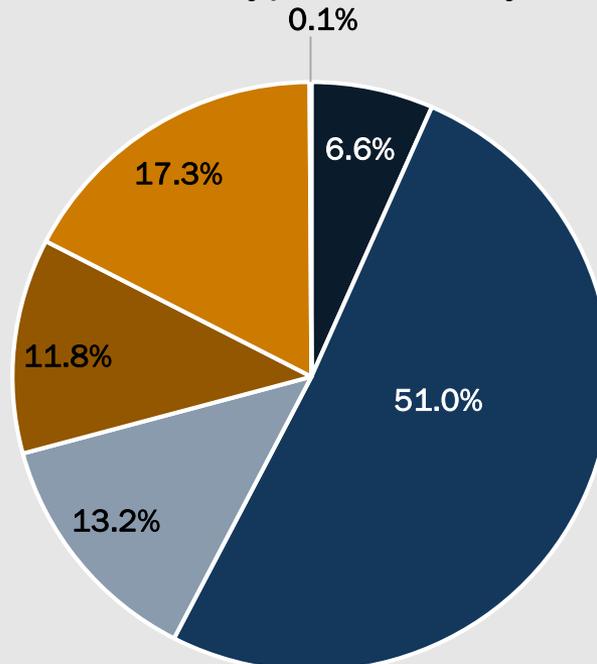
Crash Data Analysis – San Antonio Segment

Crash Severity Summary



- Fatal (0.1%)
- Severe
- Moderate
- Minor
- No Fatality/Injury

Crash Type Summary



- Single Vehicle
- 2+ Vehicles (Rear End)
- 2+ Vehicles (Angle)
- 2+ Vehicles (Sideswipe)
- 2+ Vehicles (Head On)
- Not Reported (0.1%)

Crash Data Analysis – San Antonio Segment

- **59% of total crashes were logged as intersection related**
 - High concentration of crashes observed at intersections with:
 - Loop 1604 frontage roads
 - Stonecroft
 - Braun Road
- **10% of total crashes were recorded as driveway access related**
- **Potential effects of congestion on crash data include:**
 - ~51% of crashes were classified as “rear end”
 - Possibly related to unexpected queue spillback and sudden decrease in travel speeds
 - ~92% of accidents resulted in no injury or minor injuries
 - Potentially related to slower speeds during congestion
- **Crash rate ~4 times higher than statewide average**

Crash Data Analysis – Leon Valley Segment

- Method of recording crash data varies from San Antonio and CRIS database
- High concentration of crashes observed at intersections with:
 - Huebner Road
 - I-410 frontage roads
 - Wurzbach Road
- Crash rate ~7 times higher than statewide average
- Potential causes for higher crash rate in Leon Valley vs. San Antonio segment
 - Different approach to crash reporting threshold
 - Heavier traffic volume
 - Increased driveway and intersection density
 - Narrower lanes and shoulder widths

Next Steps

- **Analysis**

- Bluetooth O-D Study Completion: May 2019
- Traffic Methodology Approval: May 2019
- Begin Development of Concepts: Summer 2019

- **Community Outreach**

- San Antonio Community Meeting: April 29th
- Planning Team Meeting #1: May 20th
- Public Meeting: Summer 2019
 - Present Existing Conditions Analysis
 - Feedback on Corridor Issues & Potential Concepts
- 2nd Round of Pop-Up Events: Summer 2019



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SH 16 (BANDERA ROAD) I-410 TO LOOP 1604

Technical Work Group Meeting #2



April 24, 2019

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Agenda

1	Introductions	3
2	TWG Meeting #1 Summary	4-6
3	Community Outreach Summary	7-10
4	Traffic Data	11-14
5	Origin & Destination (O-D) Study	15-20
6	Crash Data	21-24
7	Next Steps	25

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Introductions

- Technical Work Group
- TxDOT San Antonio District
- Consultant Team



SH 16 (Bandera Road) Project

April 24, 2019

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TWG Meeting #1 Summary

- Occurred on February 12, 2019
- 13 TWG members from 6 organizations attended
- Key Takeaways
 - Goals/Priorities:
 - Understand traffic patterns of the corridor
 - Balance local access vs. thru-traffic needs
 - Facilitate Leon Valley as a destination
 - Incorporate multimodal accommodations
 - Consider context sensitive solutions
 - Key Community Challenges
 - Communication of project data/analysis
 - Buy-in on a comprehensive solution
 - Communication of trade-offs with adjacent businesses and the community at large

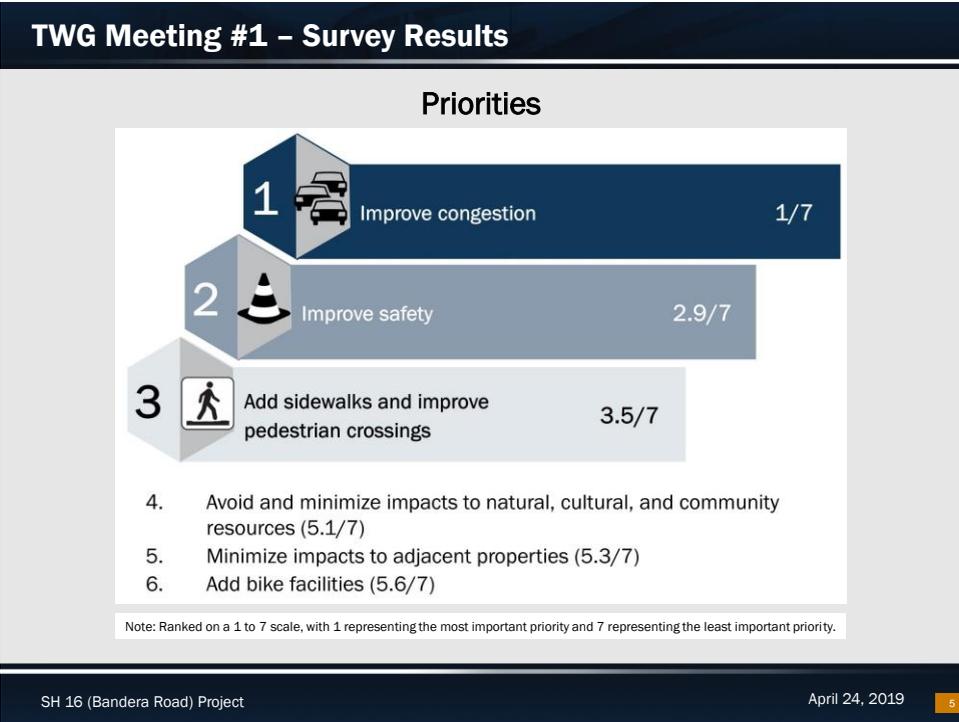


SH 16 (Bandera Road) Project

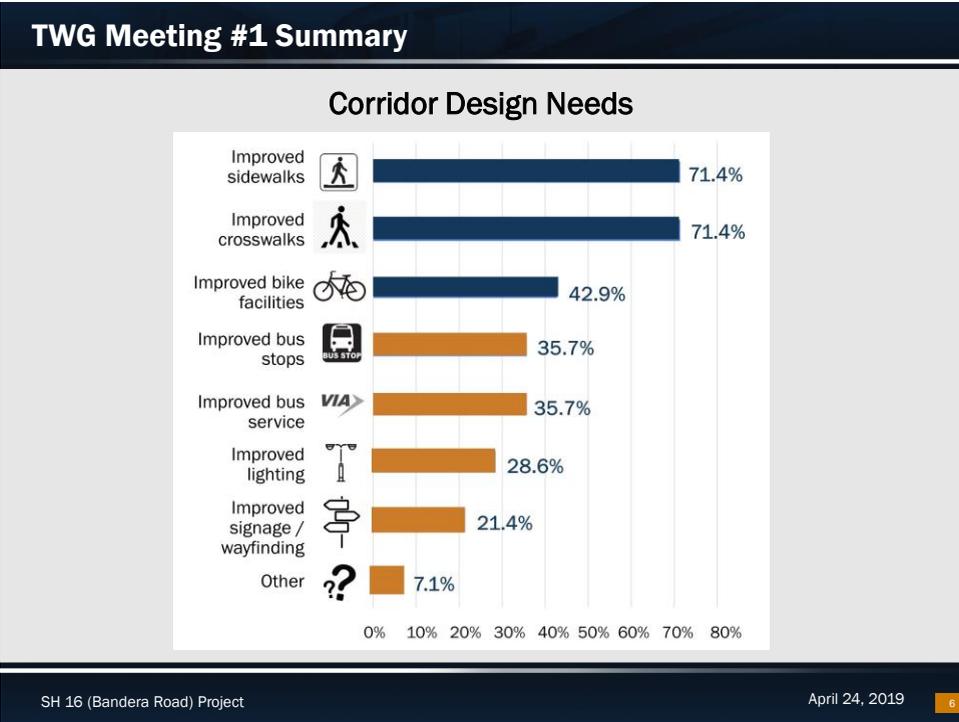
April 24, 2019

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“Pop-Up” Event Summary

- 4 events (February – March)
- 111 completed surveys
- 29 mailing list sign-up requests
- 34 mailing list requests via survey



Movies in the Park
(February 15, 2019)



C.R.Y. San Antonio
Run/Walk for Child Rights
(February 24, 2019)



Earthwise Living Day
(March 2, 2019)



SH 16 @ Loop 1604
Displaced Left Turn (DLT)
Informational Meeting
(March 5, 2019)

SH 16 (Bandera Road) Project

April 24, 2019

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Community Survey #1 – Status Summary

- Survey
 - Opened February 15, 2019
 - Planned Closing May 30, 2019
- Availability
 - English: <https://www.surveymonkey.com/r/QCRLNSH>
 - Spanish: <https://www.surveymonkey.com/r/MRXS8XG>
 - Community outreach events
- 362 surveys through April 15, 2019
 - 63% reside in Leon Valley
 - 26% reside in San Antonio
 - 12% Council District #7
 - 6% Council District #8

SH 16 (Bandera Road) Survey
February – March 2019

The Texas Department of Transportation (TxDOT) is studying potential improvements along SH 16 (Bandera Road) between I-420 and Loop 1604, within the cities of Leon Valley and San Antonio. SH 16 (Bandera Road) between I-420 and Loop 1604 is the eighth most congested roadway in the region and one of the top 100 most congested roads in Texas (Texas A&M Transportation Institute, 2018).

The SH 16 (Bandera Road) Project involves the collection and analysis of traffic data, the consideration of potential improvements including bridge and pedestrian accommodations, and the preparation of various environmental studies. TxDOT is working closely with officials from Leon Valley, San Antonio, and regional and state representatives to gather data and identify community values and concerns.

Input from community members is an important part of the project. Please take a moment to tell us what you think and help us better understand SH 16 (Bandera Road) issues that are important to you. We appreciate your input!

1. Please rank your priorities for the SH 16 (Bandera Road) Project, from most important to least important. (1 = most important; 7 = least important)

Improve congestion

Improve safety

Improve signage

Add sidewalks and improve pedestrian crossings

Add bike facilities

Minimize impacts to adjacent properties

Road and roadside impacts to natural, cultural, and community resources

Other priorities (please describe): _____

SH 16 (Bandera Road) Project

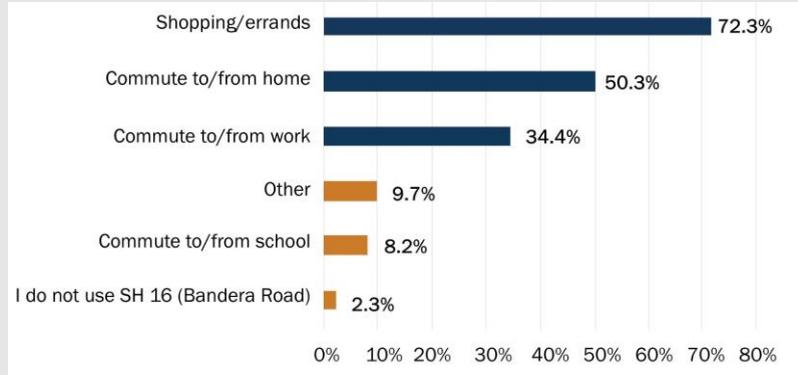
April 24, 2019

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Community Survey #1 – Status Summary

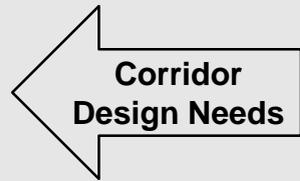
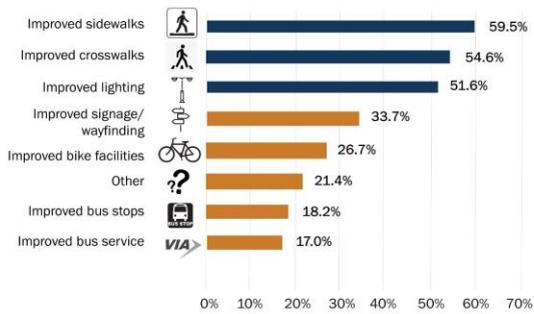
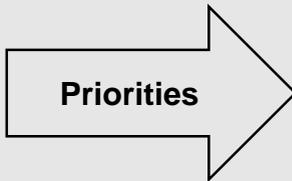
Primary Reason for Using SH 16 (Bandera Road)



Survey allows for multiple reasons to be selected

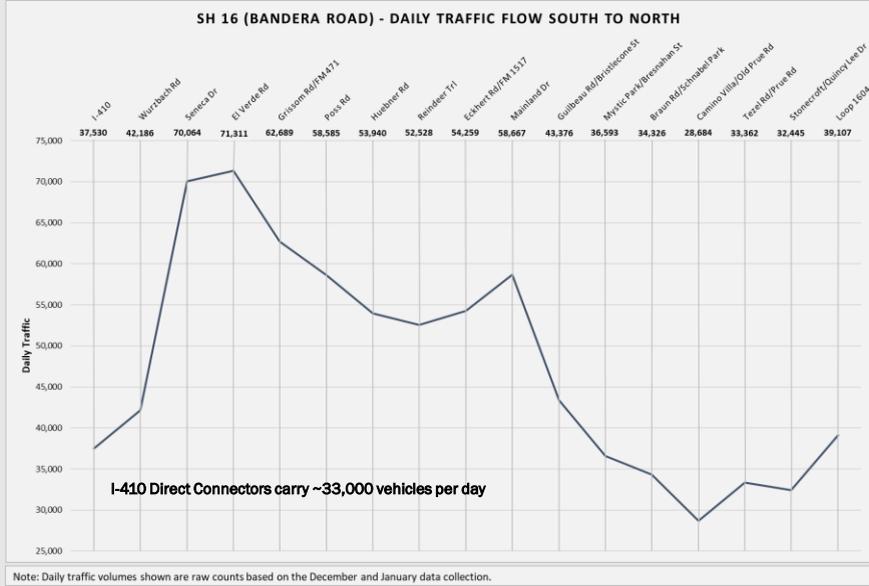
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Community Survey #1 – Status Summary



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SH 16 (Bandera Road) Current Traffic Counts



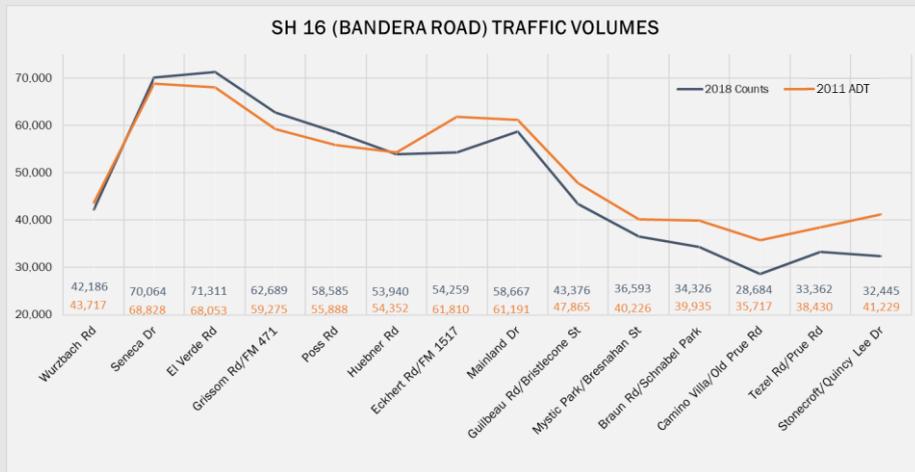
SH 16 (Bandera Road) Project

April 24, 2019

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SH 16 (Bandera Road) Current Traffic vs. Historic Traffic



SH 16 (Bandera Road) Project

April 24, 2019

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SH 16 (Bandera Road) Current Traffic vs. Historic Traffic

Traffic Volume Comparison

Year	N of Grissom Rd	S of Eckhert Rd	N of Braun Rd	N of Quincy Lee Dr
	Location ID: 15H50	Location ID: 15H51	Location ID: 15H53	Location ID: 15H37
2000 ¹	48,000	47,000	26,000	27,000
2005 ¹	57,640	51,080	28,270	33,320
2010 ¹	54,000	45,000	29,000	35,000
2011 ²	55,467	52,843	38,808	39,153
2015 ¹	56,911	49,407	32,898	40,681
2018 ³	58,689	48,400	30,633	30,735

Notes:

1. AADT from TxDOT Statewide Traffic Analysis and Reporting System (STARS II)
2. ADT from 2011 TxDOT Study
3. 2018 traffic counts from Current Study

- Historical traffic data depicts “roller coaster” growth pattern over past 20 years
- Current counts in the northern segment abnormally low (likely due to construction)
- Will adjust northern counts based on historical data prior to developing projections

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AAMPO Model – Potential Latent Demand

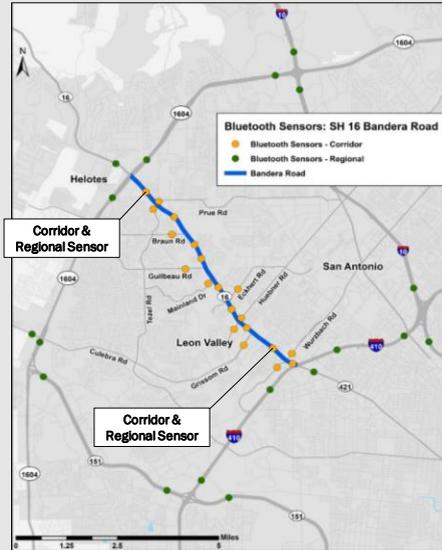
SH 16 (Bandera Road) Location	2015 AAMPO Model Volume	Standard 2045 AAMPO Model Volume	Maximum 2045 AAMPO Model Volume	Increased 2045 Volume Maximum vs. Standard Model
Between I-410 & Wurzbach (Including DCs)	87,272	95,556	108,463	12,907
Between Eckhert Rd & Mainland Dr	71,146	91,377	106,552	15,175
Between Braun Rd & Camino Villa	31,134	37,851	53,420	15,569
Between Quincy Lee Dr & LP 1604	44,390	68,330	81,424	13,094

- The Standard 2045 AAMPO volumes reflect the SH 16 (Bandera Road) no-build alternative
- The Maximum 2045 AAMPO volumes reflect 2 added lanes/direction
 - Concept to test latent demand along the corridor (modified by design team)
- Traffic volumes represent average daily traffic

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Bluetooth Origin & Destination (O-D) Data Study

- Corridor O-D analysis
 - 20 Bluetooth readers
 - Captured ~8% of total traffic
- Regional O-D analysis
 - 20 Bluetooth readers
 - Captured ~6% of total traffic
- Assumptions
 - Max travel time of one hour
 - “Cleaned” data to develop matrix of true O-D trips
- Draft Bluetooth O-D report to be submitted to TxDOT by end of April



PRELIMINARY & SUBJECT TO CHANGE

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Origin & Destination (O-D) Study – Regional Analysis

Regional Daily Trips Entering or Exiting SH 16 North Project Limit*

- ~6% to/from I-10 north of LP 1604
- ~8% to/from I-10 south of LP 1604
- ~6% to/from LP 1604 between SH 16 and I-10
- ~8% to/from LP 1604 south of SH 151
- ~16% to/from LP 1604 east of I-10
- ~32% to/from SH 16 north of LP 1604

*Regional trip distributions < 5% not shown



PRELIMINARY & SUBJECT TO CHANGE

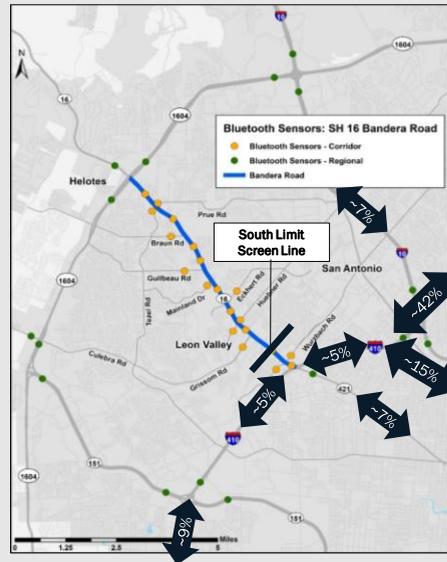
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Origin & Destination (O-D) Study – Regional Analysis

Regional Daily Trips Entering or Exiting SH 16 South Project Limit*

- ~7% to/from Bandera Road south of I-410
- ~7% to/from I-10 north of I-410
- ~15% to/from I-10 south of I-410
- ~5% to/from I-410 between SH 16 and I-10
- ~5% to/from I-410 between SH 16 and SH 151
- ~9% to/from I-410 west of SH 151
- ~42% to/from I-410 east of I-10

*Regional trip distributions < 5% not shown



PRELIMINARY & SUBJECT TO CHANGE

SH 16 (Bandera Road) Project

April 24, 2019

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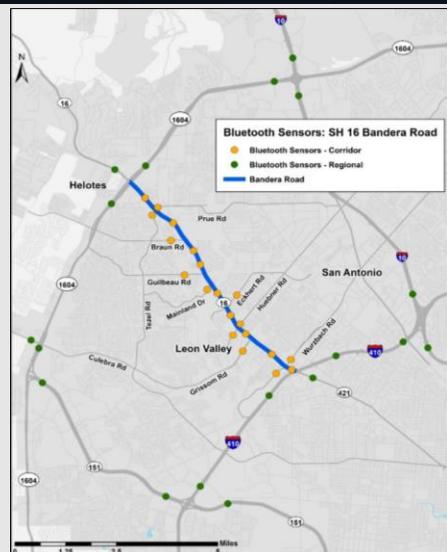
Origin & Destination (O-D) Study – Corridor Analysis

SH 16 (Bandera Road) – North Limit Between Prue Road and Loop 1604

- ~65% of daily trips travel to/from points south of Braun Road
- ~15% of daily trips are through trips that travel from Loop 1604 to I-410

SH 16 (Bandera Road) – South Limit Between I-410 and Wurzbach Road

- ~55% to 60% of daily trips travel to/from locations on Huebner Road and beyond (north)
- ~9% of daily trips are through trips that travel from I-410 to Loop 1604



PRELIMINARY & SUBJECT TO CHANGE

SH 16 (Bandera Road) Project

April 24, 2019

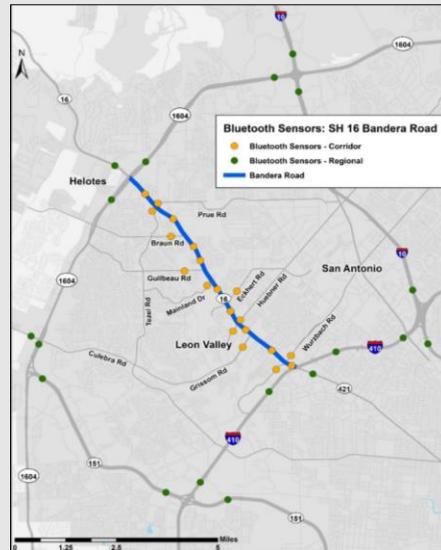
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Origin & Destination (O-D) Study – Corridor Analysis

Side Street Major Movements

- ~50% of daily trips on Grissom Road (west of SH 16) travel to/from I-410 and points south
 - Majority access I-410 DC ramps
- ~25% of daily trips at Mainland Drive, Guilbeau, and Braun Road travel to/from I-410 and points south
- ~50% of daily trips at Prue Road travel to/from Loop 1604 and points north
- O-D indicates that Wurzbach Road may be utilized as a bypass alternative to I-410



PRELIMINARY & SUBJECT TO CHANGE

SH 16 (Bandera Road) Project

April 24, 2019

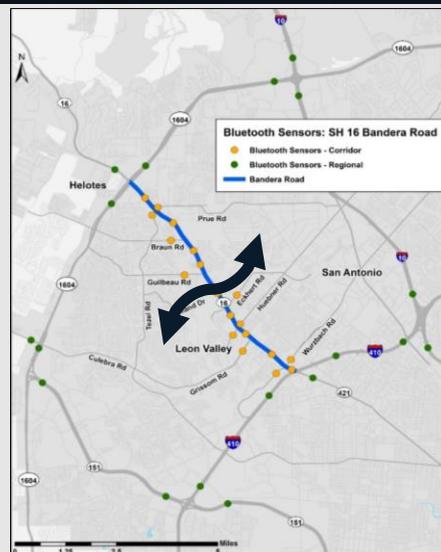
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Origin & Destination (O-D) Study – Corridor Analysis

Side Street Major Movements Across SH 16

- Typically, ~1/3 of the cross street traffic moves from one side of SH 16 to the other
- This includes “dog-leg” movements that utilize short trips on SH 16
 - Ex. ~30% of daily trips originating at Mainland Drive and Guilbeau Road (west of SH 16) have a destination along Eckhart Road (east of SH 16)



PRELIMINARY & SUBJECT TO CHANGE

SH 16 (Bandera Road) Project

April 24, 2019

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Crash Data Analysis

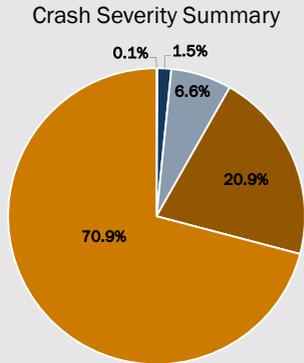
- Source of crash data:
 - San Antonio: Crash Records Information System (CRIS) database
 - Leon Valley: Provided by the Leon Valley Police Department
 - Leon Valley historically has not uploaded all crash data to CRIS database
 - Records indicate crash location only

- 5 year period analyzed (from 2014 to 2018)

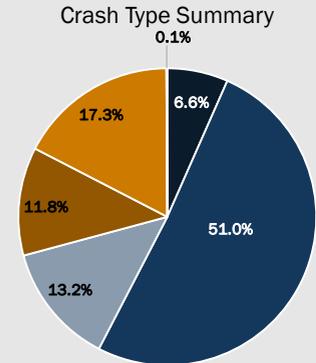
- A total of 5,842 crashes recorded within project limits over 5 year period
 - Leon Valley segment (2.5 miles): 3,693 crashes (~63%)
 - San Antonio segment (4 miles): 2,149 crashes (~37%)

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Crash Data Analysis – San Antonio Segment



- Fatal (0.1%)
- Severe
- Moderate
- Minor
- No Fatality/Injury



- Single Vehicle
- 2+ Vehicles (Rear End)
- 2+ Vehicles (Angle)
- 2+ Vehicles (Sideswipe)
- 2+ Vehicles (Head On)
- Not Reported (0.1%)

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Crash Data Analysis – San Antonio Segment

- **59% of total crashes were logged as intersection related**
 - High concentration of crashes observed at intersections with:
 - Loop 1604 frontage roads
 - Stonecroft
 - Braun Road
- **10% of total crashes were recorded as driveway access related**
- **Potential effects of congestion on crash data include:**
 - ~51% of crashes were classified as “rear end”
 - Possibly related to unexpected queue spillback and sudden decrease in travel speeds
 - ~92% of accidents resulted in no injury or minor injuries
 - Potentially related to slower speeds during congestion
- **Crash rate ~4 times higher than statewide average**

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Crash Data Analysis – Leon Valley Segment

- **Method of recording crash data varies from San Antonio and CRIS database**
- **High concentration of crashes observed at intersections with:**
 - Huebner Road
 - I-410 frontage roads
 - Wurzbach Road
- **Crash rate ~7 times higher than statewide average**
- **Potential causes for higher crash rate in Leon Valley vs. San Antonio segment**
 - Different approach to crash reporting threshold
 - Heavier traffic volume
 - Increased driveway and intersection density
 - Narrower lanes and shoulder widths

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Next Steps

▪ Analysis

- Bluetooth O-D Study Completion: May 2019
- Traffic Methodology Approval: May 2019
- Begin Development of Concepts: Summer 2019

▪ Community Outreach

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Questions / Comments?

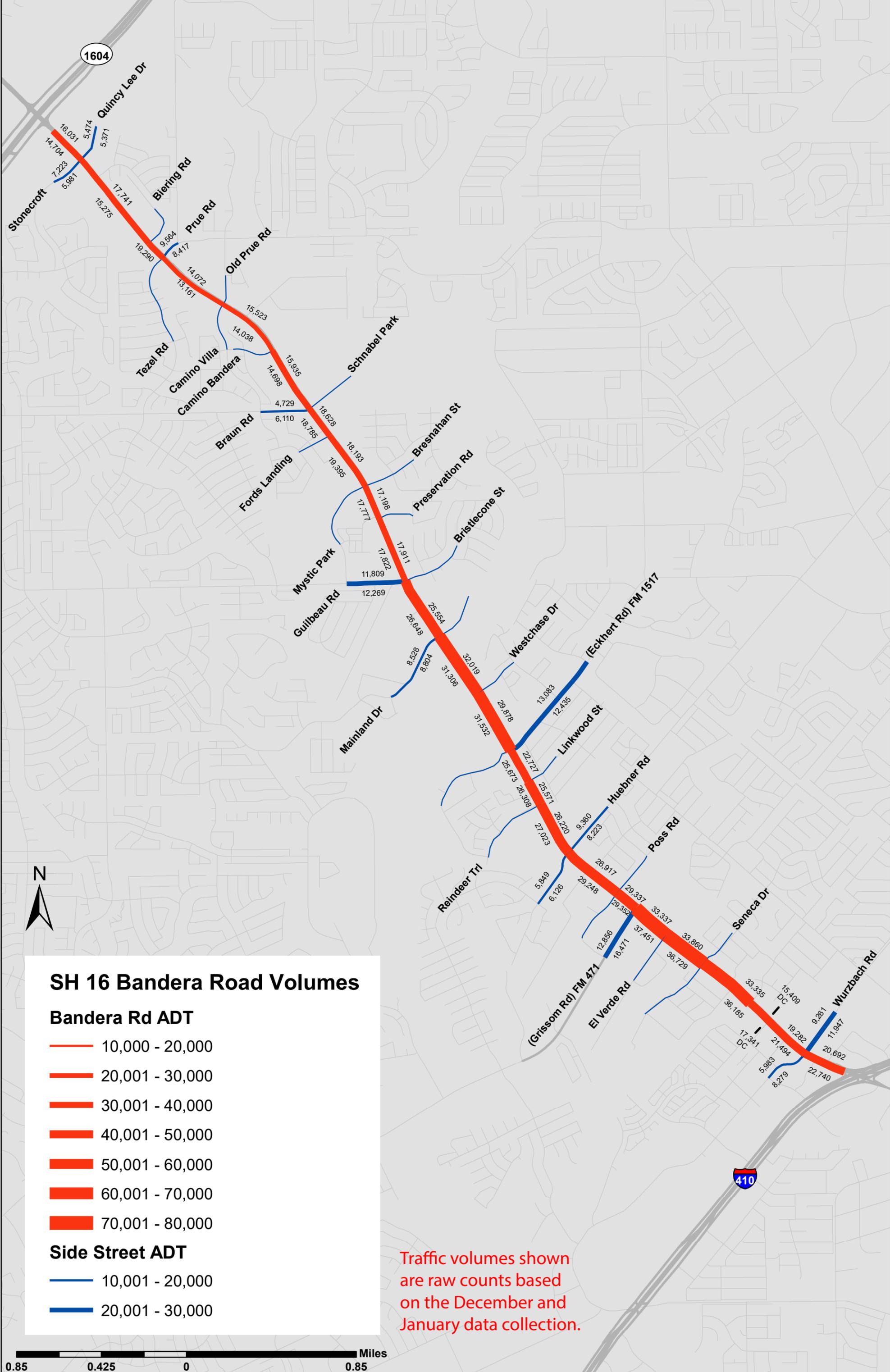


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1604

SH 16 Banderera Road Volumes

Banderera Rd ADT

- 10,000 - 20,000
- 20,001 - 30,000
- 30,001 - 40,000
- 40,001 - 50,000
- 50,001 - 60,000
- 60,001 - 70,000
- 70,001 - 80,000

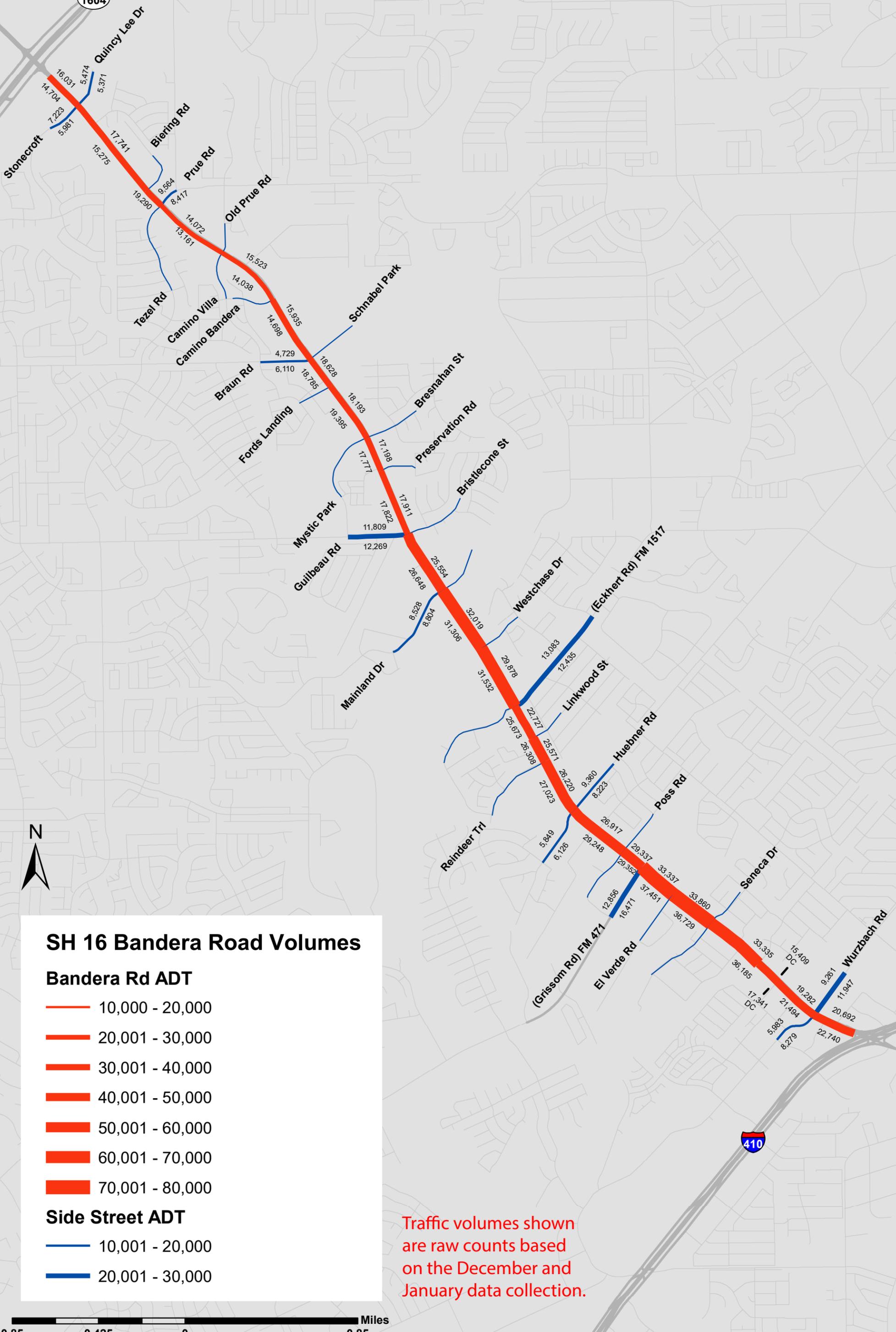
Side Street ADT

- 10,001 - 20,000
- 20,001 - 30,000

Traffic volumes shown are raw counts based on the December and January data collection.

0.85 0.425 0 0.85 Miles

410



WE WANT TO HEAR FROM YOU!

◆ Please go to the following link to complete our survey, available in English and in Spanish. This short survey is open through Wednesday, May 15, 2019.

Take our survey: <https://www.surveymonkey.com/r/QCRLNSH>

◆ To sign up for project updates, email BanderaRoad@pozcam.com

◆ Website: txdot.gov, search for "Bandera Road Project"



◆ To ask questions or provide input, email BanderaRoad@pozcam.com or contact: Laura Lopez, Public Information Officer, TxDOT San Antonio District; (210) 615-5839; Laura.Lopez@txdot.gov

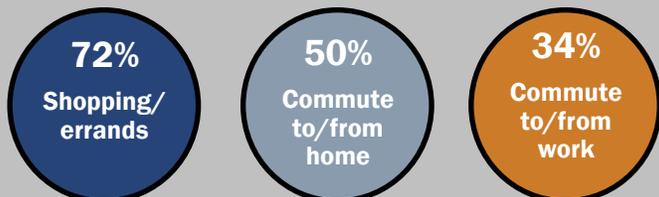
Texas Department of Transportation

TxDOTSanAntonio

STATE HIGHWAY 16
BANDERA ROAD

Preliminary Survey Results (as of April 15, 2019)

When asked what their primary reason for traveling within the corridor, respondents said:



When asked what design features they would like to see within the corridor, respondents said:



362

responses

169

People signed up to receive email updates

When asked to rank their priorities for the SH 16 (Bandera Road) Project, respondents said their top priorities are:



63% live in Leon Valley

12% live in San Antonio District 7

6% live in San Antonio District 8

56% are white

30% are Hispanic or Latino

53% are female

44% are male

23% are 65 to 74 years old

20% are 55 to 64 years old